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 28, 2022

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

RE: Tower Share Application
36 Ayer Road, Franklin, CT 06254
Latitude: 41.645802
Longitude: -72.128294
Site #: CT02219-S_CTNL121A_SBA/T-Mobile

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of T-Mobile. T-Mobile plans to install antennas and related equipment to the tower site located at 36 Ayer Road, Franklin, Connecticut.

T-Mobile proposes to install nine (9) panel antennas, six (6) RRUs and (1) microwave antenna at the 167-foot level of the existing 180-foot monopole tower, three (3) HCS Fiber cables and (1) coax will also be installed. T-Mobile equipment cabinets and a 48kW diesel generator will be placed within a 10' x 15' lease area within the existing fenced compound. Included are plans by Chappell Engineering, dated July 19, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated June 10, 2022, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Town of Franklin, although efforts to retrieve a copy of the decision have been unsuccessful. A tower extension was subsequently approved by the Connecticut Siting Council, Petition No. 781 on August 31, 2006. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Charles Grant, First Selectman, and Ronald Chalecki Zoning Enforcement Officer for the Town of Franklin, as well as the tower owner (SBA) and property owner (David Ayer).

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 180-feet and the T-Mobile antennas will be located at a center line height of 167-feet.

2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.

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3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 13.84% as evidenced by Exhibit F.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, T-Mobile respectfully submits that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole tower in Franklin. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit G, authorizing T-Mobile to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 167-foot level of the existing 180-foot tower would have an insignificant visual impact on the area around the tower. T-Mobile ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting T-Mobile proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing tower. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Franklin.

Sincerely,

Denise Sabo

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: Charles Grant - First Selectman
Franklin Town Hall
7 Meetinghouse Hill Rd.
Franklin, CT 06254

Ronald Chalecki - Zoning Enforcement Officer
Franklin Town Hall
7 Meetinghouse Hill Rd.
Franklin, CT 06254

David Ayer - Property Owner
131 Plain Hill Road
PO Box 16
Franklin, CT 06254

SBA - Tower Owner

Exhibit A

Original Facility Approval

Petition No. 781
Cellco Partnership d/b/a Verizon Wireless
36 Ayer Road, Franklin, Connecticut
Staff Report
August 31, 2006

On July 24, 2006, Cellco Partnership d/b/a Verizon Wireless (Cellco) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing wireless telecommunications tower located at 36 Ayer Road in Franklin, Connecticut. On August 23, 2006, Council member Philip Ashton and Council staff member Robert Mercier met with Cellco representative Kenneth Baldwin at the site to review this petition.

Cellco proposes to place a 30-foot extension on a 150-foot monopole owned by SBA, Inc. The existing monopole was constructed in 2001 as a "spec" tower and has not accommodated any wireless provider to date. The monopole and foundation were originally deigned and constructed to accommodate a 30-foot extension. A fenced compound is located at the base of the tower. Utilities are installed to the compound.

Cellco proposes to install a 30-foot extension on the monopole. Cellco would install 12 panel antennas at a centerline height of 177 feet above ground level. The overall height of the facility would not exceed 180 feet with antennas. The tower is structurally capable of supporting the extension. No aircraft hazard lighting and/or marking of the tower would be required.

Cellco would install a 12-foot by 30-foot equipment shelter at the base of the tower. The shelter would contain a back-up generator. No expansion of the existing fenced compound would be required.

The tower would provide continuous coverage to Route 32 in Franklin. Any reduction in antenna height would result in a coverage gap on Route 32 between the existing site and an adjacent facility to the south.

The site is located in a rural area. Although the area immediately north of the tower site is residentially developed, heavy tree cover would obscure the facility. The existing tower is visible from open areas approximately 0.75 to 1.9 miles southeast of the site. The visibility impact of the extended tower to these areas would be minimal.

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Franklin CONNECTICUT

Information on the Property Records for the Municipality of Franklin was last updated on 7/26/2022.

Parcel Information

Location:	36 AYER RD	Property Use:	Residential	Primary Use:	MobileHomes
Unique ID:	A1011000	Map Block Lot:	11 7	Acres:	129.2500
490 Acres:	126.50	Zone:	R120	Volume / Page:	105/ 730
Developers Map / Lot:		Census:			

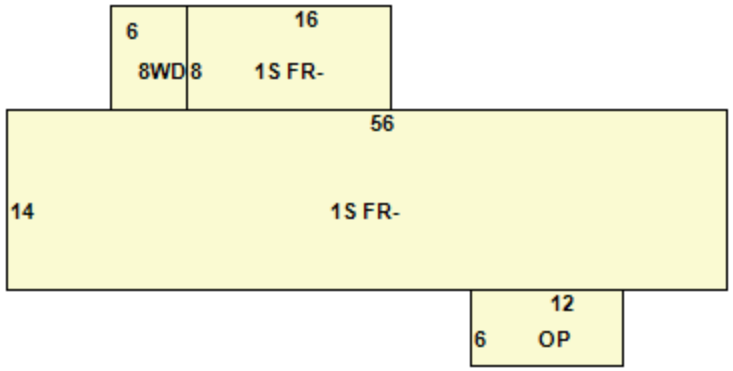
Value Information

	Appraised Value	Assessed Value
Land	227,440	74,200
Buildings	17,458	12,220
Detached Outbuildings	201,944	141,360
Total	446,842	227,780

Owner's Information

Owner's Data
AYER DAVID L 131 PLAIN HILL RD FRANKLIN, CT 06254

Building 1



Building Use:	Mobile Home	Style:	Mobile Home	Living Area:	912
Stories:	1.00	Construction:	Steel	Year Built:	1980
Total Rooms:	4	Bedrooms:	2	Full Baths:	1
Half Baths:	0	Fireplaces:	1	Heating:	Forced Hot Air

Fuel:	Oil	Cooling Percent:	0	Basement Area:	0
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Metal
Siding:	Aluminum Siding	Units:			

Special Features

Attached Components

Type:	Year Built:	Area:
Wood Deck	1980	48
Open Porch	1980	72

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Site Value	1980	0.00	0.00	1
Patio	2016	12.00	18.00	216
Cell Tower	2001	0.00	0.00	1

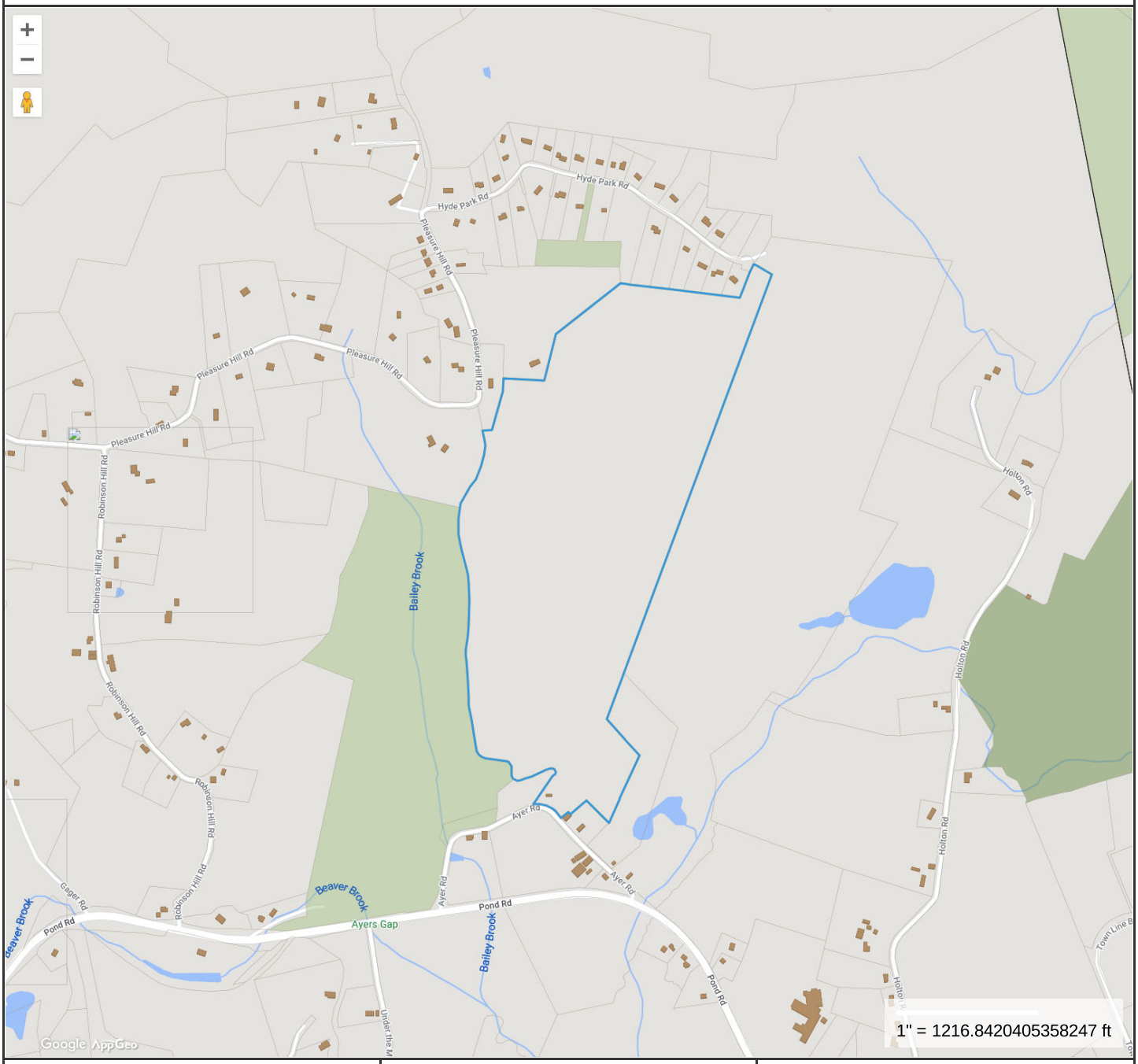
Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
AYER DAVID L	0105	0730	07/19/2021	Probate	$0
AYER ANNE B LIFE USE	0087	0821	12/22/2011		$0
AYER ANNE B LIFE USE	0086	0895	03/30/2011		$0
AYER ANNE B LIFE USE	0084	0205	11/23/2009		$0
AYER ANNE B LIFE USE	0075	1120	03/06/2006		$0
AYER ANNE B LIFE USE	0075	1059	02/22/2006		$0
AYER ANNE B LIFE USE	0069	0758	11/18/2003		$0
AYER ANNE & AYER JOHN	0034	0259	09/20/2002		$0
AYER EUGENE + ANNE + JOHN	0034	0259	09/15/1986		$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
208-22	Other	02/15/2022	KMM TELECOMUNICATION ANT UPGRADE
15-19B	Deck	08/10/2015	8 X 16 COVERED POARCH
91506		09/19/2006	12x30 SHELTER+ANTENNA'S
2135		11/17/2001	
2127		10/20/2001	GATED+LOCKED

36 AYER ROAD



Property Information

Property ID	53-11-7
Location	36 AYER RD
Owner	AYER DAVID L

SCCOG

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

SCCOG makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 05/31/2017
Data updated 05/04/2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Exhibit C

Construction Drawings

AYER ROAD FRANKLIN SBA

36 AYER ROAD
FRANKLIN, CT 06254
NEW LONDON COUNTY

SITE NO.: CTNL121A

SITE TYPE: 180'± MONOPOLE

RF DESIGN GUIDELINE: 67E5D998E 6160

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

SCOPE OF WORK

INSTALL:

- 9 ANTENNAS
- 6 RADIOS
- 1 6160 EQUIPMENT CABINET
- 1 B160 BATTERY CABINET
- 1 PPC
- 1 PURCELL CABINET
- 1 SLACKBOX
- 1 GPS ANTENNA
- 1 COAX CABLE FOR GPS
- 3 HYBRID CABLES
- 1 LOW-PROFILE MOUNT
- 1 10'x15' CONCRETE PAD
- 1 10'x15' ICE CANOPY
- 1 GENERATOR
- 1 AUTOMATIC TRANSFER SWITCH
- 3 20A-1P BREAKERS
- 1 25A-1P BREAKER
- 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.

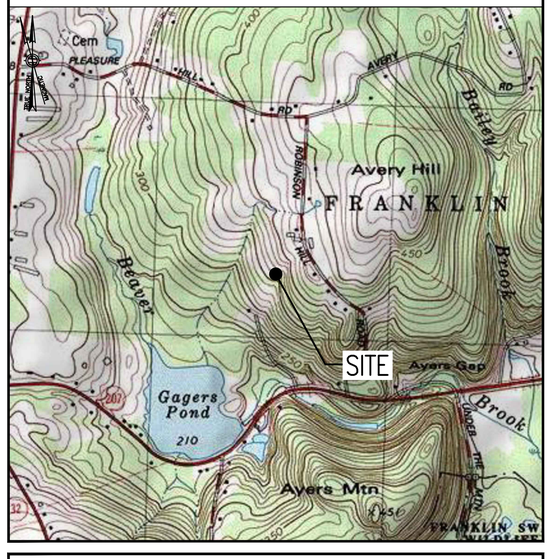
GENERAL NOTES

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 33B TO MERGE ONTO I-95 SOUTH. TAKE EXIT 6 FOR I-295 SOUTH. TAKE EXIT 9C-A FOR US-6 WEST. KEEP RIGHT AT THE FORK TO STAY ON US-6 WEST. SLIGHT LEFT ONTO CONNECTICUT TURNPIKE. TAKE EXIT ON THE LEFT ONTO I-395 SOUTH. TAKE EXIT 18 TOWARD OCCUM. TURN LEFT ONTO TAFTVILLE-OCCUM ROAD. TURN LEFT ONTO BRIDGE STREET. TURN RIGHT ONTO CT-97 NORTH. TURN LEFT ONTO CT-207 WEST. TURN ONTO CT-207 WEST. TURN RIGHT ONTO ROBINSON HILL ROAD. TURN RIGHT ONTO PLEASURE HILL ROAD. SITE IS LOCATED ON THE RIGHT HAND SIDE.

SHEET INDEX

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A-4	SITE DETAILS 2 OF 2	1
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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:	CTNL121A
SITE NAME:	AYER ROAD FRANKLIN SBA
SBA SITE NUMBER:	CT02219-S
SBA SITE NAME:	NORTH FRANKLIN
SITE ADDRESS:	36 AYER ROAD FRANKLIN, CT 06254
PROPERTY OWNER:	AYER ANNE B LIFE USE C/O AYER DAVID L. PO BOX 16 FRANKLIN, CT 06254
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON
ZONING DISTRICT:	R120 (RESIDENCE)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	180'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.645800° N41°38'44.88" LONGITUDE: -72.128290° W72°07'41.84"

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
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
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/18/22	ISSUED FOR CONSTRUCTION	JRV
0	05/31/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.497

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
3/9/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/18/22	ISSUED FOR CONSTRUCTION	JRV
0	05/31/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

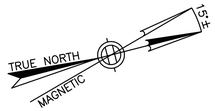
SHEET TITLE
GENERAL NOTES

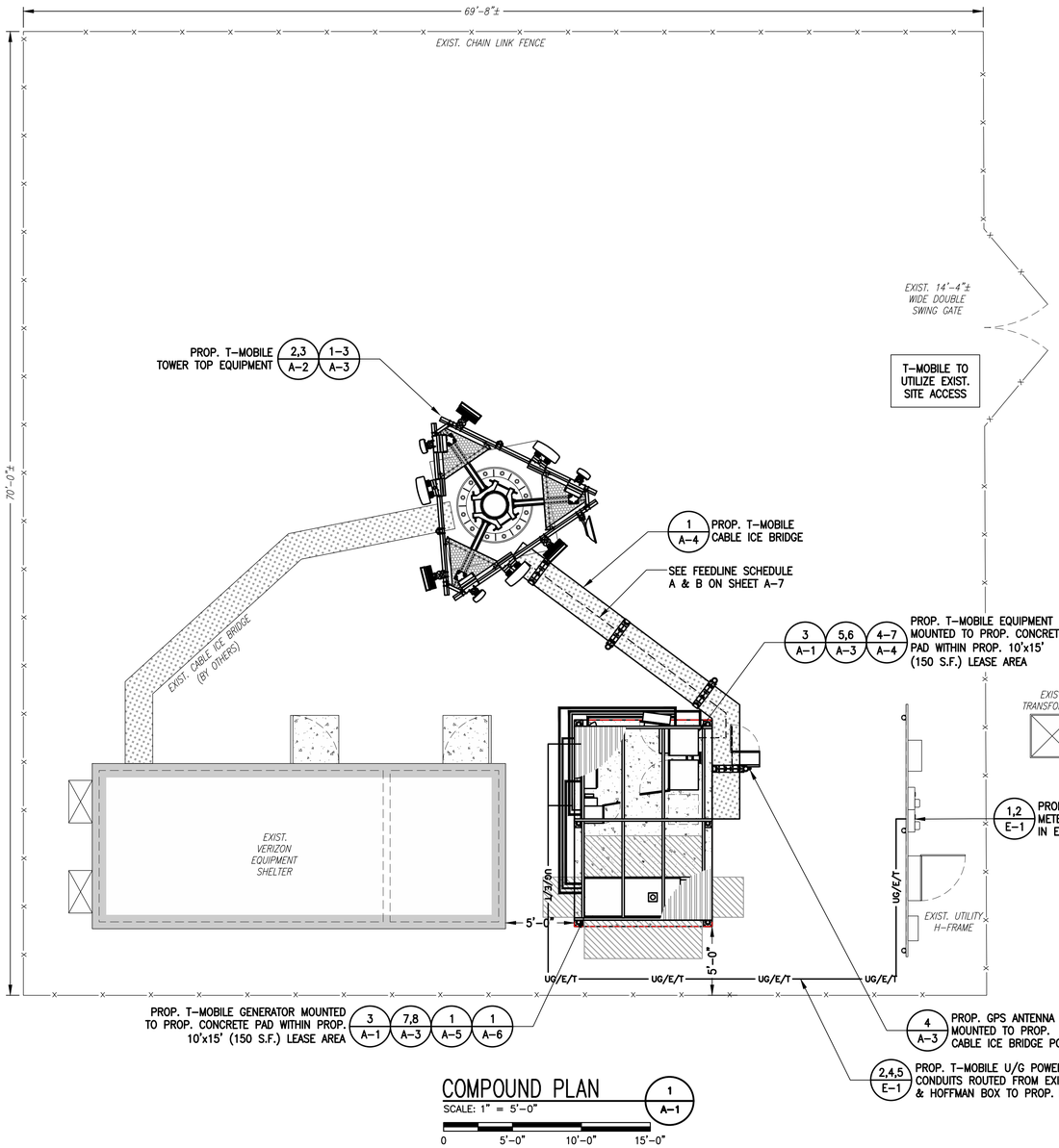
SHEET NUMBER
GN-1

1815.497

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 WORK NOTE (HAND DUG UTILITY TRENCH EXCAVATION REQUIRED):
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH SUFFICIENT TEST HOLES OR AS DIRECTED/REQUIRED BY SBA REGIONAL SITE MANAGER SHALL HAND-EXCAVATE ALL PROPOSED UNDERGROUND UTILITY TRENCHES. GENERAL CONTRACTOR RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF EXISTING UNDERGROUND UTILITIES, PHYSICAL DAMAGE REPAIR, AND SERVICE RESTORATION.

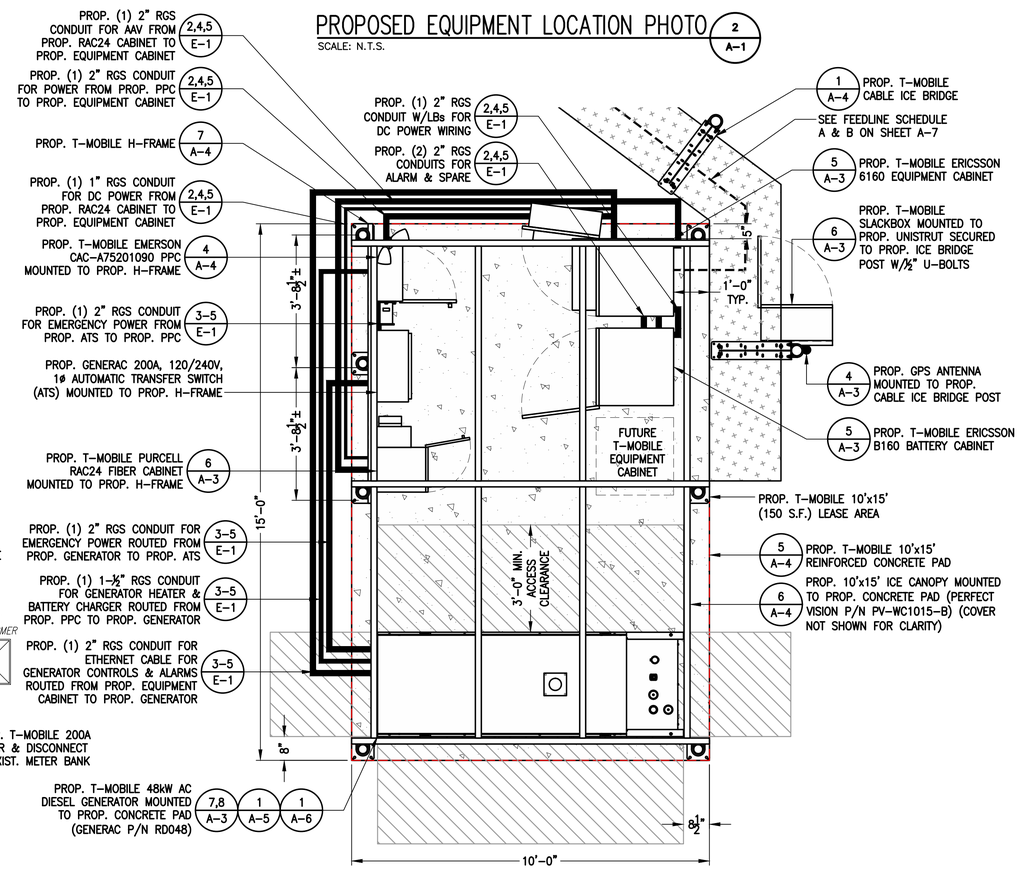




COMPOUND PLAN 1 A-1
SCALE: 1" = 5'-0"
0 5'-0" 10'-0" 15'-0"

APPROX. LOCATION OF PROP. T-MOBILE 10'x15' (150 S.F.) LEASE AREA 3 A-1

PROPOSED EQUIPMENT LOCATION PHOTO 2 A-1
SCALE: N.T.S.



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

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STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 LICENSED PROFESSIONAL CIVIL ENGINEER

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APPROVED BY: JMT

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SHEET TITLE
COMPOUND, EQUIPMENT PLAN & PHOTO

SHEET NUMBER
A-1

1815.497

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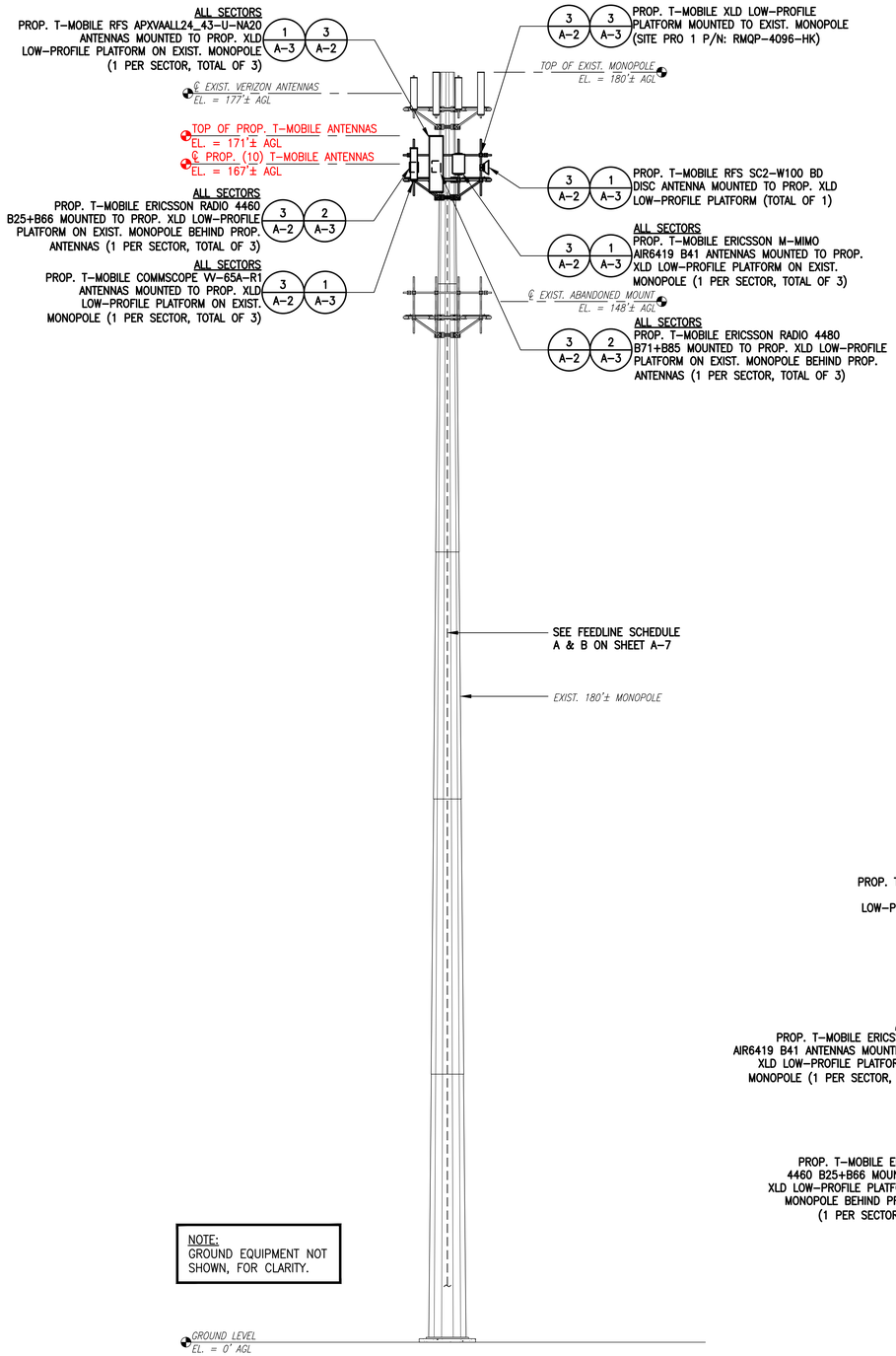
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

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

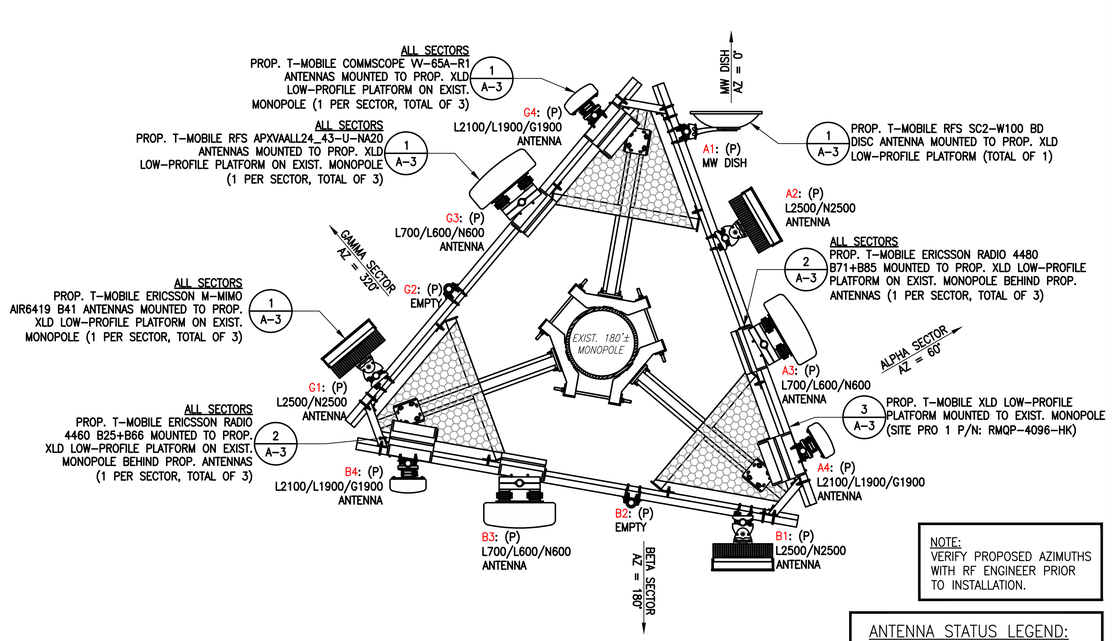
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

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



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION (2/A-2)
SCALE: 1" = 10'-0"
0 10' 20' 30'



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

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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

(E) – EXISTING
(P) – INSTALL
(F) – FUTURE

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7/19/2022

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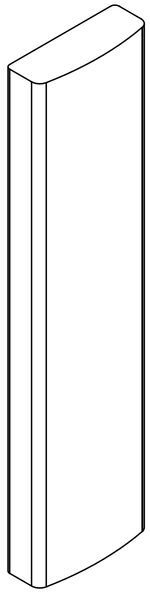
SHEET TITLE
TOWER ELEVATION, ANTENNA PLAN & PHOTO

SHEET NUMBER
A-2

1815.497

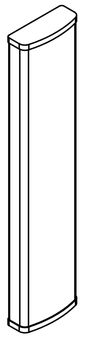


RFS APXVAALL24_43-U-NA20 ANTENNA

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

ERICSSON M-MIMO AIR6419 B41 ANTENNA

DIMENSIONS: 36.3"H x 20.9"W x 9.0"D
WEIGHT: 83.3 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3



COMMSCOPE VV-65A-R1 ANTENNA

DIMENSIONS: 54.7"H x 12.1"W x 4.6"D
WEIGHT: 23.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

RFS SC2-W100BD
2' DISH ANTENNA

DIMENSIONS: 26.4"ø x 11.5"D
WEIGHT: 20 LBS
TOTAL OF 1

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

ERICSSON RADIO 4460 B25+B66

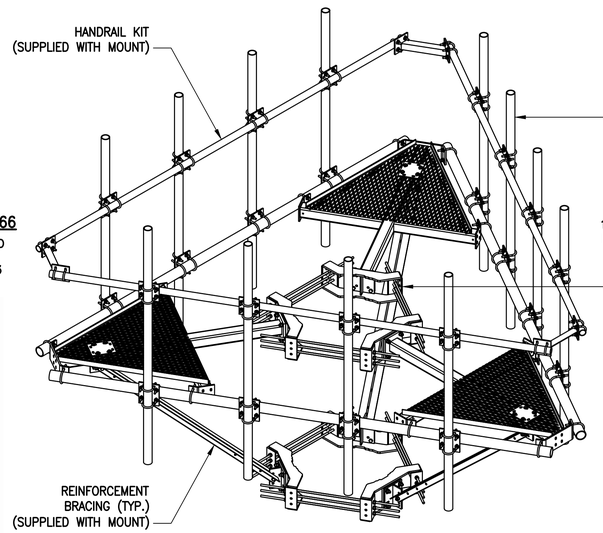
DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
WEIGHT: 104.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

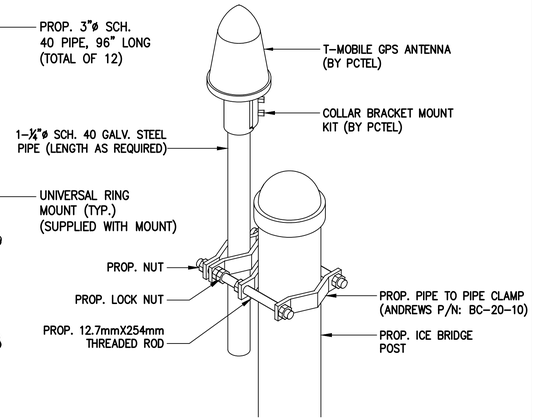
NOTE:
ANTENNAS NOT SHOWN, FOR CLARITY.



SITE-PRO 1 12'-6" LOW-PROFILE
CO-LOCATION PLATFORM W/HANDRAIL KIT

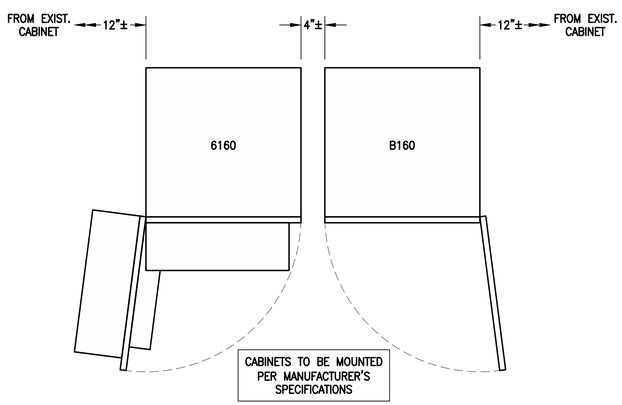
PART NUMBER: RMQP-4096-HK
(TOTAL OF 1 REQUIRED)

TYPICAL SITE PRO 1 12'-6"
LOW-PROFILE PLATFORM MOUNT
SCALE: N.T.S.
3 / A-3



NOTE:
THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1¼" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

GPS ANTENNA MOUNTING DETAIL
SCALE: N.T.S.
4 / A-3



ERICSSON 6160 SITE
SUPPORT CABINET

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

ERICSSON B160
BATTERY CABINET

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

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

PURCELL SITE SUPPORT
CABINET RAC24

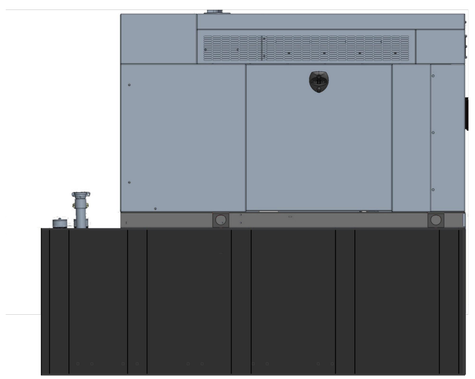
DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

SLACKBOX - HOFFMAN 32FH91
NEMA 3R ENCLOSURE

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

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

NOTE:
GENERATOR DIESEL TANK TO BE FILLED BY CONTRACTOR.

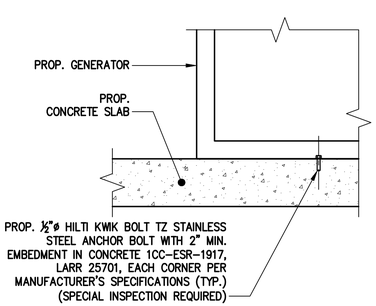


GENERAC RD048 48kW AC DIESEL GENERATOR

DIMENSIONS: 103.4"L x 35.0"W x 90.0"H
WEIGHT: 2,954 lbs
QUANTITY: TOTAL OF 1

GENERATOR DETAIL
SCALE: N.T.S.
7 / A-3

NOTE:
CONTRACTOR TO VERIFY 3" MIN. FROM EDGE OF CONCRETE TO NEW MOUNTING BOLT.



GENERATOR MOUNTING DETAIL
SCALE: N.T.S.
8 / A-3

T-MOBILE
NORTHEAST LLC

15 COMMERCE WAY, SUITE B
NORTON, MA 02766
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/18/22	ISSUED FOR CONSTRUCTION	JRV
0	05/31/22	ISSUED FOR REVIEW	JRV

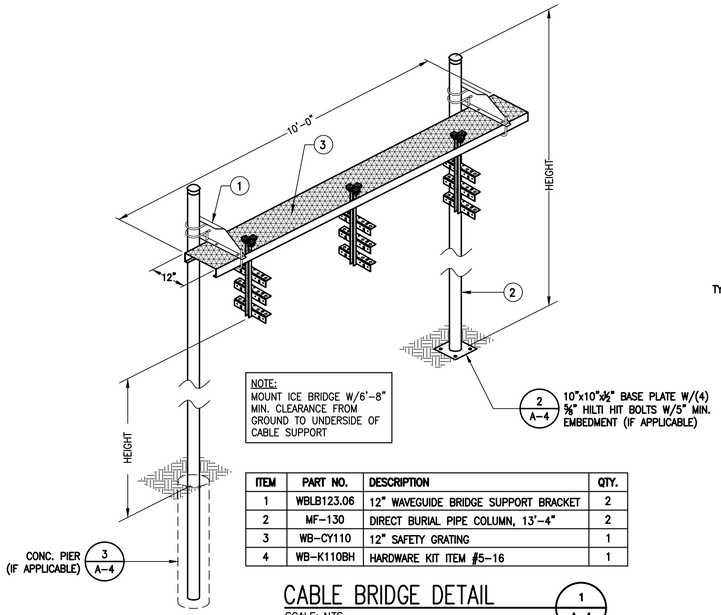
SITE NUMBER:
CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
SITE DETAILS
1 OF 2

SHEET NUMBER
A-3

1815.497

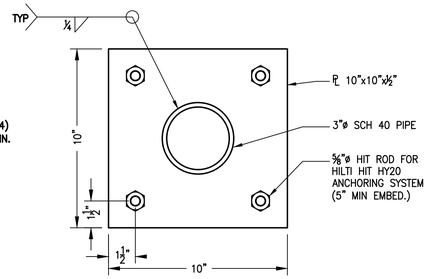


NOTE:
MOUNT ICE BRIDGE W/6'-8" MIN. CLEARANCE FROM GROUND TO UNDERSIDE OF CABLE SUPPORT

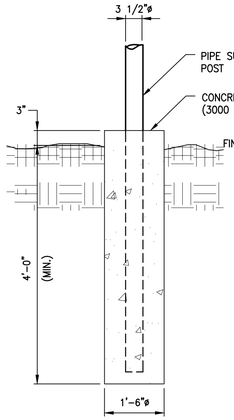
2 A-4 10"x10"x½" BASE PLATE W/(4) ⅝" HILTI HIT BOLTS W/5" MIN. EMBEDMENT (IF APPLICABLE)

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

CABLE BRIDGE DETAIL (1 / A-4)
SCALE: NTS



CABLE BRIDGE BASE PLATE (2 / A-4)
SCALE: NTS



NOTES:

1. FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
2. FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8"ø HOLE INTO LEDGE 18" DEEP. FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE
3. FOR CONCRETE, FASTEN BASEPLATE WITH (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
4. FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x⅜" BASE PLATE WITH (2)-1⅛"ø HOLES @ 6" O.C.

CABLE BRIDGE PIER (3 / A-4)
SCALE: NTS

EMERSON CAC-A75201090 PPC
DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

PPC DETAIL (4 / A-4)
SCALE: N.T.S.

CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE ¾ INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
3. PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260. AT TROWEL-FINISHED FLOORS, DO NOT EXCEED AIR-ENTRAINMENT CONTENT OF 3 PERCENT.
4. NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
5. ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
6. FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS F F=25 WITH LOCAL MINIMUM F F=17, AND MINIMUM VALUE OF LEVELNESS F F=20 WITH LOCAL MINIMUM F I AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
7. CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 4000 PSI.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.1 CODES

A. DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2012.

B. AMERICAN CONCRETE INSTITUTE "BUILDING COADE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-08.

2. EARTHWORK

2.1 FOUNDATIONS

A. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTIABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.

B. DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.

C. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

3.1 FORMWORK

A. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL, CONCRETE FOR BUILDINGS," (ACI 301-89).

B. FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

3.2 REINFORCEMENT

A. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

B. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

FOOTINGS & SLABS CAST AGAINST GROUND . . . . . 3"
CONCRETE TO BE IN CONTACT WITH GROUND
OR WEATHER AT BARS GREATER THAN #5 . . . . . 2"
AT BARS #5 OR LESS . . . . . 1-1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND
OR WEATHER BEAMS, GIRDERS & COLUMNS . . . . . 1-1/2"
SLABS & WALLS . . . . . 3/4"

3.3 CAST-IN-PLACE-CONCRETE

A. MINIMUM 28 DAY CYLINDER STRENGHT AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

	F'C (PSI)	SLUMP
CLASS I FOOTINGS	4000	3"
CLASS II FOOTINGS	4000	3"
CLASS III INTERIOR ELEVATED SLABS & WALLS	4000	4"
CLASS V OTHER WORK	4000	4"
CLASS VI LEAN CONCRETE FOR OVER EXCAVATION OF FOUNDATIONS	2000	N/A

B. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

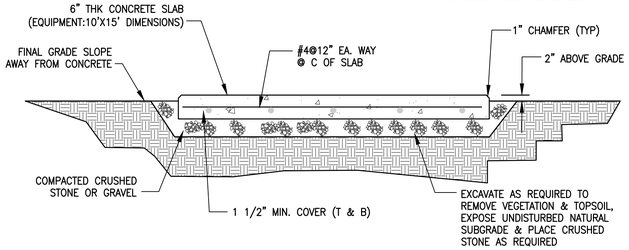
C. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE $57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

D. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1.

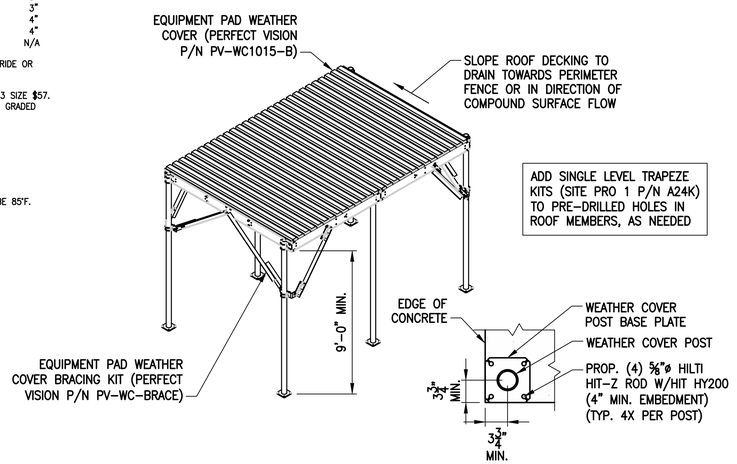
E. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

F. CHAMFER ALL EXPOSED EDGES 3/4".

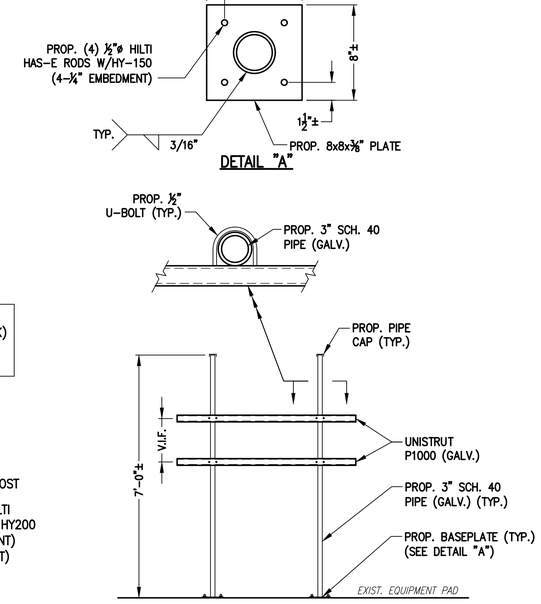
G. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MINUTES.



CONCRETE PAD DETAIL (5 / A-4)
SCALE: N.T.S.



EQUIPMENT PAD WEATHER COVER DETAIL (6 / A-4)
SCALE: N.T.S.



H-FRAME DETAIL (7 / A-4)
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED PROFESSIONAL CIVIL ENGINEER
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

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0	05/31/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL121A

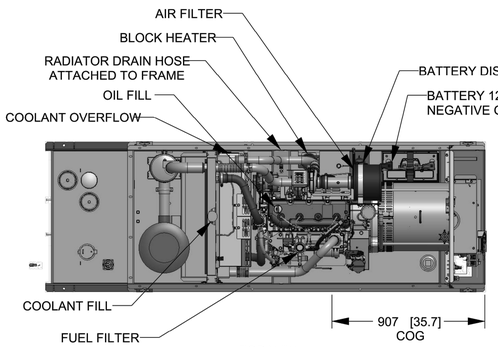
SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
SITE DETAILS
2 OF 2

SHEET NUMBER
A-4

1815.497

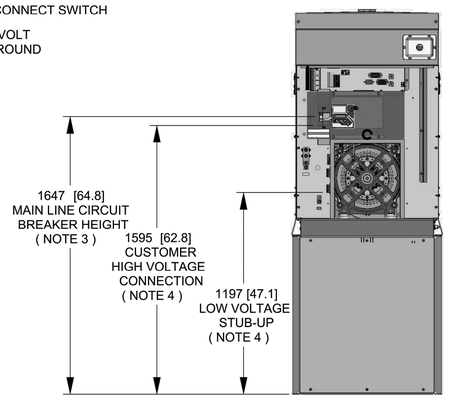
SH	REV	WINDCHILL VERSION	
1/2	A	A.1	



TOP VIEW
(SHOWN WITH ENCLOSURE REMOVED)

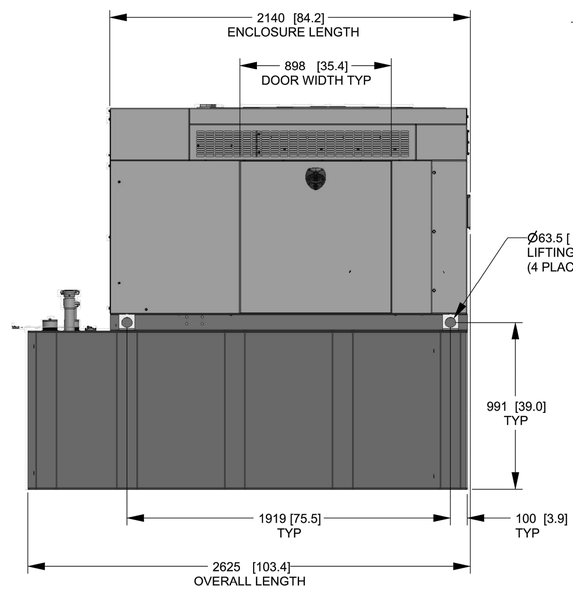
WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1,322 [2,915]
WITH WOODEN SHIPPING SKID	1,340 [2,954]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCH]

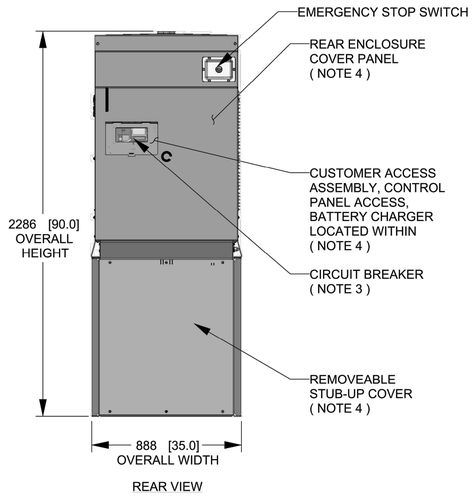


REAR VIEW
(SHOWN WITH REAR COVER PANEL REMOVED)

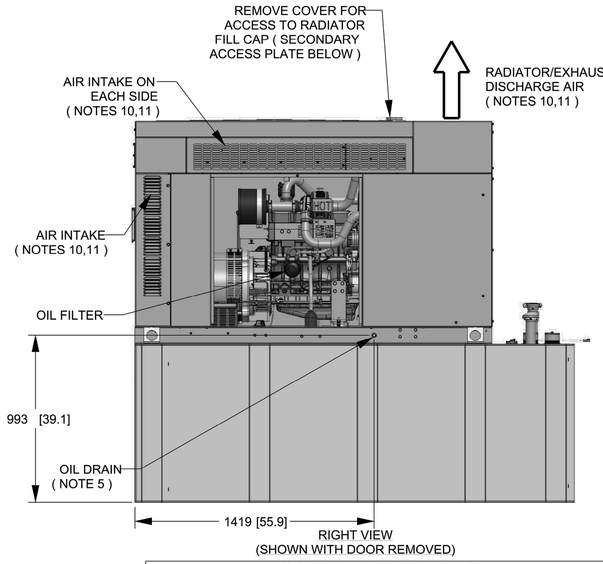
NOTES:
1. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
2. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - MAIN LINE CIRCUIT BREAKER 200 AMPS.
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
   - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER.
4. REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
   - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
   - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
5. ENGINE SERVICE CONNECTIONS:
   OIL DRAIN = 1/2" NPT
   RADIATOR DRAIN = HOSE CLAMPED TO FRAME
6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
8. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
9. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
10. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER (3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
12. GENERATOR MUST BE GROUNDED.



LEFT VIEW



REAR VIEW



RIGHT VIEW
(SHOWN WITH DOOR REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D3.4L G16
48KW Y06 EXT

ISSUE DATE: 8/8/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A

SCALE 0.035 | WT-KG SEE ABOVE | SHEET 1 of 2

GENERATOR SPECIFICATIONS 1
SCALE: N.T.S.

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

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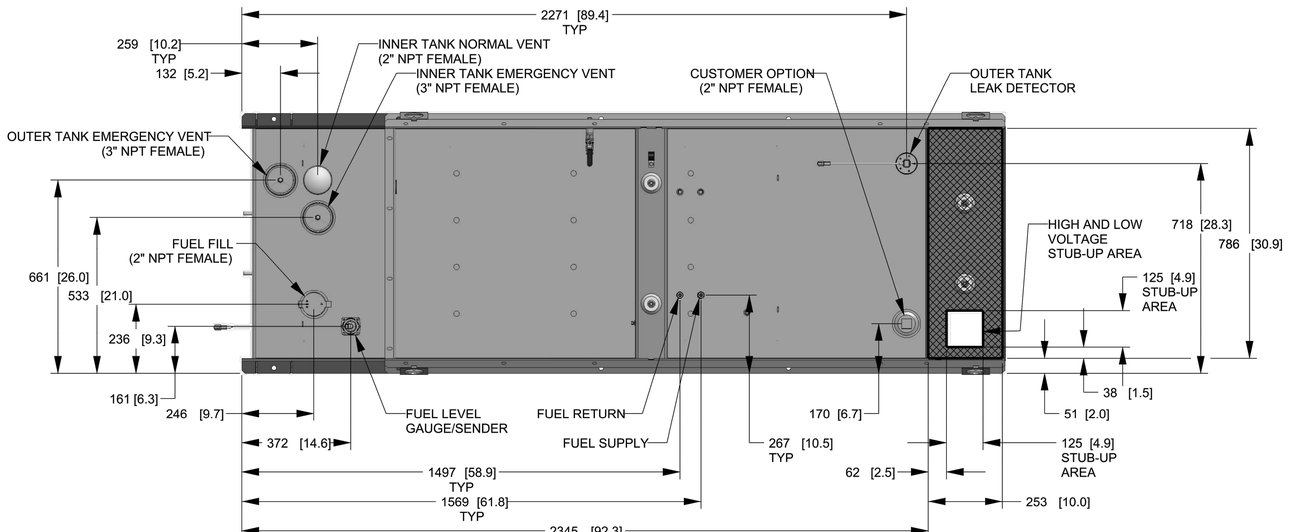
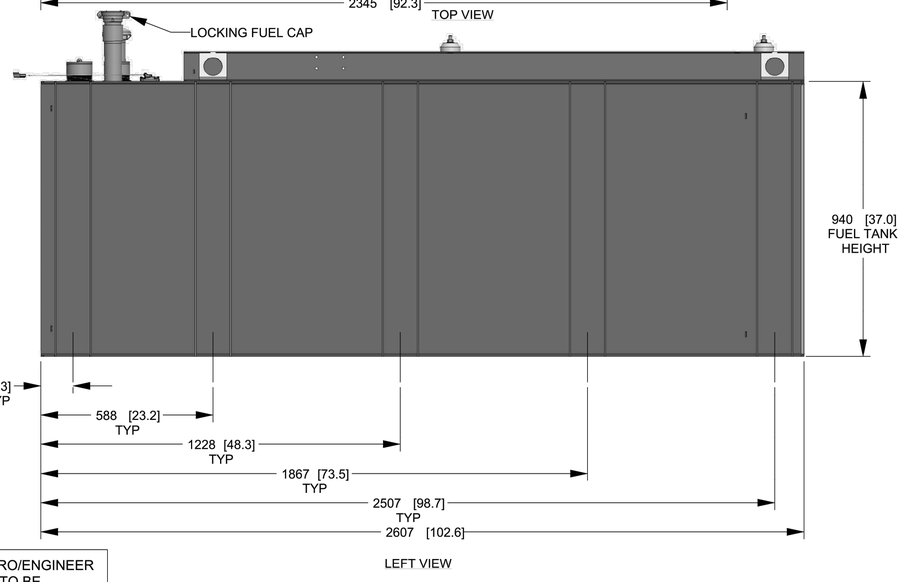
SHEET TITLE
GENERATOR SPECIFICATIONS 1

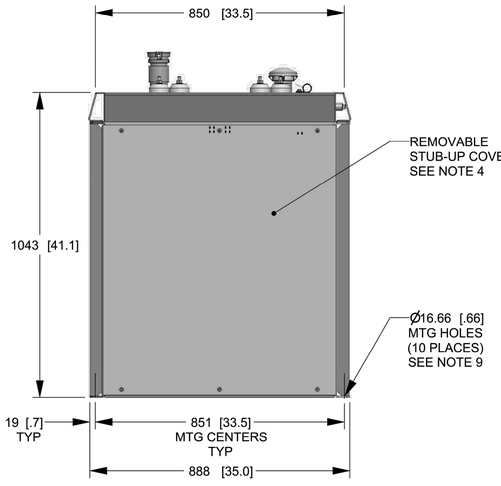
SHEET NUMBER
A-5

1815.497

SH	REV	WINDCHILL VERSION
2/2	A	A.1







FUEL TANK	
TOTAL CAPACITY	908 [240]
USABLE CAPACITY	867 [229]

CAPACITY: LITER [GALLON]
DIMENSIONS: MM [INCH]

TANK IS LISTED TO UL142 AND ULC5601

NOTE: STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D3.4L G16
48KW Y06 EXT

ISSUE DATE: 8/8/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A

SCALE 0.060 | WT-KG SEE ABOVE | SHEET 2 of 2

GENERATOR SPECIFICATIONS 1
SCALE: N.T.S. A-6

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/18/22	ISSUED FOR CONSTRUCTION	JRV
0	05/31/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
GENERATOR SPECIFICATIONS 2

SHEET NUMBER
A-6

1815.497

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1	RFS SC2-W100 BD	167'± AGL	0°	–	–	–	–	PROP. (3) 2" (6x24) HCS FIBER CABLES (220'±)
	A2	ERICSSON M-MIMO AIR6419 B41	167'± AGL	60°	0°	4°	L2500/N2500	–	
	A3	RFS APXVAALL24_43-U-NA20	167'± AGL	60°	0°	4°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	A4	COMMSCOPE VV-65A-R1	167'± AGL	60°	0°	4°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
BETA	B1	ERICSSON M-MIMO AIR6419 B41	167'± AGL	180°	0°	4°	L2500/N2500	–	
	B2	EMPTY PIPE	–	–	–	–	–	–	
	B3	RFS APXVAALL24_43-U-NA20	167'± AGL	180°	0°	4°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	B4	COMMSCOPE VV-65A-R1	167'± AGL	180°	0°	4°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
GAMMA	G1	ERICSSON M-MIMO AIR6419 B41	167'± AGL	320°	0°	4°	L2500/N2500	–	
	G2	EMPTY PIPE	–	–	–	–	–	–	
	G3	RFS APXVAALL24_43-U-NA20	167'± AGL	320°	0°	4°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	G4	COMMSCOPE VV-65A-R1	167'± AGL	320°	0°	4°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	

CABLE NOTE: SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV1 – 02/28/22

FEEDLINE SCHEDULE

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

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

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CTNL121A

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36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-7

1815.497

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS REQUIRED WITH LOCAL AUTHORITY.
3. UTILITY SERVICES SHOWN ARE PROPOSED, THE ELECTRIC CONTRACTOR SHALL COORDINATE EXACT TELEPHONE AND ELECTRIC SERVICE CONNECTION POINTS, ROUTING AND ASSOCIATED REQUIREMENTS WITH LOCAL UTILITY COMPANIES & SPRINT CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND LIGHTING AS REQUIRED FOR THE WORK.
5. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
6. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
7. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
8. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
9. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
10. ALL WIRE SHALL BE TYPE THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C, (167 DEGREES F), 98% CONDUCTIVITY, MINIMUM #12.
11. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
12. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
13. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
14. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
15. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
16. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
17. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL LOCATIONS FED FROM (NO EXCEPTIONS.)
18. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

   NOTE: ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY NOT BE CORRECT AS SHOWN ON THESE DRAWINGS). LOCATION OF OUTLETS, BOXES, ETC. AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
19. ALL UNDERGROUND CONDUIT ROUTING SHALL BE COORDINATED IN FIELD BETWEEN SPRINT WIE, CONTRACTOR, AND RESPECTIVE UTILITY COMPANIES.
20. ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
21. CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH 6" WIDE. 6 MIL THICK ALUMINIZED PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.
22. ELECTRICAL CONTRACTOR SHALL PROVIDE A SECTION OF SEALTITE CONDUIT FOR TELCO CONNECTION TO THE PRIMARY RADIO CABINET. COORDINATE EXACT CONNECTION TYPE WITH LUCENT.
23. ELECTRICAL CONTRACTOR SHALL PROVIDE A SECTION OF SEALTITE CONDUIT FOR POWER CONNECTION TO THE PRIMARY RADIO CABINET. THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL 6'-0" COIL OF WIRE AT THE END OF THE SEALTITE.
24. GROUND IN ACCORD W/LOCAL CODE & SHEET E-2.
25. PROVIDE (2) 4" GALVANIZED RIGID STEEL CONDUIT RISER WITH 1/4" NYLON DRAG LINE INCLUDING 90° GRC SWEEP AT POLE (UP TO 20'-0" AFG). SECURE TO POLE PER UTILITY COMPANY REQUIREMENTS. PRIMARY CABLES BY UTILITY COMPANY.

ELECTRICAL SPECIFICATIONS

SECTION 16010 – GENERAL PROVISIONS

A. REQUIREMENTS: FURNISH ALL LABOR, MATERIALS, SERVICE, EQUIPMENT, AND APPLIANCES REQUIRED TO COMPLETE THE INSTALLATION OF THE COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS AND CONTRACT DRAWINGS.

B. REQUIREMENTS OF REGULATORY AGENCIES AND STANDARDS: INSTALLATION, MATERIAL, EQUIPMENT AND WORKMANSHIP SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC) – APPLICABLE STATE ELECTRIC CODES, THE NATIONAL ELECTRICAL SAFETY CODE (NESC), AND THE TERMS AND THE CONDITIONS OF THE AUTHORITIES HAVING LAWFUL JURISDICTION PERTAINING TO THE WORK REQUIRED. ALL MODIFICATIONS REQUIRED BY THESE CODES, RULES, REGULATIONS, AND AUTHORITIES SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER.

C. UNDERWRITER'S LABORATORIES (UL): ALL MATERIALS, APPLIANCES, EQUIPMENT, OR OR DEVICES SHALL CONFORM TO THE APPLICABLE STANDARDS OF UNDERWRITER'S LABORATORIES, INC. THE LABEL OF, OR LISTING BY. UL, IS REQUIRED.

SECTION 16110 – RACEWAYS, BOXES AND FITTINGS

A. CONDUIT FITTINGS, CONNECTORS AND COUPLINGS, EMT COUPLINGS AND CONNECTORS EITHER STEEL OR MALLEABLE IRON ONLY. "CONCRETE TIGHT" OR "RAIN TIGHT" AND EITHER THE GLAND AND RING COMPRESSION TYPE OR STAINLESS STEEL MULTIPLE POINT LOCKING TYPE. CONNECTORS TO HAVE INSULATED THROATS. EMT FITTINGS USING SET SCREWS OR INDENTATIONS AS A MEANS OF ATTACHMENT ARE NOT PERMITTED.

B. BUSHINGS: INSULATED TYPE, DESIGNED TO PREVENT ABRASION OF WIRES WITHOUT IMPAIRING THE CONTINUITY OF THE CONDUIT GROUNDING SYSTEM, FOR RIGID STEEL CONDUIT, IMC AND RIGID ALUMINUM CONDUIT.

C. CONDUIT INSTALLATIONS: CONDUIT SYSTEMS, EMT, OR RIGID NON-METALLIC CONDUIT UNLESS NOTED. INSTALL CONCEALED CONDUIT AND EMT IN AS DIRECT LINES AS POSSIBLE. INSTALL EXPOSED CONDUITS AND EMT PARALLEL TO OR AT RIGHT ANGLES TO THE LINES OF THE BUILDING. RIGHT ANGLE BENDS IN EXPOSED CONDUIT AND EMT RUNS SHALL BE MADE WITH STANDARD ELBOWS, SCREW JOINTED CONDUIT FITTINGS OR CONDUIT BENT TO RADIUS NO LESS THAN THOSE OF STANDARD ELBOWS.

D. CONDUIT SUPPORTS: PROVIDE SUPPORTS FOR HORIZONTAL CONDUITS AND EMT NOT MORE THAN 8 FEET APART WITH NOT LESS THAN TWO SUPPORTS FOR EACH 10 FOOT STRAIGHT LENGTH AND ONE SUPPORT NEAR EACH ELBOW OR BEND INCLUDING RUNS ABOVE SUSPENDED CEILINGS AND WITHIN 3 FEET OF ALL JUNCTION BOXES, SWITCHES, FITTINGS, ETC. INSTALL ONE HOLE PIPE STRAPS ON CONDUITS 1 INCH OR SMALLER INSTALL INDIVIDUAL PIPE HANGERS FOR CONDUITS LARGER THAN 1 INCH. SPRING STEEL FASTENERS WITH HANGER RODS MAY BE USED IN DRY LOCATIONS IN LIEU OF PIPE STRAPS.

SECTION 16120 – CONDUCTORS

A. WIRES AND CABLES (600 VOLTS): CONFORM TO THE APPLICABLE UL AND ICEA STANDARDS FOR THE USE INTENDED. USE COPPER CONDUCTORS WITH 600 VOLTS INSULATION UNLESS OTHERWISE SPECIFIED OR NOTED ON THE DRAWINGS. USE STRANDED CONDUCTORS FOR NO. 8 OR LARGER WHERE ELSEWHERE SPECIFIED OR NOTED OTHERWISE ON THE DRAWINGS. USE OF ALUMINUM CONDUCTORS WILL NOT BE PERMITTED. INSULATION SHALL BE TYPE THHN/THWN, 75°C, FOR ALL CONDUCTORS, USELESS OTHERWISE SPECIFIED OR NOTED ON THE DRAWINGS.

B. COLOR CODING. PHASE, NEUTRAL, AND GROUND CONDUCTORS COLOR-CODED IN ACCORDANCE WITH NEC. CONNECT ALL CONDUCTORS OF THE SAME COLOR TO THE SAME PHASE CONDUCTOR, COLOR CODING SHALL BE BLACK, RED, BLUE, WHITE (120/208) OR BROWN ORANGE, YELLOW, GRAY (277/480) WITH GREEN FOR ALL GROUND CONDUCTORS.

C. CONNECTORS AND LUGS: FOR COPPER CONDUCTORS NO. 6 AND SMALLER: 3M SCOTCH-LOK OR T & B STA-KON COMPRESSION OR INDENT TYPE CONNECTORS WITH INTEGRAL OR SEPARATE INSULATING CAPS. FOR COPPER CONDUCTORS LARGER THAN NO. 6 SOLDERLESS, INDENT, HEX SCREW OR BOLT TYPE PRESSURE CONNECTORS, PROPERLY TAPED OR INSULATED.

D. SPLICES: (480 VOLTS AND UNDER): CONDUCTOR LENGTHS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION WITHOUT SPLICES UNLESS APPROVED BY THE BUILDING INSPECTOR.

SECTION 16220 – CIRCUIT BREAKERS

A. PROVIDE MOLDED CASE, BOLT-ON, THERMAL MAGNETIC TRIP, SINGLE, TWO OR THREE POLE BRANCH CIRCUIT BREAKERS AS SHOWN ON DRAWINGS. MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLE, COMMON TRIP. AIC RATING TO MATCH EXISTING OR AS REQUIRED FOR AVAILABLE FAULT CURRENTS.

EXISTING METER BANK PHOTO (6, E-1)
SCALE: NOT TO SCALE

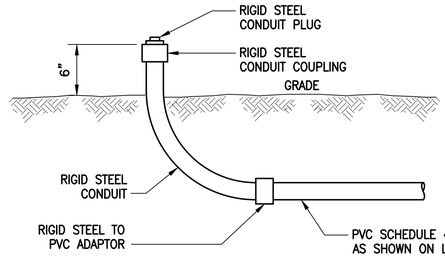
ELECTRICAL LEGEND

SYMBOLS

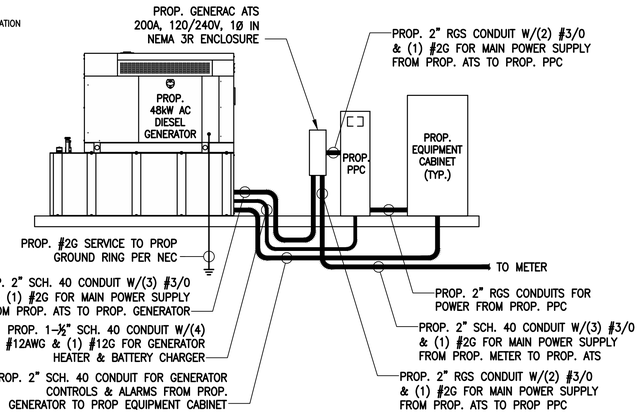
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUIT RUN UNDERGROUND
- CONDUIT RUN ABOVE GROUND
- METER ON METER/BREAKER UNIT
- 5/8" x 10'-0" COPPER CLAD GROUND ROD
- EXOTHERMIC TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- G — G — GROUND RING. #2 AWG SOLID TINNED BARE COPPER GROUND CONDUCTOR 6" BELOW FROST LINE AND 24" OFF CONCRETE PLATFORM
- XXX / XXX — REPRESENTS DETAIL NUMBER / REF. DRAWING NUMBER
- XXX — DETAIL NUMBER

ABBREVIATIONS

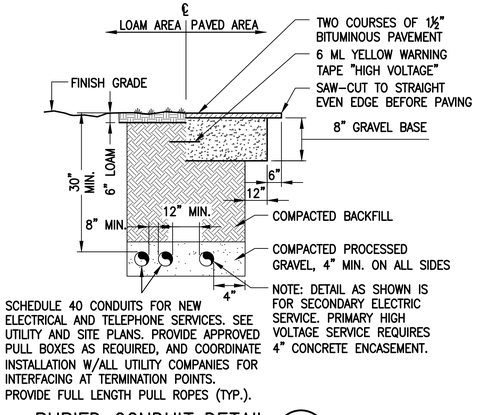
ACCA	ANTENNA CABLE COVER ASSEMBLY
AGB	COPPER ANTENNA GROUND BAR
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BTS	BASE TRANSMISSION SYSTEM
CIBGE	COAX ISOLATED GROUND BAR EXTERNAL
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GR	GROWTH
IGR	INTERIOR GROUND RING (HALO)
LAGB	LOWER ANTENNA COPPER GROUND BAR
MIGB	MASTER ISOLATED GROUND BAR
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
PRC	PRIMARY RADIO CABINET
RGS	RIGID GALVANIZED STEEL
RWY	RACEWAY
TYP	TYPICAL
SSLP	SPRINT SPECTRUM LIMITED PARTNERSHIP
UAGB	UPPER ANTENNA COPPER GROUND BAR
EXIST.	EXISTING
PROP.	PROPOSED



TYPICAL CONDUIT STUB-UP DETAIL (4, E-1)
SCALE: NONE

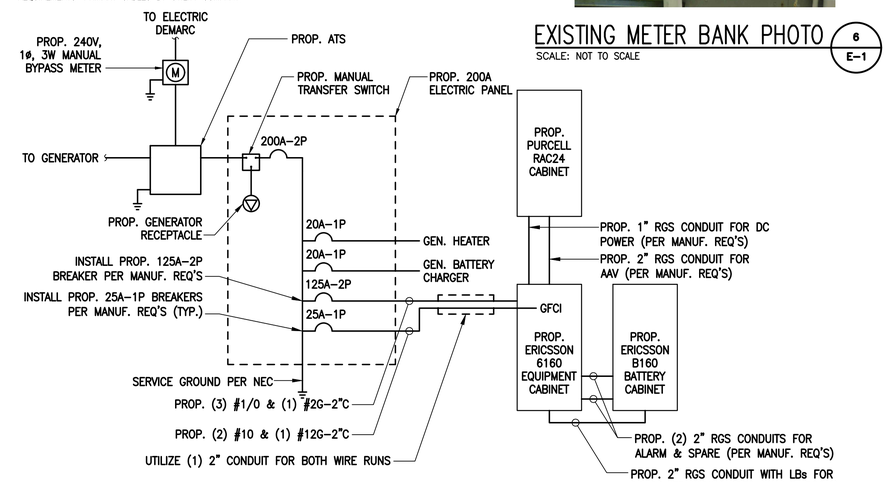


GENERATOR ONE-LINE POWER DIAGRAM (3, E-1)
SCALE: NOT TO SCALE

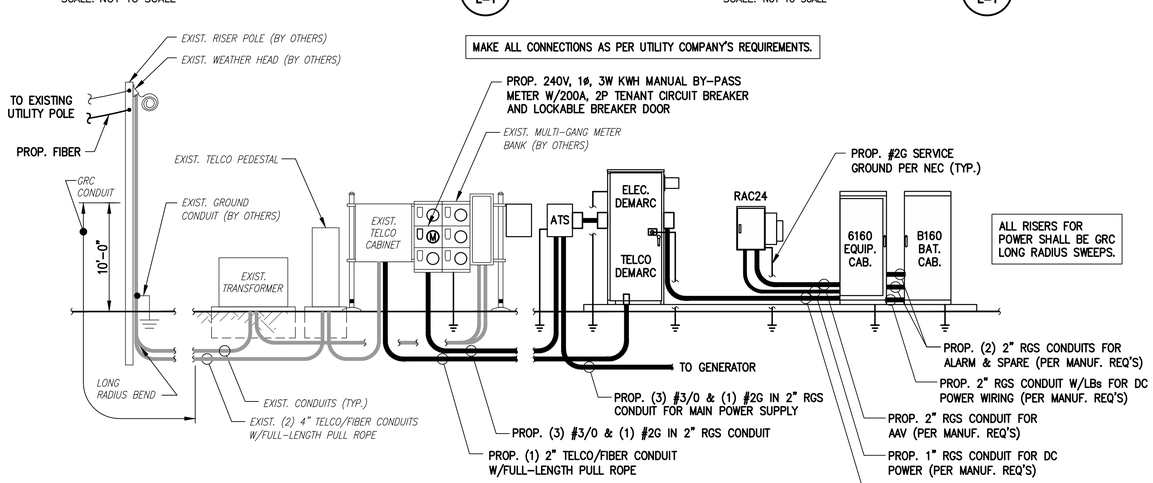


SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES. SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

BURIED CONDUIT DETAIL (5, E-1)
SCALE: NOT TO SCALE



ONE LINE DIAGRAM (1, E-1)
SCALE: NOT TO SCALE



POWER/TELCO RISER DIAGRAM (2, E-1)
SCALE: NOT TO SCALE

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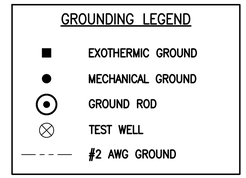
SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS
1 OF 2

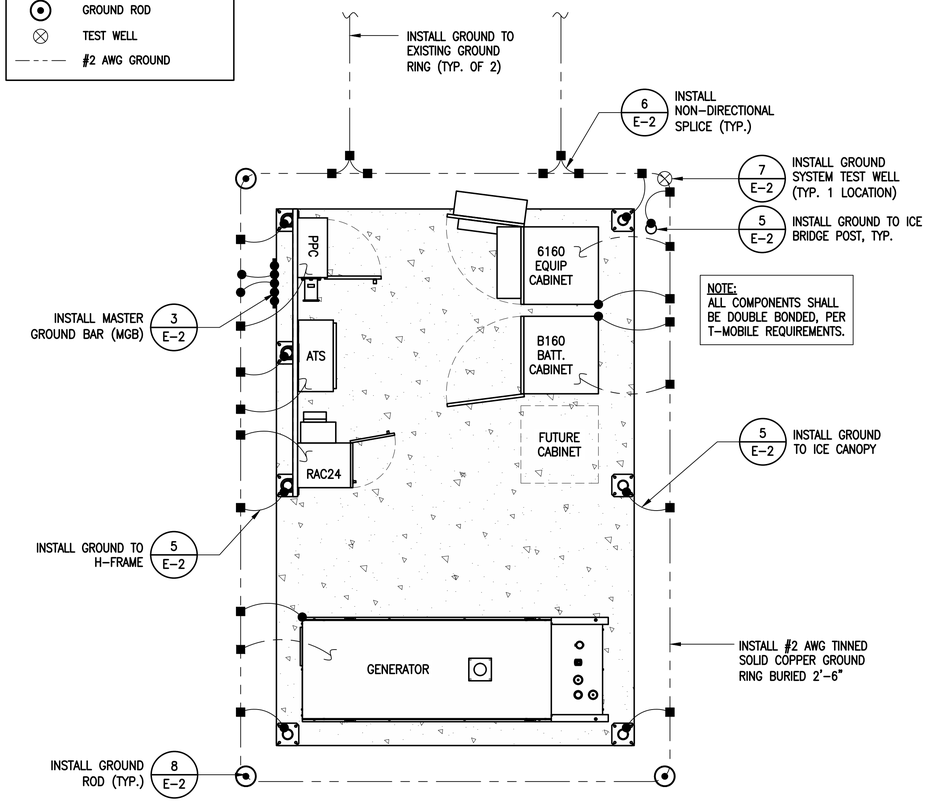
SHEET NUMBER
E-1

1815.497

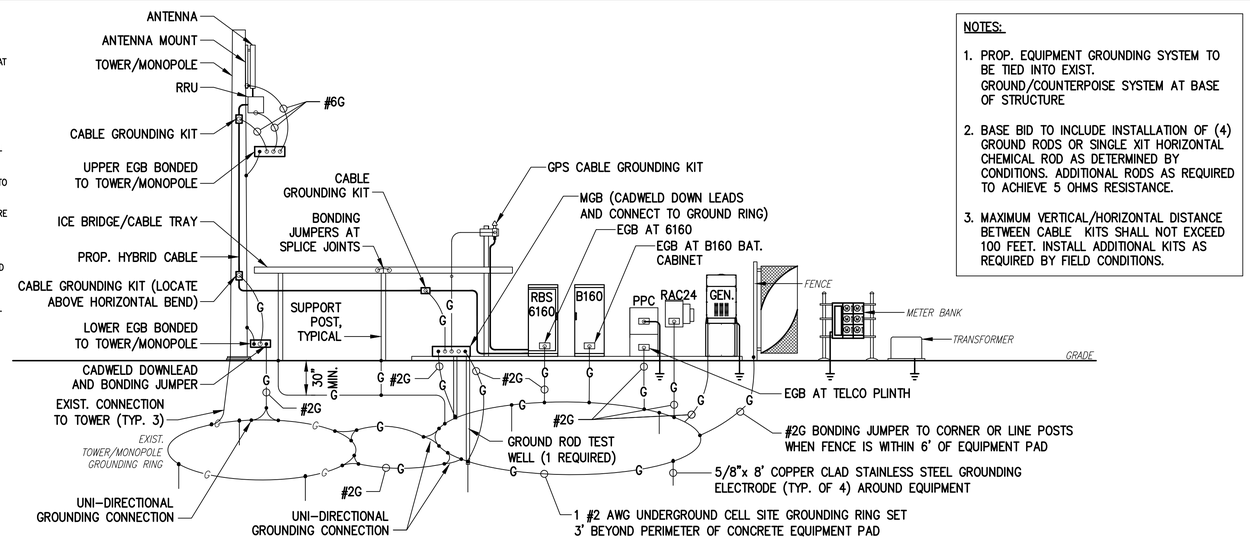
PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES

1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250–GROUNDING AND BONDING.
2. GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
4. GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON–CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
5. ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
6. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
9. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
11. GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
13. EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE–2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI–OXIDANT (THOMAS BETTS KOPR–SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
14. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF–TAPPING SCREWS.
15. THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
17. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI–CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
18. FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
    –ANTI–THEFT UPDATE TO SPRINT GROUNDING DATED 08–24–12
    –SPRINT ENGINEERING LETTER EL–0504 DATED 04–20–12



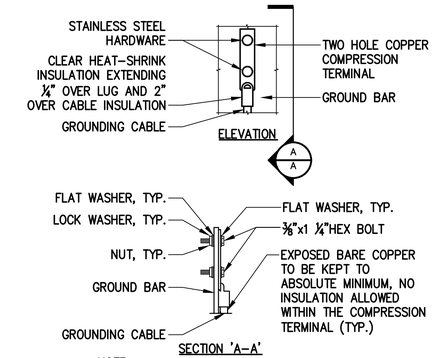


GROUNDING PLAN
SCALE: N.T.S. — 1 E–2

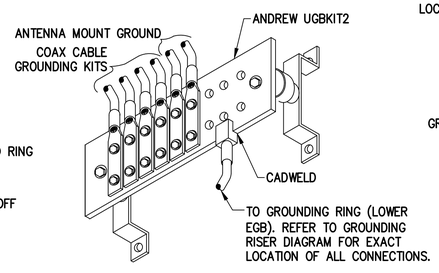


NOTES:
1. PROP. EQUIPMENT GROUNDING SYSTEM TO BE TIED INTO EXIST. GROUND/COUNTERPOISE SYSTEM AT BASE OF STRUCTURE
2. BASE BID TO INCLUDE INSTALLATION OF (4) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
3. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.

GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE — 2 E–2



MASTER GROUND BAR (MGB)
SCALE: NOT TO SCALE — 3 E–2

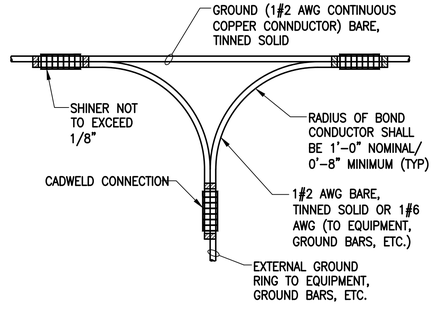


GROUND BAR (EGB)
SCALE: NOT TO SCALE — 4 E–2

SECTION 'A–A'

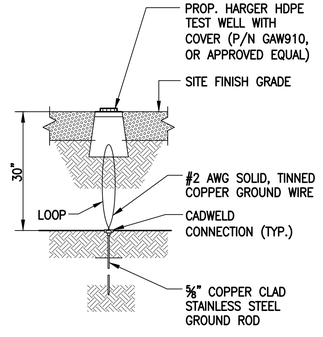
NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL
SCALE: NOT TO SCALE — 5 E–2

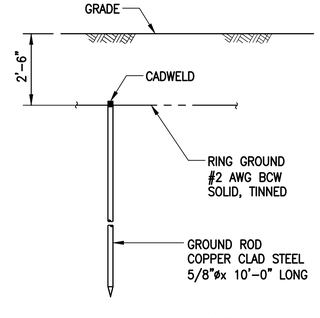


NOTE: ALL CONNECTION TO GROUND SHALL BE NON–DIRECTIONAL.

NON–DIRECTIONAL SPLICE
SCALE: NOT TO SCALE — 6 E–2



GROUND ROD TEST WELL DETAIL
SCALE: NOT TO SCALE — 7 E–2



GROUND ROD
SCALE: NOT TO SCALE — 8 E–2

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
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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
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/18/22	ISSUED FOR CONSTRUCTION	JRV
0	05/31/22	ISSUED FOR REVIEW	JRV

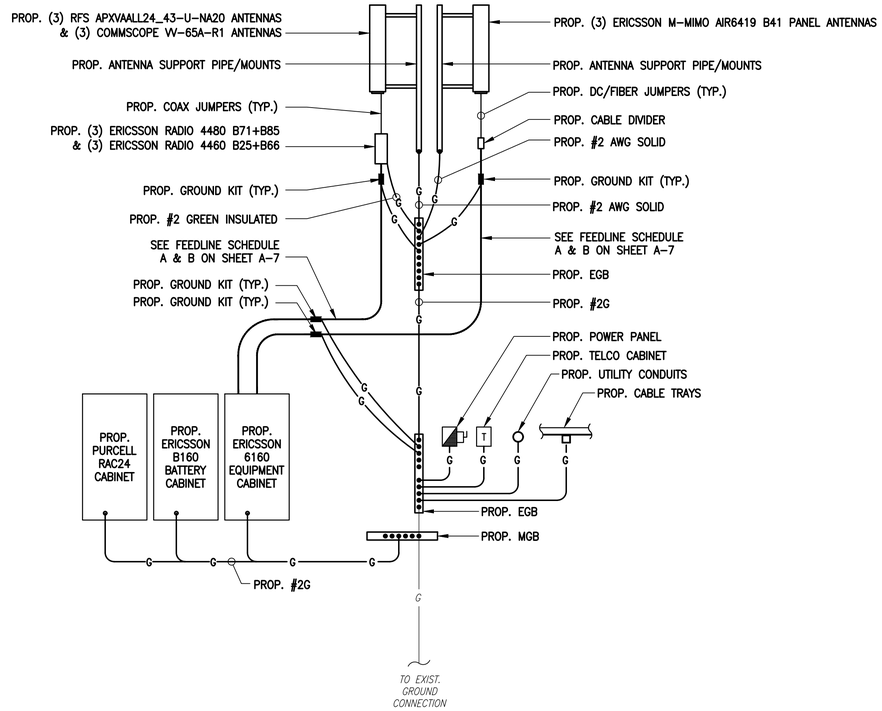
SITE NUMBER: CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS 2 OF 2

SHEET NUMBER
E-2

1815.497



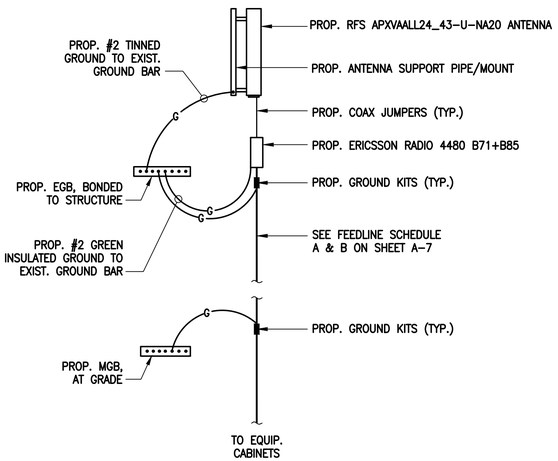
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

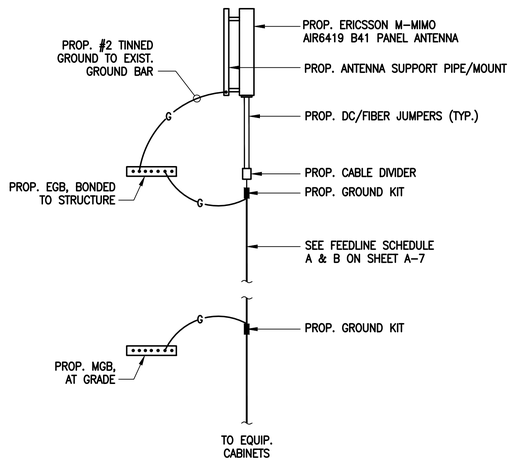
1 / E-3

ELECTRICAL AND GROUNDING NOTES

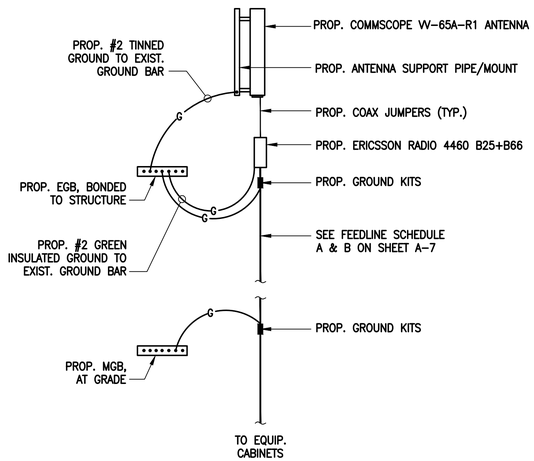
1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED 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 THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN PROP. 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.



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/L1900/G1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

2 / E-3

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

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7/19/2022

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APPROVED BY: JMT

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REV.	DATE	DESCRIPTION	BY
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0	05/31/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL121A

SITE ADDRESS:
36 AYER ROAD
FRANKLIN, CT 06254

SHEET TITLE
ANTENNA ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-3

1815.497

Exhibit D

Structural Analysis Report

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

Structural Analysis Report

Existing 180 ft SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02219-S

Customer Site Name: North Franklin

Carrier Name: T-Mobile (App#: 198416-1)

Carrier Site ID / Name: CTNL121A / Ayer Road Franklin SBA

Site Location: 36 Ayer Road

Franklin, Connecticut

New London County

Latitude: 41.645802

Longitude: -72.128294

Analysis Result:

Max Structural Usage: 75.1% [Pass]

Max Foundation Usage: 46.0% [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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Report Prepared By: Kevin Azisllari

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft SUMMIT 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	Paul J. Ford And Company, Job # 29201-1038, Design # 15316, Page 1, dated 08-22-2001
Foundation Drawing	Paul J. Ford And Company, Job # 29201-1038, Design # 15316, Page 2, dated 08-22-2001
Geotechnical Report	Jaworski Geotech, Inc., Geotechnical Reportt, dated 02-17-2000
Modification Drawings	N/A
Mount Analysis	TES 129856, dated 06/07/2022

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} = 130.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.171, S_1 = 0.061

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	178.0	6	CommScope - NHH-65B-R2B - Panel	Modified Low Profile Platform with (3) BSAMNT-SBS-1-2, (1) VZWSMART-PLK1, (3)P2 1/2 STD Pipe, (9) SP219, (3) SP219-H, (1)P2 STD Pipe and (1) SQCX4-K	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
2		6	Antel - LPA-80063/8CF - Panel			
3		3	Samsung - MT6407-77A - Panel			
4		3	Samsung RF4439d-25A			
5		3	Samsung RF4440-13A			
6		1	RFS DB-C1-12C-24AB-0Z			
13	125.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/HRK [(1) Commscope MC-PK8-C]	(1) 1.6" Hybrid	Dish Wireless
14		3	Fujitsu TA08025-B605 - RRU			
15		3	Fujitsu TA08025-B604 - RRU			
16		1	Raycap RDIDC-9181-PF-48 - COVP			

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
7	167.0	3	Ericsson AIR6419 B41 - Panel	Low Profile Platform w/HRK Site Pro RMQP-4096-HK	(1) 1 1/2" (3) 1.9" Fiber	T-Mobile
8		3	RFS APXVAALL24_43-U-NA20 - Panel			
9		3	Commscope VV-65A-R1 - Panel			
10		1	RFS SC2-W100BD - Dish			
11		3	Ericsson 4480 B71 + B85 - RRU			
12		3	Ericsson 4460 B25 + B66 - RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flange Connections
Max. Usage:	**62.0%**	**52.0%**	**54.0%**	**75.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4565.7	34.9	60.0

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

Operational Condition (Rigidity):

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
167.0	RFS SC2-W100BD - Dish	T-Mobile	0.000	1.222

It is recommended that the carriers review the twist and sway values of the microwave dishes.

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 62.03% at 0.0ft

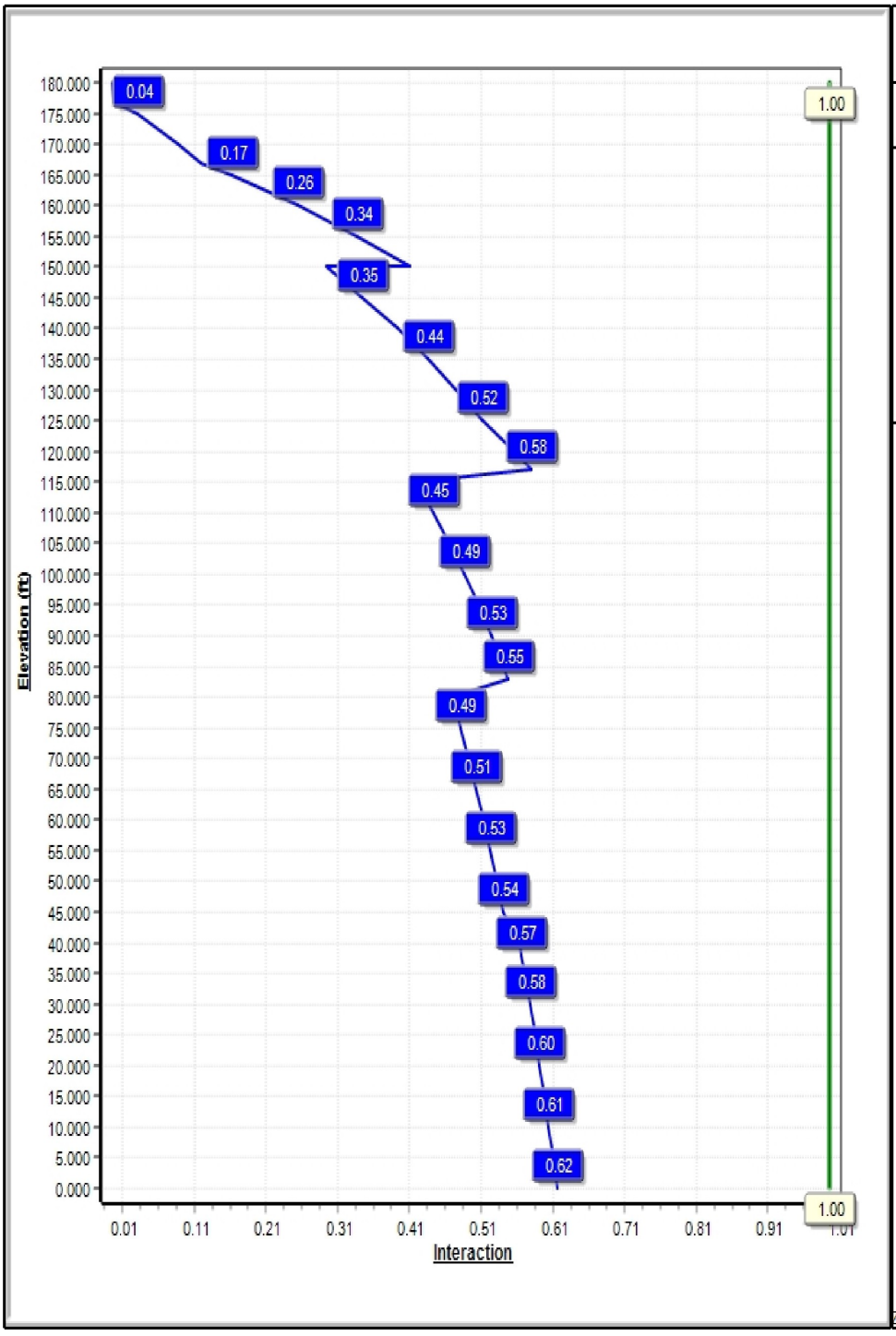
Structure:	CT02219-S-SBA	**Code:**	EIA/TIA-222-G	6/10/2022
Site Name:	North Franklin	**Exposure:**	B	
Height:	180.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

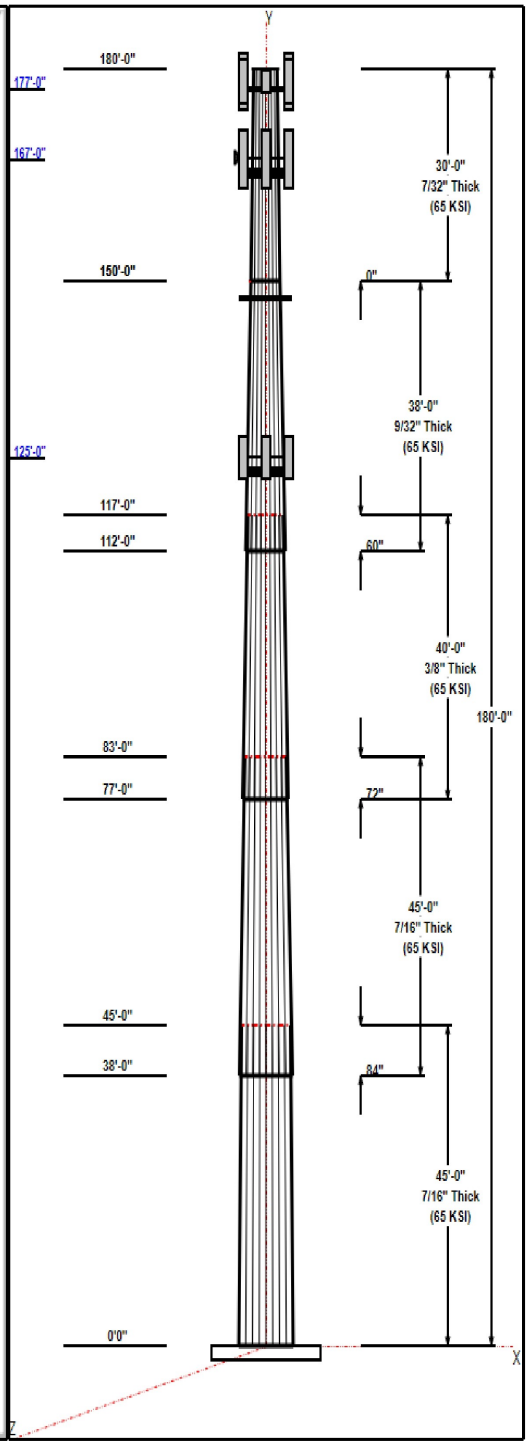
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 101 mph Wind

Iterations: 24





Structure: CT02219-S-SBA

Type: Tapered
Site Name: North Franklin
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23221

6/10/2022

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	53.16	63.61	0.438		0.23221	65
2	45.00	45.21	55.66	0.438	Slip	0.23221	65
3	40.00	38.07	47.35	0.375	Slip	0.23221	65
4	38.00	30.97	39.79	0.281	Slip	0.23221	65
5	30.00	24.00	30.97	0.219	Butt	0.23221	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
177.00	177.00	1	Low Profile Platform	Verizon
177.00	178.00	6	NHH-65B-R2B	Verizon
177.00	178.00	6	LPA-80063/8CF	Verizon
177.00	178.00	3	MT6407-77A	Verizon
177.00	178.00	3	Samsung RF4439d-25A	Verizon
177.00	178.00	3	Samsung RF4440-13A	Verizon
177.00	178.00	1	RFS DB-C1-12C-24AB-0Z	Verizon
177.00	177.00	1	Handrails	Verizon
177.00	177.00	1	BSAMNT-SBS-1-2	Verizon
167.00	167.00	3	Ericsson AIR6419 B41	T-Mobile
167.00	167.00	3	RFS	T-Mobile
167.00	167.00	3	Commscope VV-65A-R1	T-Mobile
167.00	167.00	1	RFS SC2-W100BD	T-Mobile
167.00	167.00	3	Ericsson 4480 B71 + B85	T-Mobile
167.00	167.00	3	Ericsson 4460 B25 + B66	T-Mobile
167.00	167.00	1	RMQP-4096-HK Plat. +	T-Mobile
147.50	147.50	1	Low Profile Platform	-
125.00	125.00	3	JMA Wireless	Dish Wireless
125.00	125.00	3	Fujitsu TA08025-B605	Dish Wireless
125.00	125.00	3	Fujitsu TA08025-B604	Dish Wireless
125.00	125.00	1	Raycap	Dish Wireless
125.00	125.00	1	MC-PK8-C	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1 5/8" Coax	Verizon
0.00	177.00	Inside	1 5/8" Hybrid	Verizon
0.00	167.00	Inside	1 1/2" Coax	T-Mobile
0.00	167.00	Inside	1.9" Fiber	T-Mobile
0.00	125.00	Outside	1.6" Hybrid	Dish Wireless

Anchor Bolts

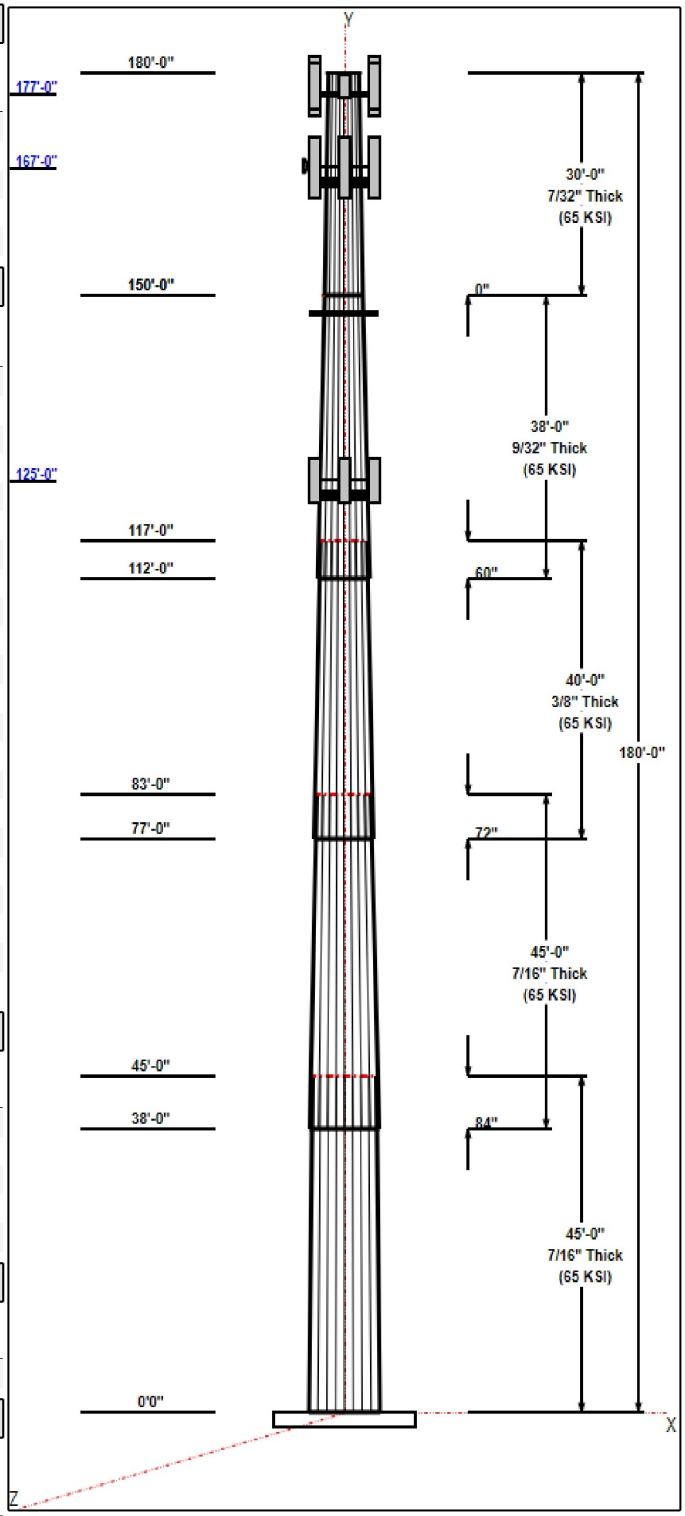
Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	71.0	55.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)



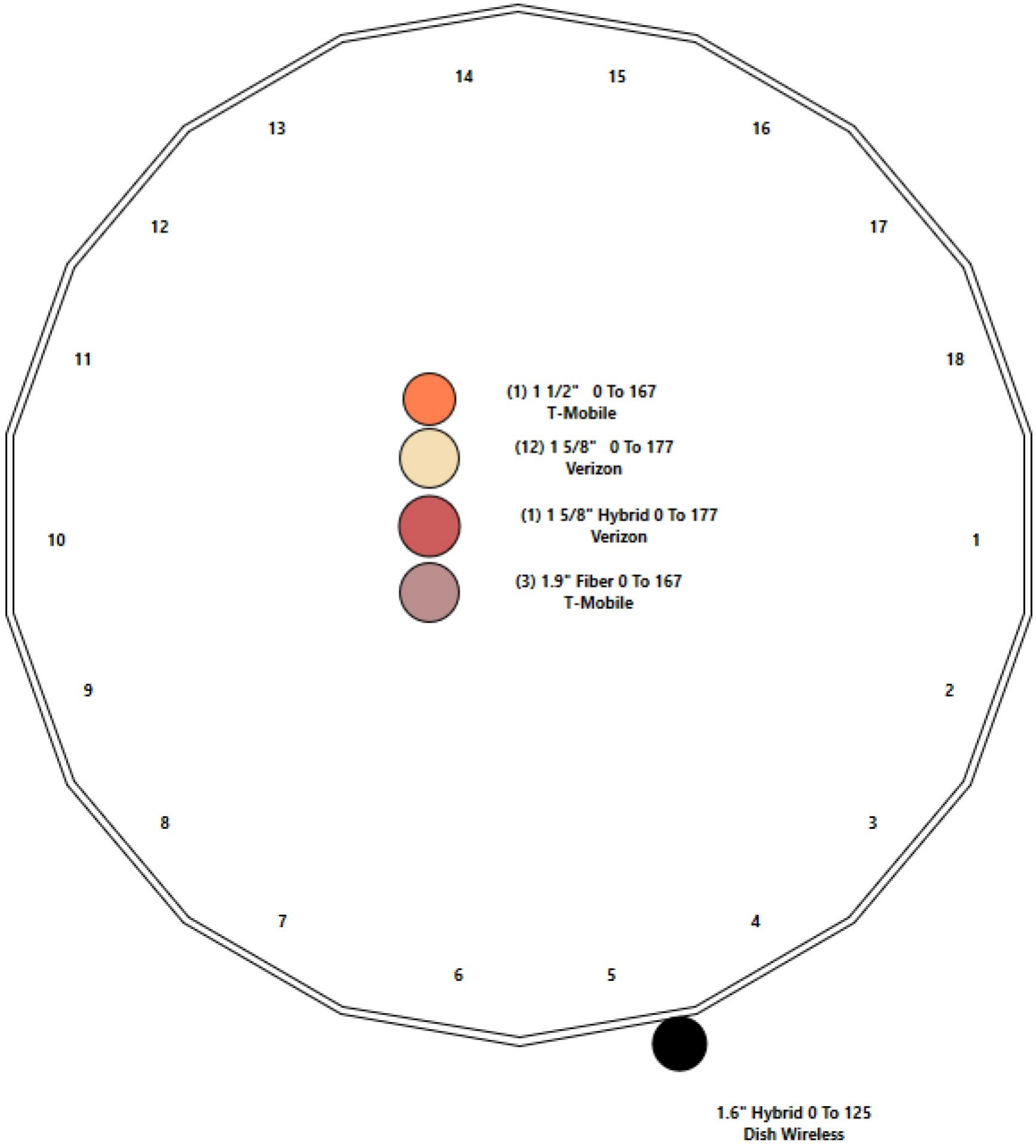
1.2D + 1.6W 101 mph Wind	4565.7	34.9	60.0
0.9D + 1.6W 101 mph Wind	4516.4	34.9	45.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1168.0	9.1	90.8
1.0D + 1.0W 60 mph Wind	1000.9	7.7	50.0

Structure: CT02219-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Franklin
Height: 180.00 (ft)

6/10/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT02219-S-SBA		**Code:**	TIA-222-G	6/10/2022
Site Name:	North Franklin		**Exposure:**	B	
Height:	180.00 (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	45.000	0.4375	65		0.00	12,321
2	18	45.000	0.4375	65	Slip	84.00	10,631
3	18	40.000	0.3750	65	Slip	72.00	6,858
4	18	38.000	0.2813	65	Slip	60.00	4,052
5	18	30.000	0.2188	65	Flange	0.00	1,933
					Total Shaft Weight:		**35,795**

	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	63.61	0.00	87.72	44228.95	24.23	145.39	53.16	45.00	73.21	25711.3	20.01	121.5	0.232209
2	55.66	38.00	76.68	29545.80	21.02	127.23	45.21	83.00	62.17	15747.2	16.81	103.3	0.232209
3	47.35	77.00	55.92	15592.38	20.86	126.28	38.07	117.00	44.86	8052.08	16.49	101.5	0.232209
4	39.79	112.0	35.27	6956.63	23.53	141.45	30.97	150.00	27.40	3259.05	18.00	110.0	0.232209
5	30.97	150.0	21.35	2550.47	23.54	141.53	24.00	180.00	16.51	1180.03	17.93	109.6	0.232209

Load Summary

Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (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.	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)
1	177.00	Low Profile Platform	1	1500.00	22.00	1.00	2830.76	39.956	1.00	0.00	0.00
2	177.00	NHH-65B-R2B	6	43.70	8.08	0.83	249.33	9.395	0.83	0.00	1.00
3	177.00	LPA-80063/8CF	6	38.00	13.67	0.93	383.97	17.405	0.83	0.00	1.00
4	177.00	MT6407-77A	3	79.40	4.69	0.70	201.36	5.654	0.70	0.00	1.00
5	177.00	Samsung RF4439d-25A	3	84.40	1.88	0.67	136.51	2.440	0.67	0.00	1.00
6	177.00	Samsung RF4440-13A	3	70.30	1.88	0.67	119.75	2.440	0.67	0.00	1.00
7	177.00	RFS DB-C1-12C-24AB-0Z	1	32.00	4.06	1.00	147.83	4.896	1.00	0.00	1.00
8	177.00	Handrails	1	406.61	9.75	1.00	897.21	19.438	1.00	0.00	0.00
9	177.00	BSAMNT-SBS-1-2	1	25.35	0.00	1.00	43.34	0.000	1.00	0.00	0.00
10	167.00	Ericsson AIR6419 B41	3	66.10	3.80	0.76	163.35	4.604	0.76	0.00	0.00
11	167.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	555.70	22.161	0.73	0.00	0.00
12	167.00	Commscope VV-65A-R1	3	183.40	21.12	0.72	642.51	23.058	0.72	0.00	0.00
13	167.00	RFS SC2-W100BD	1	18.00	2.71	1.00	102.32	3.521	1.00	0.00	0.00
14	167.00	Ericsson 4480 B71 + B85	3	93.00	2.85	0.67	165.71	3.532	0.67	0.00	0.00
15	167.00	Ericsson 4460 B25 + B66	3	109.00	2.85	0.67	181.68	3.532	0.67	0.00	0.00
16	167.00	RMQP-4096-HK Plat. + HR/Kicker	1	2645.00	51.70	1.00	5444.55	90.369	1.00	0.00	0.00
17	147.50	Low Profile Platform	1	1500.00	22.00	1.00	2806.71	39.632	1.00	0.00	0.00
18	125.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	350.12	13.928	0.74	0.00	0.00
19	125.00	Fujitsu TA08025-B605	3	75.00	1.96	0.67	126.36	2.511	0.67	0.00	0.00
20	125.00	Fujitsu TA08025-B604	3	63.90	1.96	0.67	113.61	2.511	0.67	0.00	0.00
21	125.00	Raycap RDIDC-9181-PF-48	1	21.90	2.01	1.00	74.19	2.568	1.00	0.00	0.00
22	125.00	MC-PK8-C	1	1411.00	33.60	1.00	3345.41	68.148	1.00	0.00	0.00
		Totals:	**54**	**11,085.46**			**27,762.11**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(12) 1 5/8" Coax	0.00	Inside
0.00	177.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	167.00	(1) 1 1/2" Coax	0.00	Inside
0.00	167.00	(3) 1.9" Fiber	0.00	Inside
0.00	125.00	(1) 1.6" Hybrid	1.60	Outside

Shaft Section Properties

Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

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		0.4375	63.610	87.720	44228.9	24.23	145.39	72.9	1369.	0.0
5.00		0.4375	62.449	86.108	41834.8	23.76	142.74	73.5	1319.	1478.7
10.00		0.4375	61.288	84.495	39528.7	23.29	140.09	74.0	1270.	1451.3
15.00		0.4375	60.127	82.883	37309.0	22.82	137.43	74.6	1222.	1423.9
20.00		0.4375	58.966	81.271	35173.9	22.35	134.78	75.1	1174.	1396.5
25.00		0.4375	57.805	79.659	33121.9	21.89	132.13	75.7	1128.	1369.0
30.00		0.4375	56.644	78.047	31151.3	21.42	129.47	76.2	1083.	1341.6
35.00		0.4375	55.483	76.434	29260.4	20.95	126.82	76.8	1038.	1314.2
38.00	Bot - Section 2	0.4375	54.786	75.467	28163.5	20.67	125.23	77.1	1012.	775.3
40.00		0.4375	54.322	74.822	27447.7	20.48	124.16	77.3	995.2	1031.1
45.00	Top - Section 1	0.4375	54.036	74.425	27012.9	20.37	123.51	0.0	0.0	2539.3
50.00		0.4375	52.875	72.813	25295.2	19.90	120.86	78.0	942.3	1252.5
55.00		0.4375	51.714	71.201	23651.9	19.43	118.20	78.5	900.8	1225.1
60.00		0.4375	50.552	69.588	22081.3	18.96	115.55	79.1	860.3	1197.7
65.00		0.4375	49.391	67.976	20581.9	18.50	112.89	79.6	820.8	1170.3
70.00		0.4375	48.230	66.364	19151.9	18.03	110.24	80.2	782.1	1142.8
75.00		0.4375	47.069	64.752	17789.8	17.56	107.59	80.7	744.4	1115.4
77.00	Bot - Section 3	0.4375	46.605	64.107	17263.5	17.37	106.53	81.0	729.6	438.5
80.00		0.4375	45.908	63.140	16493.8	17.09	104.93	81.3	707.6	1216.1
83.00	Top - Section 2	0.3750	45.962	54.258	14245.9	20.20	122.56	0.0	0.0	1197.7
85.00		0.3750	45.497	53.705	13814.9	19.98	121.33	77.9	598.1	367.4
90.00		0.3750	44.336	52.323	12775.7	19.44	118.23	78.5	567.6	902.0
95.00		0.3750	43.175	50.941	11789.9	18.89	115.13	79.2	537.8	878.5
100.00		0.3750	42.014	49.559	10856.3	18.34	112.04	79.8	508.9	854.9
105.00		0.3750	40.853	48.177	9973.2	17.80	108.94	80.5	480.8	831.4
110.00		0.3750	39.692	46.795	9139.4	17.25	105.85	81.1	453.5	807.9
112.00	Bot - Section 4	0.3750	39.228	46.243	8819.3	17.03	104.61	81.4	442.8	316.6
115.00		0.3750	38.531	45.414	8353.4	16.71	102.75	81.8	427.0	824.7
117.00	Top - Section 3	0.2813	38.629	34.238	6361.2	22.80	137.32	0.0	0.0	541.6
120.00		0.2813	37.933	33.616	6020.8	22.37	134.85	75.1	312.6	346.3
125.00		0.2813	36.771	32.579	5480.8	21.64	130.72	75.9	293.6	563.1
130.00		0.2813	35.610	31.542	4974.1	20.91	126.59	76.8	275.1	545.5
135.00		0.2813	34.449	30.506	4499.6	20.18	122.46	77.7	257.3	527.8
140.00		0.2813	33.288	29.469	4056.3	19.46	118.34	78.5	240.0	510.2
145.00		0.2813	32.127	28.433	3643.2	18.73	114.21	79.4	223.4	492.6
147.50		0.2813	31.547	27.914	3447.5	18.36	112.15	79.8	215.2	239.7
150.00	Top - Section 4	0.2813	30.966	27.396	3259.1	18.00	110.08	80.2	207.3	235.3
150.00	Bot - Section 5	0.2188	30.966	21.352	2550.5	23.14	141.53	73.7	162.2	
155.00		0.2188	29.805	20.546	2272.3	22.61	136.22	74.8	150.2	356.4
160.00		0.2188	28.644	19.740	2015.2	21.67	130.91	75.9	138.6	342.7
165.00		0.2188	27.483	18.934	1778.2	20.74	125.61	77.0	127.4	329.0
167.00		0.2188	27.019	18.611	1688.9	20.36	123.49	77.4	123.1	127.8
170.00		0.2188	26.322	18.127	1560.5	19.80	120.30	78.1	116.8	187.5
175.00		0.2188	25.161	17.321	1361.4	18.87	115.00	79.2	106.6	301.6
177.00		0.2188	24.697	16.999	1286.8	18.49	112.87	79.7	102.6	116.8
180.00		0.2188	24.000	16.515	1180.0	17.93	109.69	80.3	96.8	171.1
										35795.2

Wind Loading - Shaft

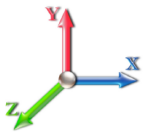
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	17.366	19.10	454.84	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.366	19.10	446.54	0.650	0.000	5.00	26.667	17.33	529.8	0.0	1774.5
10.00		1.00	0.70	17.366	19.10	438.24	0.650	0.000	5.00	26.176	17.01	520.0	0.0	1741.6
15.00		1.00	0.70	17.366	19.10	429.94	0.650	0.000	5.00	25.685	16.70	510.3	0.0	1708.7
20.00		1.00	0.70	17.366	19.10	421.64	0.650	0.000	5.00	25.194	16.38	500.5	0.0	1675.7
25.00		1.00	0.70	17.366	19.10	413.33	0.650	0.000	5.00	24.702	16.06	490.8	0.0	1642.8
30.00		1.00	0.70	17.381	19.12	405.20	0.650	0.000	5.00	24.211	15.74	481.4	0.0	1609.9
35.00		1.00	0.73	18.163	19.98	405.73	0.650	0.000	5.00	23.720	15.42	492.9	0.0	1577.0
38.00	Bot - Section 2	1.00	0.75	18.595	20.45	405.38	0.650	0.000	3.00	13.996	9.10	297.7	0.0	930.4
40.00		1.00	0.76	18.870	20.76	404.89	0.650	0.000	2.00	9.381	6.10	202.5	0.0	1237.3
45.00	Top - Section 1	1.00	0.79	19.516	21.47	402.96	0.650	0.000	5.00	23.108	15.02	515.9	0.0	3047.1
50.00		1.00	0.81	20.112	22.12	406.87	0.650	0.000	5.00	22.617	14.70	520.4	0.0	1503.1
55.00		1.00	0.83	20.667	22.73	403.40	0.650	0.000	5.00	22.125	14.38	523.1	0.0	1470.1
60.00		1.00	0.85	21.187	23.31	399.27	0.650	0.000	5.00	21.634	14.06	524.4	0.0	1437.2
65.00		1.00	0.87	21.678	23.85	394.59	0.650	0.000	5.00	21.143	13.74	524.3	0.0	1404.3
70.00		1.00	0.89	22.142	24.36	389.41	0.650	0.000	5.00	20.652	13.42	523.1	0.0	1371.4
75.00		1.00	0.91	22.582	24.84	383.80	0.650	0.000	5.00	20.160	13.10	520.8	0.0	1338.5
77.00	Bot - Section 3	1.00	0.92	22.753	25.03	381.45	0.650	0.000	2.00	7.927	5.15	206.3	0.0	526.2
80.00		1.00	0.93	23.003	25.30	377.80	0.650	0.000	3.00	11.933	7.76	314.0	0.0	1459.3
83.00	Top - Section 2	1.00	0.94	23.246	25.57	374.03	0.650	0.000	3.00	11.756	7.64	312.6	0.0	1437.3
85.00		1.00	0.94	23.404	25.74	377.68	0.650	0.000	2.00	7.739	5.03	207.2	0.0	440.8
90.00		1.00	0.96	23.790	26.17	371.06	0.650	0.000	5.00	19.004	12.35	517.2	0.0	1082.4
95.00		1.00	0.97	24.160	26.58	364.14	0.650	0.000	5.00	18.513	12.03	511.7	0.0	1054.2
100.00		1.00	0.99	24.517	26.97	356.95	0.650	0.000	5.00	18.022	11.71	505.5	0.0	1025.9
105.00		1.00	1.00	24.861	27.35	349.52	0.650	0.000	5.00	17.530	11.39	498.6	0.0	997.7
110.00		1.00	1.02	25.194	27.71	341.85	0.650	0.000	5.00	17.039	11.08	491.1	0.0	969.5
112.00	Bot - Section 4	1.00	1.02	25.324	27.86	338.72	0.650	0.000	2.00	6.678	4.34	193.5	0.0	379.9
115.00		1.00	1.03	25.516	28.07	333.96	0.650	0.000	3.00	10.013	6.51	292.3	0.0	989.7
117.00	Top - Section 3	1.00	1.03	25.642	28.21	330.75	0.650	0.000	2.00	6.577	4.27	192.9	0.0	649.9
120.00		1.00	1.04	25.828	28.41	330.78	0.650	0.000	3.00	9.718	6.32	287.1	0.0	415.6
125.00	Appurtenance(s)	1.00	1.05	26.131	28.74	322.53	0.650	0.000	5.00	15.803	10.27	472.4	0.0	675.7
130.00		1.00	1.07	26.425	29.07	314.10	0.650	0.000	5.00	15.312	9.95	462.9	0.0	654.6
135.00		1.00	1.08	26.712	29.38	305.51	0.650	0.000	5.00	14.821	9.63	452.9	0.0	633.4
140.00		1.00	1.09	26.991	29.69	296.75	0.650	0.000	5.00	14.330	9.31	442.5	0.0	612.2
145.00		1.00	1.10	27.263	29.99	287.84	0.650	0.000	5.00	13.839	9.00	431.6	0.0	591.1
147.50	Appurtenance(s)	1.00	1.10	27.396	30.14	283.33	0.650	0.000	2.50	6.735	4.38	211.1	0.0	287.6
150.00	Top - Section 4	1.00	1.11	27.528	30.28	278.78	0.650	0.000	2.50	6.612	4.30	208.2	0.0	282.3
155.00		1.00	1.12	27.787	30.57	269.59	0.650	0.000	5.00	12.856	8.36	408.7	0.0	427.7
160.00		1.00	1.13	28.040	30.84	260.26	0.650	0.000	5.00	12.365	8.04	396.6	0.0	411.3
165.00		1.00	1.14	28.288	31.12	250.81	0.650	0.000	5.00	11.874	7.72	384.2	0.0	394.8
167.00	Appurtenance(s)	1.00	1.14	28.386	31.22	247.00	0.650	0.000	2.00	4.612	3.00	149.8	0.0	153.3
170.00		1.00	1.15	28.530	31.38	241.25	0.650	0.000	3.00	6.770	4.40	221.0	0.0	225.0
175.00		1.00	1.16	28.768	31.64	231.56	0.650	0.000	5.00	10.891	7.08	358.4	0.0	361.9
177.00	Appurtenance(s)	1.00	1.16	28.861	31.75	227.66	0.650	0.000	2.00	4.219	2.74	139.3	0.0	140.1
180.00		1.00	1.17	29.000	31.90	221.77	0.650	0.000	3.00	6.181	4.02	205.1	0.0	205.3
								Totals:	**180.00**			**17,152.6**		**42,954.3**

Discrete Appurtenance Forces

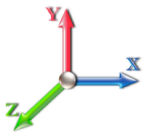
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	MT6407-77A	3	28.908	31.798	0.52	0.75	7.39	285.84	0.000	1.000	375.82	0.00	375.82
2	177.00	Low Profile Platform	1	28.861	31.747	1.00	1.00	22.00	1800.00	0.000	0.000	1117.51	0.00	0.00
3	177.00	NHH-65B-R2B	6	28.908	31.798	0.62	0.75	30.18	314.64	0.000	1.000	1535.42	0.00	1535.42
4	177.00	LPA-80063/8CF	6	28.908	31.798	0.70	0.75	57.21	273.60	0.000	1.000	2910.65	0.00	2910.65
5	177.00	BSAMNT-SBS-1-2	1	28.861	31.747	1.00	1.00	0.00	30.42	0.000	0.000	0.00	0.00	0.00
6	177.00	Samsung RF4439d-25A	3	28.908	31.798	0.50	0.75	2.83	303.84	0.000	1.000	144.19	0.00	144.19
7	177.00	Samsung RF4440-13A	3	28.908	31.798	0.50	0.75	2.83	253.08	0.000	1.000	144.19	0.00	144.19
8	177.00	RFS DB-C1-12C-24AB-0Z	1	28.908	31.798	0.75	0.75	3.04	38.40	0.000	1.000	154.92	0.00	154.92
9	177.00	Handrails	1	28.861	31.747	1.00	1.00	9.75	487.93	0.000	0.000	495.26	0.00	0.00
10	167.00	RMQP-4096-HK Plat. +	1	28.386	31.224	1.00	1.00	51.70	3174.00	0.000	0.000	2582.86	0.00	0.00
11	167.00	Ericsson 4460 B25 + B66	3	28.386	31.224	0.50	0.75	4.30	392.40	0.000	0.000	214.64	0.00	0.00
12	167.00	Ericsson 4480 B71 + B85	3	28.386	31.224	0.50	0.75	4.30	334.80	0.000	0.000	214.64	0.00	0.00
13	167.00	RFS SC2-W100BD	1	28.386	31.224	1.00	1.00	2.71	21.60	0.000	0.000	135.39	0.00	0.00
14	167.00	Commscope VV-65A-R1	3	28.386	31.224	0.54	0.75	34.21	660.24	0.000	0.000	1709.31	0.00	0.00
15	167.00	RFS	3	28.386	31.224	0.55	0.75	33.24	442.08	0.000	0.000	1660.84	0.00	0.00
16	167.00	Ericsson AIR6419 B41	3	28.386	31.224	0.57	0.75	6.50	237.96	0.000	0.000	324.63	0.00	0.00
17	147.50	Low Profile Platform	1	27.396	30.136	1.00	1.00	22.00	1800.00	0.000	0.000	1060.78	0.00	0.00
18	125.00	MC-PK8-C	1	26.131	28.744	1.00	1.00	33.60	1693.20	0.000	0.000	1545.27	0.00	0.00
19	125.00	Raycap	1	26.131	28.744	1.00	1.00	2.01	26.28	0.000	0.000	92.44	0.00	0.00
20	125.00	Fujitsu TA08025-B604	3	26.131	28.744	0.50	0.75	2.95	230.04	0.000	0.000	135.89	0.00	0.00
21	125.00	Fujitsu TA08025-B605	3	26.131	28.744	0.50	0.75	2.95	270.00	0.000	0.000	135.89	0.00	0.00
22	125.00	JMA Wireless	3	26.131	28.744	0.55	0.75	20.80	232.20	0.000	0.000	956.41	0.00	0.00
							Totals:		**13,302.55**			**17,646.95**		

Total Applied Force Summary

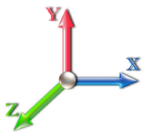
Structure:	CT02219-S-SBA		**Code:**	TIA-222-G	6/10/2022
Site Name:	North Franklin		**Exposure:**	B	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		529.80	1885.73	0.00	0.00
10.00		520.04	1852.81	0.00	0.00
15.00		510.28	1819.90	0.00	0.00
20.00		500.52	1786.98	0.00	0.00
25.00		490.76	1754.06	0.00	0.00
30.00		481.41	1721.15	0.00	0.00
35.00		492.88	1688.23	0.00	0.00
38.00		297.74	997.14	0.00	0.00
40.00		202.50	1281.78	0.00	0.00
45.00		515.90	3158.37	0.00	0.00
50.00		520.37	1614.29	0.00	0.00
55.00		523.12	1581.38	0.00	0.00
60.00		524.38	1548.46	0.00	0.00
65.00		524.33	1515.55	0.00	0.00
70.00		523.10	1482.63	0.00	0.00
75.00		520.83	1449.71	0.00	0.00
77.00		206.32	570.67	0.00	0.00
80.00		314.01	1526.02	0.00	0.00
83.00		312.63	1504.01	0.00	0.00
85.00		207.21	485.34	0.00	0.00
90.00		517.20	1193.61	0.00	0.00
95.00		511.68	1165.39	0.00	0.00
100.00		505.46	1137.18	0.00	0.00
105.00		498.58	1108.97	0.00	0.00
110.00		491.09	1080.75	0.00	0.00
112.00		193.47	424.40	0.00	0.00
115.00		292.27	1056.44	0.00	0.00
117.00		192.92	694.42	0.00	0.00
120.00		287.13	482.34	0.00	0.00
125.00	(11) attachments	3338.32	3238.70	0.00	0.00
130.00		462.90	754.89	0.00	0.00
135.00		452.90	733.73	0.00	0.00
140.00		442.47	712.56	0.00	0.00
145.00		431.60	691.40	0.00	0.00
147.50	(1) attachments	1271.87	2137.76	0.00	0.00
150.00		208.23	332.47	0.00	0.00
155.00		408.68	528.04	0.00	0.00
160.00		396.64	511.57	0.00	0.00
165.00		384.25	495.11	0.00	0.00
167.00	(17) attachments	6992.07	5456.52	0.00	0.00
170.00		220.98	273.91	0.00	0.00
175.00		358.43	443.35	0.00	0.00
177.00	(25) attachments	7017.26	3960.48	0.00	5265.20
180.00		205.06	205.27	0.00	0.00
	Totals:	**34,799.59**	**60,043.47**	**0.00**	**5,265.20**

Linear Appurtenance Segment Forces (Factored)

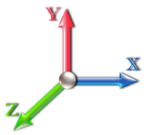
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	17.366	0.00	10.92
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	17.366	0.00	10.92
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.366	0.00	10.92
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.366	0.00	10.92
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	17.366	0.00	10.92
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	17.381	0.00	10.92
35.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	18.163	0.00	10.92
38.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.029	0.000	18.595	0.00	6.55
40.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.029	0.000	18.870	0.00	4.37
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	19.516	0.00	10.92
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	20.112	0.00	10.92
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	20.667	0.00	10.92
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	21.187	0.00	10.92
65.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	21.678	0.00	10.92
70.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	22.142	0.00	10.92
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	22.582	0.00	10.92
77.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	22.753	0.00	4.37
80.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	23.003	0.00	6.55
83.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.035	0.000	23.246	0.00	6.55
85.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	23.404	0.00	4.37
90.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	23.790	0.00	10.92
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	24.160	0.00	10.92
100.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	24.517	0.00	10.92
105.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	24.861	0.00	10.92
110.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	25.194	0.00	10.92
112.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.040	0.000	25.324	0.00	4.37
115.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	25.516	0.00	6.55
117.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.041	0.000	25.642	0.00	4.37
120.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	25.828	0.00	6.55
125.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	26.131	0.00	10.92
									Totals:		**0.0**	**273.0**

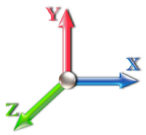
Calculated Forces

Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (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	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

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	-60.00	-34.88	0.00	-4565.6	0.00	4565.67	5755.79	2877.89	14954.5	7488.40	0.00	0.000	0.000	0.620
5.00	-58.03	-34.49	0.00	-4391.2	0.00	4391.29	5692.65	2846.33	14516.8	7269.20	0.08	-0.144	0.000	0.614
10.00	-56.09	-34.11	0.00	-4218.8	0.00	4218.84	5627.92	2813.96	14081.1	7051.05	0.31	-0.290	0.000	0.608
15.00	-54.18	-33.73	0.00	-4048.3	0.00	4048.31	5561.60	2780.80	13647.8	6834.05	0.69	-0.439	0.000	0.602
20.00	-52.31	-33.35	0.00	-3879.6	0.00	3879.67	5493.67	2746.84	13216.9	6618.32	1.23	-0.590	0.000	0.596
25.00	-50.47	-32.98	0.00	-3712.9	0.00	3712.92	5424.15	2712.07	12788.9	6403.97	1.93	-0.744	0.000	0.589
30.00	-48.67	-32.60	0.00	-3548.0	0.00	3548.04	5353.03	2676.51	12363.8	6191.13	2.80	-0.900	0.000	0.582
35.00	-46.92	-32.19	0.00	-3385.0	0.00	3385.03	5280.31	2640.16	11942.0	5979.90	3.82	-1.058	0.000	0.575
38.00	-45.88	-31.93	0.00	-3288.4	0.00	3288.47	5235.92	2617.96	11690.6	5853.99	4.52	-1.155	0.000	0.571
40.00	-44.54	-31.80	0.00	-3224.6	0.00	3224.60	5206.00	2603.00	11523.6	5770.41	5.02	-1.221	0.000	0.568
45.00	-41.31	-31.33	0.00	-3065.6	0.00	3065.63	5187.44	2593.72	11421.1	5719.07	6.39	-1.384	0.000	0.544
50.00	-39.62	-30.88	0.00	-2909.0	0.00	2909.00	5111.14	2555.57	11007.4	5511.90	7.92	-1.549	0.000	0.536
55.00	-37.97	-30.41	0.00	-2754.6	0.00	2754.62	5033.24	2516.62	10597.6	5306.71	9.63	-1.709	0.000	0.527
60.00	-36.35	-29.95	0.00	-2602.5	0.00	2602.55	4953.74	2476.87	10192.1	5103.63	11.51	-1.870	0.000	0.517
65.00	-34.77	-29.47	0.00	-2452.8	0.00	2452.83	4872.64	2436.32	9790.99	4902.77	13.55	-2.033	0.000	0.508
70.00	-33.23	-28.99	0.00	-2305.4	0.00	2305.49	4789.95	2394.98	9394.53	4704.25	15.77	-2.197	0.000	0.497
75.00	-31.74	-28.47	0.00	-2160.5	0.00	2160.55	4705.66	2352.83	9002.97	4508.18	18.16	-2.363	0.000	0.486
77.00	-31.14	-28.29	0.00	-2103.6	0.00	2103.61	4671.50	2335.75	8847.77	4430.46	19.16	-2.431	0.000	0.482
80.00	-29.58	-27.96	0.00	-2018.7	0.00	2018.74	4619.77	2309.89	8616.54	4314.67	20.72	-2.533	0.000	0.474
83.00	-28.05	-27.62	0.00	-1934.8	0.00	1934.85	3791.35	1895.67	7099.23	3554.89	22.35	-2.635	0.000	0.552
85.00	-27.51	-27.46	0.00	-1879.6	0.00	1879.60	3765.13	1882.57	6977.74	3494.06	23.47	-2.704	0.000	0.545
90.00	-26.26	-26.97	0.00	-1742.3	0.00	1742.32	3698.49	1849.25	6676.41	3343.17	26.40	-2.891	0.000	0.528
95.00	-25.03	-26.48	0.00	-1607.4	0.00	1607.48	3630.25	1815.12	6378.69	3194.08	29.53	-3.077	0.000	0.510
100.00	-23.84	-25.99	0.00	-1475.0	0.00	1475.09	3560.41	1780.20	6084.79	3046.92	32.85	-3.263	0.000	0.491
105.00	-22.68	-25.50	0.00	-1345.1	0.00	1345.16	3488.97	1744.49	5794.96	2901.79	36.36	-3.448	0.000	0.470
110.00	-21.58	-24.99	0.00	-1217.6	0.00	1217.67	3415.94	1707.97	5509.43	2758.81	40.07	-3.631	0.000	0.448
112.00	-21.13	-24.80	0.00	-1167.6	0.00	1167.69	3386.28	1693.14	5396.47	2702.25	41.61	-3.705	0.000	0.439
115.00	-20.05	-24.47	0.00	-1093.2	0.00	1093.29	3341.31	1670.66	5228.42	2618.09	43.97	-3.814	0.000	0.424
117.00	-19.34	-24.26	0.00	-1044.3	0.00	1044.34	2298.09	1149.05	3623.03	1814.21	45.58	-3.887	0.000	0.585
120.00	-18.81	-24.00	0.00	-971.55	0.00	971.55	2271.88	1135.94	3516.17	1760.70	48.06	-3.994	0.000	0.561
125.00	-15.74	-20.50	0.00	-851.55	0.00	851.55	2226.92	1113.46	3339.52	1672.24	52.36	-4.209	0.000	0.517
130.00	-14.95	-20.03	0.00	-749.08	0.00	749.08	2180.36	1090.18	3164.87	1584.79	56.87	-4.417	0.000	0.480
135.00	-14.19	-19.57	0.00	-648.93	0.00	648.93	2132.21	1066.11	2992.46	1498.45	61.60	-4.617	0.000	0.440
140.00	-13.45	-19.11	0.00	-551.08	0.00	551.08	2082.46	1041.23	2822.51	1413.35	66.54	-4.807	0.000	0.397
145.00	-12.76	-18.65	0.00	-455.51	0.00	455.51	2031.11	1015.56	2655.26	1329.61	71.66	-4.983	0.000	0.349
147.50	-10.72	-17.21	0.00	-408.88	0.00	408.88	2004.84	1002.42	2572.72	1288.27	74.29	-5.068	0.000	0.323
150.00	-10.37	-17.00	0.00	-365.85	0.00	365.85	1978.17	989.08	2490.94	1247.32	76.96	-5.148	0.000	0.299
150.00	-10.37	-17.00	0.00	-365.85	0.00	365.85	1416.47	708.23	1790.91	896.79	76.96	-5.148	0.000	0.416
155.00	-9.84	-16.57	0.00	-280.86	0.00	280.86	1383.33	691.66	1682.50	842.50	82.43	-5.289	0.000	0.341
160.00	-9.33	-16.15	0.00	-198.03	0.00	198.03	1348.59	674.30	1575.42	788.88	88.04	-5.439	0.000	0.259
165.00	-8.85	-15.73	0.00	-117.29	0.00	117.29	1312.26	656.13	1469.88	736.03	93.80	-5.550	0.000	0.167
167.00	-4.10	-8.24	0.00	-85.84	0.00	85.84	1297.28	648.64	1428.15	715.14	96.13	-5.582	0.000	0.123
170.00	-3.84	-8.00	0.00	-61.12	0.00	61.12	1274.33	637.17	1366.13	684.08	99.64	-5.619	0.000	0.093
175.00	-3.43	-7.60	0.00	-21.13	0.00	21.13	1234.81	617.40	1264.39	633.13	105.54	-5.657	0.000	0.036
177.00	-0.18	-0.22	0.00	-0.67	0.00	0.67	1218.55	609.28	1224.31	613.06	107.91	-5.663	0.000	0.001
180.00	0.00	-0.20	0.00	0.00	0.00	0.00	1193.69	596.84	1164.89	583.31	111.46	-5.663	0.000	0.000

Wind Loading - Shaft

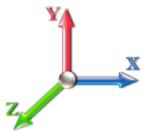
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	17.366	19.10	454.84	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.366	19.10	446.54	0.650	0.000	5.00	26.667	17.33	529.8	0.0	1330.9
10.00		1.00	0.70	17.366	19.10	438.24	0.650	0.000	5.00	26.176	17.01	520.0	0.0	1306.2
15.00		1.00	0.70	17.366	19.10	429.94	0.650	0.000	5.00	25.685	16.70	510.3	0.0	1281.5
20.00		1.00	0.70	17.366	19.10	421.64	0.650	0.000	5.00	25.194	16.38	500.5	0.0	1256.8
25.00		1.00	0.70	17.366	19.10	413.33	0.650	0.000	5.00	24.702	16.06	490.8	0.0	1232.1
30.00		1.00	0.70	17.381	19.12	405.20	0.650	0.000	5.00	24.211	15.74	481.4	0.0	1207.4
35.00		1.00	0.73	18.163	19.98	405.73	0.650	0.000	5.00	23.720	15.42	492.9	0.0	1182.7
38.00	Bot - Section 2	1.00	0.75	18.595	20.45	405.38	0.650	0.000	3.00	13.996	9.10	297.7	0.0	697.8
40.00		1.00	0.76	18.870	20.76	404.89	0.650	0.000	2.00	9.381	6.10	202.5	0.0	928.0
45.00	Top - Section 1	1.00	0.79	19.516	21.47	402.96	0.650	0.000	5.00	23.108	15.02	515.9	0.0	2285.3
50.00		1.00	0.81	20.112	22.12	406.87	0.650	0.000	5.00	22.617	14.70	520.4	0.0	1127.3
55.00		1.00	0.83	20.667	22.73	403.40	0.650	0.000	5.00	22.125	14.38	523.1	0.0	1102.6
60.00		1.00	0.85	21.187	23.31	399.27	0.650	0.000	5.00	21.634	14.06	524.4	0.0	1077.9
65.00		1.00	0.87	21.678	23.85	394.59	0.650	0.000	5.00	21.143	13.74	524.3	0.0	1053.2
70.00		1.00	0.89	22.142	24.36	389.41	0.650	0.000	5.00	20.652	13.42	523.1	0.0	1028.5
75.00		1.00	0.91	22.582	24.84	383.80	0.650	0.000	5.00	20.160	13.10	520.8	0.0	1003.9
77.00	Bot - Section 3	1.00	0.92	22.753	25.03	381.45	0.650	0.000	2.00	7.927	5.15	206.3	0.0	394.6
80.00		1.00	0.93	23.003	25.30	377.80	0.650	0.000	3.00	11.933	7.76	314.0	0.0	1094.5
83.00	Top - Section 2	1.00	0.94	23.246	25.57	374.03	0.650	0.000	3.00	11.756	7.64	312.6	0.0	1078.0
85.00		1.00	0.94	23.404	25.74	377.68	0.650	0.000	2.00	7.739	5.03	207.2	0.0	330.6
90.00		1.00	0.96	23.790	26.17	371.06	0.650	0.000	5.00	19.004	12.35	517.2	0.0	811.8
95.00		1.00	0.97	24.160	26.58	364.14	0.650	0.000	5.00	18.513	12.03	511.7	0.0	790.6
100.00		1.00	0.99	24.517	26.97	356.95	0.650	0.000	5.00	18.022	11.71	505.5	0.0	769.5
105.00		1.00	1.00	24.861	27.35	349.52	0.650	0.000	5.00	17.530	11.39	498.6	0.0	748.3
110.00		1.00	1.02	25.194	27.71	341.85	0.650	0.000	5.00	17.039	11.08	491.1	0.0	727.1
112.00	Bot - Section 4	1.00	1.02	25.324	27.86	338.72	0.650	0.000	2.00	6.678	4.34	193.5	0.0	284.9
115.00		1.00	1.03	25.516	28.07	333.96	0.650	0.000	3.00	10.013	6.51	292.3	0.0	742.3
117.00	Top - Section 3	1.00	1.03	25.642	28.21	330.75	0.650	0.000	2.00	6.577	4.27	192.9	0.0	487.4
120.00		1.00	1.04	25.828	28.41	330.78	0.650	0.000	3.00	9.718	6.32	287.1	0.0	311.7
125.00	Appurtenance(s)	1.00	1.05	26.131	28.74	322.53	0.650	0.000	5.00	15.803	10.27	472.4	0.0	506.8
130.00		1.00	1.07	26.425	29.07	314.10	0.650	0.000	5.00	15.312	9.95	462.9	0.0	490.9
135.00		1.00	1.08	26.712	29.38	305.51	0.650	0.000	5.00	14.821	9.63	452.9	0.0	475.1
140.00		1.00	1.09	26.991	29.69	296.75	0.650	0.000	5.00	14.330	9.31	442.5	0.0	459.2
145.00		1.00	1.10	27.263	29.99	287.84	0.650	0.000	5.00	13.839	9.00	431.6	0.0	443.3
147.50	Appurtenance(s)	1.00	1.10	27.396	30.14	283.33	0.650	0.000	2.50	6.735	4.38	211.1	0.0	215.7
150.00	Top - Section 4	1.00	1.11	27.528	30.28	278.78	0.650	0.000	2.50	6.612	4.30	208.2	0.0	211.7
155.00		1.00	1.12	27.787	30.57	269.59	0.650	0.000	5.00	12.856	8.36	408.7	0.0	320.8
160.00		1.00	1.13	28.040	30.84	260.26	0.650	0.000	5.00	12.365	8.04	396.6	0.0	308.4
165.00		1.00	1.14	28.288	31.12	250.81	0.650	0.000	5.00	11.874	7.72	384.2	0.0	296.1
167.00	Appurtenance(s)	1.00	1.14	28.386	31.22	247.00	0.650	0.000	2.00	4.612	3.00	149.8	0.0	115.0
170.00		1.00	1.15	28.530	31.38	241.25	0.650	0.000	3.00	6.770	4.40	221.0	0.0	168.8
175.00		1.00	1.16	28.768	31.64	231.56	0.650	0.000	5.00	10.891	7.08	358.4	0.0	271.4
177.00	Appurtenance(s)	1.00	1.16	28.861	31.75	227.66	0.650	0.000	2.00	4.219	2.74	139.3	0.0	105.1
180.00		1.00	1.17	29.000	31.90	221.77	0.650	0.000	3.00	6.181	4.02	205.1	0.0	154.0
								Totals:	**180.00**			**17,152.6**		**32,215.7**

Discrete Appurtenance Forces

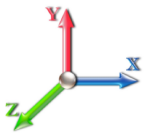
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	MT6407-77A	3	28.908	31.798	0.52	0.75	7.39	214.38	0.000	1.000	375.82	0.00	375.82
2	177.00	Low Profile Platform	1	28.861	31.747	1.00	1.00	22.00	1350.00	0.000	0.000	1117.51	0.00	0.00
3	177.00	NHH-65B-R2B	6	28.908	31.798	0.62	0.75	30.18	235.98	0.000	1.000	1535.42	0.00	1535.42
4	177.00	LPA-80063/8CF	6	28.908	31.798	0.70	0.75	57.21	205.20	0.000	1.000	2910.65	0.00	2910.65
5	177.00	BSAMNT-SBS-1-2	1	28.861	31.747	1.00	1.00	0.00	22.82	0.000	0.000	0.00	0.00	0.00
6	177.00	Samsung RF4439d-25A	3	28.908	31.798	0.50	0.75	2.83	227.88	0.000	1.000	144.19	0.00	144.19
7	177.00	Samsung RF4440-13A	3	28.908	31.798	0.50	0.75	2.83	189.81	0.000	1.000	144.19	0.00	144.19
8	177.00	RFS DB-C1-12C-24AB-0Z	1	28.908	31.798	0.75	0.75	3.04	28.80	0.000	1.000	154.92	0.00	154.92
9	177.00	Handrails	1	28.861	31.747	1.00	1.00	9.75	365.95	0.000	0.000	495.26	0.00	0.00
10	167.00	RMQP-4096-HK Plat. +	1	28.386	31.224	1.00	1.00	51.70	2380.50	0.000	0.000	2582.86	0.00	0.00
11	167.00	Ericsson 4460 B25 + B66	3	28.386	31.224	0.50	0.75	4.30	294.30	0.000	0.000	214.64	0.00	0.00
12	167.00	Ericsson 4480 B71 + B85	3	28.386	31.224	0.50	0.75	4.30	251.10	0.000	0.000	214.64	0.00	0.00
13	167.00	RFS SC2-W100BD	1	28.386	31.224	1.00	1.00	2.71	16.20	0.000	0.000	135.39	0.00	0.00
14	167.00	Commscope VV-65A-R1	3	28.386	31.224	0.54	0.75	34.21	495.18	0.000	0.000	1709.31	0.00	0.00
15	167.00	RFS	3	28.386	31.224	0.55	0.75	33.24	331.56	0.000	0.000	1660.84	0.00	0.00
16	167.00	Ericsson AIR6419 B41	3	28.386	31.224	0.57	0.75	6.50	178.47	0.000	0.000	324.63	0.00	0.00
17	147.50	Low Profile Platform	1	27.396	30.136	1.00	1.00	22.00	1350.00	0.000	0.000	1060.78	0.00	0.00
18	125.00	MC-PK8-C	1	26.131	28.744	1.00	1.00	33.60	1269.90	0.000	0.000	1545.27	0.00	0.00
19	125.00	Raycap	1	26.131	28.744	1.00	1.00	2.01	19.71	0.000	0.000	92.44	0.00	0.00
20	125.00	Fujitsu TA08025-B604	3	26.131	28.744	0.50	0.75	2.95	172.53	0.000	0.000	135.89	0.00	0.00
21	125.00	Fujitsu TA08025-B605	3	26.131	28.744	0.50	0.75	2.95	202.50	0.000	0.000	135.89	0.00	0.00
22	125.00	JMA Wireless	3	26.131	28.744	0.55	0.75	20.80	174.15	0.000	0.000	956.41	0.00	0.00
							Totals:		**9,976.91**			**17,646.95**		

Total Applied Force Summary

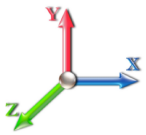
Structure:	CT02219-S-SBA		**Code:**	TIA-222-G	6/10/2022
Site Name:	North Franklin		**Exposure:**	B	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		529.80	1414.30	0.00	0.00
10.00		520.04	1389.61	0.00	0.00
15.00		510.28	1364.92	0.00	0.00
20.00		500.52	1340.24	0.00	0.00
25.00		490.76	1315.55	0.00	0.00
30.00		481.41	1290.86	0.00	0.00
35.00		492.88	1266.17	0.00	0.00
38.00		297.74	747.86	0.00	0.00
40.00		202.50	961.34	0.00	0.00
45.00		515.90	2368.78	0.00	0.00
50.00		520.37	1210.72	0.00	0.00
55.00		523.12	1186.03	0.00	0.00
60.00		524.38	1161.35	0.00	0.00
65.00		524.33	1136.66	0.00	0.00
70.00		523.10	1111.97	0.00	0.00
75.00		520.83	1087.29	0.00	0.00
77.00		206.32	428.00	0.00	0.00
80.00		314.01	1144.51	0.00	0.00
83.00		312.63	1128.01	0.00	0.00
85.00		207.21	364.01	0.00	0.00
90.00		517.20	895.20	0.00	0.00
95.00		511.68	874.04	0.00	0.00
100.00		505.46	852.88	0.00	0.00
105.00		498.58	831.72	0.00	0.00
110.00		491.09	810.56	0.00	0.00
112.00		193.47	318.30	0.00	0.00
115.00		292.27	792.33	0.00	0.00
117.00		192.92	520.81	0.00	0.00
120.00		287.13	361.76	0.00	0.00
125.00	(11) attachments	3338.32	2429.02	0.00	0.00
130.00		462.90	566.17	0.00	0.00
135.00		452.90	550.30	0.00	0.00
140.00		442.47	534.42	0.00	0.00
145.00		431.60	518.55	0.00	0.00
147.50	(1) attachments	1271.87	1603.32	0.00	0.00
150.00		208.23	249.35	0.00	0.00
155.00		408.68	396.03	0.00	0.00
160.00		396.64	383.68	0.00	0.00
165.00		384.25	371.33	0.00	0.00
167.00	(17) attachments	6992.07	4092.39	0.00	0.00
170.00		220.98	205.43	0.00	0.00
175.00		358.43	332.51	0.00	0.00
177.00	(25) attachments	7017.26	2970.36	0.00	5265.20
180.00		205.06	153.95	0.00	0.00
	Totals:	**34,799.59**	**45,032.60**	**0.00**	**5,265.20**

Linear Appurtenance Segment Forces (Factored)

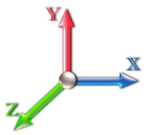
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	17.366	0.00	8.19
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	17.366	0.00	8.19
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.366	0.00	8.19
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.366	0.00	8.19
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	17.366	0.00	8.19
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	17.381	0.00	8.19
35.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	18.163	0.00	8.19
38.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.029	0.000	18.595	0.00	4.91
40.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.029	0.000	18.870	0.00	3.28
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	19.516	0.00	8.19
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	20.112	0.00	8.19
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	20.667	0.00	8.19
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	21.187	0.00	8.19
65.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	21.678	0.00	8.19
70.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	22.142	0.00	8.19
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	22.582	0.00	8.19
77.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	22.753	0.00	3.28
80.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	23.003	0.00	4.91
83.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.035	0.000	23.246	0.00	4.91
85.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	23.404	0.00	3.28
90.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	23.790	0.00	8.19
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	24.160	0.00	8.19
100.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	24.517	0.00	8.19
105.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	24.861	0.00	8.19
110.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	25.194	0.00	8.19
112.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.040	0.000	25.324	0.00	3.28
115.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	25.516	0.00	4.91
117.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.041	0.000	25.642	0.00	3.28
120.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	25.828	0.00	4.91
125.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	26.131	0.00	8.19
										Totals:	**0.0**	**204.7**

Calculated Forces

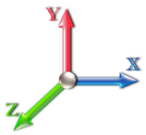
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

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	-44.99	-34.86	0.00	-4516.3	0.00	4516.37	5755.79	2877.89	14954.5	7488.40	0.00	0.000	0.000	0.611
5.00	-43.49	-34.43	0.00	-4342.0	0.00	4342.09	5692.65	2846.33	14516.8	7269.20	0.08	-0.142	0.000	0.605
10.00	-42.01	-34.02	0.00	-4169.9	0.00	4169.93	5627.92	2813.96	14081.1	7051.05	0.30	-0.287	0.000	0.599
15.00	-40.57	-33.60	0.00	-3999.8	0.00	3999.85	5561.60	2780.80	13647.8	6834.05	0.68	-0.434	0.000	0.593
20.00	-39.14	-33.19	0.00	-3831.8	0.00	3831.85	5493.67	2746.84	13216.9	6618.32	1.22	-0.583	0.000	0.586
25.00	-37.75	-32.79	0.00	-3665.9	0.00	3665.90	5424.15	2712.07	12788.9	6403.97	1.91	-0.735	0.000	0.580
30.00	-36.37	-32.39	0.00	-3501.9	0.00	3501.97	5353.03	2676.51	12363.8	6191.13	2.76	-0.889	0.000	0.573
35.00	-35.05	-31.95	0.00	-3340.0	0.00	3340.04	5280.31	2640.16	11942.0	5979.90	3.78	-1.045	0.000	0.565
38.00	-34.26	-31.68	0.00	-3244.2	0.00	3244.20	5235.92	2617.96	11690.6	5853.99	4.47	-1.141	0.000	0.561
40.00	-33.24	-31.53	0.00	-3180.8	0.00	3180.83	5206.00	2603.00	11523.6	5770.41	4.96	-1.206	0.000	0.558
45.00	-30.80	-31.05	0.00	-3023.1	0.00	3023.19	5187.44	2593.72	11421.1	5719.07	6.31	-1.367	0.000	0.535
50.00	-29.51	-30.58	0.00	-2867.9	0.00	2867.96	5111.14	2555.57	11007.4	5511.90	7.83	-1.530	0.000	0.526
55.00	-28.26	-30.10	0.00	-2715.0	0.00	2715.08	5033.24	2516.62	10597.6	5306.71	9.51	-1.687	0.000	0.517
60.00	-27.03	-29.62	0.00	-2564.5	0.00	2564.58	4953.74	2476.87	10192.1	5103.63	11.37	-1.846	0.000	0.508
65.00	-25.83	-29.13	0.00	-2416.5	0.00	2416.51	4872.64	2436.32	9790.99	4902.77	13.39	-2.006	0.000	0.498
70.00	-24.66	-28.63	0.00	-2270.8	0.00	2270.88	4789.95	2394.98	9394.53	4704.25	15.57	-2.168	0.000	0.488
75.00	-23.54	-28.12	0.00	-2127.7	0.00	2127.72	4705.66	2352.83	9002.97	4508.18	17.93	-2.331	0.000	0.477
77.00	-23.08	-27.93	0.00	-2071.4	0.00	2071.49	4671.50	2335.75	8847.77	4430.46	18.92	-2.399	0.000	0.473
80.00	-21.90	-27.60	0.00	-1987.7	0.00	1987.71	4619.77	2309.89	8616.54	4314.67	20.46	-2.499	0.000	0.466
83.00	-20.75	-27.27	0.00	-1904.9	0.00	1904.90	3791.35	1895.67	7099.23	3554.89	22.06	-2.600	0.000	0.542
85.00	-20.33	-27.09	0.00	-1850.3	0.00	1850.36	3765.13	1882.57	6977.74	3494.06	23.17	-2.668	0.000	0.535
90.00	-19.38	-26.59	0.00	-1714.9	0.00	1714.91	3698.49	1849.25	6676.41	3343.17	26.06	-2.851	0.000	0.518
95.00	-18.45	-26.10	0.00	-1581.9	0.00	1581.94	3630.25	1815.12	6378.69	3194.08	29.14	-3.035	0.000	0.501
100.00	-17.54	-25.60	0.00	-1451.4	0.00	1451.45	3560.41	1780.20	6084.79	3046.92	32.42	-3.218	0.000	0.482
105.00	-16.66	-25.11	0.00	-1323.4	0.00	1323.44	3488.97	1744.49	5794.96	2901.79	35.89	-3.399	0.000	0.461
110.00	-15.83	-24.60	0.00	-1197.9	0.00	1197.90	3415.94	1707.97	5509.43	2758.81	39.54	-3.579	0.000	0.439
112.00	-15.48	-24.42	0.00	-1148.6	0.00	1148.69	3386.28	1693.14	5396.47	2702.25	41.06	-3.652	0.000	0.430
115.00	-14.68	-24.10	0.00	-1075.4	0.00	1075.44	3341.31	1670.66	5228.42	2618.09	43.38	-3.760	0.000	0.415
117.00	-14.13	-23.89	0.00	-1027.2	0.00	1027.25	2298.09	1149.05	3623.03	1814.21	44.97	-3.832	0.000	0.573
120.00	-13.72	-23.62	0.00	-955.58	0.00	955.58	2271.88	1135.94	3516.17	1760.70	47.41	-3.937	0.000	0.549
125.00	-11.46	-20.16	0.00	-837.49	0.00	837.49	2226.92	1113.46	3339.52	1672.24	51.65	-4.148	0.000	0.506
130.00	-10.86	-19.69	0.00	-736.70	0.00	736.70	2180.36	1090.18	3164.87	1584.79	56.10	-4.353	0.000	0.470
135.00	-10.29	-19.23	0.00	-638.23	0.00	638.23	2132.21	1066.11	2992.46	1498.45	60.76	-4.549	0.000	0.431
140.00	-9.73	-18.78	0.00	-542.07	0.00	542.07	2082.46	1041.23	2822.51	1413.35	65.62	-4.736	0.000	0.389
145.00	-9.21	-18.33	0.00	-448.17	0.00	448.17	2031.11	1015.56	2655.26	1329.61	70.67	-4.910	0.000	0.342
147.50	-7.70	-16.93	0.00	-402.35	0.00	402.35	2004.84	1002.42	2572.72	1288.27	73.26	-4.993	0.000	0.316
150.00	-7.44	-16.72	0.00	-360.02	0.00	360.02	1978.17	989.08	2490.94	1247.32	75.90	-5.071	0.000	0.293
150.00	-7.44	-16.72	0.00	-360.02	0.00	360.02	1416.47	708.23	1790.91	896.79	75.90	-5.071	0.000	0.407
155.00	-7.04	-16.29	0.00	-276.44	0.00	276.44	1383.33	691.66	1682.50	842.50	81.28	-5.210	0.000	0.334
160.00	-6.66	-15.88	0.00	-194.98	0.00	194.98	1348.59	674.30	1575.42	788.88	86.81	-5.358	0.000	0.253
165.00	-6.30	-15.47	0.00	-115.59	0.00	115.59	1312.26	656.13	1469.88	736.03	92.48	-5.467	0.000	0.162
167.00	-2.89	-8.12	0.00	-84.66	0.00	84.66	1297.28	648.64	1428.15	715.14	94.77	-5.499	0.000	0.121
170.00	-2.71	-7.88	0.00	-60.30	0.00	60.30	1274.33	637.17	1366.13	684.08	98.24	-5.536	0.000	0.090
175.00	-2.41	-7.49	0.00	-20.91	0.00	20.91	1234.81	617.40	1264.39	633.13	104.05	-5.573	0.000	0.035
177.00	-0.13	-0.22	0.00	-0.66	0.00	0.66	1218.55	609.28	1224.31	613.06	106.38	-5.579	0.000	0.001
180.00	0.00	-0.20	0.00	0.00	0.00	0.00	1193.69	596.84	1164.89	583.31	109.88	-5.579	0.000	0.000

Wind Loading - Shaft

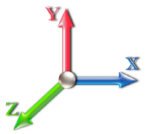
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	27.702	33.24	155.6	495.6	2270.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	27.286	32.74	153.3	522.2	2263.8
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	26.840	32.21	150.8	534.2	2242.9
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	26.383	31.66	148.2	539.8	2215.5
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	25.918	31.10	145.6	541.6	2184.4
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	25.449	30.54	143.1	541.0	2150.9
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	24.977	29.97	146.8	538.7	2115.7
38.00	Bot - Section 2	1.00	0.75	4.557	5.01	0.00	1.200	1.521	3.00	14.757	17.71	88.8	322.0	1252.3
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	2.00	9.890	11.87	60.4	217.3	1454.6
45.00	Top - Section 1	1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	24.397	29.28	154.0	538.7	3585.8
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	5.00	23.920	28.70	155.6	533.2	2036.2
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	23.441	28.13	156.7	527.0	1997.1
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	22.961	27.55	157.4	520.1	1957.3
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	22.481	26.98	157.6	512.7	1917.0
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	21.999	26.40	157.6	504.9	1876.3
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	21.517	25.82	157.2	496.7	1835.1
77.00	Bot - Section 3	1.00	0.92	5.576	6.13	0.00	1.200	1.633	2.00	8.471	10.16	62.3	197.3	723.5
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	3.00	12.752	15.30	94.9	297.5	1756.7
83.00	Top - Section 2	1.00	0.94	5.697	6.27	0.00	1.200	1.645	3.00	12.579	15.09	94.6	294.3	1731.6
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	2.00	8.289	9.95	62.8	194.8	635.6
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	5.00	20.386	24.46	156.9	477.7	1560.1
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	5.00	19.902	23.88	155.6	468.3	1522.4
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	5.00	19.418	23.30	154.0	458.6	1484.5
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	5.00	18.934	22.72	152.3	448.6	1446.4
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	18.449	22.14	150.4	438.5	1408.0
112.00	Bot - Section 4	1.00	1.02	6.206	6.83	0.00	1.200	1.695	2.00	7.243	8.69	59.3	173.8	553.7
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	3.00	10.862	13.03	89.7	260.5	1250.2
117.00	Top - Section 3	1.00	1.03	6.284	6.91	0.00	1.200	1.702	2.00	7.144	8.57	59.3	172.0	821.9
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	3.00	10.571	12.69	88.3	254.2	669.8
125.00	Appurtenance(s)	1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	17.231	20.68	145.7	413.0	1088.8
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	5.00	16.746	20.10	143.2	402.2	1056.8
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	5.00	16.260	19.51	140.5	391.2	1024.6
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	5.00	15.774	18.93	137.7	380.1	992.3
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	5.00	15.288	18.35	134.8	368.8	959.9
147.50	Appurtenance(s)	1.00	1.10	6.714	7.39	0.00	1.200	1.742	2.50	7.461	8.95	66.1	181.6	469.2
150.00	Top - Section 4	1.00	1.11	6.746	7.42	0.00	1.200	1.745	2.50	7.339	8.81	65.4	178.7	461.0
155.00		1.00	1.12	6.810	7.49	0.00	1.200	1.751	5.00	14.315	17.18	128.7	346.0	773.7
160.00		1.00	1.13	6.872	7.56	0.00	1.200	1.757	5.00	13.829	16.59	125.4	334.3	745.6
165.00		1.00	1.14	6.933	7.63	0.00	1.200	1.762	5.00	13.342	16.01	122.1	322.6	717.4
167.00	Appurtenance(s)	1.00	1.14	6.957	7.65	0.00	1.200	1.764	2.00	5.200	6.24	47.7	127.2	280.5
170.00		1.00	1.15	6.992	7.69	0.00	1.200	1.767	3.00	7.654	9.18	70.6	186.5	411.5
175.00		1.00	1.16	7.050	7.76	0.00	1.200	1.772	5.00	12.368	14.84	115.1	298.8	660.7
177.00	Appurtenance(s)	1.00	1.16	7.073	7.78	0.00	1.200	1.774	2.00	4.810	5.77	44.9	117.6	257.8
180.00		1.00	1.17	7.107	7.82	0.00	1.200	1.777	3.00	7.070	8.48	66.3	172.1	377.4
								Totals:	**180.00**			**5,223.3**		**59,196.7**

Discrete Appurtenance Forces

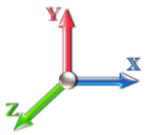
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	MT6407-77A	3	7.085	7.793	0.52	0.75	8.90	651.73	0.000	1.000	69.39	0.00	69.39
2	177.00	Low Profile Platform	1	7.073	7.780	1.00	1.00	39.96	2830.76	0.000	0.000	310.88	0.00	0.00
3	177.00	NHH-65B-R2B	6	7.085	7.793	0.62	0.75	35.09	1548.41	0.000	1.000	273.46	0.00	273.46
4	177.00	LPA-80063/8CF	6	7.085	7.793	0.62	0.75	65.01	1765.03	0.000	1.000	506.61	0.00	506.61
5	177.00	BSAMNT-SBS-1-2	1	7.073	7.780	1.00	1.00	0.00	47.26	0.000	0.000	0.00	0.00	0.00
6	177.00	Samsung RF4439d-25A	3	7.085	7.793	0.50	0.75	3.68	354.58	0.000	1.000	28.67	0.00	28.67
7	177.00	Samsung RF4440-13A	3	7.085	7.793	0.50	0.75	3.68	366.62	0.000	1.000	28.67	0.00	28.67
8	177.00	RFS DB-C1-12C-24AB-0Z	1	7.085	7.793	0.75	0.75	3.67	125.63	0.000	1.000	28.61	0.00	28.61
9	177.00	Handrails	1	7.073	7.780	1.00	1.00	19.44	1385.14	0.000	0.000	151.24	0.00	0.00
10	167.00	RMQP-4096-HK Plat. +	1	6.957	7.652	1.00	1.00	90.37	5218.55	0.000	0.000	691.53	0.00	0.00
11	167.00	Ericsson 4460 B25 + B66	3	6.957	7.652	0.50	0.75	5.32	559.45	0.000	0.000	40.74	0.00	0.00
12	167.00	Ericsson 4480 B71 + B85	3	6.957	7.652	0.50	0.75	5.32	501.93	0.000	0.000	40.74	0.00	0.00
13	167.00	RFS SC2-W100BD	1	6.957	7.652	1.00	1.00	3.52	82.02	0.000	0.000	26.94	0.00	0.00
14	167.00	Commscope VV-65A-R1	3	6.957	7.652	0.54	0.75	37.35	2037.57	0.000	0.000	285.85	0.00	0.00
15	167.00	RFS	3	6.957	7.652	0.55	0.75	36.40	1740.79	0.000	0.000	278.54	0.00	0.00
16	167.00	Ericsson AIR6419 B41	3	6.957	7.652	0.57	0.75	7.87	461.60	0.000	0.000	60.25	0.00	0.00
17	147.50	Low Profile Platform	1	6.714	7.386	1.00	1.00	39.63	2806.71	0.000	0.000	292.70	0.00	0.00
18	125.00	MC-PK8-C	1	6.404	7.044	1.00	1.00	68.15	3006.61	0.000	0.000	480.06	0.00	0.00
19	125.00	Raycap	1	6.404	7.044	1.00	1.00	2.57	65.87	0.000	0.000	18.09	0.00	0.00
20	125.00	Fujitsu TA08025-B604	3	6.404	7.044	0.50	0.75	3.79	342.89	0.000	0.000	26.66	0.00	0.00
21	125.00	Fujitsu TA08025-B605	3	6.404	7.044	0.50	0.75	3.79	386.28	0.000	0.000	26.66	0.00	0.00
22	125.00	JMA Wireless	3	6.404	7.044	0.55	0.75	23.19	887.45	0.000	0.000	163.36	0.00	0.00
							Totals:		**27,172.86**			**3,829.67**		

Total Applied Force Summary

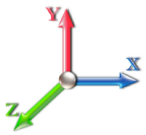
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		155.63	2399.54	0.00	0.00
10.00		153.29	2395.19	0.00	0.00
15.00		150.79	2375.53	0.00	0.00
20.00		148.22	2349.13	0.00	0.00
25.00		145.61	2318.83	0.00	0.00
30.00		143.09	2285.97	0.00	0.00
35.00		146.76	2251.26	0.00	0.00
38.00		88.77	1333.90	0.00	0.00
40.00		60.37	1509.07	0.00	0.00
45.00		154.03	3722.40	0.00	0.00
50.00		155.63	2173.22	0.00	0.00
55.00		156.72	2134.45	0.00	0.00
60.00		157.38	2095.04	0.00	0.00
65.00		157.65	2055.09	0.00	0.00
70.00		157.57	2014.65	0.00	0.00
75.00		157.19	1973.78	0.00	0.00
77.00		62.35	778.98	0.00	0.00
80.00		94.89	1840.09	0.00	0.00
83.00		94.59	1815.00	0.00	0.00
85.00		62.76	691.27	0.00	0.00
90.00		156.89	1699.51	0.00	0.00
95.00		155.55	1662.08	0.00	0.00
100.00		154.01	1624.40	0.00	0.00
105.00		152.27	1586.48	0.00	0.00
110.00		150.36	1548.34	0.00	0.00
112.00		59.34	609.83	0.00	0.00
115.00		89.66	1334.51	0.00	0.00
117.00		59.26	878.16	0.00	0.00
120.00		88.32	754.24	0.00	0.00
125.00	(11) attachments	860.50	5918.75	0.00	0.00
130.00		143.15	1157.08	0.00	0.00
135.00		140.51	1124.95	0.00	0.00
140.00		137.73	1092.66	0.00	0.00
145.00		134.83	1060.25	0.00	0.00
147.50	(1) attachments	358.83	3326.06	0.00	0.00
150.00		65.36	511.20	0.00	0.00
155.00		128.68	874.00	0.00	0.00
160.00		125.44	845.91	0.00	0.00
165.00		122.09	817.72	0.00	0.00
167.00	(17) attachments	1472.34	10922.50	0.00	0.00
170.00		70.64	460.38	0.00	0.00
175.00		115.10	742.19	0.00	0.00
177.00	(25) attachments	1442.45	9365.49	0.00	935.42
180.00		66.32	377.35	0.00	0.00
	Totals:	**9,052.93**	**90,806.41**	**0.00**	**935.42**

Linear Appurtenance Segment Forces (Factored)

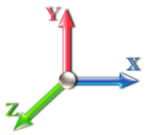
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.70	0.00	0.025	0.000	4.256	0.00	29.14
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.78	0.00	0.025	0.000	4.256	0.00	31.10
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.82	0.00	0.026	0.000	4.256	0.00	32.35
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.86	0.00	0.026	0.000	4.256	0.00	33.30
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.88	0.00	0.027	0.000	4.256	0.00	34.07
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.90	0.00	0.028	0.000	4.260	0.00	34.72
35.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.92	0.00	0.028	0.000	4.451	0.00	35.28
38.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.16	0.00	0.029	0.000	4.557	0.00	21.36
40.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.78	0.00	0.029	0.000	4.625	0.00	14.31
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.96	0.00	0.029	0.000	4.783	0.00	36.24
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.97	0.00	0.029	0.000	4.929	0.00	36.65
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.98	0.00	0.030	0.000	5.065	0.00	37.03
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	1.99	0.00	0.031	0.000	5.193	0.00	37.39
65.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.00	0.00	0.032	0.000	5.313	0.00	37.72
70.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.01	0.00	0.032	0.000	5.426	0.00	38.03
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.02	0.00	0.033	0.000	5.534	0.00	38.32
77.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.81	0.00	0.034	0.000	5.576	0.00	15.37
80.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.22	0.00	0.034	0.000	5.637	0.00	23.16
83.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.22	0.00	0.035	0.000	5.697	0.00	23.25
85.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.82	0.00	0.034	0.000	5.736	0.00	15.54
90.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.05	0.00	0.035	0.000	5.830	0.00	39.11
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.06	0.00	0.036	0.000	5.921	0.00	39.34
100.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.06	0.00	0.037	0.000	6.008	0.00	39.57
105.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.07	0.00	0.038	0.000	6.093	0.00	39.79
110.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.08	0.00	0.039	0.000	6.174	0.00	40.00
112.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.83	0.00	0.040	0.000	6.206	0.00	16.03
115.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.25	0.00	0.041	0.000	6.253	0.00	24.12
117.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.83	0.00	0.041	0.000	6.284	0.00	16.11
120.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.25	0.00	0.041	0.000	6.330	0.00	24.24
125.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.09	0.00	0.042	0.000	6.404	0.00	40.59
									Totals:		**0.0**	**923.2**

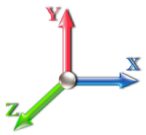
Calculated Forces

Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

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	-90.80	-9.08	0.00	-1167.9	0.00	1167.98	5755.79	2877.89	14954.5	7488.40	0.00	0.000	0.000	0.172
5.00	-88.40	-8.98	0.00	-1122.5	0.00	1122.57	5692.65	2846.33	14516.8	7269.20	0.02	-0.037	0.000	0.170
10.00	-86.00	-8.88	0.00	-1077.6	0.00	1077.65	5627.92	2813.96	14081.1	7051.05	0.08	-0.074	0.000	0.168
15.00	-83.62	-8.79	0.00	-1033.2	0.00	1033.23	5561.60	2780.80	13647.8	6834.05	0.18	-0.112	0.000	0.166
20.00	-81.26	-8.69	0.00	-989.31	0.00	989.31	5493.67	2746.84	13216.9	6618.32	0.32	-0.151	0.000	0.164
25.00	-78.94	-8.59	0.00	-945.87	0.00	945.87	5424.15	2712.07	12788.9	6403.97	0.49	-0.190	0.000	0.162
30.00	-76.65	-8.49	0.00	-902.93	0.00	902.93	5353.03	2676.51	12363.8	6191.13	0.71	-0.230	0.000	0.160
35.00	-74.39	-8.38	0.00	-860.48	0.00	860.48	5280.31	2640.16	11942.0	5979.90	0.98	-0.270	0.000	0.158
38.00	-73.05	-8.31	0.00	-835.35	0.00	835.35	5235.92	2617.96	11690.6	5853.99	1.15	-0.295	0.000	0.157
40.00	-71.54	-8.28	0.00	-818.74	0.00	818.74	5206.00	2603.00	11523.6	5770.41	1.28	-0.311	0.000	0.156
45.00	-67.81	-8.15	0.00	-777.36	0.00	777.36	5187.44	2593.72	11421.1	5719.07	1.63	-0.353	0.000	0.149
50.00	-65.64	-8.03	0.00	-736.62	0.00	736.62	5111.14	2555.57	11007.4	5511.90	2.02	-0.395	0.000	0.146
55.00	-63.50	-7.90	0.00	-696.49	0.00	696.49	5033.24	2516.62	10597.6	5306.71	2.46	-0.435	0.000	0.144
60.00	-61.40	-7.77	0.00	-656.99	0.00	656.99	4953.74	2476.87	10192.1	5103.63	2.93	-0.476	0.000	0.141
65.00	-59.34	-7.64	0.00	-618.15	0.00	618.15	4872.64	2436.32	9790.99	4902.77	3.45	-0.517	0.000	0.138
70.00	-57.32	-7.50	0.00	-579.97	0.00	579.97	4789.95	2394.98	9394.53	4704.25	4.02	-0.558	0.000	0.135
75.00	-55.34	-7.35	0.00	-542.47	0.00	542.47	4705.66	2352.83	9002.97	4508.18	4.62	-0.600	0.000	0.132
77.00	-54.56	-7.30	0.00	-527.76	0.00	527.76	4671.50	2335.75	8847.77	4430.46	4.88	-0.617	0.000	0.131
80.00	-52.72	-7.21	0.00	-505.86	0.00	505.86	4619.77	2309.89	8616.54	4314.67	5.27	-0.642	0.000	0.129
83.00	-50.90	-7.11	0.00	-484.23	0.00	484.23	3791.35	1895.67	7099.23	3554.89	5.69	-0.668	0.000	0.150
85.00	-50.21	-7.07	0.00	-470.00	0.00	470.00	3765.13	1882.57	6977.74	3494.06	5.97	-0.685	0.000	0.148
90.00	-48.51	-6.93	0.00	-434.64	0.00	434.64	3698.49	1849.25	6676.41	3343.17	6.71	-0.732	0.000	0.143
95.00	-46.84	-6.79	0.00	-399.98	0.00	399.98	3630.25	1815.12	6378.69	3194.08	7.50	-0.778	0.000	0.138
100.00	-45.21	-6.65	0.00	-366.02	0.00	366.02	3560.41	1780.20	6084.79	3046.92	8.34	-0.824	0.000	0.133
105.00	-43.63	-6.51	0.00	-332.75	0.00	332.75	3488.97	1744.49	5794.96	2901.79	9.23	-0.870	0.000	0.127
110.00	-42.08	-6.36	0.00	-300.19	0.00	300.19	3415.94	1707.97	5509.43	2758.81	10.17	-0.915	0.000	0.121
112.00	-41.46	-6.31	0.00	-287.47	0.00	287.47	3386.28	1693.14	5396.47	2702.25	10.56	-0.934	0.000	0.119
115.00	-40.13	-6.21	0.00	-268.55	0.00	268.55	3341.31	1670.66	5228.42	2618.09	11.15	-0.961	0.000	0.115
117.00	-39.25	-6.15	0.00	-256.13	0.00	256.13	2298.09	1149.05	3623.03	1814.21	11.56	-0.978	0.000	0.158
120.00	-38.49	-6.08	0.00	-237.67	0.00	237.67	2271.88	1135.94	3516.17	1760.70	12.18	-1.005	0.000	0.152
125.00	-32.59	-5.14	0.00	-207.28	0.00	207.28	2226.92	1113.46	3339.52	1672.24	13.26	-1.057	0.000	0.139
130.00	-31.43	-5.00	0.00	-181.58	0.00	181.58	2180.36	1090.18	3164.87	1584.79	14.40	-1.108	0.000	0.129
135.00	-30.30	-4.86	0.00	-156.57	0.00	156.57	2132.21	1066.11	2992.46	1498.45	15.58	-1.156	0.000	0.119
140.00	-29.21	-4.73	0.00	-132.25	0.00	132.25	2082.46	1041.23	2822.51	1413.35	16.82	-1.202	0.000	0.108
145.00	-28.15	-4.58	0.00	-108.61	0.00	108.61	2031.11	1015.56	2655.26	1329.61	18.10	-1.244	0.000	0.096
147.50	-24.83	-4.16	0.00	-97.15	0.00	97.15	2004.84	1002.42	2572.72	1288.27	18.76	-1.264	0.000	0.088
150.00	-24.32	-4.10	0.00	-86.75	0.00	86.75	1978.17	989.08	2490.94	1247.32	19.43	-1.283	0.000	0.082
150.00	-24.32	-4.10	0.00	-86.75	0.00	86.75	1416.47	708.23	1790.91	896.79	19.43	-1.283	0.000	0.114
155.00	-23.45	-3.96	0.00	-66.27	0.00	66.27	1383.33	691.66	1682.50	842.50	20.79	-1.316	0.000	0.096
160.00	-22.60	-3.83	0.00	-46.46	0.00	46.46	1348.59	674.30	1575.42	788.88	22.19	-1.352	0.000	0.076
165.00	-21.79	-3.69	0.00	-27.32	0.00	27.32	1312.26	656.13	1469.88	736.03	23.62	-1.378	0.000	0.054
167.00	-10.90	-1.96	0.00	-19.93	0.00	19.93	1297.28	648.64	1428.15	715.14	24.20	-1.385	0.000	0.036
170.00	-10.44	-1.88	0.00	-14.05	0.00	14.05	1274.33	637.17	1366.13	684.08	25.07	-1.394	0.000	0.029
175.00	-9.70	-1.75	0.00	-4.66	0.00	4.66	1234.81	617.40	1264.39	633.13	26.53	-1.402	0.000	0.015
177.00	-0.38	-0.08	0.00	-0.23	0.00	0.23	1218.55	609.28	1224.31	613.06	27.12	-1.404	0.000	0.001
180.00	0.00	-0.07	0.00	0.00	0.00	0.00	1193.69	596.84	1164.89	583.31	28.00	-1.404	0.000	0.000

Wind Loading - Shaft

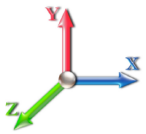
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	270.20	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	265.27	0.650	0.000	5.00	26.667	17.33	116.9	0.0	1478.7
10.00		1.00	0.70	6.129	6.74	260.34	0.650	0.000	5.00	26.176	17.01	114.7	0.0	1451.3
15.00		1.00	0.70	6.129	6.74	255.41	0.650	0.000	5.00	25.685	16.70	112.6	0.0	1423.9
20.00		1.00	0.70	6.129	6.74	250.48	0.650	0.000	5.00	25.194	16.38	110.4	0.0	1396.5
25.00		1.00	0.70	6.129	6.74	245.55	0.650	0.000	5.00	24.702	16.06	108.2	0.0	1369.0
30.00		1.00	0.70	6.134	6.75	240.71	0.650	0.000	5.00	24.211	15.74	106.2	0.0	1341.6
35.00		1.00	0.73	6.410	7.05	241.03	0.650	0.000	5.00	23.720	15.42	108.7	0.0	1314.2
38.00	Bot - Section 2	1.00	0.75	6.562	7.22	240.82	0.650	0.000	3.00	13.996	9.10	65.7	0.0	775.3
40.00		1.00	0.76	6.659	7.33	240.53	0.650	0.000	2.00	9.381	6.10	44.7	0.0	1031.1
45.00	Top - Section 1	1.00	0.79	6.887	7.58	239.38	0.650	0.000	5.00	23.108	15.02	113.8	0.0	2539.3
50.00		1.00	0.81	7.098	7.81	241.71	0.650	0.000	5.00	22.617	14.70	114.8	0.0	1252.5
55.00		1.00	0.83	7.294	8.02	239.64	0.650	0.000	5.00	22.125	14.38	115.4	0.0	1225.1
60.00		1.00	0.85	7.477	8.22	237.19	0.650	0.000	5.00	21.634	14.06	115.7	0.0	1197.7
65.00		1.00	0.87	7.650	8.42	234.41	0.650	0.000	5.00	21.143	13.74	115.6	0.0	1170.3
70.00		1.00	0.89	7.814	8.60	231.33	0.650	0.000	5.00	20.652	13.42	115.4	0.0	1142.8
75.00		1.00	0.91	7.969	8.77	228.00	0.650	0.000	5.00	20.160	13.10	114.9	0.0	1115.4
77.00	Bot - Section 3	1.00	0.92	8.030	8.83	226.60	0.650	0.000	2.00	7.927	5.15	45.5	0.0	438.5
80.00		1.00	0.93	8.118	8.93	224.44	0.650	0.000	3.00	11.933	7.76	69.3	0.0	1216.1
83.00	Top - Section 2	1.00	0.94	8.204	9.02	222.20	0.650	0.000	3.00	11.756	7.64	69.0	0.0	1197.7
85.00		1.00	0.94	8.260	9.09	224.36	0.650	0.000	2.00	7.739	5.03	45.7	0.0	367.4
90.00		1.00	0.96	8.396	9.24	220.43	0.650	0.000	5.00	19.004	12.35	114.1	0.0	902.0
95.00		1.00	0.97	8.526	9.38	216.32	0.650	0.000	5.00	18.513	12.03	112.9	0.0	878.5
100.00		1.00	0.99	8.652	9.52	212.05	0.650	0.000	5.00	18.022	11.71	111.5	0.0	854.9
105.00		1.00	1.00	8.774	9.65	207.63	0.650	0.000	5.00	17.530	11.39	110.0	0.0	831.4
110.00		1.00	1.02	8.891	9.78	203.08	0.650	0.000	5.00	17.039	11.08	108.3	0.0	807.9
112.00	Bot - Section 4	1.00	1.02	8.937	9.83	201.22	0.650	0.000	2.00	6.678	4.34	42.7	0.0	316.6
115.00		1.00	1.03	9.005	9.91	198.39	0.650	0.000	3.00	10.013	6.51	64.5	0.0	824.7
117.00	Top - Section 3	1.00	1.03	9.049	9.95	196.49	0.650	0.000	2.00	6.577	4.27	42.6	0.0	541.6
120.00		1.00	1.04	9.115	10.03	196.50	0.650	0.000	3.00	9.718	6.32	63.3	0.0	346.3
125.00	Appurtenance(s)	1.00	1.05	9.222	10.14	191.60	0.650	0.000	5.00	15.803	10.27	104.2	0.0	563.1
130.00		1.00	1.07	9.326	10.26	186.60	0.650	0.000	5.00	15.312	9.95	102.1	0.0	545.5
135.00		1.00	1.08	9.427	10.37	181.49	0.650	0.000	5.00	14.821	9.63	99.9	0.0	527.8
140.00		1.00	1.09	9.525	10.48	176.29	0.650	0.000	5.00	14.330	9.31	97.6	0.0	510.2
145.00		1.00	1.10	9.621	10.58	170.99	0.650	0.000	5.00	13.839	9.00	95.2	0.0	492.6
147.50	Appurtenance(s)	1.00	1.10	9.668	10.64	168.31	0.650	0.000	2.50	6.735	4.38	46.6	0.0	239.7
150.00	Top - Section 4	1.00	1.11	9.715	10.69	165.61	0.650	0.000	2.50	6.612	4.30	45.9	0.0	235.3
155.00		1.00	1.12	9.806	10.79	160.15	0.650	0.000	5.00	12.856	8.36	90.1	0.0	356.4
160.00		1.00	1.13	9.896	10.89	154.61	0.650	0.000	5.00	12.365	8.04	87.5	0.0	342.7
165.00		1.00	1.14	9.983	10.98	149.00	0.650	0.000	5.00	11.874	7.72	84.8	0.0	329.0
167.00	Appurtenance(s)	1.00	1.14	10.017	11.02	146.73	0.650	0.000	2.00	4.612	3.00	33.0	0.0	127.8
170.00		1.00	1.15	10.069	11.08	143.31	0.650	0.000	3.00	6.770	4.40	48.7	0.0	187.5
175.00		1.00	1.16	10.152	11.17	137.56	0.650	0.000	5.00	10.891	7.08	79.1	0.0	301.6
177.00	Appurtenance(s)	1.00	1.16	10.185	11.20	135.24	0.650	0.000	2.00	4.219	2.74	30.7	0.0	116.8
180.00		1.00	1.17	10.234	11.26	131.74	0.650	0.000	3.00	6.181	4.02	45.2	0.0	171.1
								Totals:	**180.00**			**3,783.3**		**35,795.2**

Discrete Appurtenance Forces

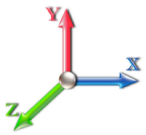
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	MT6407-77A	3	10.202	11.222	0.52	0.75	7.39	238.20	0.000	1.000	82.89	0.00	82.89
2	177.00	Low Profile Platform	1	10.185	11.204	1.00	1.00	22.00	1500.00	0.000	0.000	246.48	0.00	0.00
3	177.00	NHH-65B-R2B	6	10.202	11.222	0.62	0.75	30.18	262.20	0.000	1.000	338.66	0.00	338.66
4	177.00	LPA-80063/8CF	6	10.202	11.222	0.70	0.75	57.21	228.00	0.000	1.000	641.99	0.00	641.99
5	177.00	BSAMNT-SBS-1-2	1	10.185	11.204	1.00	1.00	0.00	25.35	0.000	0.000	0.00	0.00	0.00
6	177.00	Samsung RF4439d-25A	3	10.202	11.222	0.50	0.75	2.83	253.20	0.000	1.000	31.80	0.00	31.80
7	177.00	Samsung RF4440-13A	3	10.202	11.222	0.50	0.75	2.83	210.90	0.000	1.000	31.80	0.00	31.80
8	177.00	RFS DB-C1-12C-24AB-0Z	1	10.202	11.222	0.75	0.75	3.04	32.00	0.000	1.000	34.17	0.00	34.17
9	177.00	Handrails	1	10.185	11.204	1.00	1.00	9.75	406.61	0.000	0.000	109.24	0.00	0.00
10	167.00	RMQP-4096-HK Plat. +	1	10.017	11.019	1.00	1.00	51.70	2645.00	0.000	0.000	569.69	0.00	0.00
11	167.00	Ericsson 4460 B25 + B66	3	10.017	11.019	0.50	0.75	4.30	327.00	0.000	0.000	47.34	0.00	0.00
12	167.00	Ericsson 4480 B71 + B85	3	10.017	11.019	0.50	0.75	4.30	279.00	0.000	0.000	47.34	0.00	0.00
13	167.00	RFS SC2-W100BD	1	10.017	11.019	1.00	1.00	2.71	18.00	0.000	0.000	29.86	0.00	0.00
14	167.00	Commscope VV-65A-R1	3	10.017	11.019	0.54	0.75	34.21	550.20	0.000	0.000	377.02	0.00	0.00
15	167.00	RFS	3	10.017	11.019	0.55	0.75	33.24	368.40	0.000	0.000	366.32	0.00	0.00
16	167.00	Ericsson AIR6419 B41	3	10.017	11.019	0.57	0.75	6.50	198.30	0.000	0.000	71.60	0.00	0.00
17	147.50	Low Profile Platform	1	9.668	10.635	1.00	1.00	22.00	1500.00	0.000	0.000	233.97	0.00	0.00
18	125.00	MC-PK8-C	1	9.222	10.144	1.00	1.00	33.60	1411.00	0.000	0.000	340.84	0.00	0.00
19	125.00	Raycap	1	9.222	10.144	1.00	1.00	2.01	21.90	0.000	0.000	20.39	0.00	0.00
20	125.00	Fujitsu TA08025-B604	3	9.222	10.144	0.50	0.75	2.95	191.70	0.000	0.000	29.97	0.00	0.00
21	125.00	Fujitsu TA08025-B605	3	9.222	10.144	0.50	0.75	2.95	225.00	0.000	0.000	29.97	0.00	0.00
22	125.00	JMA Wireless	3	9.222	10.144	0.55	0.75	20.80	193.50	0.000	0.000	210.95	0.00	0.00
							Totals:		**11,085.46**			**3,892.33**		

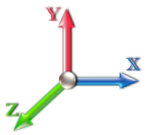
Total Applied Force Summary

Structure:	CT02219-S-SBA		**Code:**	TIA-222-G	6/10/2022
Site Name:	North Franklin		**Exposure:**	B	
Height:	180.00 (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

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		116.86	1571.44	0.00	0.00
10.00		114.70	1544.01	0.00	0.00
15.00		112.55	1516.58	0.00	0.00
20.00		110.40	1489.15	0.00	0.00
25.00		108.25	1461.72	0.00	0.00
30.00		106.18	1434.29	0.00	0.00
35.00		108.71	1406.86	0.00	0.00
38.00		65.67	830.95	0.00	0.00
40.00		44.66	1068.15	0.00	0.00
45.00		113.79	2631.97	0.00	0.00
50.00		114.78	1345.24	0.00	0.00
55.00		115.38	1317.81	0.00	0.00
60.00		115.66	1290.38	0.00	0.00
65.00		115.65	1262.95	0.00	0.00
70.00		115.38	1235.52	0.00	0.00
75.00		114.88	1208.09	0.00	0.00
77.00		45.51	475.56	0.00	0.00
80.00		69.26	1271.68	0.00	0.00
83.00		68.96	1253.34	0.00	0.00
85.00		45.70	404.45	0.00	0.00
90.00		114.08	994.67	0.00	0.00
95.00		112.86	971.16	0.00	0.00
100.00		111.49	947.65	0.00	0.00
105.00		109.97	924.14	0.00	0.00
110.00		108.32	900.63	0.00	0.00
112.00		42.67	353.67	0.00	0.00
115.00		64.46	880.36	0.00	0.00
117.00		42.55	578.68	0.00	0.00
120.00		63.33	401.95	0.00	0.00
125.00	(11) attachments	736.32	2698.91	0.00	0.00
130.00		102.10	629.08	0.00	0.00
135.00		99.90	611.44	0.00	0.00
140.00		97.59	593.80	0.00	0.00
145.00		95.20	576.17	0.00	0.00
147.50	(1) attachments	280.53	1781.47	0.00	0.00
150.00		45.93	277.06	0.00	0.00
155.00		90.14	440.03	0.00	0.00
160.00		87.49	426.31	0.00	0.00
165.00		84.75	412.59	0.00	0.00
167.00	(17) attachments	1542.22	4547.10	0.00	0.00
170.00		48.74	228.26	0.00	0.00
175.00		79.06	369.46	0.00	0.00
177.00	(25) attachments	1547.77	3300.40	0.00	1161.33
180.00		45.23	171.06	0.00	0.00
	Totals:	**7,675.63**	**50,036.23**	**0.00**	**1,161.33**

Linear Appurtenance Segment Forces (Factored)

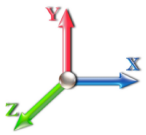
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	6.129	0.00	9.10
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.025	0.000	6.129	0.00	9.10
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	6.129	0.00	9.10
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	6.129	0.00	9.10
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	6.129	0.00	9.10
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	6.134	0.00	9.10
35.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	6.410	0.00	9.10
38.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.029	0.000	6.562	0.00	5.46
40.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.029	0.000	6.659	0.00	3.64
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	6.887	0.00	9.10
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	7.098	0.00	9.10
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	7.294	0.00	9.10
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	7.477	0.00	9.10
65.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	7.650	0.00	9.10
70.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	7.814	0.00	9.10
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	7.969	0.00	9.10
77.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	8.030	0.00	3.64
80.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	8.118	0.00	5.46
83.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.035	0.000	8.204	0.00	5.46
85.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.034	0.000	8.260	0.00	3.64
90.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	8.396	0.00	9.10
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	8.526	0.00	9.10
100.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	8.652	0.00	9.10
105.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	8.774	0.00	9.10
110.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	8.891	0.00	9.10
112.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.040	0.000	8.937	0.00	3.64
115.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	9.005	0.00	5.46
117.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.041	0.000	9.049	0.00	3.64
120.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.041	0.000	9.115	0.00	5.46
125.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	9.222	0.00	9.10
									Totals:		**0.0**	**227.5**

Calculated Forces

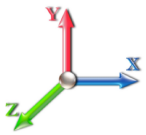
Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

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	-50.03	-7.69	0.00	-1000.9	0.00	1000.91	5755.79	2877.89	14954.5	7488.40	0.00	0.000	0.000	0.142
5.00	-48.46	-7.60	0.00	-962.47	0.00	962.47	5692.65	2846.33	14516.8	7269.20	0.02	-0.032	0.000	0.141
10.00	-46.91	-7.51	0.00	-924.48	0.00	924.48	5627.92	2813.96	14081.1	7051.05	0.07	-0.064	0.000	0.139
15.00	-45.39	-7.42	0.00	-886.93	0.00	886.93	5561.60	2780.80	13647.8	6834.05	0.15	-0.096	0.000	0.138
20.00	-43.90	-7.33	0.00	-849.83	0.00	849.83	5493.67	2746.84	13216.9	6618.32	0.27	-0.129	0.000	0.136
25.00	-42.43	-7.25	0.00	-813.17	0.00	813.17	5424.15	2712.07	12788.9	6403.97	0.42	-0.163	0.000	0.135
30.00	-40.99	-7.16	0.00	-776.94	0.00	776.94	5353.03	2676.51	12363.8	6191.13	0.61	-0.197	0.000	0.133
35.00	-39.58	-7.06	0.00	-741.15	0.00	741.15	5280.31	2640.16	11942.0	5979.90	0.84	-0.232	0.000	0.131
38.00	-38.75	-7.01	0.00	-719.95	0.00	719.95	5235.92	2617.96	11690.6	5853.99	0.99	-0.253	0.000	0.130
40.00	-37.68	-6.97	0.00	-705.94	0.00	705.94	5206.00	2603.00	11523.6	5770.41	1.10	-0.268	0.000	0.130
45.00	-35.04	-6.87	0.00	-671.06	0.00	671.06	5187.44	2593.72	11421.1	5719.07	1.40	-0.303	0.000	0.124
50.00	-33.69	-6.77	0.00	-636.72	0.00	636.72	5111.14	2555.57	11007.4	5511.90	1.74	-0.339	0.000	0.122
55.00	-32.37	-6.66	0.00	-602.87	0.00	602.87	5033.24	2516.62	10597.6	5306.71	2.11	-0.374	0.000	0.120
60.00	-31.08	-6.56	0.00	-569.55	0.00	569.55	4953.74	2476.87	10192.1	5103.63	2.52	-0.409	0.000	0.118
65.00	-29.81	-6.45	0.00	-536.76	0.00	536.76	4872.64	2436.32	9790.99	4902.77	2.97	-0.445	0.000	0.116
70.00	-28.57	-6.35	0.00	-504.49	0.00	504.49	4789.95	2394.98	9394.53	4704.25	3.45	-0.481	0.000	0.113
75.00	-27.37	-6.23	0.00	-472.76	0.00	472.76	4705.66	2352.83	9002.97	4508.18	3.98	-0.517	0.000	0.111
77.00	-26.89	-6.19	0.00	-460.30	0.00	460.30	4671.50	2335.75	8847.77	4430.46	4.20	-0.532	0.000	0.110
80.00	-25.61	-6.12	0.00	-441.73	0.00	441.73	4619.77	2309.89	8616.54	4314.67	4.54	-0.555	0.000	0.108
83.00	-24.36	-6.05	0.00	-423.37	0.00	423.37	3791.35	1895.67	7099.23	3554.89	4.90	-0.577	0.000	0.126
85.00	-23.95	-6.01	0.00	-411.27	0.00	411.27	3765.13	1882.57	6977.74	3494.06	5.14	-0.592	0.000	0.124
90.00	-22.96	-5.90	0.00	-381.23	0.00	381.23	3698.49	1849.25	6676.41	3343.17	5.78	-0.633	0.000	0.120
95.00	-21.98	-5.79	0.00	-351.73	0.00	351.73	3630.25	1815.12	6378.69	3194.08	6.47	-0.674	0.000	0.116
100.00	-21.03	-5.68	0.00	-322.77	0.00	322.77	3560.41	1780.20	6084.79	3046.92	7.20	-0.714	0.000	0.112
105.00	-20.10	-5.58	0.00	-294.35	0.00	294.35	3488.97	1744.49	5794.96	2901.79	7.97	-0.755	0.000	0.107
110.00	-19.20	-5.47	0.00	-266.47	0.00	266.47	3415.94	1707.97	5509.43	2758.81	8.78	-0.795	0.000	0.102
112.00	-18.85	-5.42	0.00	-255.54	0.00	255.54	3386.28	1693.14	5396.47	2702.25	9.11	-0.811	0.000	0.100
115.00	-17.97	-5.35	0.00	-239.27	0.00	239.27	3341.31	1670.66	5228.42	2618.09	9.63	-0.835	0.000	0.097
117.00	-17.39	-5.31	0.00	-228.57	0.00	228.57	2298.09	1149.05	3623.03	1814.21	9.98	-0.851	0.000	0.134
120.00	-16.98	-5.25	0.00	-212.64	0.00	212.64	2271.88	1135.94	3516.17	1760.70	10.53	-0.874	0.000	0.128
125.00	-14.29	-4.48	0.00	-186.40	0.00	186.40	2226.92	1113.46	3339.52	1672.24	11.47	-0.921	0.000	0.118
130.00	-13.66	-4.38	0.00	-163.98	0.00	163.98	2180.36	1090.18	3164.87	1584.79	12.46	-0.967	0.000	0.110
135.00	-13.05	-4.28	0.00	-142.08	0.00	142.08	2132.21	1066.11	2992.46	1498.45	13.49	-1.011	0.000	0.101
140.00	-12.45	-4.18	0.00	-120.68	0.00	120.68	2082.46	1041.23	2822.51	1413.35	14.58	-1.052	0.000	0.091
145.00	-11.88	-4.08	0.00	-99.78	0.00	99.78	2031.11	1015.56	2655.26	1329.61	15.70	-1.091	0.000	0.081
147.50	-10.10	-3.77	0.00	-89.58	0.00	89.58	2004.84	1002.42	2572.72	1288.27	16.28	-1.109	0.000	0.075
150.00	-9.82	-3.72	0.00	-80.16	0.00	80.16	1978.17	989.08	2490.94	1247.32	16.86	-1.127	0.000	0.069
150.00	-9.82	-3.72	0.00	-80.16	0.00	80.16	1416.47	708.23	1790.91	896.79	16.86	-1.127	0.000	0.096
155.00	-9.38	-3.63	0.00	-61.55	0.00	61.55	1383.33	691.66	1682.50	842.50	18.06	-1.158	0.000	0.080
160.00	-8.96	-3.54	0.00	-43.41	0.00	43.41	1348.59	674.30	1575.42	788.88	19.29	-1.191	0.000	0.062
165.00	-8.54	-3.45	0.00	-25.73	0.00	25.73	1312.26	656.13	1469.88	736.03	20.55	-1.215	0.000	0.041
167.00	-4.03	-1.81	0.00	-18.84	0.00	18.84	1297.28	648.64	1428.15	715.14	21.06	-1.222	0.000	0.029
170.00	-3.80	-1.75	0.00	-13.41	0.00	13.41	1274.33	637.17	1366.13	684.08	21.83	-1.230	0.000	0.023
175.00	-3.44	-1.67	0.00	-4.64	0.00	4.64	1234.81	617.40	1264.39	633.13	23.13	-1.239	0.000	0.010
177.00	-0.17	-0.05	0.00	-0.15	0.00	0.15	1218.55	609.28	1224.31	613.06	23.65	-1.240	0.000	0.000
180.00	0.00	-0.05	0.00	0.00	0.00	0.00	1193.69	596.84	1164.89	583.31	24.42	-1.240	0.000	0.000

Final Analysis Summary

Structure:	CT02219-S-SBA	**Code:**	TIA-222-G	6/10/2022	
Site Name:	North Franklin	**Exposure:**	B		
Height:	180.00 (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	

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 101 mph Wind	34.9	0.00	60.00	0.00	0.00	4565.67
0.9D + 1.6W 101 mph Wind	34.9	0.00	44.99	0.00	0.00	4516.37
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.1	0.00	90.80	0.00	0.00	1167.98
1.0D + 1.0W 60 mph Wind	7.7	0.00	50.03	0.00	0.00	1000.91

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 101 mph Wind	-60.00	-34.88	0.00	-4565.6	0.00	-4565.6	5755.79	2877.8	14954.5	7488.40	0.00	0.620
0.9D + 1.6W 101 mph Wind	-44.99	-34.86	0.00	-4516.3	0.00	-4516.3	5755.79	2877.8	14954.5	7488.40	0.00	0.611
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-90.80	-9.08	0.00	-1167.9	0.00	-1167.9	5755.79	2877.8	14954.5	7488.40	0.00	0.172
1.0D + 1.0W 60 mph Wind	-50.03	-7.69	0.00	-1000.9	0.00	-1000.9	5755.79	2877.8	14954.5	7488.40	0.00	0.142

Base Plate Summary

Structure:	CT02219-S-SB		**Code:**	TIA-222-G	6/10/2022
Site Name:	North Franklin		**Exposure:**	B	
Height:	180.00 (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

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Reactions

Original Design

Moment (kip-ft):	5900.00
Axial (kip):	46.00
Shear (kip):	45.00

Analysis (1.2D + 1.6W)

Moment (kip-ft):	4565.67
Axial (kip):	60.00
Shear (kip):	34.88

Base Plate

Yield (ksi):	55.00
Width (in):	71.00
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	14.00
Effective Len (in):	8.13
Moment (kip-in):	489.20
Allow Stress (ksi):	74.25
Applied Stress (ksi):	40.09
Stress Ratio:	0.54

Anchor Bolts

Bolt Circle:	71.00
Number Bolts:	24.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	5.00
Start Angle (deg):	45.00

Compression

Force (kip):	132.39
Allowable (kip):	260.00
Ratio:	0.52

Tension

Force (kip):	124.83
Allowable (kip):	260.00
Ratio:	0.49

Monopole Mat Foundation Design

				Date
				6/10/2022
	Customer Name:	T-Mobile	**TIA Standard:**	TIA-222-G
	Site Name:		**Structure Height (Ft.):**	180
	Site Number:	CT02219-S-SBA	**Engineer Name:**	K. Azisllari
	Engr. Number:	130362	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

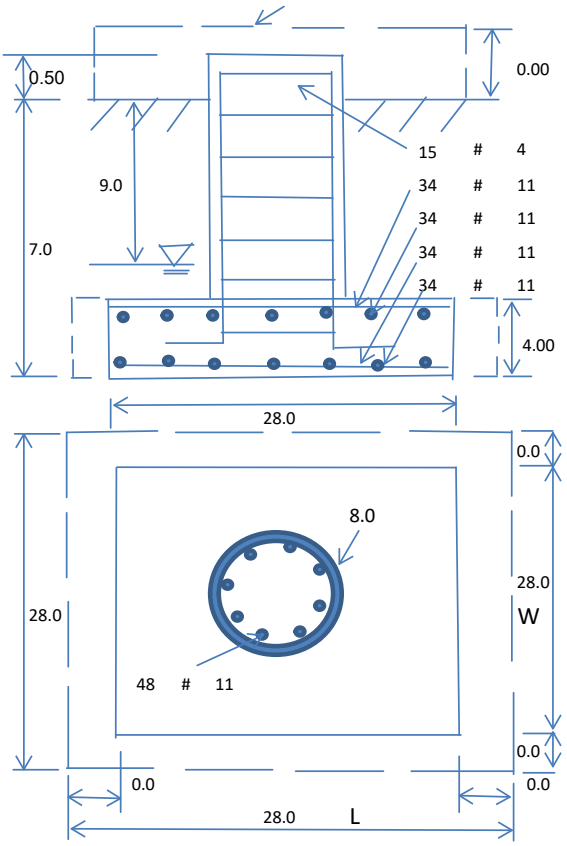
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	60.0	Shear Force (Kips):	34.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4565.7
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	7.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	28	Width of Pad (ft.):	28
Final Length of pad (ft)	28.0	Final width of pad (ft):	28.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	48	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	11	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	34	Qty. of Rebar in Pad (W):	34	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	34	Qty. of Rebar in Pad (W):	34	
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):	9.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

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

Total Dry Soil Volume (cu. Ft.):	2201.20	Total Dry Soil Weight (Kips):	275.15
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	275.15	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3311.93	Total Dry Concrete Weight (Kips):	496.79
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	496.79	Total Vertical Load on Base (Kips):	831.94

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2384	<	Allowable Factored Soil Bearing (psf):	7500	0.32	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	10566.4	>	Design Factored Momont (kips-ft):	4827	0.46	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.19	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):	1.56		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	13572.9	>	Design Factored Moment (Mu, Kips-F	4687.9	0.35	OK!
Calculated Shear Capacity (Kips):	901.9	>	Design Factored Shear (Kips):	34.9	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	4043.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9498.6	>	Design Factored Axial Load (Pu Kips):	60.0	0.01	OK!
Moment & Axial Strength Combination:	0.35	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.010		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1223.3	>	One-Way Factored Shear (L-D. Kips):	256.7	0.21	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1223.3	>	One-Way Factored Shear (W-D., Kips)	256.7	0.21	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1057.8	>	One-Way Factored Shear (C-C, Kips):	240.3	0.23	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0036		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	10133.2	>	Moment at Bottom (L-Dir. K-Ft):	1712.9	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	10133.2	>	Moment at Bottom (W-Dir. K-Ft):	1712.9	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	14171.9	>	Moment at Bottom (C-C Dir. K-Ft):	2422.4	0.17	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0036		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	10133.2	>	Moment at the top (L-Dir K-Ft):	748.3	0.07	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	10133.2	>	Moment at the top (W-Dir K-Ft):	748.3	0.07	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	14171.9	>	Moment at the top (C-C Dir. K-Ft):	702.7	0.05	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1826.3	k-ft.	Max. factored shear stress v_{u_CD}:		2.7	Psi
Max. factored shear stress v_{u_AB}:	7.3	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	7.3	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!

Exhibit E

Mount Analysis

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

Antenna Mount Analysis Report

Existing Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT02219-S-SBA

Customer Site Name: North Franklin

Carrier Name: T-Mobile (App#: 198416, V1)

Carrier Site ID / Name: CTNL121A / Ayer Road Franklin SBA

Site Location: 36 Ayer Road

Franklin, Connecticut

New London County

Latitude: 41.645802

Longitude: -72.128294

Analysis Result:

Max Structural Usage: 45.0% [Pass]

Report Prepared By: Venkata Annamreddy

NOTE: The proposed mount (1) SitePro RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

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Phone (972) 483-0607, Fax (972) 975-9615
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NOTE: The proposed mount (1) SitePro RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) SitePro RMQP-4096-HK at 167.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info provided by SBA; Application #:198416, v1; dated:5/31/2022 **[SitePro RMQP-4096-HK; Structural Drawing provided by Site Pro]**
Antenna Loading	SBA, Application #:198416, v1; dated:5/31/2022
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 130mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 101 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G / 2015 IBC
Exposure Category: B
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(1) SitePro RMQP-4096-HK at 167.00' elevation

Final Antenna Configuration

3	Ericsson AIR6419 B41
3	RFS APXVAALL24_43-U-NA20
3	Commscope VV-65A-R1
1	RFS SC2-W100BD
3	Ericsson 4480 B71 + B85
3	Ericsson 4460 B25 + B66

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

Analysis Results

Our calculations have determined that under design wind load the proposed mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 45.0%, which occurs in the mount pipe. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

NOTE: The proposed mount (1) SitePro RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

Attachments

1. Mount Assembly Drawing
2. Antenna Placement Diagram
3. Analysis Calculations

Standard Conditions

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

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

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

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

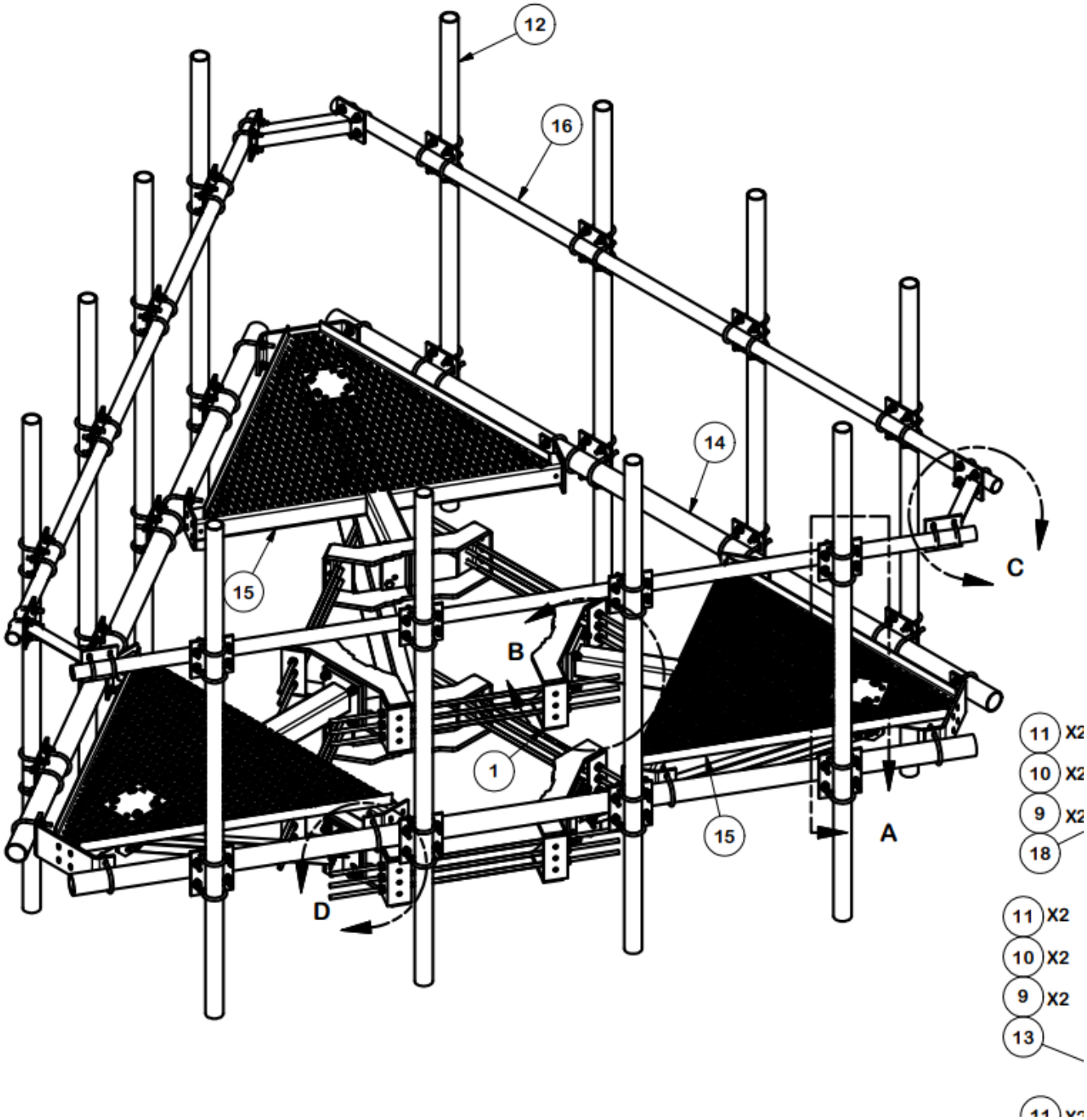
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

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

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

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

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


12
16
14
15
C
B
1
15
A
D
11 X2
10 X2
9 X2
18
11 X2
10 X2
9 X2
13

Structure: CT02219-S-SBA - North Franklin

Sector: A

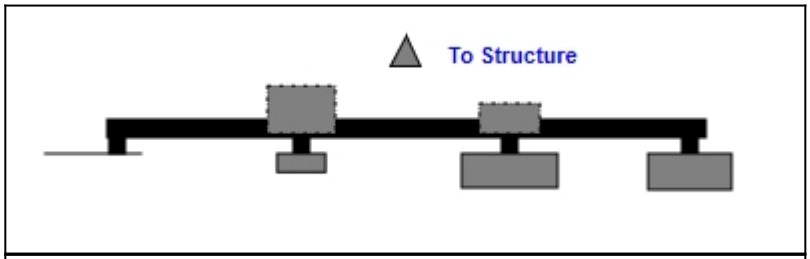
Structure Type: Monopole

Mount Elev: 167.00

6/7/2022

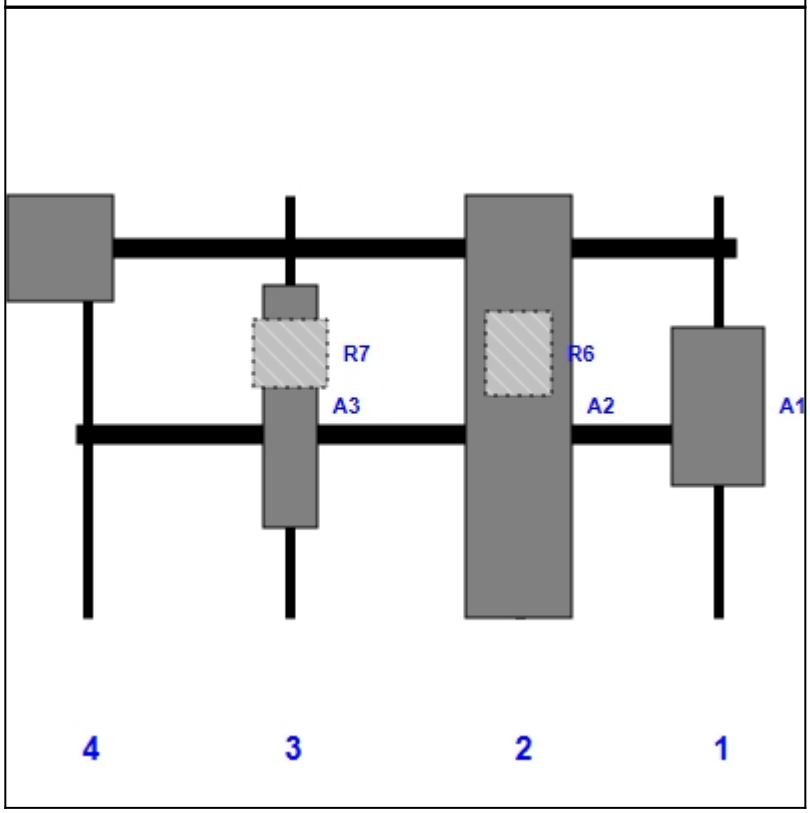
Tower Engineering Solutions

Plan View



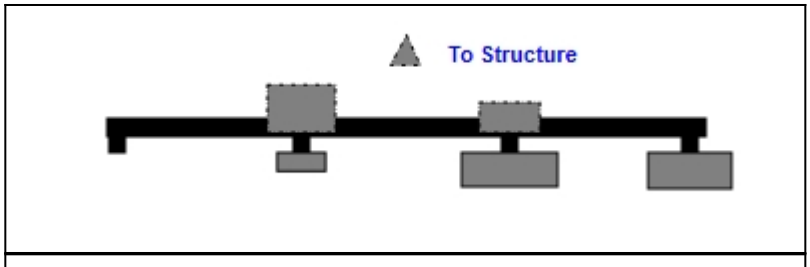
Front View

Looking Toward Structure



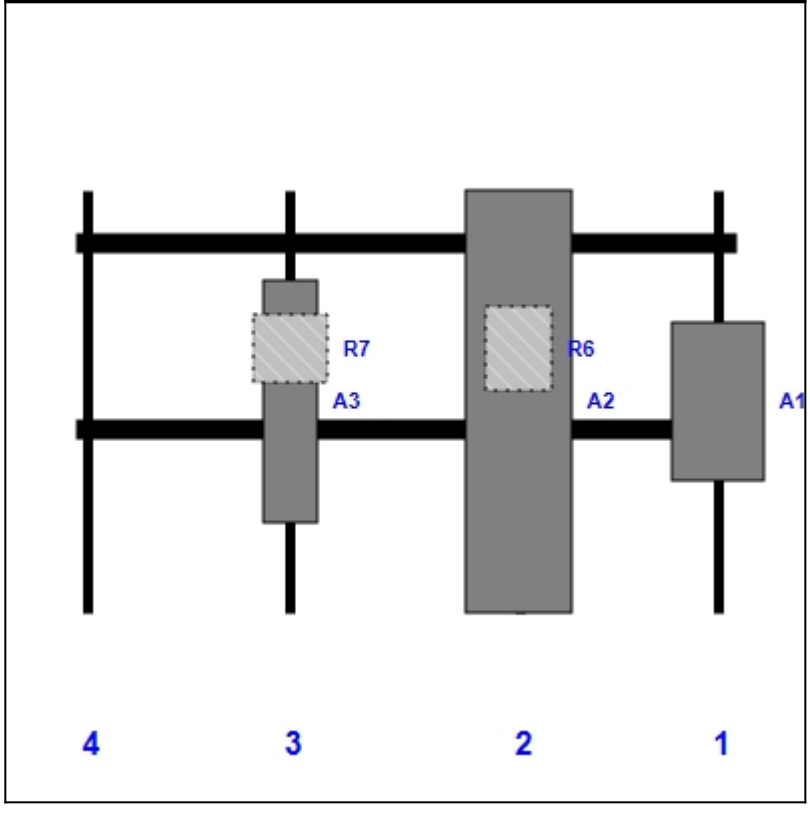
Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6419 B41	36.30	20.90	146.00	1	a	Front	48.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	101.00	2	a	Front	48.00		Added	
R6	4480 B71 + B85	19.20	15.10	101.00	2	a	Behind	36.00		Added	
A3	VV-65A-R1	54.72	12.08	49.00	3	a	Front	48.00		Added	
R7	4460 B25 + B66	15.10	17.00	49.00	3	a	Behind	36.00		Added	
A5	SC2-W100BD	24.00	24.00	3.00	4	a	Front	12.00	-6.00	Added	

Plan View



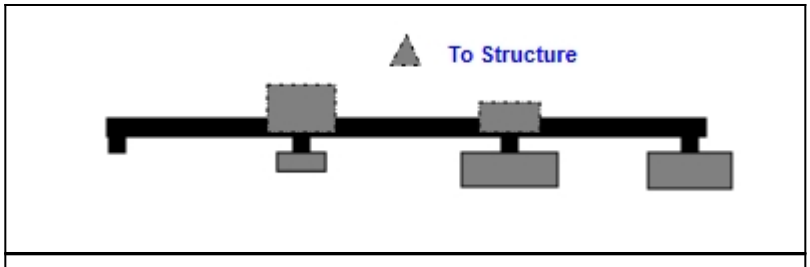
Front View

Looking Toward Structure



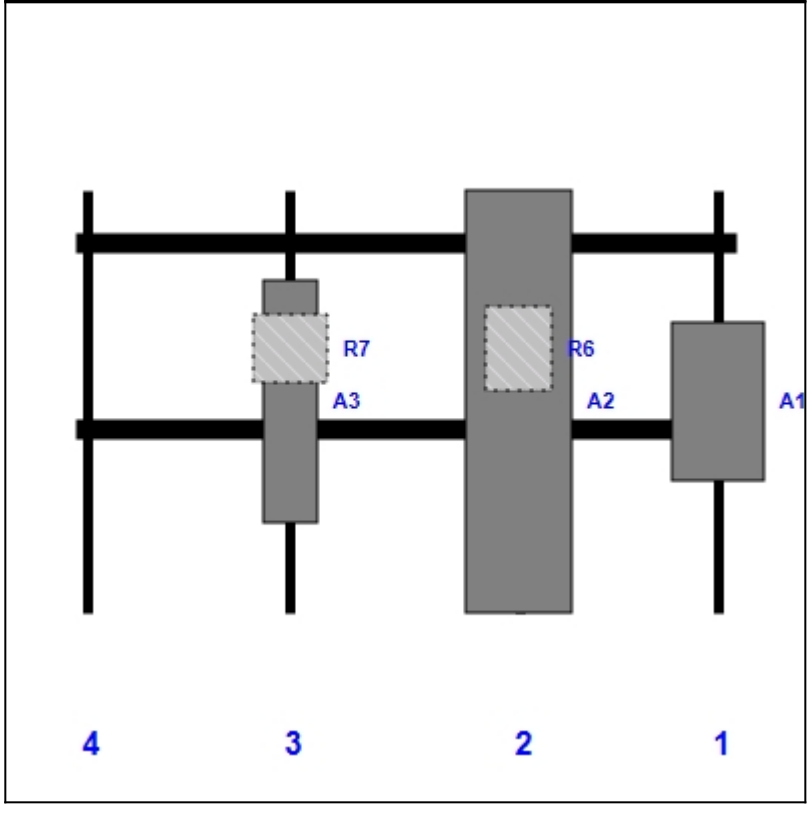
Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6419 B41	36.30	20.90	146.00	1	a	Front	48.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	101.00	2	a	Front	48.00		Added	
R6	4480 B71 + B85	19.20	15.10	101.00	2	a	Behind	36.00		Added	
A3	VV-65A-R1	54.72	12.08	49.00	3	a	Front	48.00		Added	
R7	4460 B25 + B66	15.10	17.00	49.00	3	a	Behind	36.00		Added	

Plan View

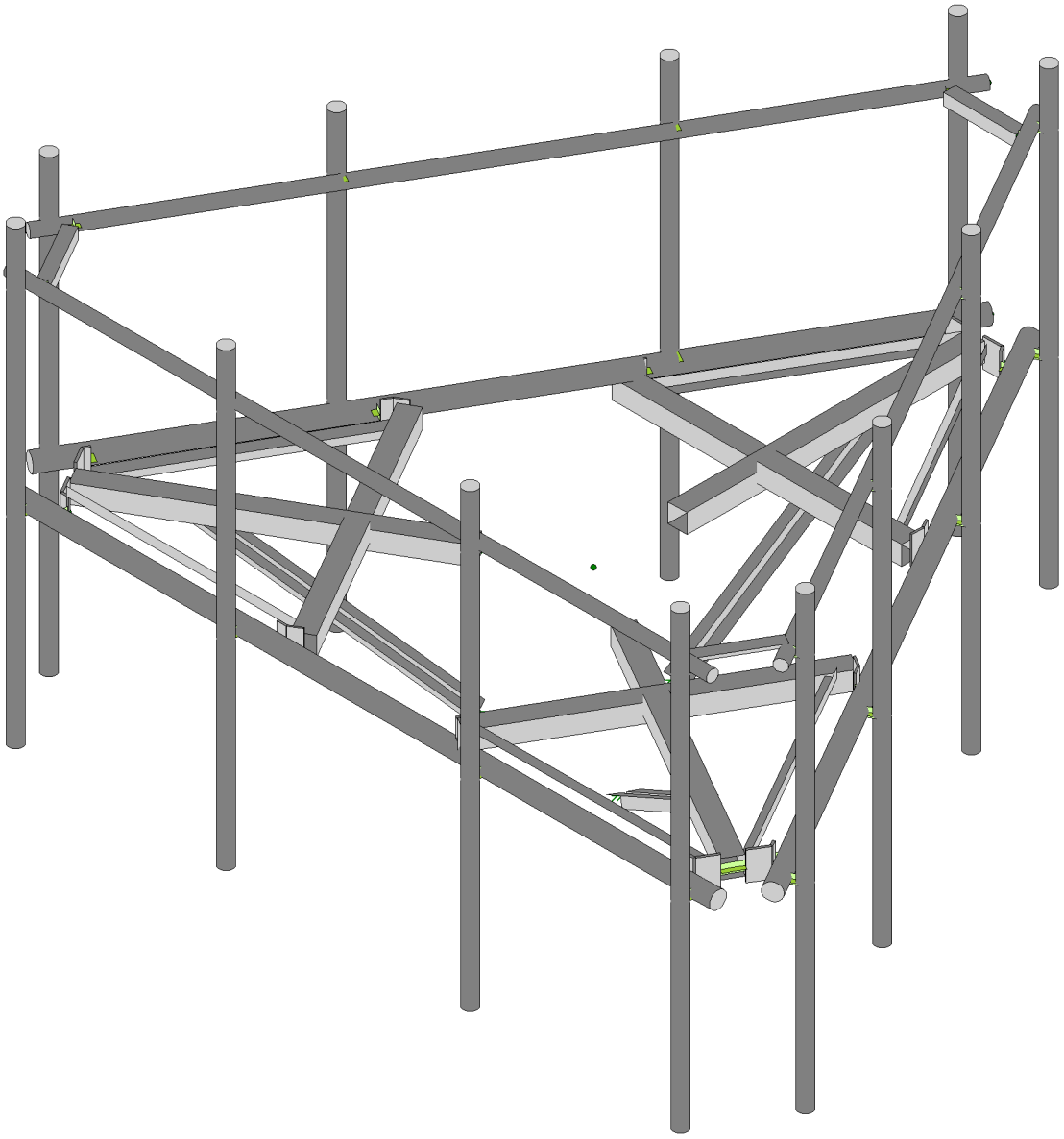


Front View

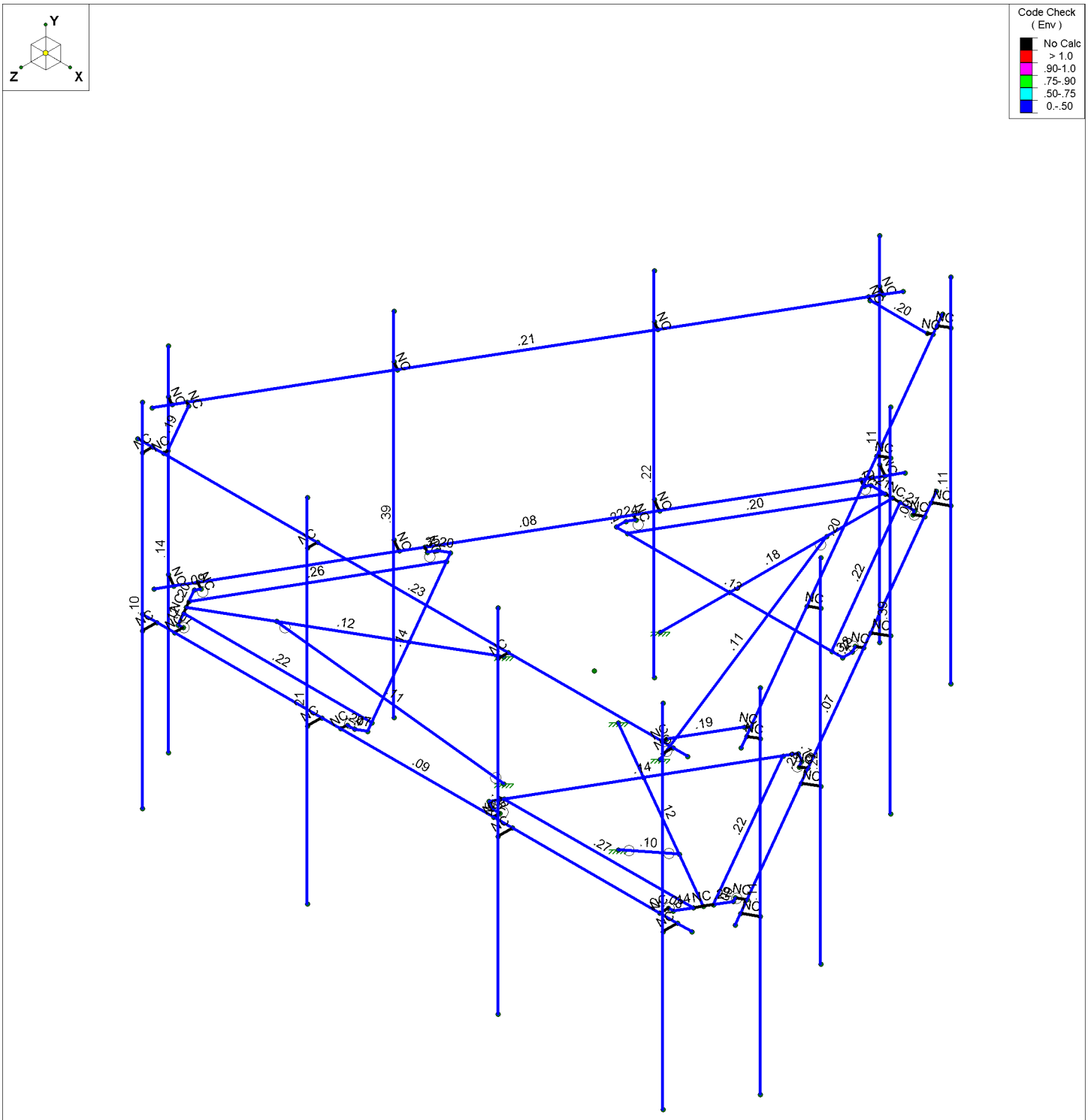
Looking Toward Structure



Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6419 B41	36.30	20.90	146.00	1	a	Front	48.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	101.00	2	a	Front	48.00		Added	
R6	4480 B71 + B85	19.20	15.10	101.00	2	a	Behind	36.00		Added	
A3	VV-65A-R1	54.72	12.08	49.00	3	a	Front	48.00		Added	
R7	4460 B25 + B66	15.10	17.00	49.00	3	a	Behind	36.00		Added	

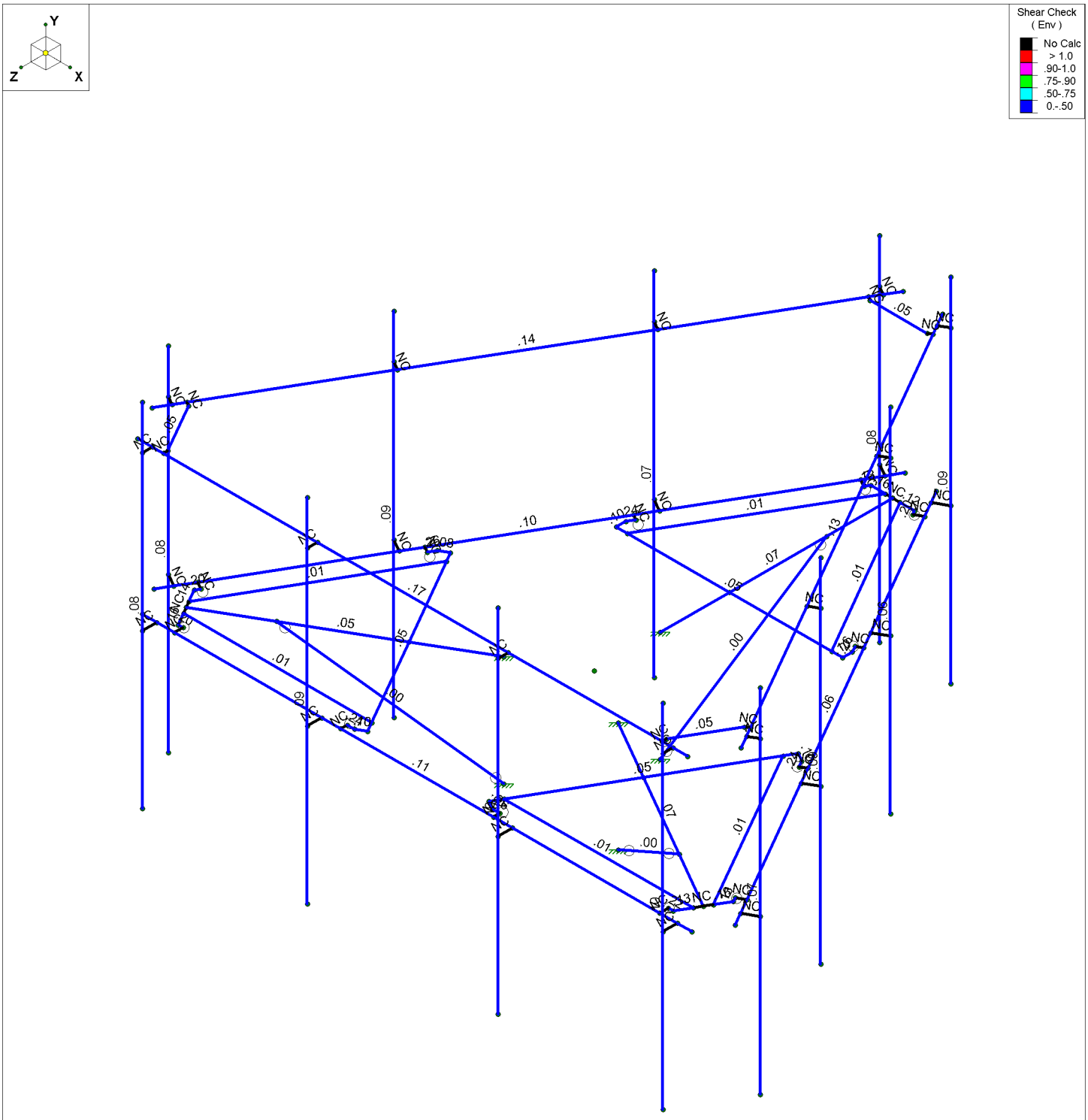


Tower Engineering Solutio...	CT02219-S-SBA_MT_LO_Loads Only_G	SK - 2
KW		June 7, 2022 at 11:12 AM
TES Project No. 129856		CT02219-S-SBA_129856_G_RISA_...



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

Tower Engineering Solutio...	CT02219-S-SBA_MT_LO_Loads Only_G	SK - 1
KW		June 7, 2022 at 11:11 AM
TES Project No. 129856		CT02219-S-SBA_129856_G_RISA_...



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

Tower Engineering Solutio...	CT02219-S-SBA_MT_LO_Loads Only_G	SK - 3
KW		June 7, 2022 at 11:12 AM
TES Project No. 129856		CT02219-S-SBA_129856_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					25			
2	Antenna Di	None					25			
3	Antenna W Front	None					25			
4	Antenna Wi Front	None					25			
5	Antenna W Side	None					25			
6	Antenna Wi Side	None					25			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						60	3	
11	Structure W Front	None						60		
12	Structure Wi Front	None						60		
13	Structure W Side	None						60		
14	Structure Wi Side	None						60		
15	BLC 9 Transient Area Loads	None						51		
16	BLC 10 Transient Area Loads	None						51		

Load Combinations

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

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	0	0	-1.5	0	
3	N3	0	0	-3.078125	0	
4	N4	0	0	-6.786458	0	
5	N5	-2.572917	0	-3.078125	0	
6	N6	2.572917	0	-3.078125	0	
7	N7	-2.572917	0	-3.296875	0	
8	N8	2.572917	0	-3.296875	0	
9	N10	2.489584	0	-3.441213	0	
10	N11	-.5	0	-6.786458	0	
11	N12	.5	0	-6.786458	0	
12	N13	-.556	0	-6.689463	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
13	N14	.556	0	-6.689463	0	
14	N9	-2.489583	0	-3.441213	0	
15	N15	-2.322917	0	-3.078125	0	
16	N18	-0.166667	0	-6.786458	0	
17	N18A	2.322917	0	-3.078125	0	
18	N19	0.166667	0	-6.786458	0	
19	N19A	2.615879	0	-3.514129	0	
20	N20	0.72595	0	-6.787583	0	
21	N23	-2.615879	0	-3.514129	0	
22	N24	-0.72595	0	-6.787583	0	
23	N24A	-1.299038	0	.75	0	
24	N25	-2.665734	0	1.539063	0	
25	N26	-5.877245	0	3.393229	0	
26	N27	-1.379276	0	3.767274	0	
27	N28	-3.952193	0	-0.689149	0	
28	N29	-1.568719	0	3.876649	0	
29	N30	-4.141636	0	-0.579774	0	
30	N31	-4.22497	0	-0.435436	0	
31	N32	-5.627245	0	3.826242	0	
32	N33	-6.127245	0	2.960216	0	
33	N34	-5.515245	0	3.826242	0	
34	N35	-6.071245	0	2.863222	0	
35	N36	-1.735386	0	3.876649	0	
36	N37	-1.504276	0	3.550767	0	
37	N38	-5.793912	0	3.537567	0	
38	N39	-3.827193	0	-0.472642	0	
39	N40	-5.960579	0	3.248891	0	
40	N41	-4.351265	0	-0.508353	0	
41	N42	-6.241194	0	2.765101	0	
42	N43	-1.735386	0	4.022482	0	
43	N44	-5.515245	0	4.022482	0	
44	N46	1.299038	0	.75	0	
45	N47	2.665734	0	1.539063	0	
46	N48	5.877245	0	3.393229	0	
47	N49	3.952193	0	-0.689149	0	
48	N50	1.379276	0	3.767274	0	
49	N51	4.141636	0	-0.579774	0	
50	N52	1.568719	0	3.876649	0	
51	N53	1.735386	0	3.876649	0	
52	N54	6.127245	0	2.960216	0	
53	N55	5.627245	0	3.826242	0	
54	N56	6.071245	0	2.863222	0	
55	N57	5.515245	0	3.826242	0	
56	N58	4.224969	0	-0.435436	0	
57	N59	3.827193	0	-0.472642	0	
58	N60	5.960579	0	3.248891	0	
59	N61	1.504276	0	3.550767	0	
60	N62	5.793912	0	3.537567	0	
61	N63	1.735386	0	4.022482	0	
62	N64	5.515245	0	4.022482	0	
63	N65	4.351265	0	-0.508353	0	
64	N66	6.241194	0	2.765101	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
65	N65A	-6.25	0	4.022482	0	
66	N66A	6.25	0	4.022482	0	
67	N67	-5.916667	0	4.022482	0	
68	N68	-2.166667	0	4.022482	0	
69	N69	5.916667	0	4.022482	0	
70	N70	2.166667	0	4.022482	0	
71	N71	-5.916667	0	4.350607	0	
72	N72	-2.166667	0	4.350607	0	
73	N73	5.916667	0	4.350607	0	
74	N74	2.166667	0	4.350607	0	
75	N75	-6.25	3.5	4.12144	0	
76	N76	6.25	3.5	4.12144	0	
77	N77	-5.916667	3.5	4.12144	0	
78	N78	-2.166667	3.5	4.12144	0	
79	N79	5.916667	3.5	4.12144	0	
80	N80	2.166667	3.5	4.12144	0	
81	N81	-5.916667	3.5	4.350607	0	
82	N82	-2.166667	3.5	4.350607	0	
83	N83	5.916667	3.5	4.350607	0	
84	N84	2.166667	3.5	4.350607	0	
85	N85	-5.916667	4.5	4.350607	0	
86	N86	-2.166667	4.5	4.350607	0	
87	N87	5.916667	4.5	4.350607	0	
88	N88	2.166667	4.5	4.350607	0	
89	N89	-5.916667	-3.5	4.350607	0	
90	N90	-2.166667	-3.5	4.350607	0	
91	N91	5.916667	-3.5	4.350607	0	
92	N92	2.166667	-3.5	4.350607	0	
93	N94	6.608572	0	3.401418	0	
94	N95	0.358572	0	-7.4239	0	
95	N96	6.441905	0	3.112743	0	
96	N97	4.566905	0	-0.134852	0	
97	N98	0.525238	0	-7.135225	0	
98	N99	2.400238	0	-3.88763	0	
99	N100	6.72607	0	2.94868	0	
100	N101	4.85107	0	-0.298915	0	
101	N102	0.809403	0	-7.299287	0	
102	N103	2.684403	0	-4.051692	0	
103	N104	6.694272	3.5	3.351939	0	
104	N105	0.444272	3.5	-7.473379	0	
105	N106	6.527606	3.5	3.063264	0	
106	N107	4.652605	3.5	-0.184332	0	
107	N108	0.610939	3.5	-7.184704	0	
108	N109	2.485939	3.5	-3.937109	0	
109	N110	6.72607	3.5	2.94868	0	
110	N111	4.85107	3.5	-0.298915	0	
111	N112	0.809403	3.5	-7.299287	0	
112	N113	2.684403	3.5	-4.051692	0	
113	N114	6.72607	4.5	2.94868	0	
114	N115	4.85107	4.5	-0.298915	0	
115	N116	0.809403	4.5	-7.299287	0	
116	N117	2.684403	4.5	-4.051692	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
117	N118	6.72607	-3.5	2.94868	0	
118	N119	4.85107	-3.5	-0.298915	0	
119	N120	0.809403	-3.5	-7.299287	0	
120	N121	2.684403	-3.5	-4.051692	0	
121	N123	-0.358572	0	-7.4239	0	
122	N124	-6.608572	0	3.401418	0	
123	N125	-0.525238	0	-7.135225	0	
124	N126	-2.400238	0	-3.88763	0	
125	N127	-6.441905	0	3.112743	0	
126	N128	-4.566905	0	-0.134852	0	
127	N129	-0.809403	0	-7.299287	0	
128	N130	-2.684403	0	-4.051692	0	
129	N131	-6.72607	0	2.94868	0	
130	N132	-4.85107	0	-0.298915	0	
131	N133	-0.444272	3.5	-7.473379	0	
132	N134	-6.694272	3.5	3.351939	0	
133	N135	-0.610939	3.5	-7.184704	0	
134	N136	-2.485939	3.5	-3.937109	0	
135	N137	-6.527606	3.5	3.063264	0	
136	N138	-4.652605	3.5	-0.184332	0	
137	N139	-0.809403	3.5	-7.299287	0	
138	N140	-2.684403	3.5	-4.051692	0	
139	N141	-6.72607	3.5	2.94868	0	
140	N142	-4.85107	3.5	-0.298915	0	
141	N143	-0.809403	4.5	-7.299287	0	
142	N144	-2.684403	4.5	-4.051692	0	
143	N145	-6.72607	4.5	2.94868	0	
144	N146	-4.85107	4.5	-0.298915	0	
145	N147	-0.809403	-3.5	-7.299287	0	
146	N148	-2.684403	-3.5	-4.051692	0	
147	N149	-6.72607	-3.5	2.94868	0	
148	N150	-4.85107	-3.5	-0.298915	0	
149	N149A	-5.668667	3.5	4.12144	0	
150	N150A	-5.668667	3.5	4.022482	0	
151	N151	5.668667	3.5	4.12144	0	
152	N152	5.668667	3.5	4.022482	0	
153	N153	6.403605	3.5	2.848489	0	
154	N154	6.317905	3.5	2.897969	0	
155	N155	0.734939	3.5	-6.96993	0	
156	N156	0.649238	3.5	-6.920451	0	
157	N157	-0.734939	3.5	-6.96993	0	
158	N158	-0.649238	3.5	-6.920451	0	
159	N159	-6.403605	3.5	2.848489	0	
160	N160	-6.317905	3.5	2.897969	0	
161	N161	0	0	-5.286458	0	
162	N162	0	-2.5	-1.5	0	
163	N163	-4.578207	0	2.643229	0	
164	N164	-1.299038	-2.5	.75	0	
165	N165	4.578207	0	2.643229	0	
166	N166	1.299038	-2.5	.75	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Standoff Arms	HSS4X4X4	Beam	SquareTube	A500 Gr....	Typical	3.37	7.8	7.8	12.8
2	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr....	Typical	3.37	7.8	7.8	12.8
3	Face Horizontals	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Mount Pipes	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	Support Rail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Bottom Corner Plate	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
7	Plan Brace Connecti...	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
8	Top Corner Braces	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
9	Grating Support Angl...	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
10	Kickers	LL2.5x2.5x3x3	Beam	Double Angle (3...	A36 Gr.36	Typical	1.8	2.46	1.07	.023

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N4			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
2	M2	N5	N6			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical
3	M3	N5	N7			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
4	M4	N7	N9			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
5	M5	N6	N8			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
6	M6	N8	N10			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
7	M7	N18	N11			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
8	M8	N11	N13			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
9	M9	N19	N12			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
10	M10	N12	N14			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
11	M11	N15	N18			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N18A	N19		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N18	N19			RIGID	None	None	RIGID	Typical
14	M14	N14	N20			RIGID	None	None	RIGID	Typical
15	M15	N10	N19A			RIGID	None	None	RIGID	Typical
16	M16	N13	N24			RIGID	None	None	RIGID	Typical
17	M17	N9	N23			RIGID	None	None	RIGID	Typical
18	M18	N24A	N26			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
19	M19	N27	N28			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical
20	M20	N27	N29			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
21	M21	N29	N36			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
22	M22	N28	N30			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
23	M23	N30	N31			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
24	M24	N38	N32			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
25	M25	N32	N34			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
26	M26	N40	N33			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
27	M27	N33	N35			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
28	M28	N37	N38			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N39	N40		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N38	N40			RIGID	None	None	RIGID	Typical
31	M31	N35	N42			RIGID	None	None	RIGID	Typical
32	M32	N31	N41			RIGID	None	None	RIGID	Typical
33	M33	N34	N44			RIGID	None	None	RIGID	Typical
34	M34	N36	N43			RIGID	None	None	RIGID	Typical
35	M35	N46	N48			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
36	M36	N49	N50			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
37	M37	N49	N51			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
38	M38	N51	N58			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
39	M39	N50	N52			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
40	M40	N52	N53			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
41	M41	N60	N54			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
42	M42	N54	N56			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
43	M43	N62	N55			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
44	M44	N55	N57			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
45	M45	N59	N60			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N61	N62		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N60	N62			RIGID	None	None	RIGID	Typical
48	M48	N57	N64			RIGID	None	None	RIGID	Typical
49	M49	N53	N63			RIGID	None	None	RIGID	Typical
50	M50	N56	N66			RIGID	None	None	RIGID	Typical
51	M51	N58	N65			RIGID	None	None	RIGID	Typical
52	M52	N65A	N66A			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
53	M53	N75	N76			Support Rail	Beam	Pipe	A53 Gr.B	Typical
54	M54	N69	N73			RIGID	None	None	RIGID	Typical
55	5	N79	N83			RIGID	None	None	RIGID	Typical
56	M56	N80	N84			RIGID	None	None	RIGID	Typical
57	M57	N70	N74			RIGID	None	None	RIGID	Typical
58	M58	N68	N72			RIGID	None	None	RIGID	Typical
59	M59	N78	N82			RIGID	None	None	RIGID	Typical
60	M60	N77	N81			RIGID	None	None	RIGID	Typical
61	M61	N67	N71			RIGID	None	None	RIGID	Typical
62	MP1A	N87	N91			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
63	MP2A	N88	N92			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
64	MP3A	N86	N90			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
65	MP4A	N85	N89			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
66	M66	N94	N95			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
67	M67	N104	N105			Support Rail	Beam	Pipe	A53 Gr.B	Typical
68	M68	N98	N102			RIGID	None	None	RIGID	Typical
69	M69	N108	N112			RIGID	None	None	RIGID	Typical
70	M70	N109	N113			RIGID	None	None	RIGID	Typical
71	M71	N99	N103			RIGID	None	None	RIGID	Typical
72	M72	N97	N101			RIGID	None	None	RIGID	Typical
73	M73	N107	N111			RIGID	None	None	RIGID	Typical
74	M74	N106	N110			RIGID	None	None	RIGID	Typical
75	M75	N96	N100			RIGID	None	None	RIGID	Typical
76	MP1C	N116	N120			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
77	MP2C	N117	N121			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
78	MP3C	N115	N119			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
79	MP4C	N114	N118			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
80	M80	N123	N124			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
81	M81	N133	N134			Support Rail	Beam	Pipe	A53 Gr.B	Typical
82	M82	N127	N131			RIGID	None	None	RIGID	Typical
83	M83	N137	N141			RIGID	None	None	RIGID	Typical
84	M84	N138	N142			RIGID	None	None	RIGID	Typical
85	M85	N128	N132			RIGID	None	None	RIGID	Typical
86	M86	N126	N130			RIGID	None	None	RIGID	Typical
87	M87	N136	N140			RIGID	None	None	RIGID	Typical
88	M88	N135	N139			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
89	M89	N125	N129			RIGID	None	None	RIGID	Typical
90	MP1B	N145	N149			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
91	MP2B	N146	N150			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
92	MP3B	N144	N148			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
93	MP4B	N143	N147			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
94	M94	N149A	N150A			RIGID	None	None	RIGID	Typical
95	M95	N151	N152			RIGID	None	None	RIGID	Typical
96	M96	N153	N154			RIGID	None	None	RIGID	Typical
97	M97	N155	N156			RIGID	None	None	RIGID	Typical
98	M98	N157	N158			RIGID	None	None	RIGID	Typical
99	M99	N159	N160			RIGID	None	None	RIGID	Typical
100	M100	N150A	N160		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
101	M101	N158	N156		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
102	M102	N154	N152		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
103	M103	N162	N161			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
104	M104	N164	N163			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
105	M105	N166	N165			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes	** NA **			None
14	M14		BenPIN				Yes	** NA **			None
15	M15		BenPIN				Yes	** NA **			None
16	M16		BenPIN				Yes	** NA **			None
17	M17		BenPIN				Yes	** NA **			None
18	M18						Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
31	M31		BenPIN				Yes	** NA **			None
32	M32		BenPIN				Yes	** NA **			None
33	M33		BenPIN				Yes	** NA **			None
34	M34		BenPIN				Yes	** NA **			None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44						Yes				None
45	M45						Yes				None
46	M46						Yes				None
47	M47						Yes	** NA **			None
48	M48		BenPIN				Yes	** NA **			None
49	M49		BenPIN				Yes	** NA **			None
50	M50		BenPIN				Yes	** NA **			None
51	M51		BenPIN				Yes	** NA **			None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes	** NA **			None
55	5						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61						Yes	** NA **			None
62	MP1A						Yes				None
63	MP2A						Yes				None
64	MP3A						Yes				None
65	MP4A						Yes				None
66	M66						Yes				None
67	M67						Yes				None
68	M68						Yes	** NA **			None
69	M69						Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73						Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	MP1C						Yes				None
77	MP2C						Yes				None
78	MP3C						Yes				None
79	MP4C						Yes				None
80	M80						Yes				None
81	M81						Yes				None
82	M82						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
83	M83						Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None
88	M88						Yes	** NA **			None
89	M89						Yes	** NA **			None
90	MP1B						Yes				None
91	MP2B						Yes				None
92	MP3B						Yes				None
93	MP4B						Yes				None
94	M94						Yes	** NA **			None
95	M95						Yes	** NA **			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes				None
101	M101						Yes				None
102	M102						Yes				None
103	M103	BenPIN	BenPIN				Yes				None
104	M104	BenPIN	BenPIN				Yes				None
105	M105	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	.3	.65	.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	.3	.65	.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
9	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Ar...	5.286			Lbyy						Lateral
2	M2	Plan Bracing	5.146			Lbyy						Lateral
3	M3	Plan Brace ...	.219			Lbyy						Lateral
4	M4	Plan Brace ...	.167			Lbyy						Lateral
5	M5	Plan Brace ...	.219			Lbyy						Lateral
6	M6	Plan Brace ...	.167			Lbyy						Lateral
7	M7	Bottom Cor...	.333			Lbyy						Lateral
8	M8	Bottom Cor...	.112			Lbyy						Lateral
9	M9	Bottom Cor...	.333			Lbyy						Lateral
10	M10	Bottom Cor...	.112			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
11	M11	Grating Sup...	4.29			Lbyy						Lateral
12	M12	Grating Sup...	4.29			Lbyy						Lateral
13	M18	Standoff Ar...	5.286			Lbyy						Lateral
14	M19	Plan Bracing	5.146			Lbyy						Lateral
15	M20	Plan Brace ...	.219			Lbyy						Lateral
16	M21	Plan Brace ...	.167			Lbyy						Lateral
17	M22	Plan Brace ...	.219			Lbyy						Lateral
18	M23	Plan Brace ...	.167			Lbyy						Lateral
19	M24	Bottom Cor...	.333			Lbyy						Lateral
20	M25	Bottom Cor...	.112			Lbyy						Lateral
21	M26	Bottom Cor...	.333			Lbyy						Lateral
22	M27	Bottom Cor...	.112			Lbyy						Lateral
23	M28	Grating Sup...	4.29			Lbyy						Lateral
24	M29	Grating Sup...	4.29			Lbyy						Lateral
25	M35	Standoff Ar...	5.286			Lbyy						Lateral
26	M36	Plan Bracing	5.146			Lbyy						Lateral
27	M37	Plan Brace ...	.219			Lbyy						Lateral
28	M38	Plan Brace ...	.167			Lbyy						Lateral
29	M39	Plan Brace ...	.219			Lbyy						Lateral
30	M40	Plan Brace ...	.167			Lbyy						Lateral
31	M41	Bottom Cor...	.333			Lbyy						Lateral
32	M42	Bottom Cor...	.112			Lbyy						Lateral
33	M43	Bottom Cor...	.333			Lbyy						Lateral
34	M44	Bottom Cor...	.112			Lbyy						Lateral
35	M45	Grating Sup...	4.29			Lbyy						Lateral
36	M46	Grating Sup...	4.29			Lbyy						Lateral
37	M52	Face Horizo...	12.5			Lbyy						Lateral
38	M53	Support Rail	12.5			Lbyy						Lateral
39	MP1A	Mount Pipes	8			Lbyy						Lateral
40	MP2A	Mount Pipes	8			Lbyy						Lateral
41	MP3A	Mount Pipes	8			Lbyy						Lateral
42	MP4A	Mount Pipes	8			Lbyy						Lateral
43	M66	Face Horizo...	12.5			Lbyy						Lateral
44	M67	Support Rail	12.5			Lbyy						Lateral
45	MP1C	Mount Pipes	8			Lbyy						Lateral
46	MP2C	Mount Pipes	8			Lbyy						Lateral
47	MP3C	Mount Pipes	8			Lbyy						Lateral
48	MP4C	Mount Pipes	8			Lbyy						Lateral
49	M80	Face Horizo...	12.5			Lbyy						Lateral
50	M81	Support Rail	12.5			Lbyy						Lateral
51	MP1B	Mount Pipes	8			Lbyy						Lateral
52	MP2B	Mount Pipes	8			Lbyy						Lateral
53	MP3B	Mount Pipes	8			Lbyy						Lateral
54	MP4B	Mount Pipes	8			Lbyy						Lateral
55	M100	Top Corner ...	1.298			Lbyy						Lateral
56	M101	Top Corner ...	1.298			Lbyy						Lateral
57	M102	Top Corner ...	1.298			Lbyy						Lateral
58	M103	Kickers	4.537			Lbyy						Lateral
59	M104	Kickers	4.537			Lbyy						Lateral
60	M105	Kickers	4.537			Lbyy						Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N46	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N162	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N164	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N166	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N46	max	1969.685	4	678.089	8	1984.994	1	.023	1	1.467	2	.65	5
2		min	-4233.981	3	20.114	10	-3291.282	2	-.617	6	-1.462	1	-.009	10
3	N2	max	1859.939	4	690.449	6	5431.816	1	.837	6	2.565	3	.351	3
4		min	-1856.074	3	78.852	1	-2821.007	2	.186	1	-2.556	4	-.237	4
5	N24A	max	4701.597	4	675.082	7	1449.485	1	.123	4	1.282	1	-.029	9
6		min	-2348.825	3	3.004	9	-2816.094	2	-.334	3	-1.266	2	-.821	5
7	N162	max	45.602	4	2643.735	5	-421.6	2	0	11	0	4	0	7
8		min	-45.328	3	277.877	2	-3920.866	5	0	1	0	7	0	4
9	N164	max	-642.185	3	2622.872	8	1948.634	8	0	4	0	3	0	3
10		min	-3365.106	8	481.235	3	351.425	3	0	3	0	4	0	4
11	N166	max	3339.388	7	2603.371	7	1934.03	7	0	3	0	3	0	3
12		min	597.146	4	446.897	4	325.425	4	0	4	0	4	0	4
13	Totals:	max	7342.563	4	9390.948	6	7553.223	1						
14		min	-7342.562	3	3550.005	1	-7553.221	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	M1	1	max	2821.007	2	689.614	6	1858.848	4	.237	4	2.565	3	.837	6
2			min	-5431.816	1	78.328	1	-1854.276	3	-.351	3	-2.556	4	.186	1
3		2	max	2821.007	2	649.15	6	1814.83	4	.237	4	.144	3	.095	1
4			min	-5431.816	1	58.769	1	-1810.259	3	-.351	3	-.128	4	-.119	2
5		3	max	2814.286	2	-158.981	2	96.853	4	.247	4	.023	4	.466	1
6			min	-5360.856	1	-1109.334	5	-94.468	3	-.337	3	-.021	3	-.267	2
7		4	max	3183.846	2	1361.857	5	8.669	8	.247	4	.114	4	1.422	5
8			min	-2988.533	1	55.609	2	-3.926	1	-.338	3	-.108	3	-.081	2
9		5	max	3183.846	2	1307.649	5	40.586	3	.247	4	.092	4	-.104	4
10			min	-2988.533	1	31.568	2	-38.279	4	-.338	3	-.083	3	-.344	7
11	M2	1	max	332.639	3	-211.318	3	990.469	2	-.08	2	.115	4	.035	6
12			min	-339.567	4	-664.062	8	-964.562	1	-.284	5	-.113	3	-.002	1
13		2	max	710.327	3	-231.268	3	50.062	3	-.079	3	.249	2	.933	8
14			min	-693.644	4	-731.63	8	-82.44	4	-.283	5	-.258	1	.299	3
15		3	max	980.021	4	833.431	5	103.775	3	.384	7	.29	2	1.981	5
16			min	-961.006	3	-332.835	4	-82.44	4	-.129	4	-.325	1	.626	3
17		4	max	980.021	4	776.202	5	103.775	3	.384	7	.3	2	.946	5
18			min	-961.006	3	230.256	2	-74.013	4	.079	4	-.295	1	.264	2
19		5	max	458.106	4	705.511	5	1143.144	1	.38	7	.166	3	.033	4
20			min	-481.878	3	198.04	2	-1196.995	2	.084	4	-.158	4	-.039	3
21	M3	1	max	990.521	2	664.06	8	337.314	4	.035	6	.113	3	.284	5
22			min	-964.505	1	211.536	3	-334.993	3	-.002	1	-.115	4	.08	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
23		2	max	990.521	2	662.815	8	334.582	4	.035	6	.095	3	.248	5
24			min	-964.505	1	211.033	3	-332.261	3	-.002	1	-.097	4	.067	2
25		3	max	990.521	2	661.569	8	331.85	4	.035	6	.077	3	.212	5
26			min	-964.505	1	210.531	3	-329.529	3	-.002	1	-.078	4	.054	2
27		4	max	990.521	2	660.324	8	329.118	4	.035	6	.063	1	.176	5
28			min	-964.505	1	210.028	3	-326.797	3	-.002	1	-.066	2	.042	2
29		5	max	990.521	2	659.078	8	326.386	4	.035	6	.059	1	.14	5
30			min	-964.505	1	209.526	3	-324.065	3	-.002	1	-.062	2	.029	2
31	M4	1	max	899.311	2	659.231	8	598.031	4	.095	8	.059	1	.107	5
32			min	-878.89	1	209.336	3	-610.159	3	.03	3	-.062	2	.014	2
33		2	max	898.41	2	658.282	8	596.47	4	.095	8	.076	1	.079	5
34			min	-877.989	1	208.953	3	-608.598	3	.03	3	-.079	2	.005	2
35		3	max	897.509	2	657.333	8	594.908	4	.095	8	.093	1	.052	5
36			min	-877.088	1	208.57	3	-607.037	3	.03	3	-.096	2	-.005	2
37		4	max	896.607	2	656.384	8	593.347	4	.095	8	.11	1	.035	1
38			min	-876.186	1	208.188	3	-605.475	3	.03	3	-.114	2	-.014	2
39		5	max	895.706	2	655.435	8	591.786	4	.095	8	.127	1	.025	1
40			min	-875.285	1	207.805	3	-603.914	3	.03	3	-.131	2	-.024	2
41	M5	1	max	1197.007	2	705.25	5	462.174	4	.039	3	.166	3	.38	7
42			min	-1143.138	1	198.61	2	-477.885	3	-.033	4	-.158	4	.084	4
43		2	max	1197.007	2	704.004	5	459.442	4	.039	3	.14	3	.343	7
44			min	-1143.138	1	198.108	2	-475.153	3	-.033	4	-.132	4	.069	4
45		3	max	1197.007	2	702.759	5	456.71	4	.039	3	.114	3	.305	7
46			min	-1143.138	1	197.605	2	-472.42	3	-.033	4	-.107	4	.054	4
47		4	max	1197.007	2	701.513	5	453.978	4	.039	3	.088	3	.267	7
48			min	-1143.138	1	197.103	2	-469.688	3	-.033	4	-.083	4	.038	4
49		5	max	1197.007	2	700.268	5	451.246	4	.039	3	.062	3	.23	7
50			min	-1143.138	1	196.6	2	-466.956	3	-.033	4	-.058	4	.023	4
51	M6	1	max	1046.907	2	700.506	5	854.453	4	-.028	2	.062	3	.208	7
52			min	-995.273	1	196.422	2	-838.62	3	-.102	5	-.058	4	.004	4
53		2	max	1046.006	2	699.557	5	852.892	4	-.028	2	.081	2	.18	7
54			min	-994.372	1	196.039	2	-837.059	3	-.102	5	-.073	1	-.008	4
55		3	max	1045.105	2	698.608	5	851.331	4	-.028	2	.105	2	.151	7
56			min	-993.47	1	195.656	2	-835.498	3	-.102	5	-.097	1	-.019	4
57		4	max	1044.203	2	697.659	5	849.77	4	-.028	2	.129	2	.123	7
58			min	-992.569	1	195.273	2	-833.937	3	-.102	5	-.12	1	-.031	4
59		5	max	1043.302	2	696.71	5	848.208	4	-.028	2	.153	2	.096	3
60			min	-991.668	1	194.89	2	-832.375	3	-.102	5	-.144	1	-.042	4
61	M7	1	max	386.97	1	480.382	5	376.894	2	.117	7	.196	1	.326	5
62			min	-343.57	2	-49.42	3	-362.712	1	.002	4	-.204	2	.005	2
63		2	max	386.97	1	478.215	5	372.73	2	.117	7	.166	1	.286	5
64			min	-343.57	2	-50.44	3	-358.549	1	.002	4	-.173	2	.008	2
65		3	max	386.97	1	476.048	5	368.567	2	.117	7	.137	1	.246	5
66			min	-343.57	2	-51.461	3	-354.386	1	.002	4	-.142	2	.012	2
67		4	max	386.97	1	473.88	5	364.404	2	.117	7	.107	1	.207	5
68			min	-343.57	2	-52.482	3	-350.222	1	.002	4	-.111	2	.016	2
69		5	max	386.97	1	471.713	5	360.241	2	.117	7	.078	1	.167	5
70			min	-343.57	2	-53.503	3	-346.059	1	.002	4	-.081	2	.02	2
71	M8	1	max	492.285	1	471.781	5	160.127	1	.011	3	.078	1	.177	7
72			min	-484.579	2	-53.221	3	-119.47	2	-.092	5	-.081	2	.045	4
73		2	max	491.679	1	471.053	5	160.476	1	.011	3	.083	1	.166	7
74			min	-483.974	2	-53.564	3	-119.819	2	-.092	5	-.084	2	.034	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
75		3	max	491.073	1	470.324	5	160.826	1	.011	3	.087	1	.156	7
76			min	-483.368	2	-53.907	3	-120.169	2	-.092	5	-.088	2	.024	4
77		4	max	490.468	1	469.596	5	161.176	1	.011	3	.092	1	.146	7
78			min	-482.762	2	-54.25	3	-120.519	2	-.092	5	-.091	2	.014	4
79		5	max	489.862	1	468.868	5	161.526	1	.011	3	.096	1	.136	7
80			min	-482.157	2	-54.593	3	-120.868	2	-.092	5	-.094	2	.003	4
81	M9	1	max	581.541	4	710.38	7	347.672	1	-.002	1	.206	2	.435	7
82			min	-508.118	3	-24.345	4	-381.394	2	-.083	8	-.188	1	.013	4
83		2	max	581.541	4	708.213	7	343.509	1	-.002	1	.175	2	.376	7
84			min	-508.118	3	-25.366	4	-377.231	2	-.083	8	-.159	1	.015	4
85		3	max	581.541	4	706.045	7	339.346	1	-.002	1	.143	2	.317	7
86			min	-508.118	3	-26.387	4	-373.068	2	-.083	8	-.131	1	.017	4
87		4	max	581.541	4	703.878	7	335.183	1	-.002	1	.113	2	.259	7
88			min	-508.118	3	-27.408	4	-368.905	2	-.083	8	-.102	1	.019	4
89		5	max	581.541	4	701.711	7	331.019	1	-.002	1	.082	2	.2	7
90			min	-508.118	3	-28.429	4	-364.742	2	-.083	8	-.075	1	.022	4
91	M10	1	max	430.878	1	701.714	7	358.222	3	.137	7	.082	2	.163	7
92			min	-429.133	2	-27.804	4	-433.569	4	-.006	4	-.075	1	.051	1
93		2	max	430.272	1	700.986	7	357.173	3	.137	7	.082	2	.146	6
94			min	-428.527	2	-28.147	4	-432.52	4	-.006	4	-.077	1	.039	1
95		3	max	429.666	1	700.258	7	356.124	3	.137	7	.083	2	.129	6
96			min	-427.921	2	-28.49	4	-431.471	4	-.006	4	-.079	1	.027	1
97		4	max	429.06	1	699.529	7	355.075	3	.137	7	.083	2	.113	8
98			min	-427.316	2	-28.833	4	-430.422	4	-.006	4	-.082	1	.015	1
99		5	max	428.455	1	698.801	7	354.026	3	.137	7	.084	2	.096	8
100			min	-426.71	2	-29.176	4	-429.372	4	-.006	4	-.084	1	.003	1
101	M11	1	max	1196.102	1	16.905	8	30.729	4	0	4	.015	3	.007	2
102			min	-1258.353	2	-2.859	3	-20.124	3	0	7	-.022	4	-.022	1
103		2	max	1203.862	1	4.556	4	18.536	8	0	4	.006	2	-.002	2
104			min	-1266.113	2	-6.919	3	-6.778	3	0	7	-.003	1	-.012	5
105		3	max	1211.623	1	-3.24	4	15.845	5	0	4	.01	4	.01	1
106			min	-1273.874	2	-25.728	7	-.091	2	0	7	-.007	3	-.002	2
107		4	max	1219.383	1	-10.006	4	19.915	3	0	4	.003	4	.049	5
108			min	-1281.634	2	-48.427	7	-9.31	4	0	7	-.011	7	.006	4
109		5	max	1227.143	1	-14.725	4	33.262	3	0	4	-.008	2	.107	7
110			min	-1289.395	2	-64.846	7	-22.656	4	0	7	-.043	8	.003	4
111	M12	1	max	1381.294	1	30.006	3	22.569	6	0	4	.016	4	.022	1
112			min	-1474.883	2	-22.104	4	-.554	4	0	3	-.023	3	-.013	2
113		2	max	1389.054	1	16.66	3	8.168	6	0	4	.007	2	.013	5
114			min	-1482.644	2	-8.758	4	-4.614	4	0	3	-.004	1	.001	2
115		3	max	1396.815	1	12.337	5	-1.485	3	0	4	.012	7	.007	2
116			min	-1490.404	2	-3.165	2	-20.083	5	0	3	-.006	4	-.009	1
117		4	max	1404.575	1	17.935	4	-8.254	3	0	4	.004	3	.003	2
118			min	-1498.165	2	-10.033	3	-42.789	5	0	3	-.009	4	-.035	5
119		5	max	1412.336	1	31.282	4	-12.973	3	0	4	-.006	2	.004	3
120			min	-1505.925	2	-23.38	3	-59.208	5	0	3	-.038	7	-.085	8
121	M13	1	max	1005.395	1	27.558	2	1497.02	2	.206	7	.214	2	.378	5
122			min	-983.849	2	-544.91	5	-1421.669	1	.015	4	-.176	1	.016	2
123		2	max	1005.395	1	27.532	2	1497.02	2	.206	7	.339	2	.423	5
124			min	-983.849	2	-544.988	5	-1421.669	1	.015	4	-.295	1	.013	2
125		3	max	1005.395	1	767.445	7	1566.864	1	.206	7	.489	2	.602	5
126			min	-983.849	2	.144	4	-1686.826	2	-.089	4	-.429	1	.071	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
127		4	max	1001.237	1	767.367	7	1566.864	1	-.017	3	.348	2	.538	5
128			min	-977.385	2	.118	4	-1686.826	2	-.155	8	-.298	1	.036	4
129		5	max	1001.237	1	767.288	7	1566.864	1	-.017	3	.208	2	.475	5
130			min	-977.385	2	.092	4	-1686.826	2	-.155	8	-.168	1	.036	4
131	M14	1	max	430.727	4	698.856	7	428.904	1	-.003	1	.084	2	.137	7
132			min	-352.566	3	-29.625	4	-426.631	2	-.096	8	-.084	1	-.006	4
133		2	max	430.727	4	698.856	7	428.904	1	-.003	1	.063	2	.103	7
134			min	-352.566	3	-29.625	4	-426.631	2	-.096	8	-.063	1	-.004	4
135		3	max	430.727	4	698.856	7	428.904	1	-.003	1	.042	2	.069	7
136			min	-352.566	3	-29.625	4	-426.631	2	-.096	8	-.042	1	-.003	4
137		4	max	430.727	4	698.856	7	428.904	1	-.003	1	.021	2	.034	7
138			min	-352.566	3	-29.625	4	-426.631	2	-.096	8	-.021	1	-.001	4
139		5	max	430.727	4	698.856	7	428.904	1	-.003	1	0	4	0	11
140			min	-352.566	3	-29.625	4	-426.631	2	-.096	8	0	3	0	5
141	M15	1	max	844.157	4	696.257	5	987.743	1	.096	3	.153	2	.102	5
142			min	-836.246	3	195.048	2	-1047.825	2	-.042	4	-.144	1	.028	2
143		2	max	844.157	4	696.257	5	987.743	1	.096	3	.115	2	.076	5
144			min	-836.246	3	195.048	2	-1047.825	2	-.042	4	-.108	1	.021	2
145		3	max	844.157	4	696.257	5	987.743	1	.096	3	.076	2	.051	5
146			min	-836.246	3	195.048	2	-1047.825	2	-.042	4	-.072	1	.014	2
147		4	max	844.157	4	696.257	5	987.743	1	.096	3	.038	2	.025	5
148			min	-836.246	3	195.048	2	-1047.825	2	-.042	4	-.036	1	.007	2
149		5	max	844.157	4	696.257	5	987.743	1	.096	3	0	3	0	11
150			min	-836.246	3	195.048	2	-1047.825	2	-.042	4	0	4	0	6
151	M16	1	max	164.014	1	468.907	5	481.481	2	.136	7	.096	1	.092	5
152			min	-118.349	2	-54.739	3	-490.777	1	.003	4	-.094	2	-.011	3
153		2	max	164.014	1	468.907	5	481.481	2	.136	7	.072	1	.069	5
154			min	-118.349	2	-54.739	3	-490.777	1	.003	4	-.071	2	-.008	3
155		3	max	164.014	1	468.907	5	481.481	2	.136	7	.048	1	.046	5
156			min	-118.349	2	-54.739	3	-490.777	1	.003	4	-.047	2	-.005	3
157		4	max	164.014	1	468.907	5	481.481	2	.136	7	.024	1	.023	5
158			min	-118.349	2	-54.739	3	-490.777	1	.003	4	-.024	2	-.003	3
159		5	max	164.014	1	468.907	5	481.481	2	.136	7	0	2	0	5
160			min	-118.349	2	-54.739	3	-490.777	1	.003	4	0	4	0	6
161	M17	1	max	601.672	3	654.83	8	899.134	2	.024	2	.127	1	.095	8
162			min	-593.904	4	208.46	3	-872.103	1	-.025	1	-.131	2	.03	3
163		2	max	601.672	3	654.83	8	899.134	2	.024	2	.095	1	.072	8
164			min	-593.904	4	208.46	3	-872.103	1	-.025	1	-.098	2	.023	3
165		3	max	601.672	3	654.83	8	899.134	2	.024	2	.064	1	.048	8
166			min	-593.904	4	208.46	3	-872.103	1	-.025	1	-.066	2	.015	3
167		4	max	601.672	3	654.83	8	899.134	2	.024	2	.032	1	.024	8
168			min	-593.904	4	208.46	3	-872.103	1	-.025	1	-.033	2	.008	3
169		5	max	601.672	3	654.83	8	899.134	2	.024	2	0	3	0	5
170			min	-593.904	4	208.46	3	-872.103	1	-.025	1	0	4	0	4
171	M18	1	max	2352.493	3	674.201	7	1178.081	2	.166	3	1.282	1	.824	7
172			min	-5076.343	4	2.831	9	-1178.705	1	-.267	4	-1.266	2	.1	9
173		2	max	2333.433	3	633.738	7	1145.068	2	.166	3	.918	3	.11	9
174			min	-5057.283	4	-16.729	9	-1145.692	1	-.267	4	-.897	4	-.096	3
175		3	max	2292.528	3	-235.256	3	76.894	2	.214	2	.174	3	.575	9
176			min	-4948.973	4	-1101.769	8	-75.976	1	-.289	1	-.17	4	-.162	3
177		4	max	2948.796	3	1348.656	8	8.011	6	.214	2	.211	3	1.403	8
178			min	-2748.493	4	183.351	3	-6.446	4	-.289	1	-.205	4	.088	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
179		5	max	2929.736	3	1294.448	8	27.599	1	.214	2	.213	3	-.107	2
180			min	-2729.433	4	159.31	3	-26.035	2	-.289	1	-.206	4	-.345	5
181	M19	1	max	173.303	1	-216.643	1	1162.558	1	-.079	1	.025	3	.034	5
182			min	-175.934	2	-666.49	6	-1130.636	2	-.286	6	-.022	1	-.013	9
183		2	max	873.351	1	-240.729	1	146.34	4	-.076	1	.307	1	.934	6
184			min	-849.316	2	-733.042	6	-181.86	3	-.285	6	-.316	2	.313	1
185		3	max	1011.277	3	832.894	8	202.557	4	.38	5	.718	3	1.98	6
186			min	-981.427	4	-312.988	10	-149.725	3	-.19	9	-.752	4	.639	1
187		4	max	992.724	3	775.665	8	170.422	4	.38	5	.516	3	.947	6
188			min	-962.874	4	242.717	3	-140.336	3	.101	2	-.512	4	.269	1
189		5	max	214.715	2	705.206	8	1511.415	4	.378	8	.101	1	.026	2
190			min	-229.594	1	210.566	3	-1562.364	3	.106	2	-.092	2	-.031	1
191	M20	1	max	1162.52	1	666.278	6	175.777	2	.034	5	.022	1	.286	6
192			min	-1130.682	2	216.996	1	-173.417	1	-.013	9	-.025	3	.079	1
193		2	max	1161.337	1	665.033	6	173.728	2	.034	5	.022	4	.249	6
194			min	-1129.499	2	216.494	1	-171.368	1	-.013	9	-.025	3	.067	1
195		3	max	1160.154	1	663.787	6	171.679	2	.034	5	.022	4	.213	6
196			min	-1128.316	2	215.992	1	-169.319	1	-.013	9	-.026	3	.055	1
197		4	max	1158.971	1	662.541	6	169.63	2	.034	5	.023	4	.177	6
198			min	-1127.133	2	215.489	1	-167.27	1	-.013	9	-.026	3	.043	1
199		5	max	1157.788	1	661.296	6	167.581	2	.034	5	.023	4	.141	6
200			min	-1125.949	2	214.987	1	-165.221	1	-.013	9	-.026	3	.031	1
201	M21	1	max	920.121	1	661.615	6	709.003	2	.096	6	.023	4	.107	6
202			min	-891.232	2	214.526	1	-720.921	1	.031	1	-.026	3	.018	1
203		2	max	920.121	1	660.666	6	706.921	2	.096	6	.042	2	.09	9
204			min	-891.232	2	214.143	1	-718.839	1	.031	1	-.045	1	.009	1
205		3	max	920.121	1	659.717	6	704.84	2	.096	6	.071	2	.077	9
206			min	-891.232	2	213.76	1	-716.757	1	.031	1	-.075	1	0	1
207		4	max	920.121	1	658.768	6	702.758	2	.096	6	.1	2	.065	9
208			min	-891.232	2	213.377	1	-714.676	1	.031	1	-.105	1	-.008	1
209		5	max	920.121	1	657.819	6	700.677	2	.096	6	.13	2	.052	9
210			min	-891.232	2	212.994	1	-712.594	1	.031	1	-.134	1	-.017	1
211	M22	1	max	1562.193	3	704.889	8	214.619	2	.031	1	.101	1	.378	8
212			min	-1511.593	4	211.25	3	-229.834	1	-.026	2	-.092	2	.106	2
213		2	max	1561.01	3	703.643	8	212.57	2	.031	1	.088	1	.339	5
214			min	-1510.41	4	210.748	3	-227.785	1	-.026	2	-.08	2	.089	2
215		3	max	1559.827	3	702.398	8	210.521	2	.031	1	.076	1	.302	5
216			min	-1509.227	4	210.245	3	-225.736	1	-.026	2	-.069	2	.073	2
217		4	max	1558.644	3	701.152	8	208.472	2	.031	1	.063	1	.264	5
218			min	-1508.044	4	209.743	3	-223.687	1	-.026	2	-.057	2	.057	2
219		5	max	1557.461	3	699.907	8	206.422	2	.031	1	.051	1	.227	5
220			min	-1506.861	4	209.24	3	-221.637	1	-.026	2	-.046	2	.041	2
221	M23	1	max	1304.793	3	700.228	8	847.383	3	-.03	3	.051	1	.205	5
222			min	-1258.531	4	208.958	3	-840.363	4	-.101	8	-.046	2	.023	2
223		2	max	1303.892	3	699.279	8	845.822	3	-.03	3	.085	3	.176	5
224			min	-1257.629	4	208.576	3	-838.802	4	-.101	8	-.077	4	.011	2
225		3	max	1302.99	3	698.33	8	844.26	3	-.03	3	.121	3	.148	5
226			min	-1256.728	4	208.193	3	-837.241	4	-.101	8	-.112	4	-.002	2
227		4	max	1302.089	3	697.381	8	842.699	3	-.03	3	.156	3	.12	5
228			min	-1255.827	4	207.81	3	-835.68	4	-.101	8	-.147	4	-.014	2
229		5	max	1301.188	3	696.432	8	841.138	3	-.03	3	.191	3	.091	5
230			min	-1254.925	4	207.427	3	-834.119	4	-.101	8	-.182	4	-.026	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
231	M24	1	max	341.509	4	725.929	9	214.449	3	.117	5	.107	4	.415	9
232			min	-289.596	3	-103.808	1	-198.52	4	.003	2	-.115	3	-.016	1
233		2	max	339.706	4	724.908	9	211.326	3	.117	5	.09	4	.354	9
234			min	-287.793	3	-104.828	1	-195.397	4	.003	2	-.098	3	-.007	1
235		3	max	337.903	4	723.887	9	208.204	3	.117	5	.074	4	.294	9
236			min	-285.99	3	-105.849	1	-192.275	4	.003	2	-.08	3	.002	1
237		4	max	336.1	4	722.866	9	205.081	3	.117	5	.058	4	.234	9
238			min	-284.188	3	-106.87	1	-189.152	4	.003	2	-.063	3	.011	1
239		5	max	334.298	4	721.845	9	201.959	3	.117	5	.043	4	.174	9
240			min	-282.385	3	-107.891	1	-186.03	4	.003	2	-.046	3	.02	1
241	M25	1	max	328.213	4	721.829	9	196.04	4	.021	1	.043	4	.177	8
242			min	-316.15	3	-107.979	1	-144.057	3	-.141	9	-.046	3	.052	3
243		2	max	328.213	4	721.486	9	196.04	4	.021	1	.048	4	.165	5
244			min	-316.15	3	-108.322	1	-144.057	3	-.141	9	-.05	3	.043	2
245		3	max	328.213	4	721.143	9	196.04	4	.021	1	.053	4	.155	5
246			min	-316.15	3	-108.665	1	-144.057	3	-.141	9	-.054	3	.03	2
247		4	max	328.213	4	720.8	9	196.04	4	.021	1	.059	4	.145	5
248			min	-316.15	3	-109.008	1	-144.057	3	-.141	9	-.058	3	.017	2
249		5	max	328.213	4	720.457	9	196.04	4	.021	1	.064	4	.135	5
250			min	-316.15	3	-109.351	1	-144.057	3	-.141	9	-.062	3	.004	2
251	M26	1	max	530.165	2	714.73	8	333.892	4	.007	4	.199	3	.437	8
252			min	-461.455	1	8.813	3	-366.494	3	-.101	9	-.181	4	.043	3
253		2	max	528.362	2	712.563	8	330.769	4	.007	4	.169	3	.378	8
254			min	-459.653	1	7.792	3	-363.372	3	-.101	9	-.153	4	.042	3
255		3	max	526.559	2	710.395	8	327.647	4	.007	4	.139	3	.318	8
256			min	-457.85	1	6.771	3	-360.25	3	-.101	9	-.126	4	.042	3
257		4	max	524.757	2	708.228	8	324.525	4	.007	4	.109	3	.259	8
258			min	-456.047	1	5.75	3	-357.127	3	-.101	9	-.099	4	.041	3
259		5	max	522.954	2	706.06	8	321.402	4	.007	4	.079	3	.2	8
260			min	-454.244	1	4.73	3	-354.005	3	-.101	9	-.072	4	.041	3
261	M27	1	max	440.824	2	705.969	8	276.479	1	.138	8	.079	3	.166	7
262			min	-432.274	1	4.501	3	-347.955	2	0	3	-.072	4	.045	4
263		2	max	440.218	2	705.241	8	276.129	1	.138	8	.073	3	.15	7
264			min	-431.669	1	4.158	3	-347.605	2	0	3	-.067	4	.032	4
265		3	max	439.612	2	704.513	8	275.78	1	.138	8	.069	1	.137	9
266			min	-431.063	1	3.815	3	-347.255	2	0	3	-.067	2	.019	4
267		4	max	439.007	2	703.785	8	275.43	1	.138	8	.076	1	.127	9
268			min	-430.457	1	3.472	3	-346.906	2	0	3	-.077	2	.005	4
269		5	max	438.401	2	703.056	8	275.08	1	.138	8	.084	1	.117	9
270			min	-429.852	1	3.129	3	-346.556	2	0	3	-.086	2	-.008	4
271	M28	1	max	1225.421	2	16.359	7	45.277	2	0	9	.024	1	.02	1
272			min	-1295.168	1	.871	4	-34.862	1	0	5	-.031	2	-.033	2
273		2	max	1225.366	2	3.562	9	27.418	2	0	9	.005	7	.009	9
274			min	-1295.113	1	-3.189	4	-17.004	1	0	5	-.002	9	-.012	6
275		3	max	1225.311	2	-4.234	9	15.583	6	0	9	.01	2	.01	9
276			min	-1295.058	1	-25.044	8	.855	1	0	5	-.007	1	0	1
277		4	max	1225.256	2	-11	9	18.815	5	0	9	.002	2	.048	8
278			min	-1295.003	1	-47.743	8	-8.299	2	0	5	-.011	5	.012	3
279		5	max	1225.202	2	-15.719	9	36.572	1	0	9	-.004	1	.104	5
280			min	-1294.948	1	-64.162	8	-26.158	2	0	5	-.045	6	.017	2
281	M29	1	max	1612.725	4	42.303	4	22.543	5	0	7	.022	3	.042	4
282			min	-1702.13	3	-34.017	3	-5.514	9	0	1	-.03	4	-.032	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
283		2	max	1620.43	4	28.861	4	8.143	5	0	7	.007	3	.015	8
284			min	-1709.835	3	-20.576	3	-9.575	9	0	1	-.004	4	-.006	3
285		3	max	1628.136	4	15.42	4	-1.186	1	0	7	.011	5	.006	3
286			min	-1717.541	3	-7.134	3	-20.439	6	0	1	-.004	2	-.02	9
287		4	max	1635.841	4	12.612	6	-7.954	1	0	7	.004	1	.002	3
288			min	-1725.246	3	-2.721	1	-43.145	6	0	1	-.01	9	-.044	9
289		5	max	1643.547	4	19.749	3	-12.673	1	0	7	-.005	3	-.003	1
290			min	-1732.951	3	-11.464	4	-59.565	6	0	1	-.039	8	-.084	6
291	M30	1	max	794.893	4	80.946	1	1308.307	1	.203	5	.131	3	.43	9
292			min	-772.928	3	-741.452	9	-1228.432	2	.027	2	-.092	4	.005	1
293		2	max	794.893	4	80.921	1	1308.307	1	.203	5	.237	1	.492	9
294			min	-772.928	3	-741.478	9	-1228.432	2	.027	2	-.192	2	-.002	1
295		3	max	802.584	4	774.4	8	1760.678	4	.203	5	.52	3	.609	8
296			min	-773.466	3	-741.503	9	-1874.145	3	-.159	9	-.459	4	.118	3
297		4	max	802.584	4	774.321	8	1760.678	4	-.029	4	.363	3	.544	8
298			min	-773.466	3	23.283	3	-1874.145	3	-.159	9	-.313	4	.053	3
299		5	max	802.584	4	774.242	8	1760.678	4	-.029	4	.207	3	.479	8
300			min	-773.466	3	23.257	3	-1874.145	3	-.159	9	-.166	4	.051	3
301	M31	1	max	347.947	2	703.17	8	439.65	2	.008	4	.084	1	.138	8
302			min	-273.544	1	3.129	3	-428.761	1	-.117	9	-.086	2	0	3
303		2	max	347.947	2	703.17	8	439.65	2	.008	4	.063	1	.103	8
304			min	-273.544	1	3.129	3	-428.761	1	-.117	9	-.065	2	0	3
305		3	max	347.947	2	703.17	8	439.65	2	.008	4	.042	1	.069	8
306			min	-273.544	1	3.129	3	-428.761	1	-.117	9	-.043	2	0	3
307		4	max	347.947	2	703.17	8	439.65	2	.008	4	.021	1	.034	8
308			min	-273.544	1	3.129	3	-428.761	1	-.117	9	-.022	2	0	3
309		5	max	347.947	2	703.17	8	439.65	2	.008	4	0	4	0	5
310			min	-273.544	1	3.129	3	-428.761	1	-.117	9	0	3	0	8
311	M32	1	max	848.706	3	695.78	8	1248.397	4	.091	5	.191	3	.101	8
312			min	-827.634	4	207.85	3	-1308.585	3	-.026	2	-.182	4	.03	3
313		2	max	848.706	3	695.78	8	1248.397	4	.091	5	.143	3	.076	8
314			min	-827.634	4	207.85	3	-1308.585	3	-.026	2	-.137	4	.023	3
315		3	max	848.706	3	695.78	8	1248.397	4	.091	5	.095	3	.051	8
316			min	-827.634	4	207.85	3	-1308.585	3	-.026	2	-.091	4	.015	3
317		4	max	848.706	3	695.78	8	1248.397	4	.091	5	.048	3	.025	8
318			min	-827.634	4	207.85	3	-1308.585	3	-.026	2	-.046	4	.008	3
319		5	max	848.706	3	695.78	8	1248.397	4	.091	5	0	2	0	6
320			min	-827.634	4	207.85	3	-1308.585	3	-.026	2	0	1	0	11
321	M33	1	max	196.518	4	720.563	9	315.87	3	.135	5	.064	4	.141	9
322			min	-143.539	3	-109.407	1	-328.564	4	.004	2	-.062	3	-.021	1
323		2	max	196.518	4	720.563	9	315.87	3	.135	5	.048	4	.106	9
324			min	-143.539	3	-109.407	1	-328.564	4	.004	2	-.046	3	-.016	1
325		3	max	196.518	4	720.563	9	315.87	3	.135	5	.032	4	.071	9
326			min	-143.539	3	-109.407	1	-328.564	4	.004	2	-.031	3	-.011	1
327		4	max	196.518	4	720.563	9	315.87	3	.135	5	.016	4	.035	9
328			min	-143.539	3	-109.407	1	-328.564	4	.004	2	-.015	3	-.005	1
329		5	max	196.518	4	720.563	9	315.87	3	.135	5	0	11	0	9
330			min	-143.539	3	-109.407	1	-328.564	4	.004	2	0	3	0	4
331	M34	1	max	713.554	1	657.068	6	922.235	1	.017	1	.13	2	.096	6
332			min	-699.912	2	214.113	1	-889.347	2	-.052	9	-.134	1	.031	1
333		2	max	713.554	1	657.068	6	922.235	1	.017	1	.097	2	.072	6
334			min	-699.912	2	214.113	1	-889.347	2	-.052	9	-.101	1	.023	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
335		3	max	713.554	1	657.068	6	922.235	1	.017	1	.065	2	.048	6
336			min	-699.912	2	214.113	1	-889.347	2	-.052	9	-.067	1	.016	1
337		4	max	713.554	1	657.068	6	922.235	1	.017	1	.032	2	.024	6
338			min	-699.912	2	214.113	1	-889.347	2	-.052	9	-.034	1	.008	1
339		5	max	713.554	1	657.068	6	922.235	1	.017	1	0	7	0	2
340			min	-699.912	2	214.113	1	-889.347	2	-.052	9	0	4	0	5
341	M35	1	max	2148.1	4	677.2	8	1485.75	1	.251	1	1.467	2	.827	8
342			min	-4763.664	3	19.937	10	-1476.017	2	-.366	2	-1.462	1	.114	10
343		2	max	2129.04	4	636.736	8	1452.737	1	.251	1	.74	3	.101	10
344			min	-4744.604	3	.377	10	-1443.004	2	-.366	2	-.728	4	-.092	1
345		3	max	2109.074	4	-220.991	4	85.416	1	.19	1	.138	3	.554	10
346			min	-4659.836	3	-1094.888	7	-82.509	2	-.289	10	-.136	4	-.176	4
347		4	max	2713.337	4	1336.066	7	14.59	1	.19	1	.205	1	1.388	7
348			min	-2514.221	3	163.202	4	-12.68	2	-.29	10	-.198	2	.062	4
349		5	max	2694.277	4	1281.858	7	20.333	2	.19	1	.203	1	-.109	3
350			min	-2495.161	3	139.161	4	-18.423	1	-.29	10	-.193	2	-.343	8
351	M36	1	max	146.684	2	-229.876	4	1168.884	4	-.081	4	.078	4	.035	8
352			min	-150.247	1	-663.725	7	-1143.127	3	-.284	7	-.074	3	0	3
353		2	max	644.269	4	-251.011	2	114.798	2	-.083	4	.417	4	.93	5
354			min	-618.005	3	-728.971	7	-148.457	1	-.282	7	-.425	3	.318	2
355		3	max	1283.159	1	831.809	7	174.661	2	.383	6	.601	1	1.978	7
356			min	-1258.951	2	-382.945	10	-137.745	1	-.11	1	-.634	2	.684	4
357		4	max	1264.605	1	774.58	7	163.95	2	.383	6	.421	1	.945	7
358			min	-1240.398	2	242.238	4	-134.16	1	.092	1	-.416	2	.278	4
359		5	max	339.392	1	703.353	7	1547.909	2	.381	6	.086	2	.017	1
360			min	-356.886	2	211.78	4	-1604.713	1	.09	1	-.076	1	-.024	10
361	M37	1	max	1168.974	4	663.416	7	150.419	1	.035	8	.074	3	.284	7
362			min	-1143.023	3	230.325	4	-146.558	2	0	3	-.078	4	.081	4
363		2	max	1167.791	4	662.17	7	148.37	1	.035	8	.071	3	.248	7
364			min	-1141.84	3	229.822	4	-144.509	2	0	3	-.075	4	.068	4
365		3	max	1166.608	4	660.925	7	146.321	1	.035	8	.068	3	.212	7
366			min	-1140.657	3	229.32	4	-142.46	2	0	3	-.071	4	.056	4
367		4	max	1165.425	4	659.679	7	144.272	1	.035	8	.065	3	.176	7
368			min	-1139.474	3	228.817	4	-140.41	2	0	3	-.068	4	.043	4
369		5	max	1164.242	4	658.434	7	142.223	1	.035	8	.061	3	.14	7
370			min	-1138.291	3	228.315	4	-138.361	2	0	3	-.065	4	.031	4
371	M38	1	max	1037.539	4	658.76	7	519.645	3	.095	7	.061	3	.106	7
372			min	-1018.455	3	227.622	4	-523.965	4	.033	2	-.065	4	.016	4
373		2	max	1036.638	4	657.811	7	518.084	3	.095	7	.083	3	.079	7
374			min	-1017.554	3	227.239	4	-522.404	4	.033	2	-.087	4	.007	4
375		3	max	1035.736	4	656.862	7	516.523	3	.095	7	.104	3	.051	7
376			min	-1016.652	3	226.856	4	-520.843	4	.033	2	-.108	4	-.003	4
377		4	max	1034.835	4	655.913	7	514.962	3	.095	7	.126	3	.033	3
378			min	-1015.751	3	226.474	4	-519.282	4	.033	2	-.13	4	-.012	4
379		5	max	1033.933	4	654.964	7	513.4	3	.095	7	.147	3	.023	3
380			min	-1014.85	3	226.091	4	-517.72	4	.033	2	-.152	4	-.022	4
381	M39	1	max	1604.526	1	703.277	7	340.823	1	.024	10	.086	2	.381	6
382			min	-1548.096	2	212.141	4	-355.127	2	-.017	1	-.076	1	.09	1
383		2	max	1603.343	1	702.032	7	338.774	1	.024	10	.066	2	.342	6
384			min	-1546.913	2	211.638	4	-353.078	2	-.017	1	-.057	1	.077	1
385		3	max	1602.16	1	700.786	7	336.725	1	.024	10	.047	2	.304	6
386			min	-1545.73	2	211.136	4	-351.029	2	-.017	1	-.039	1	.064	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
387		4	max	1600.977	1	699.541	7	334.676	1	.024	10	.029	4	.266	6
388			min	-1544.547	2	210.633	4	-348.98	2	-.017	1	-.022	3	.052	1
389		5	max	1599.794	1	698.295	7	332.627	1	.024	10	.03	4	.228	6
390			min	-1543.364	2	210.131	4	-346.931	2	-.017	1	-.023	3	.039	1
391	M40	1	max	1219.864	1	698.401	7	1087.298	1	-.03	4	.03	4	.206	6
392			min	-1162.247	2	209.981	4	-1072.431	2	-.101	7	-.023	3	.025	1
393		2	max	1219.864	1	697.452	7	1085.217	1	-.03	4	.045	4	.177	6
394			min	-1162.247	2	209.598	4	-1070.349	2	-.101	7	-.038	3	.015	1
395		3	max	1219.864	1	696.503	7	1083.135	1	-.03	4	.088	1	.148	6
396			min	-1162.247	2	209.215	4	-1068.267	2	-.101	7	-.08	2	.005	1
397		4	max	1219.864	1	695.554	7	1081.053	1	-.03	4	.133	1	.119	6
398			min	-1162.247	2	208.832	4	-1066.186	2	-.101	7	-.125	2	-.004	1
399		5	max	1219.864	1	694.605	7	1078.972	1	-.03	4	.178	1	.09	6
400			min	-1162.247	2	208.449	4	-1064.104	2	-.101	7	-.169	2	-.014	1
401	M41	1	max	307.975	2	484.922	7	379.3	4	.114	6	.198	3	.327	7
402			min	-257.572	1	-61.563	4	-363.712	3	.014	1	-.207	4	0	4
403		2	max	306.172	2	482.754	7	376.178	4	.114	6	.168	3	.287	7
404			min	-255.769	1	-62.584	4	-360.59	3	.014	1	-.175	4	.005	4
405		3	max	304.37	2	480.587	7	373.055	4	.114	6	.138	3	.247	7
406			min	-253.967	1	-63.605	4	-357.467	3	.014	1	-.144	4	.01	4
407		4	max	302.567	2	478.419	7	369.933	4	.114	6	.109	3	.207	7
408			min	-252.164	1	-64.626	4	-354.345	3	.014	1	-.113	4	.016	4
409		5	max	300.764	2	476.252	7	366.81	4	.114	6	.079	3	.167	7
410			min	-250.361	1	-65.646	4	-351.223	3	.014	1	-.082	4	.021	4
411	M42	1	max	442.708	3	476.296	7	175.536	2	.013	4	.079	3	.177	6
412			min	-435.692	4	-66.157	4	-127.078	1	-.093	7	-.082	4	.044	1
413		2	max	442.103	3	475.568	7	175.186	2	.013	4	.081	3	.166	6
414			min	-435.086	4	-66.5	4	-126.729	1	-.093	7	-.083	4	.037	1
415		3	max	441.497	3	474.84	7	174.837	2	.013	4	.083	3	.155	6
416			min	-434.481	4	-66.843	4	-126.379	1	-.093	7	-.084	4	.03	1
417		4	max	440.891	3	474.112	7	174.487	2	.013	4	.085	3	.144	6
418			min	-433.875	4	-67.186	4	-126.029	1	-.093	7	-.084	4	.024	1
419		5	max	440.286	3	473.383	7	174.137	2	.013	4	.086	3	.132	6
420			min	-433.269	4	-67.529	4	-125.679	1	-.093	7	-.085	4	.017	1
421	M43	1	max	408.282	3	782.416	10	201.713	3	.006	2	.127	4	.442	6
422			min	-341.316	4	-66.435	1	-234.511	4	-.085	5	-.109	3	-.002	1
423		2	max	406.479	3	781.396	10	198.59	3	.006	2	.107	4	.382	6
424			min	-339.514	4	-67.456	1	-231.389	4	-.085	5	-.092	3	.003	1
425		3	max	404.676	3	780.375	10	195.468	3	.006	2	.088	4	.322	6
426			min	-337.711	4	-68.477	1	-228.266	4	-.085	5	-.075	3	.009	1
427		4	max	402.873	3	779.354	10	192.346	3	.006	2	.069	4	.262	6
428			min	-335.908	4	-69.498	1	-225.144	4	-.085	5	-.059	3	.015	1
429		5	max	401.071	3	778.333	10	189.223	3	.006	2	.05	4	.202	6
430			min	-334.105	4	-70.519	1	-222.022	4	-.085	5	-.043	3	.021	1
431	M44	1	max	364.335	3	778.21	10	338.783	2	.153	10	.05	4	.163	5
432			min	-359.468	4	-70.046	1	-415.987	1	-.014	1	-.043	3	.054	2
433		2	max	364.335	3	777.867	10	337.384	2	.153	10	.055	4	.147	5
434			min	-359.468	4	-70.389	1	-414.588	1	-.014	1	-.05	3	.039	2
435		3	max	364.335	3	777.524	10	335.985	2	.153	10	.06	4	.131	5
436			min	-359.468	4	-70.732	1	-413.19	1	-.014	1	-.057	3	.024	2
437		4	max	364.335	3	777.181	10	334.586	2	.153	10	.065	4	.115	5
438			min	-359.468	4	-71.075	1	-411.791	1	-.014	1	-.065	3	.009	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
439		5	max	364.335	3	776.838	10	333.188	2	.153	10	.07	4	.099	5
440			min	-359.468	4	-71.418	1	-410.392	1	-.014	1	-.072	3	-.007	2
441	M45	1	max	1244.021	3	16.757	5	41.182	3	0	3	.021	4	.025	4
442			min	-1305.586	4	-7.369	10	-30.585	4	0	8	-.027	3	-.039	3
443		2	max	1251.726	3	3.585	1	27.74	3	0	3	.006	4	.003	4
444			min	-1313.291	4	-11.429	10	-17.143	4	0	8	-.003	3	-.013	7
445		3	max	1259.431	3	-4.211	1	16.652	7	0	3	.009	5	.022	10
446			min	-1320.997	4	-25.605	6	-3.702	4	0	8	-.004	2	-.004	4
447		4	max	1267.137	3	-10.978	1	16.456	8	0	3	.004	1	.049	7
448			min	-1328.702	4	-48.304	6	.155	1	0	8	-.011	6	.005	4
449		5	max	1274.842	3	-15.696	1	23.182	4	0	3	-.006	4	.104	6
450			min	-1336.407	4	-64.723	6	-12.585	3	0	8	-.044	7	.015	1
451	M46	1	max	1640.526	2	46.902	2	22.115	8	0	1	.026	1	.039	2
452			min	-1736.205	1	-39.032	1	1.967	3	0	10	-.033	2	-.029	1
453		2	max	1640.471	2	29.043	2	7.715	8	0	1	.006	5	.014	6
454			min	-1736.15	1	-21.173	1	-2.094	3	0	10	-.002	2	-.009	10
455		3	max	1640.416	2	12.393	6	-2.136	10	0	1	.012	6	.004	4
456			min	-1736.095	1	-3.314	1	-19.651	7	0	10	-.006	1	-.007	10
457		4	max	1640.361	2	14.544	1	-8.904	10	0	1	.004	2	-.004	4
458			min	-1736.04	1	-6.674	2	-42.357	7	0	10	-.009	1	-.033	7
459		5	max	1640.306	2	32.403	1	-13.623	10	0	1	-.003	1	-.016	4
460			min	-1735.985	1	-24.533	2	-58.776	7	0	10	-.04	6	-.081	5
461	M47	1	max	902.783	3	43.959	4	1546.789	4	.203	6	.223	4	.379	7
462			min	-877.812	4	-549.489	7	-1471.509	3	.029	1	-.184	3	.012	4
463		2	max	902.783	3	43.933	4	1546.789	4	.203	6	.352	4	.425	7
464			min	-877.812	4	-549.567	7	-1471.509	3	.029	1	-.307	3	.008	4
465		3	max	902.783	3	795.802	10	1553.82	2	.203	6	.481	4	.613	6
466			min	-877.812	4	-415.87	3	-1669.9	1	-.089	1	-.429	3	.154	4
467		4	max	891.916	3	795.777	10	1553.82	2	-.016	2	.247	1	.548	6
468			min	-869.539	4	-47.225	1	-1669.9	1	-.155	5	-.199	2	.009	1
469		5	max	891.916	3	795.751	10	1553.82	2	-.016	2	.134	4	.482	6
470			min	-869.539	4	-47.251	1	-1669.9	1	-.155	5	-.094	3	.013	1
471	M48	1	max	410.248	1	777.13	10	364.817	3	.007	2	.07	4	.153	10
472			min	-333.284	2	-72.112	1	-359.043	4	-.099	5	-.072	3	-.014	1
473		2	max	410.248	1	777.13	10	364.817	3	.007	2	.053	4	.114	10
474			min	-333.284	2	-72.112	1	-359.043	4	-.099	5	-.054	3	-.011	1
475		3	max	410.248	1	777.13	10	364.817	3	.007	2	.035	4	.076	10
476			min	-333.284	2	-72.112	1	-359.043	4	-.099	5	-.036	3	-.007	1
477		4	max	410.248	1	777.13	10	364.817	3	.007	2	.018	4	.038	10
478			min	-333.284	2	-72.112	1	-359.043	4	-.099	5	-.018	3	-.004	1
479		5	max	410.248	1	777.13	10	364.817	3	.007	2	0	11	0	8
480			min	-333.284	2	-72.112	1	-359.043	4	-.099	5	0	3	0	6
481	M49	1	max	1078.394	1	694.336	7	1160.985	2	.09	6	.178	1	.101	7
482			min	-1065.329	2	208.636	4	-1221.943	1	-.014	1	-.169	2	.03	4
483		2	max	1078.394	1	694.336	7	1160.985	2	.09	6	.134	1	.076	7
484			min	-1065.329	2	208.636	4	-1221.943	1	-.014	1	-.127	2	.023	4
485		3	max	1078.394	1	694.336	7	1160.985	2	.09	6	.089	1	.051	7
486			min	-1065.329	2	208.636	4	-1221.943	1	-.014	1	-.085	2	.015	4
487		4	max	1078.394	1	694.336	7	1160.985	2	.09	6	.045	1	.025	7
488			min	-1065.329	2	208.636	4	-1221.943	1	-.014	1	-.042	2	.008	4
489		5	max	1078.394	1	694.336	7	1160.985	2	.09	6	0	3	0	5
490			min	-1065.329	2	208.636	4	-1221.943	1	-.014	1	0	5	0	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
491	M50	1	max	174.845	2	473.416	7	433.105	4	.132	6	.086	3	.093	7
492			min	-124.973	1	-67.142	4	-440.758	3	.017	1	-.085	4	-.013	4
493		2	max	174.845	2	473.416	7	433.105	4	.132	6	.065	3	.07	7
494			min	-124.973	1	-67.142	4	-440.758	3	.017	1	-.064	4	-.01	4
495		3	max	174.845	2	473.416	7	433.105	4	.132	6	.043	3	.046	7
496			min	-124.973	1	-67.142	4	-440.758	3	.017	1	-.042	4	-.007	4
497		4	max	174.845	2	473.416	7	433.105	4	.132	6	.022	3	.023	7
498			min	-124.973	1	-67.142	4	-440.758	3	.017	1	-.021	4	-.003	4
499		5	max	174.845	2	473.416	7	433.105	4	.132	6	0	3	0	5
500			min	-124.973	1	-67.142	4	-440.758	3	.017	1	0	4	0	9
501	M51	1	max	525.163	4	654.415	7	1039.008	4	.022	4	.147	3	.095	7
502			min	-506.315	3	226.935	2	-1010.117	3	-.023	3	-.152	4	.033	2
503		2	max	525.163	4	654.415	7	1039.008	4	.022	4	.11	3	.072	7
504			min	-506.315	3	226.935	2	-1010.117	3	-.023	3	-.114	4	.025	2
505		3	max	525.163	4	654.415	7	1039.008	4	.022	4	.074	3	.048	7
506			min	-506.315	3	226.935	2	-1010.117	3	-.023	3	-.076	4	.017	2
507		4	max	525.163	4	654.415	7	1039.008	4	.022	4	.037	3	.024	7
508			min	-506.315	3	226.935	2	-1010.117	3	-.023	3	-.038	4	.008	2
509		5	max	525.163	4	654.415	7	1039.008	4	.022	4	0	3	0	9
510			min	-506.315	3	226.935	2	-1010.117	3	-.023	3	0	8	0	7
511	M52	1	max	0	11	0	11	0	11	0	11	0	11	0	11
512			min	0	1	0	1	0	1	0	1	0	1	0	1
513		2	max	208.368	2	163.466	4	143.674	4	.097	1	.334	4	.056	9
514			min	-203.84	1	-85.624	3	-128.314	3	-.16	2	-.32	3	-.077	1
515		3	max	1107.935	2	137.642	4	186.297	3	.235	2	.136	2	.075	4
516			min	-1167.052	1	-80.086	3	-183.997	4	-.262	1	-.148	1	-.079	3
517		4	max	42.638	10	-1.403	4	169.158	4	.096	6	.335	3	.067	3
518			min	-45.863	2	-200.039	7	-183.835	3	-.026	4	-.336	4	-.211	8
519		5	max	0	11	0	11	0	11	0	11	0	11	0	11
520			min	0	1	0	1	0	1	0	1	0	1	0	1
521	M53	1	max	0	11	0	11	0	11	0	11	0	11	0	11
522			min	0	1	0	1	0	1	0	1	0	1	0	1
523		2	max	134.448	3	103.601	4	36.69	1	.165	1	.094	1	.073	3
524			min	-181.976	4	-102.413	3	-68.586	2	-.182	2	-.108	2	-.084	4
525		3	max	100.862	2	130.622	4	56.3	1	.069	1	.108	1	.012	2
526			min	-113.958	1	-113.154	3	-61.805	2	-.075	2	-.127	2	-.021	1
527		4	max	92.413	2	126.848	4	182.006	2	.249	2	.233	1	.115	4
528			min	-98.117	1	-132.903	3	-154.877	1	-.245	1	-.254	2	-.135	3
529		5	max	0	11	0	11	0	11	0	11	0	11	0	11
530			min	0	1	0	1	0	1	0	1	0	1	0	1
531	M54	1	max	356.243	1	466.802	6	380.405	3	.289	3	.261	1	.026	4
532			min	-294.363	2	-143.63	1	-361.064	4	-.266	4	-.272	2	-.096	6
533		2	max	356.243	1	466.802	6	380.405	3	.289	3	.263	1	.015	4
534			min	-294.363	2	-143.63	1	-361.064	4	-.266	4	-.273	2	-.135	6
535		3	max	356.243	1	466.802	6	380.405	3	.289	3	.266	1	.003	4
536			min	-294.363	2	-143.63	1	-361.064	4	-.266	4	-.274	2	-.173	6
537		4	max	356.243	1	466.802	6	380.405	3	.289	3	.268	1	-.008	4
538			min	-294.363	2	-143.63	1	-361.064	4	-.266	4	-.275	2	-.211	6
539		5	max	356.243	1	466.802	6	380.405	3	.289	3	.271	1	0	1
540			min	-294.363	2	-143.63	1	-361.064	4	-.266	4	-.276	2	-.249	6
541	5	1	max	40.939	1	294.503	1	102.432	4	.267	3	.274	2	.054	4
542			min	-103.741	6	-288.335	2	-121.713	3	-.221	4	-.264	1	-.106	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
543		2	max	40.939	1	294.503	1	102.432	4	.267	3	.274	2	.053	4
544			min	-103.741	6	-288.335	2	-121.713	3	-.221	4	-.266	1	-.106	3
545		3	max	40.939	1	294.503	1	102.432	4	.267	3	.275	2	.052	4
546			min	-103.741	6	-288.335	2	-121.713	3	-.221	4	-.267	1	-.112	10
547		4	max	40.939	1	294.503	1	102.432	4	.267	3	.276	2	.051	4
548			min	-103.741	6	-288.335	2	-121.713	3	-.221	4	-.269	1	-.124	10
549		5	max	40.939	1	294.503	1	102.432	4	.267	3	.276	2	.05	4
550			min	-103.741	6	-288.335	2	-121.713	3	-.221	4	-.271	1	-.135	10
551	M56	1	max	174.774	1	39.501	1	61.711	4	.524	3	.189	2	.324	2
552			min	-206.055	2	-46.902	2	-54.54	3	-.53	4	-.174	1	-.314	1
553		2	max	174.774	1	39.501	1	61.711	4	.524	3	.189	2	.326	2
554			min	-206.055	2	-46.902	2	-54.54	3	-.53	4	-.173	1	-.316	1
555		3	max	174.774	1	39.501	1	61.711	4	.524	3	.188	2	.329	2
556			min	-206.055	2	-46.902	2	-54.54	3	-.53	4	-.172	1	-.318	1
557		4	max	174.774	1	39.501	1	61.711	4	.524	3	.188	2	.332	2
558			min	-206.055	2	-46.902	2	-54.54	3	-.53	4	-.171	1	-.32	1
559		5	max	174.774	1	39.501	1	61.711	4	.524	3	.187	2	.334	2
560			min	-206.055	2	-46.902	2	-54.54	3	-.53	4	-.17	1	-.323	1
561	M57	1	max	1047.24	1	913.338	6	665.812	3	.034	3	.25	4	.31	1
562			min	-1015.927	2	265.768	1	-672.987	4	-.075	8	-.265	3	-.225	2
563		2	max	1047.24	1	913.338	6	665.812	3	.034	3	.195	4	.288	1
564			min	-1015.927	2	265.768	1	-672.987	4	-.075	8	-.21	3	-.254	2
565		3	max	1047.24	1	913.338	6	665.812	3	.034	3	.173	1	.266	1
566			min	-1015.927	2	265.768	1	-672.987	4	-.075	8	-.189	2	-.283	2
567		4	max	1047.24	1	913.338	6	665.812	3	.034	3	.172	1	.244	1
568			min	-1015.927	2	265.768	1	-672.987	4	-.075	8	-.188	2	-.312	2
569		5	max	1047.24	1	913.338	6	665.812	3	.034	3	.17	1	.222	1
570			min	-1015.927	2	265.768	1	-672.987	4	-.075	8	-.187	2	-.34	2
571	M58	1	max	544.077	1	592.176	8	501.898	3	.452	3	.211	4	.396	2
572			min	-518.498	2	208.308	3	-536.753	4	-.517	4	-.171	3	-.359	1
573		2	max	544.077	1	592.176	8	501.898	3	.452	3	.202	2	.377	2
574			min	-518.498	2	208.308	3	-536.753	4	-.517	4	-.164	1	-.377	1
575		3	max	544.077	1	592.176	8	501.898	3	.452	3	.203	2	.359	2
576			min	-518.498	2	208.308	3	-536.753	4	-.517	4	-.168	1	-.396	1
577		4	max	544.077	1	592.176	8	501.898	3	.452	3	.203	2	.341	2
578			min	-518.498	2	208.308	3	-536.753	4	-.517	4	-.171	1	-.414	1
579		5	max	544.077	1	592.176	8	501.898	3	.452	3	.204	2	.323	2
580			min	-518.498	2	208.308	3	-536.753	4	-.517	4	-.175	1	-.432	1
581	M59	1	max	30.64	2	-2.343	3	209.66	4	.399	3	.165	1	.107	2
582			min	-56.244	1	-72.72	8	-174.788	3	-.456	4	-.202	2	-.097	1
583		2	max	30.64	2	-2.343	3	209.66	4	.399	3	.167	1	.109	2
584			min	-56.244	1	-72.72	8	-174.788	3	-.456	4	-.203	2	-.095	1
585		3	max	30.64	2	-2.343	3	209.66	4	.399	3	.17	1	.11	2
586			min	-56.244	1	-72.72	8	-174.788	3	-.456	4	-.203	2	-.094	1
587		4	max	30.64	2	-2.343	3	209.66	4	.399	3	.172	1	.111	2
588			min	-56.244	1	-72.72	8	-174.788	3	-.456	4	-.204	2	-.093	1
589		5	max	30.64	2	-2.343	3	209.66	4	.399	3	.175	1	.112	2
590			min	-56.244	1	-72.72	8	-174.788	3	-.456	4	-.204	2	-.092	1
591	M60	1	max	224.869	1	272.121	1	129.768	4	.202	3	.212	1	.085	3
592			min	-264.938	2	-344.827	2	-118.755	3	-.236	4	-.218	2	-.096	4
593		2	max	224.869	1	272.121	1	129.768	4	.202	3	.215	1	.09	3
594			min	-264.938	2	-344.827	2	-118.755	3	-.236	4	-.22	2	-.097	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
595		3	max	224.869	1	272.121	1	129.768	4	.202	3	.217	1	.096	3
596			min	-264.938	2	-344.827	2	-118.755	3	-.236	4	-.222	2	-.099	4
597		4	max	224.869	1	272.121	1	129.768	4	.202	3	.22	1	.107	2
598			min	-264.938	2	-344.827	2	-118.755	3	-.236	4	-.224	2	-.106	9
599		5	max	224.869	1	272.121	1	129.768	4	.202	3	.223	1	.127	2
600			min	-264.938	2	-344.827	2	-118.755	3	-.236	4	-.226	2	-.12	1
601	M61	1	max	87.874	1	420.208	2	233.636	3	.272	3	.215	2	.097	1
602			min	-47.798	2	-196.916	1	-244.751	4	-.276	4	-.208	1	-.16	2
603		2	max	87.874	1	420.208	2	233.636	3	.272	3	.217	2	.113	1
604			min	-47.798	2	-196.916	1	-244.751	4	-.276	4	-.212	1	-.195	2
605		3	max	87.874	1	420.208	2	233.636	3	.272	3	.22	2	.129	1
606			min	-47.798	2	-196.916	1	-244.751	4	-.276	4	-.215	1	-.229	2
607		4	max	87.874	1	420.208	2	233.636	3	.272	3	.223	2	.145	1
608			min	-47.798	2	-196.916	1	-244.751	4	-.276	4	-.219	1	-.263	2
609		5	max	87.874	1	420.208	2	233.636	3	.272	3	.226	2	.162	1
610			min	-47.798	2	-196.916	1	-244.751	4	-.276	4	-.223	1	-.298	2
611	MP1A	1	max	0	11	.007	8	.013	1	0	11	0	11	0	11
612			min	0	1	-.006	3	-.014	2	0	1	0	1	0	1
613		2	max	301.063	2	131.196	4	93.704	6	.271	1	.07	2	.09	4
614			min	-281.519	1	-150.731	3	-13.301	1	-.276	2	-.085	10	-.116	3
615		3	max	364.192	2	231.79	4	156.559	1	.271	1	.178	7	.286	3
616			min	-218.39	1	-251.325	3	-97.292	2	-.276	2	.023	4	-.273	4
617		4	max	-13.148	10	28.76	3	28.898	2	0	11	.029	1	.029	3
618			min	-33.144	5	-28.763	4	-28.867	1	0	1	-.029	2	-.029	4
619		5	max	0	11	.034	3	.217	6	0	11	0	11	0	11
620			min	0	1	-.036	4	-.14	1	0	1	0	1	0	1
621	MP2A	1	max	0	11	.092	8	.528	1	0	11	0	11	0	11
622			min	0	1	-.085	3	-.543	2	0	1	0	1	0	1
623		2	max	331.815	6	308.972	4	360.639	1	.17	1	.291	1	.112	4
624			min	45.073	1	-301.749	3	-330.343	2	-.187	2	-.249	2	-.113	3
625		3	max	557.407	6	397.782	4	485.286	1	.17	1	1.137	1	.579	3
626			min	169.822	1	-390.559	3	-454.99	2	-.187	2	-1.035	2	-.595	4
627		4	max	-86.828	10	246.705	3	534.205	2	0	11	.787	1	.356	3
628			min	-323.276	5	-246.703	4	-534.139	1	0	1	-.787	2	-.356	4
629		5	max	0	11	.171	4	.329	6	0	11	0	11	0	11
630			min	0	1	-.169	3	-.103	2	0	1	0	1	0	1
631	MP3A	1	max	0	11	.005	4	.032	1	0	11	0	11	0	11
632			min	0	1	-.005	3	-.033	2	0	1	0	1	0	1
633		2	max	142.259	8	268.135	4	148.703	1	.204	2	.073	6	.217	4
634			min	21.615	3	-233.172	3	-123.158	2	-.175	1	-.004	1	-.195	3
635		3	max	440.925	8	410.926	4	341.258	1	.204	2	.568	1	.453	3
636			min	167.726	3	-375.963	3	-315.713	2	-.175	1	-.471	2	-.501	4
637		4	max	-25.393	10	87.611	3	154.316	2	0	11	.03	1	.029	3
638			min	-105.929	5	-87.609	4	-154.296	1	0	1	-.03	2	-.029	4
639		5	max	0	11	.015	8	.209	6	0	11	0	11	0	11
640			min	0	1	-.006	9	-.102	1	0	1	0	1	0	1
641	MP4A	1	max	0	11	.007	4	.014	5	0	11	0	11	0	11
642			min	0	1	-.007	3	-.011	2	0	1	0	1	0	1
643		2	max	381.058	2	158.716	4	52.975	4	.226	2	.163	2	.077	4
644			min	-235.869	1	-147.75	3	-15.219	3	-.223	1	-.12	1	-.054	3
645		3	max	394.206	2	187.443	4	52.975	4	.226	2	.208	2	.27	3
646			min	-222.721	1	-176.476	3	-15.219	3	-.223	1	-.09	1	-.269	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
647		4	max	-13.148	10	28.735	3	28.793	2	0	11	.029	1	.029	3
648			min	-33.144	5	-28.737	4	-28.787	1	0	1	-.029	2	-.029	4
649		5	max	0	11	.009	3	.067	2	0	11	0	11	0	11
650			min	0	1	-.011	4	-.061	1	0	1	0	1	0	1
651	M66	1	max	0	11	.001	2	.001	3	0	11	0	11	0	11
652			min	0	1	0	10	0	1	0	1	0	1	0	1
653		2	max	298.397	3	167.805	2	108.404	3	.151	4	.221	2	.054	10
654			min	-306.081	4	-88.619	1	-94.548	4	-.217	3	-.204	1	-.084	2
655		3	max	940.91	3	127.487	6	86.314	1	.124	1	.104	3	.086	3
656			min	-1005.088	4	-63.271	1	-85.786	2	-.153	2	-.115	4	-.091	4
657		4	max	103.625	4	-15.593	2	142.609	2	.106	4	.195	1	.108	1
658			min	-113.163	3	-198.383	5	-156.012	1	-.049	3	-.198	2	-.233	2
659		5	max	0	11	0	11	0	2	0	11	0	11	0	11
660			min	0	1	-.002	2	0	4	0	1	0	1	0	1
661	M67	1	max	0	11	.002	1	.003	3	0	11	0	11	0	11
662			min	0	1	0	9	-.003	1	0	1	0	1	0	1
663		2	max	163.521	1	108.206	2	64.226	4	.122	4	.077	2	.078	1
664			min	-210.951	2	-104.199	1	-96.346	3	-.139	3	-.09	1	-.091	2
665		3	max	137.707	3	136.421	2	54.141	4	.078	4	.078	4	.017	1
666			min	-147.802	4	-119.07	1	-60.083	3	-.084	3	-.097	3	-.026	2
667		4	max	84.486	3	116.602	2	116.745	3	.186	3	.185	4	.104	2
668			min	-87.979	4	-123.345	1	-90.53	4	-.182	4	-.206	3	-.124	1
669		5	max	0	11	0	8	.003	3	0	11	0	11	0	11
670			min	0	1	-.002	2	0	1	0	1	0	1	0	1
671	M68	1	max	330.541	4	460.277	7	359.587	1	.262	1	.178	2	.049	3
672			min	-268.798	3	-114.426	4	-339.648	2	-.237	2	-.189	1	-.106	4
673		2	max	330.541	4	460.277	7	359.587	1	.262	1	.157	4	.036	2
674			min	-268.798	3	-114.426	4	-339.648	2	-.237	2	-.167	3	-.135	5
675		3	max	330.541	4	460.277	7	359.587	1	.262	1	.18	4	.036	2
676			min	-268.798	3	-114.426	4	-339.648	2	-.237	2	-.189	3	-.171	5
677		4	max	330.541	4	460.277	7	359.587	1	.262	1	.203	4	.036	2
678			min	-268.798	3	-114.426	4	-339.648	2	-.237	2	-.21	3	-.206	5
679		5	max	330.541	4	460.277	7	359.587	1	.262	1	.226	4	.036	2
680			min	-268.798	3	-114.426	4	-339.648	2	-.237	2	-.231	3	-.242	5
681	M69	1	max	31.622	2	265.599	4	85.716	2	.236	1	.213	3	.037	2
682			min	-97.85	5	-256.842	3	-105.624	1	-.189	2	-.203	4	-.09	1
683		2	max	31.622	2	265.599	4	85.716	2	.236	1	.218	3	.044	3
684			min	-97.85	5	-256.842	3	-105.624	1	-.189	2	-.209	4	-.097	4
685		3	max	31.622	2	265.599	4	85.716	2	.236	1	.222	3	.059	3
686			min	-97.85	5	-256.842	3	-105.624	1	-.189	2	-.214	4	-.112	4
687		4	max	31.622	2	265.599	4	85.716	2	.236	1	.227	3	.074	3
688			min	-97.85	5	-256.842	3	-105.624	1	-.189	2	-.22	4	-.128	4
689		5	max	31.622	2	265.599	4	85.716	2	.236	1	.231	3	.088	3
690			min	-97.85	5	-256.842	3	-105.624	1	-.189	2	-.226	4	-.143	4
691	M70	1	max	117.446	4	34.744	4	43.785	4	.525	1	.111	1	.27	3
692			min	-148.383	3	-39.328	3	-37.212	3	-.53	2	-.098	2	-.26	4
693		2	max	117.446	4	34.744	4	43.785	4	.525	1	.11	1	.272	3
694			min	-148.383	3	-39.328	3	-37.212	3	-.53	2	-.096	2	-.262	4
695		3	max	117.446	4	34.744	4	43.785	4	.525	1	.108	1	.275	3
696			min	-148.383	3	-39.328	3	-37.212	3	-.53	2	-.094	2	-.264	4
697		4	max	117.446	4	34.744	4	43.785	4	.525	1	.107	1	.277	3
698			min	-148.383	3	-39.328	3	-37.212	3	-.53	2	-.092	2	-.266	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
699		5	max	117.446	4	34.744	4	43.785	4	.525	1	.105	1	.279	3
700			min	-148.383	3	-39.328	3	-37.212	3	-.53	2	-.09	2	-.268	4
701	M71	1	max	829.372	4	912.539	7	678.936	1	.162	3	.315	2	.195	4
702			min	-798.44	3	272.712	4	-685.397	2	-.181	4	-.328	1	-.109	3
703		2	max	829.372	4	912.539	7	678.936	1	.162	3	.259	2	.173	4
704			min	-798.44	3	272.712	4	-685.397	2	-.181	4	-.272	1	-.137	3
705		3	max	829.372	4	912.539	7	678.936	1	.162	3	.202	2	.15	4
706			min	-798.44	3	272.712	4	-685.397	2	-.181	4	-.216	1	-.166	3
707		4	max	829.372	4	912.539	7	678.936	1	.162	3	.146	2	.128	4
708			min	-798.44	3	272.712	4	-685.397	2	-.181	4	-.161	1	-.194	3
709		5	max	829.372	4	912.539	7	678.936	1	.162	3	.09	2	.105	4
710			min	-798.44	3	272.712	4	-685.397	2	-.181	4	-.105	1	-.223	3
711	M72	1	max	422.764	4	591.929	7	487.776	1	.434	1	.315	3	.277	3
712			min	-396.438	3	203.307	1	-525.264	2	-.503	2	-.273	4	-.241	4
713		2	max	422.764	4	591.929	7	487.776	1	.434	1	.286	3	.257	3
714			min	-396.438	3	203.307	1	-525.264	2	-.503	2	-.247	4	-.258	4
715		3	max	422.764	4	591.929	7	487.776	1	.434	1	.257	3	.237	3
716			min	-396.438	3	203.307	1	-525.264	2	-.503	2	-.222	4	-.274	4
717		4	max	422.764	4	591.929	7	487.776	1	.434	1	.229	3	.217	3
718			min	-396.438	3	203.307	1	-525.264	2	-.503	2	-.196	4	-.291	4
719		5	max	422.764	4	591.929	7	487.776	1	.434	1	.2	3	.198	3
720			min	-396.438	3	203.307	1	-525.264	2	-.503	2	-.171	4	-.308	4
721	M73	1	max	17.577	1	1.892	1	219.201	2	.411	1	.188	4	.083	1
722			min	-43.158	2	-72.734	7	-181.942	1	-.472	2	-.227	3	-.072	2
723		2	max	17.577	1	1.892	1	219.201	2	.411	1	.184	4	.083	1
724			min	-43.158	2	-72.734	7	-181.942	1	-.472	2	-.22	3	-.07	2
725		3	max	17.577	1	1.892	1	219.201	2	.411	1	.18	4	.083	1
726			min	-43.158	2	-72.734	7	-181.942	1	-.472	2	-.213	3	-.068	2
727		4	max	17.577	1	1.892	1	219.201	2	.411	1	.175	4	.083	1
728			min	-43.158	2	-72.734	7	-181.942	1	-.472	2	-.207	3	-.065	2
729		5	max	17.577	1	1.892	1	219.201	2	.411	1	.171	4	.083	1
730			min	-43.158	2	-72.734	7	-181.942	1	-.472	2	-.2	3	-.063	2
731	M74	1	max	69.463	4	167.648	2	147.235	2	.217	1	.158	4	.13	1
732			min	-102.636	3	-249.021	1	-131.036	1	-.256	2	-.163	3	-.136	2
733		2	max	69.463	4	167.648	2	147.235	2	.217	1	.155	4	.144	1
734			min	-102.636	3	-249.021	1	-131.036	1	-.256	2	-.159	3	-.145	2
735		3	max	69.463	4	167.648	2	147.235	2	.217	1	.155	2	.158	1
736			min	-102.636	3	-249.021	1	-131.036	1	-.256	2	-.159	1	-.155	2
737		4	max	69.463	4	167.648	2	147.235	2	.217	1	.164	2	.173	1
738			min	-102.636	3	-249.021	1	-131.036	1	-.256	2	-.167	1	-.165	2
739		5	max	69.463	4	167.648	2	147.235	2	.217	1	.172	2	.187	1
740			min	-102.636	3	-249.021	1	-131.036	1	-.256	2	-.174	1	-.174	2
741	M75	1	max	95.649	2	301.373	1	230.575	1	.293	1	.187	3	.151	4
742			min	-61.676	1	-115.305	2	-246.808	2	-.309	2	-.181	4	-.217	3
743		2	max	95.649	2	301.373	1	230.575	1	.293	1	.178	3	.157	4
744			min	-61.676	1	-115.305	2	-246.808	2	-.309	2	-.173	4	-.238	3
745		3	max	95.649	2	301.373	1	230.575	1	.293	1	.168	3	.163	4
746			min	-61.676	1	-115.305	2	-246.808	2	-.309	2	-.164	4	-.259	3
747		4	max	95.649	2	301.373	1	230.575	1	.293	1	.158	3	.169	4
748			min	-61.676	1	-115.305	2	-246.808	2	-.309	2	-.156	4	-.28	3
749		5	max	95.649	2	301.373	1	230.575	1	.293	1	.174	1	.175	4
750			min	-61.676	1	-115.305	2	-246.808	2	-.309	2	-.172	2	-.301	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
751	MP1C	1	max	0	11	.012	4	.008	1	0	11	0	11	0	11
752			min	0	1	-.013	3	-.009	2	0	1	0	1	0	1
753		2	max	269.807	3	131.877	1	77.581	4	.226	4	.076	2	.144	4
754			min	-252.385	4	-70.261	2	-89.548	3	-.231	3	-.101	1	-.135	3
755		3	max	332.935	3	244.019	4	192.943	1	.226	4	.167	1	.115	2
756			min	-189.257	4	-182.458	3	-204.749	2	-.231	3	-.216	2	-.229	1
757		4	max	-13.148	10	28.885	3	28.79	2	0	11	.029	1	.029	3
758			min	-33.144	5	-28.859	4	-28.803	1	0	1	-.029	2	-.029	4
759		5	max	0	11	.198	7	.064	4	0	11	0	11	0	11
760			min	0	1	-.133	4	-.093	7	0	1	0	1	0	1
761	MP2C	1	max	0	11	.389	4	.186	1	0	11	0	11	0	11
762			min	0	1	-.407	7	-.182	2	0	1	0	1	0	1
763		2	max	330.877	7	339.73	4	306.996	1	.09	2	.133	3	.111	3
764			min	50.87	4	-316.935	3	-328.357	2	-.105	1	-.156	4	-.146	4
765		3	max	556.468	7	479.398	4	393.5	1	.09	2	.645	1	.885	3
766			min	175.618	4	-456.603	3	-414.861	2	-.105	1	-.71	2	-.965	4
767		4	max	-86.828	10	462.329	3	318.558	2	0	11	.463	1	.679	3
768			min	-323.276	5	-462.276	4	-318.591	1	0	1	-.463	2	-.679	4
769		5	max	0	11	.366	5	.141	1	0	11	0	11	0	11
770			min	0	1	-.12	3	-.285	7	0	1	0	1	0	1
771	MP3C	1	max	0	11	.021	4	.012	1	0	11	0	11	0	11
772			min	0	1	-.021	3	-.011	2	0	1	0	1	0	1
773		2	max	142.217	7	137.747	4	233.224	1	.2	3	.199	2	.058	1
774			min	17.464	1	-133.937	3	-278.458	2	-.171	4	-.201	1	-.11	2
775		3	max	440.882	7	337.907	4	374.429	1	.2	3	.456	1	.436	3
776			min	163.576	1	-334.096	3	-419.663	2	-.171	4	-.549	2	-.495	4
777		4	max	-25.393	10	137.622	3	104.283	2	0	11	.029	1	.029	3
778			min	-105.929	5	-137.607	4	-104.294	1	0	1	-.029	2	-.029	4
779		5	max	0	11	.144	7	.033	4	0	11	0	11	0	11
780			min	0	1	-.059	4	-.099	7	0	1	0	1	0	1
781	MP4C	1	max	0	11	.012	8	.009	1	0	11	0	11	0	11
782			min	0	1	-.007	3	-.009	2	0	1	0	1	0	1
783		2	max	262.177	1	61.444	1	145.222	1	.174	1	.134	2	.064	2
784			min	-154.407	2	-40.857	2	-174.909	2	-.172	2	-.136	1	-.115	1
785		3	max	275.325	1	61.444	1	173.948	1	.174	1	.183	1	.146	2
786			min	-141.259	2	-40.857	2	-203.635	2	-.172	2	-.245	2	-.238	1
787		4	max	-13.148	10	28.763	3	28.754	2	0	11	.029	1	.029	3
788			min	-33.144	5	-28.758	4	-28.755	1	0	1	-.029	2	-.029	4
789		5	max	0	11	.038	7	.027	2	0	11	0	11	0	11
790			min	0	1	-.032	4	-.029	1	0	1	0	1	0	1
791	M80	1	max	0	11	.002	1	0	3	0	11	0	11	0	11
792			min	0	1	0	8	0	2	0	1	0	1	0	1
793		2	max	233.169	1	170.16	1	151.1	1	.099	2	.22	1	.039	4
794			min	-237.675	2	-93.656	2	-137.047	2	-.163	1	-.205	2	-.088	3
795		3	max	744.92	4	148.369	1	83.362	2	.239	4	.098	4	.093	1
796			min	-800.042	3	-94.176	2	-80.092	1	-.266	3	-.11	3	-.096	2
797		4	max	34.416	9	-2.843	1	114.429	1	.108	8	.279	2	.095	4
798			min	-37.621	7	-201.488	6	-129.387	2	-.041	1	-.277	1	-.215	7
799		5	max	0	11	0	9	0	1	0	11	0	11	0	11
800			min	0	1	-.002	1	-.002	4	0	1	0	1	0	1
801	M81	1	max	0	11	.002	2	0	1	0	11	0	11	0	11
802			min	0	1	0	9	-.002	4	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
803		2	max	96.939	4	108.078	1	45.743	2	.136	3	.083	3	.074	2
804			min	-147.112	3	-105.929	2	-77.091	1	-.153	4	-.095	4	-.085	1
805		3	max	201.344	1	138.243	1	46.146	2	.043	2	.091	3	.021	4
806			min	-218.765	2	-122.499	2	-51.946	1	-.049	1	-.109	4	-.031	3
807		4	max	254.53	1	150.606	1	158.897	4	.2	4	.177	3	.143	1
808			min	-267.164	2	-156.458	2	-131.427	3	-.196	3	-.197	4	-.163	2
809		5	max	0	11	0	11	.003	1	0	11	0	11	0	11
810			min	0	1	-.002	1	-.004	4	0	1	0	1	0	1
811	M82	1	max	250.447	3	452.202	8	406.775	2	.346	2	.282	3	.041	1
812			min	-191.486	4	-73.062	3	-387.425	1	-.325	1	-.29	4	-.108	8
813		2	max	250.447	3	452.202	8	406.775	2	.346	2	.264	3	.036	3
814			min	-191.486	4	-73.062	3	-387.425	1	-.325	1	-.271	4	-.145	8
815		3	max	250.447	3	452.202	8	406.775	2	.346	2	.246	3	.042	3
816			min	-191.486	4	-73.062	3	-387.425	1	-.325	1	-.252	4	-.182	8
817		4	max	250.447	3	452.202	8	406.775	2	.346	2	.229	3	.048	3
818			min	-191.486	4	-73.062	3	-387.425	1	-.325	1	-.233	4	-.219	8
819		5	max	250.447	3	452.202	8	406.775	2	.346	2	.211	3	.054	3
820			min	-191.486	4	-73.062	3	-387.425	1	-.325	1	-.214	4	-.256	8
821	M83	1	max	63.507	3	224.732	3	133.331	1	.315	2	.226	4	.097	1
822			min	-122.479	4	-225.367	4	-152.717	2	-.27	1	-.219	3	-.145	2
823		2	max	63.507	3	224.732	3	133.331	1	.315	2	.223	4	.107	1
824			min	-122.479	4	-225.367	4	-152.717	2	-.27	1	-.217	3	-.155	2
825		3	max	63.507	3	224.732	3	133.331	1	.315	2	.22	4	.117	1
826			min	-122.479	4	-225.367	4	-152.717	2	-.27	1	-.215	3	-.165	2
827		4	max	63.507	3	224.732	3	133.331	1	.315	2	.217	4	.127	1
828			min	-122.479	4	-225.367	4	-152.717	2	-.27	1	-.213	3	-.175	2
829		5	max	63.507	3	224.732	3	133.331	1	.315	2	.214	4	.137	1
830			min	-122.479	4	-225.367	4	-152.717	2	-.27	1	-.211	3	-.185	2
831	M84	1	max	137.48	3	23.09	3	69.262	1	.591	2	.172	4	.239	4
832			min	-169.61	4	-40.582	9	-64.448	2	-.593	1	-.157	3	-.23	3
833		2	max	137.48	3	23.09	3	69.262	1	.591	2	.174	4	.241	4
834			min	-169.61	4	-40.582	9	-64.448	2	-.593	1	-.159	3	-.231	3
835		3	max	137.48	3	23.09	3	69.262	1	.591	2	.177	4	.243	4
836			min	-169.61	4	-40.582	9	-64.448	2	-.593	1	-.161	3	-.232	3
837		4	max	137.48	3	23.09	3	69.262	1	.591	2	.18	4	.244	4
838			min	-169.61	4	-40.582	9	-64.448	2	-.593	1	-.164	3	-.234	3
839		5	max	137.48	3	23.09	3	69.262	1	.591	2	.182	4	.246	4
840			min	-169.61	4	-40.582	9	-64.448	2	-.593	1	-.166	3	-.235	3
841	M85	1	max	809.342	3	911.305	5	716.568	2	.15	3	.332	3	.236	3
842			min	-777.205	4	284.586	3	-720.874	1	-.164	4	-.347	4	-.154	4
843		2	max	809.342	3	911.305	5	716.568	2	.15	3	.291	3	.212	3
844			min	-777.205	4	284.586	3	-720.874	1	-.164	4	-.306	4	-.181	4
845		3	max	809.342	3	911.305	5	716.568	2	.15	3	.249	3	.189	3
846			min	-777.205	4	284.586	3	-720.874	1	-.164	4	-.264	4	-.209	4
847		4	max	809.342	3	911.305	5	716.568	2	.15	3	.208	3	.166	3
848			min	-777.205	4	284.586	3	-720.874	1	-.164	4	-.223	4	-.237	4
849		5	max	809.342	3	911.305	5	716.568	2	.15	3	.166	3	.142	3
850			min	-777.205	4	284.586	3	-720.874	1	-.164	4	-.182	4	-.264	4
851	M86	1	max	458.649	3	592.428	5	509.517	2	.492	2	.294	1	.343	4
852			min	-433.576	4	201.977	2	-542.262	1	-.553	1	-.254	2	-.306	3
853		2	max	458.649	3	592.428	5	509.517	2	.492	2	.249	1	.326	4
854			min	-433.576	4	201.977	2	-542.262	1	-.553	1	-.212	2	-.326	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
855		3	max	458.649	3	592.428	5	509.517	2	.492	2	.205	1	.309	4
856			min	-433.576	4	201.977	2	-542.262	1	-.553	1	-.171	2	-.346	3
857		4	max	458.649	3	592.428	5	509.517	2	.492	2	.16	1	.293	4
858			min	-433.576	4	201.977	2	-542.262	1	-.553	1	-.129	2	-.366	3
859		5	max	458.649	3	592.428	5	509.517	2	.492	2	.146	4	.276	4
860			min	-433.576	4	201.977	2	-542.262	1	-.553	1	-.118	3	-.386	3
861	M87	1	max	28.493	4	3.62	2	236.385	1	.428	2	.134	2	.114	4
862			min	-53.611	3	-73.071	5	-203.579	2	-.483	1	-.17	1	-.103	3
863		2	max	28.493	4	3.62	2	236.385	1	.428	2	.122	2	.114	4
864			min	-53.611	3	-73.071	5	-203.579	2	-.483	1	-.157	1	-.1	3
865		3	max	28.493	4	3.62	2	236.385	1	.428	2	.11	2	.114	4
866			min	-53.611	3	-73.071	5	-203.579	2	-.483	1	-.143	1	-.098	3
867		4	max	28.493	4	3.62	2	236.385	1	.428	2	.11	3	.114	4
868			min	-53.611	3	-73.071	5	-203.579	2	-.483	1	-.141	4	-.096	3
869		5	max	28.493	4	3.62	2	236.385	1	.428	2	.118	3	.114	4
870			min	-53.611	3	-73.071	5	-203.579	2	-.483	1	-.146	4	-.093	3
871	M88	1	max	52.27	2	255.822	3	133.526	1	.198	2	.183	3	.102	4
872			min	-84.164	1	-338.381	4	-121.304	2	-.233	1	-.188	4	-.106	3
873		2	max	52.27	2	255.822	3	133.526	1	.198	2	.189	3	.122	4
874			min	-84.164	1	-338.381	4	-121.304	2	-.233	1	-.193	4	-.12	3
875		3	max	52.27	2	255.822	3	133.526	1	.198	2	.195	3	.141	4
876			min	-84.164	1	-338.381	4	-121.304	2	-.233	1	-.198	4	-.135	3
877		4	max	52.27	2	255.822	3	133.526	1	.198	2	.201	3	.16	4
878			min	-84.164	1	-338.381	4	-121.304	2	-.233	1	-.204	4	-.15	3
879		5	max	52.27	2	255.822	3	133.526	1	.198	2	.207	3	.18	4
880			min	-84.164	1	-338.381	4	-121.304	2	-.233	1	-.209	4	-.164	3
881	M89	1	max	102.979	3	390.474	4	220.817	2	.276	2	.16	4	.099	2
882			min	-68.764	4	-203.769	3	-233.017	1	-.286	1	-.153	3	-.163	1
883		2	max	102.979	3	390.474	4	220.817	2	.276	2	.172	4	.097	2
884			min	-68.764	4	-203.769	3	-233.017	1	-.286	1	-.167	3	-.177	1
885		3	max	102.979	3	390.474	4	220.817	2	.276	2	.184	4	.096	2
886			min	-68.764	4	-203.769	3	-233.017	1	-.286	1	-.18	3	-.192	1
887		4	max	102.979	3	390.474	4	220.817	2	.276	2	.197	4	.095	2
888			min	-68.764	4	-203.769	3	-233.017	1	-.286	1	-.194	3	-.206	1
889		5	max	102.979	3	390.474	4	220.817	2	.276	2	.209	4	.107	3
890			min	-68.764	4	-203.769	3	-233.017	1	-.286	1	-.207	3	-.232	4
891	MP1B	1	max	0	11	.01	4	.01	1	0	11	0	11	0	11
892			min	0	1	-.01	3	-.009	2	0	1	0	1	0	1
893		2	max	238.182	4	26.219	2	144.444	1	.211	3	.176	2	.073	9
894			min	-211.754	3	-67.306	1	-189.801	2	-.214	4	-.158	1	-.039	3
895		3	max	301.31	4	101.848	4	262.354	1	.211	3	.249	1	.185	1
896			min	-148.626	3	-142.507	3	-307.712	2	-.214	4	-.322	2	-.082	2
897		4	max	-13.148	10	28.822	3	28.809	2	0	11	.029	1	.029	3
898			min	-33.144	5	-28.848	4	-28.825	1	0	1	-.029	2	-.029	4
899		5	max	0	11	.096	3	.083	2	0	11	0	11	0	11
900			min	0	1	-.162	8	-.122	5	0	1	0	1	0	1
901	MP2B	1	max	0	11	.397	4	.214	5	0	11	0	11	0	11
902			min	0	1	-.387	3	-.186	2	0	1	0	1	0	1
903		2	max	329.365	5	294.667	4	354.406	1	.166	3	.125	4	.168	3
904			min	62.373	3	-324.458	3	-365.783	2	-.182	4	-.144	3	-.13	4
905		3	max	554.956	5	434.335	4	440.91	1	.166	3	.708	1	.957	3
906			min	187.121	3	-464.126	3	-452.287	2	-.182	4	-.75	2	-.859	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
907		4	max	-86.828	10	462.266	3	318.568	2	0	11	.463	1	.679	3
908			min	-323.276	5	-462.322	4	-318.597	1	0	1	-.463	2	-.679	4
909		5	max	0	11	.128	4	.136	1	0	11	0	11	0	11
910			min	0	1	-.406	5	-.241	8	0	1	0	1	0	1
911	MP3B	1	max	0	11	.025	4	.012	4	0	11	0	11	0	11
912			min	0	1	-.025	3	-.013	3	0	1	0	1	0	1
913		2	max	142.576	5	156.491	4	263.561	1	.146	4	.165	2	.125	4
914			min	15.686	2	-194.786	3	-248.12	2	-.118	3	-.207	1	-.096	3
915		3	max	441.241	5	356.65	4	404.766	1	.146	4	.511	1	.565	3
916			min	161.797	2	-394.946	3	-389.325	2	-.118	3	-.522	2	-.459	4
917		4	max	-25.393	10	137.626	3	104.275	2	0	11	.029	1	.029	3
918			min	-105.929	5	-137.644	4	-104.282	1	0	1	-.029	2	-.029	4
919		5	max	0	11	.078	3	.049	3	0	11	0	11	0	11
920			min	0	1	-.174	8	-.089	8	0	1	0	1	0	1
921	MP4B	1	max	0	11	.011	4	.008	1	0	11	0	11	0	11
922			min	0	1	-.013	7	-.01	6	0	1	0	1	0	1
923		2	max	351.431	4	105.916	2	102.661	1	.209	4	.033	2	.179	4
924			min	-242.66	3	-139.711	1	-107.596	2	-.207	3	-.076	1	-.149	3
925		3	max	364.58	4	105.916	2	131.388	1	.209	4	.196	3	.263	1
926			min	-229.512	3	-139.711	1	-136.323	2	-.207	3	-.248	4	-.166	2
927		4	max	-13.148	10	28.779	3	28.744	2	0	11	.029	1	.029	3
928			min	-33.144	5	-28.783	4	-28.748	1	0	1	-.029	2	-.029	4
929		5	max	0	11	.052	3	.027	3	0	11	0	11	0	11
930			min	0	1	-.057	4	-.03	4	0	1	0	1	0	1
931	M94	1	max	299.255	1	350.259	2	311.521	4	.108	2	.223	3	.23	2
932			min	-370.117	2	-304.215	1	-253.324	3	-.107	1	-.273	4	-.223	1
933		2	max	299.255	1	350.259	2	311.521	4	.108	2	.217	3	.221	2
934			min	-370.117	2	-304.215	1	-253.324	3	-.107	1	-.265	4	-.216	1
935		3	max	299.255	1	350.259	2	311.521	4	.108	2	.211	3	.212	2
936			min	-370.117	2	-304.215	1	-253.324	3	-.107	1	-.258	4	-.208	1
937		4	max	299.255	1	350.259	2	311.521	4	.108	2	.204	3	.204	2
938			min	-370.117	2	-304.215	1	-253.324	3	-.107	1	-.25	4	-.201	1
939		5	max	299.255	1	350.259	2	311.521	4	.108	2	.198	3	.195	2
940			min	-370.117	2	-304.215	1	-253.324	3	-.107	1	-.242	4	-.193	1
941	M95	1	max	233.429	1	296.447	2	191.862	4	.108	1	.174	3	.18	2
942			min	-321.35	2	-333.006	1	-216.45	3	-.082	2	-.151	4	-.228	1
943		2	max	233.429	1	296.447	2	191.862	4	.108	1	.168	3	.173	2
944			min	-321.35	2	-333.006	1	-216.45	3	-.082	2	-.147	4	-.219	1
945		3	max	233.429	1	296.447	2	191.862	4	.108	1	.163	3	.166	2
946			min	-321.35	2	-333.006	1	-216.45	3	-.082	2	-.142	4	-.211	1
947		4	max	233.429	1	296.447	2	191.862	4	.108	1	.158	3	.158	2
948			min	-321.35	2	-333.006	1	-216.45	3	-.082	2	-.137	4	-.203	1
949		5	max	233.429	1	296.447	2	191.862	4	.108	1	.152	3	.151	2
950			min	-321.35	2	-333.006	1	-216.45	3	-.082	2	-.132	4	-.195	1
951	M96	1	max	161.858	4	340.244	1	341.979	2	.104	1	.266	1	.222	1
952			min	-226.61	3	-288.92	2	-278.548	1	-.1	2	-.32	2	-.211	2
953		2	max	161.858	4	340.244	1	341.979	2	.104	1	.259	1	.213	1
954			min	-226.61	3	-288.92	2	-278.548	1	-.1	2	-.311	2	-.204	2
955		3	max	161.858	4	340.244	1	341.979	2	.104	1	.252	1	.205	1
956			min	-226.61	3	-288.92	2	-278.548	1	-.1	2	-.303	2	-.196	2
957		4	max	161.858	4	340.244	1	341.979	2	.104	1	.245	1	.196	1
958			min	-226.61	3	-288.92	2	-278.548	1	-.1	2	-.294	2	-.189	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
959		5	max	161.858	4	340.244	1	341.979	2	.104	1	.238	1	.188	1
960			min	-226.61	3	-288.92	2	-278.548	1	-.1	2	-.286	2	-.182	2
961	M97	1	max	104.239	2	345.564	3	145.446	3	.125	4	.127	4	.215	3
962			min	-189.91	1	-386.104	4	-171.118	4	-.099	3	-.106	3	-.264	4
963		2	max	104.239	2	345.564	3	145.446	3	.125	4	.123	4	.207	3
964			min	-189.91	1	-386.104	4	-171.118	4	-.099	3	-.102	3	-.255	4
965		3	max	104.239	2	345.564	3	145.446	3	.125	4	.118	4	.198	3
966			min	-189.91	1	-386.104	4	-171.118	4	-.099	3	-.099	3	-.245	4
967		4	max	104.239	2	345.564	3	145.446	3	.125	4	.114	4	.19	3
968			min	-189.91	1	-386.104	4	-171.118	4	-.099	3	-.095	3	-.236	4
969		5	max	104.239	2	345.564	3	145.446	3	.125	4	.11	4	.181	3
970			min	-189.91	1	-386.104	4	-171.118	4	-.099	3	-.092	3	-.226	4
971	M98	1	max	107.344	2	393.082	4	237.234	3	.12	4	.166	4	.256	4
972			min	-170.563	1	-338.396	3	-173.368	4	-.115	3	-.219	3	-.242	3
973		2	max	107.344	2	393.082	4	237.234	3	.12	4	.161	4	.246	4
974			min	-170.563	1	-338.396	3	-173.368	4	-.115	3	-.213	3	-.234	3
975		3	max	107.344	2	393.082	4	237.234	3	.12	4	.157	4	.236	4
976			min	-170.563	1	-338.396	3	-173.368	4	-.115	3	-.207	3	-.225	3
977		4	max	107.344	2	393.082	4	237.234	3	.12	4	.153	4	.226	4
978			min	-170.563	1	-338.396	3	-173.368	4	-.115	3	-.201	3	-.217	3
979		5	max	107.344	2	393.082	4	237.234	3	.12	4	.148	4	.217	4
980			min	-170.563	1	-338.396	3	-173.368	4	-.115	3	-.195	3	-.208	3
981	M99	1	max	223.285	3	311.714	1	371.742	1	.11	2	.278	2	.188	1
982			min	-308.679	4	-342.863	2	-403.769	2	-.086	1	-.252	1	-.232	2
983		2	max	223.285	3	311.714	1	371.742	1	.11	2	.268	2	.18	1
984			min	-308.679	4	-342.863	2	-403.769	2	-.086	1	-.243	1	-.224	2
985		3	max	223.285	3	311.714	1	371.742	1	.11	2	.258	2	.173	1
986			min	-308.679	4	-342.863	2	-403.769	2	-.086	1	-.233	1	-.215	2
987		4	max	223.285	3	311.714	1	371.742	1	.11	2	.248	2	.165	1
988			min	-308.679	4	-342.863	2	-403.769	2	-.086	1	-.224	1	-.207	2
989		5	max	223.285	3	311.714	1	371.742	1	.11	2	.238	2	.157	1
990			min	-308.679	4	-342.863	2	-403.769	2	-.086	1	-.215	1	-.198	2
991	M100	1	max	168.635	3	304.937	1	308.282	2	.004	1	.098	4	.306	1
992			min	-257.834	4	-349.573	2	-325.194	1	-.004	2	-.066	3	-.276	2
993		2	max	165.709	3	306.515	1	309.972	2	.004	1	.083	4	.164	4
994			min	-254.908	4	-347.996	2	-326.883	1	-.004	2	-.063	3	-.128	3
995		3	max	164.071	1	308.092	1	311.661	2	.004	1	.069	4	.085	4
996			min	-254.696	2	-346.418	2	-328.572	1	-.004	2	-.062	3	-.043	3
997		4	max	166.997	1	309.67	1	313.35	2	.004	1	.057	4	.178	2
998			min	-257.622	2	-344.841	2	-330.262	1	-.004	2	-.062	3	-.131	1
999		5	max	169.923	1	311.247	1	315.04	2	.004	1	.066	9	.329	2
1000			min	-260.548	2	-343.264	2	-331.951	1	-.004	2	-.062	3	-.279	1
1001	M101	1	max	129.949	2	338.774	3	198.855	4	.005	3	.07	4	.306	3
1002			min	-215.91	1	-392.789	4	-221.011	3	-.005	4	-.03	3	-.28	4
1003		2	max	129.949	2	340.351	3	198.855	4	.005	3	.05	1	.178	3
1004			min	-215.91	1	-391.211	4	-221.011	3	-.005	4	-.027	2	-.144	4
1005		3	max	129.949	2	341.928	3	198.855	4	.005	3	.046	1	.06	5
1006			min	-215.91	1	-389.634	4	-221.011	3	-.005	4	-.039	2	-.009	4
1007		4	max	129.949	2	343.506	3	198.855	4	.005	3	.053	3	.126	4
1008			min	-215.91	1	-388.057	4	-221.011	3	-.005	4	-.062	4	-.081	3
1009		5	max	129.949	2	345.083	3	198.855	4	.005	3	.081	3	.26	4
1010			min	-215.91	1	-386.479	4	-221.011	3	-.005	4	-.105	4	-.211	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1011	M102	1	max	149.155	1	289.355	2	236.143	1	.004	2	.092	10	.349	2
1012			min	-237.662	2	-339.967	1	-256.86	2	-.004	1	-.017	4	-.321	1
1013		2	max	146.229	1	290.932	2	234.454	1	.004	2	.063	2	.224	2
1014			min	-234.736	2	-338.39	1	-255.171	2	-.004	1	-.041	1	-.189	1
1015		3	max	143.303	1	292.509	2	232.764	1	.004	2	.072	2	.098	2
1016			min	-231.81	2	-336.812	1	-253.481	2	-.004	1	-.064	1	-.058	1
1017		4	max	140.377	1	294.087	2	231.075	1	.004	2	.081	2	.117	3
1018			min	-228.884	2	-335.235	1	-251.792	2	-.004	1	-.088	1	-.071	4
1019		5	max	137.451	1	295.664	2	229.386	1	.004	2	.091	2	.202	1
1020			min	-225.958	2	-333.658	1	-250.103	2	-.004	1	-.112	1	-.152	2
1021	M103	1	max	4728.68	5	47.104	5	47.225	4	0	4	0	11	0	11
1022			min	504.938	2	-.422	2	-47.225	3	0	7	0	1	0	1
1023		2	max	4717.54	5	23.552	5	23.612	4	0	4	.04	4	0	2
1024			min	489.487	2	-.211	2	-23.612	3	0	7	-.04	3	-.04	5
1025		3	max	4706.4	5	0	11	0	11	0	4	.054	4	0	2
1026			min	474.036	2	0	1	0	1	0	7	-.054	3	-.053	5
1027		4	max	4695.259	5	.211	2	23.612	3	0	4	.04	4	0	2
1028			min	458.585	2	-23.552	5	-23.612	4	0	7	-.04	3	-.04	5
1029		5	max	4684.119	5	.422	2	47.225	3	0	4	0	11	0	11
1030			min	443.134	2	-47.104	5	-47.225	4	0	7	0	1	0	1
1031	M104	1	max	4690.245	8	47.454	8	37.167	2	0	3	0	11	0	11
1032			min	875.902	3	-1.659	3	-37.167	1	0	4	0	1	0	1
1033		2	max	4679.37	8	23.727	8	18.584	2	0	3	.032	2	.001	3
1034			min	859.514	3	-.83	3	-18.584	1	0	4	-.032	1	-.04	8
1035		3	max	4668.495	8	0	11	0	11	0	3	.042	2	.002	3
1036			min	843.126	3	0	1	0	1	0	4	-.042	1	-.054	8
1037		4	max	4657.62	8	.83	3	18.584	1	0	3	.032	2	.001	3
1038			min	826.738	3	-23.727	8	-18.584	2	0	4	-.032	1	-.04	8
1039		5	max	4646.745	8	1.659	3	37.167	1	0	3	0	11	0	11
1040			min	810.35	3	-47.454	8	-37.167	2	0	4	0	1	0	1
1041	M105	1	max	4654.821	7	47.454	7	37.167	1	0	3	0	11	0	11
1042			min	813.584	4	-1.659	4	-37.167	2	0	4	0	1	0	1
1043		2	max	4643.946	7	23.727	7	18.584	1	0	3	.032	1	.001	4
1044			min	797.196	4	-.83	4	-18.584	2	0	4	-.032	2	-.04	7
1045		3	max	4633.071	7	0	11	0	11	0	3	.042	1	.002	4
1046			min	780.808	4	0	1	0	1	0	4	-.042	2	-.054	7
1047		4	max	4622.196	7	.83	4	18.584	2	0	3	.032	1	.001	4
1048			min	764.42	4	-23.727	7	-18.584	1	0	4	-.032	2	-.04	7
1049		5	max	4611.32	7	1.659	4	37.167	2	0	3	0	11	0	11
1050			min	748.031	4	-47.454	7	-37.167	1	0	4	0	1	0	1

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	MP2A	PIPE_2.5	.450	4.5	2	.096	4.5		2	30038....	50715	3.596	3.596	1...	H1-1b
2	MP2C	PIPE_2.5	.390	4.5	3	.063	4.5		3	30038....	50715	3.596	3.596	1...	H1-1b
3	MP2B	PIPE_2.5	.390	4.5	4	.089	4.5		4	30038....	50715	3.596	3.596	1...	H1-1b
4	M23	PL3/8x6	.347	.167	3	.256	0	y	8	71583....	72900	.57	9.113	1...	H1-1b
5	M40	PL3/8x6	.323	.167	1	.255	0	y	7	71583....	72900	.57	9.113	2...	H1-1b
6	M5	PL3/8x6	.317	0	3	.096	0	y	3	70647....	72900	.57	9.113	1...	H1-1b
7	M6	PL3/8x6	.280	.167	2	.256	0	y	5	71583....	72900	.57	9.113	1...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
8	M38	PL3/8x6	.276	.167	4	.241	0	y	7	71583....	72900	.57	9.113	2...	H1-1b
9	M46	L2x2x3	.268	0	2	.010	4.29	z	5	9305.2...	23392.8	.558	1.228	2...	H2-1
10	M29	L2x2x3	.262	0	4	.010	4.29	z	6	9305.2...	23392.8	.558	1.191	1...	H2-1
11	M21	PL3/8x6	.244	.167	1	.242	0	y	6	71583....	72900	.57	9.113	2...	H1-1b
12	M4	PL3/8x6	.239	.167	2	.241	0	y	8	71583....	72900	.57	9.113	2...	H1-1b
13	M53	PIPE_2.0	.230	8.464	2	.172	11.8...		2	6295.4...	32130	1.872	1.872	3...	H1-1b
14	M12	L2x2x3	.221	4.29	1	.010	4.29	z	8	9305.2...	23392.8	.558	1.219	2...	H2-1
15	M3	PL3/8x6	.220	0	4	.103	0	y	6	70647....	72900	.57	9.113	1...	H1-1b
16	MP3B	PIPE_2.5	.217	4.5	3	.071	4.5		4	30038....	50715	3.596	3.596	2...	H1-1b
17	M41	PL1/2x6	.216	0	3	.160	0	y	6	93348....	97200	1.012	12.15	1...	H1-1b
18	M45	L2x2x3	.216	0	3	.012	4.29	y	6	9305.2...	23392.8	.558	1.186	1...	H2-1
19	MP3C	PIPE_2.5	.216	4.5	2	.087	4.5		3	30038....	50715	3.596	3.596	2...	H1-1b
20	M28	L2x2x3	.215	0	2	.012	4.29	y	5	9305.2...	23392.8	.558	1.21	2...	H2-1
21	M7	PL1/2x6	.214	0	1	.162	0	y	7	93348....	97200	1.012	12.15	1...	H1-1b
22	M81	PIPE_2.0	.210	11.9...	2	.141	11.8...		4	6295.4...	32130	1.872	1.872	2...	H1-1b
23	MP3A	PIPE_2.5	.210	4.5	1	.086	4.5		2	30038....	50715	3.596	3.596	2...	H1-1b
24	M9	PL1/2x6	.210	0	2	.123	0	y	8	93348....	97200	1.012	12.15	1...	H1-1b
25	M11	L2x2x3	.205	4.29	1	.012	4.29	y	7	9305.2...	23392.8	.558	1.219	2...	H2-1
26	M67	PIPE_2.0	.203	8.464	3	.129	11.8...		3	6295.4...	32130	1.872	1.872	2...	H1-1b
27	M26	PL1/2x6	.201	0	3	.141	0	y	9	93348....	97200	1.012	12.15	1...	H1-1b
28	M101	L2.5x2.5x4	.197	1.298	4	.055	0	y	4	36492....	38556	1.114	2.537	2...	H2-1
29	M22	PL3/8x6	.195	0	1	.079	0	y	1	70647....	72900	.57	9.113	1...	H1-1b
30	M102	L2.5x2.5x4	.193	0	2	.047	0	y	1	36492....	38556	1.114	2.537	2...	H2-1
31	M100	L2.5x2.5x4	.191	0	4	.047	0	y	2	36492....	38556	1.114	2.537	2...	H2-1
32	M1	HSS4X4X4	.184	0	4	.074	0	z	3	12411...	139518	16.181	16.181	2...	H1-1b
33	M39	PL3/8x6	.180	0	2	.065	0	y	10	70647....	72900	.57	9.113	1...	H1-1b
34	M37	PL3/8x6	.154	0	4	.102	0	y	8	70647....	72900	.57	9.113	1...	H1-1b
35	MP1B	PIPE_2.5	.136	4.5	2	.079	4.5		4	30038....	50715	3.596	3.596	1...	H1-1b
36	M43	PL1/2x6	.136	0	4	.126	0	y	5	93348....	97200	1.012	12.15	1...	H1-1b
37	M19	HSS4X4X4	.136	2.573	8	.051	4.931	z	4	12488...	139518	16.181	16.181	1...	H1-1b
38	M36	HSS4X4X4	.135	2.573	7	.053	4.931	z	2	12488...	139518	16.181	16.181	1...	H1-1b
39	M2	HSS4X4X4	.131	2.573	5	.050	2.573	y	7	12488...	139518	16.181	16.181	1...	H1-1b
40	MP1A	PIPE_2.5	.123	4.5	3	.100	4.5		2	30038....	50715	3.596	3.596	1...	H1-1b
41	M24	PL1/2x6	.122	0	3	.162	0	y	5	93348....	97200	1.012	12.15	1...	H1-1b
42	M35	HSS4X4X4	.120	0	1	.065	0	z	2	12411...	139518	16.181	16.181	2...	H1-1b
43	M18	HSS4X4X4	.117	3.745	8	.050	0	z	1	12411...	139518	16.181	16.181	2...	H1-1b
44	MP4B	PIPE_2.5	.114	4.5	1	.075	4.5		3	30038....	50715	3.596	3.596	2...	H1-1b
45	MP1C	PIPE_2.5	.114	4.5	1	.089	4.5		4	30038....	50715	3.596	3.596	2...	H1-1b
46	MP4C	PIPE_2.5	.111	4.5	1	.069	4.5		2	30038....	50715	3.596	3.596	1...	H1-1b
47	M103	LL2.5x2.5...	.107	0	5	.003	4.537	y	5	44372....	58320	3.954	2.55	1	H1-1b*
48	M104	LL2.5x2.5...	.106	0	8	.004	0	y	8	44372....	58320	3.954	2.55	1...	H1-1b*
49	M105	LL2.5x2.5...	.105	0	7	.004	4.537	y	6	44372....	58320	3.954	2.55	1...	H1-1b*
50	MP4A	PIPE_2.5	.105	4.5	4	.075	1		2	30038....	50715	3.596	3.596	1...	H1-1b
51	M8	PL1/2x6	.101	.112	2	.132	0	y	5	96757....	97200	1.012	12.15	1...	H1-1b
52	M42	PL1/2x6	.092	.112	4	.133	0	y	7	96757....	97200	1.012	12.15	1...	H1-1b
53	M52	PIPE_3.0	.091	8.464	4	.107	8.073		1	28250....	65205	5.749	5.749	2...	H1-1b
54	M27	PL1/2x6	.091	.112	2	.198	0	y	8	96757....	97200	1.012	12.15	1...	H1-1b
55	M10	PL1/2x6	.090	.112	2	.197	0	y	7	96757....	97200	1.012	12.15	1...	H1-1b
56	M80	PIPE_3.0	.081	4.557	1	.099	8.073		3	28250....	65205	5.749	5.749	2...	H1-1b
57	M44	PL1/2x6	.075	.112	4	.219	0	y	10	96757....	97200	1.012	12.15	1...	H1-1b
58	M66	PIPE_3.0	.073	11.7...	1	.059	8.073		4	28250....	65205	5.749	5.749	2...	H1-1b
59	M25	PL1/2x6	.070	.112	4	.203	0	y	9	96757....	97200	1.012	12.15	1...	H1-1b

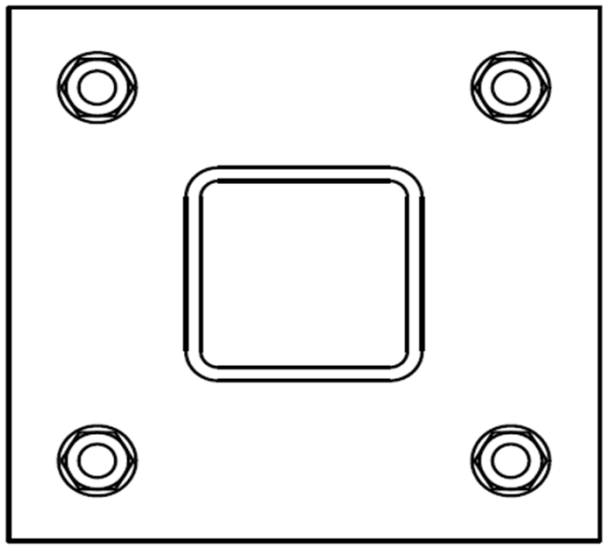
Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
60	M20	PL3/8x6	.067	0	2	.101	0	y	5	70647....	72900	.57	9.113	1..	H1-1b

TES Tower Engineering Solutions	Standoff Arm Flange Connection Check		Date	6/7/2022
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T-Mobile	Mount Elev. [ft]:	167
	Site Name:	North Franklin	Engineer Name:	Venkata Annamreddy
	Site Number:	CT02219-S-SBA	Project #:	129856

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

RISA Member Label =	M1	
I or J End?	I	
Load Combination # =	3	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	1	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	6	[In]
Bolt Vertical Spacing, Sbv =	6	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



Typical Connection Detail

NOTES

Standoff and Stiffener welds are assumed 0.1875 in.

Capacity Checks:

Max Bolt Shear =	0.675	[Kips]
Bolt Shear Capacity =	13.81	[Kips]
Max Bolt Shear Usage =	4.9%	PASS
Max Bolt Tension =	3.21	[Kips]
Bolt Tension Capacity =	20.34	[Kips]
Max Bolt Tension Usage =	15.8%	PASS
Max Bolt Interaction =	16.5%	PASS
Max Plate Bending Moment =	5.93	[Kip-In]
Length of Yield Line =	5.85	[In]
Plate Moment Capacity =	47.38	[Kip-In]
Max Plate Usage =	11.2%	PASS
Max Weld Usage =	21.8%	PASS

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CTNL121A

Ayer Road Franklin SBA
36 Ayer Road
Franklin, CT 06254

July 5, 2022

Fox Hill Telecom Project Number: 221403

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**13.84 %**

Fox Hill Telecom

July 5, 2022

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

Emissions Analysis for Site: **CTNL121A – Ayer Road Franklin SBA**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **36 Ayer Road, Franklin, 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), 2100 MHz (AWS), 2500 MHz (BRS) and 11 GHz microwave 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 **36 Ayer Road, Franklin, 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 and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20
Microwave (Sector A)	11 GHz	1	1

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), 2100 MHz (AWS), 2500 MHz (BRS) and 11 GHz microwave 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 and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	167
A	2	Commscope VV-65A-R1	167
A	3	Ericsson AIR6419 B41	167
A	4	RFS SC2-W100BD	167
B	1	RFS APXVAALL24_43-U-NA20	167
B	2	Commscope VV-65A-R1	167
B	3	Ericsson AIR6419 B41	167
C	1	RFS APXVAALL24_43-U-NA20	167
C	2	Commscope VV-65A-R1	167
C	3	Ericsson AIR6419 B41	167

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	0.93
Antenna A2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.76
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.13
Antenna A4	RFS SC2-W100BD	11 GHz	32.25	1	1	1,678.80	0.02
						Sector A Composite MPE%	**5.84**
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.93
Antenna B2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.76
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.13
						Sector B Composite MPE%	**5.82**
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.93
Antenna C2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.76
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.13
						Sector C Composite MPE%	**5.82**

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, the sector with the largest calculated MPE% is Sector A. *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 at Sector A	**5.84 %**
Verizon Wireless	1.21 %
Dish Wireless	6.79 %
Site Total MPE %:	**13.84 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	5.84 %
T-MOBILE Sector B Total:	5.82 %
T-MOBILE Sector C Total:	5.82 %
Site Total:	13.84 %

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, the sector with the largest calculated MPE% is Sector A.

T-MOBILE _ Frequency Band / Technology Max Power Values (Sector A)	# 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	167	2.57	600 MHz	400	0.64%
T-Mobile 700 MHz LTE	2	485.32	167	1.35	700 MHz	467	0.29%
T-Mobile 1900 MHz (PCS) LTE	4	1,435.69	167	7.96	1900 MHz (PCS)	1000	0.80%
T-Mobile 1900 MHz (PCS) GSM	1	538.38	167	0.75	1900 MHz (PCS)	1000	0.07%
T-Mobile 2100 MHz (AWS) LTE	4	1,610.87	167	8.94	2100 MHz (AWS)	1000	0.89%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	167	31.35	2500 MHz (BRS)	1000	3.13%
T-Mobile 11 GHz Microwave	1	1,678.80	167	0.23	11 GHz	1000	0.02%
						Total:	**5.84%**

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:	5.84 %
Sector B:	5.82 %
Sector C:	5.82 %
T-MOBILE Maximum Total (per sector):	5.84 %
Site Total:	13.84 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **13.84 %** 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

Letter of Authorization

SBA Letter of Authorization

CT - CONNECTICUT SITING COUNCIL
Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Tower Share Application

SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

Kri Pelletier
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

SBA
By: _____ Date: _____

Exhibit H

Recipient Mailings

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0309 0757 08 0089 5000 0010 1581

usps.com
$8.95
US POSTAGE
Flat Rate Env

07/28/2022 Mailed from 01566

U.S. POSTAGE PAID
Click-N-Ship®

PRIORITY MAIL®

Expected Delivery Date: 07/29/22
Ref#: SBCT-NL121

0000

R005

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

SBA COMMUNICATIONS CORPORATION
STE 125
13 FLANDERS RD
WESTBOROUGH MA 01581

USPS TRACKING #

9405 5036 9930 0309 0757 08

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 0309 0757 08

Trans. #:	568629730
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/29/2022

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-NL121

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

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

UNITED STATES POSTAL SERVICE®

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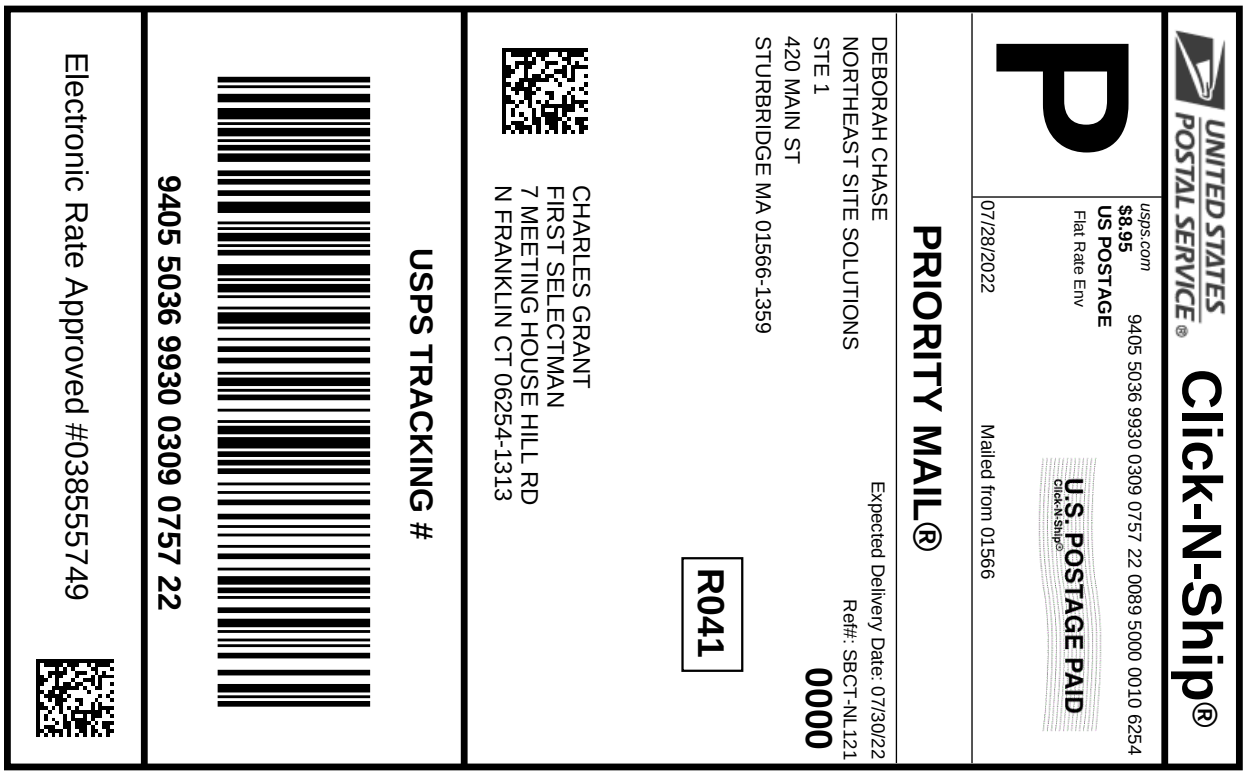

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0309 0757 22

Trans. #:	568629730
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/30/2022

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-NL121

To: CHARLES GRANT
FIRST SELECTMAN
7 MEETING HOUSE HILL RD
N FRANKLIN CT 06254-1313

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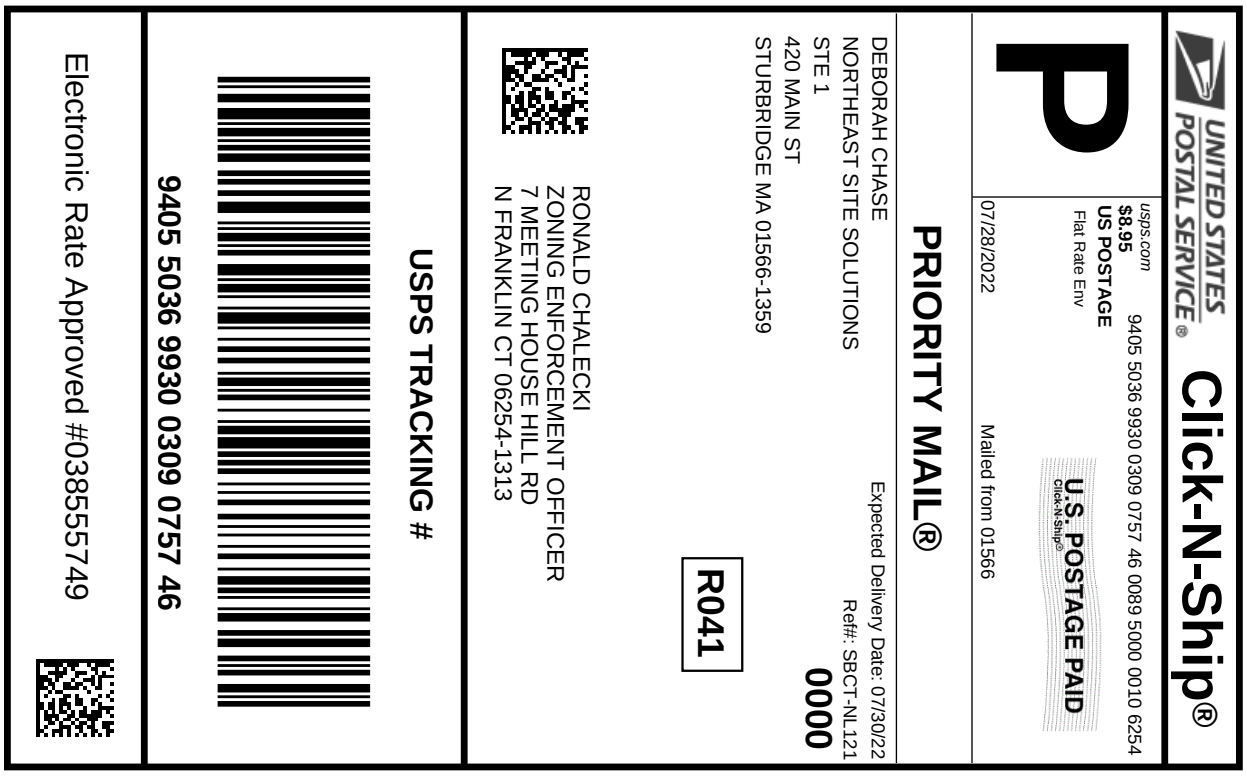

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3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand 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 0309 0757 46

Trans. #:	568629730
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/30/2022

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-NL121

To: RONALD CHALECKI
ZONING ENFORCEMENT OFFICER
7 MEETING HOUSE HILL RD
N FRANKLIN CT 06254-1313

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
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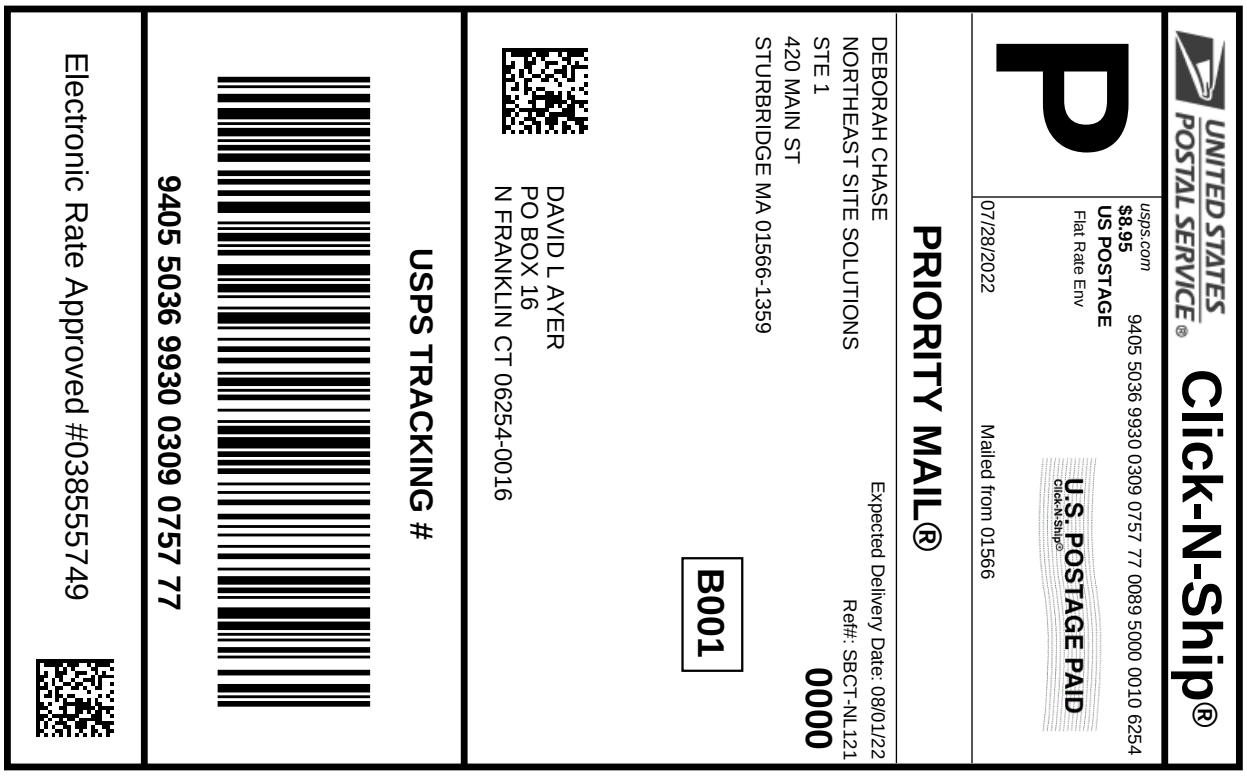

Cut on dotted line.

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.**
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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0309 0757 77

Trans. #:	568629730
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	08/01/2022

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-NL121

To: DAVID L AYER
PO BOX 16
N FRANKLIN CT 06254-0016

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UNITED STATES POSTAL SERVICE.

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

07/29/2022 03:48 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Fri 07/29/2022 Tracking #: 9405 5036 9930 0309 0757 08	1		$0.00
Prepaid Mail North Franklin, CT 06254 Weight: 0 lb 7.30 oz Acceptance Date: Fri 07/29/2022 Tracking #: 9405 5036 9930 0309 0757 77	1		$0.00
Prepaid Mail North Franklin, CT 06254 Weight: 0 lb 7.30 oz Acceptance Date: Fri 07/29/2022 Tracking #: 9405 5036 9930 0309 0757 46	1		$0.00
Prepaid Mail North Franklin, CT 06254 Weight: 0 lb 7.30 oz Acceptance Date: Fri 07/29/2022 Tracking #: 9405 5036 9930 0309 0757 22	1		$0.00

Grand Total: $0.00