NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

August 21, 2022

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

RE: Exempt Modification Application
46 Meadow Road, Clinton, CT 06413
Latitude: 41.275205
Longitude: -72.497711
Site #: CT01879-S_CT11429A_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 46 Meadow Road, Clinton, CT 06413. T-Mobile currently maintains nine (9) antennas at the 192-foot level of the existing 195-foot self-support tower. The property is owned by Nichols Auto Parts Inc., and the tower is owned by SBA. T-Mobile now intends to replace six (6) antennas. The new antennas would be installed at the 192-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable. Tower modifications will be completed as per the attached TES Structural Analysis Report dated March 16, 2022 and Antenna mount modifications will be completed as per the attached TES Mount Analysis dated February 4, 2022.

T-Mobile Planned Modifications:
Remove:
(3) Coax – 1-5/8"
(1) Fiber Line – 1-5/8"

Remove and Replace:
(3) ERICSSON AIR21 B2A B4P Antennas (REMOVE) - (3) RFS APXVAALL24_43-U_NA20 Antennas (REPLACE)
(3) ERICSSON AIR21 B4A B2P Antennas (REMOVE) - (3) RFS APX16DWVS-E-A20 Antennas (REPLACE)

Install New:
(3) ERICSSON 4480 B71+B85 RRU
(3) ERICSSON 4460 B25+B66 RRU
(3) Hybrid Fiber Lines – 1.9"

Existing to Remain:
(3) KATHREIN KRY 112 144 TMAs
(9) Coax – 1-5/8" *

*Equipment listed for entitlement purposed only

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Ground Work:
New 4' x 10' Concrete Pad for Emergency Backup Generator
Install GENERAC SD050 50kW Diesel Generator, will run for (2) 20-minute test cycles per month

The facility was approved by the Town of Clinton Planning & Zoning Commission on November 8, 1999. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Chris Aniskovich, Town Council Chair and Kathleen King, Zoning Enforcement Officer for the Town of Clinton, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

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

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Chris Aniskovich, Town Council Chair
Town of Clinton
54 E Main Street
Clinton, CT 06413

Kathleen King, Zoning Enforcement Officer
Town of Clinton
54 E Main Street
Clinton, CT 06413

Nichols Auto Parts Inc. – Property Owner
46 Meadow Road
Clinton, CT 06413

SBA - Tower Owner

Exhibit A

Original Facility Approval

Town of Clinton
Planning and Zoning Commission
54 East Main Street
Clinton, Connecticut 06413

November 15, 1999

CERTIFIED MAIL

SBA, Inc
125 Shaw Street
New London, CT 06320

Re: SP 99-450: 46 Meadow Road, SBA, Inc.: Communications tower. Map 85, Block 69, Lot 1. Zone I-1.

CAM 99-450: 46 Meadow Road, SBA, Inc.: Communications tower. Map 85, Block 69, Lot 1. Zone I-1.

Dear Ms. McNany:

At its Regular Monthly Meeting held on November 8, 1999, the Clinton Planning and Zoning Commission approved CAM 99-450 and Site Plan Application 99-450 with the following conditions:

1. If the tower is abandoned, it is to be removed within one year by the owner, otherwise the town will remove it at the expense of the property owner;
2. Should the existing fence fall into disrepair on the southwest corner of the property, the applicant shall replace the fence.

On Tuesday, November 16, 1999, the Legal Notice of Decision will appear in the Clinton Recorder at which time a 15-day appeal period will begin. Please be advised that the improvements cannot commence on this property until the 15-day appeal period has ended. Your 15-day appeal period will end at midnight on December 1, 1999.

In addition, pursuant to Section 10.10 of the Clinton Zoning Regulations, this approval is conditioned upon the commencement of the proposed improvements within one year from November 8, 1999 and completion thereof within five years (or by November 8, 2004). Failure to complete all work within such a five-year period shall result in automatic expiration of the approval of such site plan.

If you have any questions, please call the Planning and Zoning Office at (860) 669-6133, 9:00 a.m. to 4:00 p.m., Monday through Friday.

CLINTON PLANNING AND ZONING COMMISSION

Nancy Taubman

Michael Mozzochi, Chairman
Kimberly Ann Neri, Vice Chairman
Nancy Taubman, Secretary

Cc: Donald Gesick
Robert Grabarek
Nathan L. Jacobson & Associates, Inc

Phone: (860) 669-6133 FAX: (860) 664-4469

Exhibit B

Property Card

46 MEADOW RD

Location	46 MEADOW RD	**Mblu**	85/ 69/ 1/ /
Acct#	C0092100	**Owner**	NICHOLS AUTO PARTS INC
Assessment	$886,100	**Appraisal**	$1,265,800
PID	6361	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$756,800	$509,000	$1,265,800

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$529,800	$356,300	$886,100

Owner of Record

Owner	NICHOLS AUTO PARTS INC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	46 MEADOW RD CLINTON, CT 06413	**Book & Page**	0452/0683
		Sale Date	06/21/2011

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
NICHOLS AUTO PARTS INC	$0		0452/0683	06/21/2011
CHARNEY MICHAEL R 1/2 & ROBERT 1/2	$0		0442/1250	06/01/2010
CHARNEY ANNE LOUISE 1/2 INT;	$0		0312/1009	03/11/2001
CHARNEY MICHAEL & ANNE LOUISE TIC	$0		0239/0575	07/28/1995

Building Information

Building 1 : Section 1

Year Built:	1974
Living Area:	4,800
Replacement Cost:	$242,681
Building Percent Good:	58

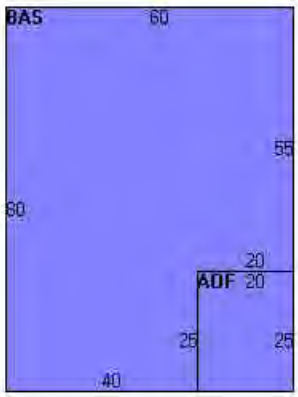
Replacement Cost
Less Depreciation: $140,800

Building Attributes	
Field	**Description**
STYLE	Pre-Eng Gar
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	IND BLDG
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	4022
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/ClintonCTPhotos///0021/P1000469_21153..

Building Layout



(http://images.vgsi.com/photos/ClintonCTPhotos//Sketches/6361_6361.jpg

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4,300	4,300
AOF	Office, (Average)	500	500
		4,800	4,800

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	4022
Description	IND BLDG
Zone	I-2
Neighborhood	1500
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	12.8
Frontage	0
Depth	0
Assessed Value	$356,300
Appraised Value	$509,000

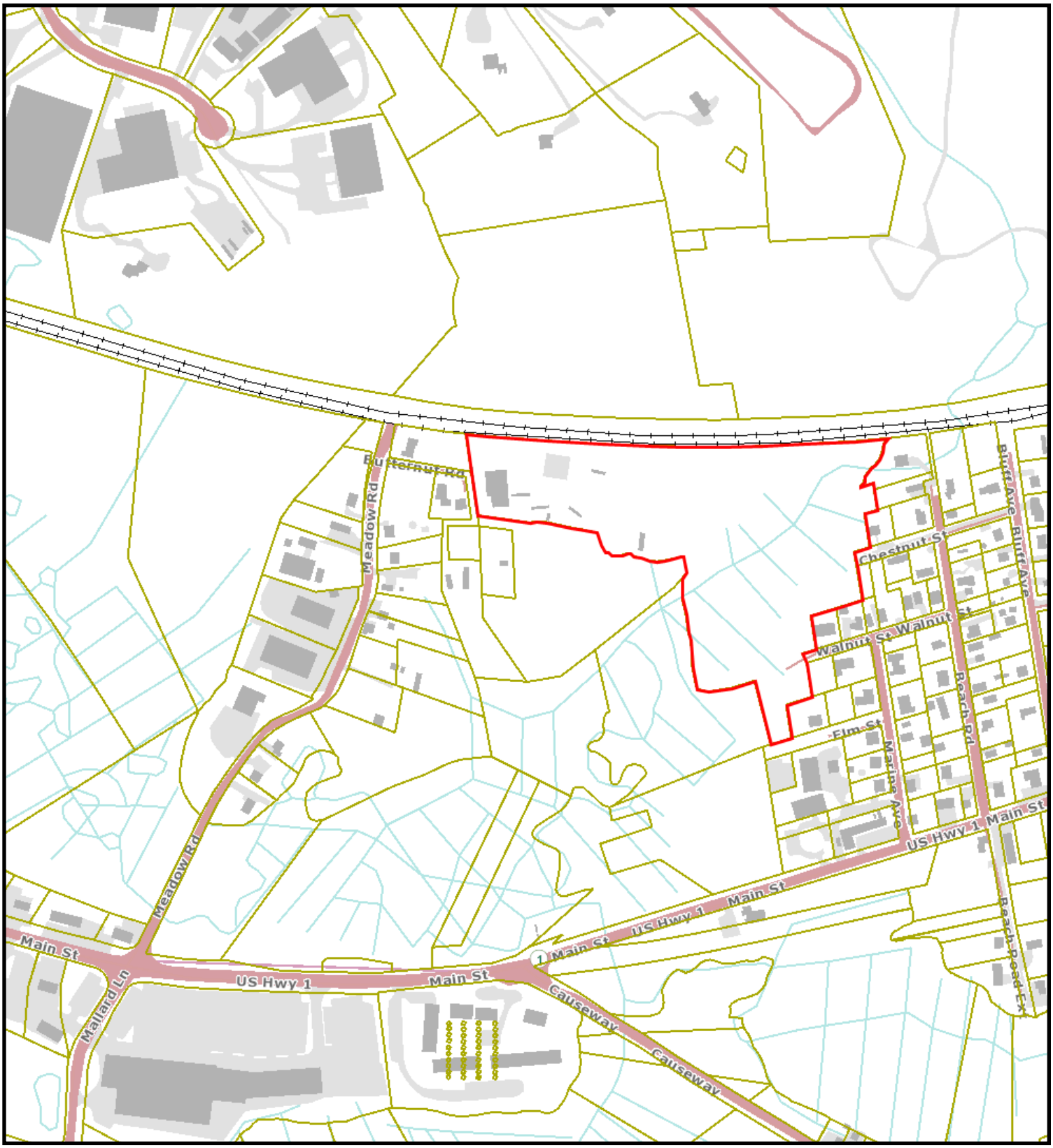
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
MSC51	TOWER			195.00 UNIT	$109,700	1
MSC1				3.00 UNIT	$506,300	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$756,800	$509,000	$1,265,800
2019	$61,400	$245,800	$307,200
2018	$61,400	$245,800	$307,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$529,800	$356,300	$886,100
2019	$42,900	$172,100	$215,000
2018	$42,900	$172,100	$215,000



46 MEADOW ROAD

7/20/2022 11:05:37 AM

Scale: 1"=400'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Exhibit C

Construction Drawings

CLINTON/ROUTE 1

46 MEADOW ROAD
CLINTON, CT 06413
MIDDLESEX COUNTY

SITE NO.: CT11429A

SITE TYPE: 195'± SELF-SUPPORT TOWER

RF DESIGN GUIDELINE: 67E998E 6160 & HARDENING

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

REMOVE:
- 6 ANTENNAS
- 3 TMAS
- 1 EQUIPMENT CABINET
- 6 COAX CABLES

INSTALL:
- 6 ANTENNAS
- 6 RADIOS
- 3 HYBRID CABLES
- 1 GENERATOR
- 1 AUTOMATIC TRANSFER SWITCH
- 2 20A-1P BREAKERS

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.

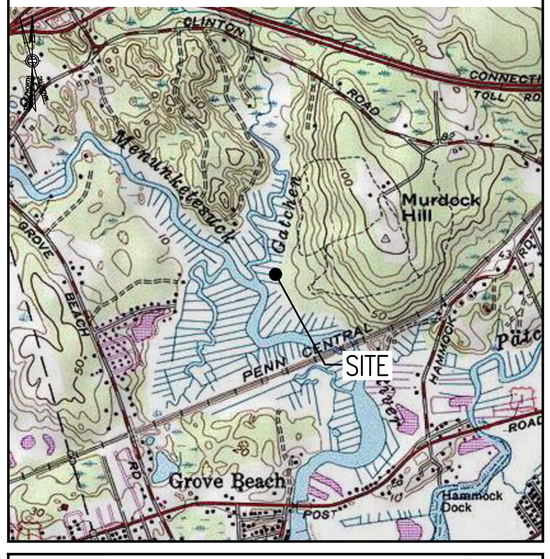
GENERAL NOTES

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 FOR I-95 SOUTH TOWARD PROVIDENCE RI. KEEP RIGHT AT FORK TO STAY ON I-95 SOUTH. KEEP LEFT TO STAY ON I-95 SOUTH. TAKE EXIT 64 FOR CT-145/HORSE HILL ROAD TOWARD CLINTON. TURN LEFT ONTO CT-145 SOUTH/HORSE HILL ROAD. TURN RIGHT ONTO CT-145 SOUTH. TURN LEFT ONTO STATE HIGHWAY 625. TURN RIGHT ONTO US-1 SOUTH. TURN RIGHT ONTO MEADOW ROAD. SITE IS LOCATED ON THE RIGHT HAND SIDE AT THE END OF THE ROAD.

SHEET INDEX

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

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:	CT11429A
SITE NAME:	CLINTON/ROUTE 1
SBA SITE NUMBER:	CT01879-S
SBA SITE NAME:	CLINTON 4 CT
SITE ADDRESS:	46 MEADOW ROAD CLINTON, CT 06413
PROPERTY OWNER:	NICHOLS AUTO PARTS INC. 46 MEADOW ROAD CLINTON, CT 06413
TOWER OWNER:	SBA TOWERS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	MIDDLESEX
ZONING DISTRICT:	I-2 (INDUSTRIAL)
STRUCTURE TYPE:	SELF-SUPPORT TOWER
STRUCTURE HEIGHT:	195'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.275205° N41°16'30.74" LONGITUDE: -72.497711° W72°29'51.76"

SPECIAL ZONING NOTE:
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
7/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.313

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

T-MOBILE
NORTHEAST LLC

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

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11429A

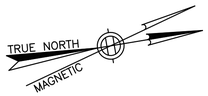
SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

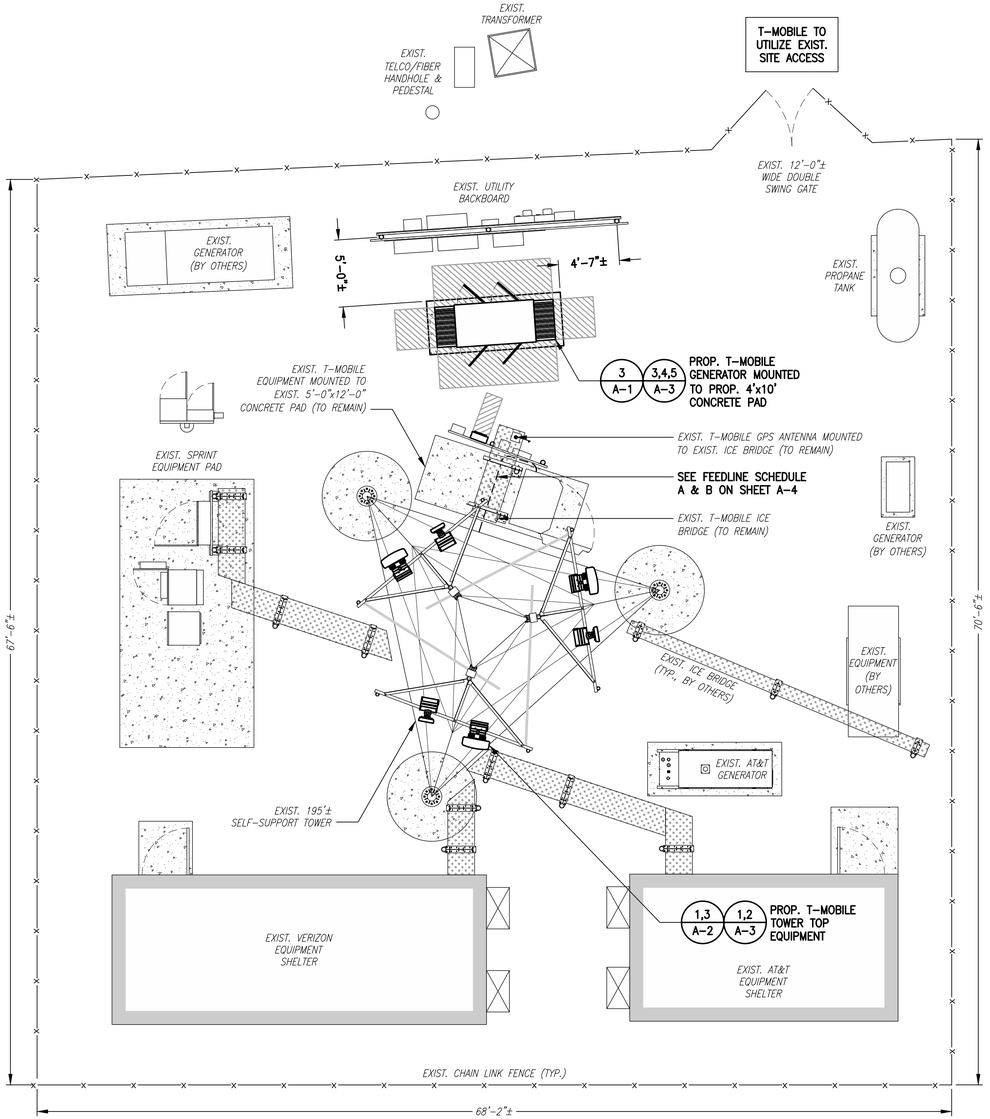
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

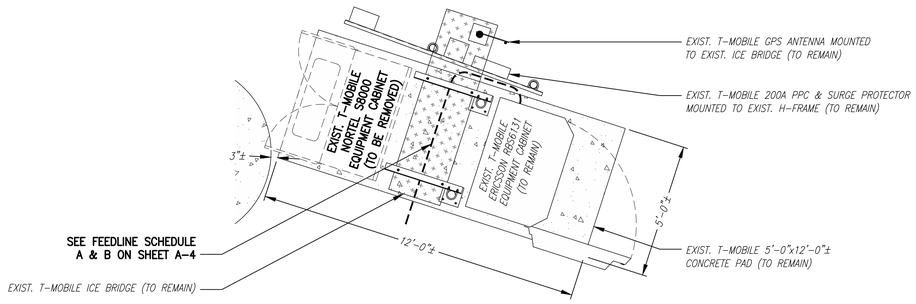
1815.313

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.

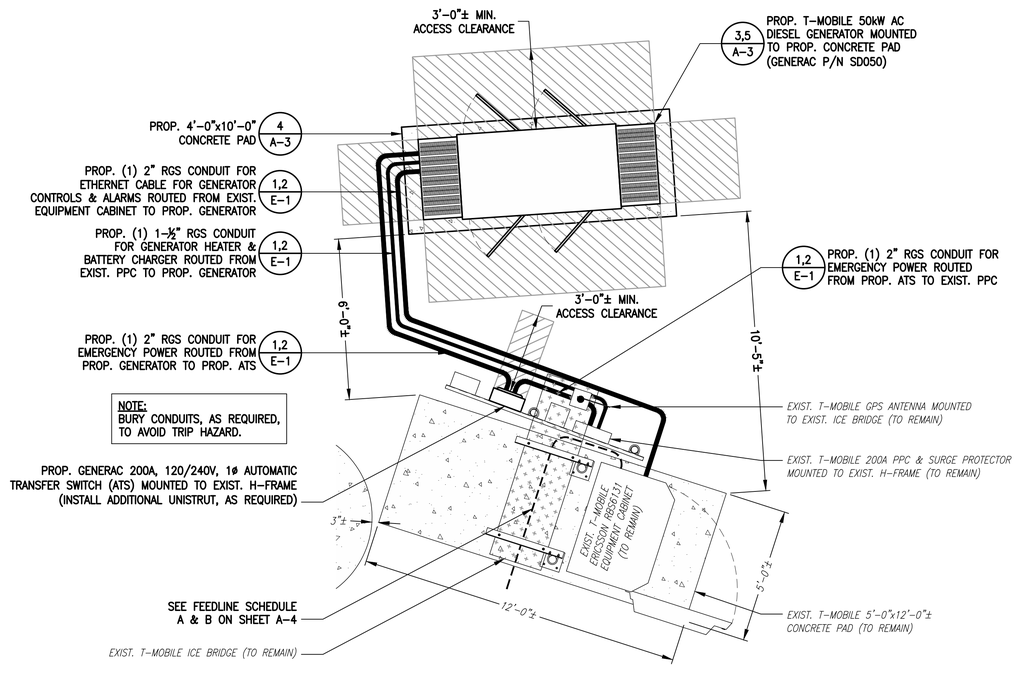




COMPOUND PLAN 1 A-1
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"



EXISTING EQUIPMENT PLAN 2 A-1
SCALE: 3/8" = 1'-0"
0 2'-8" 5'-4" 8'-0"



PROPOSED EQUIPMENT PLAN 3 A-1
SCALE: 3/8" = 1'-0"
0 2'-8" 5'-4" 8'-0"

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
7/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

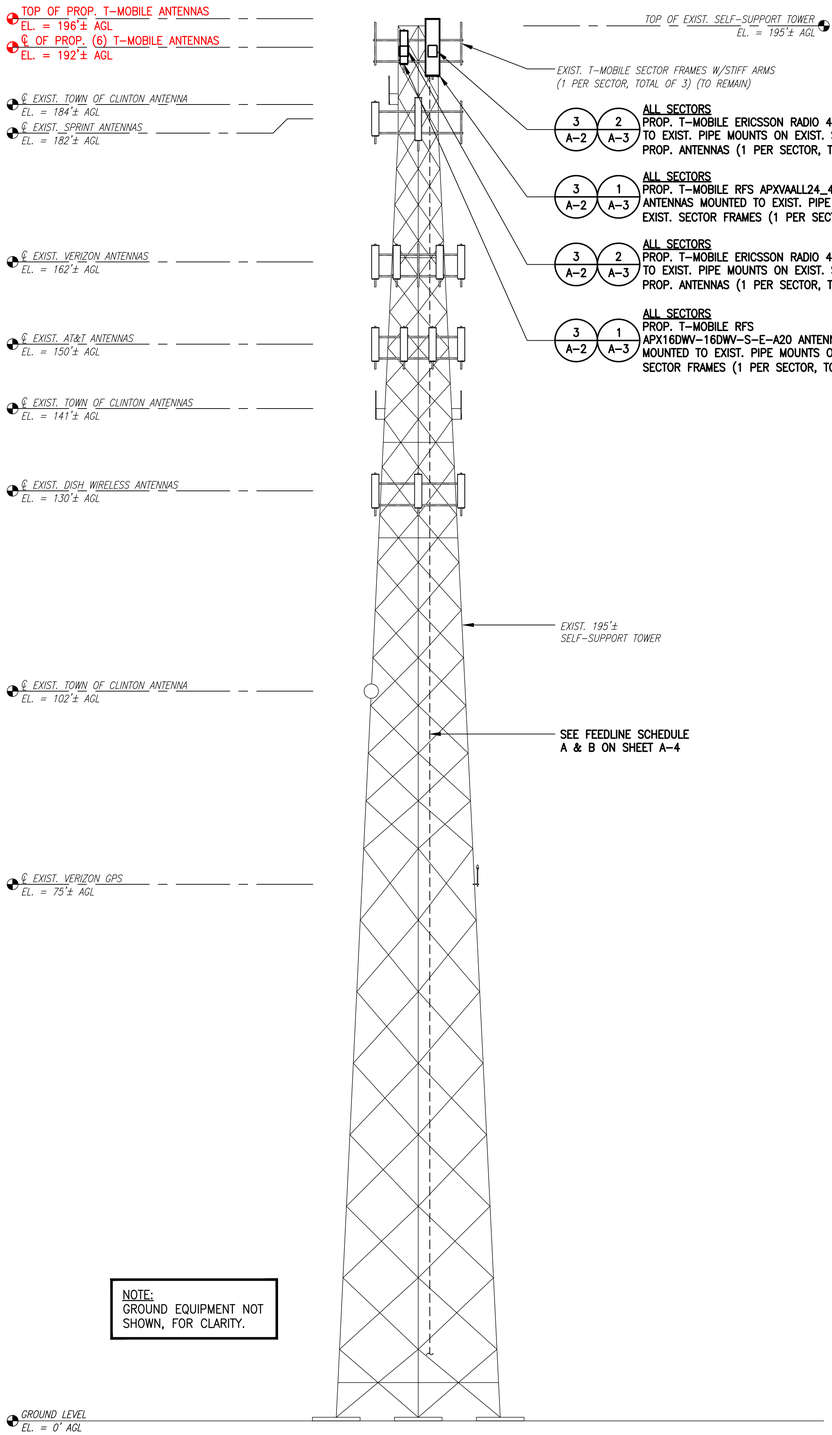
SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

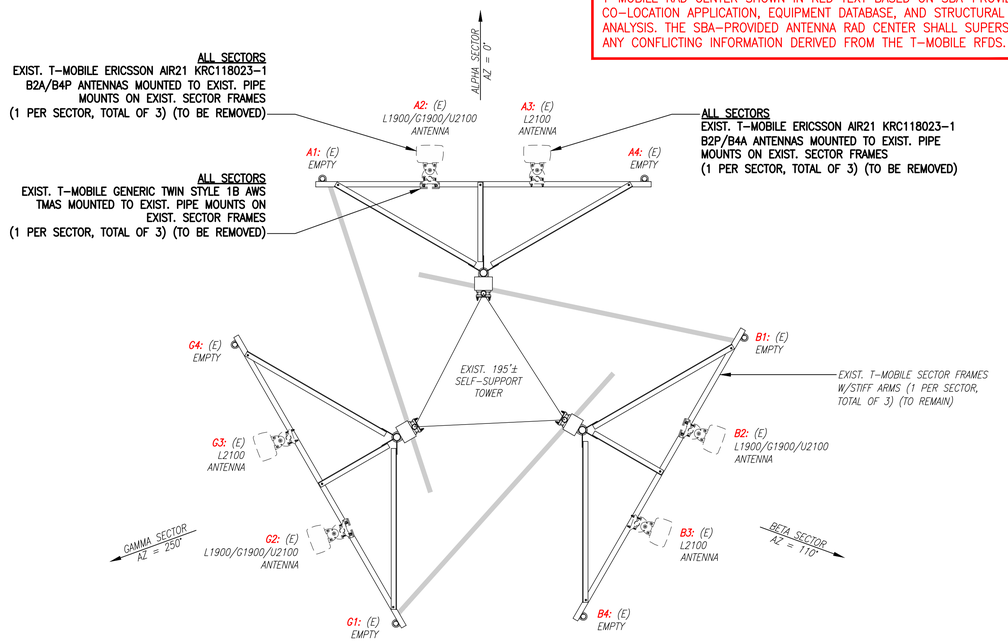
SHEET NUMBER
A-1

1815.313

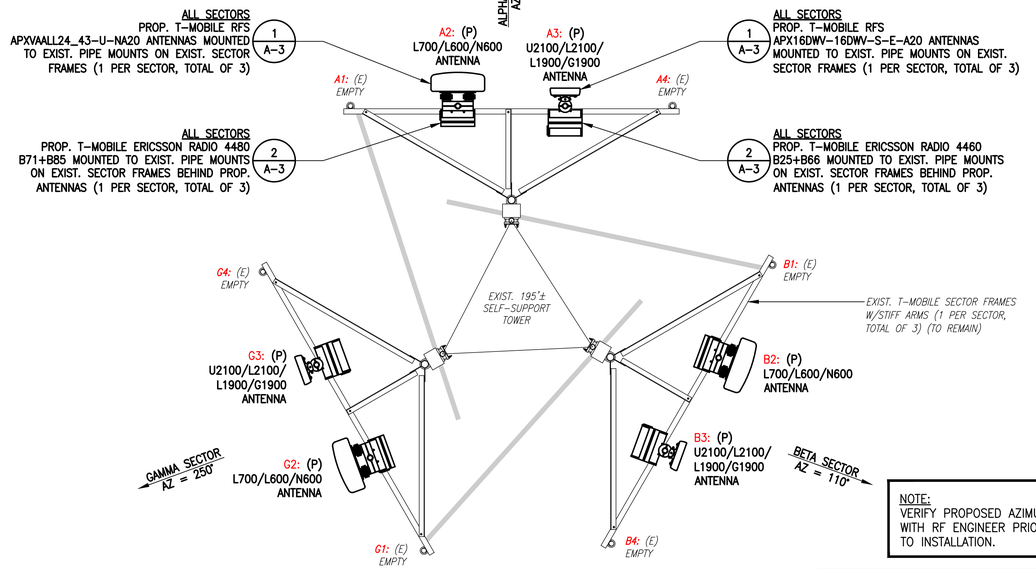


TOWER ELEVATION (1 / A-2)
SCALE: 1" =10'-0"
0 10' 20' 30'

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



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

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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

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

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
7/27/2022

CHECKED BY: JMT
APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

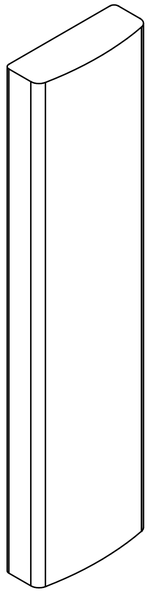
SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
TOWER ELEVATION & ANTENNA PLANS

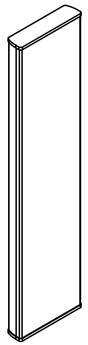
SHEET NUMBER
A-2

1815.313



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



RFS APX16DWV-16DWV-S-E-A20 ANTENNA

DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
WEIGHT: 40.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

ERICSSON RADIO 4460 B25+B66

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

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

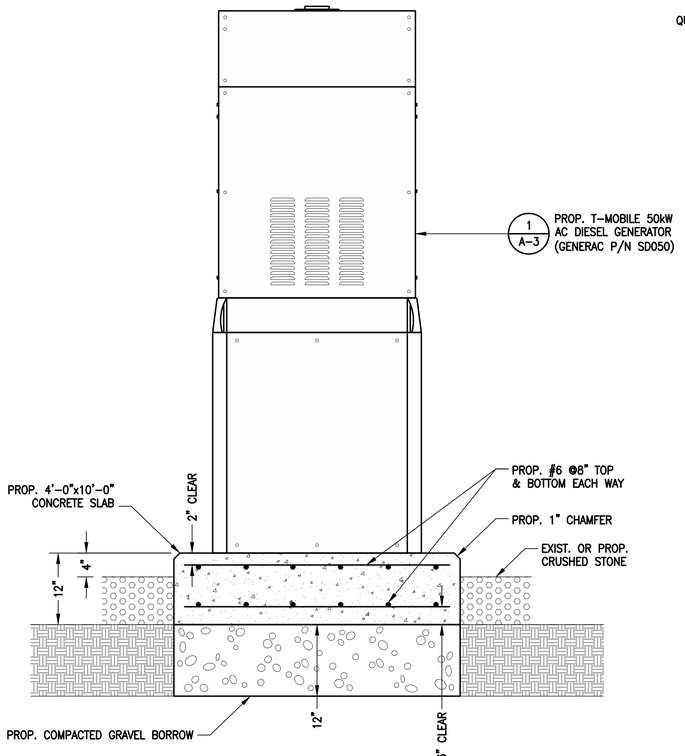
RADIO DETAILS
SCALE: N.T.S.
2 / A-3

NOTE:
GENERATOR DIESEL TANK TO BE FILLED BY CONTRACTOR

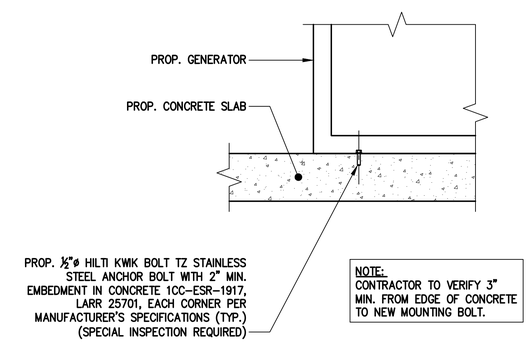
GENERAC SD050 50kW AC 211 GALLON DIESEL GENERATOR

DIMENSIONS: 106.0"L x 38.0"W x 99.0"H
WEIGHT: 5,930 lbs
QUANTITY: TOTAL OF 1

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



GENERATOR PAD DETAIL
SCALE: NTS
4 / A-3



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

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

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

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
7/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.313

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 *EMPTY PIPE*	–	–	–	–	–	–	PROP. (3) 2" (6x24) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	192'± AGL	0°	0°	5°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	A3 RFS APX16DWV-16DWV-S-E-A20	192'± AGL	0°	0°	2°	U2100/L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	A4 *EMPTY PIPE*	–	–	–	–	–	–	
BETA	B1 *EMPTY PIPE*	–	–	–	–	–	–	
	B2 RFS APXVAALL24_43-U-NA20	192'± AGL	110°	0°	5°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	B3 RFS APX16DWV-16DWV-S-E-A20	192'± AGL	110°	0°	2°	U2100/L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	B4 *EMPTY PIPE*	–	–	–	–	–	–	
GAMMA	G1 *EMPTY PIPE*	–	–	–	–	–	–	
	G2 RFS APXVAALL24_43-U-NA20	192'± AGL	250°	0°	5°	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	G3 RFS APX16DWV-16DWV-S-E-A20	192'± AGL	250°	0°	2°	U2100/L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	G4 *EMPTY PIPE*	–	–	–	–	–	–	

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

NOTE: RFDS REV5 – 08/13/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	*EXISTING TO REMAIN:* *(1) 1/2" COAX FOR GPS ANTENNA*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED: *(6) 1-5/8" COAX CABLES*	
B	PROPOSED: (3) 2" (6x24) HCS FIBER CABLES	

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

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
9/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

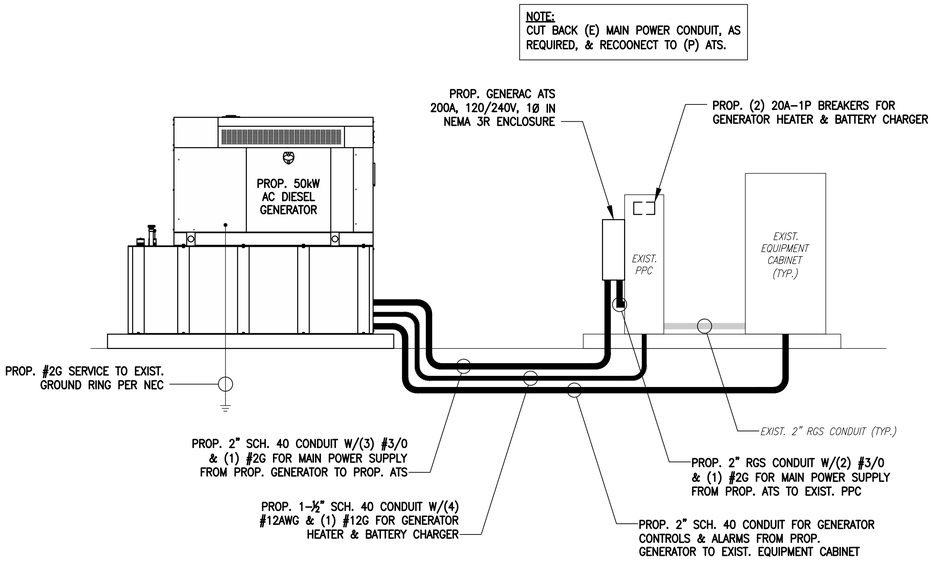
SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

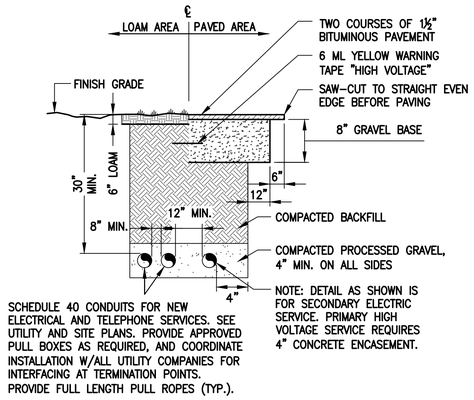
SHEET NUMBER
A-4

1815.313



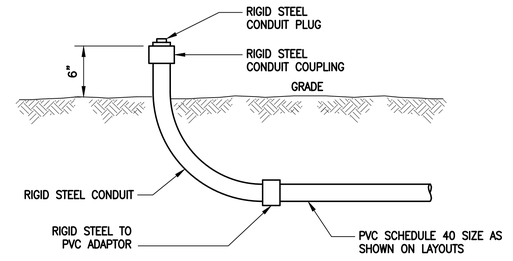
ONE-LINE POWER DIAGRAM (1 / E-1)

SCALE: NOT TO SCALE



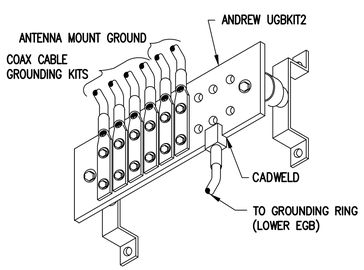
BURIED CONDUIT DETAIL (2 / E-1)

SCALE: NOT TO SCALE



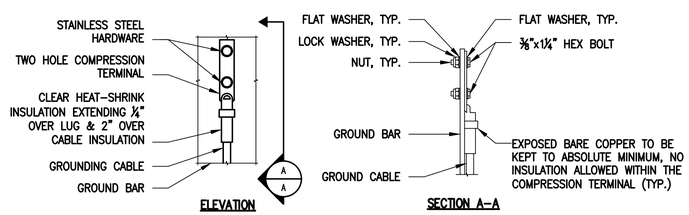
TYPICAL CONDUIT STUB-UP DETAIL (3 / E-1)

SCALE: NONE



GROUND BAR (EGB) (4 / E-1)

SCALE: NOT TO SCALE



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

TYPICAL GROUND BAR CONNECTIONS DETAIL (5 / E-1)

SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 8" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
7/27/2022

CHECKED BY:	JMT
APPROVED BY:	JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

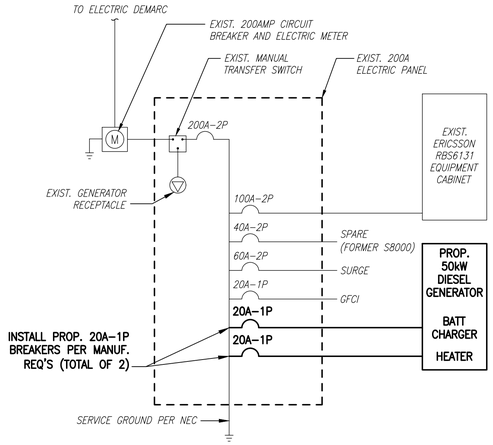
SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
ELECTRIC & GROUNDING DETAILS 1 OF 2

SHEET NUMBER
E-1

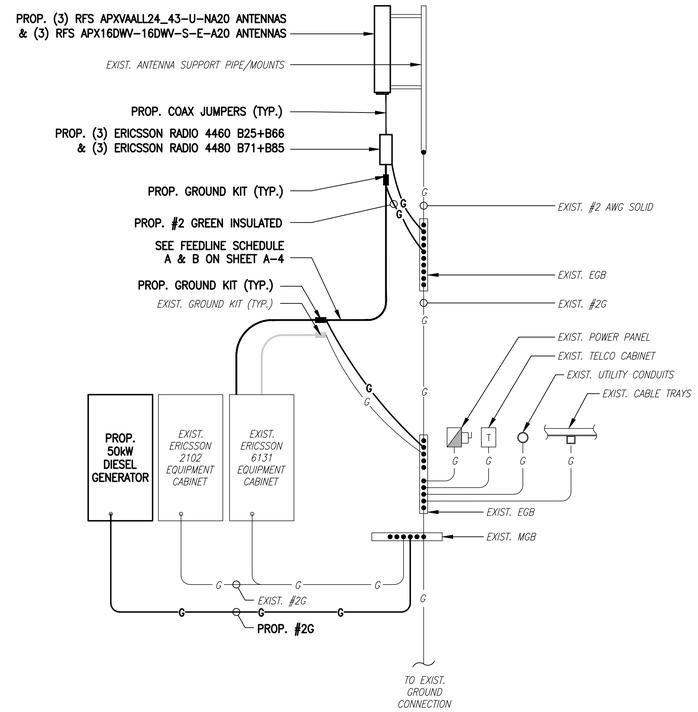
1815.313



ONE LINE DIAGRAM

SCALE: NOT TO SCALE

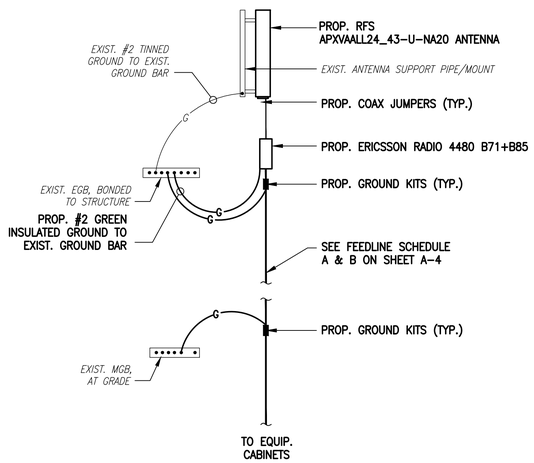
1 / E-2



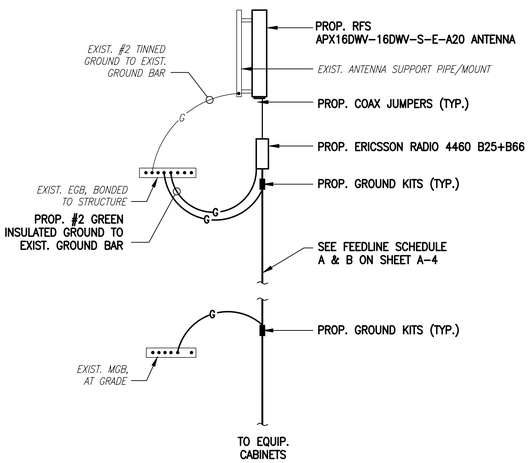
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

2 / E-2



L700/L600/N600 ANTENNA



U2100/L2100/L1900/G1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

3 / 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
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
7/27/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
4	07/27/22	CONSTRUCTION REVISED	CMC
3	01/11/22	CONSTRUCTION REVISED	CMC
2	11/18/21	CONSTRUCTION REVISED	CMC
1	10/29/21	ISSUED FOR CONSTRUCTION	CMC
0	10/15/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11429A

SITE ADDRESS:
46 MEADOW ROAD
CLINTON, CT 06413

SHEET TITLE
ELECTRIC & GROUNDING DETAILS 2 OF 2

SHEET NUMBER
E-2

1815.313

Exhibit D

Structural Analysis Report

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

Post-Mod Structural Analysis Report

Existing 195 ft Sabre Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT01879-S

Customer Site Name: Clinton 4 CT

Carrier Name: T-Mobile (App#: 173966-3)

Carrier Site ID / Name: CT11429A / Clinton/Route 1

Site Location: 46 Meadow Road

Clinton, Connecticut

Middlesex County

Latitude: 41.275205

Longitude: -72.497711

Analysis Result:

Max Structural Usage: 99.4% [Pass]

Max Foundation Usage: 85.0% [Pass]

Report Prepared By: Mohammed Al Rubaye

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

Post-Mod Structural Analysis Report

Existing 195 ft Sabre Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT01879-S

Customer Site Name: Clinton 4 CT

Carrier Name: T-Mobile (App#: 173966-3)

Carrier Site ID / Name: CT11429A / Clinton/Route 1

Site Location: 46 Meadow Road

Clinton, Connecticut

Middlesex County

Latitude: 41.275205

Longitude: -72.497711

Analysis Result:

Max Structural Usage: 99.4% [Pass]

Max Foundation Usage: 85.0% [Pass]

Report Prepared By: Mohammed Al Rubaye

Introduction

The purpose of this report is to summarize the analysis results on the 195 ft Sabre Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre, Job # 00-10101, dated 11/19/99
Foundation Drawing	Sabre, Dwg # 9014022, dated 11/23/99
Geotechnical Report	JGI, Project # 99500G, dated 12/13/99; Original design soil parameters from Sabre Job # 00-10101, dated 11/23/99
Existing Modification	FDH, Project # 1465YH1400, dated 6/3/14; FDH, Project # 15BZTJ1400, dated 9/24/15; TES, Job # 32039, dated 1/10/2018; TES, Job # 71440, dated 3/29/2019; TES, Job # 110857, dated 8/16/2021 [Pending]
Proposed Modification	TES Job # 124551

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 mph (3-Sec. Gust)
Basic 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:	D
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	SS = 0.169, S1 = 0.059

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
-	194.0	3	AIR 21 B2A B4P - Panel	(3) Sector Frame	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		3	AIR 21 B4A B2P - Panel			
-	192.5	3	KRY 112 144/1			
6	184.0	1	PD1151	Direct	(1) 7/8"	Town of Clinton
7	182.0	3	RFS APXVTM14-C-120 - Panel	(3) Sector Frame	(4) 1 1/4" Hybrid	Sprint Nextel
8		3	RFS APXVSPP18-C-A20 - Panel			
9		3	ALU TD-RRH8x20-25			
10		3	ALU 1900 MHz RRH			
11		3	ALU 800 MHz RRH			
12		4	RFS ACU-A20-N RET			
13		3	ALU ALU 800 MHz Filter			
14	162.0	6	JMA wireless MX06FRO660-03 - Panel	(3) Sector Frame w/ Mount fix mods	(6) 1 5/8" (2) 1 5/8" Fiber	Verizon
15		4	Antel LPA-80063-4CF - Panel			
16		2	Antel LPA-80063/6CF - Panel			
17		3	Samsung MT6407-77A - Panel			
18		3	Samsung B2/B66A RRH-BR049			
19		3	Samsung B5/B13 RRH-BR04C			
20		2	RFS DB-T1-6Z-8AB-0ZTA			
21	150.5	3	Kathrein - 800 10964 - Panel	(3) Sector Frame w/ (3) Stabilizer Arm (3) SFS-V Kickers	(12) 1 5/8" (1) 1/2" Fiber & (2) 3/4" DC in (1) 3" Flex Conduit (1) 1/2" Fiber (4) 3/4" DC	AT&T
22		6	Andrew - SBNHH-1D65A - Panel			
23		3	Kathrein - 7770 - Panel			
24		6	Powerwave TT19-08BP111-001 TMA			
25		12	Powerwave 7020.00 RET			
26		3	Ericsson 4449 B5 B12			
27		3	Ericsson RRUS 32			
28		3	Ericsson RRUS 8843 B2 B66A			
29		3	Raycap DC6-48-60-18-8F			
30	141.5	3	SD312HL	(3) Side Arm	(4) 7/8"	Town of Clinton
31	130.0	3	JMA Wireless MX08FRO665-21 - Panel	Commscope (3) MTC3975083	(1) 1.6" Hybrid	Dish Wireless
32		3	Fujitsu TA08025-B604			
33		3	Fujitsu TA08025-B605			
34		1	Raycap RDIDC-9181-OF-48			
35	102.0	1	Radiowave RDH4518A - Dish	Pipe	(2) CAT5e	Town of Clinton
36	75.0	1	GPS	Direct	(1) 1/2	Verizon

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	192.0	3	RFS APXVAALL24_43-U-NA20 - Panel	(3) Modified Sector Frames	(9) 1 5/8" (3) 1.9" Fiber	T-Mobile
2		3	RFS APX16DWV-16DWVS-E-A20 - Panel			
3		3	Ericsson KRY 112 144 - TMA			
4		3	Ericsson 4480 B71 + B85			
5		3	Ericsson 4460 B25 + B66			

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

Analysis Results

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

Tower Component	Legs	Diagonals	Horizontals
Max. Usage:	**99.4%**	**95.3%**	**22.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	579.1	514.6	60.7

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.3395 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222-G-2 Standard after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 124551

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed T-Mobile equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-322 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-322. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-322 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6-month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

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 EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

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

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

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

Structure: CT01879-S-SBA

Site Name:	Clinton 4 CT			**Code:**	TIA-222-G	3/16/2022
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	105.00	
Height:	195.00 (ft)	**Base Width:**	23.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	5.00	**Operational WS:**	60.00	Page: 1

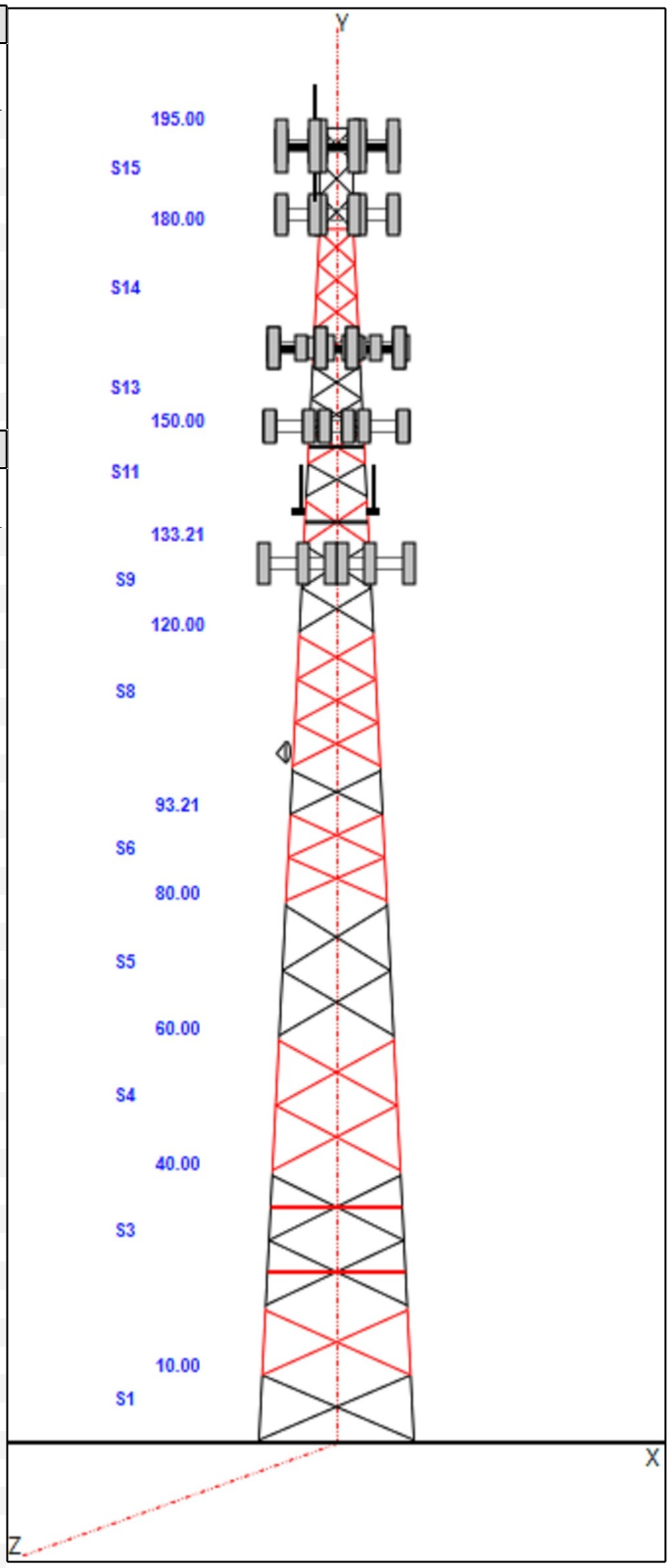
IES Tower Engineering Solutions

Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-2	MOD 8"PST+L8x8x1/2	SAE 4X4X0.375	
3-4	MOD 8"PST+5x5x3/8L	SAE 4X4X0.375	
5	MOD 6"PX+L4x4x3/8	SAE 4X4X0.375	
6-7	MOD 6"PST+4x4x3/8L	SAE 3X3X0.375	
8	MOD 5"PX+4x4x3/8L	SAE 2.5X2.5X0.375	
9	MOD 4"PX+5"PX1/2P	SAE 2.5X2.5X0.25	
10	PX 4" DIA PIPE	SAE 2.5X2.5X0.25	
11	MOD 3"PX+3.5"PST1/2P	SAE 2.5X2.5X0.375	
12-13	PX 3" DIA PIPE	SAE 2.5X2.5X0.375	
14	PST 3" DIA PIPE	SAE 1.75X1.75X0.1875	SAE 1.75X1.75X0.1875
15	PST 2" DIA PIPE	SAE 1.75X1.75X0.1875	SAE 1.75X1.75X0.1875

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
192.00	192.00	3	APXVAALL24_43-U-NA20
192.00	192.00	3	APX16DWV-16DWVS-E-A20
192.00	192.00	3	KRY 112 144
192.00	192.00	3	4480 B71 + B85
192.00	192.00	3	4460 B25 + B66
192.00	192.00	3	Heavy Sector Frame-Flat
192.00	192.00	2	(3) 12.5' - 2" Horizontal Pipe
192.00	192.00	1	(3) SFR-K-L
192.00	192.00	1	(3) SFS-H-L (V-Braces)
184.00	192.60	1	PD1151
182.00	182.00	3	Sector Frame
182.00	182.00	3	1900 MHz RRH
182.00	182.00	3	800 MHz RRH
182.00	182.00	4	ACU-A20-N
182.00	182.00	3	ALU 800 MHz Filter
182.00	182.00	3	APXVTM14-C-120
182.00	182.00	3	APXVSPP18-C-A20
182.00	182.00	3	TD-RRH8x20-25
162.00	162.00	3	B2/B66A RRH-BR049
162.00	162.00	3	B5/B13 RRH-BR04C
162.00	162.00	1	(3) HR w/ Double V-Brace Kits
162.00	162.00	2	DB-T1-6Z-8AB-0Z
162.00	162.00	3	Sector Frame
162.00	162.00	6	MX06FRO660-03
162.00	162.00	4	LPA-80063-4CF
162.00	162.00	2	LPA-80063/6CF
162.00	162.00	3	MT6407-77A
162.00	162.00	1	(3) 12.5' - 2.5" Horizontal Pi
150.50	150.50	3	7770
150.50	150.50	6	SBNHH-1D65A
150.50	150.50	3	Sector Frame
150.50	150.50	6	TT19-08BP111-001
150.50	150.50	12	Powerwave 7020.00 RET
150.50	150.50	3	Raycap DC6-48-60-18-8F COVP
150.50	150.50	3	Ericsson RRUS 32 RRU
150.50	150.50	1	(3) Stabilizer Kit + SFS-V Kit
150.50	150.50	3	800 10964
150.50	150.50	3	Ericsson 4449 B5 B12 RRU



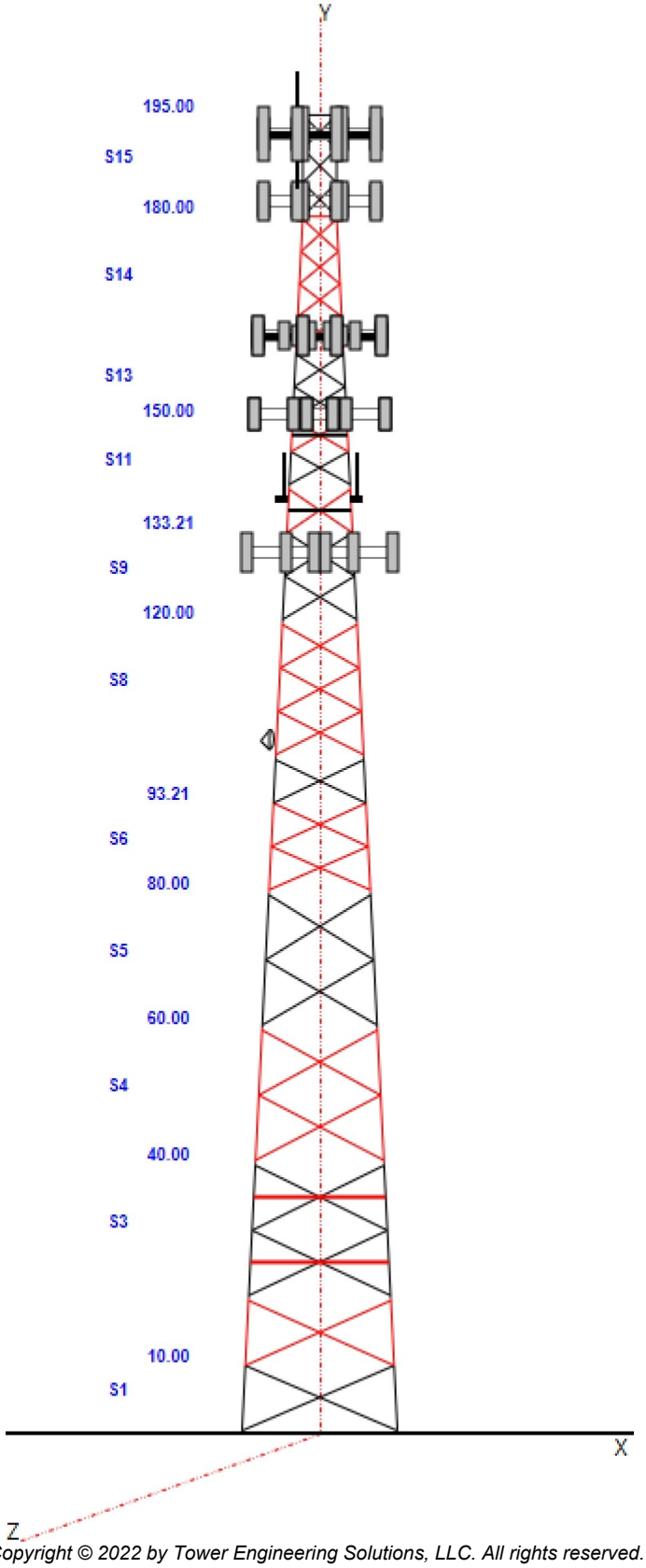
150.50	150.50	3	Ericsson RRUS 8843 B2 B66A RRU
141.50	141.50	3	SD312HL
138.00	138.00	3	Side Arm
130.00	130.00	3	MX08FRO665-21
130.00	130.00	3	TA08025-B604
130.00	130.00	3	TA08025-B605
130.00	130.00	1	RDIDC-9181-OF-48
130.00	130.00	1	(3) MTC3975083
102.00	102.00	1	Radiowave RDH4518A
102.00	102.00	1	Pipe Mount
75.00	75.00	1	GPS

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	195.00	1	Climbing Ladder
0.00	195.00	1	Safety Cable
0.00	192.00	1	W/G Ladder
162.00	192.00	9	1 5/8" Coax
162.00	192.00	3	1.9" Fiber
0.00	184.00	1	7/8" Coax
0.00	182.00	4	1 1/4" Hybrid
0.00	182.00	1	W/G Ladder
0.00	162.00	9	1 5/8" Coax
0.00	162.00	6	1 5/8" Coax
0.00	162.00	2	1 5/8" Fiber
0.00	162.00	3	1.9" Fiber
0.00	162.00	1	W/G Ladder
0.00	150.50	1	(1)1/2 & (2)3/4" in 3" Conduit
0.00	150.50	2	1 5/8" Coax
0.00	150.50	6	1 5/8" Coax
0.00	150.50	4	1 5/8" Coax
0.00	150.50	1	1/2" Fiber
0.00	150.50	4	3/4" DC
0.00	150.50	1	W/G Ladder
0.00	141.50	4	7/8" Coax
0.00	130.00	1	1.6" Hybrid
0.00	102.00	2	CAT5e
0.00	75.00	1	1/2" Coax

Base Reactions

Leg			Overturning		
Max Uplift:	-514.64	(kips	Moment:	11041.95	(ft-kips)
Max Down:	579.08	(kips	Total Down:	74.19	(kips)
Max Shear:	60.73	(kips	Total Shear:	100.54	(kips)



Loading Summary

Structure:	CT01879-S-SBA		**Code:**	TIA-222-G	3/16/2022
Site Name:	Clinton 4 CT		**Exposure:**	D	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	Ice Weight (lb)	Ice CaAa (sf)	Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
192.00	APXVAALL24_43-U-NA20	3	122.80	20.240	561.39	22.185	95.900	24.000	8.500	0.80	0.73	0.000
192.00	APX16DWV-16DWVS-E-A20	3	40.70	6.610	160.40	8.837	55.900	13.300	3.100	0.80	0.62	0.000
192.00	KRY 112 144	3	11.00	0.410	22.02	0.896	6.900	6.100	2.700	0.80	0.50	0.000
192.00	4480 B71 + B85	3	93.00	2.850	166.56	3.540	21.800	15.700	7.500	0.80	0.67	0.000
192.00	4460 B25 + B66	3	109.00	2.850	182.53	3.540	21.800	15.700	7.500	0.80	0.67	0.000
192.00	Heavy Sector Frame-Flat	3	600.00	23.000	1315.27	45.986	0.000	0.000	0.000	0.75	1.00	0.000
192.00	(3) 12.5' - 2" Horizontal Pipe	2	137.25	5.938	274.41	13.567	0.000	0.000	0.000	0.75	1.00	0.000
192.00	(3) SFR-K-L	1	394.00	16.600	1134.26	29.042	0.000	0.000	0.000	0.75	1.00	0.000
192.00	(3) SFS-H-L (V-Braces)	1	230.00	6.700	558.37	13.874	0.000	0.000	0.000	0.75	1.00	0.000
184.00	PD1151	1	20.00	4.820	243.60	11.145	206.400	2.800	2.800	1.00	1.00	8.600
182.00	Sector Frame	3	500.00	21.000	1206.88	37.923	0.000	0.000	0.000	0.75	0.75	0.000
182.00	1900 MHz RRH	3	44.00	3.800	154.54	5.207	23.000	13.000	17.000	0.80	0.50	0.000
182.00	800 MHz RRH	3	53.00	2.490	127.89	3.648	19.700	13.000	10.800	0.80	0.50	0.000
182.00	ACU-A20-N	4	1.00	0.140	5.35	0.441	4.000	2.000	3.500	0.80	0.50	0.000
182.00	ALU 800 MHz Filter	3	8.80	0.780	26.67	1.435	10.000	8.000	3.000	0.80	0.50	0.000
182.00	APXVTM14-C-120	3	56.00	6.340	218.85	7.468	56.300	12.600	6.300	0.80	0.78	0.000
182.00	APXVSPP18-C-A20	3	57.00	8.020	259.69	9.332	72.000	11.800	7.000	0.80	0.83	0.000
182.00	TD-RRH8x20-25	3	70.00	4.050	182.15	4.874	26.100	18.600	6.700	0.80	0.50	0.000
162.00	B2/B66A RRH-BR049	3	84.40	1.870	162.16	2.451	15.000	15.000	10.000	0.80	0.50	0.000
162.00	B5/B13 RRH-BR04C	3	70.30	1.870	140.76	2.451	15.000	15.000	8.100	0.80	0.50	0.000
162.00	(3) HR w/ Double V-Brace Kits	1	650.00	15.500	1477.05	31.935	0.000	0.000	0.000	0.75	1.00	0.000
162.00	DB-T1-6Z-8AB-0Z	2	18.90	4.800	164.77	5.685	24.000	24.000	10.000	0.80	0.50	0.000
162.00	Sector Frame	3	500.00	24.000	1206.88	43.340	0.000	0.000	0.000	0.75	0.75	0.000
162.00	MX06FRO660-03	6	46.00	9.870	318.89	11.264	71.300	15.400	10.700	0.80	0.87	0.000
162.00	LPA-80063-4CF	4	20.00	6.150	228.53	7.197	47.400	15.200	13.100	0.80	0.92	0.000
162.00	LPA-80063/6CF	2	27.00	9.600	319.21	10.971	70.900	15.000	13.100	0.80	0.94	0.000
162.00	MT6407-77A	3	79.40	4.690	200.77	5.650	35.100	16.100	5.500	0.80	0.70	0.000
162.00	(3) 12.5' - 2.5" Horizontal Pi	1	217.50	7.188	432.74	16.333	0.000	0.000	0.000	0.75	1.00	0.000
150.50	7770	3	35.00	5.500	169.91	6.563	55.000	11.000	5.000	0.80	0.73	0.000
150.50	SBNHH-1D65A	6	33.50	5.880	191.55	6.959	55.000	11.900	7.100	0.80	0.83	0.000
150.50	Sector Frame	3	450.00	14.000	801.27	21.025	0.000	0.000	0.000	0.75	0.75	0.000
150.50	TT19-08BP111-001	6	16.00	0.640	36.21	1.232	9.900	6.700	5.400	0.80	0.50	0.000
150.50	Powerwave 7020.00 RET	12	2.20	0.400	12.41	0.883	4.900	8.300	2.400	0.80	0.50	0.000
150.50	Raycap DC6-48-60-18-8F COVP	3	32.80	0.920	96.47	1.357	24.000	11.000	18.500	0.80	0.67	0.000
150.50	Ericsson RRUS 32 RRU	3	77.00	1.650	125.39	2.229	20.900	9.500	3.300	0.80	0.50	0.000
150.50	(3) Stabilizer Kit + SFS-V Kit	1	180.00	8.100	405.81	16.568	0.000	0.000	0.000	1.00	1.00	0.000
150.50	800 10964	3	83.80	10.000	309.05	11.296	59.000	20.000	6.390	0.80	0.71	0.000
150.50	Ericsson 4449 B5 B12 RRU	3	73.00	1.970	127.80	2.517	14.960	13.190	10.430	0.80	0.50	0.000
150.50	Ericsson RRUS 8843 B2 B66A RRU	3	72.00	1.640	119.22	2.155	14.900	13.200	10.900	0.80	0.50	0.000
141.50	SD312HL	3	10.30	3.450	108.23	6.249	83.100	3.500	18.900	1.00	1.00	0.000
138.00	Side Arm	3	100.00	3.000	186.45	6.465	0.000	0.000	0.000	0.75	0.75	0.000
130.00	MX08FRO665-21	3	64.50	12.490	350.48	13.930	72.000	20.000	8.000	0.80	0.74	0.000
130.00	TA08025-B604	3	63.90	1.960	113.68	2.511	15.800	15.000	7.900	0.80	0.50	0.000
130.00	TA08025-B605	3	75.00	1.960	126.42	2.511	15.800	15.000	9.100	0.80	0.50	0.000
130.00	RDIDC-9181-OF-48	1	21.90	2.010	74.25	2.569	16.600	14.600	8.500	0.80	1.00	0.000
130.00	(3) MTC3975083	1	1242.0	28.050	2435.42	62.704	0.000	0.000	0.000	0.75	1.00	0.000
102.00	Radiowave RDH4518A	1	110.00	8.920	277.42	10.622	0.000	0.000	0.000	1.00	1.00	0.000
102.00	Pipe Mount	1	100.00	2.000	181.21	3.353	0.000	0.000	0.000	1.00	1.00	0.000

Loading Summary

Structure:	CT01879-S-SBA		**Code:**	TIA-222-G	3/16/2022
Site Name:	Clinton 4 CT		**Exposure:**	D	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 6

Tower Engineering Solutions

75.00	GPS	1	10.00	1.000	37.17	1.660	12.000	9.000	6.000	1.00	1.00	0.000
	Totals:	**142**	**15,135.20**		**39,927.64**						**Number of Appurtenances :**	**49**

Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	195.00	Climbing Ladder	1	2.00	6.90	100.00	3	Individual NR		N	1.00	1.00	
0.00	195.00	Safety Cable	1	0.38	0.27	100.00	3	Individual NR		N	1.00	1.00	
0.00	192.00	W/G Ladder	1	0.50	6.00	100.00	1	Individual NR		N	1.00	1.00	
162.00	192.00	1 5/8" Coax	9	1.98	1.04	100.00	1	Individual IR		N	0.50	1.00	
162.00	192.00	1.9" Fiber	3	1.90	1.10	100.00	1	Individual NR		N	0.50	1.00	
0.00	184.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	182.00	1 1/4" Hybrid	4	1.55	0.66	100.00	2	Individual IR		N	1.00	0.54	
0.00	182.00	W/G Ladder	1	2.00	6.00	100.00	2	Individual NR		N	1.00	1.00	
0.00	162.00	1 5/8" Coax	9	1.98	1.04	100.00	1	Individual IR		N	0.50	0.37	
0.00	162.00	1 5/8" Coax	6	1.98	1.04	50.00	3	Block		N	0.40	1.00	
0.00	162.00	1 5/8" Fiber	2	1.63	1.10	50.00	3	Block		N	0.40	1.00	
0.00	162.00	1.9" Fiber	3	1.90	1.10	100.00	1	Individual NR		N	0.50	0.37	
0.00	162.00	W/G Ladder	1	0.50	6.00	100.00	3	Individual NR		N	1.00	1.00	
0.00	150.50	(1)1/2 & (2)3/4" in 3" Conduit	1	3.00	1.78	100.00	3	Individual NR		N	1.00	1.00	
0.00	150.50	1 5/8" Coax	2	1.98	1.04	100.00	3	Individual IR		N	1.00	1.00	0
0.00	150.50	1 5/8" Coax	6	1.98	1.04	50.00	3	Block		N	0.40	1.00	
0.00	150.50	1 5/8" Coax	4	1.98	1.04	100.00	3	Individual IR		N	1.00	1.00	
0.00	150.50	1/2" Fiber	1	0.50	0.16	100.00	3	Individual NR		N	1.00	1.00	0
0.00	150.50	3/4" DC	4	0.75	0.40	50.00	3	Block		N	1.00	1.00	
0.00	150.50	W/G Ladder	1	0.50	6.00	100.00	3	Individual NR		N	1.00	1.00	
0.00	141.50	7/8" Coax	4	1.11	0.52	50.00	3	Block		N	0.40	1.00	
0.00	130.00	1.6" Hybrid	1	1.60	1.00	100.00	2	Individual NR		N	1.00	1.00	
0.00	102.00	CAT5e	2	0.19	0.02	50.00	3	Block		N	0.40	1.00	
0.00	75.00	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	0

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W Normal Wind — 1.2D + 1.6W 105 mph Wind at Normal To Face

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

Dead Load Factor: 1.20

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	1.00	1.00	0.00	25.82	62.71	0.00	4,609.0	0.0	2351.03	1585.39	3,936.42
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	1.00	1.00	0.00	25.30	62.71	0.00	4,546.8	0.0	2289.24	1585.74	3,874.98
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	1.00	1.00	0.00	58.07	125.42	0.00	8,707.9	0.0	5770.35	3577.80	9,348.15
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	1.00	1.00	0.00	43.66	125.42	0.00	7,621.6	0.0	4844.54	3910.19	8,754.73
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	1.00	1.00	0.00	37.62	125.15	0.00	7,192.5	0.0	4480.47	4145.69	8,626.16
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	1.00	1.00	0.00	24.16	82.12	0.00	4,176.9	0.0	2931.37	2840.76	5,772.13
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	1.00	1.00	0.00	11.81	42.23	0.00	2,079.5	0.0	1449.22	1488.84	2,938.06
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	1.00	1.00	0.00	28.54	124.06	0.00	5,724.8	0.0	3632.11	4472.06	8,104.17
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	1.00	1.00	0.00	14.87	81.49	0.00	3,105.1	0.0	2021.16	3087.75	5,108.91
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	1.00	1.00	0.00	9.06	41.20	0.00	1,404.2	0.0	1197.72	1583.22	2,780.94
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	1.00	1.00	0.00	5.73	30.68	0.00	1,149.1	0.0	785.47	1182.42	1,967.90
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	1.00	1.00	0.00	6.77	28.15	0.00	1,068.2	0.0	883.92	1089.43	1,973.35
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	1.00	1.00	0.00	10.37	38.21	0.00	1,734.6	0.0	1416.92	1559.30	2,976.22
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	1.00	1.00	0.00	15.65	60.99	0.00	1,929.5	0.0	2174.93	2466.24	4,641.17
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	1.00	1.00	0.00	10.08	28.73	0.00	980.1	0.0	1433.61	1173.82	2,607.43
														56,029.8	**0.0**			**73,410.72**

Load Case: 1.2D + 1.6W 60° Wind — 1.2D + 1.6W 105 mph Wind at 60° From Face

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

Dead Load Factor: 1.20

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	0.80	1.00	0.00	22.72	62.71	0.00	4,609.0	0.0	2068.78	1585.39	3,654.17
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	0.80	1.00	0.00	22.31	62.71	0.00	4,546.8	0.0	2019.33	1585.74	3,605.07
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	0.80	1.00	0.00	50.10	125.42	0.00	8,707.9	0.0	4977.69	3577.80	8,555.49
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	0.80	1.00	0.00	38.49	125.42	0.00	7,621.6	0.0	4270.85	3910.19	8,181.04
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	0.80	1.00	0.00	32.86	125.15	0.00	7,192.5	0.0	3912.98	4145.69	8,058.67
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	0.80	1.00	0.00	21.18	82.12	0.00	4,176.9	0.0	2570.11	2840.76	5,410.87
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	0.80	1.00	0.00	10.41	42.23	0.00	2,079.5	0.0	1277.28	1488.84	2,766.12
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	0.80	1.00	0.00	25.32	124.06	0.00	5,724.8	0.0	3221.92	4472.06	7,693.98
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	0.80	1.00	0.00	12.91	81.49	0.00	3,105.1	0.0	1754.93	3087.75	4,842.68
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	0.80	1.00	0.00	7.76	41.20	0.00	1,404.2	0.0	1025.56	1583.22	2,608.78
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	0.80	1.00	0.00	4.93	30.68	0.00	1,149.1	0.0	675.26	1182.42	1,857.68
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	0.80	1.00	0.00	5.72	28.15	0.00	1,068.2	0.0	747.50	1089.43	1,836.93
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	0.80	1.00	0.00	8.93	38.21	0.00	1,734.6	0.0	1220.19	1559.30	2,779.49
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	0.80	1.00	0.00	13.79	60.99	0.00	1,929.5	0.0	1915.67	2466.24	4,381.91
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	0.80	1.00	0.00	8.74	28.73	0.00	980.1	0.0	1242.98	1173.82	2,416.80
														56,029.8	**0.0**			**68,649.67**

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 90° Wind — 1.2D + 1.6W 105 mph Wind at 90° From Face

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

Dead Load Factor: 1.20

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	0.85	1.00	0.00	23.50	62.71	0.00	4,609.0	0.0	2139.34	1585.39	3,724.73
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	0.85	1.00	0.00	23.06	62.71	0.00	4,546.8	0.0	2086.80	1585.74	3,672.55
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	0.85	1.00	0.00	52.09	125.42	0.00	8,707.9	0.0	5175.86	3577.80	8,753.65
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	0.85	1.00	0.00	39.78	125.42	0.00	7,621.6	0.0	4414.27	3910.19	8,324.46
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	0.85	1.00	0.00	34.05	125.15	0.00	7,192.5	0.0	4054.85	4145.69	8,200.54
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	0.85	1.00	0.00	21.93	82.12	0.00	4,176.9	0.0	2660.42	2840.76	5,501.19
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	0.85	1.00	0.00	10.76	42.23	0.00	2,079.5	0.0	1320.26	1488.84	2,809.11
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	0.85	1.00	0.00	26.13	124.06	0.00	5,724.8	0.0	3324.47	4472.06	7,796.53
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	0.85	1.00	0.00	13.40	81.49	0.00	3,105.1	0.0	1821.48	3087.75	4,909.24
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	0.85	1.00	0.00	8.08	41.20	0.00	1,404.2	0.0	1068.60	1583.22	2,651.82
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	0.85	1.00	0.00	5.13	30.68	0.00	1,149.1	0.0	702.81	1182.42	1,885.24
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	0.85	1.00	0.00	5.99	28.15	0.00	1,068.2	0.0	781.60	1089.43	1,871.04
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	0.85	1.00	0.00	9.29	38.21	0.00	1,734.6	0.0	1269.37	1559.30	2,828.67
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	0.85	1.00	0.00	14.25	60.99	0.00	1,929.5	0.0	1980.48	2466.24	4,446.72
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	0.85	1.00	0.00	9.07	28.73	0.00	980.1	0.0	1290.64	1173.82	2,464.46
														56,029.8	**0.0**			**69,839.93**

Load Case: 0.9D + 1.6W Normal Wind — 0.9D + 1.6W 105 mph Wind at Normal To Face

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

Dead Load Factor: 0.90

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	1.00	1.00	0.00	25.82	62.71	0.00	3,456.8	0.0	2351.03	1585.39	3,936.42
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	1.00	1.00	0.00	25.30	62.71	0.00	3,410.1	0.0	2289.24	1585.74	3,874.98
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	1.00	1.00	0.00	58.07	125.42	0.00	6,530.9	0.0	5770.35	3577.80	9,348.15
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	1.00	1.00	0.00	43.66	125.42	0.00	5,716.2	0.0	4844.54	3910.19	8,754.73
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	1.00	1.00	0.00	37.62	125.15	0.00	5,394.4	0.0	4480.47	4145.69	8,626.16
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	1.00	1.00	0.00	24.16	82.12	0.00	3,132.7	0.0	2931.37	2840.76	5,772.13
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	1.00	1.00	0.00	11.81	42.23	0.00	1,559.6	0.0	1449.22	1488.84	2,938.06
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	1.00	1.00	0.00	28.54	124.06	0.00	4,293.6	0.0	3632.11	4472.06	8,104.17
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	1.00	1.00	0.00	14.87	81.49	0.00	2,328.8	0.0	2021.16	3087.75	5,108.91
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	1.00	1.00	0.00	9.06	41.20	0.00	1,053.2	0.0	1197.72	1583.22	2,780.94
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	1.00	1.00	0.00	5.73	30.68	0.00	861.8	0.0	785.47	1182.42	1,967.90
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	1.00	1.00	0.00	6.77	28.15	0.00	801.1	0.0	883.92	1089.43	1,973.35
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	1.00	1.00	0.00	10.37	38.21	0.00	1,301.0	0.0	1416.92	1559.30	2,976.22
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	1.00	1.00	0.00	15.65	60.99	0.00	1,447.1	0.0	2174.93	2466.24	4,641.17
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	1.00	1.00	0.00	10.08	28.73	0.00	735.1	0.0	1433.61	1173.82	2,607.43
														42,022.3	**0.0**			**73,410.72**

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 60° Wind — 0.9D + 1.6W 105 mph Wind at 60° From Face

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

Dead Load Factor: 0.90

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	0.80	1.00	0.00	22.72	62.71	0.00	3,456.8	0.0	2068.78	1585.39	3,654.17
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	0.80	1.00	0.00	22.31	62.71	0.00	3,410.1	0.0	2019.33	1585.74	3,605.07
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	0.80	1.00	0.00	50.10	125.42	0.00	6,530.9	0.0	4977.69	3577.80	8,555.49
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	0.80	1.00	0.00	38.49	125.42	0.00	5,716.2	0.0	4270.85	3910.19	8,181.04
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	0.80	1.00	0.00	32.86	125.15	0.00	5,394.4	0.0	3912.98	4145.69	8,058.67
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	0.80	1.00	0.00	21.18	82.12	0.00	3,132.7	0.0	2570.11	2840.76	5,410.87
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	0.80	1.00	0.00	10.41	42.23	0.00	1,559.6	0.0	1277.28	1488.84	2,766.12
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	0.80	1.00	0.00	25.32	124.06	0.00	4,293.6	0.0	3221.92	4472.06	7,693.98
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	0.80	1.00	0.00	12.91	81.49	0.00	2,328.8	0.0	1754.93	3087.75	4,842.68
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	0.80	1.00	0.00	7.76	41.20	0.00	1,053.2	0.0	1025.56	1583.22	2,608.78
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	0.80	1.00	0.00	4.93	30.68	0.00	861.8	0.0	675.26	1182.42	1,857.68
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	0.80	1.00	0.00	5.72	28.15	0.00	801.1	0.0	747.50	1089.43	1,836.93
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	0.80	1.00	0.00	8.93	38.21	0.00	1,301.0	0.0	1220.19	1559.30	2,779.49
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	0.80	1.00	0.00	13.79	60.99	0.00	1,447.1	0.0	1915.67	2466.24	4,381.91
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	0.80	1.00	0.00	8.74	28.73	0.00	735.1	0.0	1242.98	1173.82	2,416.80
														42,022.3	**0.0**			**68,649.67**

Load Case: 0.9D + 1.6W 90° Wind — 0.9D + 1.6W 105 mph Wind at 90° From Face

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

Dead Load Factor: 0.90

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	24.71	15.501	24.14	0.00	0.17	2.71	0.85	1.00	0.00	23.50	62.71	0.00	3,456.8	0.0	2139.34	1585.39	3,724.73
2	15.0	24.72	14.913	24.14	0.00	0.17	2.69	0.85	1.00	0.00	23.06	62.71	0.00	3,410.1	0.0	2086.80	1585.74	3,672.55
3	30.0	27.88	39.887	41.18	0.00	0.19	2.62	0.85	1.00	0.00	52.09	125.42	0.00	6,530.9	0.0	5175.86	3577.80	8,753.65
4	50.0	30.47	25.850	41.18	0.00	0.18	2.68	0.85	1.00	0.00	39.78	125.42	0.00	5,716.2	0.0	4414.27	3910.19	8,324.46
5	70.0	32.31	23.827	32.28	0.00	0.17	2.71	0.85	1.00	0.00	34.05	125.15	0.00	5,394.4	0.0	4054.85	4145.69	8,200.54
6	86.6	33.53	14.889	21.32	0.00	0.18	2.66	0.85	1.00	0.00	21.93	82.12	0.00	3,132.7	0.0	2660.42	2840.76	5,501.19
7	96.6	34.17	7.008	10.96	0.00	0.19	2.64	0.85	1.00	0.00	10.76	42.23	0.00	1,559.6	0.0	1320.26	1488.84	2,809.11
8	110.0	34.95	16.118	28.73	0.00	0.18	2.68	0.85	1.00	0.00	26.13	124.06	0.00	4,293.6	0.0	3324.47	4472.06	7,796.53
9	126.6	35.82	9.791	10.75	0.00	0.14	2.79	0.85	1.00	0.00	13.40	81.49	0.00	2,328.8	0.0	1821.48	3087.75	4,909.24
10	136.6	36.29	6.513	5.10	0.00	0.18	2.68	0.85	1.00	0.00	8.08	41.20	0.00	1,053.2	0.0	1068.60	1583.22	2,651.82
11	142.6	36.56	4.022	3.23	0.00	0.15	2.76	0.85	1.00	0.00	5.13	30.68	0.00	861.8	0.0	702.81	1182.42	1,885.24
12	147.6	36.78	5.223	2.81	0.00	0.20	2.61	0.85	1.00	0.00	5.99	28.15	0.00	801.1	0.0	781.60	1089.43	1,871.04
13	155.0	37.10	7.198	5.84	0.00	0.17	2.71	0.85	1.00	0.00	9.29	38.21	0.00	1,301.0	0.0	1269.37	1559.30	2,828.67
14	170.0	37.70	9.330	11.69	0.00	0.17	2.71	0.85	1.00	0.00	14.25	60.99	0.00	1,447.1	0.0	1980.48	2466.24	4,446.72
15	187.5	38.35	6.701	5.94	0.00	0.16	2.73	0.85	1.00	0.00	9.07	28.73	0.00	735.1	0.0	1290.64	1173.82	2,464.46
														42,022.3	**0.0**			**69,839.93**

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

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

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	5.60	15.501	38.41	14.27	0.23	2.51	1.00	1.00	1.24	37.76	101.68	20.70	8,509.4	3900.4	451.92	425.48	877.39
2	15.0	5.60	14.913	39.66	15.52	0.24	2.47	1.00	1.00	1.39	38.00	105.29	23.10	8,916.4	4369.6	447.89	446.74	894.64
3	30.0	6.32	39.887	73.09	31.91	0.27	2.39	1.00	1.00	1.49	82.93	222.17	39.62	18,945.	10237.9	1066.00	1034.67	2,100.67
4	50.0	6.91	25.850	72.90	31.72	0.26	2.42	1.00	1.00	1.56	68.61	226.32	41.70	17,000.	9378.5	974.99	1164.13	2,139.12
5	70.0	7.33	23.827	63.21	30.93	0.25	2.42	1.00	1.00	1.62	60.88	228.90	41.78	16,364.	9172.2	918.59	1256.49	2,175.08
6	86.6	7.60	14.889	45.88	24.57	0.30	2.30	1.00	1.00	1.65	42.35	151.86	25.46	10,362.	6185.5	629.46	858.98	1,488.44
7	96.6	7.75	7.008	23.00	12.04	0.31	2.28	1.00	1.00	1.67	20.83	78.42	13.23	5,224.2	3144.7	312.67	451.70	764.37
8	110.0	7.93	16.118	63.06	34.33	0.30	2.28	1.00	1.00	1.69	53.97	226.72	39.48	14,414.	8690.0	830.44	1338.22	2,168.66
9	126.6	8.12	9.791	32.22	21.47	0.29	2.33	1.00	1.00	1.72	28.98	149.72	25.53	8,462.7	5357.6	465.59	906.84	1,372.44
10	136.6	8.23	6.513	15.56	10.46	0.32	2.23	1.00	1.00	1.73	15.96	76.49	11.74	4,323.4	2919.2	249.14	456.56	705.70
11	142.6	8.29	4.022	12.00	8.77	0.33	2.22	1.00	1.00	1.74	11.33	56.67	9.01	3,197.4	2048.3	177.10	339.81	516.91
12	147.6	8.34	5.223	11.15	8.34	0.39	2.09	1.00	1.00	1.74	12.25	51.92	8.38	3,161.4	2093.2	181.81	308.01	489.82
13	155.0	8.41	7.198	22.11	16.27	0.36	2.14	1.00	1.00	1.75	20.93	71.19	11.96	4,698.8	2964.2	320.64	439.19	759.83
14	170.0	8.55	9.330	43.10	31.42	0.40	2.07	1.00	1.00	1.77	36.72	109.76	23.56	6,570.6	4641.2	551.72	816.14	1,367.86
15	187.5	8.70	6.701	28.97	23.03	0.43	2.00	1.00	1.00	1.78	25.56	50.48	11.90	3,590.1	2610.0	378.36	398.96	777.31
														133,742.1	**77712.3**			**18,598.23**

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

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	5.60	15.501	38.41	14.27	0.23	2.51	0.80	1.00	1.24	34.66	101.68	20.70	8,509.4	3900.4	414.81	425.48	840.28
2	15.0	5.60	14.913	39.66	15.52	0.24	2.47	0.80	1.00	1.39	35.02	105.29	23.10	8,916.4	4369.6	412.74	446.74	859.48
3	30.0	6.32	39.887	73.09	31.91	0.27	2.39	0.80	1.00	1.49	74.96	222.17	39.62	18,945.	10237.9	963.46	1034.67	1,998.13
4	50.0	6.91	25.850	72.90	31.72	0.26	2.42	0.80	1.00	1.56	63.44	226.32	41.70	17,000.	9378.5	901.52	1164.13	2,065.64
5	70.0	7.33	23.827	63.21	30.93	0.25	2.42	0.80	1.00	1.62	56.11	228.90	41.78	16,364.	9172.2	846.68	1256.49	2,103.17
6	86.6	7.60	14.889	45.88	24.57	0.30	2.30	0.80	1.00	1.65	39.37	151.86	25.46	10,362.	6185.5	585.20	858.98	1,444.18
7	96.6	7.75	7.008	23.00	12.04	0.31	2.28	0.80	1.00	1.67	19.43	78.42	13.23	5,224.2	3144.7	291.63	451.70	743.33
8	110.0	7.93	16.118	63.06	34.33	0.30	2.28	0.80	1.00	1.69	50.75	226.72	39.48	14,414.	8690.0	780.85	1338.22	2,119.06
9	126.6	8.12	9.791	32.22	21.47	0.29	2.33	0.80	1.00	1.72	27.02	149.72	25.53	8,462.7	5357.6	434.13	906.84	1,340.97
10	136.6	8.23	6.513	15.56	10.46	0.32	2.23	0.80	1.00	1.73	14.66	76.49	11.74	4,323.4	2919.2	228.80	456.56	685.37
11	142.6	8.29	4.022	12.00	8.77	0.33	2.22	0.80	1.00	1.74	10.53	56.67	9.01	3,197.4	2048.3	164.53	339.81	504.34
12	147.6	8.34	5.223	11.15	8.34	0.39	2.09	0.80	1.00	1.74	11.21	51.92	8.38	3,161.4	2093.2	166.31	308.01	474.32
13	155.0	8.41	7.198	22.11	16.27	0.36	2.14	0.80	1.00	1.75	19.49	71.19	11.96	4,698.8	2964.2	298.59	439.19	737.77
14	170.0	8.55	9.330	43.10	31.42	0.40	2.07	0.80	1.00	1.77	34.85	109.76	23.56	6,570.6	4641.2	523.68	816.14	1,339.82
15	187.5	8.70	6.701	28.97	23.03	0.43	2.00	0.80	1.00	1.78	24.22	50.48	11.90	3,590.1	2610.0	358.52	398.96	757.47
														133,742.1	**77712.3**			**18,013.35**

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 12	

IES Tower Engineering Solutions

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

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	5.60	15.501	38.41	14.27	0.23	2.51	0.85	1.00	1.24	35.43	101.68	20.70	8,509.4	3900.4	424.08	425.48	849.56
2	15.0	5.60	14.913	39.66	15.52	0.24	2.47	0.85	1.00	1.39	35.76	105.29	23.10	8,916.4	4369.6	421.53	446.74	868.27
3	30.0	6.32	39.887	73.09	31.91	0.27	2.39	0.85	1.00	1.49	76.95	222.17	39.62	18,945.	10237.9	989.09	1034.67	2,023.77
4	50.0	6.91	25.850	72.90	31.72	0.26	2.42	0.85	1.00	1.56	64.73	226.32	41.70	17,000.	9378.5	919.89	1164.13	2,084.01
5	70.0	7.33	23.827	63.21	30.93	0.25	2.42	0.85	1.00	1.62	57.30	228.90	41.78	16,364.	9172.2	864.66	1256.49	2,121.15
6	86.6	7.60	14.889	45.88	24.57	0.30	2.30	0.85	1.00	1.65	40.11	151.86	25.46	10,362.	6185.5	596.27	858.98	1,455.25
7	96.6	7.75	7.008	23.00	12.04	0.31	2.28	0.85	1.00	1.67	19.78	78.42	13.23	5,224.2	3144.7	296.89	451.70	748.59
8	110.0	7.93	16.118	63.06	34.33	0.30	2.28	0.85	1.00	1.69	51.56	226.72	39.48	14,414.	8690.0	793.24	1338.22	2,131.46
9	126.6	8.12	9.791	32.22	21.47	0.29	2.33	0.85	1.00	1.72	27.51	149.72	25.53	8,462.7	5357.6	442.00	906.84	1,348.84
10	136.6	8.23	6.513	15.56	10.46	0.32	2.23	0.85	1.00	1.73	14.98	76.49	11.74	4,323.4	2919.2	233.89	456.56	690.45
11	142.6	8.29	4.022	12.00	8.77	0.33	2.22	0.85	1.00	1.74	10.73	56.67	9.01	3,197.4	2048.3	167.67	339.81	507.48
12	147.6	8.34	5.223	11.15	8.34	0.39	2.09	0.85	1.00	1.74	11.47	51.92	8.38	3,161.4	2093.2	170.18	308.01	478.20
13	155.0	8.41	7.198	22.11	16.27	0.36	2.14	0.85	1.00	1.75	19.85	71.19	11.96	4,698.8	2964.2	304.10	439.19	743.29
14	170.0	8.55	9.330	43.10	31.42	0.40	2.07	0.85	1.00	1.77	35.32	109.76	23.56	6,570.6	4641.2	530.69	816.14	1,346.83
15	187.5	8.70	6.701	28.97	23.03	0.43	2.00	0.85	1.00	1.78	24.55	50.48	11.90	3,590.1	2610.0	363.48	398.96	762.43
														133,742.1	**77712.3**			**18,159.57**

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

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	8.07	15.501	24.14	0.00	0.17	2.71	1.00	1.00	0.00	25.82	62.71	0.00	3,840.9	0.0	479.80	323.55	803.35
2	15.0	8.07	14.913	24.14	0.00	0.17	2.69	1.00	1.00	0.00	25.30	62.71	0.00	3,789.0	0.0	467.19	323.62	790.81
3	30.0	9.10	39.887	41.18	0.00	0.19	2.62	1.00	1.00	0.00	58.07	125.42	0.00	7,256.6	0.0	1177.62	730.16	1,907.78
4	50.0	9.95	25.850	41.18	0.00	0.18	2.68	1.00	1.00	0.00	43.66	125.42	0.00	6,351.3	0.0	988.68	798.00	1,786.68
5	70.0	10.55	23.827	32.28	0.00	0.17	2.71	1.00	1.00	0.00	38.76	125.15	0.00	5,993.7	0.0	941.92	846.06	1,787.98
6	86.6	10.95	14.889	21.32	0.00	0.18	2.66	1.00	1.00	0.00	24.79	82.12	0.00	3,480.8	0.0	613.67	579.75	1,193.42
7	96.6	11.16	7.008	10.96	0.00	0.19	2.64	1.00	1.00	0.00	12.10	42.23	0.00	1,732.9	0.0	303.02	303.85	606.86
8	110.0	11.41	16.118	28.73	0.00	0.18	2.68	1.00	1.00	0.00	30.04	124.06	0.00	4,770.6	0.0	780.15	912.66	1,692.81
9	126.6	11.70	9.791	10.75	0.00	0.14	2.79	1.00	1.00	0.00	15.89	81.49	0.00	2,587.6	0.0	440.80	614.49	1,055.28
10	136.6	11.85	6.513	5.10	0.00	0.18	2.68	1.00	1.00	0.00	9.42	41.20	0.00	1,170.2	0.0	254.20	315.08	569.28
11	142.6	11.94	4.022	3.23	0.00	0.15	2.76	1.00	1.00	0.00	5.85	30.68	0.00	957.6	0.0	163.72	235.19	398.91
12	147.6	12.01	5.223	2.81	0.00	0.20	2.61	1.00	1.00	0.00	6.84	28.15	0.00	890.2	0.0	182.20	216.67	398.87
13	155.0	12.11	7.198	5.84	0.00	0.17	2.71	1.00	1.00	0.00	10.53	38.21	0.00	1,445.5	0.0	293.56	317.64	611.20
14	170.0	12.31	9.330	11.69	0.00	0.17	2.71	1.00	1.00	0.00	15.99	60.99	0.00	1,607.9	0.0	453.26	503.31	956.57
15	187.5	12.52	6.701	5.94	0.00	0.16	2.73	1.00	1.00	0.00	10.08	28.73	0.00	816.8	0.0	292.57	239.55	532.13
														46,691.5	**0.0**			**15,091.95**

Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

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

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

Dead Load Factor: 1.00

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	8.07	15.501	24.14	0.00	0.17	2.71	0.80	1.00	0.00	22.72	62.71	0.00	3,840.9	0.0	422.20	323.55	745.75
2	15.0	8.07	14.913	24.14	0.00	0.17	2.69	0.80	1.00	0.00	22.31	62.71	0.00	3,789.0	0.0	412.11	323.62	735.73
3	30.0	9.10	39.887	41.18	0.00	0.19	2.62	0.80	1.00	0.00	50.10	125.42	0.00	7,256.6	0.0	1015.86	730.16	1,746.02
4	50.0	9.95	25.850	41.18	0.00	0.18	2.68	0.80	1.00	0.00	38.49	125.42	0.00	6,351.3	0.0	871.60	798.00	1,669.60
5	70.0	10.55	23.827	32.28	0.00	0.17	2.71	0.80	1.00	0.00	33.99	125.15	0.00	5,993.7	0.0	826.11	846.06	1,672.17
6	86.6	10.95	14.889	21.32	0.00	0.18	2.66	0.80	1.00	0.00	21.81	82.12	0.00	3,480.8	0.0	539.95	579.75	1,119.69
7	96.6	11.16	7.008	10.96	0.00	0.19	2.64	0.80	1.00	0.00	10.70	42.23	0.00	1,732.9	0.0	267.93	303.85	571.77
8	110.0	11.41	16.118	28.73	0.00	0.18	2.68	0.80	1.00	0.00	26.82	124.06	0.00	4,770.6	0.0	696.43	912.66	1,609.10
9	126.6	11.70	9.791	10.75	0.00	0.14	2.79	0.80	1.00	0.00	13.93	81.49	0.00	2,587.6	0.0	386.47	614.49	1,000.95
10	136.6	11.85	6.513	5.10	0.00	0.18	2.68	0.80	1.00	0.00	8.12	41.20	0.00	1,170.2	0.0	219.07	315.08	534.15
11	142.6	11.94	4.022	3.23	0.00	0.15	2.76	0.80	1.00	0.00	5.05	30.68	0.00	957.6	0.0	141.23	235.19	376.42
12	147.6	12.01	5.223	2.81	0.00	0.20	2.61	0.80	1.00	0.00	5.79	28.15	0.00	890.2	0.0	154.36	216.67	371.03
13	155.0	12.11	7.198	5.84	0.00	0.17	2.71	0.80	1.00	0.00	9.09	38.21	0.00	1,445.5	0.0	253.41	317.64	571.05
14	170.0	12.31	9.330	11.69	0.00	0.17	2.71	0.80	1.00	0.00	14.12	60.99	0.00	1,607.9	0.0	400.35	503.31	903.66
15	187.5	12.52	6.701	5.94	0.00	0.16	2.73	0.80	1.00	0.00	8.74	28.73	0.00	816.8	0.0	253.67	239.55	493.22
														46,691.5	**0.0**			**14,120.30**

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

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

Dead Load Factor: 1.00

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	5.0	8.07	15.501	24.14	0.00	0.17	2.71	0.85	1.00	0.00	23.50	62.71	0.00	3,840.9	0.0	436.60	323.55	760.15
2	15.0	8.07	14.913	24.14	0.00	0.17	2.69	0.85	1.00	0.00	23.06	62.71	0.00	3,789.0	0.0	425.88	323.62	749.50
3	30.0	9.10	39.887	41.18	0.00	0.19	2.62	0.85	1.00	0.00	52.09	125.42	0.00	7,256.6	0.0	1056.30	730.16	1,786.46
4	50.0	9.95	25.850	41.18	0.00	0.18	2.68	0.85	1.00	0.00	39.78	125.42	0.00	6,351.3	0.0	900.87	798.00	1,698.87
5	70.0	10.55	23.827	32.28	0.00	0.17	2.71	0.85	1.00	0.00	35.18	125.15	0.00	5,993.7	0.0	855.06	846.06	1,701.12
6	86.6	10.95	14.889	21.32	0.00	0.18	2.66	0.85	1.00	0.00	22.55	82.12	0.00	3,480.8	0.0	558.38	579.75	1,138.13
7	96.6	11.16	7.008	10.96	0.00	0.19	2.64	0.85	1.00	0.00	11.05	42.23	0.00	1,732.9	0.0	276.70	303.85	580.54
8	110.0	11.41	16.118	28.73	0.00	0.18	2.68	0.85	1.00	0.00	27.62	124.06	0.00	4,770.6	0.0	717.36	912.66	1,630.03
9	126.6	11.70	9.791	10.75	0.00	0.14	2.79	0.85	1.00	0.00	14.42	81.49	0.00	2,587.6	0.0	400.05	614.49	1,014.54
10	136.6	11.85	6.513	5.10	0.00	0.18	2.68	0.85	1.00	0.00	8.45	41.20	0.00	1,170.2	0.0	227.85	315.08	542.93
11	142.6	11.94	4.022	3.23	0.00	0.15	2.76	0.85	1.00	0.00	5.25	30.68	0.00	957.6	0.0	146.85	235.19	382.04
12	147.6	12.01	5.223	2.81	0.00	0.20	2.61	0.85	1.00	0.00	6.05	28.15	0.00	890.2	0.0	161.32	216.67	377.99
13	155.0	12.11	7.198	5.84	0.00	0.17	2.71	0.85	1.00	0.00	9.45	38.21	0.00	1,445.5	0.0	263.45	317.64	581.09
14	170.0	12.31	9.330	11.69	0.00	0.17	2.71	0.85	1.00	0.00	14.59	60.99	0.00	1,607.9	0.0	413.57	503.31	916.89
15	187.5	12.52	6.701	5.94	0.00	0.16	2.73	0.85	1.00	0.00	9.07	28.73	0.00	816.8	0.0	263.40	239.55	502.95
														46,691.5	**0.0**			**14,363.22**

Force/Stress Compression Summary

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	10	MOD - 8"PST+L8x8x1/2	-566.03	1.2D + 1.6W Normal Wind	9.64	100	100	100	38.14	50.00	655.02	86.4	Member X
2	20	MOD - 8"PST+L8x8x1/2	-539.74	1.2D + 1.6W Normal Wind	9.64	100	100	100	38.14	50.00	655.02	82.4	Member X
3	40	MOD - 8"PST+5x5x3/8L	-509.46	1.2D + 1.6W Normal Wind	9.64	50	50	50	21.56	50.00	522.32	97.5	Member X
4	60	MOD - 8"PST+5x5x3/8L	-450.93	1.2D + 1.6W Normal Wind	9.64	100	100	100	43.13	50.00	471.68	95.6	Member X
5	80	MOD - 6"PX+L4x4x3/8	-391.41	1.2D + 1.6W Normal Wind	9.64	100	100	100	56.38	50.00	401.71	97.4	Member X
6	93.20	MOD - 6"PST+4x4x3/8L	-334.58	1.2D + 1.6W Normal Wind	6.43	100	100	100	37.83	50.00	342.05	97.8	Member X
7	100	MOD - 6"PST+4x4x3/8L	-293.83	1.2D + 1.6W Normal Wind	6.43	100	100	100	37.84	50.00	342.05	85.9	Member X
8	120	MOD - 5"PX+4x4x3/8L	-271.68	1.2D + 1.6W Normal Wind	6.43	100	100	100	43.97	50.00	350.43	77.5	Member X
9	133.2	MOD - 4"PX+5"PX1/2P	-204.02	1.2D + 1.6W Normal Wind	6.43	100	100	100	49.00	46.00	262.89	77.6	Member X
10	140	PX - 4" DIA PIPE	-158.37	1.2D + 1.6W Normal Wind	6.43	50	50	50	26.05	50.00	188.84	83.9	Member X
11	145.1	MOD - 3"PX+3.5"PST1/2P	-138.88	1.2D + 1.6W Normal Wind	4.82	100	100	100	50.85	46.00	151.53	91.7	Member X
12	150	PX - 3" DIA PIPE	-118.97	1.2D + 1.6W Normal Wind	4.82	50	50	50	25.37	46.00	119.73	99.4	Member X
13	160	PX - 3" DIA PIPE	-103.55	1.2D + 1.6W Normal Wind	4.82	100	100	100	50.74	46.00	105.14	98.5	Member X
14	180	PST - 3" DIA PIPE	-69.58	1.2D + 1.6W Normal Wind	4.82	100	100	100	49.87	50.00	83.67	83.2	Member X
15	195	PST - 2" DIA PIPE	-19.24	1.2D + 1.6W Normal Wind	5.00	100	100	100	76.24	50.00	31.48	61.1	Member X

Splices

		Top Splice						Bottom Splice					
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	10	1.2D + 1.6W Normal Wind	553.38	0.00	0.0			1.2D + 1.6W Normal Wind	581.09	0.00			
2	20	1.2D + 1.6W Normal Wind	526.35	0.00	0.0			1.2D + 1.6W Normal Wind	553.38	0.00			
3	40	1.2D + 1.6W Normal Wind	467.57	0.00	0.0			1.2D + 1.6W Normal Wind	526.35	0.00			
4	60	1.2D + 1.6W Normal Wind	407.73	0.00	0.0			1.2D + 1.6W Normal Wind	467.57	0.00			
5	80	1.2D + 1.6W Normal Wind	346.89	0.00	0.0			1.2D + 1.6W Normal Wind	407.73	0.00			
6	93.20	1.2D + 1.6W Normal Wind	304.69	0.00	0.0			1.2D + 1.6W Normal Wind	346.89	0.00			
7	100	1.2D + 1.6W Normal Wind	284.07	0.00	0.0	1 1/4	4	1.2D + 1.6W Normal Wind	304.69	0.00			
8	120	1.2D + 1.6W Normal Wind	217.67	0.00	0.0	1 1/4	4	1.2D + 1.6W Normal Wind	284.07	0.00			
9	133.2	1.2D + 1.6W Normal Wind	171.54	0.00	0.0			1.2D + 1.6W Normal Wind	217.67	0.00			
10	140	1.2D + 1.6W Normal Wind	148.07	0.00	0.0	1 A325	4	1.2D + 1.6W Normal Wind	171.54	0.00			
11	145.1	1.2D + 1.6W Normal Wind	128.30	0.00	0.0			1.2D + 1.6W Normal Wind	148.07	0.00			
12	150	1.2D + 1.6W Normal Wind	111.09	0.00	0.0			1.2D + 1.6W Normal Wind	128.30	0.00			
13	160	1.2D + 1.6W Normal Wind	77.63	0.00	0.0	1 A325	4	1.2D + 1.6W Normal Wind	111.09	0.00			
14	180	1.2D + 1.6W Normal Wind	26.81	0.00	0.0	3/4 A325	4	1.2D + 1.6W Normal Wind	77.63	0.00			
15	195	1.2D + 1.0E	0.94	0.00	0.0			1.2D + 1.6W Normal Wind	26.81	0.00			

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	10										0.00	0	0				
2	20										0.00	0	0				
3	40										0.00	0	0				
4	60										0.00	0	0				
5	80										0.00	0	0				
6	93.2										0.00	0	0				
7	100										0.00	0	0				
8	120										0.00	0	0				
9	133.										0.00	0	0				
10	140										0.00	0	0				
11	145.										0.00	0	0				

Force/Stress Compression Summary

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
12	150										0.00	0	0				
13	160										0.00	0	0				
14	180	SAE - 1.75X1.75X0.187	-1.01	1.2D + 1.6W 60° Wind	5.00	100	100	100	174.93	36.00	4.58	1	1	15.19	11.09	22	Member Z
15	195	SAE - 1.75X1.75X0.187	-1.05	1.2D + 1.6W Normal Wind	5.00	100	100	100	174.93	36.00	4.58	1	1	15.19	11.09	23	Member Z

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	10	SAE - 4X4X0.375	-17.2	1.2D + 1.6W 90° Wind	24.46	48	48	48	178.77	36.00	20.22	1	1	21.86	24.1	85	Member Z
2	20	SAE - 4X4X0.375	-19.2	0.9D + 1.6W 90° Wind	23.57	48	48	48	172.32	36.00	21.76	1	1	21.86	24.1	89	Member Z
3	40	SAE - 4X4X0.375	-18.0	1.2D + 1.6W 90° Wind	21.76	48	48	48	159.09	36.00	25.53	1	1	21.86	21.5	84	Bolt Bear
4	60	SAE - 4X4X0.375	-17.0	1.2D + 1.6W 90° Wind	19.99	48	48	48	146.12	36.00	30.26	1	1	21.86	24.1	78	Bolt Shear
5	80	SAE - 4X4X0.375	-16.1	1.2D + 1.6W 90° Wind	18.26	48	48	48	133.50	36.00	36.26	1	1	21.86	24.1	74	Bolt Shear
6	93.2	SAE - 3X3X0.375	-13.9	1.2D + 1.6W 90° Wind	15.99	48	48	48	156.87	36.00	19.37	1	1	21.86	24.1	72	Member Z
7	100	SAE - 3X3X0.375	-14.0	1.2D + 1.6W 90° Wind	14.82	48	48	48	145.43	36.00	22.54	1	1	21.86	24.1	64	Bolt Shear
8	120	SAE - 2.5X2.5X0.375	-12.8	1.2D + 1.6W 90° Wind	14.18	48	48	48	167.69	36.00	13.90	1	1	15.19	19.5	93	Member Z
9	133.	SAE - 2.5X2.5X0.25	-12.3	1.2D + 1.6W 90° Wind	12.43	46	46	46	139.72	36.00	13.77	1	1	15.19	13.0	94	Bolt Bear
10	140	SAE - 2.5X2.5X0.25	-12.3	1.2D + 1.6W 90° Wind	11.35	46	46	46	127.57	36.00	16.37	1	1	15.19	13.0	94	Bolt Bear
11	145.	SAE - 2.5X2.5X0.375	-10.2	1.2D + 1.6W 90° Wind	9.96	49	49	49	120.29	36.00	26.17	1	1	15.19	19.5	68	Bolt Shear
12	150	SAE - 2.5X2.5X0.375	-9.93	1.2D + 1.6W Normal Wind	9.54	49	49	49	116.42	36.00	27.46	1	1	15.19	19.5	65	Bolt Shear
13	160	SAE - 2.5X2.5X0.375	-9.36	1.2D + 1.6W 90° Wind	8.73	49	49	49	109.02	36.00	29.98	1	1	15.19	19.5	62	Bolt Shear
14	180	SAE - 1.75X1.75X0.187	-5.51	1.2D + 1.6W 90° Wind	8.27	49	49	49	141.74	36.00	6.97	1	1	15.19	11.0	79	Member Z
15	195	SAE - 1.75X1.75X0.187	-4.67	1.2D + 1.6W 90° Wind	7.07	50	50	50	123.69	36.00	8.98	1	1	15.19	11.0	52	Member Z

Force/Stress Tension Summary

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 16	

TES Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	10	MOD - 8"PST+L8x8x1/2	517.37	0.9D + 1.6W 60° Wind	50	728.55	71.0	Member
2	20	MOD - 8"PST+L8x8x1/2	480.48	0.9D + 1.6W 60° Wind	50	728.55	66.0	Member
3	40	MOD - 8"PST+5x5x3/8L	469.49	0.9D + 1.6W 60° Wind	50	540.39	86.9	Member
4	60	MOD - 8"PST+5x5x3/8L	418.85	0.9D + 1.6W 60° Wind	50	540.39	77.5	Member
5	80	MOD - 6"PX+L4x4x3/8	366.31	0.9D + 1.6W 60° Wind	50	506.83	72.3	Member
6	93.208	MOD - 6"PST+4x4x3/8L	312.27	0.9D + 1.6W 60° Wind	50	379.79	82.2	Member
7	100	MOD - 6"PST+4x4x3/8L	264.30	0.9D + 1.6W 60° Wind	50	379.79	69.6	Member
8	120	MOD - 5"PX+4x4x3/8L	255.64	0.9D + 1.6W 60° Wind	50	403.64	63.3	Member
9	133.21	MOD - 4"PX+5"PX1/2P	194.95	0.9D + 1.6W 60° Wind	46	308.98	63.1	Member
10	140	PX - 4" DIA PIPE	141.26	0.9D + 1.6W 60° Wind	50	198.45	71.2	Member
11	145.18	MOD - 3"PX+3.5"PST1/2P	131.65	0.9D + 1.6W 60° Wind	46	180.32	73.0	Member
12	150	PX - 3" DIA PIPE	104.38	0.9D + 1.6W 60° Wind	46	125.03	83.5	Member
13	160	PX - 3" DIA PIPE	91.49	0.9D + 1.6W 60° Wind	46	125.03	73.2	Member
14	180	PST - 3" DIA PIPE	67.18	0.9D + 1.6W 60° Wind	50	100.35	66.9	Member
15	195	PST - 2" DIA PIPE	15.03	0.9D + 1.6W 60° Wind	50	48.15	31.2	Member

Splices

		Top Splice					Bottom Splice				
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	10	0.9D + 1.6W 60° Wind	492.15	0.00	0.0			0.9D + 1.6W 60° Wind	517.3	0.00			
2	20	0.9D + 1.6W 60° Wind	468.96	0.00	0.0			0.9D + 1.6W 60° Wind	492.1	0.00			
3	40	0.9D + 1.6W 60° Wind	418.36	0.00	0.0			0.9D + 1.6W 60° Wind	468.9	0.00			
4	60	0.9D + 1.6W 60° Wind	365.88	0.00	0.0			0.9D + 1.6W 60° Wind	418.3	0.00			
5	80	0.9D + 1.6W 60° Wind	311.86	0.00	0.0			0.9D + 1.6W 60° Wind	365.8	0.00			
6	93.208	0.9D + 1.6W 60° Wind	273.75	0.00	0.0			0.9D + 1.6W 60° Wind	311.8	0.00			
7	100	0.9D + 1.6W 60° Wind	255.41	305.28	83.7	1 1/4	4	0.9D + 1.6W 60° Wind	273.7	0.00			
8	120	0.9D + 1.6W 60° Wind	194.70	305.28	63.8	1 1/4	4	0.9D + 1.6W 60° Wind	255.4	0.00			
9	133.21	0.9D + 1.6W 60° Wind	152.98	0.00	0.0			0.9D + 1.6W 60° Wind	194.7	0.00			
10	140	0.9D + 1.6W 60° Wind	131.51	212.04	62.0	1 A325	4	0.9D + 1.6W 60° Wind	152.9	0.00			
11	145.18	0.9D + 1.6W 60° Wind	112.83	0.00	0.0			0.9D + 1.6W 60° Wind	131.5	0.00			
12	150	0.9D + 1.6W 60° Wind	96.29	0.00	0.0			0.9D + 1.6W 60° Wind	112.8	0.00			
13	160	0.9D + 1.6W 60° Wind	67.06	212.04	31.6	1 A325	4	0.9D + 1.6W 60° Wind	96.29	0.00			
14	180	0.9D + 1.6W 60° Wind	20.52	120.40	17.0	3/4 A325	4	0.9D + 1.6W 60° Wind	67.06	0.00			
15	195		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	20.52	0.00			

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	10	-			36	0.00	0	0					
2	20	-			36	0.00	0	0					
3	40	-			36	0.00	0	0					
4	60	-			36	0.00	0	0					
5	80	-			36	0.00	0	0					
6	93.208	-			36	0.00	0	0					
7	100	-			36	0.00	0	0					
8	120	-			36	0.00	0	0					
9	133.21	-			36	0.00	0	0					
10	140	-			36	0.00	0	0					
11	145.18	-			36	0.00	0	0					
12	150	-			36	0.00	0	0					

Force/Stress Tension Summary

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 17	

IES Tower Engineering Solutions

HORIZONTAL MEMBERS

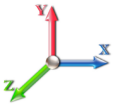
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
13	160	-			36	0.00	0	0					
14	180	SAE - 1.75X1.75X0.1875	0.77	0.9D + 1.6W 90° Wind	36	15.64	1	1	15.19	11.09	7.88	9.8	Blck Shear
15	195	SAE - 1.75X1.75X0.1875	0.90	1.2D + 1.6W 60° Wind	36	15.64	1	1	15.19	11.09	7.88	11.5	Blck Shear

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	10	SAE - 4X4X0.375	16.69	0.9D + 1.6W 90° Wind	36	82.60	1	1	21.86	24.14	25.69	76.4	Bolt Shear
2	20	SAE - 4X4X0.375	18.82	0.9D + 1.6W 90° Wind	36	82.60	1	1	21.86	24.14	25.69	86.1	Bolt Shear
3	40	SAE - 4X4X0.375	17.39	0.9D + 1.6W 90° Wind	36	82.60	1	1	21.86	21.53	24.93	80.8	Bolt Bear
4	60	SAE - 4X4X0.375	16.43	0.9D + 1.6W 90° Wind	36	82.60	1	1	21.86	24.14	25.69	75.2	Bolt Shear
5	80	SAE - 4X4X0.375	15.44	1.2D + 1.6W 90° Wind	36	82.60	1	1	21.86	24.14	25.69	70.6	Bolt Shear
6	93.208	SAE - 3X3X0.375	13.69	1.2D + 1.6W 90° Wind	36	58.13	1	1	21.86	24.14	21.61	63.3	Blck Shear
7	100	SAE - 3X3X0.375	13.58	1.2D + 1.6W 90° Wind	36	58.13	1	1	21.86	24.14	21.61	62.8	Blck Shear
8	120	SAE - 2.5X2.5X0.375	13.40	1.2D + 1.6W 90° Wind	36	47.27	1	1	15.19	19.58	19.07	88.2	Bolt Shear
9	133.21	SAE - 2.5X2.5X0.25	12.12	1.2D + 1.6W 90° Wind	36	32.71	1	1	15.19	13.05	12.71	95.3	Blck Shear
10	140	SAE - 2.5X2.5X0.25	11.76	1.2D + 1.6W 90° Wind	36	32.71	1	1	15.19	13.05	12.71	92.5	Blck Shear
11	145.18	SAE - 2.5X2.5X0.375	10.52	1.2D + 1.6W 90° Wind	36	47.27	1	1	15.19	19.58	19.07	69.3	Bolt Shear
12	150	SAE - 2.5X2.5X0.375	9.49	0.9D + 1.6W 90° Wind	36	47.27	1	1	15.19	19.58	19.07	62.5	Bolt Shear
13	160	SAE - 2.5X2.5X0.375	8.92	1.2D + 1.6W 90° Wind	36	47.27	1	1	15.19	19.58	19.07	58.7	Bolt Shear
14	180	SAE - 1.75X1.75X0.1875	5.97	1.2D + 1.6W 90° Wind	36	15.64	1	1	15.19	11.09	7.88	75.8	Blck Shear
15	195	SAE - 1.75X1.75X0.1875	4.62	1.2D + 1.6W 90° Wind	36	15.64	1	1	15.19	11.09	7.88	58.6	Blck Shear

Seismic Section Forces

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 18	



IES Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Dead Load Factor	1.20	**Sds**	0.180	**Ss**	0.1690	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.094	**S1**	0.0590	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.140	**R**	3.0000	**Vs**	3.4759	**f1**	1.4884

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	5.00	3840.8	0.00	0.03	0.01	7.94
2	15.00	3789.0	0.01	0.06	0.03	18.01
3	30.00	7256.6	0.04	0.07	0.04	52.99
4	50.00	6351.2	0.12	0.07	0.03	69.23
5	70.00	6003.7	0.24	0.06	0.02	93.28
6	86.60	3480.7	0.37	0.03	0.01	67.46
7	96.60	1732.9	0.46	0.00	0.01	37.05
8	110.00	4980.6	0.60	-0.05	0.01	118.40
9	126.61	4461.6	0.80	-0.11	0.05	123.03
10	136.61	1470.1	0.93	-0.12	0.10	46.56
11	142.59	988.46	1.01	-0.11	0.14	34.92
12	147.59	890.16	1.08	-0.08	0.18	34.98
13	155.00	4419.7	1.19	0.00	0.25	207.90
14	170.00	5125.4	1.44	0.36	0.47	364.80
15	187.50	7035.1	1.75	1.31	0.89	819.90

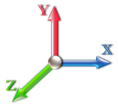
Load Case: 0.9D + 1.0E

Dead Load Factor	0.90	**Sds**	0.180	**Ss**	0.1690	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.094	**S1**	0.0590	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.140	**R**	3.0000	**Vs**	3.4759	**f1**	1.4884

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	5.00	3840.8	0.00	0.03	0.01	7.94
2	15.00	3789.0	0.01	0.06	0.03	18.01
3	30.00	7256.6	0.04	0.07	0.04	52.99
4	50.00	6351.2	0.12	0.07	0.03	69.23
5	70.00	6003.7	0.24	0.06	0.02	93.28
6	86.60	3480.7	0.37	0.03	0.01	67.46
7	96.60	1732.9	0.46	0.00	0.01	37.05
8	110.00	4980.6	0.60	-0.05	0.01	118.40
9	126.61	4461.6	0.80	-0.11	0.05	123.03
10	136.61	1470.1	0.93	-0.12	0.10	46.56
11	142.59	988.46	1.01	-0.11	0.14	34.92
12	147.59	890.16	1.08	-0.08	0.18	34.98
13	155.00	4419.7	1.19	0.00	0.25	207.90
14	170.00	5125.4	1.44	0.36	0.47	364.80
15	187.50	7035.1	1.75	1.31	0.89	819.90

Support Forces Summary

Structure:	CT01879-S-SBA	**Code:**	TIA-222-G	3/16/2022	
Site Name:	Clinton 4 CT	**Exposure:**	D		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 19	



Tower Engineering Solutions

Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	0.00	579.08	-60.73	
	1a	21.24	-252.45	-19.90	
	1b	-21.24	-252.45	-19.90	
1.2D + 1.6W 60° Wind	1	-6.14	291.85	-29.80	
	1a	-28.77	291.53	9.77	
	1b	-48.04	-509.19	-27.86	
1.2D + 1.6W 90° Wind	1	-7.31	24.85	-1.45	
	1a	-45.92	491.34	22.61	
	1b	-43.74	-442.00	-21.16	
0.9D + 1.6W Normal Wind	1	0.00	572.13	-60.32	
	1a	21.57	-258.24	-20.11	
	1b	-21.57	-258.24	-20.11	
0.9D + 1.6W 60° Wind	1	-6.15	285.28	-29.40	
	1a	-28.43	285.00	9.56	
	1b	-48.37	-514.64	-28.05	
0.9D + 1.6W 90° Wind	1	-7.32	18.64	-1.05	
	1a	-45.58	484.54	22.40	
	1b	-44.07	-447.54	-21.35	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	194.72	-13.30	
	1a	6.63	-11.11	-5.60	
	1b	-6.63	-11.11	-5.60	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-1.49	125.01	-5.86	
	1a	-5.79	124.64	1.68	
	1b	-13.41	-77.15	-7.77	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-1.75	57.71	1.25	
	1a	-10.05	174.42	4.85	
	1b	-12.25	-59.63	-6.10	
1.2D + 1.0E	1	0.00	40.59	7.80	
	1a	8.45	16.80	-4.93	
	1b	-8.45	16.80	-4.93	
0.9D + 1.0E	1	0.00	34.38	8.20	
	1a	8.80	10.63	-5.13	
	1b	-8.80	10.63	-5.13	
1.0D + 1.0W Normal Wind	1	0.00	134.29	-13.51	
	1a	3.48	-36.23	-3.56	
	1b	-3.48	-36.23	-3.56	
1.0D + 1.0W 60° Wind	1	-1.27	75.43	-7.14	
	1a	-6.80	75.27	2.51	
	1b	-8.95	-88.87	-5.19	
1.0D + 1.0W 90° Wind	1	-1.50	20.70	-1.32	
	1a	-10.33	116.22	5.15	
	1b	-8.07	-75.09	-3.83	

Max Reactions

Leg			Overturning		
Max Uplift:	-514.64	(kips)	Moment:	11041.95	(ft-kips)
Max Down:	579.08	(kips)	Total Down:	74.19	(kips)
Max Shear:	60.73	(kips)	Total Shear:	100.54	(kips)

Max Reactions

Leg			Overturning		
Max Uplift:	-514.64	(kips)	Moment:	11041.95	(ft-kips)
Max Down:	579.08	(kips)	Total Down:	74.19	(kips)
Max Shear:	60.73	(kips)	Total Shear:	100.54	(kips)

Anchor Bolts

Bolt Size (in.):	1.50	Number Bolts:	8
Yield Strength (Ksi):	50.00	Tensile Strength (Ksi):	65.00
Detail Type:	C		

Interaction Ratio: 1.07

Max Usages

Max Leg: 99.4% (1.2D + 1.6W Normal Wind - Sect 12)
Max Diag: 95.3% (1.2D + 1.6W 90° Wind - Sect 9)
Max Horiz: 22.9% (1.2D + 1.6W Normal Wind - Sect 15)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0E - Normal To Face	79.63	0.0078	0.0000	0.0178
	100.38	0.0154	0.0000	0.0257
	126.79	0.0324	0.0017	0.0322
	139.63	0.0401	0.0024	0.0455
	140.38	0.0407	0.0024	0.0459
	150.00	0.0477	0.0027	0.0478
	160.38	0.0569	0.0037	0.0710
	180.00	0.0790	0.0054	0.0832
	185.00	0.0841	0.0000	0.0742
	190.00	0.0922	0.0047	0.0804
0.9D + 1.6W 105 mph Wind at 60° From Face	79.63	0.3551	0.0070	0.5788
	100.38	0.5729	0.0199	0.7401
	126.79	0.9341	0.0562	0.8638
	139.63	1.1427	0.0766	1.2416
	140.38	1.1595	0.0769	1.2551
	150.00	1.3360	0.0860	1.1607
	160.38	1.5553	0.1184	1.6287
	180.00	2.0293	0.2396	1.7317
	185.00	2.1580	0.3634	1.2983
	190.00	2.2936	0.3846	1.6548

0.9D + 1.6W 105 mph Wind at 90° From Face	79.63	0.3580	-0.0133	0.5694
	100.38	0.5775	-0.0112	0.7303
	126.79	0.9413	0.0334	0.8691
	139.63	1.1515	0.0461	1.2389
	140.38	1.1672	0.0464	1.2480
	150.00	1.3452	0.0517	1.1610
	160.38	1.5654	0.0718	1.6154
	180.00	2.0433	0.0937	1.7087
	185.00	2.1718	-0.0160	0.8426
	190.00	2.3095	0.0921	1.7520
0.9D + 1.6W 105 mph Wind at Normal To Face	79.63	0.3686	0.0156	0.6357
	100.38	0.5932	0.0247	0.8027
	126.79	0.9643	0.0554	0.8854
	139.63	1.1794	0.0729	1.2945
	140.38	1.1957	0.0729	1.3091
	150.00	1.3776	0.0820	1.1971
	160.38	1.6025	0.1095	1.6962
	180.00	2.0907	0.1482	1.7072
	185.00	2.2248	0.0240	2.1432
	190.00	2.3639	0.1496	1.6054
1.0D + 1.0W 60 mph Wind at 60° From Face	79.63	0.0730	-0.0013	0.1181
	100.38	0.1177	-0.0004	0.1514
	126.79	0.1916	0.0111	0.1767
	139.63	0.2345	0.0149	0.2583
	140.38	0.2377	0.0149	0.2606
	150.00	0.2740	0.0165	0.2388
	160.38	0.3188	0.0225	0.3376
	180.00	0.4161	0.0298	0.3577
	185.00	0.4426	0.0124	0.2632
	190.00	0.4703	0.0293	0.3376
1.0D + 1.0W 60 mph Wind at 90° From Face	79.63	0.0735	-0.0028	0.1169
	100.38	0.1185	-0.0024	0.1498
	126.79	0.1931	0.0065	0.1781
	139.63	0.2362	0.0087	0.2545
	140.38	0.2393	0.0087	0.2559
	150.00	0.2759	0.0097	0.2380
	160.38	0.3209	0.0131	0.3304
	180.00	0.4189	0.0171	0.3526
	185.00	0.4452	-0.0039	0.1730
	190.00	0.4734	0.0167	0.3587
1.0D + 1.0W 60 mph Wind at Normal To Face	79.63	0.0759	0.0032	0.1294
	100.38	0.1220	0.0050	0.1642
	126.79	0.1980	0.0112	0.1817
	139.63	0.2421	0.0150	0.2611
	140.38	0.2457	0.0150	0.2645
	150.00	0.2829	0.0166	0.2446
	160.38	0.3291	0.0225	0.3435
	180.00	0.4290	0.0303	0.3470
	185.00	0.4570	0.0046	0.4404
	190.00	0.4850	0.0300	0.3306
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	79.63	0.0892	-0.0016	0.1449
	100.38	0.1442	-0.0004	0.1863
	126.79	0.2368	0.0138	0.2170
	139.63	0.2890	0.0185	0.3203
	140.38	0.2934	0.0185	0.3223
	150.00	0.3376	0.0208	0.2946
	160.38	0.3930	0.0281	0.4192
	180.00	0.5132	0.0374	0.4490
	185.00	0.5458	0.0360	0.3309
	190.00	0.5802	0.0376	0.4260

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	79.63	0.0900	-0.0040	0.1434
	100.38	0.1452	-0.0037	0.1835
	126.79	0.2371	0.0080	0.2178
	139.63	0.2895	0.0107	0.3139
	140.38	0.2937	0.0107	0.3150
	150.00	0.3381	0.0119	0.2923
	160.38	0.3935	0.0161	0.4082
	180.00	0.5138	0.0210	0.4399
	185.00	0.5463	0.0042	0.1645
	190.00	0.5811	0.0206	0.4571
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	79.63	0.0904	0.0026	0.1555
	100.38	0.1464	0.0041	0.1987
	126.79	0.2402	0.0136	0.2201
	139.63	0.2935	0.0181	0.3098
	140.38	0.2975	0.0181	0.3146
	150.00	0.3427	0.0203	0.2957
	160.38	0.3988	0.0273	0.4140
	180.00	0.5213	0.0369	0.4249
	185.00	0.5553	0.0039	0.5946
	190.00	0.5903	0.0367	0.4096
1.2D + 1.0E - Normal To Face	79.63	0.0078	0.0000	0.0176
	100.38	0.0155	0.0000	0.0257
	126.79	0.0324	0.0017	0.0323
	139.63	0.0402	0.0024	0.0459
	140.38	0.0408	0.0024	0.0463
	150.00	0.0477	-0.0027	0.0479
	160.38	0.0570	-0.0037	0.0710
	180.00	0.0792	-0.0054	0.0834
	185.00	0.0845	0.0000	0.0750
	190.00	0.0924	-0.0047	0.0812
1.2D + 1.6W 105 mph Wind at 60° From Face	79.63	0.3557	0.0070	0.5797
	100.38	0.5739	0.0198	0.7416
	126.79	0.9358	0.0563	0.8657
	139.63	1.1449	0.0769	1.2455
	140.38	1.1618	0.0772	1.2588
	150.00	1.3387	0.0863	1.1638
	160.38	1.5585	0.1188	1.6340
	180.00	2.0338	0.2397	1.7379
	185.00	2.1629	0.3638	1.3025
	190.00	2.2989	0.3851	1.6588
1.2D + 1.6W 105 mph Wind at 90° From Face	79.63	0.3586	-0.0134	0.5704
	100.38	0.5785	-0.0113	0.7318
	126.79	0.9430	0.0335	0.8710
	139.63	1.1537	0.0463	1.2413
	140.38	1.1694	0.0465	1.2505
	150.00	1.3479	0.0519	1.1637
	160.38	1.5686	0.0721	1.6196
	180.00	2.0478	0.0941	1.7146
	185.00	2.1767	-0.0166	0.8467
	190.00	2.3147	0.0925	1.7565
1.2D + 1.6W 105 mph Wind at Normal To Face	79.63	0.3692	0.0156	0.6366
	100.38	0.5943	0.0247	0.8042
	126.79	0.9662	0.0556	0.8874
	139.63	1.1817	0.0731	1.2970
	140.38	1.1980	0.0731	1.3117
	150.00	1.3804	0.0822	1.2000
	160.38	1.6059	0.1099	1.7007
	180.00	2.0954	0.1487	1.7116
	185.00	2.2299	0.0240	2.1478
	190.00	2.3694	0.1501	1.6105

Pier Foundation For Self Supporting Tower

			Date: 3/16/2022
Customer Name:	SBA Communications Corp	EIA/TIA Standard:	TIA-222-G
Site Name:		Structure Height (Ft.):	195
Site Number:	CT01879-S-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	124551	Engineer Login ID:	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Self Supporting Tower

Analysis or Design? Analysis

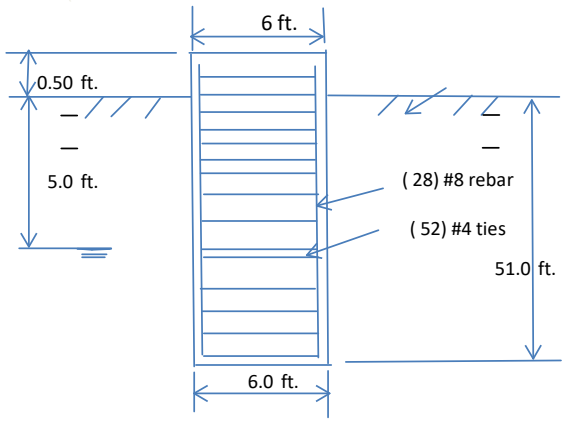
Acceptable overstress (5.0%

Base Reactions (Factored):

Axial Load (Kips):	579.1	Shear Force (Kips):	60.7
Uplift Force (Kips):	514.6	Moment (Kips-ft):	0.0

Foundation Geometries:

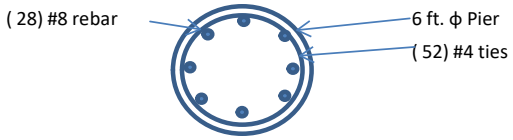
Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	51.0	ft.
Pier Height A. G. (ft.):	0.50			



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	28	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Consider ties in concrete shear strength? Yes



SST Pier Foundation

Soil Design Parameters:

Water Table B.G.S. (ft):	5.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.00	Pullout failure Angle:	30	(°)

Skin Frictions are to be obtained from: Calculations

Please Enter Ultimate End Bearing Pressure (psf): 10000

Kc = 1.15 For Sand

Kc = 1.0 Silt/Clay

Kt = 0.7 For Sand and Silt

Kt = 0.85 For Clay

Friction δ Between Pier & Soil = 0.95

Depth of Layers (ft) Top	Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)			Soil Types	Ultimate Uplift Skin Friction (psf)	Ultimate Axial Skin Friction (psf)		Kc	Kt	α
0.0	3.0	100	0	0	0	0	Sand				1.15	0.70	
3.0	51.0	120	30	0		10000	Sand	711.0	1168.1		1.15	0.70	
51.0	56.0	120	30	0		10000	Sand	777.2	1276.8		1.15	0.70	

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75	
Total Dry Soil Volume from Conical Failure (cu. Ft.):	14952	Dry Soil Weight from Conical Failure:	1615	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	45491	Buoyant Soil Weight from Conical Failure (Ki	3439	Kips
Total Dry Concrete Volume (cu. Ft.):	156	Total Dry Concrete Weight:	23.33	Kips
Total Buoyant Concrete Volume (cu. Ft.):	1301	Total Buoyant Concrete Weight:	113.93	Kips
Total Effective Concrete Weight (Kips):	137.3	Total Effective Soil Weight:	5054	Kips
Total Effective Vertical Load on Base (Kips):	607			

TES Engr. Number: 124551 Page 2/2 Date: 3/16/2022

Check Soil Capacities:

					Usage	
Calculated Foundation Allowable Axail Capacity (Kips):	1217	>	Design Factored Axial Load (Kips):	607	0.50	OK!
Calculated Foundation Uplift Capacity (Kips):	606	>	Design Factored Uplift Load (Kips):	515	0.85	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 compression):	0.65	Wind Load Factor on Concrete Design:	1.00	

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	1860	>	Design Factored Moment (Mu, K-Ft):	350.0	0.19	OK!
Calculated Shear Capacity (Kips):	326.7	>	Design Factored Shear (Kips):	60.7	0.19	OK!
Calculated Tension Capacity (Tn, Kips):	1194.5	>	Design Factored Tension (Tu Kips):	514.6	0.43	OK!
Calculated Compression Capacity (Pn, Kips):	5369	>	Design Factored Axial Load (Pu Kips):	579.1	0.11	OK!
Moment & Tension Strength Combination:	0.19	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.	
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI				

Reinforce Pier Foundation by Adding Concrete Block (Yes/No ?) No

Exhibit E

Mount Analysis

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

Post-Mod Antenna Mount Analysis Report

Existing 195-Ft Self Support Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT01879-S-SBA / Clinton 4 CT

Customer Site Name: Clinton 4 CT

Carrier Name: T-Mobile (App#: 173966-3)

Carrier Site ID / Name: CT11429A / Clinton/Route 1

Site Location: 46 Meadow Road

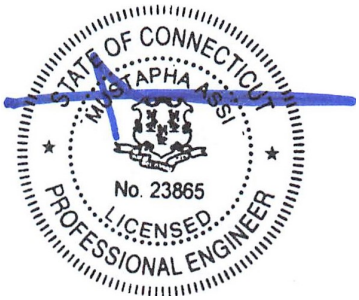
Clinton, Connecticut

Middlesex County

Latitude: 41.275205

Longitude: -72.497711

Exp. 01/31/2024



02/04/2022

Analysis Result:

Max Structural Usage: 99.7% [Pass]

Report Prepared By : Mohammad Khanfar

Introduction

The purpose of this report is to summarize the analysis results on the (3) Sector frames at 192.00' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping info by Hudson Design Group, LLC, Site name: Clinton 4 CT, Dated 01/24/2022
Antenna Loading	SBA, Application #: 173966, v3, Dated 01/18/2022
Existing Modification	N/A
Proposed Modification	TES Project No. 123522

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 135 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 105 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
Exposure Category: D
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(3) Sector frames at 192.00' elevation

Final Antenna Configuration

3 RFS APXVAALL24_43-U-NA20
3 RFS APX16DWV-16DWVS-E-A20
3 Ericsson KRY 112 144*
3 Ericsson 4480 B71 + B85
3 Ericsson 4460 B25 + B66

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

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 99.7%, which occurs in the standoff horizontal. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

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

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

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

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

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

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

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

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

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

Structure: CT01879-S-SBA - Clinton 4 CT

Sector: A

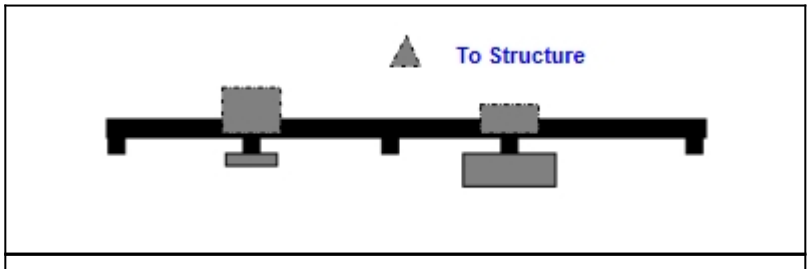
Structure Type: Self Support

Mount Elev: 192.00

2/4/2022

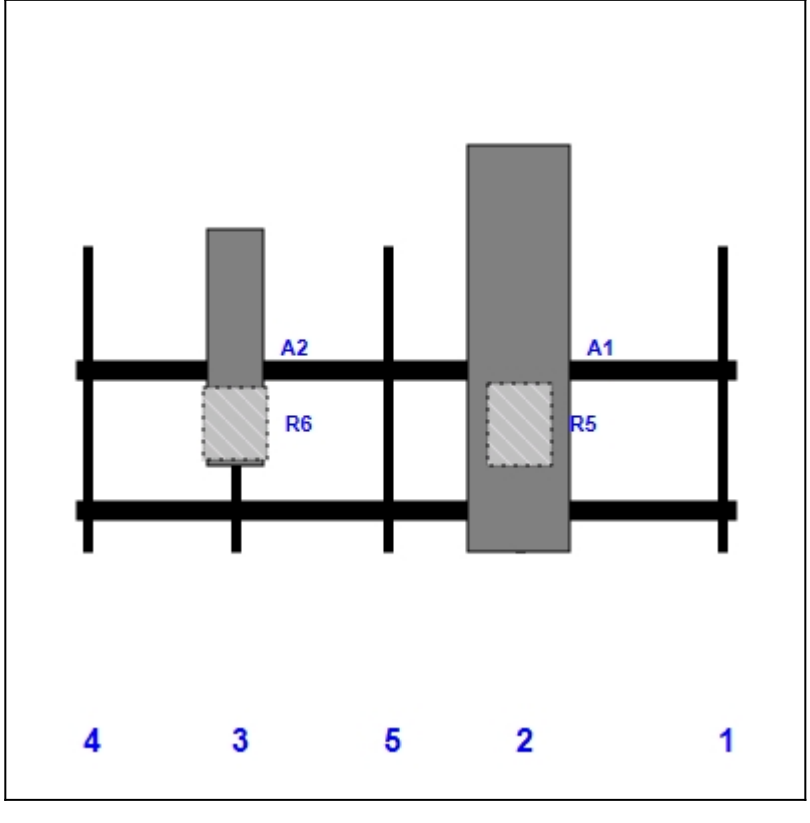
IES Tower Engineering Solutions

Plan View



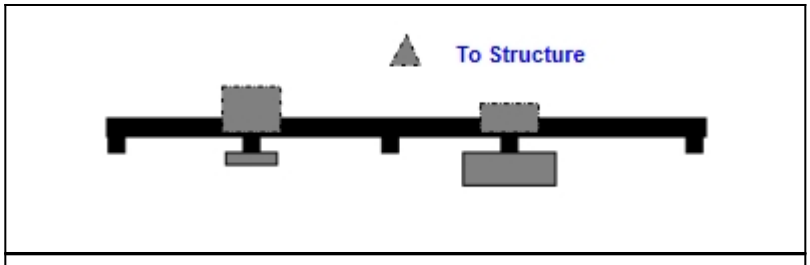
Front View

Looking Toward Structure



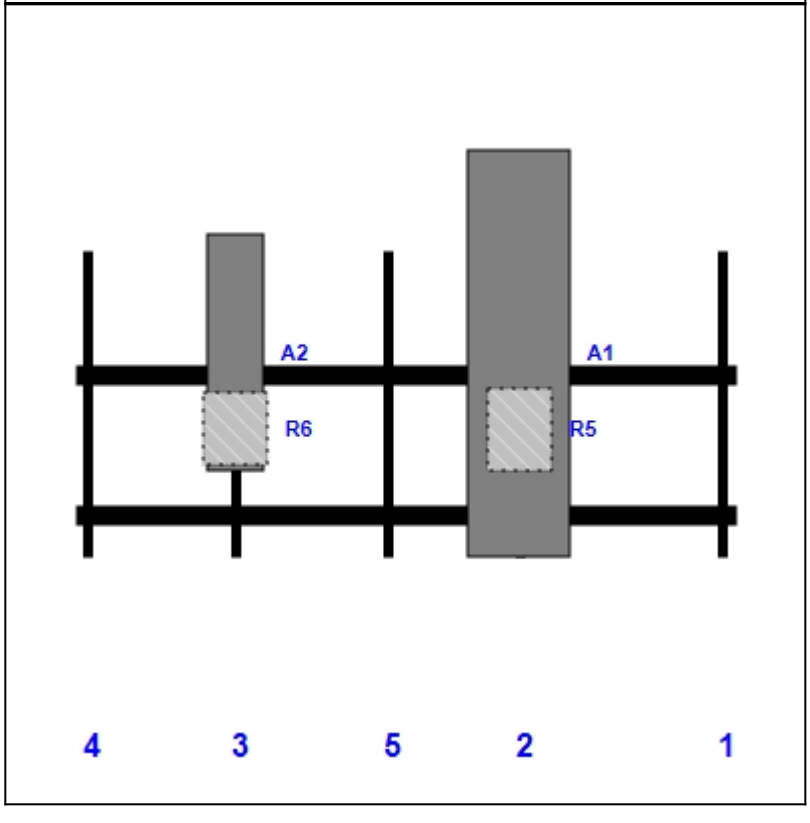
Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APXVAALL24_43-U-NA20	95.90	24.00	105.00	2	a	Front	24.00			
R5	4480 B71 + B85	19.20	15.10	105.00	2	a	Behind	42.00			
A2	APX16DWV-16DWVS-E-A20	55.90	13.30	38.00	3	a	Front	24.00			
R6	4460 B25 + B66	17.00	15.10	38.00	3	a	Behind	42.00			

Plan View



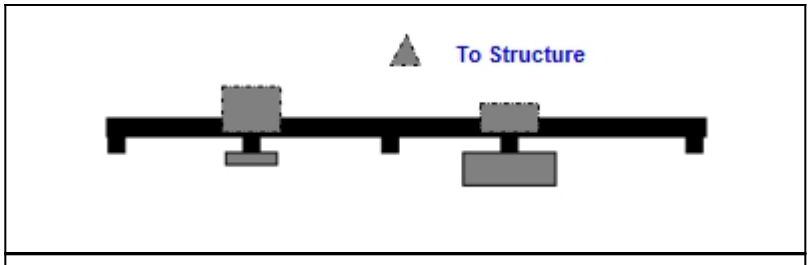
Front View

Looking Toward Structure



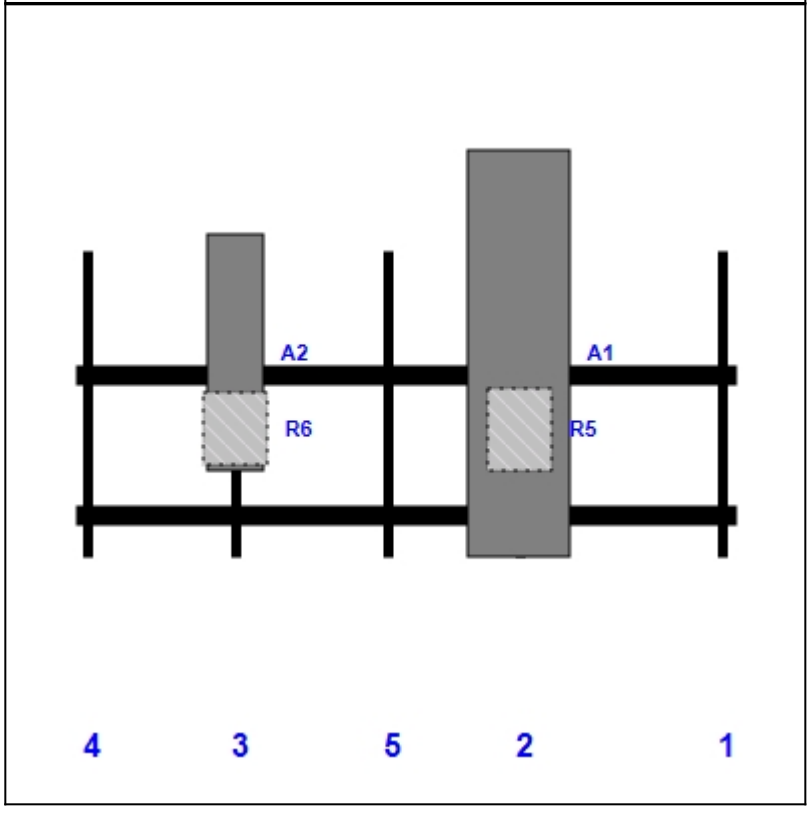
Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APXVAALL24_43-U-NA20	95.90	24.00	105.00	2	a	Front	24.00			
R5	4480 B71 + B85	19.20	15.10	105.00	2	a	Behind	42.00			
A2	APX16DWV-16DWVS-E-A20	55.90	13.30	38.00	3	a	Front	24.00			
R6	4460 B25 + B66	17.00	15.10	38.00	3	a	Behind	42.00			

Plan View



Front View

Looking Toward Structure



Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APXVAALL24_43-U-NA20	95.90	24.00	105.00	2	a	Front	24.00			
R5	4480 B71 + B85	19.20	15.10	105.00	2	a	Behind	42.00			
A2	APX16DWV-16DWVS-E-A20	55.90	13.30	38.00	3	a	Front	24.00			
R6	4460 B25 + B66	17.00	15.10	38.00	3	a	Behind	42.00			

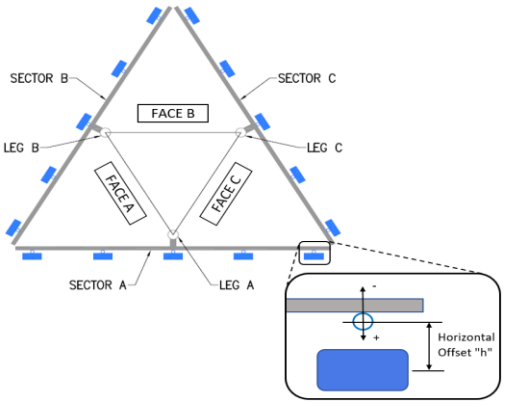
V3.0 Updated on 8-31-2020

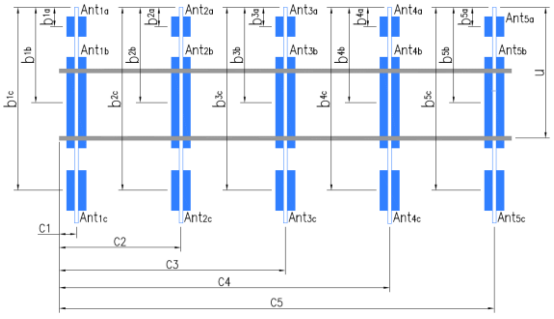
Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	SBA	**Mapping Date:**	1/24/2022
Site Name:	CT11429A	**Tower Type:**	Self Support
Site Number or ID:	Clinton 4 CT	**Tower Height (Ft.):**	196
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	**Mount Elevation (Ft.):**	192.25

Please insert the sketches of the antenna mount from the "Sketches" tab with dimensions and members here.





Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]

Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2.375"Ø X .125" WALL X 60" LON	57.50	3.00	C1	2.375"Ø X .125" WALL X 60" LONG	57.50	3.00
A2	2.375"Ø X .125" WALL X 72" LON	62.00	51.00	C2	2.375"Ø X .125" WALL X 72" LONG	62.00	51.00
A3	2.375"Ø X .125" WALL X 72" LON	62.00	117.00	C3	2.375"Ø X .125" WALL X 72" LONG	62.00	117.00
A4	2.375"Ø X .125" WALL X 60" LON	57.50	153.00	C4	2.375"Ø X .125" WALL X 60" LONG	57.50	153.00
A5				C5			
A6				C6			
B1	2.375"Ø X .125" WALL X 60" LON	57.50	3.00	D1			
B2	2.375"Ø X .125" WALL X 72" LON	62.00	51.00	D2			
B3	2.375"Ø X .125" WALL X 72" LON	62.00	117.00	D3			
B4	2.375"Ø X .125" WALL X 60" LON	57.50	153.00	D4			
B5				D5			
B6				D6			

Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :	16.50
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :	
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :	9

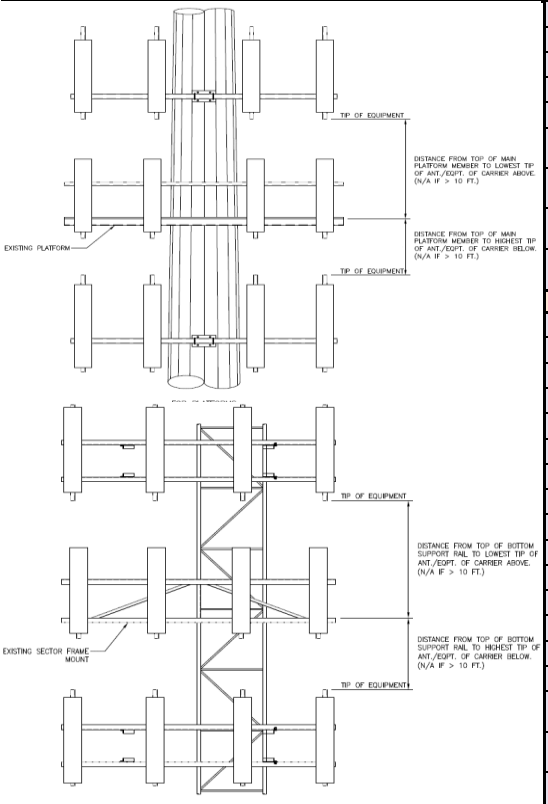
Please enter additional infomation or comments below.

Tower Face Width at Mount Elev. (ft.):	5	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	2.38

	Enter antenna model. If not labeled, enter "Unknown".						Mounting Locations [Units are inches and degrees]			Photos of antennas
Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photo Numbers
Sector A										
Ant_{1a}										
Ant_{1b}	EMPTY					195.667				19
Ant_{1c}										
Ant_{2a}	TMA	6.00	3.00	7.00		196.042				53,140
Ant_{2b}	AIR 21 B2A B4P	12.00	8.00	56.00		193.542	30.00	10.00	0.00	19,53,137
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	AIR 21 B4A B2P	12.00	8.00	56.00		193.542	30.00	10.00	0.00	19,55,138
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	EMPTY					195.667				19
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector	
Sector A:	10.00	Deg	Leg A:	350.00	Deg
Sector B:	130.00	Deg	Leg B:	110.00	Deg
Sector C:	260.00	Deg	Leg C:	230.00	Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information			
Location:	50.00	Deg	Outside Face A
Climbing Facility	Corrosion Type:		Good condition.
	Access:		Climbing path was unobstructed.
	Condition:		Good condition.



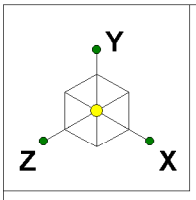
Sector B										
Ant_{1a}										
Ant_{1b}	EMPTY					195.667				26
Ant_{1c}										
Ant_{2a}	TMA	6.00	3.00	7.00		196.042				56,140
Ant_{2b}	AIR 21 B2A B4P	12.00	8.00	56.00		193.542	30.00	10.00	130.00	26,56,137
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	AIR 21 B4A B2P	12.00	8.00	56.00		193.542	30.00	10.00	130.00	26,58,138
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	EMPTY					195.667				26
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector C										
Ant_{1a}										
Ant_{1b}	EMPTY					195.667				35
Ant_{1c}										
Ant_{2a}	TMA	6.00	3.00	7.00		196.042				59,140
Ant_{2b}	AIR 21 B2A B4P	12.00	8.00	56.00		193.542	30.00	10.00	260.00	35,59,137
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	AIR 21 B4A B2P	12.00	8.00	56.00		193.542	30.00	10.00	260.00	35,61,138
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	EMPTY					195.667				35
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector D										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

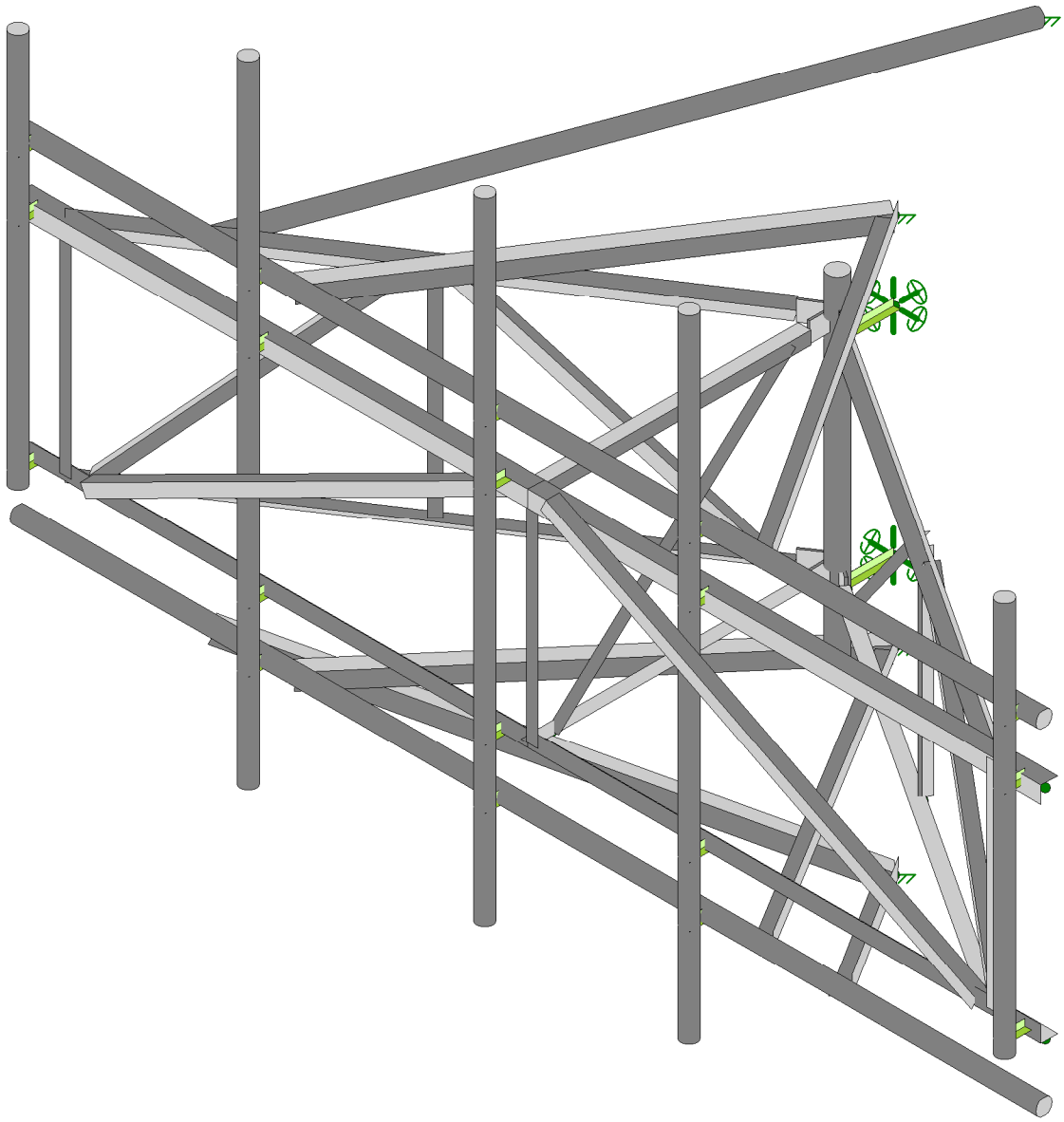
Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #

1		
2	WHIP ANTENNA EXTENDS INTO T-MOBILE SECTOR	64-67
3		
4		
5		
6		
7		
8		

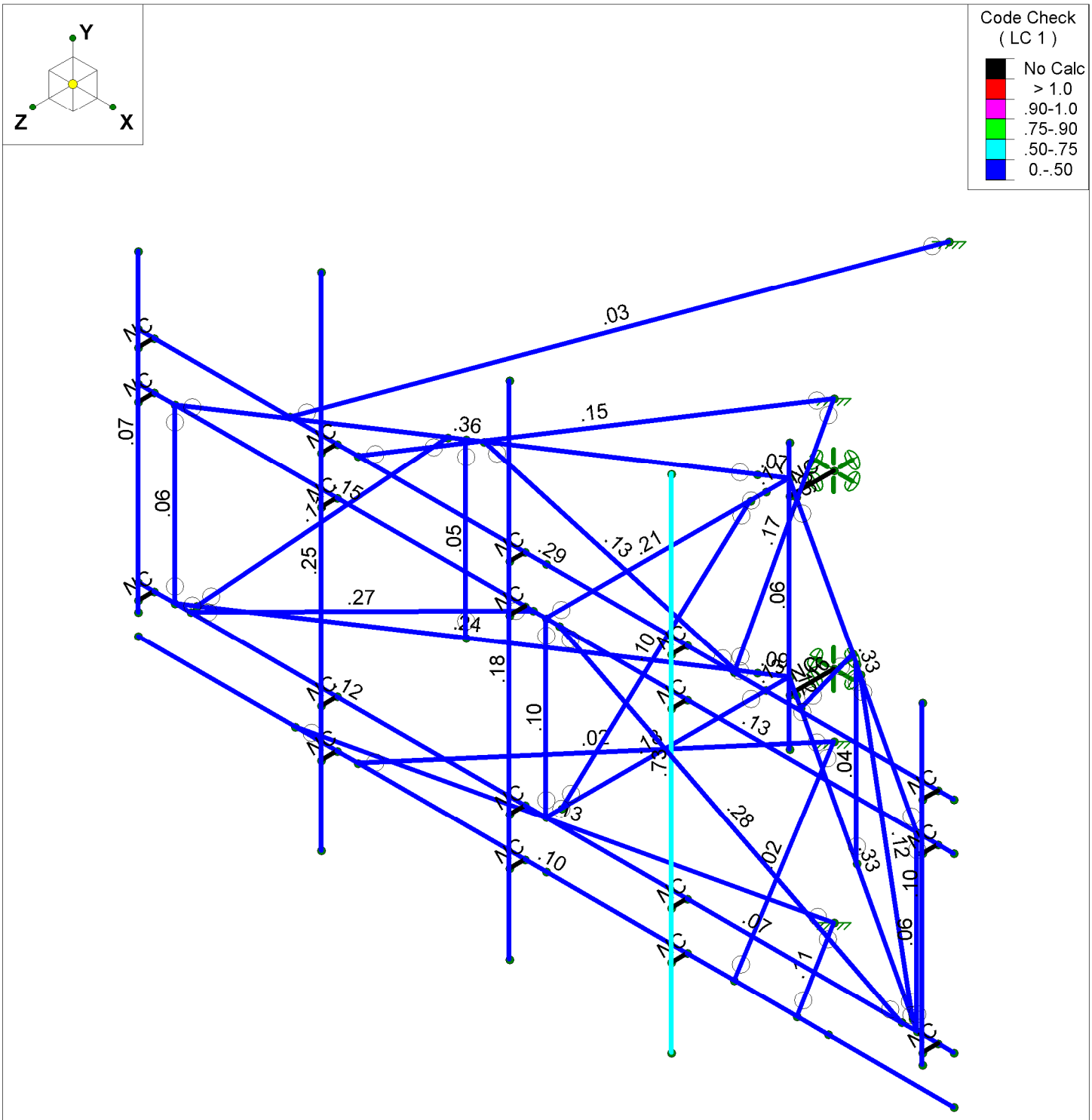
Mapping Notes
1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use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

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



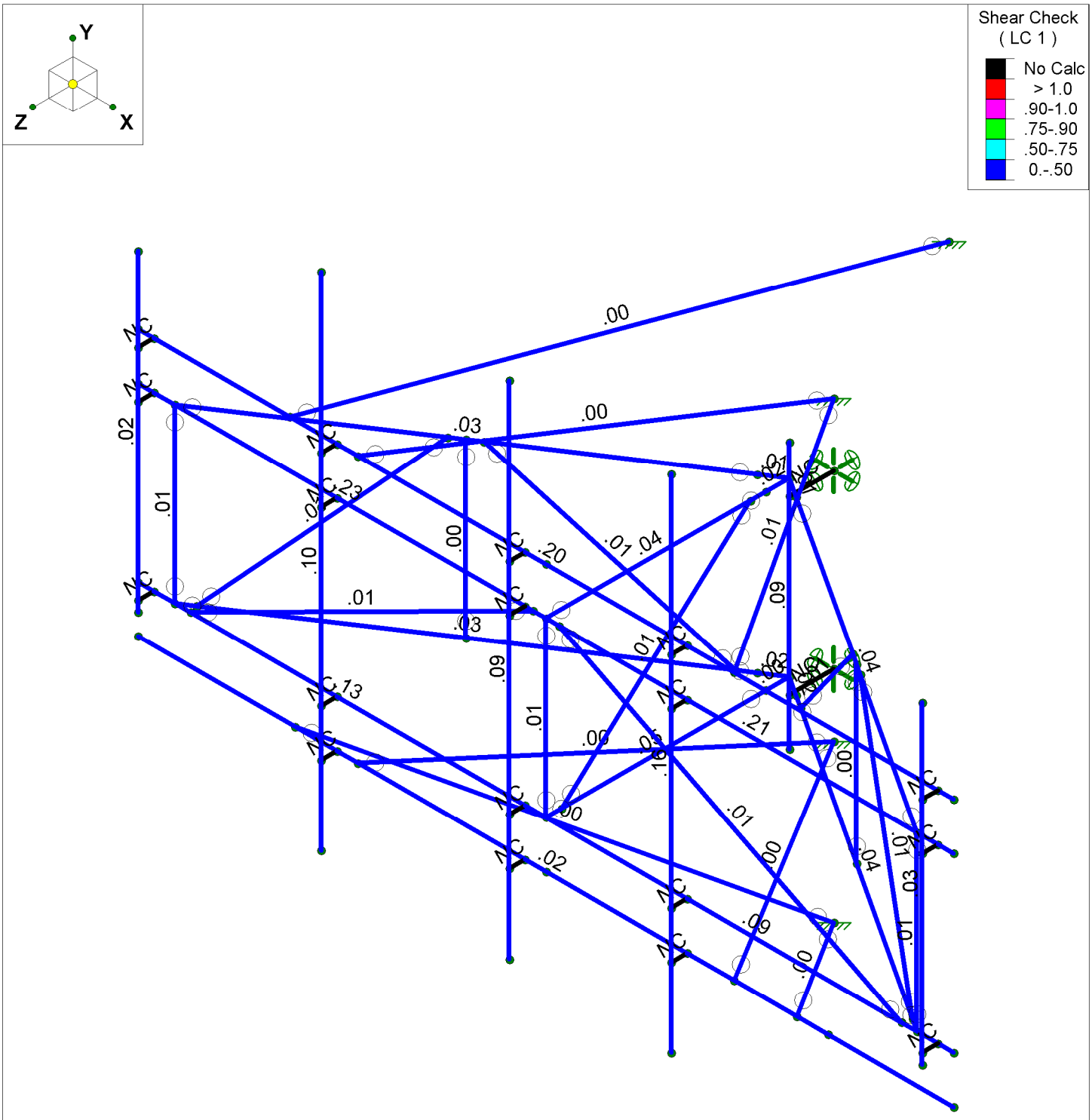


Tower Engineering Solutio...	CT01879-S-SBA_MT_LOT_Loads Only_Sector A_G	SK - 1
		Feb 4, 2022 at 3:55 PM
TES Project No. 123522		CT01879-S-SBA_123522_G_RISA_...



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

Tower Engineering Solutio...	CT01879-S-SBA_MT_LOT_Loads Only_Sector A_G	SK - 2
		Feb 4, 2022 at 3:55 PM
TES Project No. 123522		CT01879-S-SBA_123522_G_RISA_...



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

Tower Engineering Solutio...	CT01879-S-SBA_MT_LOT_Loads Only_Sector A_G	SK - 3
		Feb 4, 2022 at 3:55 PM
TES Project No. 123522		CT01879-S-SBA_123522_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					7			
2	Antenna Di	None					7			
3	Antenna W Front	None					7			
4	Antenna Wi Front	None					7			
5	Antenna W Side	None					7			
6	Antenna Wi Side	None					7			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1						
10	Structure Di	None						41		
11	Structure W Front	None						41		
12	Structure Wi Front	None						41		
13	Structure W Side	None						41		
14	Structure Wi Side	None						41		

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...
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	2.75	-0.291667	0	
2	N2	0	0	-0.291667	0	
3	N3	-6.5	2.75	3.216667	0	
4	N4	-6.5	0	3.216667	0	
5	N5	-5.916667	2.75	3.216667	0	
6	N6	-5.916667	0	3.216667	0	
7	N7	0	2.75	3.216667	0	
8	N8	0	0	3.216667	0	
9	N9	5.916667	2.75	3.216667	0	
10	N10	5.916667	0	3.216667	0	
11	N11	6.5	2.75	3.216667	0	
12	N12	6.5	0	3.216667	0	
13	N13	0	2.75	-0.666667	0	
14	N14	0	0	-0.666667	0	
15	N15	0	3.25	-0.666667	0	
16	N16	0	-1	-0.666667	0	
17	N17	0	2.5	-0.666667	0	
18	N18	0	-.25	-0.666667	0	
19	N19	0	2.5	-1.375	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
20	N20	0	-.25	-1.375	0	
21	N21	-0.313505	2.75	-0.460901	0	
22	N22	-0.313505	0	-0.460901	0	
23	N23	-3.115086	2.75	1.377883	0	
24	N24	-3.115086	0	1.377883	0	
25	N25	0.313505	2.75	-0.460901	0	
26	N26	0.313505	0	-0.460901	0	
27	N27	3.115086	2.75	1.377883	0	
28	N28	3.115086	0	1.377883	0	
29	N29	0	0	2.966667	0	
30	N30	0	2.75	-0.041667	0	
31	N31	0.208333	2.75	3.216667	0	
32	N32	-0.208333	2.75	3.216667	0	
33	N33	-5.666667	0	3.216667	0	
34	N34	5.666667	0	3.216667	0	
35	N35	0.522509	0	-0.323724	0	
36	N36	-0.522509	0	-0.323724	0	
37	N37	5.707678	0	3.079499	0	
38	N38	-5.707678	0	3.079499	0	
39	N39	2.940917	2.75	1.263569	0	
40	N40	-2.940917	2.75	1.263569	0	
41	N41	3.289256	2.75	1.492197	0	
42	N42	-3.289256	2.75	1.492197	0	
43	N44	6.25	2.75	3.216667	0	
44	N45	6.25	0	3.216667	0	
45	N46	6.25	2.75	3.466667	0	
46	N47	6.25	0	3.466667	0	
47	N48	-6.25	2.75	3.216667	0	
48	N49	-6.25	0	3.216667	0	
49	N50	-6.25	2.75	3.466667	0	
50	N51	-6.25	0	3.466667	0	
51	N52	2.25	2.75	3.216667	0	
52	N53	2.25	0	3.216667	0	
53	N54	2.25	2.75	3.466667	0	
54	N55	2.25	0	3.466667	0	
55	N56	-3.333333	2.75	3.216667	0	
56	N57	-3.333333	0	3.216667	0	
57	N58	-3.333333	2.75	3.466667	0	
58	N59	-3.333333	0	3.466667	0	
59	N60	6.25	4.833333	3.466667	0	
60	N61	-6.25	4.833333	3.466667	0	
61	N62	6.25	-0.166667	3.466667	0	
62	N63	-6.25	-0.166667	3.466667	0	
63	N64	2.25	6.	3.466667	0	
64	N65	-3.333333	6.	3.466667	0	
65	N66	2.25	-2.	3.466667	0	
66	N67	-3.333333	-2.	3.466667	0	
67	N68	-0.333333	2.75	3.216667	0	
68	N69	-0.333333	0	3.216667	0	
69	N70	-0.333333	2.75	3.466667	0	
70	N71	-0.333333	0	3.466667	0	
71	N72	-0.333333	6.	3.466667	0	
72	N73	-0.333333	-2.	3.466667	0	
73	N74	-6.5	-.75	3.216667	0	
74	N76	0	-.75	3.216667	0	
75	N78	6.5	-.75	3.216667	0	
76	N85	2.25	-.75	3.216667	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
77	N86	2.25	-.75	3.466667	0	
78	N87	-3.333333	-.75	3.216667	0	
79	N88	-3.333333	-.75	3.466667	0	
80	N89	-0.333333	-.75	3.216667	0	
81	N90	-0.333333	-.75	3.466667	0	
82	N91	-6.5	3.5	3.216667	0	
83	N93	0	3.5	3.216667	0	
84	N95	6.5	3.5	3.216667	0	
85	N98	6.25	3.5	3.216667	0	
86	N99	6.25	3.5	3.466667	0	
87	N100	-6.25	3.5	3.216667	0	
88	N101	-6.25	3.5	3.466667	0	
89	N102	2.25	3.5	3.216667	0	
90	N103	2.25	3.5	3.466667	0	
91	N104	-3.333333	3.5	3.216667	0	
92	N105	-3.333333	3.5	3.466667	0	
93	N106	-0.333333	3.5	3.216667	0	
94	N107	-0.333333	3.5	3.466667	0	
95	N96	4	-.75	3.216667	0	
96	N97	-4	-.75	3.216667	0	
97	N98A	0	-3.75	-1.375	0	
98	N99A	-4.083333	3.5	3.216667	0	
99	N100A	-2.5	2.25	-5.705125	0	
100	N101A	-3	-.75	3.216667	0	
101	N102A	3	-.75	3.216667	0	
102	N104A	-3	3.5	3.216667	0	
103	N105A	3	3.5	3.216667	0	
104	N106A	0	3.5	-1.375	0	
105	N105B	4.5	-.75	3.216667	0	
106	N108	0	-1.25	-1.375	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
2	Standoff Horiz...	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Main plate	PL3/8x3	Beam	RECT	A36 Gr.36	Typical	1.125	.013	.844	.049
4	Standoff Bracing	L1.75x1.75x2	Beam	Single Angle	A36 Gr.36	Typical	.422	.126	.126	.002
5	Face Diagonal	L2x2x2	Beam	Single Angle	A36 Gr.36	Typical	.491	.189	.189	.003
6	Face vertical	L1.75x1.75x2	Beam	Single Angle	A36 Gr.36	Typical	.422	.126	.126	.002
7	Mount Pipe 2.0	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	Tie-Back	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	Central Pipe	HSS2.875X0.250	Beam	Pipe	A53 Gr.B	Typical	1.93	1.7	1.7	3.4

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF	4CU5.25X03...	Beam	None	A570 Gr.33	Typical	4.854	13.238	12.817	.228

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1A	AACS14X1...	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19

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	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570 Gr.33	29500	11346	.3	.65	.49	33	52
2	A607 C1 Gr.55	29500	11346	.3	.65	.49	55	70

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[...	Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	19
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	38
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	22
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	30
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	34
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	1	0	24

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	MP5A						Yes				None
3	M3			1.4			Yes				None
4	M4			1.4			Yes				None
5	M5	OOOOXO	OOOOXO				Yes				None
6	M6	OOOOXO	OOOOXO				Yes				None
7	M7	OOOOXO	OOOOXO				Yes				None
8	M8	OOOOXO	OOOOXO				Yes				None
9	M9	BenPIN	BenPIN				Yes				None
10	M10	BenPIN	BenPIN				Yes				None
11	M11	BenPIN	BenPIN				Yes				None
12	M12	BenPIN	BenPIN				Yes				None
13	M13				1.4		Yes				None
14	M14				1.4		Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	M19						Yes				None
20	M20	BenPIN	BenPIN				Yes				None
21	M21	BenPIN	BenPIN				Yes				None
22	M22	BenPIN	BenPIN				Yes				None
23	M23	BenPIN	BenPIN				Yes				None
24	M24	BenPIN	BenPIN				Yes				None
25	M25	BenPIN	BenPIN				Yes				None
26	M26	BenPIN	BenPIN				Yes				None
27	M27	BenPIN	BenPIN				Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
28	M28	BenPIN	OOOOXX				Yes				None
29	M29	BenPIN	OOOOXX				Yes	Default			None
30	M30			1.4			Yes				None
31	M31			1.4			Yes				None
32	M33						Yes				None
33	M34						Yes				None
34	M35						Yes				None
35	M36						Yes				None
36	M37						Yes				None
37	M38						Yes				None
38	M39						Yes				None
39	M40						Yes				None
40	MP4A						Yes	** NA **			None
41	MP1A						Yes	** NA **			None
42	MP3A						Yes	** NA **			None
43	MP2A						Yes	** NA **			None
44	M45						Yes				None
45	M46						Yes				None
46	M47						Yes	** NA **			None
47	M52						Yes				None
48	M53						Yes				None
49	M54						Yes				None
50	M57						Yes				None
51	M58						Yes				None
52	M59						Yes				None
53	M60						Yes				None
54	M61						Yes				None
55	M56						Yes				None
56	M57A						Yes				None
57	M58A	BenPIN	BenPIN				Yes				None
58	M59A	BenPIN	BenPIN				Yes				None
59	M60A	BenPIN	BenPIN				Yes				None
60	M63	BenPIN	BenPIN				Yes				None
61	M64	BenPIN	BenPIN				Yes				None
62	M62	BenPIN	BenPIN				Yes				None
63	M63A	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Face Horizo...	6.5			Lbyy						Lateral
2	MP5A	Face Horizo...	6.5			Lbyy						Lateral
3	M3	Main plate	.375			Lbyy						Lateral
4	M4	Main plate	.375			Lbyy						Lateral
5	M5	Standoff Ho...	6.702			Lbyy						Lateral
6	M6	Standoff Ho...	6.702			Lbyy						Lateral
7	M7	Standoff Ho...	3.508			Lbyy						Lateral
8	M8	Standoff Ho...	3.508			Lbyy						Lateral
9	M9	Face vertical	2.75			Lbyy			.65	.65		Lateral
10	M10	Face vertical	2.75			Lbyy			.65	.65		Lateral
11	M11	Face vertical	2.75			Lbyy			.65	.65		Lateral
12	M12	Standoff Br...	4.076			Lbyy			.65	.65		Lateral
13	M13	Main plate	.375			Lbyy						Lateral
14	M14	Main plate	.375			Lbyy						Lateral
15	M15	Face Horizo...	6.5			Lbyy						Lateral
16	M16	Face Horizo...	6.5			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
17	M17	PIPE_2.5X	4.25									Lateral
18	M20	Standoff Br...	2.75			Lbyy						Lateral
19	M21	Standoff Br...	3.991			Lbyy						Lateral
20	M22	Standoff Br...	3.991			Lbyy						Lateral
21	M23	Standoff Br...	2.75			Lbyy						Lateral
22	M24	Standoff Br...	3.991			Lbyy						Lateral
23	M25	Standoff Br...	3.991			Lbyy						Lateral
24	M26	Face Diago...	6.112			Lbyy						Lateral
25	M27	Face Diago...	6.112			Lbyy						Lateral
26	M28	Standoff Ho...	6.702			Lbyy						Lateral
27	M29	Standoff Ho...	6.702			Lbyy						Lateral
28	M30	Main plate	.375			Lbyy						Lateral
29	M31	Main plate	.375			Lbyy						Lateral
30	MP4A	Mount Pipe ...	5									Lateral
31	MP1A	Mount Pipe ...	5									Lateral
32	MP3A	Mount Pipe ...	8									Lateral
33	MP2A	Mount Pipe ...	8									Lateral
34	M47	Mount Pipe ...	8									Lateral
35	M56	PIPE_2.0	13			Lbyy						Lateral
36	M57A	PIPE_2.0	13			Lbyy						Lateral
37	M58A	L2.5x2.5x3	6.788			Lbyy						Lateral
38	M59A	L2.5x2.5x3	6.788			Lbyy						Lateral
39	M60A	PIPE_2.0	9.147			Lbyy						Lateral
40	M63	L2.5x2.5x3	5.485			Lbyy						Lateral
41	M64	L2.5x2.5x3	5.485			Lbyy						Lateral
42	M62	L2.5x2.5x3	5.508			Lbyy						Lateral
43	M63A	L2.5x2.5x3	5.508			Lbyy						Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-torque[ft]	Kyy	Kzz	Cb	R	a[ft]	Funct...
No Data to Print ...													

Aluminum Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
No Data to Print ...											

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
No Data to Print ...			

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-61.4	0
2	MP2A	Y	-61.4	4
3	MP3A	Y	-20.35	0
4	MP3A	Y	-20.35	4
5	MP5A	Y	-11	3
6	MP2A	Y	-93	3.5
7	MP3A	Y	-7	3.5

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-305.78	0
2	MP2A	Y	-305.78	4
3	MP3A	Y	-102.751	0
4	MP3A	Y	-102.751	4
5	MP5A	Y	-27.028	3
6	MP2A	Y	-118.93	3.5
7	MP3A	Y	-134.7	3.5

Member Point Loads (BLC 3 : Antenna W Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-331.23	0
2	MP2A	Z	-331.23	4
3	MP3A	Z	-105.719	0
4	MP3A	Z	-105.719	4
5	MP5A	Z	-13.419	3
6	MP2A	Z	-46.641	3.5
7	MP3A	Z	-46.641	3.5

Member Point Loads (BLC 4 : Antenna Wi Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-84.877	0
2	MP2A	Z	-84.877	4
3	MP3A	Z	-30.26	0
4	MP3A	Z	-30.26	4
5	MP5A	Z	-5.661	3
6	MP2A	Z	-12.328	3.5
7	MP3A	Z	-11.111	3.5

Member Point Loads (BLC 5 : Antenna W Side)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	142.918	0
2	MP2A	X	142.918	4
3	MP3A	X	35.184	0
4	MP3A	X	35.184	4
5	MP5A	X	5.092	3
6	MP2A	X	39.364	3.5
7	MP3A	X	55.178	3.5

Member Point Loads (BLC 6 : Antenna Wi Side)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	40.731	0
2	MP2A	X	40.731	4
3	MP3A	X	12.844	0
4	MP3A	X	12.844	4
5	MP5A	X	3.625	3
6	MP2A	X	14.322	3.5
7	MP3A	X	18.307	3.5

Member Point Loads (BLC 7 : Service Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP5A	Y	-500	%3

Member Point Loads (BLC 8 : Service Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]

Member Point Loads (BLC 8 : Service Lm2) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M15	Y	-500	%97

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

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	N1						
2	N2						
3	N13						
4	N14						
5	N15						
6	N16						
7	N17						
8	N18						
9	N19	Reaction	Reaction	Reaction	Reaction		Reaction
10	N20	Reaction	Reaction	Reaction	Reaction		Reaction
11	N30						
12	N98A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N100A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N106A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N108	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	N19	max	526.237	9	1945.683	6	333.778	1	-.247	1	0	11	1.015	10
2		min	-676.799	10	299.87	1	-4807.165	6	-3.347	6	0	1	-.72	9
3	N20	max	708.956	10	1905.053	7	4783.689	5	.025	4	0	11	.642	10
4		min	-472.09	9	290.85	4	599.381	2	-.722	7	0	1	-.459	9
5	N98A	max	633.502	4	1131.224	7	1562.424	7	0	6	0	4	0	4
6		min	-651.02	3	-118.061	4	-215.488	4	0	1	0	3	0	3
7	N100A	max	476.53	3	444.355	4	3028.529	4	.004	9	.003	10	.023	10
8		min	-489.161	4	-405.075	3	-3047.444	3	-.004	10	-.003	9	-.024	9
9	N106A	max	2163.352	4	97.6	8	2714.947	3	0	1	0	11	0	10
10		min	-2175.893	3	16.74	3	-2696.353	4	0	2	0	1	0	9
11	N108	max	293.857	9	26.034	4	50.398	4	0	3	0	4	0	4
12		min	-270.003	10	-163.546	7	-1745.49	7	0	10	0	3	0	3
13	Totals:	max	2737.908	4	4822.162	7	4423.742	1						
14		min	-2737.909	3	1069.893	4	-4423.739	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 Mom...	LC
1	M1	1	max	0	11	0	11	0	11	0	11	0	11	0	11
2			min	0	1	0	1	0	1	0	1	0	1	0	1
3		2	max	805.562	4	72.515	4	41.471	5	.003	1	.012	6	.038	6
4			min	-831.126	3	-114.79	7	-19.417	9	-.002	2	-.006	3	-.014	1
5		3	max	1046.7	4	60.814	7	92.035	4	0	4	.148	3	.384	3
6			min	-1060.074	3	-26.867	9	-112.162	3	0	3	-.159	4	-.335	4
7		4	max	1046.7	4	89.055	7	92.035	4	0	4	.074	3	.2	3
8			min	-1060.074	3	-20.888	9	-112.162	3	0	3	-.075	4	-.207	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 Mom...	LC
9		5	max	813.921	4	682.044	8	506.627	4	.023	3	.13	8	.066	4
10			min	-690.86	3	-268.59	2	-549.751	3	-.023	4	-.011	3	-.322	7
11	MP5A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
12			min	0	1	0	1	0	1	0	1	0	1	0	1
13		2	max	417.394	9	221.916	3	116.938	4	.002	2	.064	3	.09	4
14			min	-289.917	5	-181.935	4	-109.374	3	-.002	1	-.046	4	-.125	3
15		3	max	489.654	9	78.035	4	23.536	3	0	4	.05	3	.228	4
16			min	-472.597	4	-63.862	3	-52.02	8	0	3	-.05	4	-.179	3
17		4	max	489.654	9	78.035	4	17.557	3	0	4	.004	10	.089	4
18			min	-472.597	4	-63.862	3	-80.261	8	0	3	-.028	8	-.082	3
19		5	max	388.148	10	384.209	5	281.941	1	.014	4	.014	1	-.002	1
20			min	-255.139	5	39.86	1	-536.838	6	-.025	7	-.093	6	-.273	6
21	M3	1	max	352.646	3	19.258	2	75.036	2	0	1	.017	1	.005	2
22			min	-2174.815	8	-40.895	9	-67.97	1	0	2	-.019	2	-.011	5
23		2	max	351.87	3	18.961	2	73.854	2	0	1	.013	1	.004	2
24			min	-2174.6	8	-42.002	5	-66.789	1	0	2	-.014	2	-.009	5
25		3	max	351.095	3	18.664	2	72.672	2	0	1	.008	1	.002	2
26			min	-2174.385	8	-43.275	5	-65.607	1	0	2	-.009	2	-.006	5
27		4	max	350.319	3	18.368	2	71.49	2	0	1	.004	1	.001	2
28			min	-2174.17	8	-44.547	5	-64.425	1	0	2	-.005	2	-.003	5
29		5	max	349.543	3	18.071	2	70.308	2	0	1	0	11	0	11
30			min	-2173.956	8	-45.82	5	-63.243	1	0	2	0	1	0	1
31	M4	1	max	1825.783	5	80.21	4	70.15	1	0	6	.018	2	.021	4
32			min	148.314	2	-1087.409	7	-70.81	2	0	1	-.018	1	-.28	7
33		2	max	1825.568	5	80.506	4	68.968	1	0	6	.013	2	.016	4
34			min	149.09	2	-1086.136	7	-69.628	2	0	1	-.013	1	-.21	7
35		3	max	1825.353	5	80.803	4	67.786	1	0	6	.009	2	.01	4
36			min	149.865	2	-1084.864	7	-68.446	2	0	1	-.009	1	-.14	7
37		4	max	1825.138	5	81.1	4	66.604	1	0	6	.004	2	.005	4
38			min	150.641	2	-1083.591	7	-67.264	2	0	1	-.004	1	-.07	7
39		5	max	1824.923	5	81.396	4	65.422	1	0	6	0	11	0	11
40			min	151.417	2	-1082.318	7	-66.082	2	0	1	0	1	0	1
41	M5	1	max	265.972	3	22.7	2	67.571	1	0	2	0	11	.133	3
42			min	-2475.184	8	-53.632	5	-67.496	2	0	1	0	1	-.123	4
43		2	max	279.389	3	17.76	2	47.129	1	0	2	.024	3	.146	3
44			min	-2479.807	8	-78.419	5	-47.053	2	0	1	-.081	8	-.103	4
45		3	max	392.017	3	1084.359	8	8.618	4	0	2	.039	3	.179	1
46			min	-1221.65	8	53.962	3	-16.708	1	0	1	-.036	4	-.171	2
47		4	max	423.44	3	36.258	1	59.24	2	0	2	.089	5	.055	3
48			min	-441.356	4	-71.126	6	-62.632	1	0	1	-.009	2	-.116	8
49		5	max	436.857	3	31.318	1	79.682	2	0	2	0	11	.068	2
50			min	-454.774	4	-95.912	6	-83.075	1	0	1	0	1	-.076	1
51	M6	1	max	2333.645	8	72.013	1	-46.45	3	0	1	0	11	.167	4
52			min	93.376	3	-65.152	2	-1200.495	8	-.001	6	0	1	-.144	3
53		2	max	1106.879	5	28.176	1	96.248	6	0	1	.016	3	.106	4
54			min	-99.556	2	-21.603	2	.392	1	0	6	-.124	8	-.138	3
55		3	max	1102.256	5	29.051	4	121.035	6	0	1	.036	7	.117	4
56			min	-86.139	2	-12.802	1	-1.534	4	0	6	-.026	4	-.113	1
57		4	max	1093.387	5	37.857	4	53.677	10	0	1	.083	5	.079	4
58			min	-61.196	2	-33.244	1	-15.096	2	0	6	-.004	2	-.054	3
59		5	max	301.933	1	80.514	2	27.816	3	0	1	0	11	.029	1
60			min	-281.084	2	-78.062	1	-892.302	8	-.001	6	0	1	-.065	6
61	M7	1	max	97.808	1	42.445	7	-314.28	1	0	8	0	11	.197	4
62			min	-2300.433	6	-8.638	4	-1700.398	6	0	9	0	1	-.167	3
63		2	max	460.406	4	34.149	4	115.765	7	0	10	-.045	3	.103	4
64			min	-555.732	3	-29.493	3	-26.627	4	0	9	-.247	8	-.24	7
65		3	max	460.406	4	49.46	4	128.74	7	0	10	-.022	3	.062	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 Mom...	LC
66			min	-555.732	3	-44.804	3	-24.041	4	0	9	-.176	8	-.164	7
67		4	max	460.406	4	64.77	4	141.715	7	0	10	-.007	3	.012	4
68			min	-555.732	3	-60.114	3	-21.455	4	0	9	-.094	8	-.075	7
69		5	max	460.406	4	80.08	4	154.69	7	0	10	0	11	.05	3
70			min	-555.732	3	-75.424	3	-18.869	4	0	9	0	1	-.045	4
71	M8	1	max	2522.366	7	17.376	3	6.501	2	0	8	0	11	.182	3
72			min	443.367	4	-106.66	8	-10.968	7	0	9	0	1	-.175	4
73		2	max	2522.366	7	14.791	3	20.634	4	0	8	-.001	3	.161	3
74			min	443.367	4	-119.635	8	-25.365	3	0	9	-.072	8	-.13	4
75		3	max	2522.366	7	12.205	3	35.944	4	0	8	-.013	3	.161	7
76			min	443.367	4	-132.61	8	-40.675	3	0	9	-.15	8	-.073	4
77		4	max	2522.366	7	9.619	3	51.255	4	0	8	-.036	3	.216	7
78			min	443.367	4	-145.584	8	-55.986	3	0	9	-.232	8	-.006	4
79		5	max	565.884	7	1641.624	7	102.323	4	0	8	0	11	.022	4
80			min	49.337	4	284.394	4	-105.525	3	0	3	0	1	-.04	7
81	M9	1	max	684.75	3	21.002	2	21.002	4	0	4	0	11	0	11
82			min	-550.755	4	-21.002	1	-21.002	3	0	7	0	1	0	1
83		2	max	685.934	3	10.501	2	10.501	4	0	4	.008	2	.008	4
84			min	-549.57	4	-10.501	1	-10.501	3	0	7	-.008	1	-.008	3
85		3	max	687.119	3	0	11	0	11	0	4	.01	2	.01	4
86			min	-548.386	4	0	1	0	1	0	7	-.01	1	-.01	3
87		4	max	688.303	3	10.501	1	10.501	3	0	4	.008	2	.008	4
88			min	-547.202	4	-10.501	2	-10.501	4	0	7	-.008	1	-.008	3
89		5	max	689.487	3	21.002	1	21.002	3	0	4	0	11	0	11
90			min	-546.017	4	-21.002	2	-21.002	4	0	7	0	1	0	1
91	M10	1	max	941.247	5	21.002	2	21.002	4	0	4	0	11	0	11
92			min	-208.383	2	-21.002	1	-21.002	3	0	3	0	1	0	1
93		2	max	949.937	5	10.501	2	10.501	4	0	4	.008	2	.008	4
94			min	-207.199	2	-10.501	1	-10.501	3	0	3	-.008	1	-.008	3
95		3	max	958.627	5	0	11	0	11	0	4	.01	2	.01	4
96			min	-206.015	2	0	1	0	1	0	3	-.01	1	-.01	3
97		4	max	967.317	5	10.501	1	10.501	3	0	4	.008	2	.008	4
98			min	-204.83	2	-10.501	2	-10.501	4	0	3	-.008	1	-.008	3
99		5	max	976.008	5	21.002	1	21.002	3	0	4	0	11	0	11
100			min	-203.646	2	-21.002	2	-21.002	4	0	3	0	1	0	1
101	M11	1	max	376.702	10	21.002	3	21.002	2	0	6	0	11	0	11
102			min	-7.41	4	-21.002	4	-21.002	1	0	1	0	1	0	1
103		2	max	377.887	10	10.501	3	10.501	2	0	6	.008	3	.008	2
104			min	-6.226	4	-10.501	4	-10.501	1	0	1	-.008	4	-.008	1
105		3	max	379.071	10	0	11	0	11	0	6	.01	3	.01	2
106			min	-5.041	4	0	1	0	1	0	1	-.01	4	-.01	1
107		4	max	380.255	10	10.501	4	10.501	1	0	6	.008	3	.008	2
108			min	-3.857	4	-10.501	3	-10.501	2	0	1	-.008	4	-.008	1
109		5	max	381.44	10	21.002	4	21.002	1	0	6	0	11	0	11
110			min	-2.673	4	-21.002	3	-21.002	2	0	1	0	1	0	1
111	M12	1	max	-484.594	1	11.579	2	31.127	4	0	8	0	11	0	11
112			min	-2694.224	6	-24.305	5	-31.127	3	0	3	0	1	0	1
113		2	max	-491.16	1	5.789	2	15.564	4	0	8	.015	4	.018	4
114			min	-2682.639	6	-12.153	5	-15.564	3	0	3	-.018	3	-.015	3
115		3	max	-497.726	1	0	11	0	11	0	8	.021	4	.024	4
116			min	-2671.054	6	0	1	0	1	0	3	-.024	3	-.021	3
117		4	max	-504.292	1	12.153	5	15.564	3	0	8	.015	4	.018	4
118			min	-2659.469	6	-5.789	2	-15.564	4	0	3	-.018	3	-.015	3
119		5	max	-510.859	1	24.305	5	31.127	3	0	8	0	11	0	11
120			min	-2647.885	6	-11.579	2	-31.127	4	0	3	0	1	0	1
121	M13	1	max	97.808	1	-313.812	1	14.688	2	0	8	.139	4	.139	4
122			min	-2300.433	6	-1742.788	6	-9.582	4	0	9	-.118	3	-.118	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 Mom...	LC
123		2	max	97.808	1	-314.109	1	14.688	2	0	8	.138	4	.208	8
124			min	-2300.433	6	-1744.061	6	-11.273	4	0	9	-.118	3	-.095	3
125		3	max	97.808	1	-314.406	1	14.688	2	0	8	.138	4	.319	8
126			min	-2300.433	6	-1745.333	6	-12.964	4	0	9	-.118	3	-.071	3
127		4	max	97.808	1	-314.702	1	14.688	2	0	8	.137	4	.431	8
128			min	-2300.433	6	-1746.606	6	-14.655	4	0	9	-.118	3	-.048	3
129		5	max	97.808	1	-314.999	1	14.688	2	0	8	.136	4	.543	8
130			min	-2300.433	6	-1747.878	6	-16.346	4	0	9	-.118	3	-.024	3
131	M14	1	max	2522.366	7	111.318	8	5.26	2	0	8	.133	4	.138	3
132			min	443.367	4	-21.194	3	-15.231	8	0	9	-.135	3	-.13	4
133		2	max	2522.366	7	110.045	8	5.26	2	0	8	.133	4	.139	3
134			min	443.367	4	-21.49	3	-15.699	8	0	9	-.135	3	-.134	4
135		3	max	2522.366	7	108.772	8	5.26	2	0	8	.133	4	.14	3
136			min	443.367	4	-21.787	3	-16.167	8	0	9	-.135	3	-.138	4
137		4	max	2522.366	7	107.5	8	5.26	2	0	8	.133	4	.142	3
138			min	443.367	4	-22.084	3	-16.635	8	0	9	-.135	3	-.142	4
139		5	max	2522.366	7	106.227	8	5.304	7	0	8	.133	4	.143	3
140			min	443.367	4	-22.38	3	-17.104	8	0	9	-.135	3	-.146	4
141	M15	1	max	389.39	10	25.698	4	267.743	7	.004	7	.02	1	-.008	1
142			min	-265.659	4	-185.492	7	14.914	1	-.002	4	-.079	6	-.289	6
143		2	max	389.39	10	25.698	4	239.502	7	.004	7	.023	2	.219	7
144			min	-265.659	4	-185.492	7	8.935	1	-.002	4	-.013	1	-.06	4
145		3	max	296.118	10	65.123	3	27.773	4	0	1	.084	8	.233	3
146			min	-524.369	5	-53.504	4	-71.768	7	-.002	6	-.033	3	-.194	4
147		4	max	296.118	10	65.123	3	21.794	4	0	1	.032	4	.085	3
148			min	-524.369	5	-53.504	4	-100.009	7	-.002	6	-.032	3	-.104	4
149		5	max	0	11	0	11	0	11	0	11	0	11	0	11
150			min	0	1	0	1	0	1	0	1	0	1	0	1
151	M16	1	max	708.842	4	183.374	4	157.617	2	.003	4	.129	5	.036	4
152			min	-591.848	3	-246.874	3	-110.483	1	-.003	3	-.005	2	-.313	7
153		2	max	212.404	2	-20.292	10	107.356	6	.003	4	.034	4	.169	8
154			min	-279.884	1	-271.086	6	-21.709	1	-.003	3	-.089	7	-.073	3
155		3	max	343.546	4	82.609	8	46.546	3	.002	2	.033	4	.218	4
156			min	-462.514	3	-13.664	3	-66.046	4	-.002	1	-.052	3	-.162	3
157		4	max	343.546	4	110.85	8	46.546	3	.002	2	.025	8	.079	4
158			min	-462.514	3	-7.686	3	-66.046	4	-.002	1	-.011	3	-.096	3
159		5	max	0	11	0	11	0	11	0	11	0	11	0	11
160			min	0	1	0	1	0	1	0	1	0	1	0	1
161	M17	1	max	0	11	0	9	0	1	0	11	0	11	0	11
162			min	0	1	0	7	-.007	6	0	1	0	1	0	1
163		2	max	-36.373	4	358.419	9	10.338	2	.326	9	.038	8	.388	9
164			min	-210.821	7	-512.263	10	-53.989	5	-.461	10	-.003	3	-.553	10
165		3	max	-27.262	4	358.419	9	9.592	3	.326	9	.007	3	.011	3
166			min	-185.424	7	-512.263	10	-51.827	8	-.461	10	-.017	8	-.012	4
167		4	max	-18.151	4	358.419	9	9.592	3	.326	9	.017	3	.535	10
168			min	-160.028	7	-512.263	10	-51.827	8	-.461	10	-.072	8	-.374	9
169		5	max	0	11	0	11	0	11	0	11	0	11	0	11
170			min	0	1	0	1	0	1	0	1	0	1	0	1
171	M18	1	max	333.778	1	-299.87	1	672.679	10	1.015	10	.372	9	1.968	6
172			min	-4807.165	6	-1945.683	6	-525.145	9	-.72	9	-.476	10	.034	1
173		2	max	333.778	1	-299.87	1	672.679	10	1.015	10	.279	9	2.313	6
174			min	-4807.165	6	-1945.683	6	-525.145	9	-.72	9	-.357	10	.087	1
175		3	max	333.778	1	-299.87	1	672.679	10	1.015	10	.186	9	2.658	6
176			min	-4807.165	6	-1945.683	6	-525.145	9	-.72	9	-.238	10	.14	1
177		4	max	333.778	1	-299.87	1	672.679	10	1.015	10	.093	9	3.002	6
178			min	-4807.165	6	-1945.683	6	-525.145	9	-.72	9	-.119	10	.193	1
179		5	max	333.778	1	-299.87	1	672.679	10	1.015	10	0	4	3.347	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
180			min	-4807.165	6	-1945.683	6	-525.145	9	-.72	9	0	3	.247	1
181	M19	1	max	4783.689	5	-290.85	4	476.205	9	.642	10	.506	10	-.065	3
182			min	599.381	2	-1905.053	7	-713.666	10	-.459	9	-.337	9	-.689	5
183		2	max	4783.689	5	-290.85	4	476.205	9	.642	10	.379	10	.028	3
184			min	599.381	2	-1905.053	7	-713.666	10	-.459	9	-.253	9	-.362	8
185		3	max	4783.689	5	-290.85	4	476.205	9	.642	10	.253	10	.12	3
186			min	599.381	2	-1905.053	7	-713.666	10	-.459	9	-.169	9	-.128	4
187		4	max	4783.689	5	-290.85	4	476.205	9	.642	10	.126	10	.384	7
188			min	599.381	2	-1905.053	7	-713.666	10	-.459	9	-.084	9	-.076	4
189		5	max	4783.689	5	-290.85	4	476.205	9	.642	10	0	4	.722	7
190			min	599.381	2	-1905.053	7	-713.666	10	-.459	9	0	3	-.025	4
191	M20	1	max	24.231	1	14.851	2	14.851	4	0	3	0	11	0	11
192			min	-151.087	6	-14.851	1	-14.851	3	0	4	0	1	0	1
193		2	max	25.415	1	7.425	2	7.425	4	0	3	.011	2	.011	4
194			min	-142.397	6	-7.425	1	-7.425	3	0	4	-.011	1	-.011	3
195		3	max	26.599	1	0	11	0	11	0	3	.014	2	.014	4
196			min	-133.707	6	0	1	0	1	0	4	-.014	1	-.014	3
197		4	max	27.784	1	7.425	1	7.425	3	0	3	.011	2	.011	4
198			min	-125.017	6	-7.425	2	-7.425	4	0	4	-.011	1	-.011	3
199		5	max	28.968	1	14.851	1	14.851	3	0	3	0	11	0	11
200			min	-116.327	6	-14.851	2	-14.851	4	0	4	0	1	0	1
201	M21	1	max	213.833	4	23.382	2	11.476	4	0	6	0	11	0	11
202			min	-1308.833	7	-23.382	1	-23.5	7	0	1	0	1	0	1
203		2	max	222.364	4	11.691	2	5.738	4	0	6	.017	2	.013	4
204			min	-1302.887	7	-11.691	1	-11.75	7	0	1	-.019	1	-.016	3
205		3	max	230.895	4	0	11	0	11	0	6	.022	2	.017	4
206			min	-1296.941	7	0	1	0	1	0	1	-.026	1	-.021	3
207		4	max	239.426	4	11.691	1	11.75	7	0	6	.017	2	.013	4
208			min	-1290.995	7	-11.691	2	-5.738	4	0	1	-.019	1	-.016	3
209		5	max	247.957	4	23.382	1	23.5	7	0	6	0	11	0	11
210			min	-1285.049	7	-23.382	2	-11.476	4	0	1	0	1	0	1
211	M22	1	max	1625.018	7	11.476	3	23.382	2	0	7	0	11	0	11
212			min	-141.451	4	-23.5	8	-23.382	1	0	4	0	1	0	1
213		2	max	1636.452	7	5.738	3	11.691	2	0	7	.013	3	.019	2
214			min	-147.613	4	-11.75	8	-11.691	1	0	4	-.016	4	-.017	1
215		3	max	1647.886	7	0	11	0	11	0	7	.017	3	.026	2
216			min	-153.775	4	0	1	0	1	0	4	-.021	4	-.022	1
217		4	max	1659.32	7	11.75	8	11.691	1	0	7	.013	3	.019	2
218			min	-159.937	4	-5.738	3	-11.691	2	0	4	-.016	4	-.017	1
219		5	max	1670.754	7	23.5	8	23.382	1	0	7	0	11	0	11
220			min	-166.099	4	-11.476	3	-23.382	2	0	4	0	1	0	1
221	M23	1	max	23.474	1	18.188	2	18.188	4	0	3	0	11	0	11
222			min	-147.297	6	-18.188	1	-18.188	3	0	10	0	1	0	1
223		2	max	24.658	1	9.094	2	9.094	4	0	3	.01	4	.01	1
224			min	-138.607	6	-9.094	1	-9.094	3	0	10	-.01	3	-.01	2
225		3	max	25.843	1	0	11	0	11	0	3	.014	4	.014	1
226			min	-129.917	6	0	1	0	1	0	10	-.014	3	-.014	2
227		4	max	27.027	1	9.094	1	9.094	3	0	3	.01	4	.01	1
228			min	-121.227	6	-9.094	2	-9.094	4	0	10	-.01	3	-.01	2
229		5	max	28.211	1	18.188	1	18.188	3	0	3	0	11	0	11
230			min	-112.537	6	-18.188	2	-18.188	4	0	10	0	1	0	1
231	M24	1	max	-13.934	3	11.476	3	23.382	2	0	1	0	11	0	11
232			min	-1438.612	8	-23.5	8	-23.382	1	0	6	0	1	0	1
233		2	max	-5.403	3	5.738	3	11.691	2	0	1	.017	2	.016	4
234			min	-1432.666	8	-11.75	8	-11.691	1	0	6	-.019	1	-.013	3
235		3	max	3.128	3	0	11	0	11	0	1	.022	2	.021	4
236			min	-1426.72	8	0	1	0	1	0	6	-.026	1	-.017	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 Mom...	LC
237		4	max	11.659	3	11.75	8	11.691	1	0	1	.017	2	.016	4
238			min	-1420.774	8	-5.738	3	-11.691	2	0	6	-.019	1	-.013	3
239		5	max	20.19	3	23.5	8	23.382	1	0	1	0	11	0	11
240			min	-1414.828	8	-11.476	3	-23.382	2	0	6	0	1	0	1
241	M25	1	max	1737.664	8	23.382	2	11.476	4	0	3	0	11	0	11
242			min	97.022	3	-23.382	1	-23.5	7	0	8	0	1	0	1
243		2	max	1749.098	8	11.691	2	5.738	4	0	3	.013	4	.017	1
244			min	90.86	3	-11.691	1	-11.75	7	0	8	-.016	3	-.019	2
245		3	max	1760.532	8	0	11	0	11	0	3	.017	4	.022	1
246			min	84.698	3	0	1	0	1	0	8	-.021	3	-.026	2
247		4	max	1771.966	8	11.691	1	11.75	7	0	3	.013	4	.017	1
248			min	78.536	3	-11.691	2	-5.738	4	0	8	-.016	3	-.019	2
249		5	max	1783.4	8	23.382	1	23.5	7	0	3	0	11	0	11
250			min	72.373	3	-23.382	2	-11.476	4	0	8	0	1	0	1
251	M26	1	max	554.776	3	5.328	4	53.345	2	0	2	0	11	0	11
252			min	-350.832	4	-41.519	7	-53.345	1	0	1	0	1	0	1
253		2	max	564.115	3	2.664	4	26.673	2	0	2	.039	2	.048	2
254			min	-362.928	4	-20.76	7	-26.673	1	0	1	-.048	1	-.039	1
255		3	max	573.455	3	0	11	0	11	0	2	.052	2	.064	2
256			min	-375.024	4	0	1	0	1	0	1	-.064	1	-.052	1
257		4	max	582.794	3	20.76	7	26.673	1	0	2	.039	2	.048	2
258			min	-387.12	4	-2.664	4	-26.673	2	0	1	-.048	1	-.039	1
259		5	max	592.133	3	41.519	7	53.345	1	0	2	0	11	0	11
260			min	-399.216	4	-5.328	4	-53.345	2	0	1	0	1	0	1
261	M27	1	max	626.547	4	5.328	3	53.345	2	0	4	0	11	0	11
262			min	-422.964	3	-41.519	8	-53.345	1	0	3	0	1	0	1
263		2	max	617.208	4	2.664	3	26.673	2	0	4	.039	2	.048	2
264			min	-410.868	3	-20.76	8	-26.673	1	0	3	-.048	1	-.039	1
265		3	max	607.868	4	0	11	0	11	0	4	.052	2	.064	2
266			min	-398.772	3	0	1	0	1	0	3	-.064	1	-.052	1
267		4	max	598.529	4	20.76	8	26.673	1	0	4	.039	2	.048	2
268			min	-386.676	3	-2.664	3	-26.673	2	0	3	-.048	1	-.039	1
269		5	max	589.19	4	41.519	8	53.345	1	0	4	0	11	0	11
270			min	-374.58	3	-5.328	3	-53.345	2	0	3	0	1	0	1
271	M28	1	max	349.543	3	65.475	1	17.866	2	0	1	0	11	0	11
272			min	-2173.956	8	-61.648	2	-46.674	5	0	2	0	1	0	1
273		2	max	336.126	3	45.032	1	12.926	2	0	1	.026	4	.079	2
274			min	-2169.333	8	-41.205	2	-71.461	5	0	2	-.073	7	-.112	1
275		3	max	857.691	3	-.303	10	1019.264	7	0	1	.031	1	.161	2
276			min	-1233.139	4	-18.112	1	-122.464	4	0	2	-.029	2	-.175	1
277		4	max	1336.824	3	56.041	2	40.823	1	0	1	.081	5	.103	7
278			min	-1349.262	4	-60.504	1	-67.613	6	0	2	-.006	2	-.053	4
279		5	max	1323.406	3	76.484	2	35.883	1	0	1	0	11	.079	1
280			min	-1335.845	4	-80.947	1	-92.4	6	0	2	0	1	-.073	2
281	M29	1	max	1824.923	5	81.668	4	69.766	1	0	6	0	11	0	11
282			min	151.417	2	-1104.124	7	-67.511	2	0	1	0	1	0	1
283		2	max	747.728	5	102.413	7	25.504	1	0	2	.021	4	.123	5
284			min	-100.165	3	-16.152	4	-23.651	2	0	1	-.109	7	-.044	2
285		3	max	746.178	8	127.2	7	5.677	4	0	2	.036	5	.107	1
286			min	-131.136	3	-11.212	4	-14.222	1	0	1	-.01	2	-.11	2
287		4	max	750.801	8	50.143	5	34.604	2	0	2	.073	5	.049	4
288			min	-144.553	3	-15.27	2	-34.664	1	0	1	-.003	4	-.071	7
289		5	max	630.844	4	166.019	4	78.932	2	0	6	0	11	.052	2
290			min	-708.628	3	-795.733	7	-79.19	1	0	1	0	1	-.044	1
291	M30	1	max	262.869	3	22.113	2	70.355	1	0	2	.089	3	.1	3
292			min	-2474.325	8	-43.796	10	-68.421	2	0	1	-.089	4	-.095	4
293		2	max	263.644	3	21.816	2	69.173	1	0	2	.09	3	.099	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 Mom...	LC
294			min	-2474.54	8	-44.093	10	-67.239	2	0	1	-.09	4	-.093	4
295		3	max	264.42	3	21.519	2	67.991	1	0	2	.092	3	.098	3
296			min	-2474.755	8	-44.965	5	-66.057	2	0	1	-.09	4	-.092	4
297		4	max	265.196	3	21.223	2	66.809	1	0	2	.093	3	.098	3
298			min	-2474.969	8	-46.238	5	-64.875	2	0	1	-.09	4	-.09	4
299		5	max	265.972	3	20.926	2	65.627	1	0	2	.095	3	.097	3
300			min	-2475.184	8	-47.511	5	-63.693	2	0	1	-.09	4	-.088	4
301	M31	1	max	2334.504	8	1176.658	8	78.232	1	0	1	.096	3	.382	8
302			min	90.273	3	47.324	3	-69.845	2	-.001	6	-.111	4	-.089	3
303		2	max	2334.289	8	1175.385	8	77.05	1	0	1	.097	3	.306	8
304			min	91.049	3	47.028	3	-68.663	2	-.001	6	-.113	4	-.093	3
305		3	max	2334.075	8	1174.113	8	75.868	1	0	1	.099	3	.23	8
306			min	91.824	3	46.731	3	-67.481	2	-.001	6	-.115	4	-.096	3
307		4	max	2333.86	8	1172.84	8	74.686	1	0	1	.1	3	.154	8
308			min	92.6	3	46.434	3	-66.299	2	-.001	6	-.116	4	-.099	3
309		5	max	2333.645	8	1171.568	8	73.504	1	0	1	.102	3	.118	4
310			min	93.376	3	46.138	3	-65.117	2	-.001	6	-.118	4	-.102	3
311	M33	1	max	147.095	3	316.02	10	281.638	8	.124	8	.048	3	.021	2
312			min	-140.816	4	-128.388	4	28.641	2	-.095	10	-.031	4	-.023	1
313		2	max	147.095	3	316.02	10	281.638	8	.124	8	.058	7	.024	2
314			min	-140.816	4	-128.388	4	28.641	2	-.095	10	-.025	4	-.029	1
315		3	max	147.095	3	316.02	10	281.638	8	.124	8	.074	7	.028	2
316			min	-140.816	4	-128.388	4	28.641	2	-.095	10	-.02	4	-.04	10
317		4	max	147.095	3	316.02	10	281.638	8	.124	8	.089	7	.034	4
318			min	-140.816	4	-128.388	4	28.641	2	-.095	10	-.015	4	-.06	10
319		5	max	147.095	3	316.02	10	281.638	8	.124	8	.104	6	.042	4
320			min	-140.816	4	-128.388	4	28.641	2	-.095	10	-.009	4	-.079	10
321	M34	1	max	34.554	4	181.374	8	68.065	7	.1	7	.024	10	.01	1
322			min	-29.076	3	-289.553	10	-82.823	10	-.161	10	-.021	1	-.022	6
323		2	max	34.554	4	181.374	8	68.065	7	.1	7	.018	10	.011	1
324			min	-29.076	3	-289.553	10	-82.823	10	-.161	10	-.021	1	-.032	8
325		3	max	34.554	4	181.374	8	68.065	7	.1	7	.018	2	.023	10
326			min	-29.076	3	-289.553	10	-82.823	10	-.161	10	-.021	1	-.044	8
327		4	max	34.554	4	181.374	8	68.065	7	.1	7	.019	2	.041	10
328			min	-29.076	3	-289.553	10	-82.823	10	-.161	10	-.02	1	-.055	8
329		5	max	34.554	4	181.374	8	68.065	7	.1	7	.021	2	.059	10
330			min	-29.076	3	-289.553	10	-82.823	10	-.161	10	-.02	1	-.066	8
331	M35	1	max	748.52	3	511.03	3	233.545	3	.134	9	.256	4	.022	2
332			min	-740.234	4	-464.461	4	-268.852	4	-.066	4	-.261	3	-.025	1
333		2	max	748.52	3	511.03	3	233.545	3	.134	9	.239	4	.027	4
334			min	-740.234	4	-464.461	4	-268.852	4	-.066	4	-.246	3	-.031	1
335		3	max	748.52	3	511.03	3	233.545	3	.134	9	.222	4	.056	4
336			min	-740.234	4	-464.461	4	-268.852	4	-.066	4	-.231	3	-.061	3
337		4	max	748.52	3	511.03	3	233.545	3	.134	9	.206	4	.085	4
338			min	-740.234	4	-464.461	4	-268.852	4	-.066	4	-.217	3	-.093	3
339		5	max	748.52	3	511.03	3	233.545	3	.134	9	.189	4	.114	4
340			min	-740.234	4	-464.461	4	-268.852	4	-.066	4	-.202	3	-.125	3
341	M36	1	max	134.148	4	420.411	4	98.682	9	.182	9	.052	4	.015	1
342			min	-132.645	3	-376.45	3	-59.679	3	-.112	3	-.065	3	-.017	2
343		2	max	134.148	4	420.411	4	98.682	9	.182	9	.055	4	.019	3
344			min	-132.645	3	-376.45	3	-59.679	3	-.112	3	-.069	3	-.024	4
345		3	max	134.148	4	420.411	4	98.682	9	.182	9	.058	4	.042	3
346			min	-132.645	3	-376.45	3	-59.679	3	-.112	3	-.072	3	-.051	4
347		4	max	134.148	4	420.411	4	98.682	9	.182	9	.06	4	.066	3
348			min	-132.645	3	-376.45	3	-59.679	3	-.112	3	-.076	3	-.077	4
349		5	max	134.148	4	420.411	4	98.682	9	.182	9	.063	4	.089	3
350			min	-132.645	3	-376.45	3	-59.679	3	-.112	3	-.08	3	-.103	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 Mom...	LC
351	M37	1	max	44.495	3	325.673	8	201.706	4	.058	4	.141	1	.002	2
352			min	-163.538	8	9.853	10	-250.751	3	-.162	7	-.143	2	-.003	1
353		2	max	44.495	3	325.673	8	201.706	4	.058	4	.136	1	0	3
354			min	-163.538	8	9.853	10	-250.751	3	-.162	7	-.141	2	-.021	8
355		3	max	44.495	3	325.673	8	201.706	4	.058	4	.131	1	-.002	10
356			min	-163.538	8	9.853	10	-250.751	3	-.162	7	-.139	2	-.042	8
357		4	max	44.495	3	325.673	8	201.706	4	.058	4	.132	4	-.002	10
358			min	-163.538	8	9.853	10	-250.751	3	-.162	7	-.143	3	-.062	8
359		5	max	44.495	3	325.673	8	201.706	4	.058	4	.144	4	-.003	10
360			min	-163.538	8	9.853	10	-250.751	3	-.162	7	-.159	3	-.082	8
361	M38	1	max	221.281	7	284.032	7	55.642	2	.032	3	.248	8	0	4
362			min	-80.376	4	-22.647	4	-275.703	5	-.162	8	-.066	3	-.005	7
363		2	max	221.281	7	284.032	7	55.642	2	.032	3	.233	8	.002	4
364			min	-80.376	4	-22.647	4	-275.703	5	-.162	8	-.067	3	-.023	7
365		3	max	221.281	7	284.032	7	55.642	2	.032	3	.218	8	.003	4
366			min	-80.376	4	-22.647	4	-275.703	5	-.162	8	-.068	3	-.041	7
367		4	max	221.281	7	284.032	7	55.642	2	.032	3	.202	8	.005	4
368			min	-80.376	4	-22.647	4	-275.703	5	-.162	8	-.07	3	-.058	7
369		5	max	221.281	7	284.032	7	55.642	2	.032	3	.187	8	.006	4
370			min	-80.376	4	-22.647	4	-275.703	5	-.162	8	-.071	3	-.076	7
371	M39	1	max	93.172	2	148.068	7	241.277	4	.015	10	.409	3	.002	2
372			min	-131.577	1	-100.468	4	-228.727	3	-.032	8	-.418	4	-.003	1
373		2	max	93.172	2	148.068	7	241.277	4	.015	10	.394	3	.006	4
374			min	-131.577	1	-100.468	4	-228.727	3	-.032	8	-.403	4	-.01	7
375		3	max	93.172	2	148.068	7	241.277	4	.015	10	.38	3	.012	4
376			min	-131.577	1	-100.468	4	-228.727	3	-.032	8	-.388	4	-.019	7
377		4	max	93.172	2	148.068	7	241.277	4	.015	10	.366	3	.018	4
378			min	-131.577	1	-100.468	4	-228.727	3	-.032	8	-.373	4	-.028	7
379		5	max	93.172	2	148.068	7	241.277	4	.015	10	.351	3	.025	4
380			min	-131.577	1	-100.468	4	-228.727	3	-.032	8	-.358	4	-.038	7
381	M40	1	max	262.436	4	138.123	4	252.017	3	.145	7	.174	4	.001	1
382			min	-283.768	3	-151.714	3	-249.338	4	-.075	4	-.414	7	-.003	6
383		2	max	262.436	4	138.123	4	252.017	3	.145	7	.158	4	.007	3
384			min	-283.768	3	-151.714	3	-249.338	4	-.075	4	-.406	7	-.007	4
385		3	max	262.436	4	138.123	4	252.017	3	.145	7	.143	4	.017	3
386			min	-283.768	3	-151.714	3	-249.338	4	-.075	4	-.398	7	-.016	4
387		4	max	262.436	4	138.123	4	252.017	3	.145	7	.127	4	.026	3
388			min	-283.768	3	-151.714	3	-249.338	4	-.075	4	-.39	7	-.025	4
389		5	max	262.436	4	138.123	4	252.017	3	.145	7	.111	4	.036	3
390			min	-283.768	3	-151.714	3	-249.338	4	-.075	4	-.381	7	-.033	4
391	MP4A	1	max	0	11	.004	9	.015	7	0	11	0	11	0	11
392			min	0	1	-.015	5	-.02	8	0	1	0	1	0	1
393		2	max	22.545	8	15.547	4	15.55	1	0	11	.01	1	.01	3
394			min	5.206	1	-15.548	3	-15.55	2	0	1	-.01	2	-.01	4
395		3	max	409.833	4	90.838	3	133.533	4	.063	4	.221	3	.066	3
396			min	-386.94	3	-99.096	9	-133.041	3	-.08	3	-.208	4	-.052	4
397		4	max	415.039	4	75.291	3	133.533	4	.063	4	.055	3	.075	9
398			min	-381.734	3	-99.096	9	-133.041	3	-.08	3	-.048	9	-.038	3
399		5	max	0	11	.002	8	.002	8	0	11	0	11	0	11
400			min	0	1	0	9	0	9	0	1	0	1	0	1
401	MP1A	1	max	0	11	.009	7	.005	5	0	11	0	11	0	11
402			min	0	1	-.005	10	-.005	2	0	1	0	1	0	1
403		2	max	22.545	8	15.544	4	15.552	1	0	11	.01	1	.01	3
404			min	5.206	1	-15.544	3	-15.552	2	0	1	-.01	2	-.01	4
405		3	max	138.553	4	83.4	10	54.761	2	.021	2	.066	1	.034	10
406			min	-299.981	10	-63.163	8	-49.677	1	-.02	1	-.054	2	-.042	6
407		4	max	158.803	8	83.4	10	39.215	2	.021	2	.042	8	.039	8

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 Mom...	LC
408			min	-294.775	10	-61.438	7	-34.13	1	-.02	1	-.046	10	-.071	10
409		5	max	0	11	.001	10	.002	7	0	11	0	11	0	11
410			min	0	1	0	7	0	10	0	1	0	1	0	1
411	MP3A	1	max	127.171	8	56.279	4	169.325	1	0	11	0	11	0	11
412			min	24.42	1	-56.287	3	-169.326	2	0	1	0	1	0	1
413		2	max	163.243	8	81.154	4	194.2	1	0	11	.364	1	.137	3
414			min	32.75	1	-81.162	3	-194.2	2	0	1	-.364	2	-.137	4
415		3	max	304.653	7	13.507	4	184.465	2	.206	3	.023	4	.094	4
416			min	-216.029	4	-20.309	7	-168.65	1	-.183	4	-.038	7	-.085	3
417		4	max	498.667	7	163.688	3	274.638	3	.501	7	.083	8	.069	3
418			min	-325.206	4	-164.108	4	-235.288	4	-.294	4	-.061	1	-.114	9
419		5	max	0	11	.006	8	.013	8	0	11	0	11	0	11
420			min	0	1	-.002	9	-.005	3	0	1	0	1	0	1
421	MP2A	1	max	379.46	8	229.085	4	531.478	1	0	11	0	11	0	11
422			min	73.68	1	-229.128	3	-531.478	2	0	1	0	1	0	1
423		2	max	415.532	8	253.96	4	556.353	1	0	11	1.088	1	.483	3
424			min	82.01	1	-254.003	3	-556.352	2	0	1	-1.088	2	-.483	4
425		3	max	222.359	7	181.88	3	520.353	2	.024	3	.045	1	.065	4
426			min	13.523	9	-135.983	4	-461.422	1	-.044	8	-.063	2	-.05	3
427		4	max	568.898	7	104.603	8	121.439	6	.095	3	.219	7	.065	10
428			min	82.136	9	-186.913	5	-128.845	3	-.231	8	-.015	4	-.159	8
429		5	max	0	11	.016	8	.021	7	0	11	0	11	0	11
430			min	0	1	-.002	9	-.001	4	0	1	0	1	0	1
431	M45	1	max	411.533	4	645.867	5	123.613	4	.206	4	.112	2	.024	3
432			min	-440.113	3	-244.924	2	-169.695	3	-.2	3	-.122	1	-.023	4
433		2	max	411.533	4	645.867	5	123.613	4	.206	4	.103	2	.026	3
434			min	-440.113	3	-244.924	2	-169.695	3	-.2	3	-.115	1	-.047	8
435		3	max	411.533	4	645.867	5	123.613	4	.206	4	.093	2	.03	2
436			min	-440.113	3	-244.924	2	-169.695	3	-.2	3	-.108	1	-.085	8
437		4	max	411.533	4	645.867	5	123.613	4	.206	4	.084	2	.045	2
438			min	-440.113	3	-244.924	2	-169.695	3	-.2	3	-.101	1	-.124	8
439		5	max	411.533	4	645.867	5	123.613	4	.206	4	.075	2	.061	2
440			min	-440.113	3	-244.924	2	-169.695	3	-.2	3	-.094	1	-.163	8
441	M46	1	max	370.951	7	463.507	2	330.068	4	.046	2	.062	9	.013	4
442			min	-3.93	4	-292.712	1	-328.399	3	-.054	1	-.067	10	-.024	7
443		2	max	370.951	7	463.507	2	330.068	4	.046	2	.048	9	.016	4
444			min	-3.93	4	-292.712	1	-328.399	3	-.054	1	-.053	10	-.049	7
445		3	max	370.951	7	463.507	2	330.068	4	.046	2	.033	9	.03	1
446			min	-3.93	4	-292.712	1	-328.399	3	-.054	1	-.039	10	-.074	7
447		4	max	370.951	7	463.507	2	330.068	4	.046	2	.038	4	.048	1
448			min	-3.93	4	-292.712	1	-328.399	3	-.054	1	-.038	3	-.1	7
449		5	max	370.951	7	463.507	2	330.068	4	.046	2	.058	4	.066	1
450			min	-3.93	4	-292.712	1	-328.399	3	-.054	1	-.059	3	-.127	6
451	M47	1	max	0	11	.005	9	.029	5	0	11	0	11	0	11
452			min	0	1	-.026	8	-.017	2	0	1	0	1	0	1
453		2	max	36.072	8	24.871	4	24.893	1	0	11	.025	1	.025	3
454			min	8.33	1	-24.874	3	-24.892	2	0	1	-.025	2	-.025	4
455		3	max	339.016	2	69.331	3	129.778	2	.035	4	.114	1	.034	3
456			min	-386.739	1	-53.528	4	-91.684	1	-.037	10	-.112	2	-.03	4
457		4	max	347.346	2	301.318	4	104.904	2	.035	4	.189	6	.096	4
458			min	-435.255	7	-284.874	3	-273.938	5	-.037	10	-.044	1	-.115	3
459		5	max	0	11	.015	8	.018	5	0	11	0	11	0	11
460			min	0	1	-.002	9	0	3	0	1	0	1	0	1
461	M52	1	max	95.711	4	362.418	8	186.497	5	.138	10	.076	3	.034	3
462			min	-128.799	3	8.103	9	-94.803	2	-.058	2	-.263	8	-.031	4
463		2	max	95.711	4	362.418	8	186.497	5	.138	10	.081	3	.031	3
464			min	-128.799	3	8.103	9	-94.803	2	-.058	2	-.255	8	-.039	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 Mom...	LC
465		3	max	95.711	4	362.418	8	186.497	5	.138	10	.086	3	.029	3
466			min	-128.799	3	8.103	9	-94.803	2	-.058	2	-.247	8	-.054	8
467		4	max	95.711	4	362.418	8	186.497	5	.138	10	.09	3	.027	3
468			min	-128.799	3	8.103	9	-94.803	2	-.058	2	-.239	8	-.077	8
469		5	max	95.711	4	362.418	8	186.497	5	.138	10	.095	3	.025	3
470			min	-128.799	3	8.103	9	-94.803	2	-.058	2	-.231	8	-.1	8
471	M53	1	max	273.544	3	534.687	7	140.812	4	.155	4	.521	7	.054	4
472			min	-236.053	4	-317.369	4	-136.376	3	-.184	3	-.33	4	-.07	3
473		2	max	273.544	3	534.687	7	140.812	4	.155	4	.516	7	.074	4
474			min	-236.053	4	-317.369	4	-136.376	3	-.184	3	-.321	4	-.098	3
475		3	max	273.544	3	534.687	7	140.812	4	.155	4	.511	7	.094	4
476			min	-236.053	4	-317.369	4	-136.376	3	-.184	3	-.312	4	-.127	3
477		4	max	273.544	3	534.687	7	140.812	4	.155	4	.506	7	.113	4
478			min	-236.053	4	-317.369	4	-136.376	3	-.184	3	-.303	4	-.158	7
479		5	max	273.544	3	534.687	7	140.812	4	.155	4	.501	7	.133	4
480			min	-236.053	4	-317.369	4	-136.376	3	-.184	3	-.294	4	-.191	7
481	M54	1	max	-24.731	4	-45.551	4	309.227	3	.092	3	.058	4	.044	7
482			min	-274.629	7	-399.595	7	-326.028	4	-.124	4	-.055	3	-.023	4
483		2	max	-24.731	4	-45.551	4	309.227	3	.092	3	.038	4	.069	7
484			min	-274.629	7	-399.595	7	-326.028	4	-.124	4	-.036	3	-.02	4
485		3	max	-24.731	4	-45.551	4	309.227	3	.092	3	.017	4	.094	7
486			min	-274.629	7	-399.595	7	-326.028	4	-.124	4	-.016	3	-.017	4
487		4	max	-24.731	4	-45.551	4	309.227	3	.092	3	.015	9	.119	7
488			min	-274.629	7	-399.595	7	-326.028	4	-.124	4	-.015	10	-.014	4
489		5	max	-24.731	4	-45.551	4	309.227	3	.092	3	.026	9	.144	7
490			min	-274.629	7	-399.595	7	-326.028	4	-.124	4	-.027	10	-.011	4
491	M57	1	max	106.255	4	.292	4	48.242	10	.201	5	.051	1	.146	1
492			min	-118.027	3	-150.71	7	-357.994	8	-.009	10	-.062	2	-.148	2
493		2	max	106.255	4	.292	4	48.242	10	.201	5	.044	1	.149	1
494			min	-118.027	3	-150.71	7	-357.994	8	-.009	10	-.065	2	-.147	2
495		3	max	106.255	4	.292	4	48.242	10	.201	5	.037	1	.152	1
496			min	-118.027	3	-150.71	7	-357.994	8	-.009	10	-.074	6	-.146	2
497		4	max	106.255	4	.292	4	48.242	10	.201	5	.03	1	.156	1
498			min	-118.027	3	-150.71	7	-357.994	8	-.009	10	-.094	6	-.144	2
499		5	max	106.255	4	.292	4	48.242	10	.201	5	.024	1	.159	1
500			min	-118.027	3	-150.71	7	-357.994	8	-.009	10	-.114	6	-.143	2
501	M58	1	max	606.075	4	65.258	4	178.463	8	.085	9	.31	3	.093	4
502			min	-615.864	3	-154.184	7	-172.272	9	-.123	7	-.293	4	-.09	3
503		2	max	606.075	4	65.258	4	178.463	8	.085	9	.303	3	.089	4
504			min	-615.864	3	-154.184	7	-172.272	9	-.123	7	-.282	4	-.083	3
505		3	max	606.075	4	65.258	4	178.463	8	.085	9	.296	3	.085	4
506			min	-615.864	3	-154.184	7	-172.272	9	-.123	7	-.272	4	-.075	3
507		4	max	606.075	4	65.258	4	178.463	8	.085	9	.289	3	.081	4
508			min	-615.864	3	-154.184	7	-172.272	9	-.123	7	-.262	4	-.068	3
509		5	max	606.075	4	65.258	4	178.463	8	.085	9	.282	3	.077	4
510			min	-615.864	3	-154.184	7	-172.272	9	-.123	7	-.252	4	-.061	3
511	M59	1	max	1262.253	1	233.568	7	815.315	3	.189	3	.167	2	.329	2
512			min	-1255.024	2	-.075	10	-720.708	4	-.241	4	-.16	1	-.319	1
513		2	max	1262.253	1	233.568	7	815.315	3	.189	3	.168	2	.328	2
514			min	-1255.024	2	-.075	10	-720.708	4	-.241	4	-.155	1	-.325	1
515		3	max	1262.253	1	233.568	7	815.315	3	.189	3	.168	2	.327	2
516			min	-1255.024	2	-.075	10	-720.708	4	-.241	4	-.15	1	-.33	1
517		4	max	1262.253	1	233.568	7	815.315	3	.189	3	.169	2	.326	2
518			min	-1255.024	2	-.075	10	-720.708	4	-.241	4	-.145	1	-.336	1
519		5	max	1262.253	1	233.568	7	815.315	3	.189	3	.17	2	.325	2
520			min	-1255.024	2	-.075	10	-720.708	4	-.241	4	-.14	1	-.342	1
521	M60	1	max	624.487	1	370.344	4	413.866	3	.052	8	.649	4	.04	10

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 Mom...	LC
522			min	-601.916	2	-365.252	3	-433.104	4	-.005	3	-.661	3	-.068	9
523		2	max	624.487	1	370.344	4	413.866	3	.052	8	.622	4	.038	10
524			min	-601.916	2	-365.252	3	-433.104	4	-.005	3	-.635	3	-.06	9
525		3	max	624.487	1	370.344	4	413.866	3	.052	8	.595	4	.048	3
526			min	-601.916	2	-365.252	3	-433.104	4	-.005	3	-.609	3	-.053	9
527		4	max	624.487	1	370.344	4	413.866	3	.052	8	.568	4	.07	3
528			min	-601.916	2	-365.252	3	-433.104	4	-.005	3	-.583	3	-.066	4
529		5	max	624.487	1	370.344	4	413.866	3	.052	8	.541	4	.093	3
530			min	-601.916	2	-365.252	3	-433.104	4	-.005	3	-.557	3	-.089	4
531	M61	1	max	372.95	3	-26.88	3	288.566	3	.028	10	.142	1	.137	1
532			min	-382.872	4	-411.304	8	-226.969	4	-.11	7	-.135	2	-.153	2
533		2	max	372.95	3	-26.88	3	288.566	3	.028	10	.137	1	.144	1
534			min	-382.872	4	-411.304	8	-226.969	4	-.11	7	-.126	2	-.148	2
535		3	max	372.95	3	-26.88	3	288.566	3	.028	10	.131	1	.151	1
536			min	-382.872	4	-411.304	8	-226.969	4	-.11	7	-.117	2	-.143	2
537		4	max	372.95	3	-26.88	3	288.566	3	.028	10	.125	1	.159	1
538			min	-382.872	4	-411.304	8	-226.969	4	-.11	7	-.107	2	-.138	2
539		5	max	372.95	3	-26.88	3	288.566	3	.028	10	.12	1	.166	1
540			min	-382.872	4	-411.304	8	-226.969	4	-.11	7	-.098	2	-.133	2
541	M56	1	max	0	11	0	11	0	11	0	11	0	11	0	11
542			min	0	1	0	1	0	1	0	1	0	1	0	1
543		2	max	891.797	3	28.07	9	2507.064	4	.094	4	.355	4	.056	3
544			min	-868.514	4	-60.375	8	-2553.868	3	-.086	3	-.355	3	-.158	8
545		3	max	856.315	2	248.914	5	212.327	1	.173	1	.083	3	.231	7
546			min	-777.534	1	24.036	3	-200.145	2	-.181	2	-.09	4	.033	10
547		4	max	358.006	8	13.922	4	107.985	1	.148	2	.296	3	.043	4
548			min	-48.201	10	-92.579	7	-118.615	2	-.146	1	-.273	4	-.158	7
549		5	max	0	11	0	11	0	11	0	11	0	11	0	11
550			min	0	1	0	1	0	1	0	1	0	1	0	1
551	M57A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
552			min	0	1	0	1	0	1	0	1	0	1	0	1
553		2	max	433.472	4	27.494	4	786.911	7	.054	4	.213	6	.048	4
554			min	-915.962	7	-17.396	3	-167.722	4	-.069	3	-.017	10	-.148	7
555		3	max	234.963	2	227.318	8	115.226	8	.031	4	.018	3	.208	8
556			min	-304.377	1	22.693	9	8.247	9	-.033	3	-.022	4	.026	9
557		4	max	-60.629	9	-19.307	9	-59.954	9	0	3	.472	6	-.003	9
558			min	-535.695	5	-282.048	8	-613.574	8	0	4	.039	1	-.161	8
559		5	max	0	11	0	11	0	11	0	11	0	11	0	11
560			min	0	1	0	1	0	1	0	1	0	1	0	1
561	M58A	1	max	1488.263	7	45.12	3	6.975	1	0	4	0	11	0	11
562			min	-626.254	4	-45.12	4	-58.441	6	0	3	0	1	0	1
563		2	max	1469.87	7	22.56	3	3.488	1	0	4	.046	3	.039	1
564			min	-611.383	4	-22.56	4	-29.221	6	0	3	-.066	4	-.062	6
565		3	max	1451.476	7	0	11	0	11	0	4	.062	3	.051	1
566			min	-596.513	4	0	1	0	1	0	3	-.088	4	-.083	6
567		4	max	1433.083	7	22.56	4	29.221	6	0	4	.046	3	.039	1
568			min	-581.642	4	-22.56	3	-3.488	1	0	3	-.066	4	-.062	6
569		5	max	1414.689	7	45.12	4	58.441	6	0	4	0	11	0	11
570			min	-566.772	4	-45.12	3	-6.975	1	0	3	0	1	0	1
571	M59A	1	max	948.243	8	58.441	6	45.12	3	0	4	0	11	0	11
572			min	111.217	2	-6.975	1	-45.12	4	0	3	0	1	0	1
573		2	max	929.849	8	29.221	6	22.56	3	0	4	.066	3	.039	1
574			min	107.34	9	-3.488	1	-22.56	4	0	3	-.046	4	-.062	6
575		3	max	911.456	8	0	11	0	11	0	4	.088	3	.051	1
576			min	102.736	9	0	1	0	1	0	3	-.062	4	-.083	6
577		4	max	893.063	8	3.488	1	22.56	4	0	4	.066	3	.039	1
578			min	98.131	9	-29.221	6	-22.56	3	0	3	-.046	4	-.062	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
579		5	max	874.669	8	6.975	1	45.12	4	0	4	0	11	0	11
580			min	93.527	9	-58.441	6	-45.12	3	0	3	0	1	0	1
581	M60A	1	max	3099.357	4	82.433	6	55.162	3	.024	10	0	11	0	11
582			min	-3110.252	3	17.182	1	-55.162	4	-.024	9	0	1	0	1
583		2	max	3102.904	4	41.216	6	27.581	3	.024	10	.095	3	-.029	1
584			min	-3116.403	3	8.591	1	-27.581	4	-.024	9	-.095	4	-.141	6
585		3	max	3106.451	4	0	11	0	11	.024	10	.126	3	-.039	1
586			min	-3122.553	3	0	1	0	1	-.024	9	-.126	4	-.189	6
587		4	max	3109.999	4	-8.591	1	27.581	4	.024	10	.095	3	-.029	1
588			min	-3128.703	3	-41.216	6	-27.581	3	-.024	9	-.095	4	-.141	6
589		5	max	3113.546	4	-17.182	1	55.162	4	.024	10	0	11	0	11
590			min	-3134.854	3	-82.433	6	-55.162	3	-.024	9	0	1	0	1
591	M63	1	max	3552.382	3	41.938	3	-10.09	10	0	4	0	11	0	11
592			min	-3518.103	4	-41.938	4	-47.661	5	0	3	0	1	0	1
593		2	max	3538.681	3	20.969	3	-5.045	10	0	4	.023	3	.023	4
594			min	-3504.403	4	-20.969	4	-23.83	5	0	3	-.044	8	-.044	7
595		3	max	3524.981	3	0	11	0	11	0	4	.031	3	.031	4
596			min	-3490.702	4	0	1	0	1	0	3	-.059	8	-.059	7
597		4	max	3511.281	3	20.969	4	23.83	8	0	4	.023	3	.023	4
598			min	-3477.002	4	-20.969	3	5.045	1	0	3	-.044	8	-.044	7
599		5	max	3497.581	3	41.938	4	47.661	8	0	4	0	11	0	11
600			min	-3463.302	4	-41.938	3	10.09	1	0	3	0	1	0	1
601	M64	1	max	1497.674	1	47.661	8	41.938	3	0	1	0	11	0	11
602			min	-1518.113	2	10.09	1	-41.938	4	0	2	0	1	0	1
603		2	max	1483.974	1	23.83	8	20.969	3	0	1	.044	7	.023	3
604			min	-1504.412	2	5.045	1	-20.969	4	0	2	-.023	4	-.044	8
605		3	max	1470.273	1	0	11	0	11	0	1	.059	7	.031	3
606			min	-1490.712	2	0	1	0	1	0	2	-.031	4	-.059	8
607		4	max	1456.573	1	-5.045	10	20.969	4	0	1	.044	7	.023	3
608			min	-1477.012	2	-23.83	5	-20.969	3	0	2	-.023	4	-.044	8
609		5	max	1442.873	1	-10.09	10	41.938	4	0	1	0	11	0	11
610			min	-1463.312	2	-47.661	5	-41.938	3	0	2	0	1	0	1
611	M62	1	max	210.922	4	0	11	-10.09	10	0	4	0	11	0	11
612			min	-1148.557	7	0	1	-11.771	11	0	3	0	1	0	1
613		2	max	210.462	4	0	11	-5.045	10	0	4	-.007	10	-.007	10
614			min	-1149.017	7	0	1	-5.886	11	0	3	-.009	11	-.009	11
615		3	max	210.002	4	0	11	0	11	0	4	-.01	10	-.01	10
616			min	-1149.477	7	0	1	0	1	0	3	-.011	11	-.011	11
617		4	max	209.542	4	0	11	5.886	11	0	4	-.007	10	-.007	10
618			min	-1149.936	7	0	1	5.045	1	0	3	-.009	11	-.009	11
619		5	max	209.082	4	0	11	11.771	11	0	4	0	11	0	11
620			min	-1150.396	7	0	1	10.09	1	0	3	0	1	0	1
621	M63A	1	max	-42.366	1	11.771	11	0	11	0	4	0	11	0	11
622			min	-997.347	6	10.09	1	0	1	0	7	0	1	0	1
623		2	max	-42.826	1	5.886	11	0	11	0	4	.009	11	-.007	10
624			min	-997.807	6	5.045	1	0	1	0	7	.007	1	-.009	11
625		3	max	-43.286	1	0	11	0	11	0	4	.011	11	-.01	10
626			min	-998.267	6	0	1	0	1	0	7	.01	1	-.011	11
627		4	max	-43.746	1	-5.045	10	0	11	0	4	.009	11	-.007	10
628			min	-998.727	6	-5.886	11	0	1	0	7	.007	1	-.009	11
629		5	max	-44.206	1	-10.09	10	0	11	0	4	0	11	0	11
630			min	-999.187	6	-11.771	11	0	1	0	7	0	1	0	1

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

	Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M6	L2x2x3	.997	.209	5	.176	0	z	8	3815.705	23392.8	.558	1.124	2....	H2-1
2	M8	L2x2x3	.939	3.253	6	.231	3.289	y	7	12626.6...	23392.8	.558	1.2	1....	H2-1
3	M29	L2x2x3	.909	.209	7	.158	0	y	7	3815.705	23392.8	.558	1.106	2....	H2-1
4	M7	L2x2x3	.776	.256	7	.239	0	z	6	12626.6...	23392.8	.558	1.183	1....	H2-1
5	MP2A	PIPE_2.0	.734	2.5	1	.175	3.25		2	14916.0...	32130	1.872	1.872	3....	H1-1b
6	M13	PL3/8x3	.613	.258	8	.123	.258	y	6	34888.6...	36450	.284	2.279	1....	H1-1b
7	M56	PIPE_2.0	.609	3.521	4	.317	3.25		3	5820.472	32130	1.872	1.872	2....	H1-1b
8	M28	L2x2x3	.604	3.561	3	.142	3.211	z	7	3815.705	23392.8	.558	1.069	1....	H2-1
9	M14	PL3/8x3	.548	.202	3	.009	0	y	8	34888.6...	36450	.284	2.279	1....	H1-1b
10	M1	L2.5x2.5x3	.531	3.182	4	.255	6.229	z	3	7772.657	29192.4	.873	1.618	1....	H2-1
11	M5	L2x2x3	.525	3.142	5	.150	3.211	y	8	3815.705	23392.8	.558	1.105	2....	H2-1
12	M31	PL3/8x3	.506	0	4	.086	0	y	8	34888.6...	36450	.284	2.279	1....	H1-1b
13	MP5A	L2.5x2.5x3	.482	3.115	3	.262	6.5	z	7	7772.657	29192.4	.873	1.807	2....	H2-1
14	M25	L1.75x1.75x2	.405	2.037	6	.015	0	z	6	4997.09	13668.75	.3	.511	1....	H2-1
15	M63	L2.5x2.5x3	.390	2.685	3	.007	5.485	y	4	10916.1...	29192.4	.873	1.574	1....	H2-1
16	M17	PIPE_2.5X	.387	.708	6	.305	3.497		8	56778.5...	66150	4.646	4.646	1....	H1-1b
17	M30	PL3/8x3	.381	.258	3	.006	.258	y	1	34888.6...	36450	.284	2.279	1....	H1-1b
18	M22	L1.75x1.75x2	.378	2.037	6	.014	0	y	6	4997.09	13668.75	.3	.511	1....	H2-1
19	M27	L2x2x2	.367	3.056	8	.014	6.112	z	2	3152.486	15908.4	.403	.571	1....	H2-1
20	M57A	PIPE_2.0	.365	3.115	7	.116	3.385		7	5820.472	32130	1.872	1.872	1....	H1-1b
21	M26	L2x2x2	.354	3.056	7	.015	6.112	z	2	3152.486	15908.4	.403	.571	1....	H2-1
22	M16	L2.5x2.5x3	.339	0	8	.207	5.958	y	1	7772.657	29192.4	.873	1.741	1....	H2-1
23	M60A	PIPE_2.0	.328	4.574	4	.018	0		8	11756.7...	32130	1.872	1.872	1....	H1-1a
24	M58A	L2.5x2.5x3	.301	3.324	7	.010	6.788	y	3	7126.096	29192.4	.873	1.468	1....	H2-1
25	M12	L1.75x1.75x2	.284	2.038	5	.022	4.076	y	8	8782.315	13668.75	.3	.508	1....	H2-1
26	M15	L2.5x2.5x3	.265	2.234	7	.203	5.958	z	6	7772.657	29192.4	.873	1.792	2....	H2-1
27	MP3A	PIPE_2.0	.261	2.5	3	.371	2.5		3	14916.0...	32130	1.872	1.872	1....	H3-6
28	M59A	L2.5x2.5x3	.255	3.394	7	.009	6.788	z	4	7126.096	29192.4	.873	1.468	1....	H2-1
29	MP4A	PIPE_2.0	.236	2.083	3	.235	2.083		3	23808.54	32130	1.872	1.872	2....	H1-1b
30	M24	L1.75x1.75x2	.187	1.996	8	.019	0	y	8	4997.059	13668.75	.3	.511	1....	H2-1
31	M47	PIPE_2.0	.182	3.25	1	.104	2.5		3	14916.0...	32130	1.872	1.872	3....	H1-1b
32	M21	L1.75x1.75x2	.178	1.996	7	.015	0	z	7	4997.059	13668.75	.3	.511	1....	H2-1
33	M64	L2.5x2.5x3	.171	2.628	1	.007	0	z	2	10916.1...	29192.4	.873	1.574	1....	H2-1
34	M4	PL3/8x3	.167	0	7	.078	0	y	7	34888.6...	36450	.284	2.279	1....	H1-1b
35	M9	L1.75x1.75x2	.113	1.375	3	.009	0	z	3	11175.5...	13668.75	.3	.567	1....	H2-1
36	MP1A	PIPE_2.0	.113	1.354	5	.103	1.354		6	23808.54	32130	1.872	1.872	3....	H1-1b
37	M10	L1.75x1.75x2	.105	1.432	5	.007	0	z	3	11175.5...	13668.75	.3	.567	1....	H2-1
38	M3	PL3/8x3	.083	0	2	.006	.258	y	1	34888.6...	36450	.284	2.279	1....	H1-1b
39	M11	L1.75x1.75x2	.066	1.375	3	.006	2.75	z	2	11175.5...	13668.75	.3	.567	1....	H2-1
40	M62	L2.5x2.5x3	.057	2.754	7	.004	5.508	z	4	10826.1...	29192.4	.873	1.572	1....	H2-1
41	M23	L1.75x1.75x2	.055	1.375	4	.006	0	z	4	8486.47	13668.75	.3	.567	1....	H2-1
42	M20	L1.75x1.75x2	.053	1.375	2	.006	2.75	z	3	8486.47	13668.75	.3	.549	1	H2-1
43	M63A	L2.5x2.5x3	.052	2.754	6	.003	5.508	y	7	10826.1...	29192.4	.873	1.572	1....	H2-1

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shea...	Loc[ft]	Dir	LC	phi*Pn...	phi*Tn...	phi*M...	phi*M...	phi*...	phi*...	Cb	Eqn
No Data to Print ...																

Envelope AA ADM1-10: ASD - Building Aluminum Code Checks

Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Pnc/O...	Pnt/Om...	Mny/O...	Mnz/O...	Vny/O...	Vnz/O...	Cb	Eqn
No Data to Print ...																

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Exposure Analysis Report

July 13, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: Clinton/Route 1
Site Number: CT11429A

Site Address: 46 Meadow Road, Clinton, CT 06413

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	2.47592 µW/cm^2
Cumulative General Population % MPE (Ground Level):	0.31694%

750 West Center Street | Suite 301 | West Bridgewater | MA | 02379

July 13, 2022

Centerline
Attn: Jessica Meyer, Project Coordinator
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **Clinton/Route 1**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **46 Meadow Road, Clinton, CT 06413** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.

Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: approximately 9' north of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu W/cm^2$)	General Population MPE Limit ($\mu W/cm^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	192.00	2.00	40.00	1853.92	0.01826	466.67	0.00391
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	4.00	60.00	4844.08	0.04719	400.00	0.01180
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	2.00	40.00	1614.69	0.01573	400.00	0.00393
T-Mobile A 2	COMMSCOPE VV-65A-R1	1900	15.77	192.00	2.00	140.00	10572.02	0.10499	1000.00	0.01050
T-Mobile A 2	COMMSCOPE VV-65A-R1	2100	16.47	192.00	2.00	140.00	12421.04	0.10180	1000.00	0.01018
T-Mobile A 2	COMMSCOPE VV-65A-R1	2100	16.47	192.00	1.00	40.00	1774.43	0.01454	1000.00	0.00145
T-Mobile A 2	COMMSCOPE VV-65A-R1	1900	15.77	192.00	1.00	15.00	566.36	0.00562	1000.00	0.00056
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	192.00	2.00	40.00	1853.92	0.00001	466.67	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	4.00	60.00	4844.08	0.00052	400.00	0.00013
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	2.00	40.00	1614.69	0.00017	400.00	0.00004
T-Mobile B 4	COMMSCOPE VV-65A-R1	1900	15.77	192.00	2.00	140.00	10572.02	0.00052	1000.00	0.00005
T-Mobile B 4	COMMSCOPE VV-65A-R1	2100	16.47	192.00	2.00	140.00	12421.04	0.00036	1000.00	0.00004
T-Mobile B 4	COMMSCOPE VV-65A-R1	2100	16.47	192.00	1.00	40.00	1774.43	0.00005	1000.00	0.00001
T-Mobile B 4	COMMSCOPE VV-65A-R1	1900	15.77	192.00	1.00	15.00	566.36	0.00003	1000.00	0.00000
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	192.00	2.00	40.00	1853.92	0.00014	466.67	0.00003
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	4.00	60.00	4844.08	0.00024	400.00	0.00006
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	13.05	192.00	2.00	40.00	1614.69	0.00008	400.00	0.00002
T-Mobile C 6	COMMSCOPE VV-65A-R1	1900	15.77	192.00	2.00	140.00	10572.02	0.00059	1000.00	0.00006
T-Mobile C 6	COMMSCOPE VV-65A-R1	2100	16.47	192.00	2.00	140.00	12421.04	0.00028	1000.00	0.00003
T-Mobile C 6	COMMSCOPE VV-65A-R1	2100	16.47	192.00	1.00	40.00	1774.43	0.00004	1000.00	0.00000
T-Mobile C 6	COMMSCOPE VV-65A-R1	1900	15.77	192.00	1.00	15.00	566.36	0.00003	1000.00	0.00000
Town of Clinton 7	GENERIC OMNI 9.5FT	450	5.96	184.00	1.00	25.00	98.61	0.00090	300.00	0.00030
Verizon A 8	AMPHENOL LPA-80063-4CF	850	13.00	162.00	4.00	20.00	1596.21	0.04995	566.67	0.00882
Verizon A 9	SAMSUNG MT6407	3700	23.35	162.00	4.00	50.00	43254.37	0.83862	1000.00	0.08386
Verizon A 10	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.03711	466.67	0.00795
Verizon A 10	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.04079	566.67	0.00720
Verizon A 10	JMA MX06FRO660-03	1900	15.75	162.00	4.00	40.00	6013.40	0.06639	1000.00	0.00664
Verizon A 11	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.03711	466.67	0.00795
Verizon A 11	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.04079	566.67	0.00720
Verizon A 11	JMA MX06FRO660-03	2100	15.95	162.00	4.00	40.00	6296.80	0.07935	1000.00	0.00794
Verizon A 12	AMPHENOL LPA-80063-4CF	850	13.00	162.00	3.00	20.00	1197.16	0.03747	566.67	0.00661
Verizon B 13	AMPHENOL LPA-80063-4CF	850	13.00	162.00	4.00	20.00	1596.21	0.00021	566.67	0.00004
Verizon B 14	SAMSUNG MT6407	3700	23.35	162.00	4.00	50.00	43254.37	0.01712	1000.00	0.00171
Verizon B 15	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.00004	466.67	0.00001
Verizon B 15	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.00021	566.67	0.00004

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
Verizon B 15	JMA MX06FRO660-03	1900	15.75	162.00	4.00	40.00	6013.40	0.00001	1000.00	0.00000
Verizon B 16	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.00004	466.67	0.00001
Verizon B 16	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.00021	566.67	0.00004
Verizon B 16	JMA MX06FRO660-03	2100	15.95	162.00	4.00	40.00	6296.80	0.00006	1000.00	0.00001
Verizon B 17	AMPHENOL LPA-80063-4CF	850	13.00	162.00	3.00	20.00	1197.16	0.00016	566.67	0.00003
Verizon C 18	AMPHENOL LPA-80063-6CF	850	14.50	162.00	4.00	20.00	2254.71	0.00014	566.67	0.00003
Verizon C 19	SAMSUNG MT6407	3700	23.35	162.00	4.00	50.00	43254.37	0.01966	1000.00	0.00197
Verizon C 20	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.00003	466.67	0.00001
Verizon C 20	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.00001	566.67	0.00000
Verizon C 20	JMA MX06FRO660-03	1900	15.75	162.00	4.00	40.00	6013.40	0.00007	1000.00	0.00001
Verizon C 21	JMA MX06FRO660-03	700	12.05	162.00	2.00	40.00	1282.60	0.00003	466.67	0.00001
Verizon C 21	JMA MX06FRO660-03	850	12.05	162.00	2.00	40.00	1282.60	0.00001	566.67	0.00000
Verizon C 21	JMA MX06FRO660-03	2100	15.95	162.00	4.00	40.00	6296.80	0.00026	1000.00	0.00003
Verizon C 22	AMPHENOL LPA-80063-6CF	850	14.50	162.00	3.00	20.00	1691.03	0.00011	566.67	0.00002
AT&T A 23	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.09518	466.67	0.02040
AT&T A 23	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.09518	466.67	0.02040
AT&T A 23	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	2.00	25.00	660.65	0.02976	466.67	0.00638
AT&T A 24	COMMSCOPE SBNHH-1D65A	850	11.57	150.50	4.00	40.00	2296.78	0.10300	566.67	0.01818
AT&T A 24	COMMSCOPE SBNHH-1D65A	2300	14.79	150.50	4.00	25.00	3013.01	0.06288	1000.00	0.00629
AT&T A 25	KATHREIN 80010964	1900	15.35	150.50	4.00	40.00	5484.28	0.09827	1000.00	0.00983
AT&T A 25	KATHREIN 80010964	2100	15.85	150.50	4.00	40.00	6153.47	0.09619	1000.00	0.00962
AT&T A 26	POWERWAVE 7770	850	11.35	150.50	1.00	40.00	545.83	0.01854	566.67	0.00327
AT&T B 27	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.00048	466.67	0.00010
AT&T B 27	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.00048	466.67	0.00010
AT&T B 27	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	2.00	25.00	660.65	0.00015	466.67	0.00003
AT&T B 28	COMMSCOPE SBNHH-1D65A	850	11.57	150.50	4.00	40.00	2296.78	0.00054	566.67	0.00010
AT&T B 28	COMMSCOPE SBNHH-1D65A	2300	14.79	150.50	4.00	25.00	3013.01	0.00001	1000.00	0.00000
AT&T B 29	KATHREIN 80010964	1900	15.35	150.50	4.00	40.00	5484.28	0.00054	1000.00	0.00005
AT&T B 29	KATHREIN 80010964	2100	15.85	150.50	4.00	40.00	6153.47	0.00018	1000.00	0.00002
AT&T B 30	POWERWAVE 7770	850	11.35	150.50	1.00	40.00	545.83	0.00038	566.67	0.00007
AT&T C 31	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.00102	466.67	0.00022
AT&T C 31	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	4.00	40.00	2114.07	0.00102	466.67	0.00022
AT&T C 31	COMMSCOPE SBNHH-1D65A	700	11.21	150.50	2.00	25.00	660.65	0.00032	466.67	0.00007
AT&T C 32	COMMSCOPE SBNHH-1D65A	850	11.57	150.50	4.00	40.00	2296.78	0.00021	566.67	0.00004
AT&T C 32	COMMSCOPE SBNHH-1D65A	2300	14.79	150.50	4.00	25.00	3013.01	0.00025	1000.00	0.00003
AT&T C 33	KATHREIN 80010964	1900	15.35	150.50	4.00	40.00	5484.28	0.00013	1000.00	0.00001

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
AT&T C 33	KATHREIN 80010964	2100	15.85	150.50	4.00	40.00	6153.47	0.00000	1000.00	0.00001
AT&T C 34	POWERWAVE 7770	850	11.35	150.50	1.00	40.00	545.83	0.00033	566.67	0.00006
Town of Clinton 35	ANTENNA EXPERTS SD-312	225	3.00	141.50	1.00	25.00	49.88	0.00246	200.00	0.00123
Dish A 36	JMA MX08FRO665-21	1900	15.75	130.00	4.00	40.00	6013.40	0.10859	1000.00	0.01086
Dish A 36	JMA MX08FRO665-21	2000	15.75	130.00	4.00	40.00	6013.40	0.09522	1000.00	0.00952
Dish A 36	JMA MX08FRO665-21	2100	16.75	130.00	4.00	40.00	7570.42	0.08490	1000.00	0.00849
Dish B 37	JMA MX08FRO665-21	1900	15.75	130.00	4.00	40.00	6013.40	0.00006	1000.00	0.00001
Dish B 37	JMA MX08FRO665-21	2000	15.75	130.00	4.00	40.00	6013.40	0.00015	1000.00	0.00002
Dish B 37	JMA MX08FRO665-21	2100	16.75	130.00	4.00	40.00	7570.42	0.00002	1000.00	0.00000
Dish C 38	JMA MX08FRO665-21	1900	15.75	130.00	4.00	40.00	6013.40	0.00013	1000.00	0.00001
Dish C 38	JMA MX08FRO665-21	2000	15.75	130.00	4.00	40.00	6013.40	0.00002	1000.00	0.00000
Dish C 38	JMA MX08FRO665-21	2100	16.75	130.00	4.00	40.00	7570.42	0.00008	1000.00	0.00001
Town of Clinton 39	GENERIC MICROWAVE 2FT	18000	36.95	102.00	1.00	0.10	495.45	0.00115	1000.00	0.00012
							Cumulative Power Density:	**2.47592 µW/cm²**	**Cumulative % MPE:**	**0.31694%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

Exhibit G

Recipient Mailings

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0301 9958 68 0089 5000 0010 1581

usps.com
$8.95
US POSTAGE
Flat Rate Env

07/21/2022 Mailed from 01566

U.S. POSTAGE PAID
Click-N-Ship®

PRIORITY MAIL®

Expected Delivery Date: 07/23/22
Ref#: SBCT11429

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

0000

R005

SBA COMMUNICATIONS CORPORATION
STE 125
13 FLANDERS RD
WESTBOROUGH MA 01581

USPS TRACKING #

9405 5036 9930 0301 9958 68

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 9958 68

Trans. #:	568072728
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/23/2022

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

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

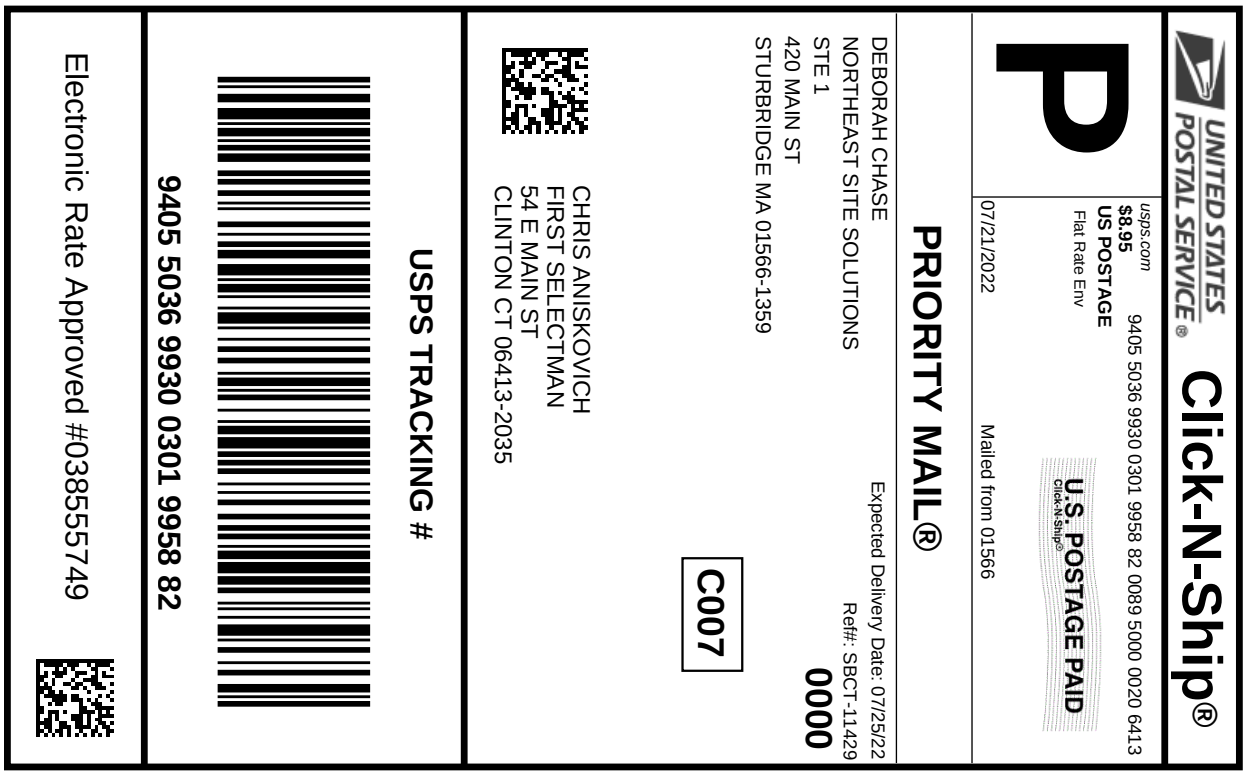
Ref#: SBCT11429

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®

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 9958 82

Trans. #:	568072728
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/25/2022

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

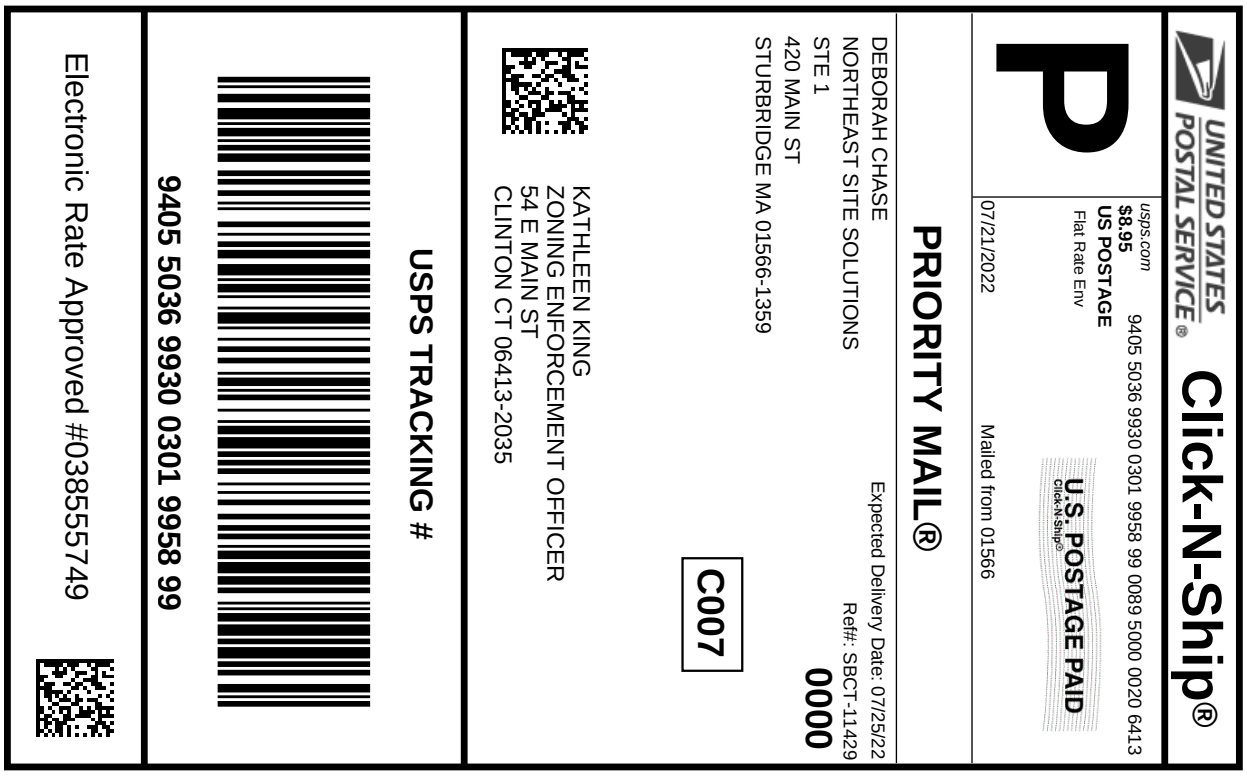
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: SBCT-11429

To: CHRIS ANISKOVICH
FIRST SELECTMAN
54 E MAIN ST
CLINTON CT 06413-2035

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 9958 99

Trans. #:	568072728
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/25/2022

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

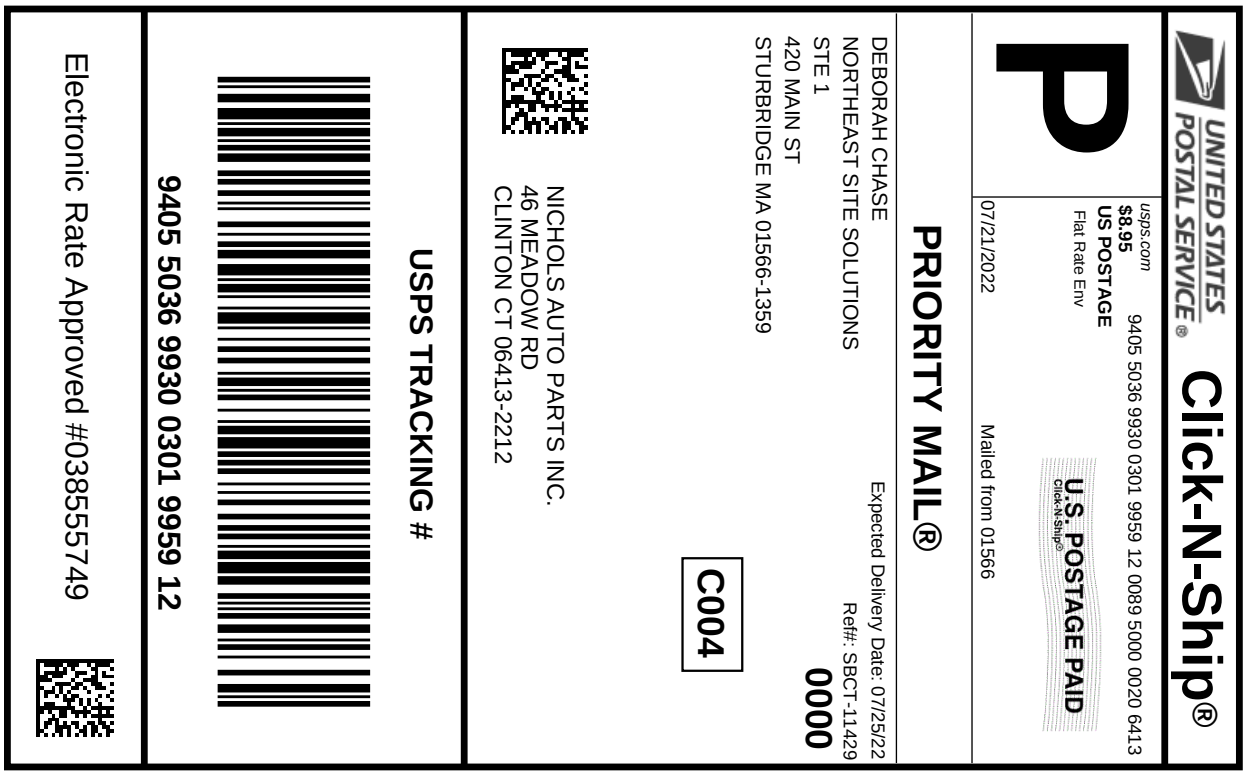
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: SBCT-11429

To: KATHLEEN KING
ZONING ENFORCEMENT OFFICER
54 E MAIN ST
CLINTON CT 06413-2035

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 9959 12

Trans. #:	568072728
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/25/2022

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-11429

To: NICHOLS AUTO PARTS INC.
46 MEADOW RD
CLINTON CT 06413-2212

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

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

CT11429A SBA TMO

UNITED STATES POSTAL SERVICE.

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

08/26/2022 01:22 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Fri 08/26/2022 Tracking #: 9405 5036 9930 0301 9958 68	1		$0.00
Prepaid Mail Clinton, CT 06413 Weight: 0 lb 6.80 oz Acceptance Date: Fri 08/26/2022 Tracking #: 9405 5036 9930 0301 9958 99	1		$0.00
Prepaid Mail Clinton, CT 06413 Weight: 0 lb 6.80 oz Acceptance Date: Fri 08/26/2022 Tracking #: 9405 5036 9930 0301 9959 12	1		$0.00
Prepaid Mail Clinton, CT 06413 Weight: 0 lb 6.80 oz Acceptance Date: Fri 08/26/2022 Tracking #: 9405 5036 9930 0301 9958 82	1		$0.00
Grand Total:			$0.00

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

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

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

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

or call 1-800-410-7420.