Filed by:
G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbasite.com

August 9, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
208 Reed Road, Tolland, CT 06084
Latitude: 41.853361
Longitude: -72.406139
T-Mobile Site #: CT11413D_L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 139.3/140.5 foot levels of the existing 150-foot Monopole Tower at 208 Reed Road, Tolland, CT. The 150-foot tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Reed Road Realty, LLC. T-Mobile now intends to replace three (3) existing antennas with (3) three new 700/600/1900/2100 MHz antennas. The new antennas would be installed at the 138-foot level of the tower.

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) Andrew LNX-6515DS antennas (at 139.3') (Remove) – (3) RFS APXVAARR24_43_U_NA20 antennas 600/700/1900/2100 MHz (Replace) (at 138')
- (3) side arms (at 140.5') (Remove) and (3) side arms (at 139.3') (Remove) – (1) Sitepro RMQP-4096-HK low profile platform with HRK and reinforcement kit (Replace) (at 138')

Install New:

- (1) 1-5/8" fiber
- (3) Ericsson KRY 112 489/2
- (3) Ericsson KRY 112 144/1
- (3) Ericsson Radio 4449 B71+B12

Existing Equipment to Remain:

- (3) EMS-RR90-17-00DP panel antennas (at 140.5' – relocate to 138')
- (3) Kathrein 782 11056 (at 139.3' – relocate to 138')
- (12) 1-5/8" coax

Entitlements:

- N/A

GROUND

Install New:

- (3) Ericsson Radio 4415 mounted to proposed unistrut
- Equipment inside existing 6201 equipment cabinet

Remove and Replace:

- 100A Power panel (Remove) – 200A power panel (Replace)

This facility was approved by the Town of Tolland's Planning and Zoning Commission on November 10, 1997 under Special Permit #581. Approval was given for a 127 ½' monopole telecom tower with antennas and an equipment shelter. On June 22, 1998, the Town granted a Special Permit allowing the tower to be increased in height from 127 ½' to a maximum of 150' as measured to grade. Antennas and related structures were not to protrude above 150'. There were no further post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Tolland's Town Manager, Steven R. Werbner, and Director of Planning and Development, Heidi Samokar, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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 modification 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 modification 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 telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

G. Scott Shepherd
Sr. Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581

508.251.0720 x3804 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

G. Scott Shepherd

Attachments

cc: Steven R. Werbner, Town Manager / with attachments
Town of Tolland, 21 Tolland Green, Tolland CT 06084
Heidi Samokar, AICP, Director of Planning & Development / with attachments
Town of Tolland, 21 Tolland Green, Tolland CT 06084
Reed Road Realty, LLC / with attachments
70 Slater Rd., Tolland, CT 06084

Exhibit List

Exhibit 1	Check Copy	x
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Holland P&Z Commission 11/10/97
Exhibit 6	Construction Drawings	7/29/19
Exhibit 7	Structural Analysis	TES dated 6/24/19
Exhibit 8	Mount Analysis	TES dated 6/19/19
Exhibit 9	EME Report	Transcom 6/11/19

EXHIBIT 1

EXHIBIT 2

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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EXHIBIT 3

208 REED ROAD

Location	208 REED ROAD	**Mblu**	26/ D/ 35/ /
Acct#	5393	**Owner**	REED ROAD REALTY LLC
Assessment	$371,200	**Appraisal**	$530,300
PID	4326	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$116,500	$413,800	$530,300
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$81,500	$289,700	$371,200

Owner of Record

Owner	REED ROAD REALTY LLC	**Sale Price**	$310,000
Co-Owner		**Certificate**	
Address	70 SLATER RD TOLLAND, CT 06084	**Book & Page**	995/ 292
		Sale Date	10/26/2005
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
REED ROAD REALTY LLC	$310,000		995/ 292	00	10/26/2005
MCCLELLAND BRIAN H & CAROL ANN	$0		944/ 298	29	11/29/2004
MCCLELLAND BRIAN	$190,000		666/ 90	00	10/16/2000

Building Information

Building 1 : Section 1

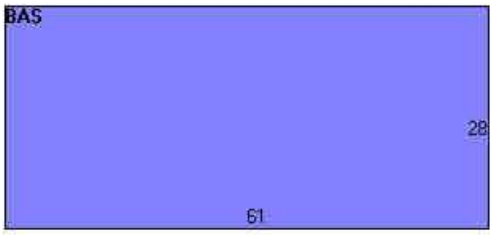
Year Built:	1957
Living Area:	1,708
Replacement Cost:	$91,395
Building Percent Good:	55
Replacement Cost Less Depreciation:	$50,300

Building Attributes	
Field	**Description**
STYLE	Comm Garage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Ext Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
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
Bldg Use	Industrial
Total Rooms	
Total Bedrms	
Total Baths	
Solar	
1st Floor Use:	300
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	14
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/TollandCTPhotos//\00\00\72/64.

Building Layout



(http://images.vgsi.com/photos/TollandCTPhotos//Sketches/4326

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	Main Floor	1,708	1,708
		1,708	1,708

Building 2 : Section 1

Year Built: 1998
Living Area: 464
Replacement Cost: $59,114
Building Percent Good: 87
Replacement Cost Less Depreciation: $51,400

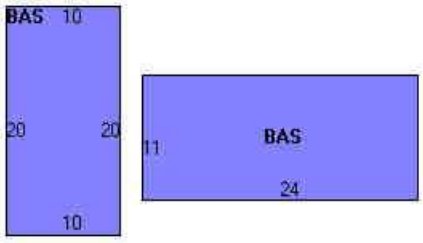
Building Attributes : Bldg 2 of 2	
Field	**Description**
STYLE	Communications Bld

MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Ext Wall 1	Poly-Steel/Con
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Hot Air-no Duc
AC Type	Central
Bldg Use	Industrial
Total Rooms	
Total Bedrms	
Total Baths	
Solar	
1st Floor Use:	200
Heat/AC	Heat/AC Pkg
Frame Type	Masonry
Baths/Plumbing	None
Ceiling/Wall	None
Rooms/Prtns	Light
Wall Height	10
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/TollandCTPhotos//\00\00\72/65.

Building Layout



(http://images.vgsi.com/photos/TollandCTPhotos//Sketches/4326

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	Main Floor	464	464
		464	464

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	300
Description	Industrial
Zone	CIZ

Land Line Valuation

Size (Acres)	10.27
Frontage	1439
Depth	

Neighborhood	350C	**Assessed Value**	$289,700
Alt Land Appr	No	**Appraised Value**	$413,800
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN	FENCE	CL5	5' Chain Link	40 L.F.	$200	2
PAV	PAVING	A	Asphalt	6000 S.F.	$1,000	1
FN	FENCE	CL8	8' Chain Link	1120 L.F.	$11,200	2
TRL1	TRAILER	A	Storage	160 S.F.	$2,400	1

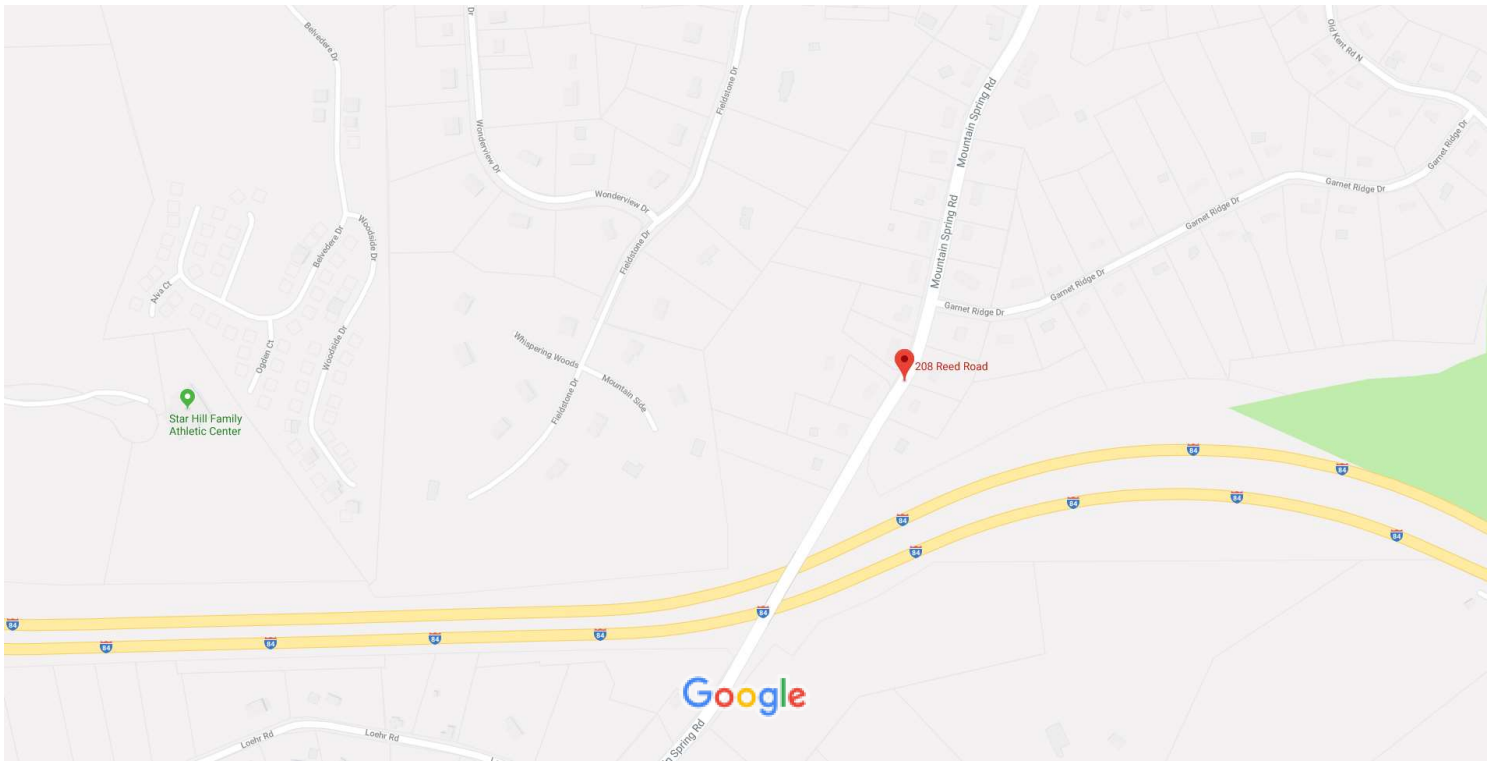
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$116,500	$413,800	$530,300
2017	$116,500	$413,800	$530,300
2015	$116,500	$413,800	$530,300

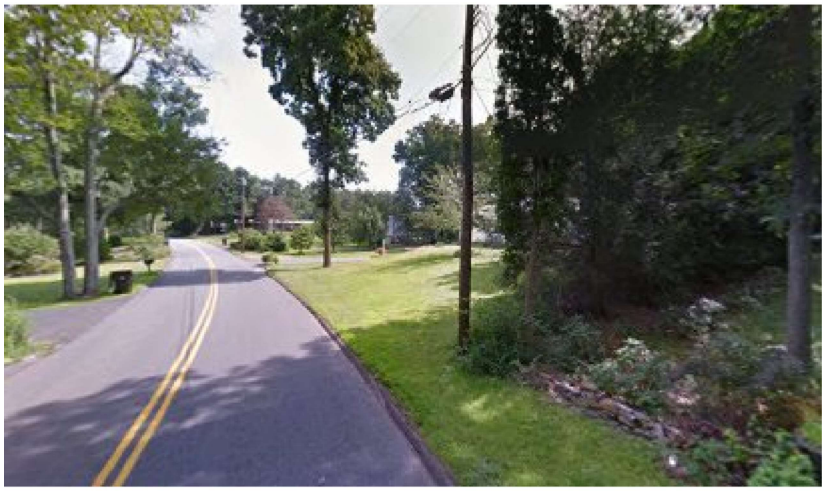
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$81,500	$289,700	$371,200
2017	$81,500	$289,700	$371,200
2015	$81,500	$289,700	$371,200

EXHIBIT 4

Google Maps 208 Reed Rd



Map data ©2019 Google 200 ft



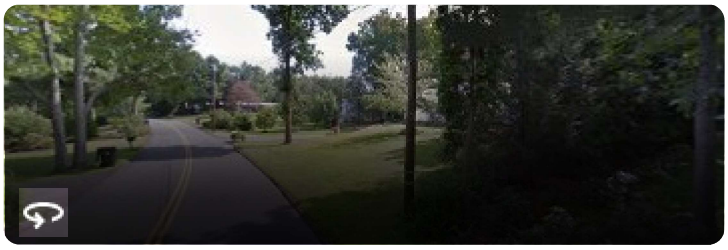
208 Reed Rd

Tolland, CT 06084

Directions Save Nearby Send to your phone Share

VH4W+PC Tolland, Connecticut

Photos



At this location

Pagani Construction
4.0 ★★★★☆ (1)
General contractor · 208 Reed Rd

EXHIBIT 5

VOL. 573 PAGE 287

TOWN OF TOLLAND

NOTICE OF GRANTING A SPECIAL PERMIT

This is to certify that the Planning & Zoning Commission on **November 10, 1997** granted a SPECIAL PERMIT.

Description of the Premises: **208 Reed Road.**

Subdivision Name & Lot #, if applicable: **N/A**

Description in Tolland Land Records: Vol. **373** Page **95.**

Section of Zoning Regulation(s) Involved: **§170-71 & 72 .**

Nature of SPECIAL PERMIT: **Allowed the construction of a 127 ½ foot, monopole telecommunications tower, antennas and an equipment shelter.**

Owner(s) of Record: **David Logan.**

Applicant (if other than owner): **Smart SMR of New York, Inc. dba Nextel Communications.**

Planning & Zoning Application number: **#581**

PLANNING AND ZONING COMMISSION

By R. E. Blake

Ronald E. Blake, Town Planner
For the Planning & Zoning Commission
Endorsed: **November 14, 1997**

WP6\DOCS\SPECPER.FOR 111497/0845 REB

RECEIVED Nov. 24, 1997 At. 12:38 pm
Attest Barbara M. McDonald Asst. Town Clerk

4137

TOWN OF TOLLAND

NOTICE OF GRANTING A SPECIAL PERMIT

This is to certify that the Planning & Zoning Commission on **June 22, 1998** granted a SPECIAL PERMIT.

Description of the Premises: **208 Reed Road.**

Subdivision Name & Lot #, if applicable: N/A

Description in Tolland Land Records: Vol. **373 Page 95.**

Section of Zoning Regulation(s) Involved: **§170-93.**

Nature of SPECIAL PERMIT: **Allowed an existing telecommunications tower to be increased in height from 127 ½ feet to a maximum of 150 feet as measured to grade. Antennas, as indicated on the approved plans are to be installed at approximately 144 feet (measured from the vertical center of the antenna array) and may not to exceed 150 feet.**

Owner(s) of Record: **Nextel Communications.**

Applicant (if other than owner): **Omnipoint Communications, Inc.**

Planning & Zoning Application number: **#592.**

PLANNING AND ZONING COMMISSION

By R. E. Blake

Ronald E. Blake, Town Planner
For the Planning & Zoning Commission
Endorsed: **June 25, 1998**

FILECLERK.FOR 062598/1423

4(3D

TOWN of TOLLAND / 21 tolland green, tolland, connecticut 06084

CERTIFIED LETTER
Z 336 011 760

Ronald E. Blake
Town Planner

June 25, 1998

Omnipoint Communications, Inc.
C/O Tom Gilligan
25 Van Zant Street
Norwalk, CT 06855

RE: P&Z App. #592 - Special Permit/Site Plan request. Telecommunication Tower. 208 Reed Road. PBD Zone.

Dear Mr. Gilligan:

You are hereby advised that the Planning and Zoning Commission, on June 22, 1998, approved your Special Permit/Site Plan request as follows:

1. The existing Smart SMR Nextel tower may be increased in height from 127 ½ feet to a maximum of 150 feet (to be measured from the existing grade). Antennas and related structures may not protrude above 150 feet.

2. Omnipoint may install its antenna array with the center of the array at approximately 144 feet.

In granting the approval the Commission allowed a waiver for the minimum setback from a dwelling in a Residential Zone. Setback requirement: (§170-93 H (3) a. [3]). The Commission (under waiver provision §170-93 H (4)) allowed the setback to be reduced from 500 to 250 feet.

Please note that Zoning & Building permits must be secured before the tower is extended.

The tower, antennas and appurtenances must be constructed essentially as indicated on the approved plans and as stipulated herein.

• Enclosed is an endorsed "NOTICE OF GRANTING A SPECIAL PERMIT" form. This document must be filed on the Town land records as soon as possible.

If you have any questions, please contact me at 871-3601 Monday through Wednesday 9:00am to 4:30pm, Thursday 9:00am to 4:30pm and 5:30pm to 8:30pm, and Friday 9:00am to 12:30pm.

Very truly yours,

R. E. Blake

Ronald E. Blake
Town Planner

Enclosure: One

EXHIBIT 6

TOLLAND/RT-84/X66-1

208 REED ROAD
TOLLAND, CT 06084
TOLLAND COUNTY

SITE NO.: CT11413D

SITE TYPE: 150'± MONOPOLE

RF DESIGN GUIDELINE: CUSTOM

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

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.

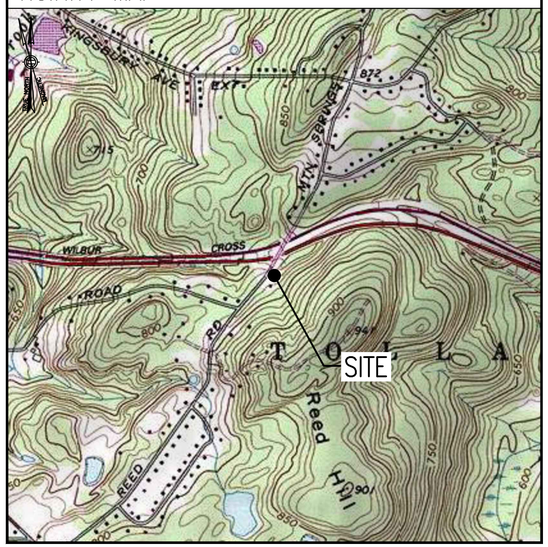
GENERAL NOTES

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"



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.

SHEET INDEX

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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).

PROJECT SUMMARY

SITE NUMBER:	CT11413D
SBA SITE NUMBER:	CT46129-A
SBA SITE NAME:	TOLLAND-REED RD
SITE ADDRESS:	208 REED ROAD TOLLAND, CT 06084
PROPERTY OWNER:	REED ROAD REALTY LLC. 70 SLATER ROAD TOLLAND, CT 06084
TOWER OWNER:	SBA 2012 TC ASSETS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	TOLLAND COUNTY
ZONING DISTRICT:	RDD (RESIDENTIAL DESIGN DISTRICT)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	150'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
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: 41.853361° N41°51'12.0996" LONGITUDE: -72.406139° W72°24'22.1004"

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STATE OF CONNECTICUT
CLEMENT J. SAMEK
26876
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	07/29/19	ISSUED FOR CONSTRUCTION	CMC
2	05/24/19	ISSUED FOR CONSTRUCTION	JRV
1	05/09/19	ISSUED FOR CONSTRUCTION	JRV
0	05/07/19	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
208 REED ROAD
TOLLAND, CT 06084

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.084

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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3	07/29/19	ISSUED FOR CONSTRUCTION	CMC
2	05/24/19	ISSUED FOR CONSTRUCTION	JRV
1	05/09/19	ISSUED FOR CONSTRUCTION	JRV
0	05/07/19	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
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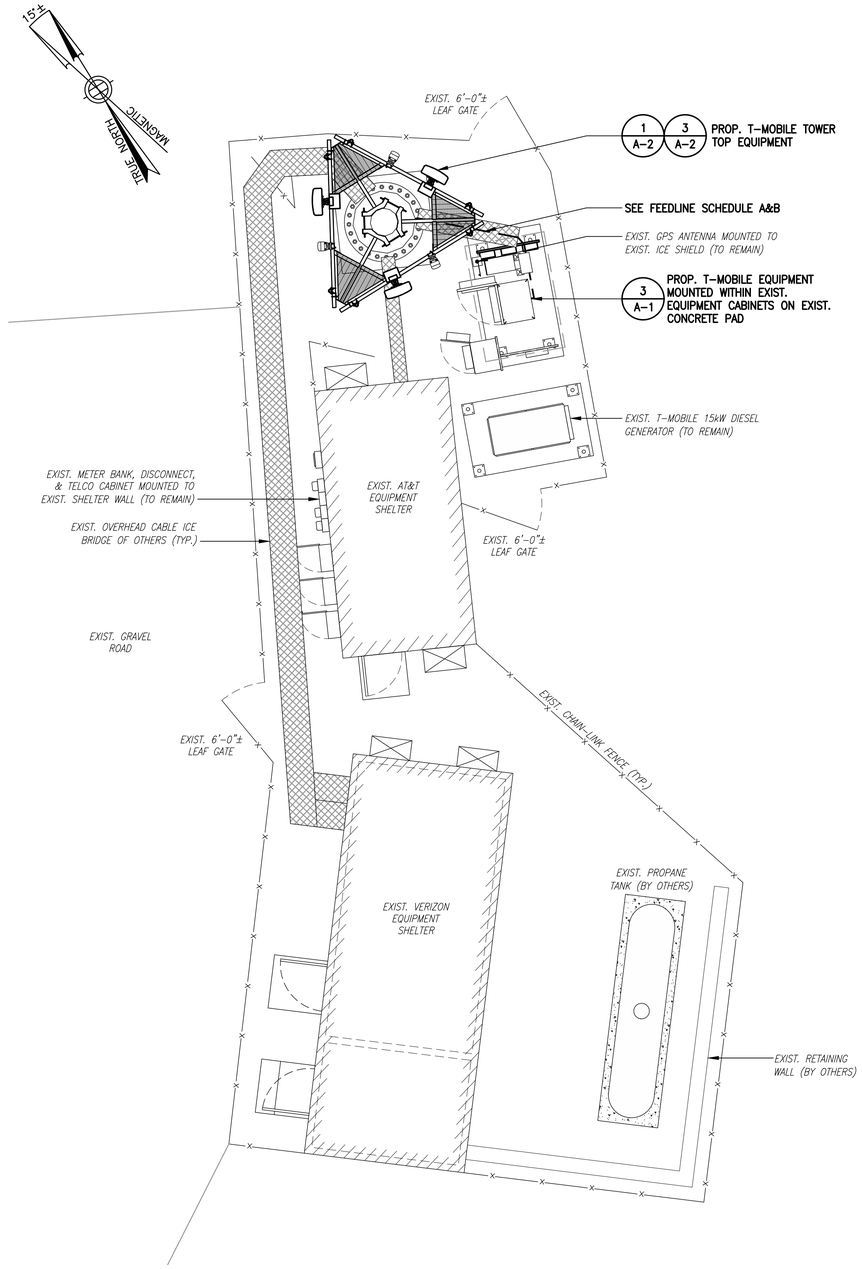
TOLLAND, CT 06084

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

1815.084

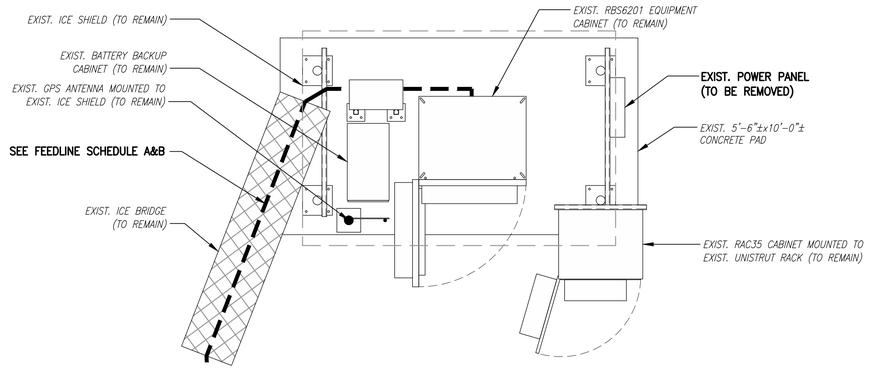
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



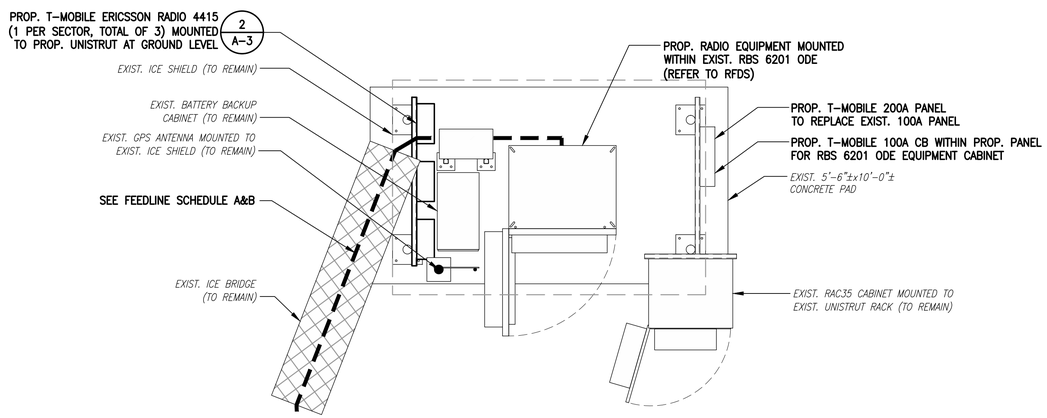
COMPOUND PLAN (1 / A-1)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	*EXISTING TO REMAIN:* *(6) 1-5/8" COAX CABLES* *EXISTING TO BE REMOVED:* *(6) 1-1/4" COAX CABLES*	ROUTED PER TOWER STRUCTURAL ANALYSIS
B	PROPOSED: (6) 1-5/8" COAX CABLES (1) 1-5/8" HCS FIBER CABLES	

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



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



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

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15 COMMERCE WAY, SUITE B
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SBA COMMUNICATIONS CORP.
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STATE OF CONNECTICUT
CLEMENT J. SAMK
No. 26876
LICENSED
PROFESSIONAL ENGINEER

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SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.084

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
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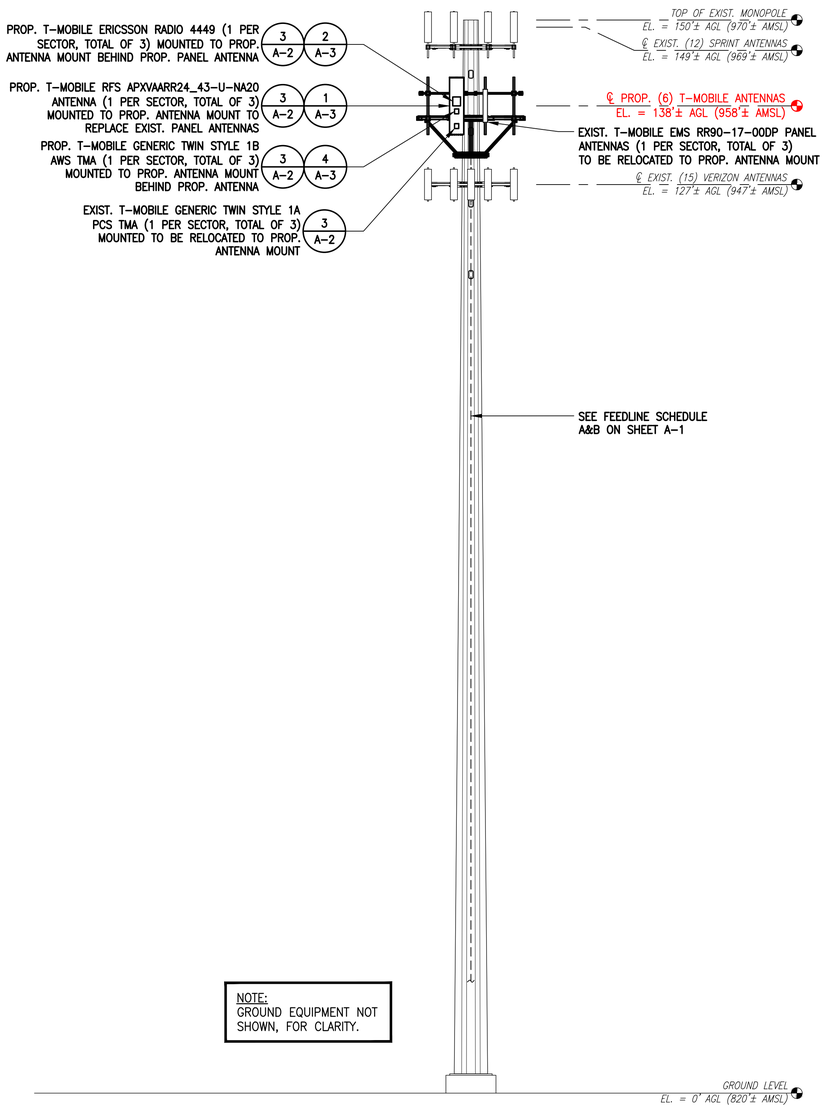
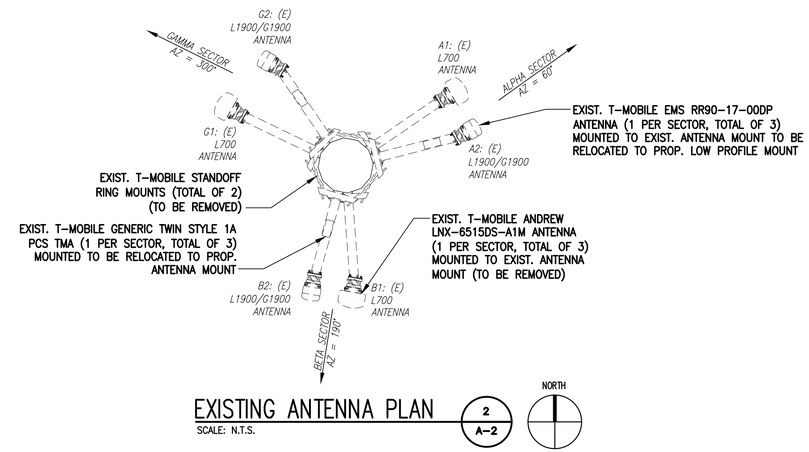
SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
GENERAL CONTRACTOR SHALL ORIENT PROPOSED PLATFORM REINFORCEMENT KIT RING-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING OR PROPOOSED RING-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

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.

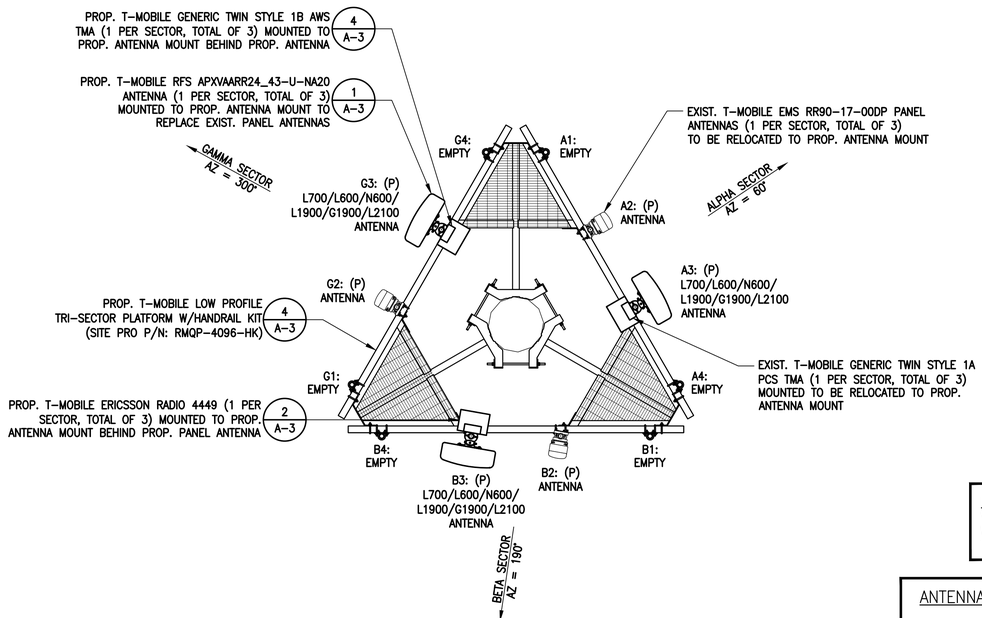


NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION (1 / A-2)
SCALE: 1" = 20'
0 10' 20' 40' 60'



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

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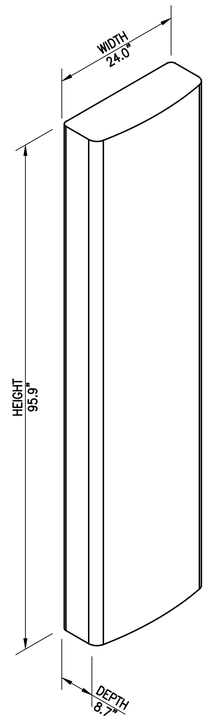
SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

1815.084

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	RADIOS/TMAS	CABLES
ALPHA	EMPTY	138'± AGL	–	–	–	–	–	–
	EMS RR90-17-XXDP	*138'± AGL*	*60°*	*0°*	*2°*	–	–	–
	RFS APXVAARR24_43-U-NA20	138'± AGL	60°	0°	2°	L600/L700/N600	RADIO 4449 B71+B12	(1) 1-⅝" HCS CABLE (SHARED)
					2°	L1900/G1900	*TWIN STYLE 1A PCS TMA*	*(2) 1-⅝" COAX CABLES*
					2°	L2100	RADIO 4415 B66A (AT CABINET) TWIN STYLE 1B AWS TMA	(2) 1-⅝" COAX CABLES
	EMPTY	138'± AGL	–	–	–	–	–	–
BETA	EMPTY	138'± AGL	–	–	–	–	–	–
	EMS RR90-17-XXDP	*138'± AGL*	*190°*	*0°*	*2°*	–	–	–
	RFS APXVAARR24_43-U-NA20	138'± AGL	190°	0°	4°	L600/L700/N600	RADIO 4449 B71+B12	(1) 1-⅝" HCS CABLE (SHARED)
					2°	L1900/G1900	*TWIN STYLE 1A PCS TMA*	*(2) 1-⅝" COAX CABLES*
					2°	L2100	RADIO 4415 B66A (AT CABINET) TWIN STYLE 1B AWS TMA	(2) 1-⅝" COAX CABLES
	EMPTY	138'± AGL	–	–	–	–	–	–
GAMMA	EMPTY	138'± AGL	–	–	–	–	–	–
	EMS RR90-17-XXDP	*138'± AGL*	*300°*	*0°*	*2°*	–	–	–
	RFS APXVAARR24_43-U-NA20	138'± AGL	300°	0°	5°	L600/L700/N600	RADIO 4449 B71+B12	(1) 1-⅝" HCS CABLE (SHARED)
					2°	L1900/G1900	*TWIN STYLE 1A PCS TMA*	*(2) 1-⅝" COAX CABLES*
					2°	L2100	RADIO 4415 B66A (AT CABINET) TWIN STYLE 1B AWS TMA	(2) 1-⅝" COAX CABLES
	EMPTY	138'± AGL	–	–	–	–	–	–



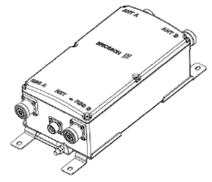
RFS APXVAARR24_43-NA20 PANEL ANTENNA
DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 LBS
1 PER SECTOR, TOTAL OF 3

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

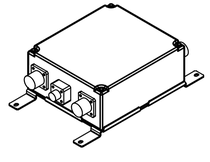
ERICSSON RRUS 4415 B66A
DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46 LBS
(1 PER SECTOR, TOTAL OF 3)

ERICSSON RADIO 4449 B12+B71
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 LBS
1 PER SECTOR, TOTAL OF 3

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

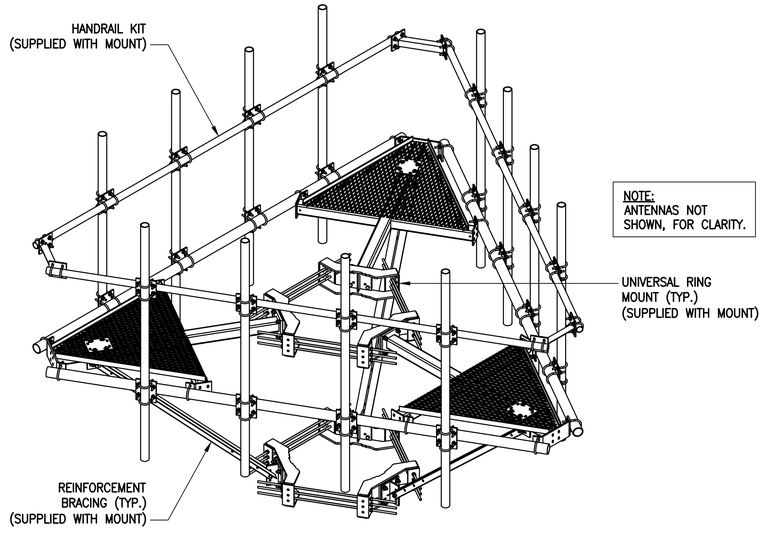


ERICSSON KRY 112 489/2
DIMENSIONS: 11.0"H x 6.1"W x 3.94"D
WEIGHT: 15.4 LBS
1 PER SECTOR, TOTAL OF 3



ERICSSON KRY 112 114/1
DIMENSIONS: 6.93"H x 6.1"W x 2.8"D
WEIGHT: 11.02 LBS
1 PER SECTOR, TOTAL OF 3

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



NOTE:
ANTENNAS NOT SHOWN, FOR CLARITY.

SITE-PRO 1 12'-6" LOW-PROFILE CO-LOCATION PLATFORM W/HANDRAIL KIT
PART NUMBERS: RMQP-4096-HK
(TOTAL OF 1 REQUIRED)

TYPICAL SITE PRO 1
12'-6" PLATFORM MOUNT (4 / A-3)
SCALE: N.T.S.

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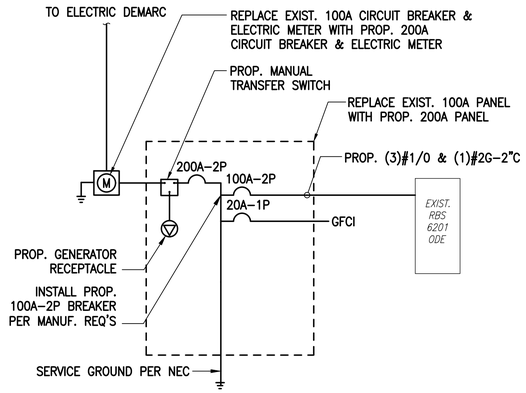
SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

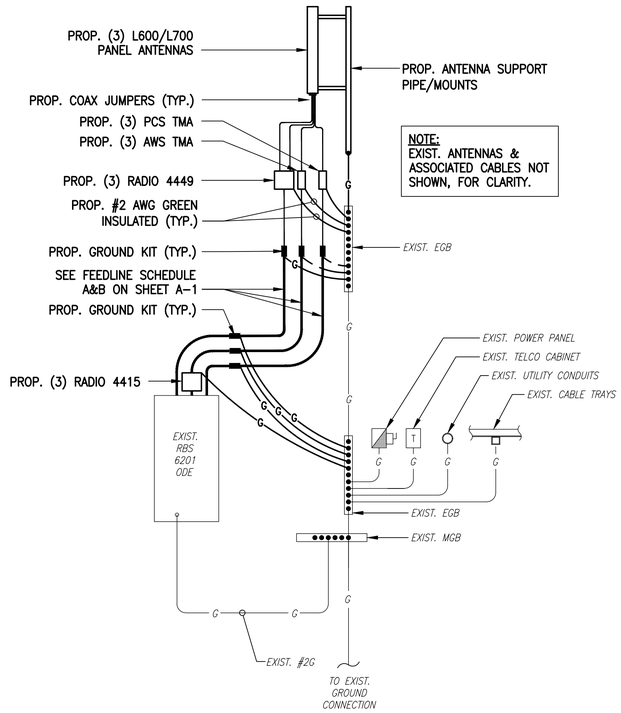
1815.084



ONE LINE DIAGRAM

SCALE: NOT TO SCALE

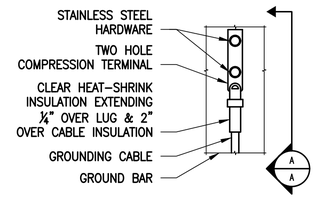
1 E-1



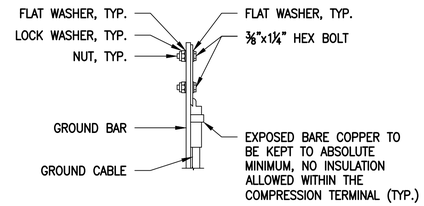
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

2 E-1



ELEVATION



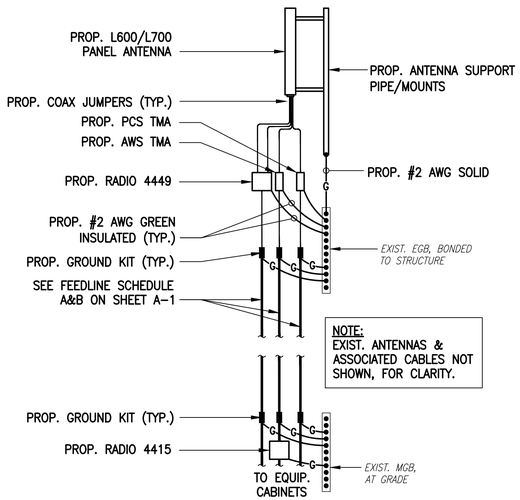
SECTION A-A

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

TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: NOT TO SCALE

3 E-1

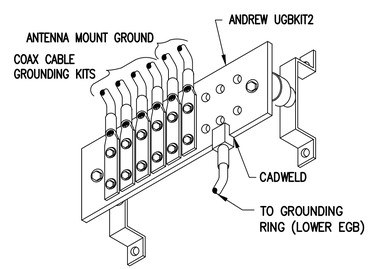


L600/L700

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

4 E-1



GROUND BAR (EGB)

SCALE: NOT TO SCALE

5 E-1

ELECTRICAL AND GROUNDING NOTES

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

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SBA

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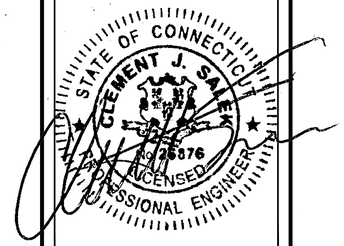

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SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.084

EXHIBIT 7

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

Structural Analysis Report

Existing 150 ft EEI Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46129-A
Customer Site Name: Tolland-reed Rd
Carrier Name: T-Mobile (App#: 116675, V1)
Carrier Site ID / Name: CT11413D / Tolland
Site Location: 208 Reed Road
Tolland, Connecticut
Tolland County
Latitude: 41.853361
Longitude: -72.406139

Analysis Result:

Max Structural Usage: 63.0% [Pass]
Max Foundation Usage: 72.8% [Pass]
Additional Usage Caused by New Mount: +1.1%

Report Prepared By: Sital Shrestha

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Structure design report prepared by EEI. job #:3238 dated 12/17/1997
Foundation Drawing	Foundation report prepared by EEI. job #:3238 dated 12/17/1997
Geotechnical Report	Geotechnical report prepared by APPLEID EARTH TECHNOLOGIES. dated 12/10/2007
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} =124.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 96.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.064

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	149.08	3	Scala - AP11-880/090/XP - Panel	Low Profile Platform	(15) 1 1/4"	Sprint*
2		9	Andrew - DB844H90E-XY - Panel			
-	140.5	3	EMS - RR90-17-00DP - Panel	(3) Side Arm	(12) 1-5/8"	T-Mobile
-	139.3	3	Kathrein 782 11056	(3) Side Arm		
-		3	Andrew - LNX-6515DS - Panel			
9	127.0	2	Antel - LPA-80063/6CF - Panel	Low Profile Platform	(11) 1 5/8" (2) 1 5/8" Fiber Hybrid	Verizon
10		4	Antel - LPA-80080/6CF - Panel			
11		3	Commscope - SBNHH-1D65A - Panel			
12		3	Commscope - SBNHH-1D65B - Panel			
13		3	Amphenol Antel - BXA-70063-6CF-2 - Panel			
14		2	RFs DB-T1-6Z-8AB-0Z			
15		6	RFs FD9R6004/2CL-3CL Diplexer			
16		3	ALU RRH2x60-700			
17		3	ALU RRH2X60-AWS			
18		3	ALU RRH2X60-PCS			

Sprint is Terminated, Equipment remains installed

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
3	138.0	3	RFS APXVAARR24_43-U-NA20	Sitepro RMQP-4096-HK (low profile platform w/HRK & reinforcement kit)	(12) 1-5/8" Coax (1) 1-5/8" Fiber	T-Mobile
4		3	EMS RR90-17-00DPL2			
5		3	Ericsson KRY 112 489/2			
6		3	Ericsson KRY 112 144/1			
7		3	Ericsson Radio 4449 B71+B12			
8		3	Kathrein 782 11056			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**58.2%**	**48.4%**	**63.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4611.0	39.0
Analysis Reactions	3868.7	38.3
Factored Reactions*	6224.9	52.7
% of Design Reactions	62.1%	72.8%

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 ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.9721 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

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

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

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

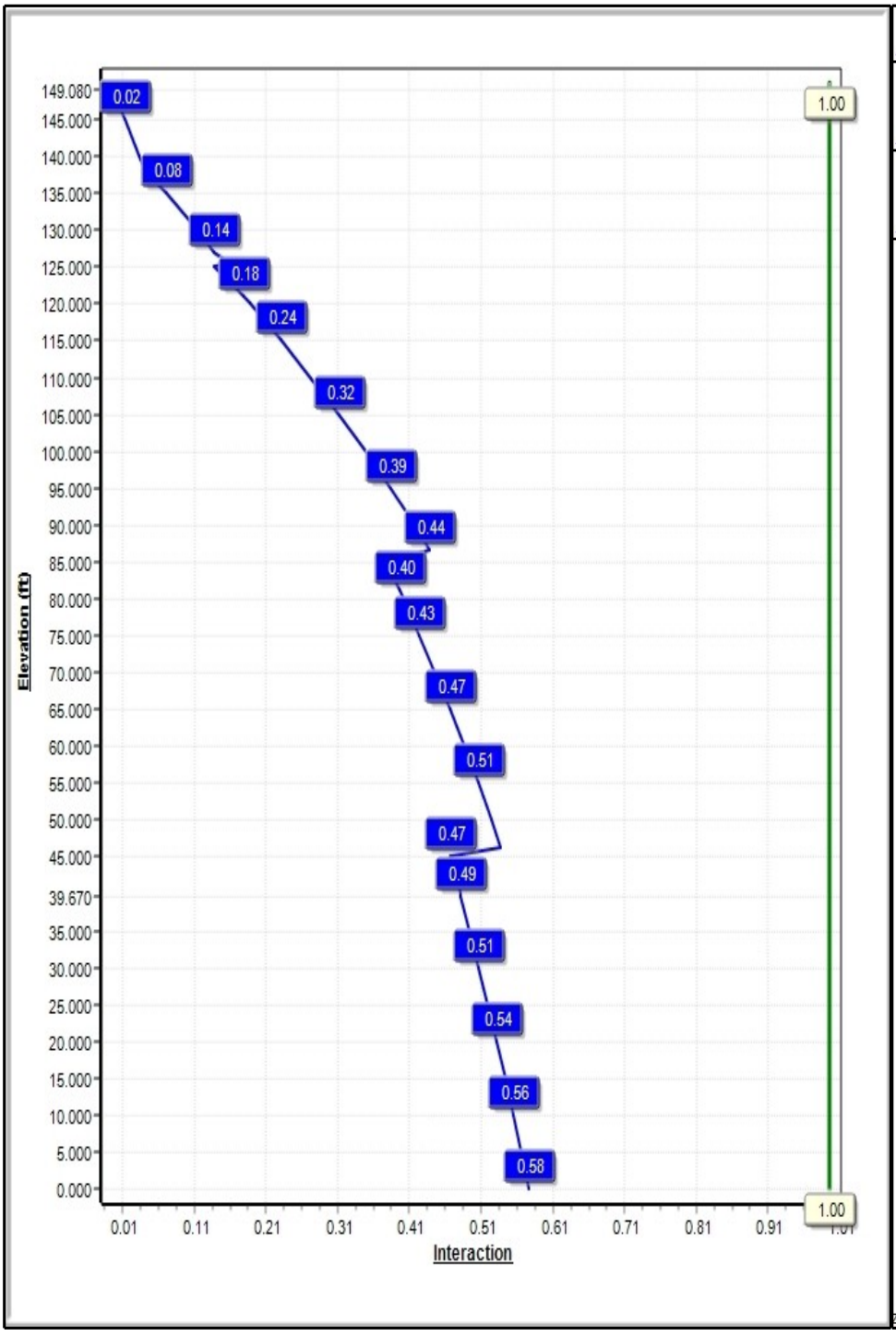
Usage Diagram - Max Ratio 58.15% at 0.0ft

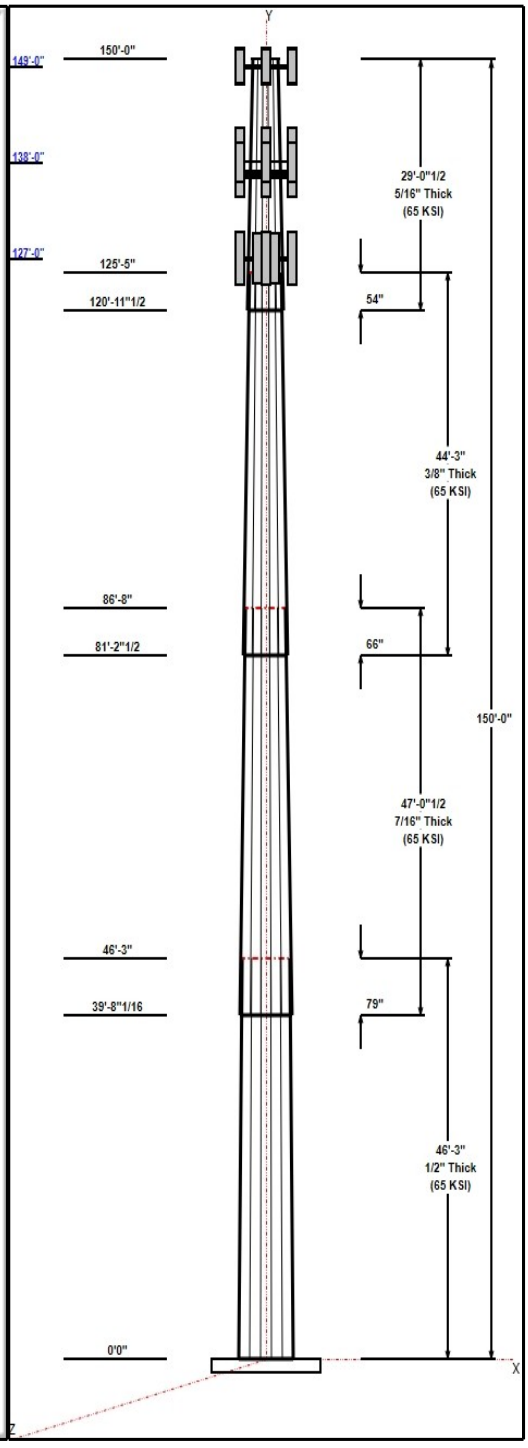
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	22
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 96 mph Wind





Structure: CT46129-A-SBA

Type: Tapered
Site Name: Tolland-reed Rd
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.22340

6/24/2019

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	46.25	45.67	56.00	0.500		0.22340	65
2	47.04	37.50	48.01	0.438	Slip	0.22340	65
3	44.25	29.60	39.48	0.375	Slip	0.22340	65
4	29.04	24.74	31.23	0.313	Slip	0.22340	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.08	149.08	9	DB844H90E-XY	Sprint
149.08	149.08	3	AP11-880/090/XP	Sprint
149.08	149.08	1	Low Profile Platform	Sprint
138.00	138.00	3	Kathrein 782 11056	T-Mobile
138.00	138.00	3	APXVAARR24_43-U-NA20	T-Mobile
138.00	138.00	1	RMQP-4096-HK Plat. +	T-Mobile
138.00	138.00	3	KRY 112 489/2	T-Mobile
138.00	138.00	3	KRY 112 144/1	T-Mobile
138.00	138.00	3	Radio 4449 B71+B12	T-Mobile
138.00	138.00	3	RR90-17-00DP	T-Mobile
127.00	127.00	3	SBNHH-1D65B	Verizon
127.00	127.00	3	SBNHH-1D65A	Verizon
127.00	127.00	3	BXA-70063-6CF-2	Verizon
127.00	127.00	4	LPA-80080/6CF	Verizon
127.00	127.00	2	LPA-80063/6CF	Verizon
127.00	127.00	3	RRH2X60-AWS	Verizon
127.00	127.00	3	RRH2X60-PCS	Verizon
127.00	127.00	3	RRH2x60-700	Verizon
127.00	127.00	6	FD9R6004/2CL-3CL	Verizon
127.00	127.00	2	DB-T1-6Z-8AB-0Z	Verizon
127.00	127.00	1	Low Profile Platform	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	149.08	Inside	1 1/4" Coax	Sprint
0.00	138.00	Inside	1 5/8" Coax	T-Mobile
0.00	138.00	Inside	1 5/8" Fiber	T-Mobile
0.00	127.00	Inside	1 5/8" Coax	Verizon
0.00	127.00	Inside	1 5/8" Fiber Hybrid	Verizon

Anchor Bolts

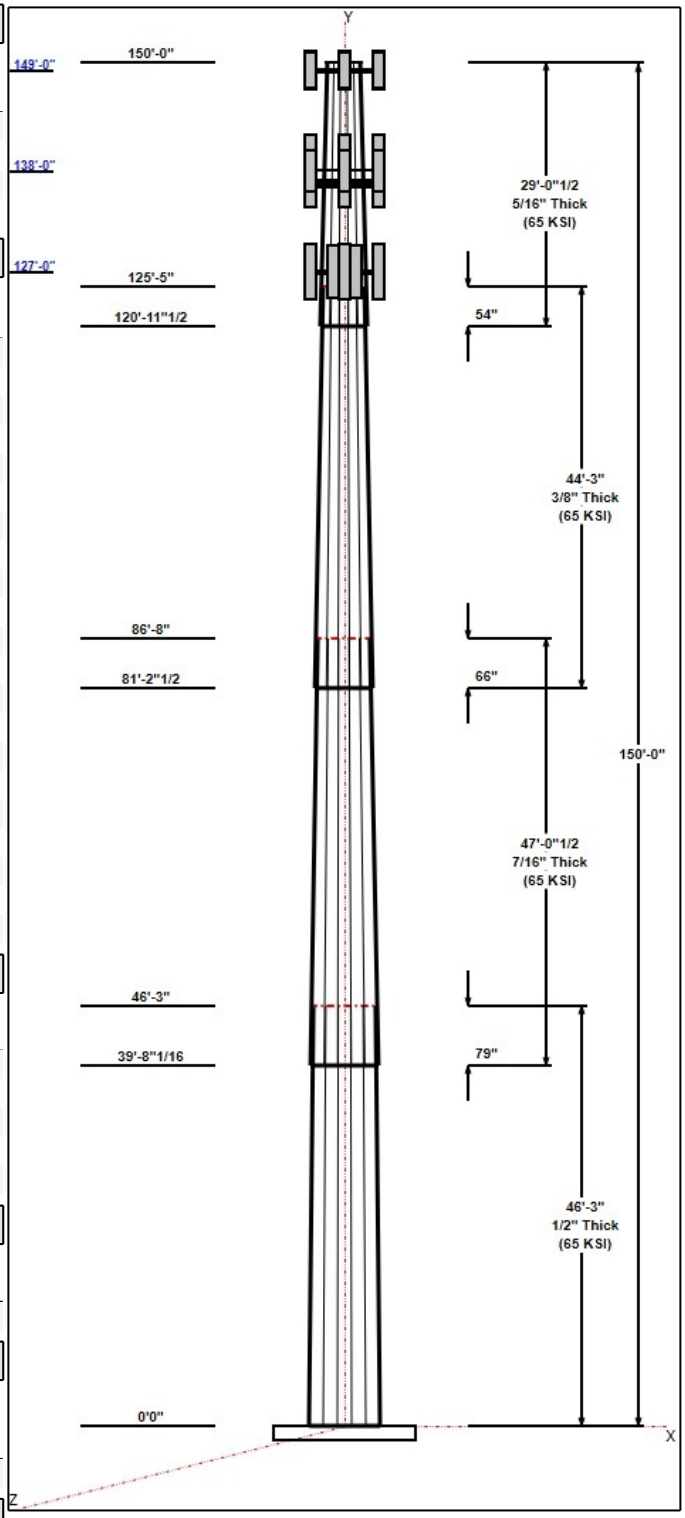
Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	71.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 96 mph Wind	3868.7	38.3	51.9
0.9D + 1.6W 96 mph Wind	3840.0	38.3	38.9



1.2D + 1.0Di + 1.0Wi 50 mph Wind	991.5	9.2	83.8
1.2D + 1.0E	201.4	1.8	52.0
0.9D + 1.0E	199.8	1.8	39.0
1.0D + 1.0W 60 mph Wind	940.4	9.4	43.3

Structure: CT46129-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Tolland-reed Rd
Height: 150.00 (ft)

6/24/2019

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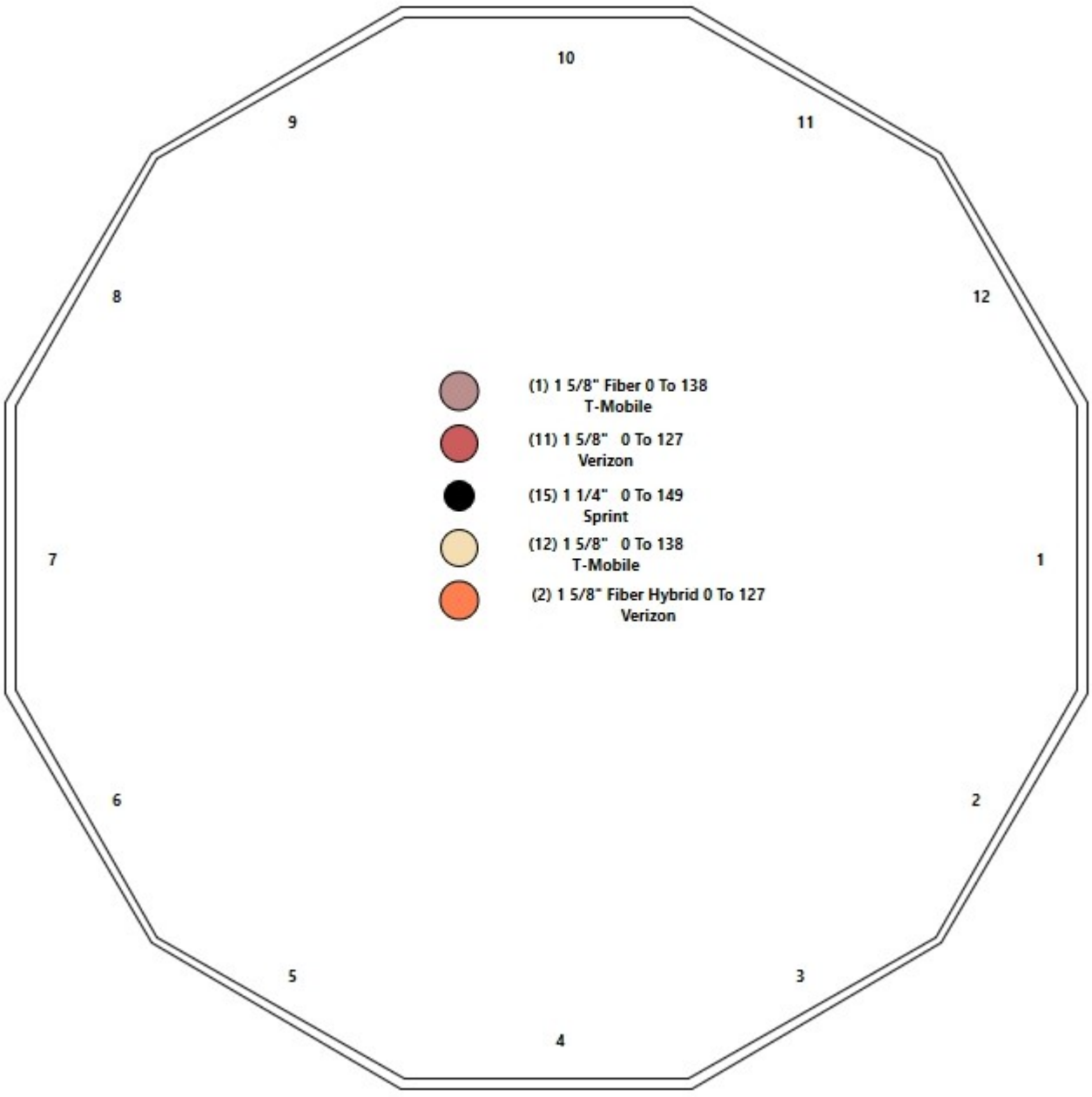


Shaft Properties

Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	46.250	0.5000	65		0.00	12,754
2	12	47.040	0.4375	65	Slip	78.96	9,543
3	12	44.250	0.3750	65	Slip	66.00	6,212
4	12	29.040	0.3125	65	Slip	54.00	2,751
					Total Shaft Weight:		**31,260**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	56.00	0.00	89.36	35131.02	27.87	112.00	45.67	46.25	72.72	18936.3	22.33	91.34	0.223400
2	48.01	39.67	67.02	19362.54	27.26	109.74	37.50	86.71	52.22	9157.23	20.83	85.72	0.223400
3	39.48	81.21	47.22	9218.48	26.07	105.29	29.60	125.46	35.29	3846.04	19.00	78.93	0.223400
4	31.23	120.9	31.11	3794.91	24.63	99.93	24.74	150.00	24.58	1872.10	19.07	79.17	0.223400

Load Summary

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	149.08	DB844H90E-XY	9	14.00	3.05	1.12	173.82	4.246	1.12	0.00	0.00
2	149.08	AP11-880/090/XP	3	17.60	4.83	0.72	189.65	6.166	0.72	0.00	0.00
3	149.08	Low Profile Platform	1	1200.00	25.00	1.00	2595.31	52.906	1.00	0.00	0.00
4	138.00	Kathrein 782 11056	3	12.60	0.60	0.76	34.55	1.352	0.76	0.00	0.00
5	138.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	703.46	22.783	0.70	0.00	0.00
6	138.00	RMQP-4096-HK Plat. + HR/Kicker	1	2645.00	51.70	1.00	6307.21	02.285	1.00	0.00	0.00
7	138.00	KRY 112 489/2	3	15.40	0.65	1.00	38.70	1.459	1.00	0.00	0.00
8	138.00	KRY 112 144/1	3	11.00	0.41	1.00	25.26	1.038	1.00	0.00	0.00
9	138.00	Radio 4449 B71+B12	3	71.00	1.97	0.67	141.58	2.694	0.67	0.00	0.00
10	138.00	RR90-17-00DP	3	13.50	4.36	0.73	156.61	5.704	0.73	0.00	0.00
11	127.00	SBNHH-1D65B	3	40.60	8.08	0.83	320.94	9.811	0.83	0.00	0.00
12	127.00	SBNHH-1D65A	3	33.50	5.88	0.83	254.39	7.326	0.83	0.00	0.00
13	127.00	BXA-70063-6CF-2	3	17.00	7.57	0.73	211.46	11.194	0.73	0.00	0.00
14	127.00	LPA-80080/6CF	4	21.00	4.33	1.70	292.37	5.923	1.70	0.00	0.00
15	127.00	LPA-80063/6CF	2	27.00	9.60	0.94	421.99	11.407	0.94	0.00	0.00
16	127.00	RRH2X60-AWS	3	60.00	3.50	0.76	174.46	4.535	0.76	0.00	0.00
17	127.00	RRH2X60-PCS	3	55.00	2.20	0.89	174.14	3.058	0.89	0.00	0.00
18	127.00	RRH2x60-700	3	60.00	3.50	0.76	174.46	4.535	0.76	0.00	0.00
19	127.00	FD9R6004/2CL-3CL Diplexer	6	3.10	0.37	0.62	13.63	0.968	0.62	0.00	0.00
20	127.00	DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.71	218.02	5.970	0.71	0.00	0.00
21	127.00	Low Profile Platform	1	1200.00	25.00	1.00	2573.13	52.462	1.00	0.00	0.00
		Totals:	**65**	**6,971.00**			**23,370.27**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	149.08	(15) 1 1/4" Coax	0.00	Inside
0.00	138.00	(12) 1 5/8" Coax	0.00	Inside
0.00	138.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	127.00	(11) 1 5/8" Coax	0.00	Inside
0.00	127.00	(2) 1 5/8" Fiber Hybrid	0.00	Inside

Shaft Section Properties

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	56.000	89.355	35131.0	27.87	112.00	74.3	1211.	0.0
5.00		0.5000	54.883	87.557	33052.3	27.27	109.77	75.0	1163.	1505.0
10.00		0.5000	53.766	85.758	31057.2	26.67	107.53	75.6	1115.	1474.4
15.00		0.5000	52.649	83.960	29144.0	26.07	105.30	76.3	1069.	1443.8
20.00		0.5000	51.532	82.162	27311.1	25.47	103.06	76.9	1023.	1413.2
25.00		0.5000	50.415	80.363	25556.7	24.87	100.83	77.6	979.3	1382.6
30.00		0.5000	49.298	78.565	23879.1	24.28	98.60	78.2	935.8	1352.0
35.00		0.5000	48.181	76.766	22276.5	23.68	96.36	78.9	893.2	1321.4
39.67	Bot - Section 2	0.5000	47.138	75.087	20846.1	23.12	94.28	79.5	854.3	1206.5
40.00		0.5000	47.064	74.968	20747.4	23.08	94.13	79.5	851.6	159.5
45.00		0.5000	45.947	73.170	19289.8	22.48	91.89	80.2	811.0	2385.3
46.25	Top - Section 1	0.4375	46.543	64.951	17622.6	26.36	106.38	0.0	0.0	587.4
50.00		0.4375	45.705	63.771	16679.4	25.85	104.47	76.5	705.0	821.3
55.00		0.4375	44.588	62.197	15474.9	25.16	101.92	77.3	670.5	1071.6
60.00		0.4375	43.471	60.623	14329.8	24.48	99.36	78.0	636.8	1044.8
65.00		0.4375	42.354	59.050	13242.7	23.80	96.81	78.8	604.0	1018.1
70.00		0.4375	41.237	57.476	12211.9	23.11	94.26	79.5	572.1	991.3
75.00		0.4375	40.120	55.903	11236.1	22.43	91.70	80.3	541.0	964.5
80.00		0.4375	39.003	54.329	10313.8	21.74	89.15	81.0	510.8	937.7
81.21	Bot - Section 3	0.4375	38.733	53.948	10098.4	21.58	88.53	81.2	503.7	222.9
85.00		0.4375	37.886	52.756	9443.3	21.06	86.60	81.7	481.5	1290.5
86.71	Top - Section 2	0.3750	38.254	45.739	8376.6	25.19	102.01	0.0	0.0	572.9
90.00		0.3750	37.519	44.851	7898.4	24.66	100.05	77.8	406.7	507.1
95.00		0.3750	36.402	43.503	7207.0	23.87	97.07	78.7	382.5	751.6
100.00		0.3750	35.285	42.154	6557.3	23.07	94.09	79.6	359.0	728.7
105.00		0.3750	34.168	40.805	5947.8	22.27	91.11	80.4	336.3	705.7
110.00		0.3750	33.051	39.456	5377.2	21.47	88.14	81.3	314.3	682.8
115.00		0.3750	31.934	38.107	4844.4	20.67	85.16	81.9	293.1	659.8
120.00		0.3750	30.817	36.759	4348.0	19.88	82.18	81.9	272.6	636.9
120.96	Bot - Section 4	0.3750	30.603	36.500	4256.8	19.72	81.61	81.9	268.7	119.7
125.00		0.3750	29.700	35.410	3886.8	19.08	79.20	81.9	252.8	915.7
125.46	Top - Section 3	0.3125	30.222	30.097	3436.6	23.77	96.71	0.0	0.0	102.5
127.00		0.3125	29.878	29.750	3319.4	23.48	95.61	79.1	214.6	156.8
130.00		0.3125	29.208	29.076	3098.7	22.90	93.47	79.7	205.0	300.3
135.00		0.3125	28.091	27.952	2753.1	21.94	89.89	80.8	189.3	485.1
138.00		0.3125	27.421	27.278	2558.6	21.37	87.75	81.4	180.3	281.9
140.00		0.3125	26.974	26.828	2434.1	20.98	86.32	81.8	174.3	184.1
145.00		0.3125	25.857	25.704	2140.8	20.03	82.74	81.9	159.9	446.9
149.08		0.3125	24.946	24.787	1919.8	19.25	79.83	81.9	148.7	350.5
150.00		0.3125	24.740	24.580	1872.1	19.07	79.17	81.9	146.2	77.3
										31259.9

Wind Loading - Shaft

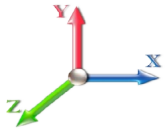
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 96 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.051	20.96	427.61	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.051	20.96	419.08	1.000	0.000	5.00	23.916	23.92	801.9	0.0	1806.0
10.00		1.00	0.85	19.051	20.96	410.55	1.000	0.000	5.00	23.434	23.43	785.7	0.0	1769.3
15.00		1.00	0.85	19.051	20.96	402.02	1.000	0.000	5.00	22.952	22.95	769.6	0.0	1732.5
20.00		1.00	0.90	20.214	22.24	405.32	1.000	0.000	5.00	22.470	22.47	799.4	0.0	1695.8
25.00		1.00	0.95	21.187	23.31	405.96	1.000	0.000	5.00	21.988	21.99	819.9	0.0	1659.1
30.00		1.00	0.98	22.016	24.22	404.66	1.000	0.000	5.00	21.506	21.51	833.3	0.0	1622.4
35.00		1.00	1.01	22.742	25.02	401.96	1.000	0.000	5.00	21.025	21.02	841.5	0.0	1585.7
39.67	Bot - Section 2	1.00	1.04	23.349	25.68	398.47	1.000	0.000	4.67	19.202	19.20	789.1	0.0	1447.9
40.00		1.00	1.04	23.390	25.73	398.20	1.000	0.000	0.33	1.366	1.37	56.2	0.0	191.3
45.00		1.00	1.07	23.977	26.38	393.60	1.000	0.000	5.00	20.438	20.44	862.5	0.0	2862.4
46.25	Top - Section 1	1.00	1.08	24.116	26.53	392.33	1.000	0.000	1.25	5.034	5.03	213.7	0.0	704.8
50.00		1.00	1.09	24.515	26.97	395.89	1.000	0.000	3.75	14.922	14.92	643.8	0.0	985.5
55.00		1.00	1.12	25.012	27.51	390.11	1.000	0.000	5.00	19.475	19.47	857.3	0.0	1285.9
60.00		1.00	1.14	25.474	28.02	383.84	1.000	0.000	5.00	18.993	18.99	851.5	0.0	1253.8
65.00		1.00	1.16	25.907	28.50	377.14	1.000	0.000	5.00	18.511	18.51	844.0	0.0	1221.7
70.00		1.00	1.17	26.315	28.95	370.07	1.000	0.000	5.00	18.029	18.03	835.0	0.0	1189.5
75.00		1.00	1.19	26.700	29.37	362.67	1.000	0.000	5.00	17.547	17.55	824.6	0.0	1157.4
80.00		1.00	1.21	27.065	29.77	354.97	1.000	0.000	5.00	17.065	17.07	812.9	0.0	1125.3
81.21	Bot - Section 3	1.00	1.21	27.151	29.87	353.07	1.000	0.000	1.21	4.057	4.06	193.9	0.0	267.5
85.00		1.00	1.22	27.413	30.15	347.01	1.000	0.000	3.79	12.771	12.77	616.2	0.0	1548.6
86.71	Top - Section 2	1.00	1.23	27.528	30.28	344.24	1.000	0.000	1.71	5.672	5.67	274.8	0.0	687.5
90.00		1.00	1.24	27.744	30.52	345.73	1.000	0.000	3.29	10.754	10.75	525.1	0.0	608.5
95.00		1.00	1.25	28.062	30.87	337.35	1.000	0.000	5.00	15.943	15.94	787.4	0.0	901.9
100.00		1.00	1.27	28.367	31.20	328.77	1.000	0.000	5.00	15.462	15.46	771.9	0.0	874.4
105.00		1.00	1.28	28.660	31.53	320.00	1.000	0.000	5.00	14.980	14.98	755.6	0.0	846.9
110.00		1.00	1.29	28.942	31.84	311.06	1.000	0.000	5.00	14.498	14.50	738.5	0.0	819.3
115.00		1.00	1.30	29.214	32.14	301.95	1.000	0.000	5.00	14.016	14.02	720.7	0.0	791.8
120.00		1.00	1.32	29.477	32.42	292.70	1.000	0.000	5.00	13.534	13.53	702.1	0.0	764.3
120.96	Bot - Section 4	1.00	1.32	29.526	32.48	290.91	1.000	0.000	0.96	2.543	2.54	132.2	0.0	143.6
125.00		1.00	1.33	29.731	32.70	283.31	1.000	0.000	4.04	10.727	10.73	561.3	0.0	1098.8
125.46	Top - Section 3	1.00	1.33	29.754	32.73	282.43	1.000	0.000	0.46	1.201	1.20	62.9	0.0	123.0
127.00	Appurtenance(s)	1.00	1.33	29.831	32.81	285.48	1.000	0.000	1.54	3.992	3.99	209.6	0.0	188.2
130.00		1.00	1.34	29.978	32.98	279.77	1.000	0.000	3.00	7.646	7.65	403.4	0.0	360.3
135.00		1.00	1.35	30.217	33.24	270.14	1.000	0.000	5.00	12.358	12.36	657.2	0.0	582.2
138.00	Appurtenance(s)	1.00	1.35	30.357	33.39	264.30	1.000	0.000	3.00	7.184	7.18	383.8	0.0	338.3
140.00		1.00	1.36	30.449	33.49	260.39	1.000	0.000	2.00	4.693	4.69	251.5	0.0	220.9
145.00		1.00	1.37	30.675	33.74	250.53	1.000	0.000	5.00	11.395	11.39	615.2	0.0	536.3
149.08	Appurtenance(s)	1.00	1.38	30.854	33.94	242.41	1.000	0.000	4.08	8.941	8.94	485.5	0.0	420.6
150.00		1.00	1.38	30.894	33.98	240.57	1.000	0.000	0.92	1.972	1.97	107.2	0.0	92.7
								Totals:	**150.00**			**23,198.1**		**37,511.9**

Discrete Appurtenance Forces

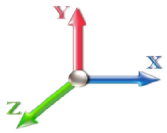
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 96 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.08	AP11-880/090/XP	3	30.854	33.940	0.65	0.90	9.39	63.36	0.000	0.000	509.89	0.00	0.00
2	149.08	DB844H90E-XY	9	30.854	33.940	1.01	0.90	27.67	151.20	0.000	0.000	1502.57	0.00	0.00
3	149.08	Low Profile Platform	1	30.854	33.940	0.90	0.90	22.50	1440.00	0.000	0.000	1221.84	0.00	0.00
4	138.00	KRY 112 489/2	3	30.357	33.393	1.00	1.00	1.95	55.44	0.000	0.000	104.18	0.00	0.00
5	138.00	Kathrein 782 11056	3	30.357	33.393	0.61	0.80	1.09	45.36	0.000	0.000	58.47	0.00	0.00
6	138.00	APXVAARR24_43-U-NA2	3	30.357	33.393	0.56	0.80	34.00	460.80	0.000	0.000	1816.73	0.00	0.00
7	138.00	RMQP-4096-HK Plat. +	1	30.357	33.393	1.00	1.00	51.70	3174.00	0.000	0.000	2762.23	0.00	0.00
8	138.00	Radio 4449 B71+B12	3	30.357	33.393	0.54	0.80	3.17	255.60	0.000	0.000	169.25	0.00	0.00
9	138.00	KRY 112 144/1	3	30.357	33.393	1.00	1.00	1.23	39.60	0.000	0.000	65.72	0.00	0.00
10	138.00	RR90-17-00DP	3	30.357	33.393	0.58	0.80	7.64	48.60	0.000	0.000	408.12	0.00	0.00
11	127.00	SBNHH-1D65B	3	29.831	32.814	0.66	0.80	16.10	146.16	0.000	0.000	845.04	0.00	0.00
12	127.00	Low Profile Platform	1	29.831	32.814	0.80	0.80	20.00	1440.00	0.000	0.000	1050.04	0.00	0.00
13	127.00	DB-T1-6Z-8AB-0Z	2	29.831	32.814	0.57	0.80	5.45	45.36	0.000	0.000	286.28	0.00	0.00
14	127.00	FD9R6004/2CL-3CL	6	29.831	32.814	0.50	0.80	1.10	22.32	0.000	0.000	57.81	0.00	0.00
15	127.00	RRH2x60-700	3	29.831	32.814	0.61	0.80	6.38	216.00	0.000	0.000	335.17	0.00	0.00
16	127.00	RRH2X60-PCS	3	29.831	32.814	0.71	0.80	4.70	198.00	0.000	0.000	246.72	0.00	0.00
17	127.00	RRH2X60-AWS	3	29.831	32.814	0.61	0.80	6.38	216.00	0.000	0.000	335.17	0.00	0.00
18	127.00	LPA-80063/6CF	2	29.831	32.814	0.75	0.80	14.44	64.80	0.000	0.000	758.04	0.00	0.00
19	127.00	LPA-80080/6CF	4	29.831	32.814	1.36	0.80	23.56	100.80	0.000	0.000	1236.69	0.00	0.00
20	127.00	BXA-70063-6CF-2	3	29.831	32.814	0.58	0.80	13.26	61.20	0.000	0.000	696.31	0.00	0.00
21	127.00	SBNHH-1D65A	3	29.831	32.814	0.66	0.80	11.71	120.60	0.000	0.000	614.95	0.00	0.00
							Totals:		**8,365.20**			**15,081.23**		

Total Applied Force Summary

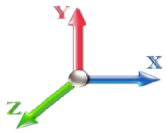
Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 96 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		801.90	2028.69	0.00	0.00
10.00		785.74	1991.98	0.00	0.00
15.00		769.58	1955.26	0.00	0.00
20.00		799.42	1918.54	0.00	0.00
25.00		819.90	1881.83	0.00	0.00
30.00		833.31	1845.11	0.00	0.00
35.00		841.52	1808.39	0.00	0.00
39.67		789.09	1655.88	0.00	0.00
40.00		56.23	206.04	0.00	0.00
45.00		862.50	3085.13	0.00	0.00
46.25		213.68	760.53	0.00	0.00
50.00		643.84	1152.56	0.00	0.00
55.00		857.29	1508.64	0.00	0.00
60.00		851.54	1476.51	0.00	0.00
65.00		844.04	1444.39	0.00	0.00
70.00		835.00	1412.26	0.00	0.00
75.00		824.57	1380.13	0.00	0.00
80.00		812.90	1348.00	0.00	0.00
81.21		193.88	321.39	0.00	0.00
85.00		616.17	1717.38	0.00	0.00
86.71		274.79	763.64	0.00	0.00
90.00		525.10	755.05	0.00	0.00
95.00		787.43	1124.67	0.00	0.00
100.00		771.93	1097.13	0.00	0.00
105.00		755.59	1069.59	0.00	0.00
110.00		738.49	1042.05	0.00	0.00
115.00		720.66	1014.52	0.00	0.00
120.00		702.15	986.98	0.00	0.00
120.96		132.17	186.35	0.00	0.00
125.00		561.30	1278.78	0.00	0.00
125.46		62.92	143.51	0.00	0.00
127.00	(33) attachments	6671.85	2888.01	0.00	0.00
130.00		403.42	444.84	0.00	0.00
135.00		657.24	723.04	0.00	0.00
138.00	(19) attachments	5768.52	4502.21	0.00	0.00
140.00		251.49	244.69	0.00	0.00
145.00		615.17	595.67	0.00	0.00
149.08	(13) attachments	3719.83	2123.62	0.00	0.00
150.00		107.22	92.73	0.00	0.00
	Totals:	**38,279.36**	**51,975.73**	**0.00**	**0.00**

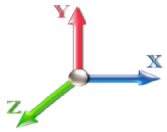
Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 96 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.92	-38.35	0.00	-3868.6	0.00	3868.68	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.582
5.00	-49.79	-37.68	0.00	-3676.9	0.00	3676.93	5908.08	2954.04	13246.7	6542.05	0.08	-0.153	0.000	0.571
10.00	-47.71	-37.01	0.00	-3488.5	0.00	3488.55	5837.12	2918.56	12816.3	6329.51	0.33	-0.307	0.000	0.559
15.00	-45.66	-36.36	0.00	-3303.4	0.00	3303.48	5764.05	2882.03	12388.0	6117.98	0.73	-0.463	0.000	0.548
20.00	-43.65	-35.66	0.00	-3121.7	0.00	3121.71	5688.87	2844.43	11962.0	5907.62	1.30	-0.619	0.000	0.536
25.00	-41.68	-34.93	0.00	-2943.4	0.00	2943.42	5611.57	2805.78	11538.7	5698.56	2.03	-0.777	0.000	0.524
30.00	-39.75	-34.18	0.00	-2768.7	0.00	2768.77	5532.15	2766.08	11118.3	5490.95	2.93	-0.936	0.000	0.512
35.00	-37.87	-33.41	0.00	-2597.8	0.00	2597.87	5450.63	2725.31	10701.2	5284.94	4.00	-1.096	0.000	0.499
39.67	-36.18	-32.64	0.00	-2441.8	0.00	2441.85	5372.57	2686.29	10314.8	5094.09	5.15	-1.246	0.000	0.486
40.00	-35.93	-32.63	0.00	-2431.0	0.00	2431.08	5366.99	2683.49	10287.6	5080.67	5.23	-1.257	0.000	0.485
45.00	-32.81	-31.75	0.00	-2267.9	0.00	2267.93	5281.24	2640.62	9877.82	4878.29	6.64	-1.418	0.000	0.471
46.25	-32.01	-31.57	0.00	-2228.2	0.00	2228.23	4440.49	2220.24	8438.24	4167.33	7.02	-1.460	0.000	0.542
50.00	-30.80	-30.97	0.00	-2109.8	0.00	2109.86	4391.92	2195.96	8192.87	4046.15	8.21	-1.582	0.000	0.529
55.00	-29.22	-30.16	0.00	-1955.0	0.00	1955.00	4325.31	2162.66	7867.62	3885.52	9.96	-1.755	0.000	0.510
60.00	-27.68	-29.35	0.00	-1804.2	0.00	1804.20	4256.59	2128.30	7544.81	3726.10	11.89	-1.928	0.000	0.491
65.00	-26.19	-28.53	0.00	-1657.4	0.00	1657.47	4185.76	2092.88	7224.74	3568.03	14.01	-2.100	0.000	0.471
70.00	-24.72	-27.71	0.00	-1514.8	0.00	1514.83	4112.81	2056.41	6907.71	3411.46	16.30	-2.270	0.000	0.450
75.00	-23.30	-26.90	0.00	-1376.2	0.00	1376.26	4037.75	2018.88	6594.01	3256.53	18.77	-2.439	0.000	0.429
80.00	-21.94	-26.07	0.00	-1241.7	0.00	1241.75	3960.58	1980.29	6283.93	3103.40	21.41	-2.605	0.000	0.406
81.21	-21.59	-25.89	0.00	-1210.2	0.00	1210.21	3941.59	1970.79	6209.47	3066.62	22.07	-2.645	0.000	0.400
85.00	-19.87	-25.23	0.00	-1112.0	0.00	1112.07	3881.29	1940.65	5977.77	2952.20	24.22	-2.769	0.000	0.382
86.71	-19.08	-24.94	0.00	-1068.9	0.00	1068.94	3179.63	1589.82	4962.15	2450.62	25.23	-2.826	0.000	0.442
90.00	-18.30	-24.42	0.00	-986.88	0.00	986.88	3141.06	1570.53	4805.90	2373.45	27.21	-2.931	0.000	0.422
95.00	-17.15	-23.63	0.00	-864.76	0.00	864.76	3080.68	1540.34	4570.36	2257.13	30.37	-3.097	0.000	0.389
100.00	-16.04	-22.84	0.00	-746.63	0.00	746.63	3018.19	1509.10	4337.39	2142.08	33.70	-3.256	0.000	0.354
105.00	-14.96	-22.06	0.00	-632.44	0.00	632.44	2953.59	1476.79	4107.30	2028.44	37.19	-3.406	0.000	0.317
110.00	-13.91	-21.29	0.00	-522.14	0.00	522.14	2886.87	1443.44	3880.37	1916.37	40.83	-3.544	0.000	0.277
115.00	-12.90	-20.53	0.00	-415.68	0.00	415.68	2808.90	1404.45	3645.04	1800.15	44.61	-3.668	0.000	0.236
120.00	-11.94	-19.78	0.00	-313.01	0.00	313.01	2709.48	1354.74	3390.12	1674.25	48.51	-3.775	0.000	0.192
120.96	-11.75	-19.65	0.00	-294.02	0.00	294.02	2690.40	1345.20	3342.23	1650.60	49.27	-3.794	0.000	0.183
125.00	-10.50	-19.01	0.00	-214.64	0.00	214.64	2610.07	1305.03	3144.44	1552.92	52.51	-3.863	0.000	0.142
125.46	-10.36	-18.94	0.00	-205.90	0.00	205.90	2134.18	1067.09	2628.47	1298.10	52.88	-3.870	0.000	0.164
127.00	-7.92	-12.09	0.00	-176.73	0.00	176.73	2118.25	1059.12	2578.53	1273.44	54.13	-3.892	0.000	0.143
130.00	-7.49	-11.66	0.00	-140.46	0.00	140.46	2086.63	1043.32	2481.86	1225.70	56.59	-3.933	0.000	0.118
135.00	-6.81	-10.96	0.00	-82.14	0.00	82.14	2032.25	1016.13	2322.74	1147.11	60.74	-3.984	0.000	0.075
138.00	-2.72	-4.90	0.00	-49.25	0.00	49.25	1998.61	999.30	2228.56	1100.60	63.25	-4.004	0.000	0.046
140.00	-2.49	-4.63	0.00	-39.46	0.00	39.46	1975.75	987.88	2166.35	1069.88	64.92	-4.014	0.000	0.038
145.00	-1.94	-3.97	0.00	-16.32	0.00	16.32	1894.65	947.33	1989.39	982.48	69.14	-4.030	0.000	0.018
149.08	-0.08	-0.11	0.00	-0.10	0.00	0.10	1827.05	913.52	1849.12	913.21	72.58	-4.035	0.000	0.000
150.00	0.00	-0.11	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	73.36	-4.035	0.000	0.000

Wind Loading - Shaft

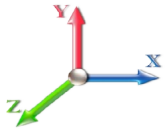
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

TES Tower Engineering Solutions

Load Case: 0.9D + 1.6W 96 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.051	20.96	427.61	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.051	20.96	419.08	1.000	0.000	5.00	23.916	23.92	801.9	0.0	1354.5
10.00		1.00	0.85	19.051	20.96	410.55	1.000	0.000	5.00	23.434	23.43	785.7	0.0	1326.9
15.00		1.00	0.85	19.051	20.96	402.02	1.000	0.000	5.00	22.952	22.95	769.6	0.0	1299.4
20.00		1.00	0.90	20.214	22.24	405.32	1.000	0.000	5.00	22.470	22.47	799.4	0.0	1271.9
25.00		1.00	0.95	21.187	23.31	405.96	1.000	0.000	5.00	21.988	21.99	819.9	0.0	1244.3
30.00		1.00	0.98	22.016	24.22	404.66	1.000	0.000	5.00	21.506	21.51	833.3	0.0	1216.8
35.00		1.00	1.01	22.742	25.02	401.96	1.000	0.000	5.00	21.025	21.02	841.5	0.0	1189.3
39.67	Bot - Section 2	1.00	1.04	23.349	25.68	398.47	1.000	0.000	4.67	19.202	19.20	789.1	0.0	1085.9
40.00		1.00	1.04	23.390	25.73	398.20	1.000	0.000	0.33	1.366	1.37	56.2	0.0	143.5
45.00		1.00	1.07	23.977	26.38	393.60	1.000	0.000	5.00	20.438	20.44	862.5	0.0	2146.8
46.25	Top - Section 1	1.00	1.08	24.116	26.53	392.33	1.000	0.000	1.25	5.034	5.03	213.7	0.0	528.6
50.00		1.00	1.09	24.515	26.97	395.89	1.000	0.000	3.75	14.922	14.92	643.8	0.0	739.1
55.00		1.00	1.12	25.012	27.51	390.11	1.000	0.000	5.00	19.475	19.47	857.3	0.0	964.4
60.00		1.00	1.14	25.474	28.02	383.84	1.000	0.000	5.00	18.993	18.99	851.5	0.0	940.3
65.00		1.00	1.16	25.907	28.50	377.14	1.000	0.000	5.00	18.511	18.51	844.0	0.0	916.2
70.00		1.00	1.17	26.315	28.95	370.07	1.000	0.000	5.00	18.029	18.03	835.0	0.0	892.2
75.00		1.00	1.19	26.700	29.37	362.67	1.000	0.000	5.00	17.547	17.55	824.6	0.0	868.1
80.00		1.00	1.21	27.065	29.77	354.97	1.000	0.000	5.00	17.065	17.07	812.9	0.0	844.0
81.21	Bot - Section 3	1.00	1.21	27.151	29.87	353.07	1.000	0.000	1.21	4.057	4.06	193.9	0.0	200.6
85.00		1.00	1.22	27.413	30.15	347.01	1.000	0.000	3.79	12.771	12.77	616.2	0.0	1161.4
86.71	Top - Section 2	1.00	1.23	27.528	30.28	344.24	1.000	0.000	1.71	5.672	5.67	274.8	0.0	515.6
90.00		1.00	1.24	27.744	30.52	345.73	1.000	0.000	3.29	10.754	10.75	525.1	0.0	456.4
95.00		1.00	1.25	28.062	30.87	337.35	1.000	0.000	5.00	15.943	15.94	787.4	0.0	676.5
100.00		1.00	1.27	28.367	31.20	328.77	1.000	0.000	5.00	15.462	15.46	771.9	0.0	655.8
105.00		1.00	1.28	28.660	31.53	320.00	1.000	0.000	5.00	14.980	14.98	755.6	0.0	635.2
110.00		1.00	1.29	28.942	31.84	311.06	1.000	0.000	5.00	14.498	14.50	738.5	0.0	614.5
115.00		1.00	1.30	29.214	32.14	301.95	1.000	0.000	5.00	14.016	14.02	720.7	0.0	593.8
120.00		1.00	1.32	29.477	32.42	292.70	1.000	0.000	5.00	13.534	13.53	702.1	0.0	573.2
120.96	Bot - Section 4	1.00	1.32	29.526	32.48	290.91	1.000	0.000	0.96	2.543	2.54	132.2	0.0	107.7
125.00		1.00	1.33	29.731	32.70	283.31	1.000	0.000	4.04	10.727	10.73	561.3	0.0	824.1
125.46	Top - Section 3	1.00	1.33	29.754	32.73	282.43	1.000	0.000	0.46	1.201	1.20	62.9	0.0	92.3
127.00	Appurtenance(s)	1.00	1.33	29.831	32.81	285.48	1.000	0.000	1.54	3.992	3.99	209.6	0.0	141.1
130.00		1.00	1.34	29.978	32.98	279.77	1.000	0.000	3.00	7.646	7.65	403.4	0.0	270.2
135.00		1.00	1.35	30.217	33.24	270.14	1.000	0.000	5.00	12.358	12.36	657.2	0.0	436.6
138.00	Appurtenance(s)	1.00	1.35	30.357	33.39	264.30	1.000	0.000	3.00	7.184	7.18	383.8	0.0	253.7
140.00		1.00	1.36	30.449	33.49	260.39	1.000	0.000	2.00	4.693	4.69	251.5	0.0	165.7
145.00		1.00	1.37	30.675	33.74	250.53	1.000	0.000	5.00	11.395	11.39	615.2	0.0	402.2
149.08	Appurtenance(s)	1.00	1.38	30.854	33.94	242.41	1.000	0.000	4.08	8.941	8.94	485.5	0.0	315.4
150.00		1.00	1.38	30.894	33.98	240.57	1.000	0.000	0.92	1.972	1.97	107.2	0.0	69.5
								Totals:	**150.00**			**23,198.1**		**28,133.9**

Discrete Appurtenance Forces

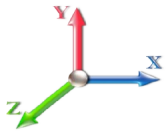
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 96 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.08	AP11-880/090/XP	3	30.854	33.940	0.65	0.90	9.39	47.52	0.000	0.000	509.89	0.00	0.00
2	149.08	DB844H90E-XY	9	30.854	33.940	1.01	0.90	27.67	113.40	0.000	0.000	1502.57	0.00	0.00
3	149.08	Low Profile Platform	1	30.854	33.940	0.90	0.90	22.50	1080.00	0.000	0.000	1221.84	0.00	0.00
4	138.00	KRY 112 489/2	3	30.357	33.393	1.00	1.00	1.95	41.58	0.000	0.000	104.18	0.00	0.00
5	138.00	Kathrein 782 11056	3	30.357	33.393	0.61	0.80	1.09	34.02	0.000	0.000	58.47	0.00	0.00
6	138.00	APXVAARR24_43-U-NA2	3	30.357	33.393	0.56	0.80	34.00	345.60	0.000	0.000	1816.73	0.00	0.00
7	138.00	RMQP-4096-HK Plat. +	1	30.357	33.393	1.00	1.00	51.70	2380.50	0.000	0.000	2762.23	0.00	0.00
8	138.00	Radio 4449 B71+B12	3	30.357	33.393	0.54	0.80	3.17	191.70	0.000	0.000	169.25	0.00	0.00
9	138.00	KRY 112 144/1	3	30.357	33.393	1.00	1.00	1.23	29.70	0.000	0.000	65.72	0.00	0.00
10	138.00	RR90-17-00DP	3	30.357	33.393	0.58	0.80	7.64	36.45	0.000	0.000	408.12	0.00	0.00
11	127.00	SBNHH-1D65B	3	29.831	32.814	0.66	0.80	16.10	109.62	0.000	0.000	845.04	0.00	0.00
12	127.00	Low Profile Platform	1	29.831	32.814	0.80	0.80	20.00	1080.00	0.000	0.000	1050.04	0.00	0.00
13	127.00	DB-T1-6Z-8AB-0Z	2	29.831	32.814	0.57	0.80	5.45	34.02	0.000	0.000	286.28	0.00	0.00
14	127.00	FD9R6004/2CL-3CL	6	29.831	32.814	0.50	0.80	1.10	16.74	0.000	0.000	57.81	0.00	0.00
15	127.00	RRH2x60-700	3	29.831	32.814	0.61	0.80	6.38	162.00	0.000	0.000	335.17	0.00	0.00
16	127.00	RRH2X60-PCS	3	29.831	32.814	0.71	0.80	4.70	148.50	0.000	0.000	246.72	0.00	0.00
17	127.00	RRH2X60-AWS	3	29.831	32.814	0.61	0.80	6.38	162.00	0.000	0.000	335.17	0.00	0.00
18	127.00	LPA-80063/6CF	2	29.831	32.814	0.75	0.80	14.44	48.60	0.000	0.000	758.04	0.00	0.00
19	127.00	LPA-80080/6CF	4	29.831	32.814	1.36	0.80	23.56	75.60	0.000	0.000	1236.69	0.00	0.00
20	127.00	BXA-70063-6CF-2	3	29.831	32.814	0.58	0.80	13.26	45.90	0.000	0.000	696.31	0.00	0.00
21	127.00	SBNHH-1D65A	3	29.831	32.814	0.66	0.80	11.71	90.45	0.000	0.000	614.95	0.00	0.00
							Totals:		**6,273.90**			**15,081.23**		

Total Applied Force Summary

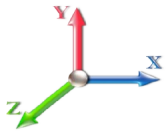
Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 96 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		801.90	1521.52	0.00	0.00
10.00		785.74	1493.98	0.00	0.00
15.00		769.58	1466.44	0.00	0.00
20.00		799.42	1438.91	0.00	0.00
25.00		819.90	1411.37	0.00	0.00
30.00		833.31	1383.83	0.00	0.00
35.00		841.52	1356.29	0.00	0.00
39.67		789.09	1241.91	0.00	0.00
40.00		56.23	154.53	0.00	0.00
45.00		862.50	2313.85	0.00	0.00
46.25		213.68	570.39	0.00	0.00
50.00		643.84	864.42	0.00	0.00
55.00		857.29	1131.48	0.00	0.00
60.00		851.54	1107.38	0.00	0.00
65.00		844.04	1083.29	0.00	0.00
70.00		835.00	1059.19	0.00	0.00
75.00		824.57	1035.10	0.00	0.00
80.00		812.90	1011.00	0.00	0.00
81.21		193.88	241.04	0.00	0.00
85.00		616.17	1288.04	0.00	0.00
86.71		274.79	572.73	0.00	0.00
90.00		525.10	566.29	0.00	0.00
95.00		787.43	843.50	0.00	0.00
100.00		771.93	822.85	0.00	0.00
105.00		755.59	802.19	0.00	0.00
110.00		738.49	781.54	0.00	0.00
115.00		720.66	760.89	0.00	0.00
120.00		702.15	740.23	0.00	0.00
120.96		132.17	139.76	0.00	0.00
125.00		561.30	959.09	0.00	0.00
125.46		62.92	107.64	0.00	0.00
127.00	(33) attachments	6671.85	2166.01	0.00	0.00
130.00		403.42	333.63	0.00	0.00
135.00		657.24	542.28	0.00	0.00
138.00	(19) attachments	5768.52	3376.66	0.00	0.00
140.00		251.49	183.52	0.00	0.00
145.00		615.17	446.75	0.00	0.00
149.08	(13) attachments	3719.83	1592.72	0.00	0.00
150.00		107.22	69.55	0.00	0.00
	Totals:	**38,279.36**	**38,981.80**	**0.00**	**0.00**

Calculated Forces

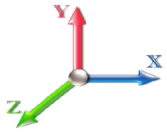
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 96 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.93	-38.33	0.00	-3839.9	0.00	3839.96	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.575
5.00	-37.31	-37.63	0.00	-3648.3	0.00	3648.31	5908.08	2954.04	13246.7	6542.05	0.08	-0.152	0.000	0.564
10.00	-35.72	-36.93	0.00	-3460.1	0.00	3460.18	5837.12	2918.56	12816.3	6329.51	0.32	-0.305	0.000	0.553
15.00	-34.16	-36.24	0.00	-3275.5	0.00	3275.53	5764.05	2882.03	12388.0	6117.98	0.73	-0.459	0.000	0.541
20.00	-32.63	-35.52	0.00	-3094.3	0.00	3094.31	5688.87	2844.43	11962.0	5907.62	1.29	-0.614	0.000	0.530
25.00	-31.14	-34.77	0.00	-2916.7	0.00	2916.71	5611.57	2805.78	11538.7	5698.56	2.02	-0.771	0.000	0.518
30.00	-29.67	-34.00	0.00	-2742.8	0.00	2742.87	5532.15	2766.08	11118.3	5490.95	2.91	-0.928	0.000	0.505
35.00	-28.24	-33.21	0.00	-2572.8	0.00	2572.89	5450.63	2725.31	10701.2	5284.94	3.97	-1.087	0.000	0.492
39.67	-26.97	-32.43	0.00	-2417.8	0.00	2417.81	5372.57	2686.29	10314.8	5094.09	5.11	-1.236	0.000	0.480
40.00	-26.77	-32.41	0.00	-2407.1	0.00	2407.11	5366.99	2683.49	10287.6	5080.67	5.19	-1.246	0.000	0.479
45.00	-24.42	-31.54	0.00	-2245.0	0.00	2245.06	5281.24	2640.62	9877.82	4878.29	6.58	-1.406	0.000	0.465
46.25	-23.81	-31.34	0.00	-2205.6	0.00	2205.64	4440.49	2220.24	8438.24	4167.33	6.96	-1.447	0.000	0.535
50.00	-22.89	-30.74	0.00	-2088.1	0.00	2088.10	4391.92	2195.96	8192.87	4046.15	8.14	-1.568	0.000	0.521
55.00	-21.69	-29.91	0.00	-1934.4	0.00	1934.42	4325.31	2162.66	7867.62	3885.52	9.88	-1.739	0.000	0.503
60.00	-20.52	-29.09	0.00	-1784.8	0.00	1784.87	4256.59	2128.30	7544.81	3726.10	11.79	-1.910	0.000	0.484
65.00	-19.39	-28.26	0.00	-1639.4	0.00	1639.44	4185.76	2092.88	7224.74	3568.03	13.88	-2.080	0.000	0.464
70.00	-18.28	-27.44	0.00	-1498.1	0.00	1498.13	4112.81	2056.41	6907.71	3411.46	16.15	-2.249	0.000	0.444
75.00	-17.20	-26.63	0.00	-1360.9	0.00	1360.92	4037.75	2018.88	6594.01	3256.53	18.60	-2.415	0.000	0.422
80.00	-16.18	-25.80	0.00	-1227.8	0.00	1227.80	3960.58	1980.29	6283.93	3103.40	21.21	-2.579	0.000	0.400
81.21	-15.91	-25.62	0.00	-1196.5	0.00	1196.58	3941.59	1970.79	6209.47	3066.62	21.87	-2.620	0.000	0.394
85.00	-14.62	-24.96	0.00	-1099.5	0.00	1099.50	3881.29	1940.65	5977.77	2952.20	24.00	-2.742	0.000	0.376
86.71	-14.02	-24.68	0.00	-1056.8	0.00	1056.81	3179.63	1589.82	4962.15	2450.62	25.00	-2.798	0.000	0.436
90.00	-13.43	-24.16	0.00	-975.62	0.00	975.62	3141.06	1570.53	4805.90	2373.45	26.96	-2.902	0.000	0.416
95.00	-12.56	-23.36	0.00	-854.82	0.00	854.82	3080.68	1540.34	4570.36	2257.13	30.09	-3.066	0.000	0.383
100.00	-11.72	-22.58	0.00	-738.00	0.00	738.00	3018.19	1509.10	4337.39	2142.08	33.38	-3.224	0.000	0.349
105.00	-10.91	-21.81	0.00	-625.10	0.00	625.10	2953.59	1476.79	4107.30	2028.44	36.84	-3.372	0.000	0.312
110.00	-10.13	-21.05	0.00	-516.07	0.00	516.07	2886.87	1443.44	3880.37	1916.37	40.44	-3.508	0.000	0.273
115.00	-9.37	-20.30	0.00	-410.85	0.00	410.85	2808.90	1404.45	3645.04	1800.15	44.18	-3.631	0.000	0.232
120.00	-8.66	-19.56	0.00	-309.36	0.00	309.36	2709.48	1354.74	3390.12	1674.25	48.04	-3.736	0.000	0.188
120.96	-8.51	-19.42	0.00	-290.59	0.00	290.59	2690.40	1345.20	3342.23	1650.60	48.80	-3.755	0.000	0.179
125.00	-7.58	-18.81	0.00	-212.11	0.00	212.11	2610.07	1305.03	3144.44	1552.92	52.00	-3.823	0.000	0.140
125.46	-7.47	-18.74	0.00	-203.46	0.00	203.46	2134.18	1067.09	2628.47	1298.10	52.37	-3.830	0.000	0.161
127.00	-5.75	-11.94	0.00	-174.61	0.00	174.61	2118.25	1059.12	2578.53	1273.44	53.61	-3.852	0.000	0.140
130.00	-5.44	-11.52	0.00	-138.79	0.00	138.79	2086.63	1043.32	2481.86	1225.70	56.04	-3.892	0.000	0.116
135.00	-4.93	-10.83	0.00	-81.20	0.00	81.20	2032.25	1016.13	2322.74	1147.11	60.15	-3.942	0.000	0.073
138.00	-1.96	-4.84	0.00	-48.72	0.00	48.72	1998.61	999.30	2228.56	1100.60	62.63	-3.963	0.000	0.045
140.00	-1.80	-4.58	0.00	-39.04	0.00	39.04	1975.75	987.88	2166.35	1069.88	64.29	-3.972	0.000	0.037
145.00	-1.39	-3.93	0.00	-16.15	0.00	16.15	1894.65	947.33	1989.39	982.48	68.46	-3.988	0.000	0.017
149.08	-0.06	-0.11	0.00	-0.10	0.00	0.10	1827.05	913.52	1849.12	913.21	71.86	-3.993	0.000	0.000
150.00	0.00	-0.11	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	72.63	-3.993	0.000	0.000

Wind Loading - Shaft

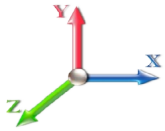
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

TES Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	25.296	30.35	172.6	606.3	2412.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	24.913	29.90	169.9	638.3	2407.6
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	24.492	29.39	167.1	652.2	2384.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	24.055	28.87	174.1	658.1	2353.9
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	23.609	28.33	179.1	659.4	2318.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	23.157	27.79	182.6	657.6	2280.0
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	22.701	27.24	184.9	653.6	2239.3
39.67	Bot - Section 2	1.00	1.04	6.334	6.97	0.00	1.200	2.037	4.67	20.787	24.94	173.8	605.6	2053.5
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	0.33	1.478	1.77	12.4	43.5	234.9
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	5.00	22.157	26.59	190.2	652.8	3515.2
46.25	Top - Section 1	1.00	1.08	6.542	7.20	0.00	1.200	2.069	1.25	5.465	6.56	47.2	162.7	867.6
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	3.75	16.225	19.47	142.4	483.7	1469.2
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	21.229	25.47	190.1	636.1	1922.0
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	20.762	24.91	189.4	626.5	1880.3
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	20.295	24.35	188.3	616.3	1837.9
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	19.826	23.79	186.8	605.5	1795.0
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	19.357	23.23	185.1	594.1	1751.5
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	18.886	22.66	183.0	582.3	1707.6
81.21	Bot - Section 3	1.00	1.21	7.365	8.10	0.00	1.200	2.188	1.21	4.499	5.40	43.7	140.2	407.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	3.79	14.160	16.99	139.0	440.3	1988.8
86.71	Top - Section 2	1.00	1.23	7.467	8.21	0.00	1.200	2.203	1.71	6.299	7.56	62.1	197.2	884.7
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	3.29	11.966	14.36	118.9	374.0	982.5
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	17.796	21.36	178.8	555.5	1457.4
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	17.324	20.79	176.0	542.3	1416.7
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	16.851	20.22	172.9	528.9	1375.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	16.378	19.65	169.7	515.2	1334.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	15.904	19.09	166.4	501.2	1293.0
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	15.431	18.52	162.9	487.0	1251.2
120.96	Bot - Section 4	1.00	1.32	8.009	8.81	0.00	1.200	2.277	0.96	2.908	3.49	30.7	93.0	236.6
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	4.04	12.265	14.72	130.6	389.3	1488.1
125.46	Top - Section 3	1.00	1.33	8.071	8.88	0.00	1.200	2.286	0.46	1.377	1.65	14.7	44.2	167.2
127.00	Appurtenance(s)	1.00	1.33	8.092	8.90	0.00	1.200	2.289	1.54	4.580	5.50	48.9	146.6	334.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	3.00	8.793	10.55	94.4	280.3	640.7
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	5.00	14.277	17.13	154.5	452.5	1034.6
138.00	Appurtenance(s)	1.00	1.35	8.235	9.06	0.00	1.200	2.308	3.00	8.338	10.01	90.6	266.1	604.4
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	2.00	5.463	6.56	59.6	175.0	395.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	5.00	13.327	15.99	146.4	422.4	958.6
149.08	Appurtenance(s)	1.00	1.38	8.370	9.21	0.00	1.200	2.326	4.08	10.522	12.63	116.3	334.5	755.1
150.00		1.00	1.38	8.381	9.22	0.00	1.200	2.327	0.92	2.329	2.79	25.8	74.9	167.6
								Totals:	**150.00**			**5,221.7**		**54,606.9**

Discrete Appurtenance Forces

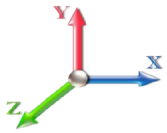
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.08	AP11-880/090/XP	3	8.370	9.207	0.65	0.90	11.99	579.50	0.000	0.000	110.36	0.00	0.00
2	149.08	DB844H90E-XY	9	8.370	9.207	1.01	0.90	38.52	1589.59	0.000	0.000	354.61	0.00	0.00
3	149.08	Low Profile Platform	1	8.370	9.207	0.90	0.90	47.62	2535.31	0.000	0.000	438.39	0.00	0.00
4	138.00	KRY 112 489/2	3	8.235	9.058	1.00	1.00	4.38	110.34	0.000	0.000	39.66	0.00	0.00
5	138.00	Kathrein 782 11056	3	8.235	9.058	0.61	0.80	2.47	97.10	0.000	0.000	22.34	0.00	0.00
6	138.00	APXVAARR24 43-U-NA2	3	8.235	9.058	0.56	0.80	38.27	2187.19	0.000	0.000	346.71	0.00	0.00
7	138.00	RMQP-4096-HK Plat. +	1	8.235	9.058	1.00	1.00	102.29	6081.21	0.000	0.000	926.53	0.00	0.00
8	138.00	Radio 4449 B71+B12	3	8.235	9.058	0.54	0.80	4.33	426.55	0.000	0.000	39.24	0.00	0.00
9	138.00	KRY 112 144/1	3	8.235	9.058	1.00	1.00	3.11	73.07	0.000	0.000	28.21	0.00	0.00
10	138.00	RR90-17-00DP	3	8.235	9.058	0.58	0.80	9.99	477.92	0.000	0.000	90.52	0.00	0.00
11	127.00	SBNHH-1D65B	3	8.092	8.901	0.66	0.80	19.54	987.18	0.000	0.000	173.96	0.00	0.00
12	127.00	Low Profile Platform	1	8.092	8.901	0.80	0.80	41.97	2513.13	0.000	0.000	373.59	0.00	0.00
13	127.00	DB-T1-6Z-8AB-0Z	2	8.092	8.901	0.57	0.80	6.78	443.61	0.000	0.000	60.37	0.00	0.00
14	127.00	FD9R6004/2CL-3CL	6	8.092	8.901	0.50	0.80	2.88	71.67	0.000	0.000	25.63	0.00	0.00
15	127.00	RRH2x60-700	3	8.092	8.901	0.61	0.80	8.27	499.09	0.000	0.000	73.63	0.00	0.00
16	127.00	RRH2X60-PCS	3	8.092	8.901	0.71	0.80	6.53	555.42	0.000	0.000	58.15	0.00	0.00
17	127.00	RRH2X60-AWS	3	8.092	8.901	0.61	0.80	8.27	499.09	0.000	0.000	73.63	0.00	0.00
18	127.00	LPA-80063/6CF	2	8.092	8.901	0.75	0.80	17.16	854.78	0.000	0.000	152.71	0.00	0.00
19	127.00	LPA-80080/6CF	4	8.092	8.901	1.36	0.80	32.22	1186.28	0.000	0.000	286.79	0.00	0.00
20	127.00	BXA-70063-6CF-2	3	8.092	8.901	0.58	0.80	19.61	517.09	0.000	0.000	174.57	0.00	0.00
21	127.00	SBNHH-1D65A	3	8.092	8.901	0.66	0.80	14.59	783.26	0.000	0.000	129.90	0.00	0.00
							Totals:		**23,068.37**			**3,979.49**		

Total Applied Force Summary

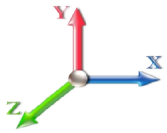
Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		172.56	2635.01	0.00	0.00
10.00		169.95	2630.28	0.00	0.00
15.00		167.08	2607.44	0.00	0.00
20.00		174.12	2576.63	0.00	0.00
25.00		179.11	2541.20	0.00	0.00
30.00		182.55	2502.72	0.00	0.00
35.00		184.86	2462.04	0.00	0.00
39.67		173.80	2261.51	0.00	0.00
40.00		12.38	249.57	0.00	0.00
45.00		190.24	3737.90	0.00	0.00
46.25		47.19	923.25	0.00	0.00
50.00		142.43	1636.22	0.00	0.00
55.00		190.13	2144.71	0.00	0.00
60.00		189.39	2103.01	0.00	0.00
65.00		188.27	2060.65	0.00	0.00
70.00		186.81	2017.71	0.00	0.00
75.00		185.06	1974.26	0.00	0.00
80.00		183.03	1930.35	0.00	0.00
81.21		43.74	461.61	0.00	0.00
85.00		138.99	2157.66	0.00	0.00
86.71		62.09	960.84	0.00	0.00
90.00		118.88	1129.02	0.00	0.00
95.00		178.82	1680.16	0.00	0.00
100.00		175.96	1639.46	0.00	0.00
105.00		172.93	1598.47	0.00	0.00
110.00		169.73	1557.21	0.00	0.00
115.00		166.37	1515.70	0.00	0.00
120.00		162.87	1473.97	0.00	0.00
120.96		30.74	279.32	0.00	0.00
125.00		130.58	1668.10	0.00	0.00
125.46		14.67	187.72	0.00	0.00
127.00	(33) attachments	1631.84	9313.97	0.00	0.00
130.00		94.39	725.18	0.00	0.00
135.00		154.48	1175.50	0.00	0.00
138.00	(19) attachments	1583.84	10142.29	0.00	0.00
140.00		59.56	419.69	0.00	0.00
145.00		146.38	1018.03	0.00	0.00
149.08	(13) attachments	1019.61	5507.93	0.00	0.00
150.00		25.76	167.63	0.00	0.00
	Totals:	**9,201.17**	**83,773.90**	**0.00**	**0.00**

Calculated Forces

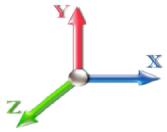
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-83.77	-9.23	0.00	-991.49	0.00	991.49	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.161
5.00	-81.13	-9.11	0.00	-945.34	0.00	945.34	5908.08	2954.04	13246.7	6542.05	0.02	-0.039	0.000	0.158
10.00	-78.49	-8.99	0.00	-899.78	0.00	899.78	5837.12	2918.56	12816.3	6329.51	0.08	-0.079	0.000	0.156
15.00	-75.88	-8.88	0.00	-854.81	0.00	854.81	5764.05	2882.03	12388.0	6117.98	0.19	-0.119	0.000	0.153
20.00	-73.30	-8.75	0.00	-810.42	0.00	810.42	5688.87	2844.43	11962.0	5907.62	0.33	-0.160	0.000	0.150
25.00	-70.75	-8.61	0.00	-766.68	0.00	766.68	5611.57	2805.78	11538.7	5698.56	0.52	-0.201	0.000	0.147
30.00	-68.24	-8.47	0.00	-723.62	0.00	723.62	5532.15	2766.08	11118.3	5490.95	0.76	-0.242	0.000	0.144
35.00	-65.78	-8.32	0.00	-681.27	0.00	681.27	5450.63	2725.31	10701.2	5284.94	1.03	-0.284	0.000	0.141
39.67	-63.51	-8.16	0.00	-642.42	0.00	642.42	5372.57	2686.29	10314.8	5094.09	1.33	-0.324	0.000	0.138
40.00	-63.26	-8.17	0.00	-639.73	0.00	639.73	5366.99	2683.49	10287.6	5080.67	1.35	-0.326	0.000	0.138
45.00	-59.52	-7.98	0.00	-598.88	0.00	598.88	5281.24	2640.62	9877.82	4878.29	1.72	-0.369	0.000	0.134
46.25	-58.59	-7.95	0.00	-588.90	0.00	588.90	4440.49	2220.24	8438.24	4167.33	1.82	-0.380	0.000	0.155
50.00	-56.95	-7.84	0.00	-559.08	0.00	559.08	4391.92	2195.96	8192.87	4046.15	2.13	-0.412	0.000	0.151
55.00	-54.80	-7.68	0.00	-519.89	0.00	519.89	4325.31	2162.66	7867.62	3885.52	2.58	-0.458	0.000	0.146
60.00	-52.70	-7.51	0.00	-481.51	0.00	481.51	4256.59	2128.30	7544.81	3726.10	3.09	-0.504	0.000	0.142
65.00	-50.63	-7.34	0.00	-443.96	0.00	443.96	4185.76	2092.88	7224.74	3568.03	3.64	-0.550	0.000	0.137
70.00	-48.61	-7.18	0.00	-407.24	0.00	407.24	4112.81	2056.41	6907.71	3411.46	4.24	-0.596	0.000	0.131
75.00	-46.63	-7.01	0.00	-371.36	0.00	371.36	4037.75	2018.88	6594.01	3256.53	4.89	-0.641	0.000	0.126
80.00	-44.70	-6.82	0.00	-336.33	0.00	336.33	3960.58	1980.29	6283.93	3103.40	5.59	-0.686	0.000	0.120
81.21	-44.24	-6.79	0.00	-328.08	0.00	328.08	3941.59	1970.79	6209.47	3066.62	5.76	-0.697	0.000	0.118
85.00	-42.08	-6.64	0.00	-302.34	0.00	302.34	3881.29	1940.65	5977.77	2952.20	6.33	-0.731	0.000	0.113
86.71	-41.12	-6.58	0.00	-290.98	0.00	290.98	3179.63	1589.82	4962.15	2450.62	6.59	-0.746	0.000	0.132
90.00	-39.98	-6.48	0.00	-269.32	0.00	269.32	3141.06	1570.53	4805.90	2373.45	7.12	-0.775	0.000	0.126
95.00	-38.30	-6.30	0.00	-236.94	0.00	236.94	3080.68	1540.34	4570.36	2257.13	7.96	-0.820	0.000	0.117
100.00	-36.66	-6.13	0.00	-205.42	0.00	205.42	3018.19	1509.10	4337.39	2142.08	8.84	-0.864	0.000	0.108
105.00	-35.06	-5.96	0.00	-174.77	0.00	174.77	2953.59	1476.79	4107.30	2028.44	9.77	-0.905	0.000	0.098
110.00	-33.50	-5.78	0.00	-144.98	0.00	144.98	2886.87	1443.44	3880.37	1916.37	10.74	-0.943	0.000	0.087
115.00	-31.99	-5.61	0.00	-116.06	0.00	116.06	2808.90	1404.45	3645.04	1800.15	11.74	-0.978	0.000	0.076
120.00	-30.51	-5.43	0.00	-88.01	0.00	88.01	2709.48	1354.74	3390.12	1674.25	12.78	-1.008	0.000	0.064
120.96	-30.23	-5.40	0.00	-82.80	0.00	82.80	2690.40	1345.20	3342.23	1650.60	12.99	-1.013	0.000	0.061
125.00	-28.57	-5.25	0.00	-60.98	0.00	60.98	2610.07	1305.03	3144.44	1552.92	13.85	-1.033	0.000	0.050
125.46	-28.38	-5.23	0.00	-58.56	0.00	58.56	2134.18	1067.09	2628.47	1298.10	13.95	-1.035	0.000	0.058
127.00	-19.10	-3.43	0.00	-50.51	0.00	50.51	2118.25	1059.12	2578.53	1273.44	14.29	-1.041	0.000	0.049
130.00	-18.37	-3.33	0.00	-40.21	0.00	40.21	2086.63	1043.32	2481.86	1225.70	14.95	-1.053	0.000	0.042
135.00	-17.20	-3.16	0.00	-23.55	0.00	23.55	2032.25	1016.13	2322.74	1147.11	16.06	-1.067	0.000	0.029
138.00	-7.09	-1.38	0.00	-14.08	0.00	14.08	1998.61	999.30	2228.56	1100.60	16.73	-1.073	0.000	0.016
140.00	-6.67	-1.32	0.00	-11.32	0.00	11.32	1975.75	987.88	2166.35	1069.88	17.18	-1.076	0.000	0.014
145.00	-5.65	-1.15	0.00	-4.73	0.00	4.73	1894.65	947.33	1989.39	982.48	18.31	-1.081	0.000	0.008
149.08	-0.17	-0.03	0.00	-0.03	0.00	0.03	1827.05	913.52	1849.12	913.21	19.23	-1.082	0.000	0.000
150.00	0.00	-0.03	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	19.44	-1.082	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	20
Gust Response Factor	1.10			**Sds**	0.19	**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.43	**SA**	0.04	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1504.9	0.00	0.03	0.02	22.69	
10.00		1474.3	0.01	0.05	0.03	33.26	
15.00		1443.7	0.02	0.06	0.04	38.18	
20.00		1413.1	0.03	0.07	0.04	40.31	
25.00		1382.5	0.05	0.07	0.04	41.16	
30.00		1351.9	0.08	0.07	0.04	41.49	
35.00		1321.3	0.10	0.07	0.04	41.65	
39.67	Bot - Section 2	1206.5	0.13	0.07	0.03	38.90	
40.00		159.45	0.13	0.07	0.03	5.15	
45.00		2385.3	0.17	0.07	0.03	78.34	
46.25	Top - Section 1	587.37	0.18	0.07	0.03	19.33	
50.00		821.27	0.21	0.06	0.02	27.01	
55.00		1071.6	0.25	0.05	0.02	34.27	
60.00		1044.8	0.30	0.04	0.01	30.95	
65.00		1018.0	0.35	0.03	0.01	25.78	
70.00		991.28	0.41	0.01	0.01	18.61	
75.00		964.51	0.47	-0.01	0.01	9.73	
80.00		937.74	0.54	-0.03	0.01	-0.01	
81.21	Bot - Section 3	222.91	0.55	-0.04	0.01	-0.56	
85.00		1290.4	0.61	-0.06	0.02	-13.13	
86.71	Top - Section 2	572.89	0.63	-0.06	0.02	-7.66	
90.00		507.09	0.68	-0.08	0.03	-9.51	
95.00		751.62	0.76	-0.10	0.04	-18.21	
100.00		728.67	0.84	-0.12	0.07	-18.63	
105.00		705.73	0.93	-0.12	0.10	-15.66	
110.00		682.78	1.02	-0.11	0.14	-9.45	
115.00		659.83	1.11	-0.06	0.19	-0.29	
120.00		636.88	1.21	0.01	0.26	11.50	
120.96	Bot - Section 4	119.66	1.23	0.03	0.28	2.65	
125.00		915.69	1.31	0.14	0.35	38.14	
125.46	Top - Section 3	102.52	1.32	0.15	0.36	4.52	
127.00	Appurtenance(s)	2349.5	1.35	0.20	0.39	123.44	
130.00		300.26	1.42	0.32	0.45	21.14	
135.00		485.14	1.53	0.58	0.58	50.65	
138.00	Appurtenance(s)	3681.4	1.60	0.78	0.67	468.84	
140.00		184.11	1.65	0.93	0.73	26.46	
145.00		446.89	1.77	1.39	0.92	84.21	
149.08	Appurtenance(s)	1729.2	1.87	1.86	1.10	396.02	
150.00		77.27	1.89	1.98	1.14	18.44	
	Totals:	**38,230.9**				**1,699.7**	**Total Wind:** **38,279.4**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	20
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.43	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.98	-1.80	0.00	-201.45	0.00	201.45	5976.93	2988.46	13678.8	6755.45		0.00	0.00	0.039
5.00	-49.95	-1.78	0.00	-192.47	0.00	192.47	5908.08	2954.04	13246.7	6542.05		0.00	-0.01	0.038
10.00	-47.95	-1.75	0.00	-183.57	0.00	183.57	5837.12	2918.56	12816.3	6329.51		0.02	-0.02	0.037
15.00	-46.00	-1.72	0.00	-174.81	0.00	174.81	5764.05	2882.03	12388.0	6117.98		0.04	-0.02	0.037
20.00	-44.08	-1.69	0.00	-166.20	0.00	166.20	5688.87	2844.43	11962.0	5907.62		0.07	-0.03	0.036
25.00	-42.20	-1.65	0.00	-157.77	0.00	157.77	5611.57	2805.78	11538.7	5698.56		0.11	-0.04	0.035
30.00	-40.35	-1.61	0.00	-149.52	0.00	149.52	5532.15	2766.08	11118.3	5490.95		0.15	-0.05	0.035
35.00	-38.54	-1.58	0.00	-141.46	0.00	141.46	5450.63	2725.31	10701.2	5284.94		0.21	-0.06	0.034
39.67	-36.89	-1.54	0.00	-134.10	0.00	134.10	5372.57	2686.29	10314.8	5094.09		0.27	-0.07	0.033
40.00	-36.68	-1.54	0.00	-133.60	0.00	133.60	5366.99	2683.49	10287.6	5080.67		0.28	-0.07	0.033
45.00	-33.60	-1.46	0.00	-125.92	0.00	125.92	5281.24	2640.62	9877.82	4878.29		0.35	-0.08	0.032
46.25	-32.84	-1.44	0.00	-124.10	0.00	124.10	4440.49	2220.24	8438.24	4167.33		0.37	-0.08	0.037
50.00	-31.68	-1.41	0.00	-118.71	0.00	118.71	4391.92	2195.96	8192.87	4046.15		0.44	-0.09	0.037
55.00	-30.17	-1.38	0.00	-111.64	0.00	111.64	4325.31	2162.66	7867.62	3885.52		0.53	-0.09	0.036
60.00	-28.70	-1.35	0.00	-104.72	0.00	104.72	4256.59	2128.30	7544.81	3726.10		0.64	-0.10	0.035
65.00	-27.25	-1.33	0.00	-97.95	0.00	97.95	4185.76	2092.88	7224.74	3568.03		0.75	-0.11	0.034
70.00	-25.84	-1.31	0.00	-91.30	0.00	91.30	4112.81	2056.41	6907.71	3411.46		0.88	-0.13	0.033
75.00	-24.46	-1.31	0.00	-84.73	0.00	84.73	4037.75	2018.88	6594.01	3256.53		1.01	-0.14	0.032
80.00	-23.11	-1.30	0.00	-78.20	0.00	78.20	3960.58	1980.29	6283.93	3103.40		1.16	-0.15	0.031
81.21	-22.79	-1.31	0.00	-76.62	0.00	76.62	3941.59	1970.79	6209.47	3066.62		1.20	-0.15	0.031
85.00	-21.07	-1.30	0.00	-71.67	0.00	71.67	3881.29	1940.65	5977.77	2952.20		1.32	-0.16	0.030
86.71	-20.31	-1.30	0.00	-69.44	0.00	69.44	3179.63	1589.82	4962.15	2450.62		1.38	-0.16	0.035
90.00	-19.55	-1.30	0.00	-65.16	0.00	65.16	3141.06	1570.53	4805.90	2373.45		1.49	-0.17	0.034
95.00	-18.43	-1.30	0.00	-58.64	0.00	58.64	3080.68	1540.34	4570.36	2257.13		1.67	-0.18	0.032
100.00	-17.33	-1.30	0.00	-52.12	0.00	52.12	3018.19	1509.10	4337.39	2142.08		1.86	-0.19	0.030
105.00	-16.26	-1.30	0.00	-45.59	0.00	45.59	2953.59	1476.79	4107.30	2028.44		2.06	-0.20	0.028
110.00	-15.22	-1.30	0.00	-39.08	0.00	39.08	2886.87	1443.44	3880.37	1916.37		2.28	-0.21	0.026
115.00	-14.21	-1.30	0.00	-32.57	0.00	32.57	2808.90	1404.45	3645.04	1800.15		2.50	-0.22	0.023
120.00	-13.22	-1.29	0.00	-26.06	0.00	26.06	2709.48	1354.74	3390.12	1674.25		2.74	-0.23	0.020
120.96	-13.03	-1.28	0.00	-24.83	0.00	24.83	2690.40	1345.20	3342.23	1650.60		2.78	-0.23	0.020
125.00	-11.75	-1.24	0.00	-19.64	0.00	19.64	2610.07	1305.03	3144.44	1552.92		2.98	-0.24	0.017
125.46	-11.61	-1.24	0.00	-19.07	0.00	19.07	2134.18	1067.09	2628.47	1298.10		3.00	-0.24	0.020
127.00	-8.72	-1.10	0.00	-17.16	0.00	17.16	2118.25	1059.12	2578.53	1273.44		3.08	-0.24	0.018
130.00	-8.28	-1.08	0.00	-13.86	0.00	13.86	2086.63	1043.32	2481.86	1225.70		3.23	-0.24	0.015
135.00	-7.55	-1.03	0.00	-8.46	0.00	8.46	2032.25	1016.13	2322.74	1147.11		3.49	-0.25	0.011
138.00	-3.05	-0.54	0.00	-5.38	0.00	5.38	1998.61	999.30	2228.56	1100.60		3.64	-0.25	0.006
140.00	-2.81	-0.51	0.00	-4.30	0.00	4.30	1975.75	987.88	2166.35	1069.88		3.75	-0.25	0.005
145.00	-2.21	-0.42	0.00	-1.75	0.00	1.75	1894.65	947.33	1989.39	982.48		4.01	-0.25	0.003
149.08	-0.09	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21		4.23	-0.25	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94		4.27	-0.25	0.000

Seismic Segment Forces (Factored)

Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	20
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.43		**SA**	0.04	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1504.9	0.00	0.03	0.02	22.69	
10.00		1474.3	0.01	0.05	0.03	33.26	
15.00		1443.7	0.02	0.06	0.04	38.18	
20.00		1413.1	0.03	0.07	0.04	40.31	
25.00		1382.5	0.05	0.07	0.04	41.16	
30.00		1351.9	0.08	0.07	0.04	41.49	
35.00		1321.3	0.10	0.07	0.04	41.65	
39.67	Bot - Section 2	1206.5	0.13	0.07	0.03	38.90	
40.00		159.45	0.13	0.07	0.03	5.15	
45.00		2385.3	0.17	0.07	0.03	78.34	
46.25	Top - Section 1	587.37	0.18	0.07	0.03	19.33	
50.00		821.27	0.21	0.06	0.02	27.01	
55.00		1071.6	0.25	0.05	0.02	34.27	
60.00		1044.8	0.30	0.04	0.01	30.95	
65.00		1018.0	0.35	0.03	0.01	25.78	
70.00		991.28	0.41	0.01	0.01	18.61	
75.00		964.51	0.47	-0.01	0.01	9.73	
80.00		937.74	0.54	-0.03	0.01	-0.01	
81.21	Bot - Section 3	222.91	0.55	-0.04	0.01	-0.56	
85.00		1290.4	0.61	-0.06	0.02	-13.13	
86.71	Top - Section 2	572.89	0.63	-0.06	0.02	-7.66	
90.00		507.09	0.68	-0.08	0.03	-9.51	
95.00		751.62	0.76	-0.10	0.04	-18.21	
100.00		728.67	0.84	-0.12	0.07	-18.63	
105.00		705.73	0.93	-0.12	0.10	-15.66	
110.00		682.78	1.02	-0.11	0.14	-9.45	
115.00		659.83	1.11	-0.06	0.19	-0.29	
120.00		636.88	1.21	0.01	0.26	11.50	
120.96	Bot - Section 4	119.66	1.23	0.03	0.28	2.65	
125.00		915.69	1.31	0.14	0.35	38.14	
125.46	Top - Section 3	102.52	1.32	0.15	0.36	4.52	
127.00	Appurtenance(s)	2349.5	1.35	0.20	0.39	123.44	
130.00		300.26	1.42	0.32	0.45	21.14	
135.00		485.14	1.53	0.58	0.58	50.65	
138.00	Appurtenance(s)	3681.4	1.60	0.78	0.67	468.84	
140.00		184.11	1.65	0.93	0.73	26.46	
145.00		446.89	1.77	1.39	0.92	84.21	
149.08	Appurtenance(s)	1729.2	1.87	1.86	1.10	396.02	
150.00		77.27	1.89	1.98	1.14	18.44	
	Totals:	**38,230.9**				**1,699.7**	**Total Wind:** **38,279.4**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	20
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.43	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.98	-1.79	0.00	-199.83	0.00	199.83	5976.93	2988.46	13678.8	6755.45		0.00	0.00	0.036
5.00	-37.46	-1.78	0.00	-190.86	0.00	190.86	5908.08	2954.04	13246.7	6542.05		0.00	-0.01	0.036
10.00	-35.97	-1.75	0.00	-181.97	0.00	181.97	5837.12	2918.56	12816.3	6329.51		0.02	-0.02	0.035
15.00	-34.50	-1.71	0.00	-173.23	0.00	173.23	5764.05	2882.03	12388.0	6117.98		0.04	-0.02	0.034
20.00	-33.06	-1.68	0.00	-164.65	0.00	164.65	5688.87	2844.43	11962.0	5907.62		0.07	-0.03	0.034
25.00	-31.65	-1.64	0.00	-156.26	0.00	156.26	5611.57	2805.78	11538.7	5698.56		0.11	-0.04	0.033
30.00	-30.26	-1.60	0.00	-148.05	0.00	148.05	5532.15	2766.08	11118.3	5490.95		0.15	-0.05	0.032
35.00	-28.91	-1.56	0.00	-140.04	0.00	140.04	5450.63	2725.31	10701.2	5284.94		0.21	-0.06	0.032
39.67	-27.67	-1.53	0.00	-132.73	0.00	132.73	5372.57	2686.29	10314.8	5094.09		0.27	-0.07	0.031
40.00	-27.51	-1.52	0.00	-132.23	0.00	132.23	5366.99	2683.49	10287.6	5080.67		0.27	-0.07	0.031
45.00	-25.20	-1.44	0.00	-124.61	0.00	124.61	5281.24	2640.62	9877.82	4878.29		0.35	-0.08	0.030
46.25	-24.63	-1.43	0.00	-122.81	0.00	122.81	4440.49	2220.24	8438.24	4167.33		0.37	-0.08	0.035
50.00	-23.76	-1.40	0.00	-117.46	0.00	117.46	4391.92	2195.96	8192.87	4046.15		0.43	-0.08	0.034
55.00	-22.63	-1.37	0.00	-110.45	0.00	110.45	4325.31	2162.66	7867.62	3885.52		0.53	-0.09	0.034
60.00	-21.52	-1.34	0.00	-103.60	0.00	103.60	4256.59	2128.30	7544.81	3726.10		0.63	-0.10	0.033
65.00	-20.44	-1.32	0.00	-96.90	0.00	96.90	4185.76	2092.88	7224.74	3568.03		0.74	-0.11	0.032
70.00	-19.38	-1.30	0.00	-90.32	0.00	90.32	4112.81	2056.41	6907.71	3411.46		0.87	-0.12	0.031
75.00	-18.34	-1.29	0.00	-83.83	0.00	83.83	4037.75	2018.88	6594.01	3256.53		1.00	-0.13	0.030
80.00	-17.33	-1.29	0.00	-77.38	0.00	77.38	3960.58	1980.29	6283.93	3103.40		1.15	-0.14	0.029
81.21	-17.09	-1.29	0.00	-75.82	0.00	75.82	3941.59	1970.79	6209.47	3066.62		1.19	-0.15	0.029
85.00	-15.80	-1.29	0.00	-70.93	0.00	70.93	3881.29	1940.65	5977.77	2952.20		1.31	-0.15	0.028
86.71	-15.23	-1.29	0.00	-68.73	0.00	68.73	3179.63	1589.82	4962.15	2450.62		1.36	-0.16	0.033
90.00	-14.67	-1.29	0.00	-64.49	0.00	64.49	3141.06	1570.53	4805.90	2373.45		1.47	-0.17	0.032
95.00	-13.82	-1.29	0.00	-58.04	0.00	58.04	3080.68	1540.34	4570.36	2257.13		1.65	-0.18	0.030
100.00	-13.00	-1.29	0.00	-51.60	0.00	51.60	3018.19	1509.10	4337.39	2142.08		1.84	-0.19	0.028
105.00	-12.20	-1.29	0.00	-45.15	0.00	45.15	2953.59	1476.79	4107.30	2028.44		2.04	-0.20	0.026
110.00	-11.41	-1.29	0.00	-38.71	0.00	38.71	2886.87	1443.44	3880.37	1916.37		2.26	-0.21	0.024
115.00	-10.65	-1.29	0.00	-32.27	0.00	32.27	2808.90	1404.45	3645.04	1800.15		2.48	-0.22	0.022
120.00	-9.91	-1.27	0.00	-25.84	0.00	25.84	2709.48	1354.74	3390.12	1674.25		2.71	-0.23	0.019
120.96	-9.77	-1.27	0.00	-24.61	0.00	24.61	2690.40	1345.20	3342.23	1650.60		2.76	-0.23	0.019
125.00	-8.81	-1.23	0.00	-19.48	0.00	19.48	2610.07	1305.03	3144.44	1552.92		2.95	-0.23	0.016
125.46	-8.71	-1.22	0.00	-18.92	0.00	18.92	2134.18	1067.09	2628.47	1298.10		2.97	-0.23	0.019
127.00	-6.54	-1.09	0.00	-17.03	0.00	17.03	2118.25	1059.12	2578.53	1273.44		3.05	-0.24	0.016
130.00	-6.21	-1.07	0.00	-13.75	0.00	13.75	2086.63	1043.32	2481.86	1225.70		3.20	-0.24	0.014
135.00	-5.66	-1.02	0.00	-8.40	0.00	8.40	2032.25	1016.13	2322.74	1147.11		3.45	-0.24	0.010
138.00	-2.29	-0.53	0.00	-5.35	0.00	5.35	1998.61	999.30	2228.56	1100.60		3.61	-0.25	0.006
140.00	-2.11	-0.51	0.00	-4.28	0.00	4.28	1975.75	987.88	2166.35	1069.88		3.71	-0.25	0.005
145.00	-1.66	-0.42	0.00	-1.74	0.00	1.74	1894.65	947.33	1989.39	982.48		3.97	-0.25	0.003
149.08	-0.07	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21		4.18	-0.25	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94		4.23	-0.25	0.000

Wind Loading - Shaft

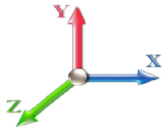
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	267.25	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	261.92	1.000	0.000	5.00	23.916	23.92	195.8	0.0	1505.0
10.00		1.00	0.85	7.442	8.19	256.59	1.000	0.000	5.00	23.434	23.43	191.8	0.0	1474.4
15.00		1.00	0.85	7.442	8.19	251.26	1.000	0.000	5.00	22.952	22.95	187.9	0.0	1443.8
20.00		1.00	0.90	7.896	8.69	253.33	1.000	0.000	5.00	22.470	22.47	195.2	0.0	1413.2
25.00		1.00	0.95	8.276	9.10	253.72	1.000	0.000	5.00	21.988	21.99	200.2	0.0	1382.6
30.00		1.00	0.98	8.600	9.46	252.91	1.000	0.000	5.00	21.506	21.51	203.4	0.0	1352.0
35.00		1.00	1.01	8.883	9.77	251.22	1.000	0.000	5.00	21.025	21.02	205.4	0.0	1321.4
39.67	Bot - Section 2	1.00	1.04	9.121	10.03	249.05	1.000	0.000	4.67	19.202	19.20	192.6	0.0	1206.5
40.00		1.00	1.04	9.137	10.05	248.87	1.000	0.000	0.33	1.366	1.37	13.7	0.0	159.5
45.00		1.00	1.07	9.366	10.30	246.00	1.000	0.000	5.00	20.438	20.44	210.6	0.0	2385.3
46.25	Top - Section 1	1.00	1.08	9.420	10.36	245.21	1.000	0.000	1.25	5.034	5.03	52.2	0.0	587.4
50.00		1.00	1.09	9.576	10.53	247.43	1.000	0.000	3.75	14.922	14.92	157.2	0.0	821.3
55.00		1.00	1.12	9.770	10.75	243.82	1.000	0.000	5.00	19.475	19.47	209.3	0.0	1071.6
60.00		1.00	1.14	9.951	10.95	239.90	1.000	0.000	5.00	18.993	18.99	207.9	0.0	1044.8
65.00		1.00	1.16	10.120	11.13	235.71	1.000	0.000	5.00	18.511	18.51	206.1	0.0	1018.1
70.00		1.00	1.17	10.279	11.31	231.29	1.000	0.000	5.00	18.029	18.03	203.9	0.0	991.3
75.00		1.00	1.19	10.430	11.47	226.67	1.000	0.000	5.00	17.547	17.55	201.3	0.0	964.5
80.00		1.00	1.21	10.572	11.63	221.86	1.000	0.000	5.00	17.065	17.07	198.5	0.0	937.7
81.21	Bot - Section 3	1.00	1.21	10.606	11.67	220.67	1.000	0.000	1.21	4.057	4.06	47.3	0.0	222.9
85.00		1.00	1.22	10.708	11.78	216.88	1.000	0.000	3.79	12.771	12.77	150.4	0.0	1290.5
86.71	Top - Section 2	1.00	1.23	10.753	11.83	215.15	1.000	0.000	1.71	5.672	5.67	67.1	0.0	572.9
90.00		1.00	1.24	10.838	11.92	216.08	1.000	0.000	3.29	10.754	10.75	128.2	0.0	507.1
95.00		1.00	1.25	10.962	12.06	210.84	1.000	0.000	5.00	15.943	15.94	192.2	0.0	751.6
100.00		1.00	1.27	11.081	12.19	205.48	1.000	0.000	5.00	15.462	15.46	188.5	0.0	728.7
105.00		1.00	1.28	11.195	12.31	200.00	1.000	0.000	5.00	14.980	14.98	184.5	0.0	705.7
110.00		1.00	1.29	11.305	12.44	194.41	1.000	0.000	5.00	14.498	14.50	180.3	0.0	682.8
115.00		1.00	1.30	11.412	12.55	188.72	1.000	0.000	5.00	14.016	14.02	175.9	0.0	659.8
120.00		1.00	1.32	11.514	12.67	182.94	1.000	0.000	5.00	13.534	13.53	171.4	0.0	636.9
120.96	Bot - Section 4	1.00	1.32	11.534	12.69	181.82	1.000	0.000	0.96	2.543	2.54	32.3	0.0	119.7
125.00		1.00	1.33	11.614	12.78	177.07	1.000	0.000	4.04	10.727	10.73	137.0	0.0	915.7
125.46	Top - Section 3	1.00	1.33	11.623	12.78	176.52	1.000	0.000	0.46	1.201	1.20	15.4	0.0	102.5
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	178.43	1.000	0.000	1.54	3.992	3.99	51.2	0.0	156.8
130.00		1.00	1.34	11.710	12.88	174.85	1.000	0.000	3.00	7.646	7.65	98.5	0.0	300.3
135.00		1.00	1.35	11.803	12.98	168.84	1.000	0.000	5.00	12.358	12.36	160.5	0.0	485.1
138.00	Appurtenance(s)	1.00	1.35	11.858	13.04	165.19	1.000	0.000	3.00	7.184	7.18	93.7	0.0	281.9
140.00		1.00	1.36	11.894	13.08	162.74	1.000	0.000	2.00	4.693	4.69	61.4	0.0	184.1
145.00		1.00	1.37	11.982	13.18	156.58	1.000	0.000	5.00	11.395	11.39	150.2	0.0	446.9
149.08	Appurtenance(s)	1.00	1.38	12.053	13.26	151.50	1.000	0.000	4.08	8.941	8.94	118.5	0.0	350.5
150.00		1.00	1.38	12.068	13.27	150.35	1.000	0.000	0.92	1.972	1.97	26.2	0.0	77.3
								Totals:	**150.00**			**5,663.6**		**31,259.9**

Discrete Appurtenance Forces

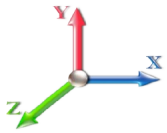
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.08	AP11-880/090/XP	3	12.053	13.258	0.65	0.90	9.39	52.80	0.000	0.000	124.48	0.00	0.00
2	149.08	DB844H90E-XY	9	12.053	13.258	1.01	0.90	27.67	126.00	0.000	0.000	366.84	0.00	0.00
3	149.08	Low Profile Platform	1	12.053	13.258	0.90	0.90	22.50	1200.00	0.000	0.000	298.30	0.00	0.00
4	138.00	KRY 112 489/2	3	11.858	13.044	1.00	1.00	1.95	46.20	0.000	0.000	25.44	0.00	0.00
5	138.00	Kathrein 782 11056	3	11.858	13.044	0.61	0.80	1.09	37.80	0.000	0.000	14.28	0.00	0.00
6	138.00	APXVAARR24 43-U-NA2	3	11.858	13.044	0.56	0.80	34.00	384.00	0.000	0.000	443.54	0.00	0.00
7	138.00	RMQP-4096-HK Plat. +	1	11.858	13.044	1.00	1.00	51.70	2645.00	0.000	0.000	674.37	0.00	0.00
8	138.00	Radio 4449 B71+B12	3	11.858	13.044	0.54	0.80	3.17	213.00	0.000	0.000	41.32	0.00	0.00
9	138.00	KRY 112 144/1	3	11.858	13.044	1.00	1.00	1.23	33.00	0.000	0.000	16.04	0.00	0.00
10	138.00	RR90-17-00DP	3	11.858	13.044	0.58	0.80	7.64	40.50	0.000	0.000	99.64	0.00	0.00
11	127.00	SBNHH-1D65B	3	11.653	12.818	0.66	0.80	16.10	121.80	0.000	0.000	206.31	0.00	0.00
12	127.00	Low Profile Platform	1	11.653	12.818	0.80	0.80	20.00	1200.00	0.000	0.000	256.36	0.00	0.00
13	127.00	DB-T1-6Z-8AB-0Z	2	11.653	12.818	0.57	0.80	5.45	37.80	0.000	0.000	69.89	0.00	0.00
14	127.00	FD9R6004/2CL-3CL	6	11.653	12.818	0.50	0.80	1.10	18.60	0.000	0.000	14.11	0.00	0.00
15	127.00	RRH2x60-700	3	11.653	12.818	0.61	0.80	6.38	180.00	0.000	0.000	81.83	0.00	0.00
16	127.00	RRH2X60-PCS	3	11.653	12.818	0.71	0.80	4.70	165.00	0.000	0.000	60.23	0.00	0.00
17	127.00	RRH2X60-AWS	3	11.653	12.818	0.61	0.80	6.38	180.00	0.000	0.000	81.83	0.00	0.00
18	127.00	LPA-80063/6CF	2	11.653	12.818	0.75	0.80	14.44	54.00	0.000	0.000	185.07	0.00	0.00
19	127.00	LPA-80080/6CF	4	11.653	12.818	1.36	0.80	23.56	84.00	0.000	0.000	301.93	0.00	0.00
20	127.00	BXA-70063-6CF-2	3	11.653	12.818	0.58	0.80	13.26	51.00	0.000	0.000	170.00	0.00	0.00
21	127.00	SBNHH-1D65A	3	11.653	12.818	0.66	0.80	11.71	100.50	0.000	0.000	150.13	0.00	0.00
							Totals:		**6,971.00**			**3,681.94**		

Total Applied Force Summary

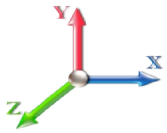
Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		195.78	1690.58	0.00	0.00
10.00		191.83	1659.98	0.00	0.00
15.00		187.89	1629.38	0.00	0.00
20.00		195.17	1598.79	0.00	0.00
25.00		200.17	1568.19	0.00	0.00
30.00		203.45	1537.59	0.00	0.00
35.00		205.45	1506.99	0.00	0.00
39.67		192.65	1379.90	0.00	0.00
40.00		13.73	171.70	0.00	0.00
45.00		210.57	2570.94	0.00	0.00
46.25		52.17	633.77	0.00	0.00
50.00		157.19	960.47	0.00	0.00
55.00		209.30	1257.20	0.00	0.00
60.00		207.90	1230.43	0.00	0.00
65.00		206.06	1203.65	0.00	0.00
70.00		203.86	1176.88	0.00	0.00
75.00		201.31	1150.11	0.00	0.00
80.00		198.46	1123.34	0.00	0.00
81.21		47.34	267.82	0.00	0.00
85.00		150.43	1431.15	0.00	0.00
86.71		67.09	636.37	0.00	0.00
90.00		128.20	629.21	0.00	0.00
95.00		192.24	937.22	0.00	0.00
100.00		188.46	914.27	0.00	0.00
105.00		184.47	891.33	0.00	0.00
110.00		180.29	868.38	0.00	0.00
115.00		175.94	845.43	0.00	0.00
120.00		171.42	822.48	0.00	0.00
120.96		32.27	155.29	0.00	0.00
125.00		137.04	1065.65	0.00	0.00
125.46		15.36	119.60	0.00	0.00
127.00	(33) attachments	1628.87	2406.67	0.00	0.00
130.00		98.49	370.70	0.00	0.00
135.00		160.46	602.54	0.00	0.00
138.00	(19) attachments	1408.33	3751.84	0.00	0.00
140.00		61.40	203.91	0.00	0.00
145.00		150.19	496.39	0.00	0.00
149.08	(13) attachments	908.16	1769.68	0.00	0.00
150.00		26.18	77.27	0.00	0.00
	Totals:	**9,345.55**	**43,313.11**	**0.00**	**0.00**

Calculated Forces

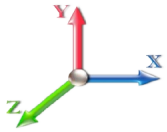
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2019	
Site Name:	Tolland-reed Rd	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.31	-9.36	0.00	-940.41	0.00	940.41	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.146
5.00	-41.61	-9.19	0.00	-893.61	0.00	893.61	5908.08	2954.04	13246.7	6542.05	0.02	-0.037	0.000	0.144
10.00	-39.95	-9.02	0.00	-847.67	0.00	847.67	5837.12	2918.56	12816.3	6329.51	0.08	-0.075	0.000	0.141
15.00	-38.31	-8.86	0.00	-802.55	0.00	802.55	5764.05	2882.03	12388.0	6117.98	0.18	-0.112	0.000	0.138
20.00	-36.71	-8.68	0.00	-758.27	0.00	758.27	5688.87	2844.43	11962.0	5907.62	0.32	-0.150	0.000	0.135
25.00	-35.14	-8.50	0.00	-714.85	0.00	714.85	5611.57	2805.78	11538.7	5698.56	0.49	-0.189	0.000	0.132
30.00	-33.59	-8.32	0.00	-672.34	0.00	672.34	5532.15	2766.08	11118.3	5490.95	0.71	-0.227	0.000	0.129
35.00	-32.08	-8.12	0.00	-630.77	0.00	630.77	5450.63	2725.31	10701.2	5284.94	0.97	-0.266	0.000	0.125
39.67	-30.70	-7.94	0.00	-592.83	0.00	592.83	5372.57	2686.29	10314.8	5094.09	1.25	-0.303	0.000	0.122
40.00	-30.53	-7.93	0.00	-590.21	0.00	590.21	5366.99	2683.49	10287.6	5080.67	1.27	-0.305	0.000	0.122
45.00	-27.95	-7.72	0.00	-550.55	0.00	550.55	5281.24	2640.62	9877.82	4878.29	1.61	-0.345	0.000	0.118
46.25	-27.32	-7.67	0.00	-540.90	0.00	540.90	4440.49	2220.24	8438.24	4167.33	1.70	-0.355	0.000	0.136
50.00	-26.35	-7.53	0.00	-512.13	0.00	512.13	4391.92	2195.96	8192.87	4046.15	2.00	-0.384	0.000	0.133
55.00	-25.09	-7.33	0.00	-474.50	0.00	474.50	4325.31	2162.66	7867.62	3885.52	2.42	-0.426	0.000	0.128
60.00	-23.86	-7.13	0.00	-437.88	0.00	437.88	4256.59	2128.30	7544.81	3726.10	2.89	-0.468	0.000	0.123
65.00	-22.65	-6.93	0.00	-402.25	0.00	402.25	4185.76	2092.88	7224.74	3568.03	3.40	-0.510	0.000	0.118
70.00	-21.47	-6.73	0.00	-367.62	0.00	367.62	4112.81	2056.41	6907.71	3411.46	3.96	-0.551	0.000	0.113
75.00	-20.32	-6.53	0.00	-333.99	0.00	333.99	4037.75	2018.88	6594.01	3256.53	4.56	-0.592	0.000	0.108
80.00	-19.19	-6.33	0.00	-301.35	0.00	301.35	3960.58	1980.29	6283.93	3103.40	5.20	-0.632	0.000	0.102
81.21	-18.92	-6.28	0.00	-293.70	0.00	293.70	3941.59	1970.79	6209.47	3066.62	5.36	-0.642	0.000	0.101
85.00	-17.49	-6.12	0.00	-269.89	0.00	269.89	3881.29	1940.65	5977.77	2952.20	5.88	-0.672	0.000	0.096
86.71	-16.86	-6.05	0.00	-259.42	0.00	259.42	3179.63	1589.82	4962.15	2450.62	6.13	-0.686	0.000	0.111
90.00	-16.22	-5.93	0.00	-239.50	0.00	239.50	3141.06	1570.53	4805.90	2373.45	6.61	-0.712	0.000	0.106
95.00	-15.29	-5.73	0.00	-209.87	0.00	209.87	3080.68	1540.34	4570.36	2257.13	7.38	-0.752	0.000	0.098
100.00	-14.37	-5.54	0.00	-181.21	0.00	181.21	3018.19	1509.10	4337.39	2142.08	8.19	-0.791	0.000	0.089
105.00	-13.48	-5.35	0.00	-153.50	0.00	153.50	2953.59	1476.79	4107.30	2028.44	9.03	-0.827	0.000	0.080
110.00	-12.61	-5.17	0.00	-126.73	0.00	126.73	2886.87	1443.44	3880.37	1916.37	9.92	-0.860	0.000	0.071
115.00	-11.76	-4.98	0.00	-100.90	0.00	100.90	2808.90	1404.45	3645.04	1800.15	10.84	-0.891	0.000	0.060
120.00	-10.94	-4.80	0.00	-75.98	0.00	75.98	2709.48	1354.74	3390.12	1674.25	11.78	-0.917	0.000	0.049
120.96	-10.79	-4.77	0.00	-71.37	0.00	71.37	2690.40	1345.20	3342.23	1650.60	11.97	-0.921	0.000	0.047
125.00	-9.72	-4.62	0.00	-52.10	0.00	52.10	2610.07	1305.03	3144.44	1552.92	12.76	-0.938	0.000	0.037
125.46	-9.60	-4.60	0.00	-49.98	0.00	49.98	2134.18	1067.09	2628.47	1298.10	12.85	-0.940	0.000	0.043
127.00	-7.22	-2.93	0.00	-42.89	0.00	42.89	2118.25	1059.12	2578.53	1273.44	13.15	-0.945	0.000	0.037
130.00	-6.86	-2.83	0.00	-34.09	0.00	34.09	2086.63	1043.32	2481.86	1225.70	13.75	-0.955	0.000	0.031
135.00	-6.25	-2.66	0.00	-19.94	0.00	19.94	2032.25	1016.13	2322.74	1147.11	14.75	-0.967	0.000	0.020
138.00	-2.53	-1.19	0.00	-11.96	0.00	11.96	1998.61	999.30	2228.56	1100.60	15.36	-0.972	0.000	0.012
140.00	-2.32	-1.12	0.00	-9.59	0.00	9.59	1975.75	987.88	2166.35	1069.88	15.77	-0.974	0.000	0.010
145.00	-1.83	-0.97	0.00	-3.97	0.00	3.97	1894.65	947.33	1989.39	982.48	16.79	-0.978	0.000	0.005
149.08	-0.08	-0.03	0.00	-0.03	0.00	0.03	1827.05	913.52	1849.12	913.21	17.63	-0.979	0.000	0.000
150.00	0.00	-0.03	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	17.82	-0.979	0.000	0.000

Final Analysis Summary

Structure:	CT46129-A-SBA		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 96 mph Wind	38.3	0.00	51.92	0.00	0.00	3868.68
0.9D + 1.6W 96 mph Wind	38.3	0.00	38.93	0.00	0.00	3839.96
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.2	0.00	83.77	0.00	0.00	991.49
1.2D + 1.0E	1.8	0.00	51.98	0.00	0.00	201.45
0.9D + 1.0E	1.8	0.00	38.98	0.00	0.00	199.83
1.0D + 1.0W 60 mph Wind	9.4	0.00	43.31	0.00	0.00	940.41

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 96 mph Wind	-51.92	-38.35	0.00	-3868.6	0.00	-3868.6	5976.93	2988.4	13678.8	6755.45	0.00	0.582
0.9D + 1.6W 96 mph Wind	-38.93	-38.33	0.00	-3839.9	0.00	-3839.9	5976.93	2988.4	13678.8	6755.45	0.00	0.575
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-83.77	-9.23	0.00	-991.49	0.00	-991.49	5976.93	2988.4	13678.8	6755.45	0.00	0.161
1.2D + 1.0E	-51.98	-1.80	0.00	-201.45	0.00	-201.45	5976.93	2988.4	13678.8	6755.45	0.00	0.039
0.9D + 1.0E	-38.98	-1.79	0.00	-199.83	0.00	-199.83	5976.93	2988.4	13678.8	6755.45	0.00	0.036
1.0D + 1.0W 60 mph Wind	-43.31	-9.36	0.00	-940.41	0.00	-940.41	5976.93	2988.4	13678.8	6755.45	0.00	0.146

Base Plate Summary

Structure:	CT46129-A-SB		**Code:**	EIA/TIA-222-G	6/24/2019
Site Name:	Tolland-reed Rd		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions		Base Plate		Anchor Bolts	
Original Design		**Yield (ksi):**	60.00	**Bolt Circle:**	65.00
Moment (kip-ft):	4611.00	**Width (in):**	71.00	**Number Bolts:**	24.00
Axial (kip):	39.00	**Style:**	Round	**Bolt Type:**	2.25" 18J
Shear (kip):	39.00	**Polygon Sides:**	0.00	**Bolt Diameter (in):**	2.25
		Clip Length (in):	0.00	**Yield (ksi):**	75.00
Analysis				**Ultimate (ksi):**	100.00
Moment (kip-ft):	3868.68	**Effective Len (in):**	12.80	**Arrangement:**	Radial
Axial (kip):	83.77	**Moment (kip-in):**	551.37	**Cluster Dist (in):**	0.00
Shear (kip):	38.35	**Allow Stress (ksi):**	81.00	**Start Angle (deg):**	0.00
		Applied Stress (ksi):	0.00		
Moment Design %:	83.90	**Stress Ratio:**	0.63	Compression	
				Force (kip):	122.53
				Allowable (kip):	260.00
				Ratio:	0.48
				Tension	
				Force (kip):	115.55
				Allowable (kip):	260.00
				Ratio:	0.46

EXHIBIT 8

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

Antenna Mount Analysis Report

Existing 150-Ft Site Pro Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT46129-A-SBA

Customer Site Name: Tolland-reed Rd

Carrier Name: T-Mobile (App#: 116675, V1)

Carrier Site ID / Name: CT11413D / Tolland

Site Location: 208 Reed Road

Tolland, Connecticut

Tolland County

Latitude: 41.853361

Longitude: -72.406139

Analysis Result:

Max Structural Usage: 55.0%[Pass]

Report Prepared By : Dipika Dhungana

NOTE: The proposed low profile platform w/HRK & reinforcement kit RMQP-4096-HK is not currently installed on the tower. The proposed low profile platform w/HRK & reinforcement kit RMQP-4096-HK was assumed to be installed per the manufacturer's instructions, and it was assumed that the platform can be installed properly on the existing tower. TES cannot verify that the proposed low profile platform w/HRK & reinforcement kit RMQP-4096-HK will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the low profile platform w/HRK & reinforcement kit RMQP-4096-HK at 138.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	SBA Site: CT46129-A-01 / Tolland-reed Rd/ Application #: 116675, v1
Antenna Loading	SBA Site: CT46129-A-01 / Tolland-reed Rd/ Application #: 116675, v1
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125.0mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G/ IBC 2015/ 2018 CSBC
Exposure Category: B
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

The site is a Risk Category II structure per table 1604.5 of the 2015 IBC. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(1) Low profile platform w/HRK & reinforcement kit RMQP-4096-HK at 138.00' elevation

Final Antenna Configuration

3	RFS APXVAARR24_43-U-NA20
3	EMS RR90-17-00DPL2
3	Ericsson KRY 112 489/2
3	Ericsson KRY 112 144/1
3	Ericsson Radio 4449 B71+B12
3	Kathrein 782 11056

Any proposed antennas not currently installed should be mounted such that the centers of the antennas do not exceed 0.5 ft vertically from the center of the RMQP-4096-HK.

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 55.0%, which occurs in the connection plate. 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. Antenna Placement Diagram
2. 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: CT46129-A-SBA - Tolland-reed Rd

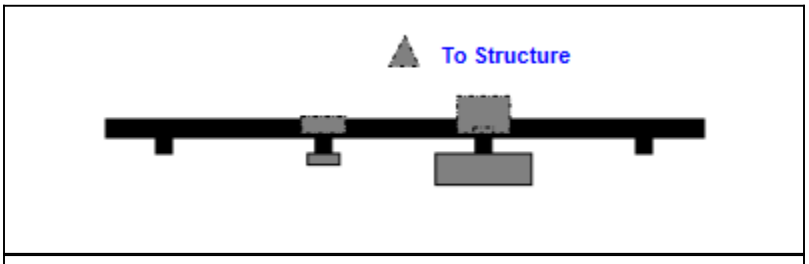
Sector: **A**

Structure Type: Monopole

Mount Elev: 138.00

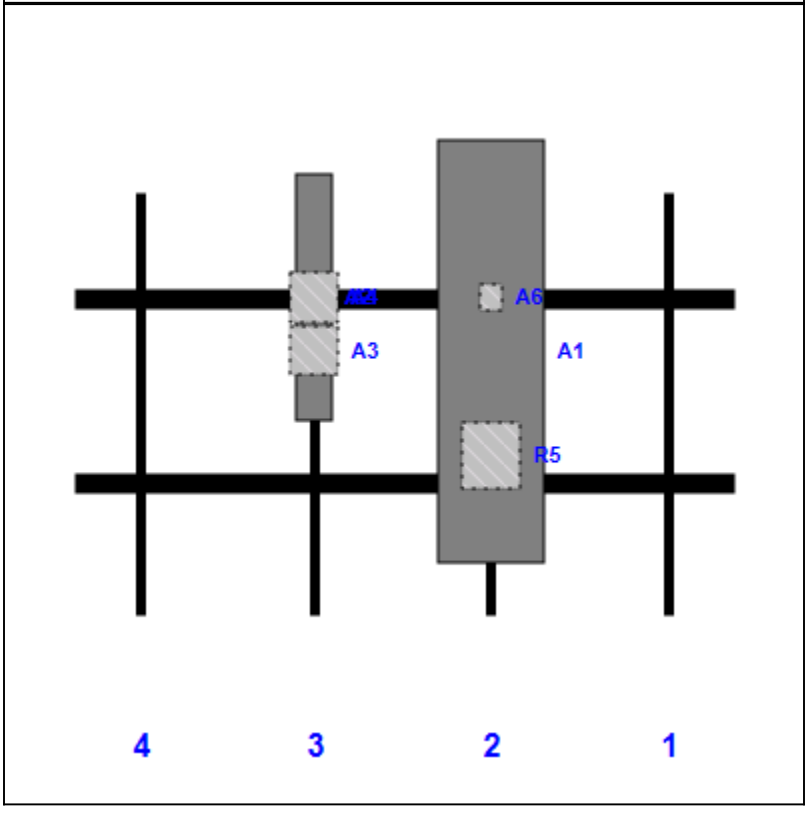
6/18/2019

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A1	APXVAARR24_43-U-NA20	95.90	24.00	94.90	2	a	Front	36.00	0.00
R5	4449	15.00	13.20	94.90	2	a	Behind	60.00	0.00
A6	782 11056	5.70	5.00	94.90	2	a	Behind	24.00	0.00
A2	EMS RR90-17-00DPL2	56.00	8.00	54.90	3	a	Front	24.00	0.00
A3	Ericsson KRY 112 489/2	11.20	11.00	54.90	3	a	Behind	36.00	0.00
A4	Ericsson KRY 112 144/1	11.20	11.00	54.90	3	a	Behind	24.00	0.00

Structure: CT46129-A-SBA - Tolland-reed Rd

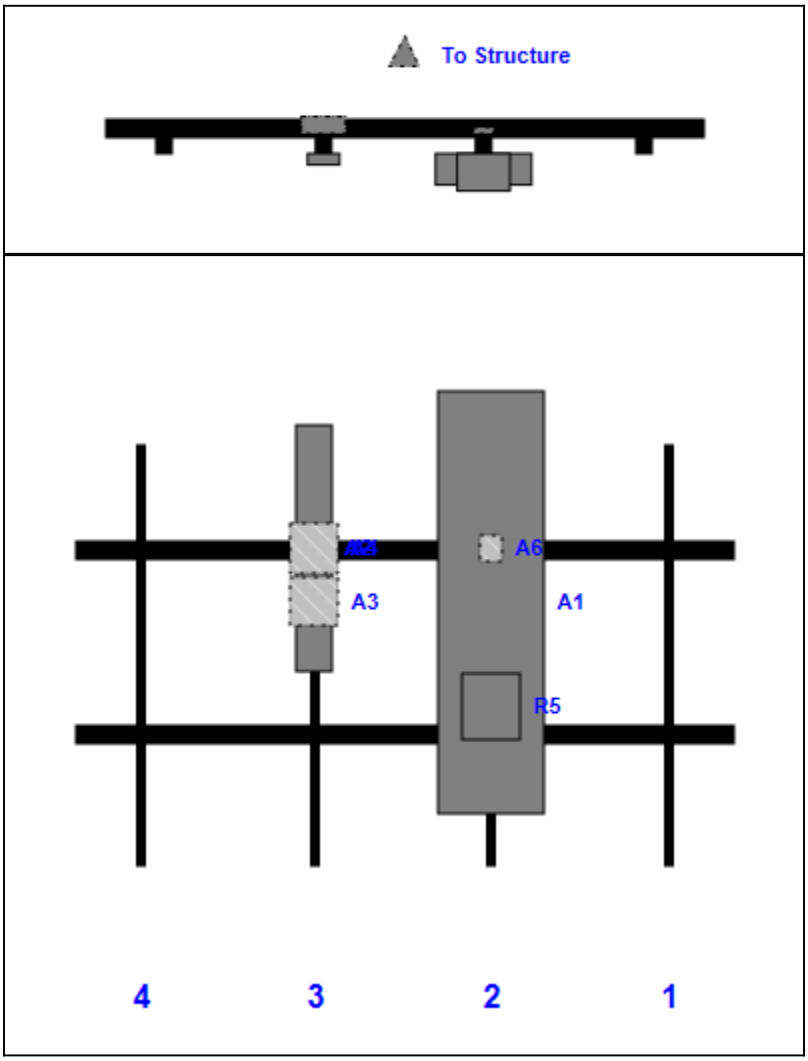
Sector: **B**

Structure Type: Monopole

Mount Elev: 138.00

6/18/2019

Plan View



Front View

Looking Toward Structure

Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A1	APXVAARR24_43-U-NA20	95.90	24.00	94.90	2	a	Front	36.00	0.00
R5	4449	15.00	13.20	94.90	2	a	Front	60.00	0.00
A6	782 11056	5.70	5.00	94.90	2	a	Behind	24.00	0.00
A2	EMS RR90-17-00DPL2	56.00	8.00	54.90	3	a	Front	24.00	0.00
A3	Ericsson KRY 112 489/2	11.20	11.00	54.90	3	a	Behind	36.00	0.00
A4	Ericsson KRY 112 144/1	11.20	11.00	54.90	3	a	Behind	24.00	0.00

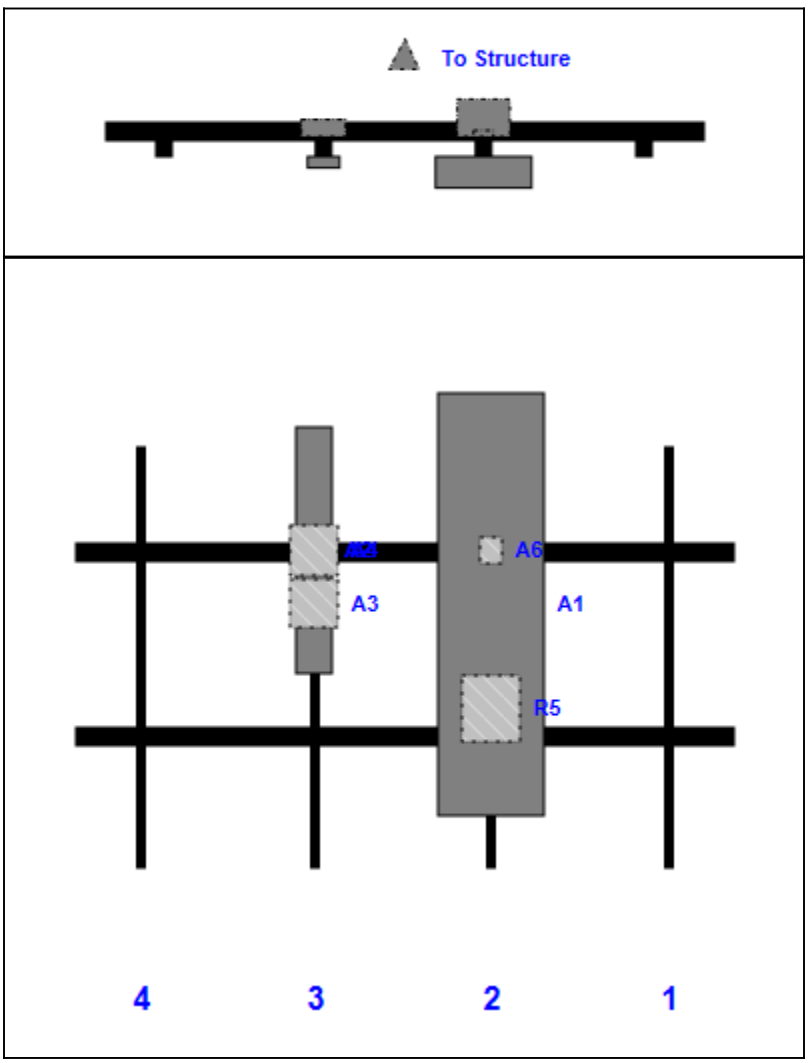
Structure: CT46129-A-SBA - Tolland-reed Rd

Sector: C
Structure Type: Monopole
Mount Elev: 138.00

6/18/2019

Tower Engineering Solutions

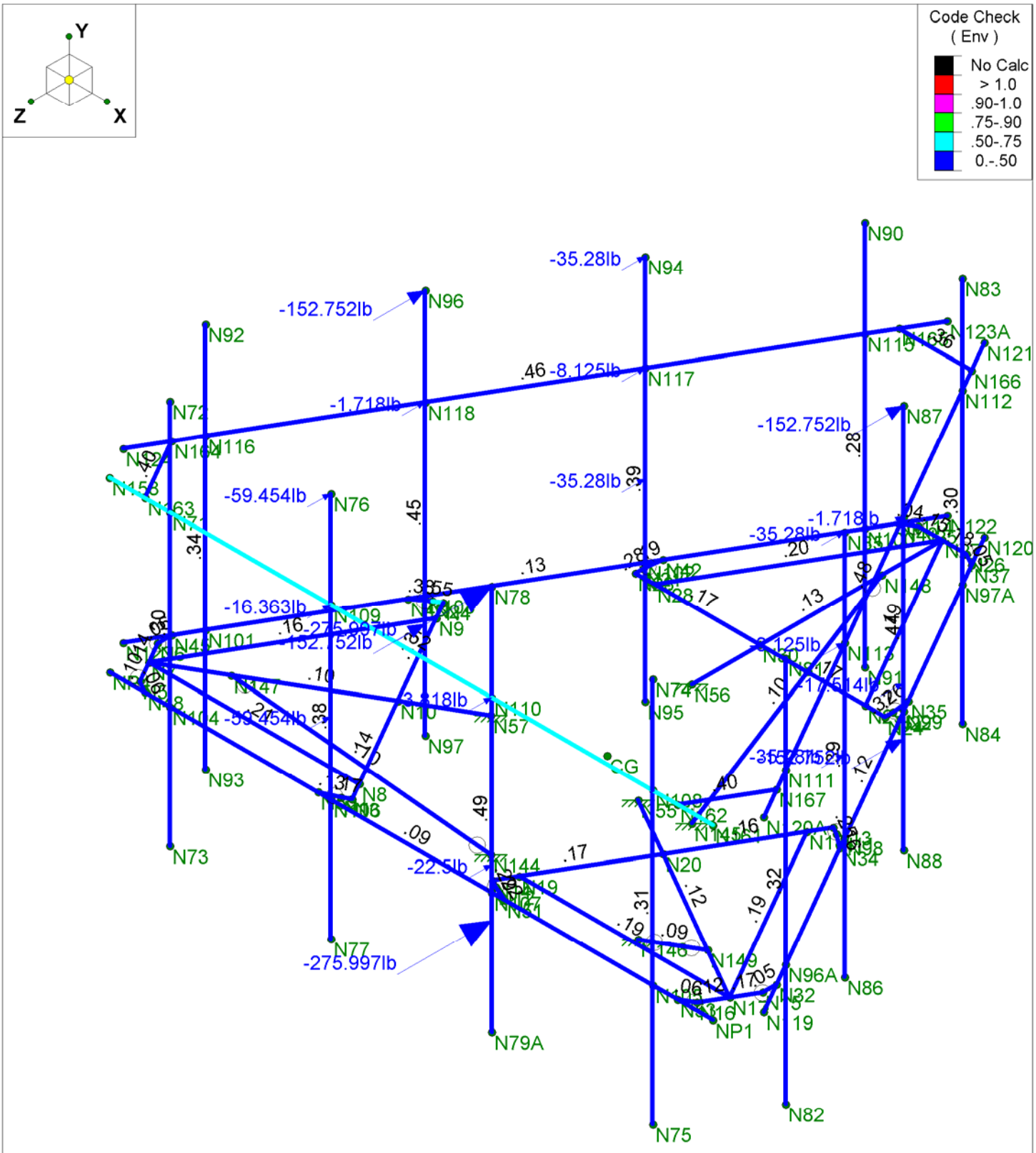
Plan View



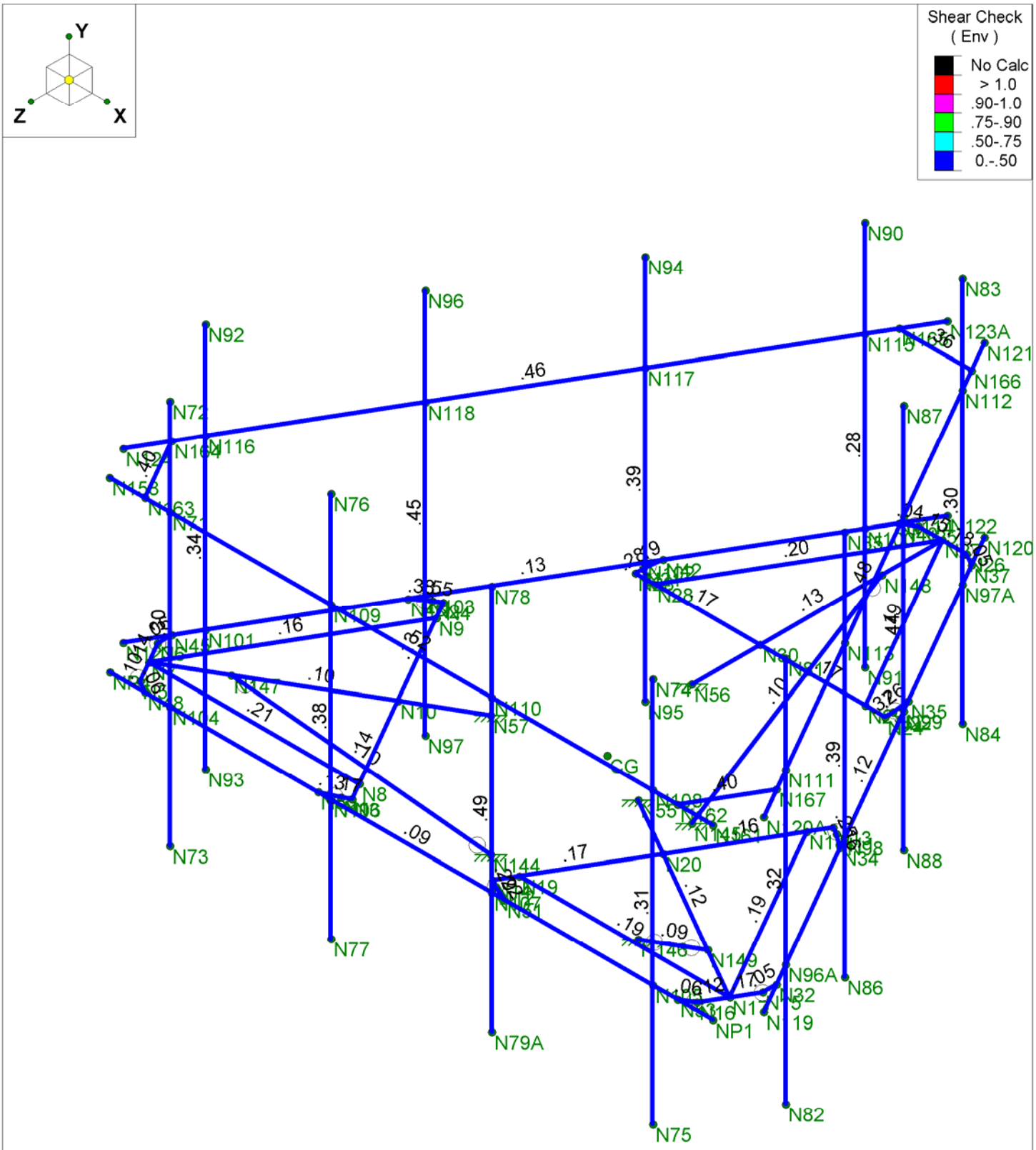
Front View

Looking Toward Structure

Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A1	APXVAARR24_43-U-NA20	95.90	24.00	94.90	2	a	Front	36.00	0.00
R5	4449	15.00	13.20	94.90	2	a	Behind	60.00	0.00
A6	782 11056	5.70	5.00	94.90	2	a	Behind	24.00	0.00
A2	EMS RR90-17-00DPL2	56.00	8.00	54.90	3	a	Front	24.00	0.00
A3	Ericsson KRY 112 489/2	11.20	11.00	54.90	3	a	Behind	36.00	0.00
A4	Ericsson KRY 112 144/1	11.20	11.00	54.90	3	a	Behind	24.00	0.00

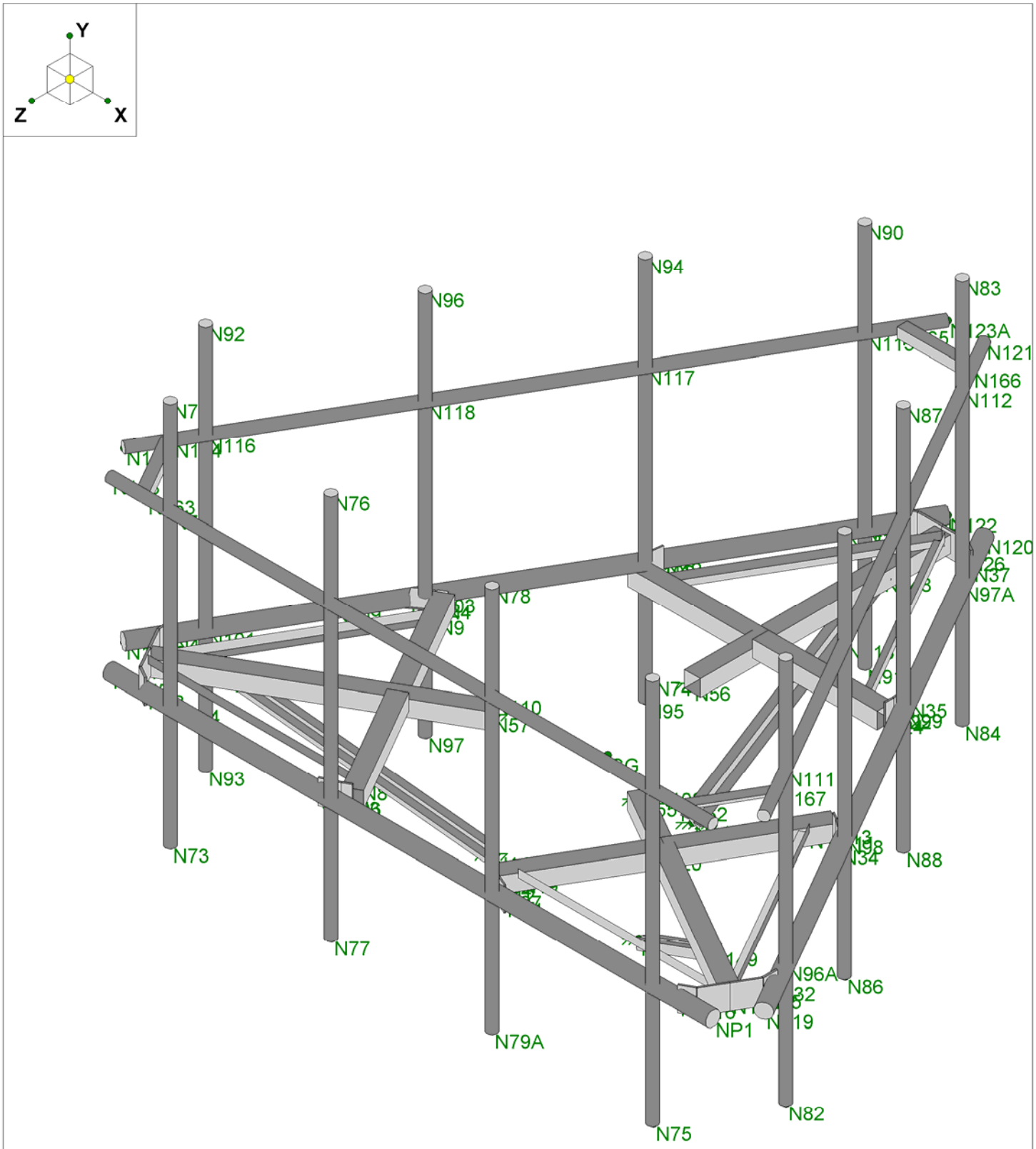


Tower Engineering Solutio...	CT46129-A-SBA_MT_LO_Loads Only_G	SK - 1
		June 18, 2019 at 3:42 PM
TES Project No. 79268		CT46129-A-SBA_79268_G_RISA_L...



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

Tower Engineering Solutio...	CT46129-A-SBA_MT_LO_Loads Only_G	SK - 2
		June 18, 2019 at 3:42 PM
TES Project No. 79268		CT46129-A-SBA_79268_G_RISA_L...



Tower Engineering Solutio...	CT46129-A-SBA_MT_LO_Loads Only_G	SK - 3
		June 18, 2019 at 3:42 PM
TES Project No. 79268		CT46129-A-SBA_79268_G_RISA_L...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					21			
2	Antenna Di	None					21			
3	Antenna W Front	None					21			
4	Antenna Wi Front	None					21			
5	Antenna W Side	None					21			
6	Antenna Wi Side	None					21			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						63	3	
11	Structure W Front	None						63		
12	Structure Wi Front	None						63		
13	Structure W Side	None						63		
14	Structure Wi Side	None						63		
15	BLC 9 Transient Area...	None						117		
16	BLC 10 Transient Are...	None						110		

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	NP4	-6.248693	0.395833	4.052255	0	
2	NP1	6.251307	0.395833	4.052255	0	
3	CG	3e-6	0	0	0	
4	N57	-1.525645	0.395833	0.880833	0	
5	N56	0.001306	0.395833	-1.760626	0	
6	N55	1.525423	0.395833	0.879222	0	
7	N53	5.518027	0.395833	4.052255	0	
8	N51	1.934693	0.395833	4.052255	0	
9	N50	-1.932785	0.395833	4.052255	0	
10	N48	-5.516118	0.395833	4.052255	0	
11	N45	-6.267413	0.395833	2.750973	0	
12	N43	-4.475748	0.395833	-0.352283	0	
13	N42	-2.542007	0.395833	-3.70162	0	
14	N40	-0.750342	0.395833	-6.804875	0	
15	N37	0.749411	0.395833	-6.806498	0	
16	N35	2.544372	0.395833	-3.697534	0	
17	N34	4.474346	0.395833	-0.354721	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
18	N32	6.269307	0.395833	2.754243	0	
19	N30	0.000003	0.395833	-3.17336	0	
20	N29	2.180513	0.395833	-3.17336	0	
21	N28	-2.178604	0.395833	-3.17336	0	
22	N27	0.000003	0.395833	-6.948466	0	
23	N26	0.500954	0.395833	-6.948466	0	
24	N25	-0.499046	0.395833	-6.948466	0	
25	N24	2.584288	0.395833	-3.17336	0	
26	N23	-2.582379	0.395833	-3.17336	0	
27	N22	2.584288	0.395833	-3.340026	0	
28	N21	-2.582379	0.395833	-3.340026	0	
29	N20	2.748854	0.395833	1.585571	0	
30	N19	1.659075	0.395833	3.473123	0	
31	N18	3.838468	0.395833	-0.301696	0	
32	N17	6.018192	0.395833	3.473123	0	
33	N16	5.768027	0.395833	3.906422	0	
34	N15	6.268027	0.395833	3.040397	0	
35	N14	1.457023	0.395833	3.823089	0	
36	N13	4.040356	0.395833	-0.651376	0	
37	N12	1.60136	0.395833	3.906422	0	
38	N11	4.184693	0.395833	-0.568042	0	
39	N10	-2.74678	0.395833	1.585856	0	
40	N9	-3.83656	0.395833	-0.301696	0	
41	N8	-1.657001	0.395833	3.473409	0	
42	N7	-6.016118	0.395833	3.473409	0	
43	N6	-6.266118	0.395833	3.040397	0	
44	N5	-5.766118	0.395833	3.906422	0	
45	N4	-4.038447	0.395833	-0.651376	0	
46	N3	-1.455114	0.395833	3.823089	0	
47	N2	-4.182785	0.395833	-0.568042	0	
48	N1	-1.599451	0.395833	3.906422	0	
49	N144	-1.525645	-2.104167	0.880833	0	
50	N145	0.001306	-2.104167	-1.760626	0	
51	N146	1.525423	-2.104167	0.879222	0	
52	N147	-4.933586	0.395833	2.848409	0	
53	N148	0.000003	0.395833	-5.698466	0	
54	N149	4.93566	0.395833	2.848123	0	
55	N158	-6.248693	3.895833	4.052256	0	
56	N161	6.251307	3.895833	4.052256	0	
57	N162	5.518027	3.895833	4.052256	0	
58	N163	-5.516118	3.895833	4.052256	0	
59	N164	-6.267414	3.895833	2.750973	0	
60	N165	-0.750342	3.895833	-6.804876	0	
61	N166	0.750348	3.895833	-6.804876	0	
62	N167	6.268371	3.895833	2.752621	0	
63	N71	-4.998693	3.895833	4.052256	0	
64	N72	-4.998693	5.895833	4.052256	0	
65	N73	-4.998693	-2.104167	4.052256	0	
66	N74	5.001307	5.895833	4.052256	0	
67	N75	5.001307	-2.104167	4.052256	0	
68	N76	-1.665693	5.895833	4.052256	0	
69	N77	-1.665693	-2.104167	4.052256	0	
70	N78	1.668306	5.895833	4.052256	0	
71	N79A	1.668306	-2.104167	4.052256	0	
72	N81	6.008703	5.895833	2.302868	0	
73	N82	6.008703	-2.104167	2.302868	0	
74	N83	1.008703	5.895833	-6.357386	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
75	N84	1.008703	-2.104167	-6.357386	0	
76	N85	4.342203	5.895833	-0.583595	0	
77	N86	4.342203	-2.104167	-0.583595	0	
78	N87	2.675203	5.895833	-3.470924	0	
79	N88	2.675203	-2.104167	-3.470924	0	
80	N90	-1.010009	5.895833	-6.355123	0	
81	N91	-1.010009	-2.104167	-6.355123	0	
82	N92	-6.010009	5.895833	2.305131	0	
83	N93	-6.010009	-2.104167	2.305131	0	
84	N94	-2.676509	5.895833	-3.468661	0	
85	N95	-2.676509	-2.104167	-3.468661	0	
86	N96	-4.343509	5.895833	-0.581332	0	
87	N97	-4.343509	-2.104167	-0.581332	0	
88	N96A	6.010608	0.395833	2.302868	0	
89	N97A	1.010608	0.395833	-6.357386	0	
90	N98	4.344108	0.395833	-0.583595	0	
91	N99	2.677108	0.395833	-3.470924	0	
92	N100	-1.010006	0.395833	-6.355123	0	
93	N101	-6.010006	0.395833	2.305131	0	
94	N102	-2.676506	0.395833	-3.468661	0	
95	N103	-4.343506	0.395833	-0.581332	0	
96	N104	-4.998693	0.395833	4.052255	0	
97	N105	5.001307	0.395833	4.052255	0	
98	N106	-1.665693	0.395833	4.052255	0	
99	N107	1.668306	0.395833	4.052255	0	
100	N108	5.001307	3.895833	4.052256	0	
101	N109	-1.665693	3.895833	4.052256	0	
102	N110	1.668306	3.895833	4.052256	0	
103	N111	6.010608	3.895833	2.302868	0	
104	N112	1.010608	3.895833	-6.357386	0	
105	N113	4.344108	3.895833	-0.583595	0	
106	N114	2.677108	3.895833	-3.470924	0	
107	N115	-1.010006	3.895833	-6.355123	0	
108	N116	-6.010006	3.895833	2.305131	0	
109	N117	-2.676506	3.895833	-3.468661	0	
110	N118	-4.343506	3.895833	-0.581332	0	
111	N119	6.633707	0.395833	3.385402	0	
112	N120	0.383707	0.395833	-7.439915	0	
113	N122	-0.385005	0.395833	-7.437658	0	
114	N123	-6.635005	0.395833	3.38766	0	
115	N120A	6.633707	3.895833	3.385402	0	
116	N121	0.383707	3.895833	-7.439915	0	
117	N123A	-0.385005	3.895833	-7.437658	0	
118	N124	-6.635005	3.895833	3.38766	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Footrails	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Grating Angl...	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Handrails	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Standoff Arm	HSS4x4x4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
5	Plan Bracing	HSS4x4x4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
6	Kickers	LL2.5x2.5x3...	Beam	Double Angl...	A36 Gr.36	Typical	1.8	2.46	1.07	.023
7	Mount Pipes	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	Footrail Con...	PL1/2x6_HRA	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
9	Plan Bracing...	PL3/8X6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
10	Handrail Cor...	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	1.5CU1.25X...	Beam	CU	A570_33	Typical	.131	.022	.052	5.4e-5

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1	AA CS14X1...	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	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	58	1.2
7	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2
8	J429-Gr5	29000	11154	.3	.65	.49	92	1.5	120	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570_33	29500	11346	.3	.65	.49	33	52
2	A607_C1_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....	1	19	16	13	12	141
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B....	1	38	35	35	24	141
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B....	1	22	16	16	13	141
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B....	1	30	25	25	19	141
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B....	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B....	1	24	15	15	15	141

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N5			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
2	M2	N7	N6			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
3	M3	N3	N1			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
4	M4	N1	N50			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
5	M5	N4	N2		90	Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
6	M6	N2	N43		90	Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
7	M7	N7	N9			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N7	N8		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N5	N48			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
10	M10	N6	N45			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
11	M11	N7	N57			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
12	M12	N3	N10			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
13	M13	N10	N4			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
14	M14	N17	N15			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
15	M15	N17	N16			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
16	M16	N13	N11			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
17	M17	N11	N34			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
18	M18	N14	N12			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
19	M19	N12	N51			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
20	M20	N17	N19			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
21	M21	N17	N18		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N15	N32			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
23	M23	N16	N53			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
24	M24	N17	N55			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
25	M25	N13	N20			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
26	M26	N20	N14			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
27	M27	N27	N25			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
28	M28	N27	N26			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
29	M29	N23	N21			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
30	M30	N21	N42			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
31	M31	N24	N22			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
32	M32	N22	N35			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
33	M33	N27	N29			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
34	M34	N27	N28		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
35	M35	N25	N40			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
36	M36	N26	N37			PL1/2x6_HRA	Beam	RECT	A36 Gr.36	DR1
37	M37	N27	N56			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
38	M38	N23	N30			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
39	M39	N30	N24			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
40	M40	N119	N120			Footrails	Beam	Pipe	A53 Gr.B	Typical
41	M41	N122	N123			Footrails	Beam	Pipe	A53 Gr.B	Typical
42	M42	NP4	NP1			Footrails	Beam	Pipe	A53 Gr.B	Typical
43	M139	N144	N147			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
44	M140	N145	N148			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
45	M141	N146	N149			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
46	M154	N158	N161			Handrails	Beam	Pipe	A53 Gr.B	Typical
47	M155	N120A	N121			Handrails	Beam	Pipe	A53 Gr.B	Typical
48	M156	N123A	N124			Handrails	Beam	Pipe	A53 Gr.B	Typical
49	M157	N163	N164		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
50	M158	N165	N166		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
51	M159	N167	N162		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
52	MP4A	N72	N73			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
53	MP1A	N74	N75			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
54	MP3A	N76	N77			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
55	MP2A	N78	N79A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
56	MP4C	N81	N82			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
57	MP1C	N83	N84			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
58	MP3C	N85	N86			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
59	MP2C	N87	N88			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
60	MP4B	N90	N91			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
61	MP1B	N92	N93			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
62	MP3B	N94	N95			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
63	MP2B	N96	N97			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	M1						Yes			None
2	M2						Yes			None
3	M3						Yes			None
4	M4		BenPIN				Yes			None
5	M5						Yes			None
6	M6		BenPIN				Yes			None
7	M7						Yes			None
8	M8						Yes			None
9	M9		BenPIN				Yes			None
10	M10		BenPIN				Yes			None
11	M11						Yes			None
12	M12						Yes			None
13	M13						Yes			None
14	M14						Yes			None
15	M15						Yes			None
16	M16						Yes			None
17	M17		BenPIN				Yes			None
18	M18						Yes			None
19	M19		BenPIN				Yes			None
20	M20						Yes			None
21	M21						Yes			None
22	M22		BenPIN				Yes			None
23	M23		BenPIN				Yes			None
24	M24						Yes			None
25	M25						Yes			None
26	M26						Yes			None
27	M27						Yes			None
28	M28						Yes			None
29	M29						Yes			None
30	M30		BenPIN				Yes			None
31	M31						Yes			None
32	M32		BenPIN				Yes			None
33	M33						Yes			None
34	M34						Yes			None
35	M35		BenPIN				Yes			None
36	M36		BenPIN				Yes			None
37	M37						Yes			None
38	M38						Yes			None
39	M39						Yes			None
40	M40						Yes			None
41	M41						Yes			None
42	M42						Yes			None
43	M139	BenPIN	BenPIN				Yes			None
44	M140	BenPIN	BenPIN				Yes			None
45	M141	BenPIN	BenPIN				Yes			None
46	M154						Yes			None
47	M155						Yes			None
48	M156						Yes			None
49	M157						Yes			None
50	M158						Yes			None
51	M159						Yes			None
52	MP4A						Yes			None
53	MP1A						Yes			None
54	MP3A						Yes			None
55	MP2A						Yes			None
56	MP4C						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
57	MP1C						Yes			None
58	MP3C						Yes			None
59	MP2C						Yes			None
60	MP4B						Yes			None
61	MP1B						Yes			None
62	MP3B						Yes			None
63	MP2B						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	PL1/2x6_H...	.5			Lbyy			.65	.65		Lateral
2	M2	PL1/2x6_H...	.5			Lbyy			.65	.65		Lateral
3	M3	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
4	M4	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
5	M5	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
6	M6	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
7	M7	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
8	M8	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
9	M9	PL1/2x6_H...	.289			Lbyy			.8	.8		Lateral
10	M10	PL1/2x6_H...	.289			Lbyy			.8	.8		Lateral
11	M11	Standoff Arm	5.185			Lbyy			2.1	2.1		Lateral
12	M12	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
13	M13	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
14	M14	PL1/2x6_H...	.5			Lbyy			.65	.65		Lateral
15	M15	PL1/2x6_H...	.5			Lbyy			.65	.65		Lateral
16	M16	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
17	M17	Plan Bracin...	.36			Lbyy			.8	.8		Lateral
18	M18	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
19	M19	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
20	M20	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
21	M21	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
22	M22	PL1/2x6_H...	.286			Lbyy			.8	.8		Lateral
23	M23	PL1/2x6_H...	.289			Lbyy			.8	.8		Lateral
24	M24	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
25	M25	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
26	M26	Plan Bracing	2.584			Lbyy			.65	.65		Lateral
27	M27	PL1/2x6_H...	.499			Lbyy			.65	.65		Lateral
28	M28	PL1/2x6_H...	.501			Lbyy			.65	.65		Lateral
29	M29	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
30	M30	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
31	M31	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
32	M32	Plan Bracin...	.36			Lbyy			.8	.8		Lateral
33	M33	Grating Ang...	4.36			Lbyy			.65	.65		Lateral
34	M34	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
35	M35	PL1/2x6_H...	.289			Lbyy			.8	.8		Lateral
36	M36	PL1/2x6_H...	.286			Lbyy			.8	.8		Lateral
37	M37	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
38	M38	Plan Bracing	2.582			Lbyy			.65	.65		Lateral
39	M39	Plan Bracing	2.584			Lbyy			.65	.65		Lateral
40	M40	Footrails	12.5			Lbyy			1	1		Lateral
41	M41	Footrails	12.5			Lbyy			1	1		Lateral
42	M42	Footrails	12.5			Lbyy			1	1		Lateral
43	M139	Kickers	4.662			Lbyy			1	1		Lateral
44	M140	Kickers	4.664			Lbyy			1	1		Lateral
45	M141	Kickers	4.664			Lbyy			1	1		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
46	M154	Handrails	12.5			Lbyy			1	1		Lateral
47	M155	Handrails	12.5			Lbyy			1	1		Lateral
48	M156	Handrails	12.5			Lbyy			1	1		Lateral
49	M157	Handrail Co...	1.503			Lbyy			.65	.65		Lateral
50	M158	Handrail Co...	1.501			Lbyy			.65	.65		Lateral
51	M159	Handrail Co...	1.501			Lbyy			.65	.65		Lateral
52	MP4A	Mount Pipes	8			Lbyy			1	1		Lateral
53	MP1A	Mount Pipes	8			Lbyy			1	1		Lateral
54	MP3A	Mount Pipes	8			Lbyy			1	1		Lateral
55	MP2A	Mount Pipes	8			Lbyy			1	1		Lateral
56	MP4C	Mount Pipes	8			Lbyy			1	1		Lateral
57	MP1C	Mount Pipes	8			Lbyy			1	1		Lateral
58	MP3C	Mount Pipes	8			Lbyy			1	1		Lateral
59	MP2C	Mount Pipes	8			Lbyy			1	1		Lateral
60	MP4B	Mount Pipes	8			Lbyy			1	1		Lateral
61	MP1B	Mount Pipes	8			Lbyy			1	1		Lateral
62	MP3B	Mount Pipes	8			Lbyy			1	1		Lateral
63	MP2B	Mount Pipes	8			Lbyy			1	1		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-torque...	Kyy	Kzz	Cm-...	Cm-...	Cb	R	a[ft]	y sw...	z sw...
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	-64	0
2	MP2A	Y	-64	6
3	MP2B	Y	-64	0
4	MP2B	Y	-64	6
5	MP2C	Y	-64	0
6	MP2C	Y	-64	6
7	MP3A	Y	-9	0
8	MP3A	Y	-9	4
9	MP3B	Y	-9	0
10	MP3B	Y	-9	4
11	MP3C	Y	-9	0
12	MP3C	Y	-9	4
13	MP3A	Y	-17	2
14	MP3B	Y	-17	2
15	MP3C	Y	-17	2
16	MP2A	Y	-70	5
17	MP2B	Y	-70	5
18	MP2C	Y	-70	5

Member Point Loads (BLC 1 : Antenna D) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2A	Y	-2.6	2
20	MP2B	Y	-2.6	2
21	MP2C	Y	-2.6	2

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-287.732	0
2	MP2A	Y	-287.732	6
3	MP2B	Y	-287.732	0
4	MP2B	Y	-287.732	6
5	MP2C	Y	-287.732	0
6	MP2C	Y	-287.732	6
7	MP3A	Y	-71.554	0
8	MP3A	Y	-71.554	4
9	MP3B	Y	-71.554	0
10	MP3B	Y	-71.554	4
11	MP3C	Y	-71.554	0
12	MP3C	Y	-71.554	4
13	MP3A	Y	-53.782	2
14	MP3B	Y	-53.782	2
15	MP3C	Y	-53.782	2
16	MP2A	Y	-97.913	5
17	MP2B	Y	-97.913	5
18	MP2C	Y	-97.913	5
19	MP2A	Y	-18.271	2
20	MP2B	Y	-18.271	2
21	MP2C	Y	-18.271	2

Member Point Loads (BLC 3 : Antenna W Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-275.997	0
2	MP2A	Z	-275.997	6
3	MP2B	Z	-152.752	0
4	MP2B	Z	-152.752	6
5	MP2C	Z	-152.752	0
6	MP2C	Z	-152.752	6
7	MP3A	Z	-59.454	0
8	MP3A	Z	-59.454	4
9	MP3B	Z	-35.28	0
10	MP3B	Z	-35.28	4
11	MP3C	Z	-35.28	0
12	MP3C	Z	-35.28	4
13	MP3A	Z	-16.363	2
14	MP3B	Z	-8.125	2
15	MP3C	Z	-8.125	2
16	MP2A	Z	-22.5	5
17	MP2B	Z	0	5
18	MP2C	Z	-17.514	5
19	MP2A	Z	-3.818	2
20	MP2B	Z	-1.718	2
21	MP2C	Z	-1.718	2

Member Point Loads (BLC 4 : Antenna Wi Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-82.546	0

Member Point Loads (BLC 4 : Antenna Wi Front) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
2	MP2A	Z	-82.546	6
3	MP2B	Z	-48.691	0
4	MP2B	Z	-48.691	6
5	MP2C	Z	-48.691	0
6	MP2C	Z	-48.691	6
7	MP3A	Z	-20.667	0
8	MP3A	Z	-20.667	4
9	MP3B	Z	-13.988	0
10	MP3B	Z	-13.988	4
11	MP3C	Z	-13.988	0
12	MP3C	Z	-13.988	4
13	MP3A	Z	-5.9	2
14	MP3B	Z	-3.76	2
15	MP3C	Z	-3.76	2
16	MP2A	Z	-8.646	5
17	MP2B	Z	0	5
18	MP2C	Z	-7.083	5
19	MP2A	Z	-2.105	2
20	MP2B	Z	-1.44	2
21	MP2C	Z	-1.44	2

Member Point Loads (BLC 5 : Antenna W Side)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	111.67	0
2	MP2A	X	111.67	6
3	MP2B	X	234.915	0
4	MP2B	X	234.915	6
5	MP2C	X	234.915	0
6	MP2C	X	234.915	6
7	MP3A	X	27.222	0
8	MP3A	X	27.222	4
9	MP3B	X	51.396	0
10	MP3B	X	51.396	4
11	MP3C	X	51.396	0
12	MP3C	X	51.396	4
13	MP3A	X	10.757	2
14	MP3B	X	27.234	2
15	MP3C	X	27.234	2
16	MP2A	X	31.704	5
17	MP2B	X	-20.838	5
18	MP2C	X	41.676	5
19	MP2A	X	2.037	2
20	MP2B	X	6.236	2
21	MP2C	X	6.236	2

Member Point Loads (BLC 6 : Antenna Wi Side)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	37.406	0
2	MP2A	X	37.406	6
3	MP2B	X	71.261	0
4	MP2B	X	71.261	6
5	MP2C	X	71.261	0
6	MP2C	X	71.261	6
7	MP3A	X	11.761	0
8	MP3A	X	11.761	4
9	MP3B	X	18.441	0

Member Point Loads (BLC 6 : Antenna Wi Side) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
10	MP3B	X	18.441	4
11	MP3C	X	18.441	0
12	MP3C	X	18.441	4
13	MP3A	X	6.095	2
14	MP3B	X	10.373	2
15	MP3C	X	10.373	2
16	MP2A	X	13.125	5
17	MP2B	X	-8.125	5
18	MP2C	X	16.25	5
19	MP2A	X	2.437	2
20	MP2B	X	3.767	2
21	MP2C	X	3.767	2

Member Point Loads (BLC 7 : Service Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-500	0

Member Point Loads (BLC 8 : Service Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-500	%50

Member Distributed Loads (BLC 10 : Structure Di)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-19.95	-19.95	0	%100
2	M2	Y	-19.95	-19.95	0	%100
3	M3	Y	-19.726	-19.726	0	%100
4	M4	Y	-19.726	-19.726	0	%100
5	M5	Y	-19.726	-19.726	0	%100
6	M6	Y	-19.726	-19.726	0	%100
7	M7	Y	-11.321	-11.321	0	%100
8	M8	Y	-11.321	-11.321	0	%100
9	M9	Y	-19.95	-19.95	0	%100
10	M10	Y	-19.95	-19.95	0	%100
11	M11	Y	-22.642	-22.642	0	%100
12	M12	Y	-22.642	-22.642	0	%100
13	M13	Y	-22.642	-22.642	0	%100
14	M14	Y	-19.95	-19.95	0	%100
15	M15	Y	-19.95	-19.95	0	%100
16	M16	Y	-19.726	-19.726	0	%100
17	M17	Y	-19.726	-19.726	0	%100
18	M18	Y	-19.726	-19.726	0	%100
19	M19	Y	-19.726	-19.726	0	%100
20	M20	Y	-11.321	-11.321	0	%100
21	M21	Y	-11.321	-11.321	0	%100
22	M22	Y	-19.95	-19.95	0	%100
23	M23	Y	-19.95	-19.95	0	%100
24	M24	Y	-22.642	-22.642	0	%100
25	M25	Y	-22.642	-22.642	0	%100
26	M26	Y	-22.642	-22.642	0	%100
27	M27	Y	-19.95	-19.95	0	%100
28	M28	Y	-19.95	-19.95	0	%100
29	M29	Y	-19.726	-19.726	0	%100
30	M30	Y	-19.726	-19.726	0	%100
31	M31	Y	-19.726	-19.726	0	%100

Member Distributed Loads (BLC 10 : Structure Di) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
32	M32	Y	-19.726	-19.726	0	%100
33	M33	Y	-11.321	-11.321	0	%100
34	M34	Y	-11.321	-11.321	0	%100
35	M35	Y	-19.95	-19.95	0	%100
36	M36	Y	-19.95	-19.95	0	%100
37	M37	Y	-22.642	-22.642	0	%100
38	M38	Y	-22.642	-22.642	0	%100
39	M39	Y	-22.642	-22.642	0	%100
40	M40	Y	-16.373	-16.373	0	%100
41	M41	Y	-16.373	-16.373	0	%100
42	M42	Y	-16.373	-16.373	0	%100
43	M139	Y	-21.745	-21.745	0	%100
44	M140	Y	-21.745	-21.745	0	%100
45	M141	Y	-21.745	-21.745	0	%100
46	M154	Y	-13.202	-13.202	0	%100
47	M155	Y	-13.202	-13.202	0	%100
48	M156	Y	-13.202	-13.202	0	%100
49	M157	Y	-13.116	-13.116	0	%100
50	M158	Y	-13.116	-13.116	0	%100
51	M159	Y	-13.116	-13.116	0	%100
52	MP4A	Y	-13.202	-13.202	0	%100
53	MP1A	Y	-13.202	-13.202	0	%100
54	MP3A	Y	-13.202	-13.202	0	%100
55	MP2A	Y	-13.202	-13.202	0	%100
56	MP4C	Y	-13.202	-13.202	0	%100
57	MP1C	Y	-13.202	-13.202	0	%100
58	MP3C	Y	-13.202	-13.202	0	%100
59	MP2C	Y	-13.202	-13.202	0	%100
60	MP4B	Y	-13.202	-13.202	0	%100
61	MP1B	Y	-13.202	-13.202	0	%100
62	MP3B	Y	-13.202	-13.202	0	%100
63	MP2B	Y	-13.202	-13.202	0	%100

Member Distributed Loads (BLC 11 : Structure W Front)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	PZ	-27.272	-27.272	0	%100
2	M2	PZ	-27.272	-27.272	0	%100
3	M3	PZ	-27.272	-27.272	0	%100
4	M4	PZ	-27.272	-27.272	0	%100
5	M5	PZ	-27.272	-27.272	0	%100
6	M6	PZ	-27.272	-27.272	0	%100
7	M7	PZ	-9.091	-9.091	0	%100
8	M8	PZ	-9.091	-9.091	0	%100
9	M9	PZ	-27.272	-27.272	0	%100
10	M10	PZ	-27.272	-27.272	0	%100
11	M11	PZ	-18.182	-18.182	0	%100
12	M12	PZ	-18.182	-18.182	0	%100
13	M13	PZ	-18.182	-18.182	0	%100
14	M14	PZ	-27.272	-27.272	0	%100
15	M15	PZ	-27.272	-27.272	0	%100
16	M16	PZ	-27.272	-27.272	0	%100
17	M17	PZ	-27.272	-27.272	0	%100
18	M18	PZ	-27.272	-27.272	0	%100
19	M19	PZ	-27.272	-27.272	0	%100
20	M20	PZ	-9.091	-9.091	0	%100
21	M21	PZ	-9.091	-9.091	0	%100

Member Distributed Loads (BLC 11 : Structure W Front) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
22	M22	PZ	-27.272	-27.272	0	%100
23	M23	PZ	-27.272	-27.272	0	%100
24	M24	PZ	-18.182	-18.182	0	%100
25	M25	PZ	-18.182	-18.182	0	%100
26	M26	PZ	-18.182	-18.182	0	%100
27	M27	PZ	-27.272	-27.272	0	%100
28	M28	PZ	-27.272	-27.272	0	%100
29	M29	PZ	-27.272	-27.272	0	%100
30	M30	PZ	-27.272	-27.272	0	%100
31	M31	PZ	-27.272	-27.272	0	%100
32	M32	PZ	-27.272	-27.272	0	%100
33	M33	PZ	-9.091	-9.091	0	%100
34	M34	PZ	-9.091	-9.091	0	%100
35	M35	PZ	-27.272	-27.272	0	%100
36	M36	PZ	-27.272	-27.272	0	%100
37	M37	PZ	-18.182	-18.182	0	%100
38	M38	PZ	-18.182	-18.182	0	%100
39	M39	PZ	-18.182	-18.182	0	%100
40	M40	PZ	-9.545	-9.545	0	%100
41	M41	PZ	-9.545	-9.545	0	%100
42	M42	PZ	-9.545	-9.545	0	%100
43	M139	PZ	-11.364	-11.364	0	%100
44	M140	PZ	-11.364	-11.364	0	%100
45	M141	PZ	-11.364	-11.364	0	%100
46	M154	PZ	-6.477	-6.477	0	%100
47	M155	PZ	-6.477	-6.477	0	%100
48	M156	PZ	-6.477	-6.477	0	%100
49	M157	PZ	-11.364	-11.364	0	%100
50	M158	PZ	-11.364	-11.364	0	%100
51	M159	PZ	-11.364	-11.364	0	%100
52	MP4A	PZ	-6.477	-6.477	0	%100
53	MP1A	PZ	-6.477	-6.477	0	%100
54	MP3A	PZ	-6.477	-6.477	0	%100
55	MP2A	PZ	-6.477	-6.477	0	%100
56	MP4C	PZ	-6.477	-6.477	0	%100
57	MP1C	PZ	-6.477	-6.477	0	%100
58	MP3C	PZ	-6.477	-6.477	0	%100
59	MP2C	PZ	-6.477	-6.477	0	%100
60	MP4B	PZ	-6.477	-6.477	0	%100
61	MP1B	PZ	-6.477	-6.477	0	%100
62	MP3B	PZ	-6.477	-6.477	0	%100
63	MP2B	PZ	-6.477	-6.477	0	%100

Member Distributed Loads (BLC 12 : Structure Wi Front)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	PZ	-10.591	-10.591	0	%100
2	M2	PZ	-10.591	-10.591	0	%100
3	M3	PZ	-10.591	-10.591	0	%100
4	M4	PZ	-10.591	-10.591	0	%100
5	M5	PZ	-10.591	-10.591	0	%100
6	M6	PZ	-10.591	-10.591	0	%100
7	M7	PZ	-5.76	-5.76	0	%100
8	M8	PZ	-5.76	-5.76	0	%100
9	M9	PZ	-10.591	-10.591	0	%100
10	M10	PZ	-10.591	-10.591	0	%100
11	M11	PZ	-8.175	-8.175	0	%100

Member Distributed Loads (BLC 12 : Structure Wi Front) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
12	M12	PZ	-8.175	-8.175	0	%100
13	M13	PZ	-8.175	-8.175	0	%100
14	M14	PZ	-10.591	-10.591	0	%100
15	M15	PZ	-10.591	-10.591	0	%100
16	M16	PZ	-10.591	-10.591	0	%100
17	M17	PZ	-10.591	-10.591	0	%100
18	M18	PZ	-10.591	-10.591	0	%100
19	M19	PZ	-10.591	-10.591	0	%100
20	M20	PZ	-5.76	-5.76	0	%100
21	M21	PZ	-5.76	-5.76	0	%100
22	M22	PZ	-10.591	-10.591	0	%100
23	M23	PZ	-10.591	-10.591	0	%100
24	M24	PZ	-8.175	-8.175	0	%100
25	M25	PZ	-8.175	-8.175	0	%100
26	M26	PZ	-8.175	-8.175	0	%100
27	M27	PZ	-10.591	-10.591	0	%100
28	M28	PZ	-10.591	-10.591	0	%100
29	M29	PZ	-10.591	-10.591	0	%100
30	M30	PZ	-10.591	-10.591	0	%100
31	M31	PZ	-10.591	-10.591	0	%100
32	M32	PZ	-10.591	-10.591	0	%100
33	M33	PZ	-5.76	-5.76	0	%100
34	M34	PZ	-5.76	-5.76	0	%100
35	M35	PZ	-10.591	-10.591	0	%100
36	M36	PZ	-10.591	-10.591	0	%100
37	M37	PZ	-8.175	-8.175	0	%100
38	M38	PZ	-8.175	-8.175	0	%100
39	M39	PZ	-8.175	-8.175	0	%100
40	M40	PZ	-5.881	-5.881	0	%100
41	M41	PZ	-5.881	-5.881	0	%100
42	M42	PZ	-5.881	-5.881	0	%100
43	M139	PZ	-6.364	-6.364	0	%100
44	M140	PZ	-6.364	-6.364	0	%100
45	M141	PZ	-6.364	-6.364	0	%100
46	M154	PZ	-5.065	-5.065	0	%100
47	M155	PZ	-5.065	-5.065	0	%100
48	M156	PZ	-5.065	-5.065	0	%100
49	M157	PZ	-6.364	-6.364	0	%100
50	M158	PZ	-6.364	-6.364	0	%100
51	M159	PZ	-6.364	-6.364	0	%100
52	MP4A	PZ	-5.065	-5.065	0	%100
53	MP1A	PZ	-5.065	-5.065	0	%100
54	MP3A	PZ	-5.065	-5.065	0	%100
55	MP2A	PZ	-5.065	-5.065	0	%100
56	MP4C	PZ	-5.065	-5.065	0	%100
57	MP1C	PZ	-5.065	-5.065	0	%100
58	MP3C	PZ	-5.065	-5.065	0	%100
59	MP2C	PZ	-5.065	-5.065	0	%100
60	MP4B	PZ	-5.065	-5.065	0	%100
61	MP1B	PZ	-5.065	-5.065	0	%100
62	MP3B	PZ	-5.065	-5.065	0	%100
63	MP2B	PZ	-5.065	-5.065	0	%100

Member Distributed Loads (BLC 13 : Structure W Side)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	PX	27.272	27.272	0	%100

Member Distributed Loads (BLC 13 : Structure W Side) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
2	M2	PX	27.272	27.272	0	%100
3	M3	PX	27.272	27.272	0	%100
4	M4	PX	27.272	27.272	0	%100
5	M5	PX	27.272	27.272	0	%100
6	M6	PX	27.272	27.272	0	%100
7	M7	PX	9.091	9.091	0	%100
8	M8	PX	9.091	9.091	0	%100
9	M9	PX	27.272	27.272	0	%100
10	M10	PX	27.272	27.272	0	%100
11	M11	PX	18.182	18.182	0	%100
12	M12	PX	18.182	18.182	0	%100
13	M13	PX	18.182	18.182	0	%100
14	M14	PX	27.272	27.272	0	%100
15	M15	PX	27.272	27.272	0	%100
16	M16	PX	27.272	27.272	0	%100
17	M17	PX	27.272	27.272	0	%100
18	M18	PX	27.272	27.272	0	%100
19	M19	PX	27.272	27.272	0	%100
20	M20	PX	9.091	9.091	0	%100
21	M21	PX	9.091	9.091	0	%100
22	M22	PX	27.272	27.272	0	%100
23	M23	PX	27.272	27.272	0	%100
24	M24	PX	18.182	18.182	0	%100
25	M25	PX	18.182	18.182	0	%100
26	M26	PX	18.182	18.182	0	%100
27	M27	PX	27.272	27.272	0	%100
28	M28	PX	27.272	27.272	0	%100
29	M29	PX	27.272	27.272	0	%100
30	M30	PX	27.272	27.272	0	%100
31	M31	PX	27.272	27.272	0	%100
32	M32	PX	27.272	27.272	0	%100
33	M33	PX	9.091	9.091	0	%100
34	M34	PX	9.091	9.091	0	%100
35	M35	PX	27.272	27.272	0	%100
36	M36	PX	27.272	27.272	0	%100
37	M37	PX	18.182	18.182	0	%100
38	M38	PX	18.182	18.182	0	%100
39	M39	PX	18.182	18.182	0	%100
40	M40	PX	9.545	9.545	0	%100
41	M41	PX	9.545	9.545	0	%100
42	M42	PX	9.545	9.545	0	%100
43	M139	PX	11.364	11.364	0	%100
44	M140	PX	11.364	11.364	0	%100
45	M141	PX	11.364	11.364	0	%100
46	M154	PX	6.477	6.477	0	%100
47	M155	PX	6.477	6.477	0	%100
48	M156	PX	6.477	6.477	0	%100
49	M157	PX	11.364	11.364	0	%100
50	M158	PX	11.364	11.364	0	%100
51	M159	PX	11.364	11.364	0	%100
52	MP4A	PX	6.477	6.477	0	%100
53	MP1A	PX	6.477	6.477	0	%100
54	MP3A	PX	6.477	6.477	0	%100
55	MP2A	PX	6.477	6.477	0	%100
56	MP4C	PX	6.477	6.477	0	%100
57	MP1C	PX	6.477	6.477	0	%100
58	MP3C	PX	6.477	6.477	0	%100

Member Distributed Loads (BLC 13 : Structure W Side) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
59	MP2C	PX	6.477	6.477	0	%100
60	MP4B	PX	6.477	6.477	0	%100
61	MP1B	PX	6.477	6.477	0	%100
62	MP3B	PX	6.477	6.477	0	%100
63	MP2B	PX	6.477	6.477	0	%100

Member Distributed Loads (BLC 14 : Structure Wi Side)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	PX	10.591	10.591	0	%100
2	M2	PX	10.591	10.591	0	%100
3	M3	PX	10.591	10.591	0	%100
4	M4	PX	10.591	10.591	0	%100
5	M5	PX	10.591	10.591	0	%100
6	M6	PX	10.591	10.591	0	%100
7	M7	PX	5.76	5.76	0	%100
8	M8	PX	5.76	5.76	0	%100
9	M9	PX	10.591	10.591	0	%100
10	M10	PX	10.591	10.591	0	%100
11	M11	PX	8.175	8.175	0	%100
12	M12	PX	8.175	8.175	0	%100
13	M13	PX	8.175	8.175	0	%100
14	M14	PX	10.591	10.591	0	%100
15	M15	PX	10.591	10.591	0	%100
16	M16	PX	10.591	10.591	0	%100
17	M17	PX	10.591	10.591	0	%100
18	M18	PX	10.591	10.591	0	%100
19	M19	PX	10.591	10.591	0	%100
20	M20	PX	5.76	5.76	0	%100
21	M21	PX	5.76	5.76	0	%100
22	M22	PX	10.591	10.591	0	%100
23	M23	PX	10.591	10.591	0	%100
24	M24	PX	8.175	8.175	0	%100
25	M25	PX	8.175	8.175	0	%100
26	M26	PX	8.175	8.175	0	%100
27	M27	PX	10.591	10.591	0	%100
28	M28	PX	10.591	10.591	0	%100
29	M29	PX	10.591	10.591	0	%100
30	M30	PX	10.591	10.591	0	%100
31	M31	PX	10.591	10.591	0	%100
32	M32	PX	10.591	10.591	0	%100
33	M33	PX	5.76	5.76	0	%100
34	M34	PX	5.76	5.76	0	%100
35	M35	PX	10.591	10.591	0	%100
36	M36	PX	10.591	10.591	0	%100
37	M37	PX	8.175	8.175	0	%100
38	M38	PX	8.175	8.175	0	%100
39	M39	PX	8.175	8.175	0	%100
40	M40	PX	5.881	5.881	0	%100
41	M41	PX	5.881	5.881	0	%100
42	M42	PX	5.881	5.881	0	%100
43	M139	PX	6.364	6.364	0	%100
44	M140	PX	6.364	6.364	0	%100
45	M141	PX	6.364	6.364	0	%100
46	M154	PX	5.065	5.065	0	%100
47	M155	PX	5.065	5.065	0	%100
48	M156	PX	5.065	5.065	0	%100

Member Distributed Loads (BLC 14 : Structure Wi Side) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
49	M157	PX	6.364	6.364	0	%100
50	M158	PX	6.364	6.364	0	%100
51	M159	PX	6.364	6.364	0	%100
52	MP4A	PX	5.065	5.065	0	%100
53	MP1A	PX	5.065	5.065	0	%100
54	MP3A	PX	5.065	5.065	0	%100
55	MP2A	PX	5.065	5.065	0	%100
56	MP4C	PX	5.065	5.065	0	%100
57	MP1C	PX	5.065	5.065	0	%100
58	MP3C	PX	5.065	5.065	0	%100
59	MP2C	PX	5.065	5.065	0	%100
60	MP4B	PX	5.065	5.065	0	%100
61	MP1B	PX	5.065	5.065	0	%100
62	MP3B	PX	5.065	5.065	0	%100
63	MP2B	PX	5.065	5.065	0	%100

Member Distributed Loads (BLC 15 : BLC 9 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-1.096	-1.096	.046	.5
2	M2	Y	-1.097	-1.097	.046	.5
3	M4	Y	-.727	-.727	.018	.285
4	M6	Y	-.727	-.727	.011	.278
5	M7	Y	-1.116	-2.255	0	.872
6	M7	Y	-2.255	-3.781	.872	1.744
7	M7	Y	-3.781	-5.099	1.744	2.615
8	M7	Y	-5.099	-4.137	2.615	3.487
9	M7	Y	-4.137	-1.49	3.487	4.359
10	M8	Y	-1.115	-2.255	0	.872
11	M8	Y	-2.255	-3.776	.872	1.744
12	M8	Y	-3.776	-5.091	1.744	2.615
13	M8	Y	-5.091	-4.134	2.615	3.487
14	M8	Y	-4.134	-1.494	3.487	4.359
15	M11	Y	-.379	-3.236	0	.83
16	M11	Y	-3.236	-4.306	.83	1.659
17	M11	Y	-4.306	-6.344	1.659	2.489
18	M11	Y	-6.344	-5.813	2.489	3.318
19	M11	Y	-5.813	-.379	3.318	4.148
20	M12	Y	-.334	-1.032	0	.517
21	M12	Y	-1.032	-2.274	.517	1.033
22	M12	Y	-2.274	-3.526	1.033	1.55
23	M12	Y	-3.526	-1.96	1.55	2.067
24	M12	Y	-1.96	-.035	2.067	2.583
25	M13	Y	-.035	-1.945	0	.517
26	M13	Y	-1.945	-3.503	.517	1.033
27	M13	Y	-3.503	-2.265	1.033	1.55
28	M13	Y	-2.265	-1.024	1.55	2.067
29	M13	Y	-1.024	-.316	2.067	2.583
30	M41	Y	1.184e-16	-.395	8.75	9.5
31	M41	Y	-.395	-.821	9.5	10.25
32	M41	Y	-.821	-1.058	10.25	11
33	M41	Y	-1.058	-.632	11	11.75
34	M41	Y	-.632	1.184e-16	11.75	12.5
35	M42	Y	-1.184e-16	-.631	0	.75
36	M42	Y	-.631	-1.056	.75	1.5
37	M42	Y	-1.056	-.819	1.5	2.25
38	M42	Y	-.819	-.395	2.25	3

Member Distributed Loads (BLC 15 : BLC 9 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
39	M42	Y	-.395	-1.184e-16	3	3.75
40	M27	Y	-1.071	-1.071	.043	.499
41	M28	Y	-1.072	-1.072	.041	.501
42	M30	Y	-.727	-.727	.018	.285
43	M32	Y	-.969	-.969	0	.255
44	M33	Y	-1.099	-2.248	0	.872
45	M33	Y	-2.248	-3.781	.872	1.744
46	M33	Y	-3.781	-5.103	1.744	2.616
47	M33	Y	-5.103	-4.162	2.616	3.488
48	M33	Y	-4.162	-1.552	3.488	4.36
49	M34	Y	-1.096	-2.244	0	.872
50	M34	Y	-2.244	-3.772	.872	1.743
51	M34	Y	-3.772	-5.094	1.743	2.615
52	M34	Y	-5.094	-4.14	2.615	3.487
53	M34	Y	-4.14	-1.499	3.487	4.359
54	M37	Y	-.378	-3.217	0	.83
55	M37	Y	-3.217	-4.296	.83	1.66
56	M37	Y	-4.296	-6.351	1.66	2.49
57	M37	Y	-6.351	-5.824	2.49	3.32
58	M37	Y	-5.824	-.378	3.32	4.15
59	M38	Y	-.334	-1.035	0	.516
60	M38	Y	-1.035	-2.28	.516	1.033
61	M38	Y	-2.28	-3.536	1.033	1.549
62	M38	Y	-3.536	-1.966	1.549	2.066
63	M38	Y	-1.966	-.035	2.066	2.582
64	M39	Y	-.044	-1.959	0	.517
65	M39	Y	-1.959	-3.52	.517	1.034
66	M39	Y	-3.52	-2.278	1.034	1.551
67	M39	Y	-2.278	-.946	1.551	2.067
68	M39	Y	-.946	-.061	2.067	2.584
69	M40	Y	0	-.396	8.75	9.5
70	M40	Y	-.396	-.822	9.5	10.25
71	M40	Y	-.822	-1.061	10.25	11
72	M40	Y	-1.061	-.634	11	11.75
73	M40	Y	-.634	0	11.75	12.5
74	M41	Y	0	-.63	0	.75
75	M41	Y	-.63	-1.055	.75	1.5
76	M41	Y	-1.055	-.819	1.5	2.25
77	M41	Y	-.819	-.394	2.25	3
78	M41	Y	-.394	0	3	3.75
79	M14	Y	-1.074	-1.074	.044	.5
80	M15	Y	-1.062	-1.062	.041	.5
81	M17	Y	-.727	-.727	.018	.285
82	M19	Y	-.969	-.969	0	.256
83	M20	Y	-.956	-2.226	0	.872
84	M20	Y	-2.226	-3.824	.872	1.744
85	M20	Y	-3.824	-5.132	1.744	2.615
86	M20	Y	-5.132	-4.172	2.615	3.487
87	M20	Y	-4.172	-1.562	3.487	4.359
88	M21	Y	-1.1	-2.27	0	.872
89	M21	Y	-2.27	-3.813	.872	1.744
90	M21	Y	-3.813	-5.117	1.744	2.615
91	M21	Y	-5.117	-4.141	2.615	3.487
92	M21	Y	-4.141	-1.498	3.487	4.359
93	M24	Y	-1.144	-2.382	0	.83
94	M24	Y	-2.382	-4.278	.83	1.66
95	M24	Y	-4.278	-7.09	1.66	2.49

Member Distributed Loads (BLC 15 : BLC 9 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
96	M24	Y	-7.09	-5.625	2.49	3.32
97	M24	Y	-5.625	-.295	3.32	4.15
98	M25	Y	-.334	-1.033	0	.517
99	M25	Y	-1.033	-2.269	.517	1.033
100	M25	Y	-2.269	-3.489	1.033	1.55
101	M25	Y	-3.489	-1.928	1.55	2.066
102	M25	Y	-1.928	-.035	2.066	2.583
103	M26	Y	-.044	-1.922	0	.517
104	M26	Y	-1.922	-3.475	.517	1.033
105	M26	Y	-3.475	-2.271	1.033	1.55
106	M26	Y	-2.271	-.947	1.55	2.067
107	M26	Y	-.947	-.062	2.067	2.584
108	M40	Y	0	-.631	0	.75
109	M40	Y	-.631	-1.056	.75	1.5
110	M40	Y	-1.056	-.82	1.5	2.25
111	M40	Y	-.82	-.395	2.25	3
112	M40	Y	-.395	0	3	3.75
113	M42	Y	0	-.396	8.75	9.5
114	M42	Y	-.396	-.822	9.5	10.25
115	M42	Y	-.822	-1.06	10.25	11
116	M42	Y	-1.06	-.634	11	11.75
117	M42	Y	-.634	0	11.75	12.5

Member Distributed Loads (BLC 16 : BLC 10 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-1.606	-1.606	0	.5
2	M2	Y	-3.208	-3.208	.045	.5
3	M4	Y	-2.159	-2.159	.011	.278
4	M6	Y	-2.159	-2.159	.011	.278
5	M7	Y	-3.283	-6.685	0	.872
6	M7	Y	-6.685	-11.228	.872	1.744
7	M7	Y	-11.228	-15.148	1.744	2.615
8	M7	Y	-15.148	-12.294	2.615	3.487
9	M7	Y	-12.294	-4.429	3.487	4.359
10	M8	Y	-4.421	-7.033	0	.872
11	M8	Y	-7.033	-11.165	.872	1.744
12	M8	Y	-11.165	-15.074	1.744	2.615
13	M8	Y	-15.074	-12.235	2.615	3.487
14	M8	Y	-12.235	-4.394	3.487	4.359
15	M11	Y	-1.125	-9.586	0	.83
16	M11	Y	-9.586	-12.774	.83	1.659
17	M11	Y	-12.774	-18.847	1.659	2.489
18	M11	Y	-18.847	-17.273	2.489	3.318
19	M11	Y	-17.273	-1.125	3.318	4.148
20	M12	Y	-.933	-3.046	0	.517
21	M12	Y	-3.046	-6.753	.517	1.033
22	M12	Y	-6.753	-10.475	1.033	1.55
23	M12	Y	-10.475	-5.826	1.55	2.067
24	M12	Y	-5.826	-.106	2.067	2.583
25	M13	Y	-.105	-5.782	0	.517
26	M13	Y	-5.782	-10.414	.517	1.033
27	M13	Y	-10.414	-6.734	1.033	1.55
28	M13	Y	-6.734	-3.044	1.55	2.067
29	M13	Y	-3.044	-.936	2.067	2.583
30	M41	Y	2.368e-16	-1.174	8.75	9.5
31	M41	Y	-1.174	-2.438	9.5	10.25

Member Distributed Loads (BLC 16 : BLC 10 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
32	M41	Y	-2.438	-3.142	10.25	11
33	M41	Y	-3.142	-1.879	11	11.75
34	M41	Y	-1.879	2.368e-16	11.75	12.5
35	M42	Y	0	-1.877	0	.75
36	M42	Y	-1.877	-3.14	.75	1.5
37	M42	Y	-3.14	-2.437	1.5	2.25
38	M42	Y	-2.437	-1.174	2.25	3
39	M42	Y	-1.174	0	3	3.75
40	M14	Y	-1.618	-1.618	0	.5
41	M15	Y	-3.302	-3.302	.059	.5
42	M17	Y	-2.159	-2.159	.011	.278
43	M20	Y	-3.405	-7.847	0	.872
44	M20	Y	-7.847	-10.583	.872	1.744
45	M20	Y	-10.583	-12.536	1.744	2.615
46	M20	Y	-12.536	-9.496	2.615	3.487
47	M20	Y	-9.496	-.658	3.487	4.359
48	M21	Y	-3.95	-6.9	0	.872
49	M21	Y	-6.9	-11.222	.872	1.744
50	M21	Y	-11.222	-15.135	1.744	2.615
51	M21	Y	-15.135	-12.271	2.615	3.487
52	M21	Y	-12.271	-4.409	3.487	4.359
53	M23	Y	-2.351	-2.351	0	.289
54	M24	Y	-1.087	-9.512	0	.83
55	M24	Y	-9.512	-14.059	.83	1.66
56	M24	Y	-14.059	-19.914	1.66	2.49
57	M24	Y	-19.914	-18.146	2.49	3.32
58	M24	Y	-18.146	-1.087	3.32	4.15
59	M25	Y	-.937	-3.045	0	.517
60	M25	Y	-3.045	-6.73	.517	1.033
61	M25	Y	-6.73	-10.393	1.033	1.55
62	M25	Y	-10.393	-5.765	1.55	2.066
63	M25	Y	-5.765	-.105	2.066	2.583
64	M26	Y	-2.709	-6.771	0	.861
65	M26	Y	-6.771	-5.303	.861	1.722
66	M26	Y	-5.303	-.548	1.722	2.584
67	M40	Y	0	-1.878	0	.75
68	M40	Y	-1.878	-3.14	.75	1.5
69	M40	Y	-3.14	-2.437	1.5	2.25
70	M40	Y	-2.437	-1.174	2.25	3
71	M40	Y	-1.174	0	3	3.75
72	M27	Y	-3.18	-3.18	.043	.499
73	M28	Y	-3.182	-3.182	.041	.501
74	M30	Y	-2.157	-2.157	.018	.285
75	M32	Y	-2.876	-2.876	0	.255
76	M33	Y	-3.262	-6.675	0	.872
77	M33	Y	-6.675	-11.224	.872	1.744
78	M33	Y	-11.224	-15.147	1.744	2.616
79	M33	Y	-15.147	-12.354	2.616	3.488
80	M33	Y	-12.354	-4.606	3.488	4.36
81	M34	Y	-3.253	-6.662	0	.872
82	M34	Y	-6.662	-11.198	.872	1.743
83	M34	Y	-11.198	-15.12	1.743	2.615
84	M34	Y	-15.12	-12.29	2.615	3.487
85	M34	Y	-12.29	-4.448	3.487	4.359
86	M37	Y	-1.123	-9.55	0	.83
87	M37	Y	-9.55	-12.753	.83	1.66
88	M37	Y	-12.753	-18.853	1.66	2.49

Member Distributed Loads (BLC 16 : BLC 10 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[ft,%]	End Location[ft,%]
89	M37	Y	-18.853	-17.288	2.49	3.32
90	M37	Y	-17.288	-1.123	3.32	4.15
91	M38	Y	-.99	-3.071	0	.516
92	M38	Y	-3.071	-6.767	.516	1.033
93	M38	Y	-6.767	-10.496	1.033	1.549
94	M38	Y	-10.496	-5.836	1.549	2.066
95	M38	Y	-5.836	-.104	2.066	2.582
96	M39	Y	-.131	-5.815	0	.517
97	M39	Y	-5.815	-10.449	.517	1.034
98	M39	Y	-10.449	-6.761	1.034	1.551
99	M39	Y	-6.761	-2.808	1.551	2.067
100	M39	Y	-2.808	-.181	2.067	2.584
101	M40	Y	2.368e-16	-1.176	8.75	9.5
102	M40	Y	-1.176	-2.441	9.5	10.25
103	M40	Y	-2.441	-3.149	10.25	11
104	M40	Y	-3.149	-1.883	11	11.75
105	M40	Y	-1.883	2.368e-16	11.75	12.5
106	M41	Y	0	-1.872	0	.75
107	M41	Y	-1.872	-3.131	.75	1.5
108	M41	Y	-3.131	-2.431	1.5	2.25
109	M41	Y	-2.431	-1.171	2.25	3
110	M41	Y	-1.171	0	3	3.75

Member Area Loads (BLC 9 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N3	N5	N6	N4	Y	Two Way	-.005
2	N23	N25	N26	N24	Y	Two Way	-.005
3	N14	N13	N15	N16	Y	Two Way	-.005

Member Area Loads (BLC 10 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N5	N6	N4	N3	Y	Two Way	-.015
2	N16	N15	N13	N19	Y	Two Way	-.015
3	N23	N25	N26	N24	Y	Two Way	-.015

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	CG						
2	N56	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N10						
4	N55	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N144	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N145	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N146	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	N56	max	1110.197	4	1368.699	6	4194.38	1	1.537	6	1.387	3	.887	3
2		min	-1113.916	3	293.626	1	-2609.216	2	.397	1	-1.39	4	-.836	4
3	N55	max	2494.187	4	1269.835	8	1702.344	1	.373	1	.759	2	1.155	5
4		min	-3849.522	3	296.088	3	-2488.776	2	-1.201	6	-.761	1	-.079	2

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
5	N57	max	3869.162	4	952.915	7	1507.083	1	.417	1	.44	1	.132	2
6		min	-2401.493	3	59.433	10	-2349.685	2	-.851	6	-.433	2	-.939	5
7	N144	max	350.332	3	2404.328	8	1840.434	8	0	1	0	2	0	2
8		min	-3176.384	8	-261.012	3	-218.613	3	0	2	0	1	0	1
9	N145	max	41.853	4	2312.257	5	606.499	2	0	1	0	4	0	3
10		min	-41.871	3	-382.404	2	-3529.143	5	0	1	0	3	0	4
11	N146	max	2939.784	7	2229.519	7	1703.846	7	0	1	0	1	0	1
12		min	-352.212	4	-262.193	4	-219.669	4	0	2	0	2	0	2
13	Totals:	max	5285.784	4	9729.904	5	5323.994	1						
14		min	-5285.784	3	2640.93	2	-5323.994	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	273.629	4	734.248	10	116.041	3	.071	1	.038	4	.461	2
2			min	-279.697	3	-329.884	1	-112.186	4	-.054	2	-.04	3	-.319	1
3		2	max	271.267	4	732.996	10	111.95	3	.071	1	.024	4	.396	2
4			min	-277.335	3	-331.136	1	-108.095	4	-.054	2	-.025	3	-.278	1
5		3	max	268.905	4	731.683	10	107.859	3	.071	1	.011	4	.331	2
6			min	-274.973	3	-332.449	1	-104.004	4	-.054	2	-.012	3	-.237	1
7		4	max	266.543	4	516.295	2	103.768	3	.071	1	.013	1	.266	2
8			min	-272.611	3	-333.762	1	-99.913	4	-.054	2	-.014	2	-.195	1
9		5	max	264.181	4	514.982	2	99.677	3	.071	1	.017	1	.202	2
10			min	-270.249	3	-335.075	1	-95.822	4	-.054	2	-.018	2	-.153	1
11	M2	1	max	275.741	4	717.375	8	114.71	4	.028	1	.036	3	.56	4
12			min	-263.911	3	-359.486	3	-112.852	3	-.073	6	-.035	4	-.332	3
13		2	max	278.103	4	713.37	8	110.619	4	.028	1	.022	3	.477	4
14			min	-266.272	3	-360.739	3	-108.761	3	-.073	6	-.021	4	-.287	3
15		3	max	280.465	4	709.163	8	106.528	4	.028	1	.011	1	.395	4
16			min	-268.634	3	-362.052	3	-104.67	3	-.073	6	-.01	2	-.242	3
17		4	max	282.826	4	704.955	8	102.438	4	.028	1	.006	4	.312	4
18			min	-270.996	3	-363.365	3	-100.579	3	-.073	6	-.005	3	-.196	3
19		5	max	285.188	4	700.747	8	98.347	4	.028	1	.018	4	.23	4
20			min	-273.358	3	-364.678	3	-96.488	3	-.073	6	-.017	3	-.151	3
21	M3	1	max	961.727	1	745.142	8	99.052	2	.176	2	.078	1	.387	8
22			min	-925.951	2	45.025	3	-83.557	4	-.199	1	-.084	2	.024	3
23		2	max	960.939	1	743.938	8	97.689	2	.176	2	.075	1	.356	8
24			min	-925.164	2	44.642	3	-83.103	4	-.199	1	-.08	2	.022	3
25		3	max	960.152	1	742.733	8	96.325	2	.176	2	.071	1	.325	8
26			min	-924.377	2	44.259	3	-82.648	4	-.199	1	-.075	2	.02	3
27		4	max	959.365	1	741.528	8	94.961	2	.176	2	.068	1	.294	8
28			min	-923.589	2	43.876	3	-82.194	4	-.199	1	-.072	2	.018	3
29		5	max	958.577	1	740.324	8	93.881	3	.176	2	.065	1	.263	8
30			min	-922.802	2	43.494	3	-81.739	4	-.199	1	-.068	2	.016	3
31	M4	1	max	944.244	1	740.335	8	192.4	2	.185	2	.065	1	.267	8
32			min	-906.648	2	43.434	3	-185.295	1	-.194	1	-.068	2	.015	3
33		2	max	942.786	1	737.469	8	189.069	2	.185	2	.048	1	.2	8
34			min	-905.191	2	42.534	3	-181.963	1	-.194	1	-.05	2	.011	3
35		3	max	941.329	1	734.564	8	185.737	2	.185	2	.032	1	.133	8
36			min	-903.733	2	41.619	3	-178.632	1	-.194	1	-.033	2	.007	3
37		4	max	939.871	1	731.658	8	182.406	2	.185	2	.016	1	.066	8
38			min	-902.276	2	40.704	3	-175.301	1	-.194	1	-.016	2	.004	3
39		5	max	938.414	1	729.006	8	179.075	2	.185	2	0	1	0	1
40			min	-900.818	2	39.858	3	-171.969	1	-.194	1	0	1	0	1
41	M5	1	max	1050.837	3	489.128	2	-80.829	1	.164	3	.309	8	.238	2
42			min	-1006.894	4	-519.215	1	-595.65	6	-.139	4	.032	3	-.252	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
43		2	max	1050.05	3	487.764	2	-80.446	1	.164	3	.285	8	.218	2
44			min	-1006.106	4	-517.852	1	-594.446	6	-.139	4	.028	3	-.231	1
45		3	max	1049.263	3	486.401	2	-80.063	1	.164	3	.26	8	.197	2
46			min	-1005.319	4	-516.488	1	-593.241	6	-.139	4	.024	3	-.209	1
47		4	max	1048.476	3	485.037	2	-79.68	1	.164	3	.236	8	.177	2
48			min	-1004.532	4	-515.125	1	-592.036	6	-.139	4	.02	3	-.188	1
49		5	max	1047.688	3	483.673	2	-79.298	1	.164	3	.211	8	.157	2
50			min	-1003.744	4	-513.761	1	-590.832	6	-.139	4	.016	3	-.166	1
51	M6	1	max	1024.581	3	436.584	2	-79.976	1	.161	3	.213	6	.157	2
52			min	-977.32	4	-462.345	1	-590.27	6	-.148	4	.028	1	-.166	1
53		2	max	1022.686	3	434.011	2	-79.071	1	.161	3	.159	6	.117	2
54			min	-975.425	4	-459.771	1	-587.399	6	-.148	4	.021	1	-.124	1
55		3	max	1020.79	3	431.437	2	-78.156	1	.161	3	.106	6	.078	2
56			min	-973.53	4	-457.198	1	-584.493	6	-.148	4	.014	1	-.083	1
57		4	max	1018.895	3	428.864	2	-77.241	1	.161	3	.053	6	.039	2
58			min	-971.635	4	-454.625	1	-581.587	6	-.148	4	.007	1	-.041	1
59		5	max	1017	3	426.291	2	-76.401	1	.161	3	0	1	0	1
60			min	-969.739	4	-452.051	1	-578.941	6	-.148	4	0	1	0	1
61	M7	1	max	1031.827	4	76.994	6	17.733	4	0	3	-.002	1	.091	6
62			min	-1123.869	3	3.042	1	-22.505	3	0	4	-.045	8	-.034	1
63		2	max	1024.963	4	53.114	6	11.859	1	0	3	.009	1	.035	2
64			min	-1117.005	3	-2.575	1	-16.656	2	0	4	-.01	2	-.024	1
65		3	max	1018.099	4	21.347	6	7.896	1	0	3	.019	5	.011	10
66			min	-1110.141	3	-10.455	1	-12.694	2	0	4	-.003	2	-.015	5
67		4	max	1011.235	4	10.015	2	13.16	3	0	3	.01	7	.005	9
68			min	-1103.278	3	-24.105	5	-17.932	4	0	4	-.003	4	-.021	6
69		5	max	1004.372	4	2.745	2	25.048	3	0	3	.017	3	.025	1
70			min	-1096.414	3	-53.759	5	-29.82	4	0	4	-.035	8	-.024	2
71	M8	1	max	973.541	2	26.619	2	87.207	8	0	2	.001	3	.023	3
72			min	-1045.857	1	-34.329	1	6.301	3	0	5	-.055	8	-.12	8
73		2	max	973.541	2	10.768	2	62.616	8	0	2	.008	3	.022	3
74			min	-1045.857	1	-20.677	5	.686	3	0	5	-.012	4	-.048	8
75		3	max	973.541	2	5.23	3	30.823	8	0	2	.018	6	.015	3
76			min	-1045.857	1	-17.568	8	-7.189	3	0	5	-.004	1	-.013	4
77		4	max	973.541	2	13.224	1	11.836	4	0	2	.01	5	.025	8
78			min	-1045.857	1	-21.754	6	-16.606	3	0	5	-.001	2	-.004	10
79		5	max	973.541	2	29.075	1	4.566	4	0	2	.022	1	.026	4
80			min	-1045.857	1	-36.786	2	-43.552	7	0	5	-.033	2	-.018	3
81	M9	1	max	276.907	4	514.553	2	58.158	2	.138	1	.017	1	.149	2
82			min	-284.118	3	-335.544	1	-54.65	1	-.147	2	-.018	2	-.098	1
83		2	max	275.533	4	513.888	2	60.514	2	.138	1	.013	1	.111	2
84			min	-282.744	3	-336.209	1	-57.006	1	-.147	2	-.014	2	-.073	1
85		3	max	274.159	4	513.223	2	62.87	2	.138	1	.009	1	.074	2
86			min	-281.369	3	-336.874	1	-59.362	1	-.147	2	-.009	2	-.049	1
87		4	max	272.785	4	512.559	2	65.226	2	.138	1	.005	1	.037	2
88			min	-279.995	3	-337.539	1	-61.717	1	-.147	2	-.005	2	-.024	1
89		5	max	271.411	4	511.894	2	67.581	2	.138	1	0	1	0	1
90			min	-278.621	3	-338.204	1	-64.073	1	-.147	2	0	1	0	1
91	M10	1	max	296.113	4	700.809	8	51.837	3	.13	4	.018	4	.202	8
92			min	-285.501	3	-365.266	3	-56.132	4	-.118	3	-.017	3	-.106	3
93		2	max	296.127	4	698.701	8	54.994	3	.13	4	.014	4	.151	8
94			min	-285.515	3	-365.931	3	-59.289	4	-.118	3	-.013	3	-.08	3
95		3	max	296.141	4	696.592	8	58.152	3	.13	4	.009	4	.101	8
96			min	-285.529	3	-366.595	3	-62.447	4	-.118	3	-.009	3	-.053	3
97		4	max	296.155	4	694.484	8	61.309	3	.13	4	.005	4	.05	8
98			min	-285.543	3	-367.26	3	-65.604	4	-.118	3	-.005	3	-.027	3
99		5	max	296.169	4	692.376	8	64.466	3	.13	4	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
100			min	-285.557	3	-367.925	3	-68.761	4	-.118	3	0	1	0	1
101	M11	1	max	2005.29	3	279.098	3	77.416	1	.44	2	.039	4	-.049	3
102			min	-1867.304	4	-1257.545	8	-80.309	2	-.523	1	-.029	3	-.269	8
103		2	max	2484.415	3	951.383	8	36.701	4	.44	2	.118	1	1.293	8
104			min	-4110.788	4	-38.715	3	-40.252	3	-.522	1	-.112	2	-.384	3
105		3	max	2500.744	3	876.89	8	27.274	4	.44	2	.152	4	.387	10
106			min	-4127.116	4	-64.413	3	-30.824	3	-.522	1	-.151	3	-.317	3
107		4	max	2520.896	3	-41.109	10	823.637	2	.735	2	.902	4	.049	4
108			min	-4215.506	4	-903.518	7	-831.47	1	-.665	1	-.904	3	-.124	7
109		5	max	2537.225	3	-59.329	10	851.919	2	.735	2	.433	2	1.08	7
110			min	-4231.835	4	-952.036	7	-859.753	1	-.665	1	-.44	1	.107	10
111	M12	1	max	83.387	4	-44.833	3	961.803	1	-.024	3	.084	2	.176	2
112			min	-99.68	2	-745.372	8	-925.859	2	-.387	8	-.078	1	-.199	1
113		2	max	637.182	1	-77.921	3	178.819	4	-.039	3	.305	1	.483	6
114			min	-626.766	2	-806.695	8	-208.364	3	-.387	8	-.279	2	-.099	1
115		3	max	645.317	1	-88.451	3	164.728	4	-.039	3	.355	1	.999	6
116			min	-634.901	2	-835.91	8	-194.273	3	-.387	8	-.348	2	.004	1
117		4	max	653.452	1	-99.7	3	150.637	4	-.039	3	.408	1	1.536	6
118			min	-643.037	2	-867.631	8	-180.182	3	-.387	8	-.421	2	.116	1
119		5	max	661.587	1	-109.54	3	136.546	4	-.039	3	.464	1	2.096	8
120			min	-651.172	2	-894.454	8	-166.092	3	-.387	8	-.497	2	.219	3
121	M13	1	max	753.231	3	756.701	8	275.928	1	.328	8	.603	3	1.769	8
122			min	-745.54	4	144.535	3	-240.074	2	.031	3	-.641	4	.152	3
123		2	max	745.096	3	729.902	8	280.625	1	.328	8	.497	3	1.289	8
124			min	-737.405	4	134.702	3	-244.771	2	.031	3	-.511	4	.062	3
125		3	max	736.961	3	698.231	8	285.322	1	.328	8	.401	3	.828	8
126			min	-729.27	4	123.467	3	-249.468	2	.031	3	-.39	4	-.022	3
127		4	max	728.825	3	669.035	8	290.019	1	.328	8	.351	1	.386	8
128			min	-721.134	4	112.945	3	-254.165	2	.031	3	-.321	2	-.098	3
129		5	max	489.188	2	596.011	6	1006.6	4	.309	8	.252	1	.139	4
130			min	-519.145	1	79.601	1	-1051.082	3	.032	3	-.238	2	-.164	3
131	M14	1	max	261.327	3	497.528	3	135.79	1	.054	2	.061	2	.43	3
132			min	-265.609	4	-323.253	4	-131.775	2	-.04	1	-.064	1	-.3	4
133		2	max	263.687	3	496.276	3	134.428	1	.054	2	.045	2	.368	3
134			min	-267.969	4	-324.505	4	-130.412	2	-.04	1	-.047	1	-.26	4
135		3	max	266.048	3	494.967	3	133.065	1	.054	2	.029	2	.306	3
136			min	-270.329	4	-325.814	4	-129.049	2	-.04	1	-.03	1	-.219	4
137		4	max	268.408	3	493.658	3	131.702	1	.054	2	.013	2	.244	3
138			min	-272.69	4	-327.122	4	-127.687	2	-.04	1	-.014	1	-.178	4
139		5	max	270.768	3	492.35	3	130.34	1	.054	2	.016	4	.182	3
140			min	-275.05	4	-328.431	4	-126.324	2	-.04	1	-.017	3	-.137	4
141	M15	1	max	301.186	3	616.519	2	125.787	3	.046	2	.046	4	.537	2
142			min	-303.467	4	-393.256	1	-129.465	4	-.069	1	-.044	3	-.371	1
143		2	max	298.823	3	615.262	2	121.694	3	.046	2	.03	4	.46	2
144			min	-301.103	4	-394.513	1	-125.371	4	-.069	1	-.028	3	-.321	1
145		3	max	296.459	3	613.954	2	117.6	3	.046	2	.019	2	.383	2
146			min	-298.74	4	-395.822	1	-121.278	4	-.069	1	-.017	1	-.272	1
147		4	max	294.096	3	612.645	2	113.507	3	.046	2	.018	2	.306	2
148			min	-296.376	4	-397.13	1	-117.184	4	-.069	1	-.016	1	-.222	1
149		5	max	291.732	3	611.337	2	109.413	3	.046	2	.017	2	.23	2
150			min	-294.013	4	-398.439	1	-113.091	4	-.069	1	-.015	1	-.173	1
151	M16	1	max	1130.401	4	788.414	7	292.18	1	.141	3	.129	2	.413	7
152			min	-1100.231	3	82.864	4	-280.019	2	-.162	4	-.135	1	.025	4
153		2	max	1129.613	4	787.209	7	290.816	1	.141	3	.117	2	.38	7
154			min	-1099.444	3	82.481	4	-278.655	2	-.162	4	-.123	1	.021	4
155		3	max	1128.826	4	786.004	7	289.453	1	.141	3	.105	2	.347	7
156			min	-1098.656	3	82.098	4	-277.291	2	-.162	4	-.111	1	.018	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
157		4	max	1128.039	4	784.8	7	288.089	1	.141	3	.094	2	.314	7
158			min	-1097.869	3	81.716	4	-275.928	2	-.162	4	-.099	1	.014	4
159		5	max	1127.252	4	783.595	7	286.725	1	.141	3	.082	2	.282	7
160			min	-1097.082	3	81.333	4	-274.564	2	-.162	4	-.087	1	.011	4
161	M17	1	max	1129.943	4	783.648	7	247.324	1	.154	3	.082	2	.28	7
162			min	-1098.708	3	81.86	4	-234.025	2	-.159	4	-.087	1	.029	4
163		2	max	1128.069	4	780.816	7	244.779	1	.154	3	.061	2	.21	7
164			min	-1096.834	3	80.971	4	-231.48	2	-.159	4	-.065	1	.021	4
165		3	max	1126.196	4	777.943	7	242.235	1	.154	3	.041	2	.139	7
166			min	-1094.96	3	80.067	4	-228.936	2	-.159	4	-.043	1	.014	4
167		4	max	1124.322	4	775.07	7	239.691	1	.154	3	.02	2	.07	7
168			min	-1093.086	3	79.162	4	-226.392	2	-.159	4	-.021	1	.007	4
169		5	max	1122.448	4	772.438	7	237.147	1	.154	3	0	1	0	1
170			min	-1091.213	3	78.322	4	-223.848	2	-.159	4	0	1	0	1
171	M18	1	max	1150.659	1	923.854	7	194.766	1	.198	1	.152	2	.481	7
172			min	-1102.411	2	97.472	4	-217.746	2	-.165	2	-.147	1	.049	4
173		2	max	1149.872	1	922.65	7	193.403	1	.198	1	.143	2	.442	7
174			min	-1101.624	2	97.089	4	-216.383	2	-.165	2	-.139	1	.045	4
175		3	max	1149.084	1	921.445	7	192.039	1	.198	1	.134	2	.404	7
176			min	-1100.836	2	96.706	4	-215.019	2	-.165	2	-.131	1	.041	4
177		4	max	1148.297	1	920.24	7	190.676	1	.198	1	.125	2	.365	7
178			min	-1100.049	2	96.323	4	-213.655	2	-.165	2	-.123	1	.037	4
179		5	max	1147.51	1	919.035	7	189.312	1	.198	1	.116	2	.327	7
180			min	-1099.262	2	95.94	4	-212.292	2	-.165	2	-.115	1	.033	4
181	M19	1	max	1119.687	1	919.052	7	321.802	1	.192	1	.116	2	.332	7
182			min	-1068.648	2	95.884	4	-326.803	2	-.177	2	-.115	1	.034	4
183		2	max	1118.23	1	916.316	7	318.471	1	.192	1	.087	2	.249	7
184			min	-1067.19	2	94.942	4	-323.471	2	-.177	2	-.086	1	.026	4
185		3	max	1116.772	1	913.58	7	315.139	1	.192	1	.058	2	.166	7
186			min	-1065.733	2	94.001	4	-320.14	2	-.177	2	-.057	1	.017	4
187		4	max	1115.315	1	910.864	7	311.808	1	.192	1	.029	2	.083	7
188			min	-1064.275	2	93.079	4	-316.809	2	-.177	2	-.028	1	.008	4
189		5	max	1113.857	1	908.234	7	308.477	1	.192	1	0	1	0	1
190			min	-1062.818	2	92.244	4	-313.477	2	-.177	2	0	1	0	1
191	M20	1	max	1194.843	2	84.619	7	29.171	2	0	5	-.001	4	.107	5
192			min	-1285.998	1	8.368	4	-36.628	1	0	2	-.05	7	-.02	2
193		2	max	1194.843	2	60.08	7	13.32	2	0	5	.007	2	.036	7
194			min	-1285.998	1	2.856	4	-20.777	1	0	2	-.01	1	-.018	4
195		3	max	1194.843	2	28.753	7	4.636	4	0	5	.019	6	.006	3
196			min	-1285.998	1	-5.059	4	-16.944	7	0	2	-.004	1	-.017	8
197		4	max	1194.843	2	9.167	3	10.925	1	0	5	.012	5	-.003	4
198			min	-1285.998	1	-14.53	4	-20.752	6	0	2	0	2	-.033	7
199		5	max	1194.843	2	1.832	3	26.776	1	0	5	.023	1	.015	4
200			min	-1285.998	1	-38.844	8	-34.233	2	0	2	-.034	2	-.031	7
201	M21	1	max	1245.295	3	16.39	1	87.955	6	0	1	-.001	1	.041	1
202			min	-1311.376	4	-24.14	2	1.939	1	0	6	-.052	7	-.117	6
203		2	max	1238.431	3	12.426	1	63.647	6	0	1	.009	1	.029	1
204			min	-1304.512	4	-20.176	2	-3.681	1	0	6	-.013	2	-.046	2
205		3	max	1231.567	3	8.463	1	31.799	6	0	1	.019	5	.016	5
206			min	-1297.648	4	-18.193	6	-11.596	1	0	6	-.004	2	-.009	2
207		4	max	1224.703	3	15.347	4	16.194	2	0	1	.013	8	.033	6
208			min	-1290.784	4	-23.098	3	-21.042	1	0	6	-.002	3	-.002	1
209		5	max	1217.839	3	27.234	4	8.917	2	0	1	.018	4	.035	2
210			min	-1283.92	4	-34.985	3	-44.788	5	0	6	-.029	7	-.023	1
211	M22	1	max	282.167	3	491.854	3	51.447	3	.111	4	.016	4	.14	3
212			min	-288.456	4	-329.025	4	-50.148	4	-.122	3	-.017	3	-.095	4
213		2	max	282.181	3	491.197	3	54.568	3	.111	4	.012	4	.105	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
214			min	-288.47	4	-329.682	4	-53.27	4	-.122	3	-.013	3	-.071	4
215		3	max	282.195	3	490.539	3	57.69	3	.111	4	.009	4	.07	3
216			min	-288.484	4	-330.339	4	-56.391	4	-.122	3	-.009	3	-.047	4
217		4	max	282.209	3	489.882	3	60.812	3	.111	4	.004	4	.035	3
218			min	-288.498	4	-330.997	4	-59.513	4	-.122	3	-.004	3	-.024	4
219		5	max	282.223	3	489.225	3	63.933	3	.111	4	0	1	0	1
220			min	-288.512	4	-331.654	4	-62.635	4	-.122	3	0	1	0	1
221	M23	1	max	307.54	3	611.129	2	47.685	4	.154	2	.017	2	.176	2
222			min	-311.44	4	-398.635	1	-53.616	2	-.145	1	-.015	1	-.116	1
223		2	max	306.166	3	610.464	2	49.187	1	.154	2	.013	2	.132	2
224			min	-310.066	4	-399.3	1	-55.971	2	-.145	1	-.011	1	-.087	1
225		3	max	304.792	3	609.799	2	51.543	1	.154	2	.009	2	.088	2
226			min	-308.692	4	-399.965	1	-58.327	2	-.145	1	-.008	1	-.058	1
227		4	max	303.418	3	609.135	2	53.899	1	.154	2	.004	2	.044	2
228			min	-307.318	4	-400.63	1	-60.683	2	-.145	1	-.004	1	-.029	1
229		5	max	302.043	3	608.47	2	56.254	1	.154	2	0	1	0	1
230			min	-305.943	4	-401.294	1	-63.039	2	-.145	1	0	1	0	1
231	M24	1	max	2308.579	4	287.892	4	81.932	2	.587	1	.018	4	-.052	1
232			min	-2171.972	3	-1061.623	7	-82.853	1	-.621	2	-.016	3	-.25	7
233		2	max	2789.881	4	972.325	7	42.034	4	.587	1	.096	4	1.065	7
234			min	-4292.281	3	-30.942	4	-42.365	3	-.62	2	-.095	3	-.398	4
235		3	max	2806.219	4	895.999	7	32.602	4	.587	1	.145	4	.218	3
236			min	-4308.619	3	-57.005	4	-32.933	3	-.62	2	-.144	3	-.342	4
237		4	max	2734.217	4	-277.188	3	940.051	1	.647	1	.853	4	.026	3
238			min	-4300.717	3	-1220.295	8	-937.618	2	-.85	2	-.852	3	-.188	8
239		5	max	2750.554	4	-295.387	3	968.348	1	.647	1	.761	1	1.431	6
240			min	-4317.054	3	-1268.833	8	-965.915	2	-.85	2	-.759	2	.374	1
241	M25	1	max	280.877	2	-82.712	4	1130.253	4	-.025	4	.135	1	.141	3
242			min	-291.229	1	-788.955	7	-1100.358	3	-.413	7	-.129	2	-.162	4
243		2	max	587.228	4	-103.716	4	144.17	2	-.027	4	.443	4	.527	7
244			min	-574.533	3	-853.631	7	-174.038	1	-.41	7	-.416	3	-.104	4
245		3	max	595.362	4	-114.239	4	139.474	2	-.027	4	.477	4	1.088	7
246			min	-582.668	3	-882.822	7	-169.342	1	-.41	7	-.471	3	-.034	4
247		4	max	603.496	4	-125.462	4	134.778	2	-.027	4	.521	4	1.668	7
248			min	-590.802	3	-914.468	7	-164.646	1	-.41	7	-.534	3	.043	4
249		5	max	611.63	4	-135.285	4	130.081	2	-.027	4	.573	4	2.268	7
250			min	-598.936	3	-941.249	7	-159.949	1	-.41	7	-.607	3	.128	4
251	M26	1	max	890.994	1	1067.301	7	176.383	4	.473	7	.432	1	2.537	7
252			min	-879.864	2	159.601	4	-143.956	3	.062	4	-.466	2	.333	4
253		2	max	882.857	1	1040.117	7	190.475	4	.473	7	.389	1	1.864	6
254			min	-871.728	2	149.775	4	-158.048	3	.062	4	-.401	2	.209	1
255		3	max	874.721	1	1010.168	7	204.568	4	.473	7	.349	1	1.214	6
256			min	-863.591	2	138.557	4	-172.141	3	.062	4	-.338	2	.069	1
257		4	max	866.585	1	981.578	7	218.661	4	.473	7	.312	1	.584	6
258			min	-855.455	2	128.046	4	-186.234	3	.062	4	-.279	2	-.065	1
259		5	max	192.338	1	924.151	7	1102.274	2	.481	7	.152	2	.165	2
260			min	-220.18	2	97.152	4	-1150.781	1	.049	4	-.147	1	-.198	1
261	M27	1	max	237.092	1	460.284	4	117.382	2	.075	3	.045	3	.414	4
262			min	-245.178	2	-284.27	3	-112.757	1	-.059	4	-.047	4	-.283	3
263		2	max	237.092	1	459.033	4	111.938	2	.075	3	.036	3	.356	4
264			min	-245.178	2	-285.522	3	-107.313	1	-.059	4	-.037	4	-.247	3
265		3	max	237.092	1	457.726	4	106.494	2	.075	3	.027	3	.299	4
266			min	-245.178	2	-286.828	3	-101.869	1	-.059	4	-.028	4	-.211	3
267		4	max	237.092	1	456.42	4	101.05	2	.075	3	.017	3	.242	4
268			min	-245.178	2	-288.135	3	-96.424	1	-.059	4	-.019	4	-.176	3
269		5	max	237.092	1	455.113	4	95.606	2	.075	3	.013	2	.185	4
270			min	-245.178	2	-289.441	3	-90.98	1	-.059	4	-.013	1	-.14	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
271	M28	1	max	221.333	1	518.967	7	97.598	1	.053	3	.057	3	.429	3
272			min	-226.381	2	-259.383	4	-102.089	2	-.074	4	-.056	4	-.261	4
273		2	max	221.333	1	514.943	7	94.34	4	.053	3	.046	3	.368	3
274			min	-226.381	2	-260.642	4	-96.624	2	-.074	4	-.044	4	-.229	4
275		3	max	221.333	1	510.734	7	94.34	4	.053	3	.034	3	.308	3
276			min	-226.381	2	-261.953	4	-94.489	3	-.074	4	-.032	4	-.196	4
277		4	max	221.333	1	506.525	7	94.34	4	.053	3	.022	3	.248	3
278			min	-226.381	2	-263.265	4	-94.489	3	-.074	4	-.021	4	-.163	4
279		5	max	221.333	1	502.317	7	94.34	4	.053	3	.014	1	.188	3
280			min	-226.381	2	-264.577	4	-94.489	3	-.074	4	-.014	2	-.13	4
281	M29	1	max	678.521	2	919.959	5	284.696	4	.16	4	.147	3	.482	5
282			min	-643.636	1	93.805	2	-271.416	3	-.186	3	-.152	4	.04	2
283		2	max	678.521	2	918.754	5	282.878	4	.16	4	.135	3	.444	5
284			min	-643.636	1	93.422	2	-269.598	3	-.186	3	-.14	4	.036	2
285		3	max	678.521	2	917.55	5	281.06	4	.16	4	.124	3	.406	5
286			min	-643.636	1	93.04	2	-267.78	3	-.186	3	-.128	4	.032	2
287		4	max	678.521	2	916.345	5	279.241	4	.16	4	.113	3	.367	5
288			min	-643.636	1	92.657	2	-265.961	3	-.186	3	-.116	4	.028	2
289		5	max	678.521	2	915.14	5	277.423	4	.16	4	.102	3	.329	5
290			min	-643.636	1	92.274	2	-264.143	3	-.186	3	-.105	4	.025	2
291	M30	1	max	686.505	2	915.162	5	295.785	4	.169	4	.102	3	.331	5
292			min	-650.67	1	92.388	2	-288.013	3	-.177	3	-.105	4	.033	2
293		2	max	686.067	2	912.31	5	291.864	4	.169	4	.076	3	.248	5
294			min	-650.232	1	91.488	2	-284.093	3	-.177	3	-.078	4	.025	2
295		3	max	685.629	2	909.405	5	287.944	4	.169	4	.05	3	.165	5
296			min	-649.794	1	90.573	2	-280.173	3	-.177	3	-.052	4	.016	2
297		4	max	685.192	2	906.499	5	284.024	4	.169	4	.025	3	.082	5
298			min	-649.357	1	89.658	2	-276.253	3	-.177	3	-.026	4	.008	2
299		5	max	684.754	2	903.832	5	280.104	4	.169	4	0	1	0	1
300			min	-648.919	1	88.812	2	-272.332	3	-.177	3	0	1	0	1
301	M31	1	max	845.033	2	922.709	5	344.686	4	.179	4	.202	3	.479	5
302			min	-810.711	1	101.854	2	-362.685	3	-.148	3	-.196	4	.042	2
303		2	max	845.033	2	921.505	5	342.868	4	.179	4	.187	3	.441	5
304			min	-810.711	1	101.471	2	-360.867	3	-.148	3	-.182	4	.038	2
305		3	max	845.033	2	920.3	5	341.05	4	.179	4	.172	3	.402	5
306			min	-810.711	1	101.088	2	-359.049	3	-.148	3	-.167	4	.034	2
307		4	max	845.033	2	919.095	5	339.232	4	.179	4	.157	3	.364	5
308			min	-810.711	1	100.705	2	-357.231	3	-.148	3	-.153	4	.03	2
309		5	max	845.033	2	917.891	5	337.414	4	.179	4	.142	3	.326	5
310			min	-810.711	1	100.323	2	-355.413	3	-.148	3	-.139	4	.025	2
311	M32	1	max	847.136	2	917.923	5	394.78	4	.17	4	.142	3	.328	5
312			min	-811.412	1	100.502	2	-402.601	3	-.156	3	-.139	4	.035	2
313		2	max	846.704	2	914.96	5	390.904	4	.17	4	.106	3	.246	5
314			min	-810.979	1	99.571	2	-398.725	3	-.156	3	-.104	4	.026	2
315		3	max	846.271	2	911.997	5	387.029	4	.17	4	.07	3	.164	5
316			min	-810.546	1	98.64	2	-394.849	3	-.156	3	-.069	4	.018	2
317		4	max	845.838	2	909.091	5	383.153	4	.17	4	.035	3	.082	5
318			min	-810.114	1	97.726	2	-390.973	3	-.156	3	-.034	4	.009	2
319		5	max	845.405	2	906.491	5	379.277	4	.17	4	0	1	0	1
320			min	-809.681	1	96.9	2	-387.097	3	-.156	3	0	1	0	1
321	M33	1	max	987.51	1	86.53	8	28.358	3	0	8	-.006	2	.114	8
322			min	-1062.6	2	4.726	3	-36.001	4	0	3	-.05	5	-.039	3
323		2	max	980.644	1	62.677	8	16.471	3	0	8	.009	3	.039	4
324			min	-1055.734	2	-.877	3	-24.114	4	0	3	-.012	4	-.023	3
325		3	max	973.778	1	30.913	8	4.584	3	0	8	.02	7	.004	4
326			min	-1048.868	2	-8.757	3	-17.243	5	0	3	-.005	4	-.018	6
327		4	max	966.912	1	13.183	4	7.503	2	0	8	.013	6	-.002	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
328			min	-1042.002	2	-18.194	3	-18.814	5	0	3	-.001	1	-.035	5
329		5	max	960.046	1	5.862	4	11.547	4	0	8	.015	4	.013	2
330			min	-1035.136	2	-44.461	7	-22.107	7	0	3	-.027	7	-.031	5
331	M34	1	max	911.249	1	28.855	4	89.45	7	0	4	-.003	2	.037	4
332			min	-982.125	2	-37.369	3	5.234	4	0	7	-.054	5	-.123	7
333		2	max	904.387	1	16.966	4	65.62	7	0	4	.008	4	.021	4
334			min	-975.263	2	-25.479	3	-.363	4	0	7	-.012	3	-.043	7
335		3	max	897.526	1	5.076	4	33.899	7	0	4	.02	8	.016	6
336			min	-968.402	2	-18.779	7	-8.231	4	0	7	-.005	3	-.007	1
337		4	max	890.664	1	6.907	2	14.246	3	0	4	.013	6	.036	7
338			min	-961.54	2	-20.34	5	-17.651	4	0	7	0	1	0	4
339		5	max	883.803	1	10.867	2	6.971	3	0	4	.014	3	.036	5
340			min	-954.679	2	-23.655	8	-41.246	8	0	7	-.025	8	-.012	2
341	M35	1	max	250.9	1	455.249	4	38.622	1	.134	3	.013	2	.131	4
342			min	-260.418	2	-289.254	3	-38.654	2	-.143	4	-.013	1	-.084	3
343		2	max	249.54	1	454.584	4	41.002	1	.134	3	.01	2	.098	4
344			min	-259.058	2	-289.919	3	-41.034	2	-.143	4	-.01	1	-.063	3
345		3	max	248.18	1	453.919	4	43.383	1	.134	3	.007	2	.066	4
346			min	-257.698	2	-290.584	3	-43.414	2	-.143	4	-.007	1	-.042	3
347		4	max	246.82	1	453.254	4	45.763	1	.134	3	.003	2	.033	4
348			min	-256.338	2	-291.248	3	-45.795	2	-.143	4	-.003	1	-.021	3
349		5	max	245.46	1	452.59	4	48.143	1	.134	3	0	1	0	1
350			min	-254.977	2	-291.913	3	-48.175	2	-.143	4	0	1	0	1
351	M36	1	max	229.609	1	502.284	7	42.639	2	.139	3	.014	1	.143	7
352			min	-236.514	2	-264.313	4	-44.084	1	-.129	4	-.014	2	-.076	4
353		2	max	228.264	1	500.2	7	44.992	2	.139	3	.011	1	.107	7
354			min	-235.169	2	-264.97	4	-46.437	1	-.129	4	-.01	2	-.057	4
355		3	max	226.92	1	498.115	7	47.345	2	.139	3	.007	1	.071	7
356			min	-233.824	2	-265.628	4	-48.791	1	-.129	4	-.007	2	-.038	4
357		4	max	225.575	1	496.031	7	49.699	2	.139	3	.004	1	.035	7
358			min	-232.48	2	-266.285	4	-51.144	1	-.129	4	-.004	2	-.019	4
359		5	max	224.23	1	493.946	7	52.052	2	.139	3	0	1	0	1
360			min	-231.135	2	-266.942	4	-53.497	1	-.129	4	0	1	0	1
361	M37	1	max	1995.516	2	375.286	2	71.277	3	.629	4	.017	4	-.045	2
362			min	-1850.826	1	-1097.441	5	-71.67	4	-.664	3	-.014	3	-.259	5
363		2	max	2647.469	2	1019.031	5	22.163	1	.629	4	.051	3	1.099	5
364			min	-4167.268	1	-64.142	2	-22.398	2	-.663	3	-.049	4	-.499	2
365		3	max	2647.469	2	944.52	5	46.162	4	.629	4	.051	1	.253	1
366			min	-4167.268	1	-89.848	2	-46.531	3	-.663	3	-.05	2	-.399	2
367		4	max	2609.216	2	-274.713	1	1072.167	4	.836	4	.325	1	.029	1
368			min	-4194.379	1	-1319.057	6	-1075.606	3	-.887	3	-.316	2	-.206	6
369		5	max	2609.216	2	-292.943	1	1109.896	4	.836	4	1.39	4	1.537	6
370			min	-4194.379	1	-1367.599	6	-1113.335	3	-.887	3	-1.387	3	.397	1
371	M38	1	max	270.682	3	-93.607	2	678.514	2	-.04	2	.152	4	.16	4
372			min	-285.335	4	-920.348	5	-643.64	1	-.482	5	-.147	3	-.186	3
373		2	max	381.683	3	-119.674	2	93.477	1	-.045	2	.266	2	.583	5
374			min	-368.572	4	-980.649	5	-124.037	2	-.473	5	-.238	1	-.013	2
375		3	max	381.683	3	-130.205	2	74.696	1	-.045	2	.192	2	1.225	5
376			min	-368.572	4	-1009.869	5	-105.257	2	-.473	5	-.183	1	.068	2
377		4	max	381.683	3	-141.456	2	55.915	1	-.045	2	.13	2	1.887	5
378			min	-368.572	4	-1041.596	5	-86.476	2	-.473	5	-.141	1	.155	2
379		5	max	381.683	3	-151.296	2	49.751	3	-.045	2	.081	2	2.569	5
380			min	-368.572	4	-1068.416	5	-80.775	4	-.473	5	-.111	1	.25	2
381	M39	1	max	619.641	4	1074.298	5	85.541	3	.474	5	.327	2	2.575	5
382			min	-609.533	3	158.019	2	-51.309	4	.047	2	-.366	1	.254	2
383		2	max	619.641	4	1047.46	5	85.541	3	.474	5	.314	2	1.889	5
384			min	-609.533	3	148.173	2	-51.309	4	.047	2	-.331	1	.155	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
385		3	max	619.641	4	1015.742	5	85.541	3	.474	5	.313	2	1.222	5
386			min	-609.533	3	136.922	2	-51.309	4	.047	2	-.307	1	.063	2
387		4	max	619.641	4	986.562	5	85.541	3	.474	5	.325	2	.576	5
388			min	-609.533	3	126.402	2	-51.309	4	.047	2	-.296	1	-.022	2
389		5	max	342.608	4	923.142	5	810.76	1	.479	5	.202	3	.148	3
390			min	-364.659	3	101.626	2	-844.97	2	.042	2	-.196	4	-.179	4
391	M40	1	max	0	1	.004	1	.002	3	0	1	0	1	0	1
392			min	0	1	-.001	3	-.004	1	0	1	0	1	0	1
393		2	max	105.218	1	225.838	2	138.128	3	.399	4	.245	2	.159	2
394			min	-135.415	2	-269.122	1	-140.267	4	-.405	3	-.25	1	-.138	1
395		3	max	756.419	3	236.058	2	91.384	4	.248	1	.196	4	.059	3
396			min	-851.93	4	-143.533	1	-91.462	3	-.253	2	-.204	3	-.214	8
397		4	max	124.746	3	181.801	3	87.359	2	.275	1	.22	4	.163	4
398			min	-169.659	4	-212.16	4	-83.985	1	-.27	2	-.224	3	-.256	3
399		5	max	0	3	.002	5	.004	4	0	1	0	1	0	1
400			min	0	4	-.005	3	0	1	0	1	0	1	0	1
401	M41	1	max	0	1	.004	4	0	9	0	1	0	1	0	1
402			min	0	1	0	5	-.003	4	0	1	0	1	0	1
403		2	max	158.27	4	211.405	3	91.426	1	.267	2	.155	1	.176	3
404			min	-191.45	3	-254.187	4	-93.616	2	-.274	1	-.161	2	-.133	4
405		3	max	414.245	4	313.557	5	63.858	2	.217	4	.158	3	.012	1
406			min	-548.009	3	-105.223	2	-59.721	1	-.221	3	-.162	4	-.286	6
407		4	max	205.635	1	160.692	1	145.641	3	.37	4	.135	2	.088	2
408			min	-282.206	2	-249.42	2	-145.812	4	-.363	3	-.131	1	-.376	5
409		5	max	0	1	.002	8	.002	2	0	1	0	1	0	1
410			min	0	1	-.005	1	-.003	3	0	1	0	1	0	1
411	M42	1	max	0	1	0	1	0	1	0	1	0	1	0	1
412			min	0	1	0	1	0	1	0	1	0	1	0	1
413		2	max	177.498	2	179.742	4	142.392	2	.364	1	.28	4	.127	1
414			min	-202.906	1	-211.943	3	-145.104	1	-.37	2	-.283	3	-.119	2
415		3	max	908.835	2	260.36	4	165.366	3	.233	3	.237	1	.042	2
416			min	-1018.071	1	-174.257	3	-165.919	4	-.236	4	-.245	2	-.236	5
417		4	max	82.769	2	136.532	4	104.097	1	.283	2	.29	3	.091	1
418			min	-143.009	7	-172.146	3	-99.642	2	-.277	1	-.297	4	-.198	6
419		5	max	0	1	0	1	0	1	0	1	0	1	0	1
420			min	0	1	0	1	0	1	0	1	0	1	0	1
421	M139	1	max	4387.9	8	61.947	8	33.275	2	0	2	0	1	0	1
422			min	-488.313	3	1.031	3	-33.275	1	0	1	0	1	0	1
423		2	max	4373.416	8	30.974	8	16.638	2	0	2	.029	2	0	3
424			min	-503.477	3	.515	3	-16.638	1	0	1	-.029	1	-.054	8
425		3	max	4358.931	8	0	1	0	1	0	2	.039	2	-.001	3
426			min	-518.642	3	0	1	0	1	0	1	-.039	1	-.072	8
427		4	max	4344.447	8	-.515	3	16.638	1	0	2	.029	2	0	3
428			min	-533.806	3	-30.974	8	-16.638	2	0	1	-.029	1	-.054	8
429		5	max	4329.962	8	-1.031	3	33.275	1	0	2	0	1	0	1
430			min	-548.97	3	-61.947	8	-33.275	2	0	1	0	1	0	1
431	M140	1	max	4218.734	5	61.549	5	42.403	4	0	4	0	1	0	1
432			min	-716.986	2	2.29	2	-42.403	3	0	3	0	1	0	1
433		2	max	4203.907	5	30.774	5	21.202	4	0	4	.037	4	-.002	2
434			min	-731.174	2	1.145	2	-21.202	3	0	3	-.037	3	-.054	5
435		3	max	4189.081	5	0	1	0	1	0	4	.049	4	-.003	2
436			min	-745.361	2	0	1	0	1	0	3	-.049	3	-.072	5
437		4	max	4174.254	5	-1.145	2	21.202	3	0	4	.037	4	-.002	2
438			min	-759.548	2	-30.774	5	-21.202	4	0	3	-.037	3	-.054	5
439		5	max	4159.428	5	-2.29	2	42.403	3	0	4	0	1	0	1
440			min	-773.735	2	-61.549	5	-42.403	4	0	3	0	1	0	1
441	M141	1	max	4063.547	7	61.985	7	33.29	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
442			min	-490.767	4	1.043	4	-33.29	2	0	2	0	1	0	1
443		2	max	4049.064	7	30.992	7	16.645	1	0	1	.029	1	0	4
444			min	-505.936	4	.522	4	-16.645	2	0	2	-.029	2	-.054	7
445		3	max	4034.582	7	0	1	0	1	0	1	.039	1	-.001	4
446			min	-521.105	4	0	1	0	1	0	2	-.039	2	-.072	7
447		4	max	4020.099	7	-.522	4	16.645	2	0	1	.029	1	0	4
448			min	-536.275	4	-30.992	7	-16.645	1	0	2	-.029	2	-.054	7
449		5	max	4005.616	7	-1.043	4	33.29	2	0	1	0	1	0	1
450			min	-551.444	4	-61.985	7	-33.29	1	0	2	0	1	0	1
451	M154	1	max	0	1	0	1	0	1	0	1	0	1	0	1
452			min	0	1	0	1	0	1	0	1	0	1	0	1
453		2	max	182.572	3	153.865	4	176.198	1	.394	1	.179	1	.059	2
454			min	-162.177	4	-125.532	3	-176.56	2	-.398	2	-.179	2	-.06	1
455		3	max	156.667	6	264.108	4	122.16	1	.17	1	.437	1	.023	3
456			min	-22.817	1	-238.367	3	-122.973	2	-.173	2	-.437	2	-.041	6
457		4	max	142.311	8	166.342	4	285.859	2	.492	2	.358	1	.059	4
458			min	-72.309	3	-205.184	3	-288.205	1	-.496	1	-.361	2	-.079	3
459		5	max	0	1	0	1	0	1	0	1	0	1	0	1
460			min	0	1	0	1	0	1	0	1	0	1	0	1
461	M155	1	max	0	1	.006	3	.017	4	0	1	0	1	0	1
462			min	0	1	-.002	1	-.016	1	0	1	0	1	0	1
463		2	max	204.613	1	159.88	3	173.965	4	.33	4	.223	2	.057	1
464			min	-194.828	2	-138.448	4	-176.348	3	-.334	3	-.223	1	-.057	2
465		3	max	169.758	3	261.269	2	109.907	4	.165	4	.342	4	.051	4
466			min	-114.989	4	-232.492	1	-110.191	3	-.168	3	-.342	3	-.066	3
467		4	max	119.199	7	211.304	2	170.207	3	.366	3	.338	4	.116	3
468			min	-27.248	4	-247.184	1	-172.473	4	-.37	4	-.341	3	-.133	4
469		5	max	0	1	.006	4	.022	3	0	1	0	1	0	1
470			min	0	1	-.004	2	-.007	1	0	1	0	1	0	1
471	M156	1	max	0	1	.004	2	.002	1	0	1	0	1	0	1
472			min	0	1	-.005	3	-.02	4	0	1	0	1	0	1
473		2	max	125.834	4	178.745	1	114.116	2	.297	3	.233	3	.072	4
474			min	-98.082	3	-150.035	2	-115.656	1	-.3	4	-.234	4	-.071	3
475		3	max	219.056	5	264.048	1	75.026	2	.112	2	.336	3	.039	2
476			min	-97.006	2	-216.357	2	-75.791	1	-.115	1	-.336	4	-.062	1
477		4	max	203.666	5	185.69	3	248.076	4	.42	4	.232	2	.098	1
478			min	-83.591	2	-249.354	4	-248.397	3	-.423	3	-.234	1	-.124	2
479		5	max	0	1	.003	2	.015	1	0	1	0	1	0	1
480			min	0	1	-.006	3	-.021	4	0	1	0	1	0	1
481	M157	1	max	382.082	3	451.303	1	280.119	2	.015	1	.257	2	.499	4
482			min	-385.283	4	-480.5	2	-284.306	1	-.016	2	-.238	1	-.511	3
483		2	max	379.125	3	453.128	1	281.826	2	.015	1	.228	4	.357	4
484			min	-382.326	4	-478.674	2	-286.013	1	-.016	2	-.219	3	-.363	3
485		3	max	376.168	3	454.953	1	283.534	2	.015	1	.238	4	.217	4
486			min	-379.369	4	-476.849	2	-287.721	1	-.016	2	-.235	3	-.217	3
487		4	max	373.21	3	456.779	1	285.241	2	.015	1	.25	4	.369	2
488			min	-376.411	4	-475.024	2	-289.428	1	-.016	2	-.252	3	-.364	1
489		5	max	370.253	3	458.604	1	286.949	2	.015	1	.264	4	.571	2
490			min	-373.454	4	-473.198	2	-291.136	1	-.016	2	-.27	3	-.563	1
491	M158	1	max	313.95	2	604.008	3	323.248	4	.021	3	.205	1	.525	3
492			min	-314.47	1	-626.399	4	-324.598	3	-.021	4	-.193	2	-.532	4
493		2	max	313.95	2	605.831	3	323.248	4	.021	3	.2	1	.278	3
494			min	-314.47	1	-624.576	4	-324.598	3	-.021	4	-.193	2	-.281	4
495		3	max	313.95	2	607.654	3	323.248	4	.021	3	.196	1	.181	1
496			min	-314.47	1	-622.753	4	-324.598	3	-.021	4	-.194	2	-.181	2
497		4	max	313.95	2	609.477	3	323.248	4	.021	3	.195	1	.221	4
498			min	-314.47	1	-620.93	4	-324.598	3	-.021	4	-.197	2	-.216	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
499		5	max	313.95	2	611.3	3	323.248	4	.021	3	.196	1	.472	4
500			min	-314.47	1	-619.107	4	-324.598	3	-.021	4	-.201	2	-.464	3
501	M159	1	max	326.379	1	517.852	2	323.369	1	.018	2	.243	3	.641	2
502			min	-335.967	2	-547.011	1	-326.607	2	-.018	1	-.222	4	-.651	1
503		2	max	324.169	4	519.675	2	321.664	1	.018	2	.222	3	.417	2
504			min	-333.014	2	-545.188	1	-324.902	2	-.018	1	-.211	4	-.42	1
505		3	max	327.122	4	521.498	2	319.959	1	.018	2	.206	2	.203	3
506			min	-330.06	2	-543.365	1	-323.196	2	-.018	1	-.203	1	-.201	4
507		4	max	330.076	4	523.321	2	318.253	1	.018	2	.259	2	.318	3
508			min	-332.858	3	-541.542	1	-321.491	2	-.018	1	-.262	1	-.311	4
509		5	max	333.03	4	525.144	2	316.548	1	.018	2	.313	2	.433	3
510			min	-335.812	3	-539.719	1	-319.786	2	-.018	1	-.322	1	-.424	4
511	MP4A	1	max	0	1	.009	6	.06	5	0	1	0	1	0	1
512			min	0	1	-.011	5	-.048	6	0	1	0	1	0	1
513		2	max	587.829	2	272.892	4	109.262	2	.327	2	.204	3	.48	4
514			min	-489.814	1	-245.22	3	-114.073	1	-.327	1	-.191	4	-.444	3
515		3	max	596.159	2	293.62	4	105.257	4	.327	2	.089	2	.067	3
516			min	-481.484	1	-265.947	3	-109.037	3	-.327	1	-.084	1	-.087	4
517		4	max	-8.33	4	20.733	3	20.794	2	0	1	.021	1	.021	3
518			min	-34.734	5	-20.73	4	-20.794	1	0	1	-.021	2	-.021	4
519		5	max	0	1	.025	7	.078	6	0	1	0	1	0	1
520			min	0	1	-.003	4	-.075	5	0	1	0	1	0	1
521	MP1A	1	max	0	1	.023	5	.057	1	0	1	0	1	0	1
522			min	0	1	-.01	2	-.069	6	0	1	0	1	0	1
523		2	max	659.737	2	231.901	4	107.165	3	.374	1	.183	4	.424	4
524			min	-596.165	1	-283.874	3	-104.385	4	-.374	2	-.193	3	-.502	3
525		3	max	668.067	2	252.628	4	107.165	3	.374	1	.021	3	.088	2
526			min	-587.835	1	-304.601	3	-104.385	4	-.374	2	-.025	4	-.062	1
527		4	max	-8.33	9	20.73	3	20.796	2	0	1	.021	1	.021	3
528			min	-34.734	5	-20.734	4	-20.796	1	0	1	-.021	2	-.021	4
529		5	max	0	1	.003	3	.08	6	0	1	0	1	0	1
530			min	0	1	-.038	8	-.075	5	0	1	0	1	0	1
531	MP3A	1	max	82.354	6	43.584	4	95.518	1	0	1	0	1	0	1
532			min	10.8	2	-43.588	3	-95.517	2	0	1	0	1	0	1
533		2	max	257.532	8	314.767	4	122.906	1	.208	2	.212	1	.545	4
534			min	-60.226	3	-270.838	3	-121.286	2	-.207	1	-.212	2	-.474	3
535		3	max	362.854	8	372.827	4	225.17	1	.208	2	.254	1	.089	3
536			min	-42.639	3	-328.898	3	-223.55	2	-.207	1	-.25	2	-.105	4
537		4	max	-8.33	1	20.728	3	20.81	2	0	1	.021	1	.021	3
538			min	-34.734	5	-20.725	4	-20.809	1	0	1	-.021	2	-.021	4
539		5	max	0	1	.022	5	.096	6	0	1	0	1	0	1
540			min	0	1	0	2	-.089	5	0	1	0	1	0	1
541	MP2A	1	max	364.532	5	179.077	4	444.564	1	0	1	0	1	0	1
542			min	76.8	2	-179.066	3	-444.568	2	0	1	0	1	0	1
543		2	max	399.266	5	256.778	4	465.291	1	.141	1	.91	1	.402	4
544			min	85.13	2	-268.749	3	-465.296	2	-.139	2	-.91	2	-.42	3
545		3	max	416.962	5	277.505	4	116.11	1	.141	1	.455	1	.138	3
546			min	-18.417	2	-289.477	3	-114.469	2	-.139	2	-.454	2	-.132	4
547		4	max	-69.77	1	163.64	3	374.656	2	0	1	.024	1	.021	3
548			min	-326.359	5	-163.65	4	-374.652	1	0	1	-.024	2	-.021	4
549		5	max	0	1	.015	4	.873	6	0	1	0	1	0	1
550			min	0	1	-.128	7	-.788	5	0	1	0	1	0	1
551	MP4C	1	max	0	1	.05	8	.017	5	0	1	0	1	0	1
552			min	0	1	-.035	3	-.025	6	0	1	0	1	0	1
553		2	max	496.385	1	73.493	3	282.141	1	.271	3	.584	2	.103	3
554			min	-397.948	2	-87.443	4	-297.951	2	-.272	4	-.568	1	-.127	4
555		3	max	504.715	1	52.766	3	302.868	1	.271	3	.124	4	.034	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
556			min	-389.618	2	-66.716	4	-318.678	2	-.272	4	-.14	3	-.029	1
557		4	max	-8.33	2	20.77	3	20.755	2	0	1	.021	1	.021	3
558			min	-34.734	5	-20.771	4	-20.756	1	0	1	-.021	2	-.021	4
559		5	max	0	1	.043	3	.028	2	0	1	0	1	0	1
560			min	0	1	-.061	8	-.044	5	0	1	0	1	0	1
561	MP1C	1	max	0	1	.043	4	.031	3	0	1	0	1	0	1
562			min	0	1	-.055	7	-.041	8	0	1	0	1	0	1
563		2	max	604.696	3	218.27	1	214.955	4	.294	4	.378	3	.343	1
564			min	-532.91	4	-195.655	2	-174.009	3	-.294	3	-.436	4	-.307	2
565		3	max	613.026	3	218.27	1	214.955	4	.294	4	.078	1	.084	2
566			min	-524.58	4	-195.655	2	-174.009	3	-.294	3	-.055	2	-.094	1
567		4	max	-8.33	1	20.789	3	20.743	2	0	1	.021	1	.021	3
568			min	-34.734	6	-20.787	4	-20.739	1	0	1	-.021	2	-.021	4
569		5	max	0	1	.083	7	.059	8	0	1	0	1	0	1
570			min	0	1	-.06	4	-.026	3	0	1	0	1	0	1
571	MP3C	1	max	82.354	5	82.511	4	56.571	1	0	1	0	1	0	1
572			min	10.8	2	-82.507	3	-56.568	2	0	1	0	1	0	1
573		2	max	287.182	6	150.562	4	255.014	1	.204	3	.462	2	.186	3
574			min	-106.364	1	-169.621	3	-292.44	2	-.202	4	-.403	1	-.186	4
575		3	max	392.502	6	241.773	4	324.124	1	.204	3	.128	1	.181	3
576			min	-88.778	1	-260.832	3	-361.55	2	-.202	4	-.144	2	-.176	4
577		4	max	-8.33	3	20.785	3	20.747	2	0	1	.021	1	.021	3
578			min	-34.734	5	-20.786	4	-20.749	1	0	1	-.021	2	-.021	4
579		5	max	0	1	.058	3	.031	4	0	1	0	1	0	1
580			min	0	1	-.078	8	-.054	7	0	1	0	1	0	1
581	MP2C	1	max	364.532	5	378.154	4	245.278	1	0	1	0	1	0	1
582			min	76.8	1	-378.154	3	-245.285	2	0	1	0	1	0	1
583		2	max	399.266	5	398.881	4	266.005	1	.12	2	.511	1	.777	3
584			min	85.13	2	-398.882	3	-266.012	2	-.118	1	-.511	2	-.777	4
585		3	max	423.303	8	171.009	4	237.647	1	.12	2	.17	1	.359	3
586			min	-49.859	3	-165.549	3	-232.777	2	-.118	1	-.168	2	-.362	4
587		4	max	-69.773	1	321.922	3	216.39	2	0	1	.022	1	.023	3
588			min	-326.374	5	-321.919	4	-216.385	1	0	1	-.022	2	-.023	4
589		5	max	0	1	.661	7	.465	8	0	1	0	1	0	1
590			min	0	1	-.597	8	-.351	7	0	1	0	1	0	1
591	MP4B	1	max	0	1	.045	8	.027	4	0	1	0	1	0	1
592			min	0	1	-.047	7	-.038	7	0	1	0	1	0	1
593		2	max	653.077	4	195.317	2	203.223	3	.269	4	.337	4	.304	4
594			min	-557.125	3	-208.436	1	-172.87	4	-.268	3	-.382	3	-.317	3
595		3	max	661.407	4	195.317	2	203.223	3	.269	4	.069	1	.102	1
596			min	-548.795	3	-208.436	1	-172.87	4	-.268	3	-.055	2	-.089	2
597		4	max	-8.33	1	20.789	3	20.74	2	0	1	.021	1	.021	3
598			min	-34.734	7	-20.791	4	-20.737	1	0	1	-.021	2	-.021	4
599		5	max	0	1	.062	3	.053	7	0	1	0	1	0	1
600			min	0	1	-.083	8	-.028	4	0	1	0	1	0	1
601	MP1B	1	max	0	1	.044	8	.034	5	0	1	0	1	0	1
602			min	0	1	-.05	7	-.014	2	0	1	0	1	0	1
603		2	max	557.891	4	98.203	6	247.053	1	.326	3	.607	2	.163	3
604			min	-466.237	3	-55.014	1	-317.069	2	-.327	4	-.503	1	-.111	4
605		3	max	566.221	4	98.203	6	267.78	1	.326	3	.099	3	.004	1
606			min	-457.907	3	-55.014	1	-337.796	2	-.327	4	-.134	4	-.055	6
607		4	max	-8.33	1	20.773	3	20.749	2	0	1	.021	1	.021	3
608			min	-34.734	5	-20.77	4	-20.755	1	0	1	-.021	2	-.021	4
609		5	max	0	1	.076	7	.024	3	0	1	0	1	0	1
610			min	0	1	-.043	4	-.076	8	0	1	0	1	0	1
611	MP3B	1	max	82.354	5	82.546	4	56.533	1	0	1	0	1	0	1
612			min	10.8	4	-82.543	3	-56.54	2	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
613		2	max	313.313	7	178.402	4	259.226	1	.133	1	.348	2	.232	2
614			min	-99.047	4	-212.05	3	-205.687	2	-.131	2	-.435	1	-.282	1
615		3	max	418.636	7	269.615	4	328.337	1	.133	1	.104	1	.229	3
616			min	-81.46	4	-303.263	3	-274.797	2	-.131	2	-.084	2	-.214	4
617		4	max	-8.33	1	20.791	3	20.744	2	0	1	.021	1	.021	3
618			min	-34.734	5	-20.793	4	-20.741	1	0	1	-.021	2	-.021	4
619		5	max	0	1	.064	3	.072	7	0	1	0	1	0	1
620			min	0	1	-.091	8	-.037	4	0	1	0	1	0	1
621	MP2B	1	max	364.532	8	378.052	4	245.366	1	0	1	0	1	0	1
622			min	76.8	1	-378.055	3	-245.354	2	0	1	0	1	0	1
623		2	max	399.266	8	398.779	4	266.093	1	.167	3	.511	1	.777	3
624			min	85.13	1	-398.782	3	-266.081	2	-.165	4	-.511	2	-.777	4
625		3	max	320.962	6	163.611	4	250.062	1	.167	3	.202	1	.339	3
626			min	-43.47	1	-158.978	3	-260.954	2	-.165	4	-.205	2	-.339	4
627		4	max	-69.77	1	321.887	3	216.374	2	0	1	.022	1	.023	3
628			min	-326.359	5	-321.886	4	-216.38	1	0	1	-.022	2	-.023	4
629		5	max	0	1	.605	7	.282	7	0	1	0	1	0	1
630			min	0	1	-.591	8	-.416	8	0	1	0	1	0	1

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

	Member	Shape	Code Check	Loc.....		Shea...	Loc.....	...		phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	M5	PL3/8X6	.550	0	8	.380	0	y	3	72193...	72900	.57	9.113	...	H1-1b
2	M154	PIPE_2.0	.516	7.943	2	.330	11....		1	6295....	32130	1.872	1.872	...	H3-6
3	MP2A	PIPE_2.0	.492	2	1	.133	5.5		1	14916...	32130	1.872	1.872	...	H1-1b
4	M155	PIPE_2.0	.476	1.172	1	.317	11....		4	6295....	32130	1.872	1.872	...	H3-6
5	M156	PIPE_2.0	.464	7.943	4	.313	1.172		4	6295....	32130	1.872	1.872	...	H3-6
6	MP2B	PIPE_2.0	.448	2	4	.141	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
7	MP2C	PIPE_2.0	.436	2	4	.103	5.5		2	14916...	32130	1.872	1.872	...	H1-1b
8	M157	L2.5x2.5x4	.404	0	4	.117	0	y	2	37374...	38556	1.114	2.537	...	H2-1
9	M159	L2.5x2.5x4	.402	1.501	1	.135	0	y	1	37377...	38556	1.114	2.537	...	H2-1
10	MP3B	PIPE_2.0	.394	5.5	3	.119	5.5		1	14916...	32130	1.872	1.872	...	H1-1b
11	MP3C	PIPE_2.0	.389	5.5	2	.154	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
12	M6	PL3/8X6	.377	0	6	.378	0	y	3	68871...	72900	.57	9.113	...	H1-1b
13	MP3A	PIPE_2.0	.375	5.5	4	.151	5.5		2	14916...	32130	1.872	1.872	...	H1-1b
14	M31	PL3/8X6	.370	0	3	.419	0	y	4	72193...	72900	.57	9.113	...	H1-1b
15	M158	L2.5x2.5x4	.361	1.501	4	.154	0	y	4	37377...	38556	1.114	2.537	...	H2-1
16	MP1B	PIPE_2.0	.339	2	2	.217	2		4	14916...	32130	1.872	1.872	...	H1-1b
17	MP4C	PIPE_2.0	.323	2	1	.181	2		3	14916...	32130	1.872	1.872	...	H1-1b
18	MP1A	PIPE_2.0	.312	5.5	3	.238	2		1	14916...	32130	1.872	1.872	...	H1-1b
19	MP4A	PIPE_2.0	.304	5.5	4	.211	2		1	14916...	32130	1.872	1.872	...	H1-1b
20	MP1C	PIPE_2.0	.298	5.5	1	.204	5.5		4	14916...	32130	1.872	1.872	...	H1-1b
21	M18	PL3/8X6	.292	0	2	.460	0	y	1	72193...	72900	.57	9.113	...	H1-1b
22	MP4B	PIPE_2.0	.281	5.5	1	.188	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
23	M29	PL3/8X6	.281	0	4	.433	0	y	3	72193...	72900	.57	9.113	...	H1-1b
24	M32	PL3/8X6	.260	0	3	.397	0	y	4	68955...	72900	.57	9.113	...	H1-1b
25	M16	PL3/8X6	.246	0	1	.372	0	y	4	72193...	72900	.57	9.113	...	H1-1b
26	M19	PL3/8X6	.222	0	2	.445	0	y	1	68871...	72900	.57	9.113	...	H1-1b
27	M8	L2x2x3	.206	0	8	.016	0	z	8	15646...	23392.8	.558	1.239	...	H2-1
28	M34	L2x2x3	.199	0	5	.018	0	z	7	15647...	23392.8	.558	1.239	...	H2-1
29	M30	PL3/8X6	.193	0	4	.412	0	y	3	68871...	72900	.57	9.113	...	H1-1b
30	M21	L2x2x3	.192	0	7	.017	0	z	6	15646...	23392.8	.558	1.239	...	H2-1
31	M33	L2x2x3	.188	0	8	.017	0	y	8	15644...	23392.8	.558	1.239	...	H2-1
32	M20	L2x2x3	.187	0	5	.016	0	y	5	15646...	23392.8	.558	1.239	...	H2-1
33	M28	PL1/2x6_...	.176	0	3	.106	.501	y	4	68001...	72900	.449	9.113	...	H1-1b
34	M14	PL1/2x6_...	.172	0	1	.076	.5	y	4	68025...	72900	.449	9.113	...	H1-1b

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

	Member	Shape	Code Check	Loc...	...	Shea...	Loc...	...	...	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
35	M39	HSS4x4x4	.170	0	5	.063	0	y	5	13788...	139518	16.181	16.181	...	H1-1b
36	M26	HSS4x4x4	.169	0	6	.062	0	y	7	13788...	139518	16.181	16.181	...	H1-1b
37	M3	PL3/8X6	.168	0	2	.459	0	y	1	72193...	72900	.57	9.113	...	H1-1b
38	M38	HSS4x4x4	.165	2.582	5	.063	2.582	y	5	13788...	139518	16.181	16.181	...	H1-1b
39	M17	PL3/8X6	.159	0	1	.367	0	y	4	68955...	72900	.57	9.113	...	H1-1b
40	M7	L2x2x3	.158	0	7	.013	0	y	6	15646...	23392.8	.558	1.239	...	H2-1
41	M25	HSS4x4x4	.155	2.583	7	.055	2.583	y	7	13788...	139518	16.181	16.181	...	H1-1b
42	M27	PL1/2x6_...	.150	0	4	.107	.499	y	3	68037...	72900	.449	9.113	...	H1-1b
43	M12	HSS4x4x4	.142	2.583	6	.052	2.583	y	8	13788...	139518	16.181	16.181	...	H1-1b
44	M2	PL1/2x6_...	.142	0	4	.113	0	y	6	68019...	72900	.449	9.113	...	H1-1b
45	M4	PL3/8X6	.133	0	2	.449	0	y	1	68871...	72900	.57	9.113	...	H1-1b
46	M41	PIPE_3.0	.132	7.943	6	.126	8.073		4	28250...	65205	5.749	5.749	...	H1-1b
47	M37	HSS4x4x4	.131	5.188	8	.094	5.188	z	3	84899...	139518	16.181	16.181	...	H1-1b
48	M13	HSS4x4x4	.125	0	8	.044	0	y	8	13788...	139518	16.181	16.181	...	H1-1b
49	M15	PL1/2x6_...	.118	0	3	.103	.5	y	1	68013...	72900	.449	9.113	...	H1-1b
50	M24	HSS4x4x4	.115	5.188	6	.087	5.188	z	2	84900...	139518	16.181	16.181	...	H1-1b
51	M40	PIPE_3.0	.115	1.302	1	.129	4.427		3	28250...	65205	5.749	5.749	...	H1-1b
52	M139	LL2.5x2....	.101	0	8	.005	4.662	z	1	43654...	58320	3.954	2.55	...	H1-1b*
53	M11	HSS4x4x4	.097	1.296	8	.076	5.185	z	2	84943...	139518	16.181	16.181	...	H1-1b
54	M140	LL2.5x2....	.097	0	5	.006	4.664	z	3	43642...	58320	3.954	2.55	1	H1-1b*
55	M1	PL1/2x6_...	.096	0	4	.105	.5	y	1	68019...	72900	.449	9.113	...	H1-1b
56	M141	LL2.5x2....	.093	0	7	.006	4.664	z	2	43642...	58320	3.954	2.55	...	H1-1b*
57	M42	PIPE_3.0	.091	7.812	8	.128	4.427		1	28250...	65205	5.749	5.749	...	H1-1b
58	M10	PL1/2x6_...	.063	0	4	.193	0	y	4	70380...	72900	.449	9.113	...	H1-1b
59	M9	PL1/2x6_...	.058	0	2	.209	0	y	2	70380...	72900	.449	9.113	...	H1-1b
60	M23	PL1/2x6_...	.057	0	2	.222	0	y	2	70380...	72900	.449	9.113	...	H1-1b
61	M22	PL1/2x6_...	.054	0	3	.176	0	y	3	70436...	72900	.449	9.113	...	H1-1b
62	M36	PL1/2x6_...	.047	0	1	.197	0	y	3	70436...	72900	.449	9.113	...	H1-1b
63	M35	PL1/2x6_...	.041	0	1	.203	0	y	4	70380...	72900	.449	9.113	...	H1-1b

Envelope AISI S100-10: LRFD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pn[lb]	phi*Tn[lb]	phi*Mny...	phi*Mnz...	Cb	Cmyy	Cmzz	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 9

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11413D

Tolland/Rt-84/X66_1
208 Reed Road
Tolland, CT 06084

June 11, 2019

Transcom Engineering Project Number: 737001-0088

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**5.66 %**

June 11, 2019

T-MOBILE
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 6009

Emissions Analysis for Site: **CT11413D – Tolland/Rt-84/X66_1**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **208 Reed Road, Tolland, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **208 Reed Road, Tolland, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	2	60
GSM	1900 MHz (PCS)	1	15
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAARR24_43-U-NA20	138
A	2	EMS RR90-17-XXDP (Dormant)	138
B	1	RFS APXVAARR24_43-U-NA20	138
B	2	EMS RR90-17-XXDP (Dormant)	138
C	1	RFS APXVAARR24_43-U-NA20	138
C	2	EMS RR90-17-XXDP (Dormant)	138

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site. Since all **1900 MHz (PCS)** & **2100 MHz (AWS)** radios are ground mounted the following cable loss values were used. For each ground mounted **1900 MHz (PCS)** radio there was **1.65 dB** of cable loss calculated into the system gains / losses for this site. For each ground mounted **2100 MHz (AWS)** radio there was **1.70 dB** of cable loss calculated into the system gains / losses for this site. These values were calculated based upon the manufacturers specifications for **160 feet** of **1-5/8”** coax.

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 2100 MHz (AWS) / 600 MHz / 700 MHz	15.65 / 16.35 / 12.95 / 13.35	11	415	10,339.74	2.82
Antenna A2	EMS RR90-17-XXDP	Dormant	N/A	0	0	0.00	0.00
						Sector A Composite MPE%	**2.82**
Antenna B1	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 2100 MHz (AWS) / 600 MHz / 700 MHz	15.65 / 16.35 / 12.95 / 13.35	11	415	10,339.74	2.82
Antenna B2	EMS RR90-17-XXDP	Dormant	N/A	0	0	0.00	0.00
						Sector B Composite MPE%	**2.82**
Antenna C1	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 2100 MHz (AWS) / 600 MHz / 700 MHz	15.65 / 16.35 / 12.95 / 13.35	11	415	10,339.74	2.82
Antenna C2	EMS RR90-17-XXDP	Dormant	N/A	0	0	0.00	0.00
						Sector C Composite MPE%	**2.82**

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**2.82 %**
Verizon Wireless	2.84 %
Site Total MPE %:	**5.66 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.82 %
T-MOBILE Sector B Total:	2.82 %
T-MOBILE Sector C Total:	2.82 %
Site Total:	5.66 %

Table 5: Site MPE Summary

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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,004.75	138	8.29	1900 MHz (PCS)	1000	0.83%
T-Mobile 2100 MHz (AWS) LTE	2	1,750.46	138	7.22	2100 MHz (AWS)	1000	0.72%
T-Mobile 1900 MHz (PCS) GSM	1	376.78	138	0.78	1900 MHz (PCS)	1000	0.08%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	138	3.26	600 MHz	400	0.81%
T-Mobile 700 MHz LTE	2	432.54	138	1.78	700 MHz	467	0.38%
						Total:	**2.82%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-MOBILE facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-MOBILE Sector	Power Density Value (%)
Sector A:	2.82 %
Sector B:	2.82 %
Sector C:	2.82 %
T-MOBILE Maximum Total (per sector):	2.82 %
Site Total:	5.66 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.66 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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