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

July 21, 2020

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

Notice of Exempt Modification
1605 Durham Hill Road, Wallingford, CT 06492
N 41.469562
W -72.742225
T-Mobile#: CT11287A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains three (3) antennas at the 152-foot level of the existing 162-foot Monopole Tower at 1605 Durham Hill Road, Wallingford, CT. The tower is owned by SBA Properties, LLC. The property is owned by Tilcon Mineral, Inc. T-Mobile intends remove three (3) 1900 MHz antennas and install three (3) new 600/700MHz antennas. The new antennas would be installed at the 152-foot level of the tower.

Please note: Per the Connecticut Siting Council Website: CSC COVID 19 Guidelines.
In order to prevent the spread of Coronavirus and protect the health and safety of our members and staff, as of March 18, 2020, the Connecticut Siting Council shall convert to full remote operations until March 30, 2020. Please be advised that during this time period, all hard copy filing requirements will be waived in lieu of an electronic filing. Please also be advised that the March 26, 2020 regular meeting shall be held via teleconference. The Council's website is not equipped with an on-line filing fee receipt service. Therefore, filing fees and/or direct cost charges associated with matters received electronically during the above-mentioned time period will be directly invoiced at a later date.

Planned Modifications:

TOWER

Remove:
- (1) 1-5/8" Coax

Remove and Replace:
- (3) LNX-6515DS-A1M 1900MHZ (remove) – (3) RFS APXVAARR24_43-U-NA20 600/700 MHZ (replace)

Install New:
- (3) Ericsson Radio 4449 B71+B12 RRU

- (1) 1-5/8” Fiber
- METROSITE SUPPORT RAIL CENTER PIPE KIT: MS-HRCP-35
- METROSITE LIGHT COLLAR MOUNT ASSEMBLY: MS-1436 (6) 2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B: PST2375-6 (6) L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36: L252525-8

Existing Equipment to Remain:

- (3) RFS APXV18-206516S-A20 1900 MHz (PCS)
- (6) EMS RR90-17-02DP – Panel
- (1) MT-195-14 & VSR-MS-B low profile platform w/handrail
- (3) Allen Telecom TMAs
- (3) Ericsson KRY 112 144/1 TMAs

- (3) Kathrein Bias Ts
- (11) 1-5/8” Coax

Entitlements:

- N/A

GROUND

Install New:

- Equipment inside existing 6201 cabinet

This facility was first approved by the Town of Wallingford’s Inland Wetlands and Watercourse Commission on December 1, 1999. The Town of Wallingford’s Planning and Zoning Commission subsequently approved the facility on December 13, 1999. Special Permit 418-99 granted approval for a 165-foot tower to be battleship gray and to be constructed to support at least five carriers. A sedimentation and erosion control bond was to be placed in coordination with the Wetlands and Watercourse Commission Approval. There were no post-construction stipulations made. 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 Wallingford’s Mayor, William W. Dickinson, Jr., and Zoning Enforcement Officer, Amy Torre, as well as 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

Attachments

cc: William W. Dickinson, Mayor
Wallingford Town Hall 45 South Main Street, Wallingford, CT 06492
Amy Torre, Zoning Enforcement Officer,
Wallingford Town Hall 45 South Main Street, Wallingford, CT 06492
Tilcon Mineral, Inc.–as property owner
PO Box 32411, Harford, CT 06150

Exhibit List

Exhibit 1	Check Copy	
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	x
Exhibit 6	Construction Drawings	Chappell Engineering 7/29/19
Exhibit 7	Structural Analysis	TES 8/6/19
Exhibit 8	Post Mod Mount Analysis	TES 8/2/19
Exhibit 9	Mount Mod Drawings	TES 8/2/19
Exhibit 10	EME Report	Transcom 5/15/09

EXHIBIT LIST

Exhibit 1	Check Copy	
Exhibit 2	Notification Receipts	
Exhibit 3	Property Card	
Exhibit 4	Property Map	
Exhibit 5	Original Zoning Approval	Town of Wallingford P&Z Commission 12/13/99
Exhibit 6	Construction Drawings	_____ dated _____
Exhibit __*	Modification Drawings	_____ dated _____
Exhibit __	Structural Analysis	_____ dated _____
Exhibit __*	Mount Analysis	_____ dated _____
Exhibit __*	Generator Cut Sheet	
Exhibit __	EME Report	Transcom Engineering, Inc. dated 5/5/19
Exhibit __*	LOA	

EXHIBIT 1

Normall, Exhibit 1 would contain a copy of the check, which due to COVID 19, will be invoiced by the CSC at a later date.

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

Property Location: 1600 DURHAM RD | MAP ID: 98/ / 3/ / | Bldg Name: | State Use: 4100
Vision ID: 16164 | Account #20010500 | Bldg #: 1 of 8 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 07/03/2019 12:52

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
TILCON MINERALS INC	2 Above Street	2 Public Water	1 Paved	2 Suburban
	7 Swampy			
301 HARTFORD AVE	8 Ledge			
PO BOX 310903				
NEWINGTON, CT 06131-0903				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	203002010	P/Z MAP #	
Census:	1760	ENG MAP #	
Old MBLU		Easement	
TC MAP #		Town Line?	TL1
TC MAP #		IND PARKS	
Record Lot			
GIS ID: 98/3		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
IND LAND	3-1	1,504,900	1,053,400
IND BLDG	3-2	561,600	393,200
IND IMPR	3-3	1,337,100	936,100
UTL LAND	4-1	200,000	140,000
	Total	3,603,600	2,522,700

6148
WALLINGFORD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
TILCON MINERALS INC	507/ 608	07/30/1981			0	

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2018	3-1	1,053,400	2017	3-1	1,053,400	2016	3-1	1,053,400
2018	3-2	393,200	2017	3-2	393,200	2016	3-2	393,200
2018	3-3	936,100	2017	3-3	936,100	2016	3-3	936,100
2018	4-1	140,000	2017	4-1	140,000	2016	4-1	140,000
Total:		2,522,700	Total:		2,522,700	Total:		2,522,700

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	181,400
Appraised XF (B) Value (Bldg)	9,900
Appraised OB (L) Value (Bldg)	1,209,300
Appraised Land Value (Bldg)	1,704,900
Special Land Value	0
Total Appraised Parcel Value	3,603,600
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	3,603,600

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
I3/A				

NOTES

COURT JUDGEMENT 1/21/04
SEE NO. CV-02-0464833S
PERMIT 19378-EQUIPMENT BLDG & PERMIT
17813-TRUCK SCALE ASSESSED AS P/P
PERMIT 22849-NEW TANKS & PUMPS ASSESSED
AS PERSONAL PROPERTY

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
22849	06/17/2008	CM	Commercial	26,200	04/08/2009	100	04/08/2009	storage tanks & pads
21442	02/28/2007	CM	Commercial	135,000	05/14/2007	100	05/14/2007	Machinery Foundations
19378	07/08/2005	CM	Commercial	100,000	09/28/2005	100	09/28/2005	New Equipment Room (1
17813	05/21/2004	CM	Commercial	26,200	09/28/2005	100	09/28/2005	Truck Scale/1000 gal Sep
17568	03/26/2004	CM	Commercial	53,488	06/28/2004	100	06/14/2004	New Bldg-Test Lab 15x2
17568	03/24/2004	CC	C of C	0	06/28/2004	100	06/14/2004	Certificate of Completio
16621	06/11/2003	CM	Commercial	18,900	07/25/2003	100	07/25/2003	Footings for Conveyor

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
08/14/2015	07	7	KC	19	Map Correction-No Value
01/04/2011			DT	40	No change
05/20/2010	03		DT	29	Field Review
11/25/2009	03		TH	00	Measur+Listed
04/08/2009	02		DH	63	Permit Check - No Measu

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	4100	SAND&GRAVL M96	RU40				43,560	SF	2.76	1.0000	C	1.0000	1.00	C50	0.75			1.00	2.07	90,200
1	4100	SAND&GRAVL M96	RU40				10.92	AC	120,200.00	1.0000	0	1.0000	0.40	C50	0.75			1.00	36,060.00	393,800
1	4100	SAND&GRAVL M96	RU40				255.22	AC	10,000.00	1.0000	0	1.0000	0.40		0.00			1.00	4,000.00	1,020,900
1	4310	TEL REL TW M96	RU40				1.00	BL	200,000.00	1.0000	0	1.0000	1.00		0.00	3500 SQ FT		1.00	200,000.00	200,000
1	4310	TEL REL TW M96					3,500	SF	0.00	1.0000	0	1.0000	1.00		0.00	CELL SITE AREA		.00	0.00	0

Total Card Land Units: 267.22 AC | Parcel Total Land Area: 267.22 AC | Total Land Value: 1,704,900

Property Location: 1600 DURHAM RD **MAP ID:** 98/ / 3/ / **Bldg Name:** **State Use:** 4100

Vision ID: 16164 **Account #**20010500 **Bldg #:** 1 of 8 **Sec #:** 1 of 1 **Card** 1 of 1 **Print Date:** 07/03/2019 12:52

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	414		Warehouse
Model	96		Ind/Comm
Grade	C-		
Stories	1		
Occupancy	1		
Exterior Wall 1	27		Pre-finsh Metl
Exterior Wall 2			
Roof Structure	03		Gable
Roof Cover	01		Metal/Tin
Interior Wall 1	01		Minim/Masonry
Interior Wall 2			
Interior Floor 1	03		Concr-Finished
Interior Floor 2			
Heating Fuel	02		Oil
Heating Type	03		Hot Air-no Duc
AC Type	01		None
Bldg Use	4100		SAND&GRAVL M96
Total Rooms			
Total Bedrms	00		
Total Baths	0		
Heat/AC	00		Heat/Min
Frame Type	05		Steel
Baths/Plumbing	02		Average
Ceiling/Wall	04		Ceil & Min WL
Rooms/Prtns	02		Average
Wall Height	28		
% Comn Wall	0		

CONSTRUCTION DETAIL (CONTINUED)

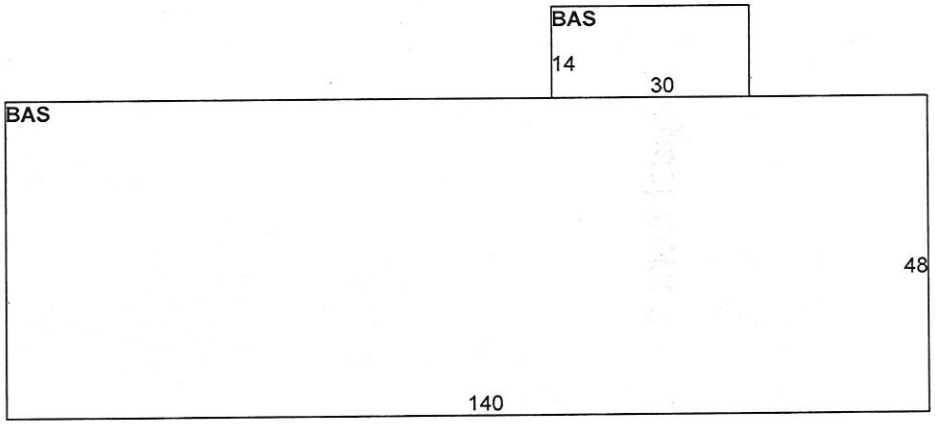
Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
4100	SAND&GRAVL M96	100

COST/MARKET VALUATION

Adj. Base Rate:	38.49
	274,840
Net Other Adj:	0.00
Replace Cost	274,840
AYB	1979
Dep Code	F
Remodel Rating	
Year Remodeled	
Dep %	34
Functional Obslnc	0
External Obslnc	0
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	66
Apprais Val	181,400
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
FGR1	Garage-Avg			L	320	30.00	1990	C		A	50	4,800
PAV2	Paving-Conc			L	1,344	3.50	1969	C		A	50	2,400
RR1	RR Spur			L	5,255	83.00	2009	C		A	50	218,100
SCL2	Scales-Elec			L	450	960.00	2009	C		A	50	216,000
SCL2	Scales-Elec			L	200	960.00	2009	C		A	50	96,000
SCL2	Scales-Elec			L	200	960.00	2009	C		A	50	96,000
SCL2	Scales-Elec			L	1,200	960.00	2009	C		A	50	576,000
MEZ2	Mezz Finished			B	1,000	15.00	1981		1		100	9,900

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	7,140	7,140	7,140	38.49	274,840
	Ttl. Gross Liv/Lease Area:	7,140	7,140	7,140		274,840

EXHIBIT 4

MAP TITLE

Department 1

Department 2

N
W E
S

EXHIBIT 5

CT 1798 G

Zoning

Town of Wallingford, Connecticut

WILLIAM E. AUSTIN
CHAIRMAN-PLANNING & ZONING COMMISSION
LINDA A. BUSH, AICP
TOWN PLANNER
WALLINGFORD TOWN HALL
45 SOUTH MAIN STREET
WALLINGFORD, CT 06492
TELEPHONE (203) 294-2090

CERTIFIED LETTER **#Z 483 770 392**

December 16, 1999

Ms. Esther McNany
SBA, Inc./Sprint PCS
125 Shaw Street
New London, CT 06335

RE: Special Permit #418-99
1605 Durham Road

Dear Ms. McNany:

Enclosed is a Legal Notice of Action taken by the Planning and Zoning Commission at their meeting held on December 13, 1999, on the above-referenced application.

Your application for:

A 165 ft. telecommunications tower

has been approved with the conditions listed on the enclosed Zoning Permit. A Special Permit is also enclosed.

A $10.00 fee is required for the filing of each Special Permit on the Land Records. Please make your check payable to the "Town Clerk" and forward to this office. Also forward to this office two (2) copies of your final plans.

Should you have any questions regarding this matter, please contact this office.

Sincerely,

Thomas M. Talbot
Assistant Town Planner

Enclosures
TMT:ss

Town of Wallingford, Connecticut

418-99

ZONING PERMIT

DATE: December 16, 1999

ISSUED TO:

NAME SBA, Inc./Sprint PCS

ADDRESS 125 Shaw Street - New London, CT 06335

ISSUED FOR: 165 ft. telecommunications tower

LOCATION OF PREMISES: 1605 Durham Road

CONDITIONS OF PERMIT:

1. Comments of the Assistant Manager of the Electric Division, dated 11/24/99.
2. *Posting of $1,000.00 sedimentation and erosion control bond.*
3. Color of proposed facility to be battleship gray.
4. No landscaping required as per recommendation of the Town Planner.
5. Telecommunications tower to be constructed to support at least four (4) other cell locations.
6.
7.
8.
9.
10.
11.
12.

ALL WORK CONNECTED WITH A SITE PLAN APPROVAL SHALL BE COMPLETED WITHIN FIVE YEARS AFTER SAID APPROVAL.

WALLINGFORD PLANNING AND ZONING COMMISSION

BY: _____
Assistant Town Planner

* BUILDING PERMIT WILL NOT BE ISSUED UNTIL CONDITIONS ARE MET.

Town of Wallingford, Connecticut

INLAND WETLANDS & WATERCOURSES COMMISSION

JAMES E. VITALI
CHAIRMAN
BRENT F. SMITH
ENVIRONMENTAL PLANNER
WALLINGFORD TOWN HALL
45 SOUTH MAIN STREET
WALLINGFORD, CT 06492
TELEPHONE (203) 294-2093
FAX (203) 294-2073

CERTIFIED LETTER

IWWC PERMIT #A99-10.2/SBA - 1605 Durham Rd., Rt. 68

EXPIRES:12/1/2004
ISSUED: 12/6/1999

SBA, Inc.
125 Shaw Street
New London, CT 06320
Attn: Esther McNany

Ms McNany:

This permit refers to your application to conduct authorized activities within regulated inland wetland areas and/or watercourses in the Town of Wallingford.

The Town of Wallingford Inland Wetlands and Watercourses Commission (IWWC) has considered your application with due regard for the matters enumerated in Sections 22a-42a of the General Statutes and in accordance with Section 6 of the Town of Wallingford Inland Wetlands and Watercourses Regulations and has found that the proposed work, as specified and conditioned below, is in conformance with the purposes and provisions of said sections.

The authorized activity(ies) consists of: Construction of a structure and parking area as referenced on site plan titled: "SBA, #4275-022/Wallingford, 1605 Durham Rd., Wallingford, CT"; dated: 10/29/99; and stamped received: 10/29/99.

The permit is issued subject to the following conditions and/or modifications:

1. The permittee shall notify the IWWC prior to the commencement of work and upon its completion.

2. The authorized activity(ies) must begin during the first year of the permit's issuance in accordance with Section 11.8 of the IWWC regulations. If the authorized activity(ies) is not completed on or before **December 1, 2004** said activity(ies) shall cease and, if not previously revoked or specifically extended, this permit shall be null and void.

3. All work and all regulated activities conducted pursuant to this authorization shall be consistent with the terms and conditions of this permit. Any structures, excavation, fill obstructions, encroachments or regulated activities not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension or revocation. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this permit.

4. This authorization is not transferable without the written consent of the IWWC.

5. In evaluation of this application, the IWWC has relied on information provided by the applicant and, if such information subsequently proves to be false, deceptive, incomplete and/or inaccurate, this permit shall be modified, suspended, or revoked.

6. This permittee shall employ Best Management Practices, consistent with the terms and conditions of this permit, to control storm water discharges and to prevent erosion and sedimentation and to otherwise prevent pollution of wetlands or watercourses. For information and technical assistance, contact the Environmental Planner or the IWWC. The permittee shall immediately inform the IWWC of any problems involving wetlands or watercourses which have developed in the course of, or which are caused by, the authorized work.

7. No equipment or material including without limitation, fill, construction materials, or debris, shall be deposited, placed, or stored in any wetland or watercourse on or off-site unless specifically authorized by this permit.

8. This permit is subject to and does not derogate any present or future property rights or other rights or powers of the Town of Wallingford, and conveys no property rights in real estate of material nor any exclusive privileges, and is further subject to any and all regulations pertinent to the property or activity affected hereby.

9. Timely implementation and maintenance of sediment and erosion control measures are a condition of this permit. All sediment and erosion control measures must be maintained until all disturbed areas are stabilized.

10. Prior to any site disturbance all sediment and erosion controls must be in place as shown on plans.

SPECIAL CONDITIONS):

1. All sediment and erosion controls must be properly installed and then inspected by the Environmental Planner before any construction activity commences.

Brent Smith
Environmental Planner

Town of Wallingford, Connecticut

INLAND WETLANDS & WATERCOURSES COMMISSION

JAMES E. VITALI
CHAIRMAN
BRENT F. SMITH
ENVIRONMENTAL PLANNER
WALLINGFORD TOWN HALL
45 SOUTH MAIN STREET
WALLINGFORD, CT 06492
TELEPHONE (203) 294-2093
FAX (203) 294-2073

CERTIFIED LETTER

December 2, 1999

SBA, Inc.
125 Shaw Street
New London, CT 06320
Attention: Esther McNany

RE: IWWC Application #A99-10.2/SBA - 1605 Durham Rd., Rt. 68

Dear Ms. McNany:

Pursuant to Section 22a-42a of the Connecticut General Statutes, the Town of Wallingford Inland Wetlands and Watercourses Commission voted at its December 1, 1999 meeting to approve with a condition the above-referenced application.

The condition of the permit approval is as follows:

(1) All sediment and erosion controls must be properly installed and then inspected by the Environmental Planner before any construction activity commences.

If you have any questions, please contact me at (203) 294-2093.

Sincerely,

Brent Smith
Environmental Planner

BS/ba
cc: Rosemary Rascati, Town Clerk

EXHIBIT 6

DURHAM/ RT 68

1605 DURHAM ROAD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

SITE NO.: CT11287A

SITE TYPE: 162'± MONOPOLE

RF DESIGN GUIDELINE: 67D04G

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

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.

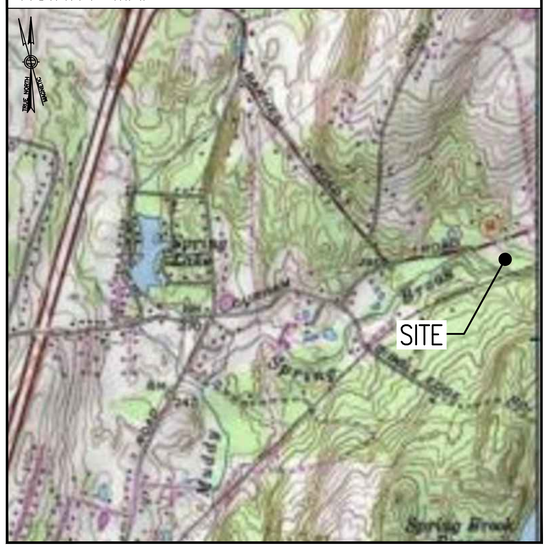
GENERAL NOTES

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.

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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:	CT11287A
SBA SITE NUMBER:	CT01698-S
SBA SITE NAME:	DURHAM
SITE ADDRESS:	1605 DURHAM ROAD WALLINGFORD, CT 06492
PROPERTY OWNER:	SBA PROPERTIES, INC. ATTEN: TAX DEPARTMENT 8051 CONGRESS AVE. BOCA RATON, FL 33487
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW HAVEN COUNTY
ZONING DISTRICT:	I-40, INDUSTRIAL DISTRICT
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	162'
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: N.41.469562° (41°-28'-10.42") LONGITUDE W.-72.742225° (-72°-44'-32.01")

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

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

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

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

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/29/19	ISSUED FOR CONSTRUCTION	BDJ
0	05/09/19	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11287A

SITE ADDRESS:
1605 DURHAM ROAD
WALLINGFORD, CT 06492

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.063

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 (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/29/19	ISSUED FOR CONSTRUCTION	BDJ
0	05/09/19	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11287A

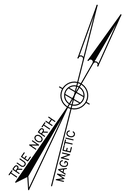
SITE ADDRESS:
1605 DURHAM ROAD
WALLINGFORD, CT 06492

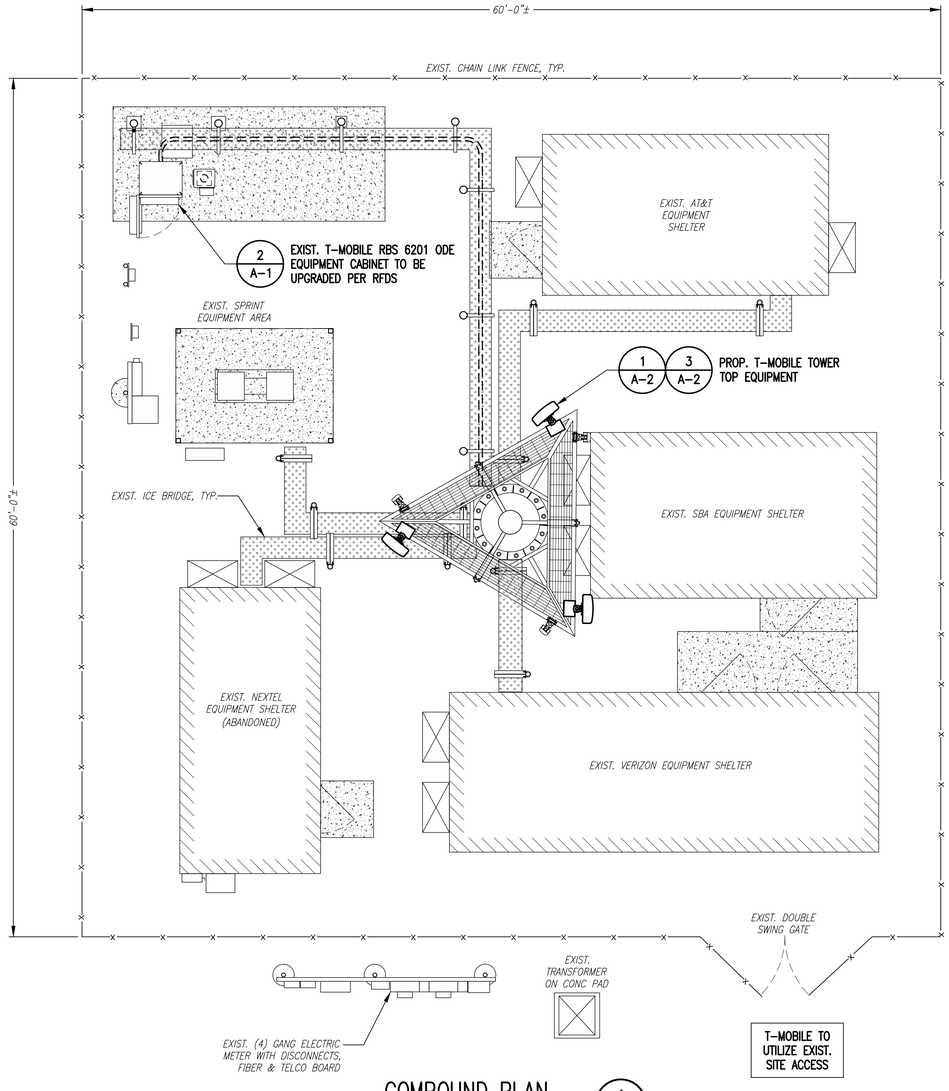
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

1815.063

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.

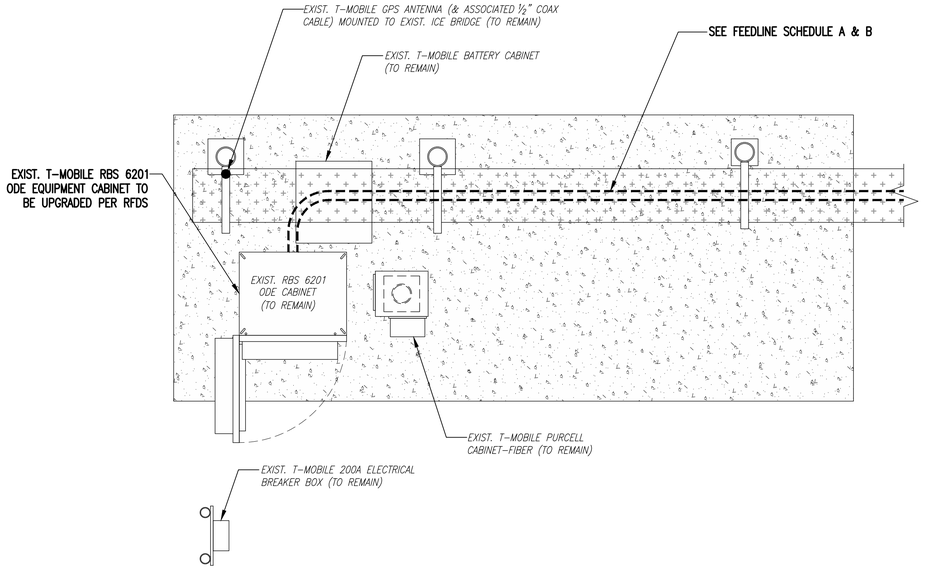




COMPOUND PLAN 1 A-1
SCALE: 1" = 5'-0"
0 5'-0" 10'-0" 15'-0"

FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (11) 1-5/8" COAX CABLES ((1) 1-5/8" TO BE REMOVED)	ROUTED PER TOWER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 1-5/8" HCS FIBER	

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



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

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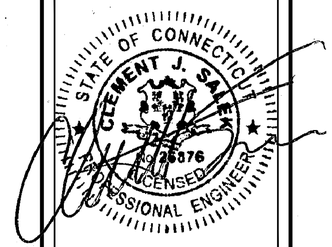

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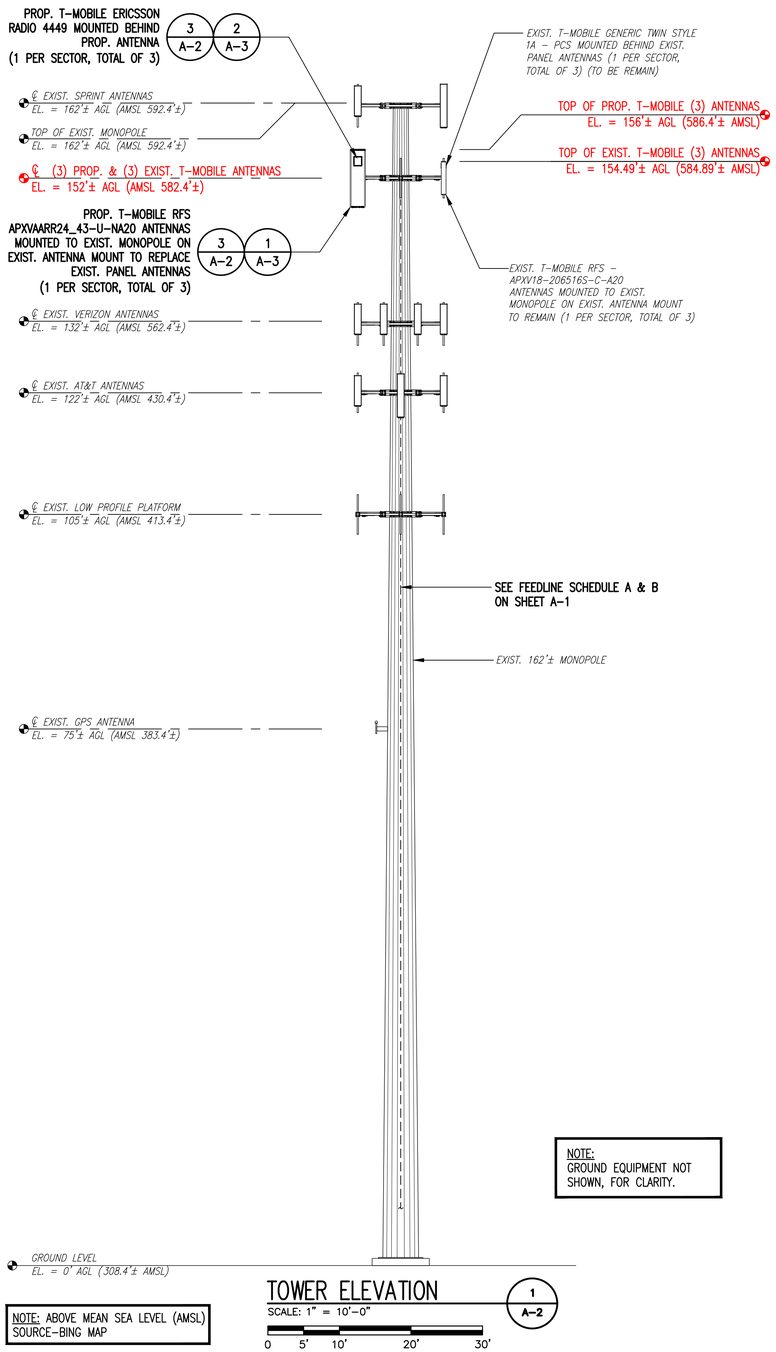
SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.063

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.

NOTE: ABOVE MEAN SEA LEVEL (AMSL) SOURCE-BING MAP

TOWER ELEVATION 1 A-2
SCALE: 1" = 10'-0"
0 5' 10' 20' 30'

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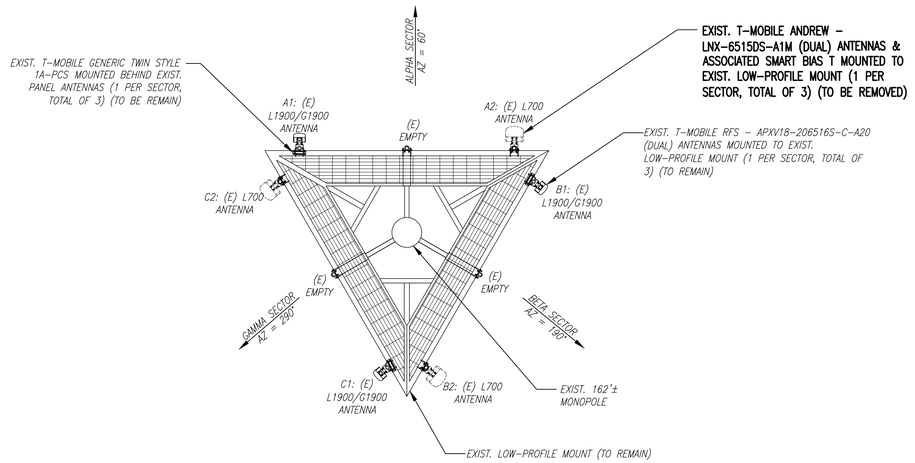
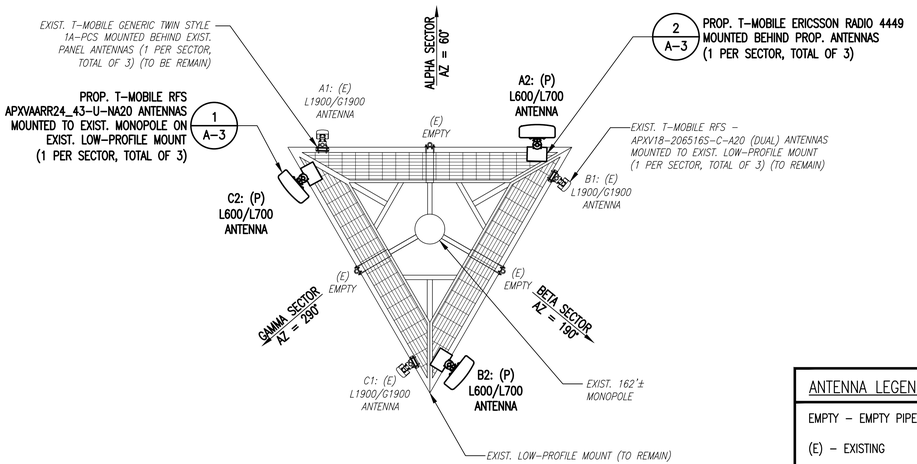


EXISTING ANTENNA PLAN 2 A-2
SCALE: N.T.S.
NORTH



PROPOSED ANTENNA PLAN 3 A-2
SCALE: N.T.S.
NORTH

ANTENNA LEGEND:
EMPTY - EMPTY PIPE
(E) - EXISTING
(P) - INSTALL

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

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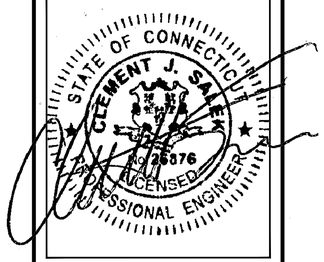

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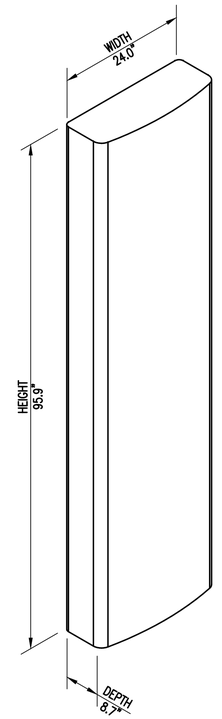
SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

1815.063

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	*RFS – APXV18-206516S-C-A20*	*152'± AGL*	*60°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A-PCS TMA*	*(2) 1-5/8" COAXIAL CABLES*
	EMPTY	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	RFS APXVAARR24_43-U-NA20	**152'± AGL**	**60°**	**0°**	**2°**	**L600/L700**	**ERICSSON RADIO 4449 B71+B12**	**(1) 6x12 HYBRID CABLE TRUNK (SHARED)**
BETA	*RFS – APXV18-206516S-C-A20*	*152'± AGL*	*190°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A-PCS TMA*	*(2) 1-5/8" COAXIAL CABLES*
	EMPTY	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	RFS APXVAARR24_43-U-NA20	**152'± AGL**	**190°**	**0°**	**2°**	**L600/L700**	**ERICSSON RADIO 4449 B71+B12**	**(1) 6x12 HYBRID CABLE TRUNK (SHARED)**
GAMMA	*RFS – APXV18-206516S-C-A20*	*152'± AGL*	*290°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A-PCS TMA*	*(2) 1-5/8" COAXIAL CABLES*
	EMPTY	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	RFS APXVAARR24_43-U-NA20	**152'± AGL**	**290°**	**0°**	**2°**	**L600/L700**	**ERICSSON RADIO 4449 B71+B12**	**(1) 6x12 HYBRID CABLE TRUNK (SHARED)**



RFS APXVAARR24_43-U-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 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

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

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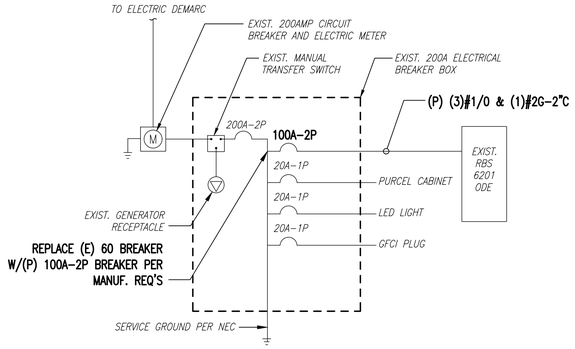
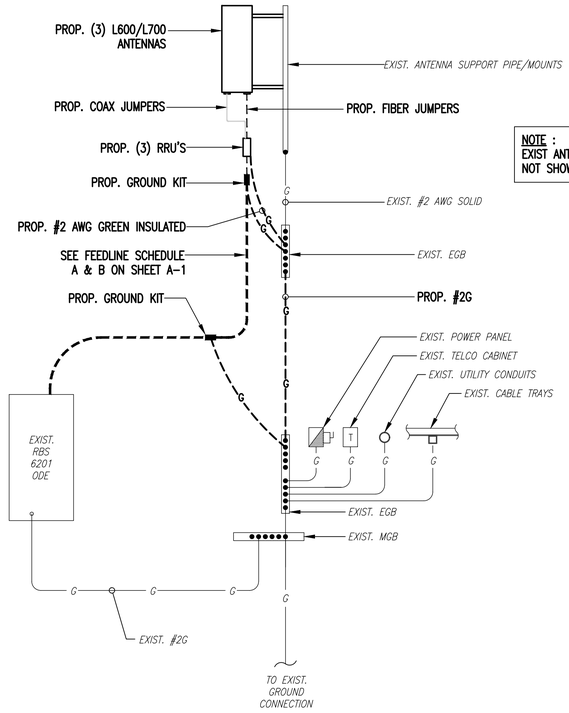
SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

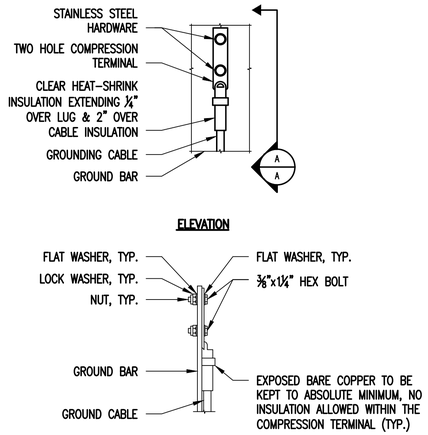
1815.063



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

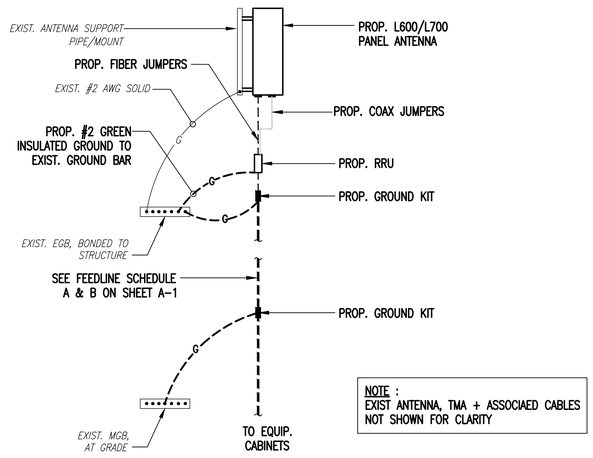


GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE
2 E-1



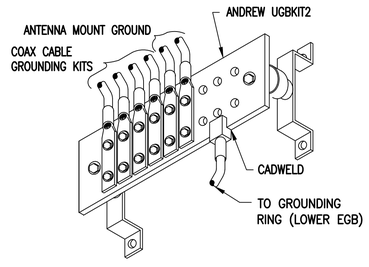
NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

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



L600/700

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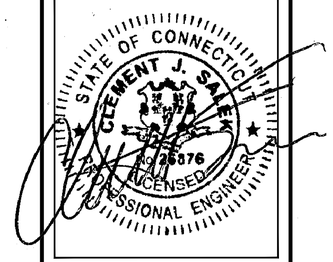

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/29/19	ISSUED FOR CONSTRUCTION	BDJ
0	05/09/19	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11287A

SITE ADDRESS:
1605 DURHAM ROAD
WALLINGFORD, CT 06492

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.063

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 162 ft SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01698-S

Customer Site Name: Durham

Carrier Name: T-Mobile (App#: 115954, V1)

Carrier Site ID / Name: CT11287A / Durham

Site Location: 1605 Durham Road, CT Route 68

Wallingford, Connecticut

New Haven County

Latitude: 41.469574

Longitude: -72.742250

8/6/19

Analysis Result:

Max Structural Usage: 79.0% [Pass]

Max Foundation Usage: 84.0% [Pas]

Additional Usage Caused by Mount Modification: +1.0%

Report Prepared By : Fabiyaye Arinyedokiari

Introduction

The purpose of this report is to summarize the analysis results on the 162 ft SUMMIT Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Paul J. Ford and Company Job #29299-949 dated December 22, 1999
Foundation Drawing	Paul J. Ford and Company Job #29299-949 dated December 22, 1999
Geotechnical Report	Jaworski Geotech, Inc., Project #99407G dated September 2, 1999
Modification Drawings	Tower Engineering Solutions Mount Modifications, Job #82795 dated August 2, 2019 [Pending]

Analysis Criteria

The rigorous 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} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" 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 = 0.181, S_1 = 0.062

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	162.5	3	RFS APXVTM14-C-120 - Panel	Low Profile Platform	(3) 1 1/4" (1) 1 5/8" Fiber	Sprint
2		3	RFS APXVSPP18-C-A20 - Panel			
3		4	RFS ACU-A20-N RET			
4	162.0	3	Alcatel Lucent 800 MHz Filter	Collar Mount		
5		3	Alcatel Lucent 800 MHz RRU			
6		3	TD-RRH8x20-25 - RRH			
7		3	Alcatel Lucent 1900MHz RRH			
-	152.0	6	EMS RR90-17-02DP - Panel	Platform w/ Hand Rail (Commscope MT-195-14 and VSR-MS-B)	(12) 1 5/8"	T-Mobile*
-		3	RFS APXV18-206516S-A20 - Panel			
-		3	Commscope LNX-6515DS-A1M - Panel			
-		3	Allen Telecom FE15501P77/75 – TMA			
-		3	Ericsson KRY 112 144/1 – TMA			
-		3	Kathrein 782 11056 – Bias T			
15	132.0	4	Andrew DB846F65ZAXY - Panel	Low Profile Platform	(11) 1 5/8" (2) 1 5/8" Hybrid	Verizon
16		9	Commscope SBNHH-1D65B - Panel			
17		2	Antel LPA-80080-4CF-EDIN-0 - Panel			
18		3	Alcatel Lucent RRH2x60-1900 – RRU			
19		3	Alcatel Lucent RRH2X60-700 – RRU			
20		3	Alcatel Lucent RRH2X60-AWS - RRU			
21		6	RFS FD9R6004/2C-3L - Diplexer			
22		2	RFS DB-T1-6Z-8AB-0Z – Distribution Box			
23	124.5	1	Raycap DC6-48-60-18-8F - Surge Arrestors	Low Profile Platform	(12) 1 5/8" (1) 10 mm (1) 3" Conduit (2) DC	AT&T*
24		6	Ericsson RRUS-11 RRU			
25	122.0	6	Powerwave 7770.00 - Panel			
26		3	KMW AM-X-CD-16-65-00T			
27		6	Powerwave LGP21401 TMA			
28		6	Powerwave LGP21903 - Diplexer			
-	105	-	-	Low Profile Platform	-	-
29	80.0	1	Kathrein 738-449 - Whip	Flush Mount	(1) ½"	AT&T
30	75.0	1	GPS	Flush Mount	(1) ½"	Verizon*

*Lines installed outside of pole shaft.

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
8	152.0	3	RFS - APXV18-206516S-A20 - Panel	Modified Platform w/ Hand Rail (Commscope MT-195-14 and VSR-MS-B) (1) METROSITE SUPPORT RAIL CENTER PIPE KIT: MS-HRCP-35 (1) METROSITE LIGHT COLLAR MOUNT ASSEMBLY: MS-1436 (6) 2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B: PST2375-6 (6) L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36: L252525-8	(11) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
9		3	RFS - APXVAARR24_43-U-NA20 - Panel			
10		6	EMS - RR90-17-02DP - Panel			
11		3	Allen Telecom FE15501P77/75 – TMA			
12		3	Ericsson KRY 112 144/1 – TMA			
13		3	Ericsson Radio 4449 B71+B12			
14		3	Kathrein 782 11056 – Bias T			

The proposed transmission lines can be installed inside or outside of the pole shafts. If installed outside, the lines shall be strapped tightly to the face of the pole shafts. Stacking lines is not allowed.

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:	**79.4%**	**72.0%**	**72.4%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4826.5	40.6	98.7

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.552 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 78.04% at 45.0ft

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham	**Exposure:**	C	
Height:	162.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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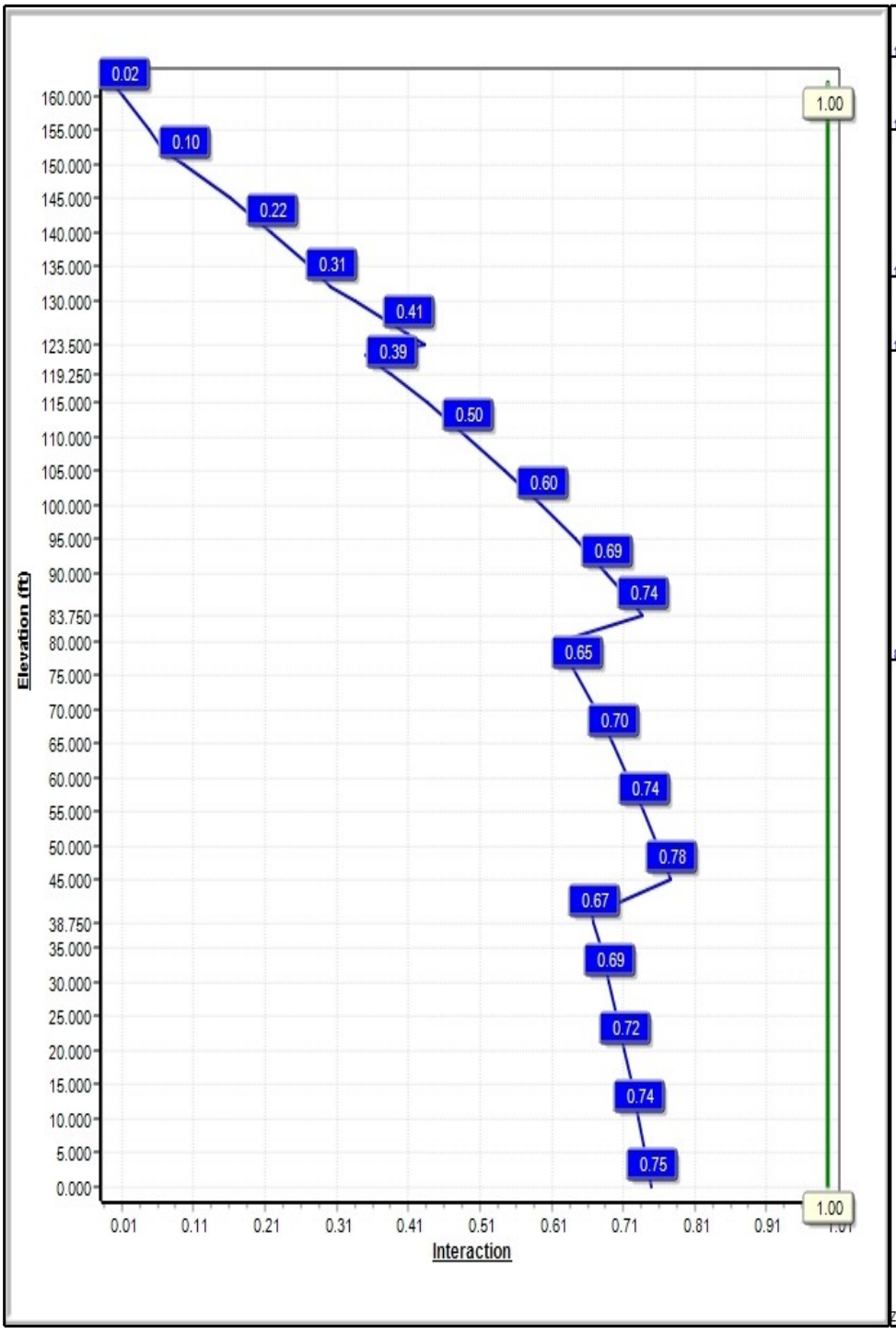
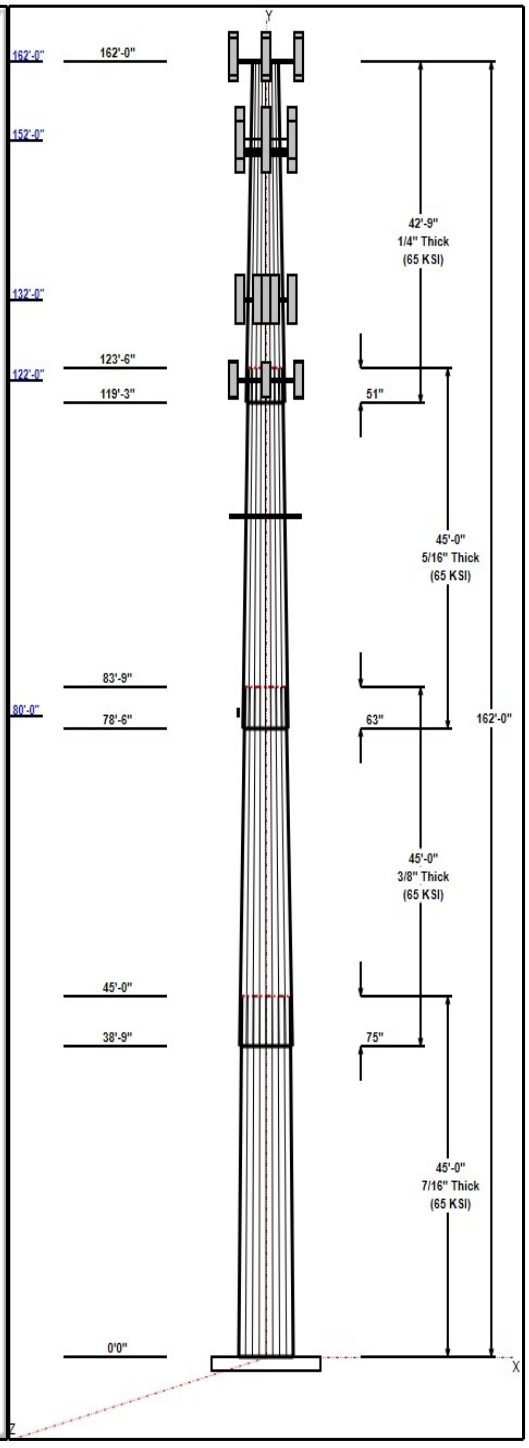
Dead Load Factor:	1.20	**Iterations:**	24
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT01698-S-SBA

Type: Tapered
Site Name: Durham
Height: 162.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22003

8/6/2019

Tower Engineering Solutions

Shaft Properties

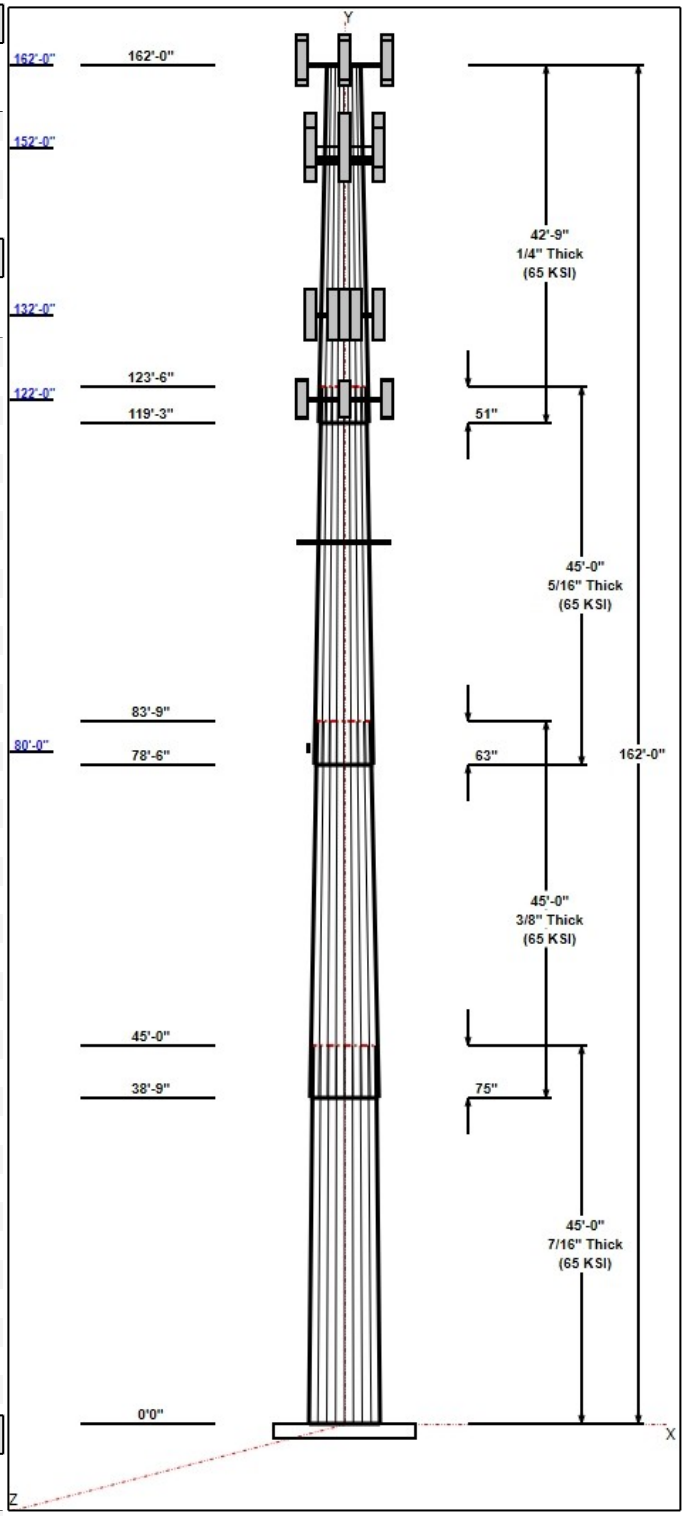
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	47.87	57.77	0.438		0.22003	65
2	45.00	40.09	49.99	0.375	Slip	0.22003	65
3	45.00	31.97	41.87	0.313	Slip	0.22003	65
4	42.75	24.00	33.41	0.250	Slip	0.22003	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
162.00	162.50	3	APXVTM14-C-120	Sprint
162.00	162.00	3	TD-RRH8x20-25	Sprint
162.00	162.50	3	APXVSPP18-C-A20	Sprint
162.00	162.00	3	1900MHz RRH	Sprint
162.00	162.00	3	800 MHz RRU	Sprint
162.00	162.00	3	800 MHz Ext. Filter	Sprint
162.00	162.50	4	ACU-A20-N	Sprint
162.00	162.00	1	Low Profile Platform-flat	
162.00	160.00	1	Flush Mount	Verizon
152.00	152.00	3	APXVAARR24_43-U-NA20	T-Mobile
152.00	152.00	3	Radio 4449 B71+B12	T-Mobile
152.00	152.00	3	APXV18-206516S-A20	T-Mobile
152.00	152.00	3	KRY 112 144/1	T-Mobile
152.00	152.00	3	782 11056	T-Mobile
152.00	152.00	3	FE15501P77/75	T-Mobile
152.00	152.00	1	Platform w/ Hand Rail	T-Mobile
152.00	152.00	6	RR90-17-02DP	T-Mobile
132.00	132.00	1	Low Profile	Verizon
132.00	132.00	9	SBNHH-1D65B	Verizon
132.00	132.00	2	LPA-80080-4CF-EDIN-0	Verizon
132.00	132.00	4	DB846F65ZAXY	Verizon
132.00	132.00	3	RRH2X60-AWS	Verizon
132.00	132.00	3	RRH2x60-1900	Verizon
132.00	132.00	3	RRH2X60-700	Verizon
132.00	132.00	6	FD9R6004/2C-3L	Verizon
132.00	132.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon
124.50	124.50	1	Flush Mount	Verizon
124.50	124.50	6	RRUS-11	AT&T
124.50	124.50	1	DC6-48-60-18-8F	AT&T
122.00	122.00	6	7770.00	AT&T
122.00	122.00	6	LGP21401	AT&T
122.00	122.00	6	LGP21903	AT&T
122.00	122.00	3	AM-X-CD-16-65-00T-RET	AT&T
122.00	122.00	1	Low Profile Platform-flat	
105.00	105.00	1	Low Profile Platform-flat	
80.00	80.35	1	738-449	AT&T
75.00	75.00	1	GPS	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	162.00	Inside	1 1/4" Coax	Sprint
0.00	162.00	Inside	1 5/8" Fiber	Sprint
0.00	162.00	Outside	Safety Cable	
0.00	152.00	Outside	1 5/8" Coax	T-Mobile
0.00	152.00	Outside	1 5/8" Fiber	T-Mobile



0.00	132.00	Inside	1 5/8" Coax	Verizon
0.00	132.00	Inside	1 5/8" Hybrid	Verizon
0.00	122.00	Outside	1 5/8" Coax	AT&T
0.00	122.00	Outside	10 mm	AT&T
0.00	122.00	Outside	3" Coax	AT&T
0.00	122.00	Outside	DC	AT&T
0.00	80.00	Inside	1/2" Coax	AT&T
0.00	75.00	Outside	1/2" Coax	Verizon

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	4753.1	40.2	54.2
0.9D + 1.6W 97 mph Wind	4702.4	40.2	40.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1346.6	11.3	96.0
1.2D + 1.0E	239.0	1.9	54.2
0.9D + 1.0E	236.2	1.9	40.7
1.0D + 1.0W 60 mph Wind	1130.4	9.6	45.2

Structure: CT01698-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Durham
Height: 162.00 (ft)

8/6/2019

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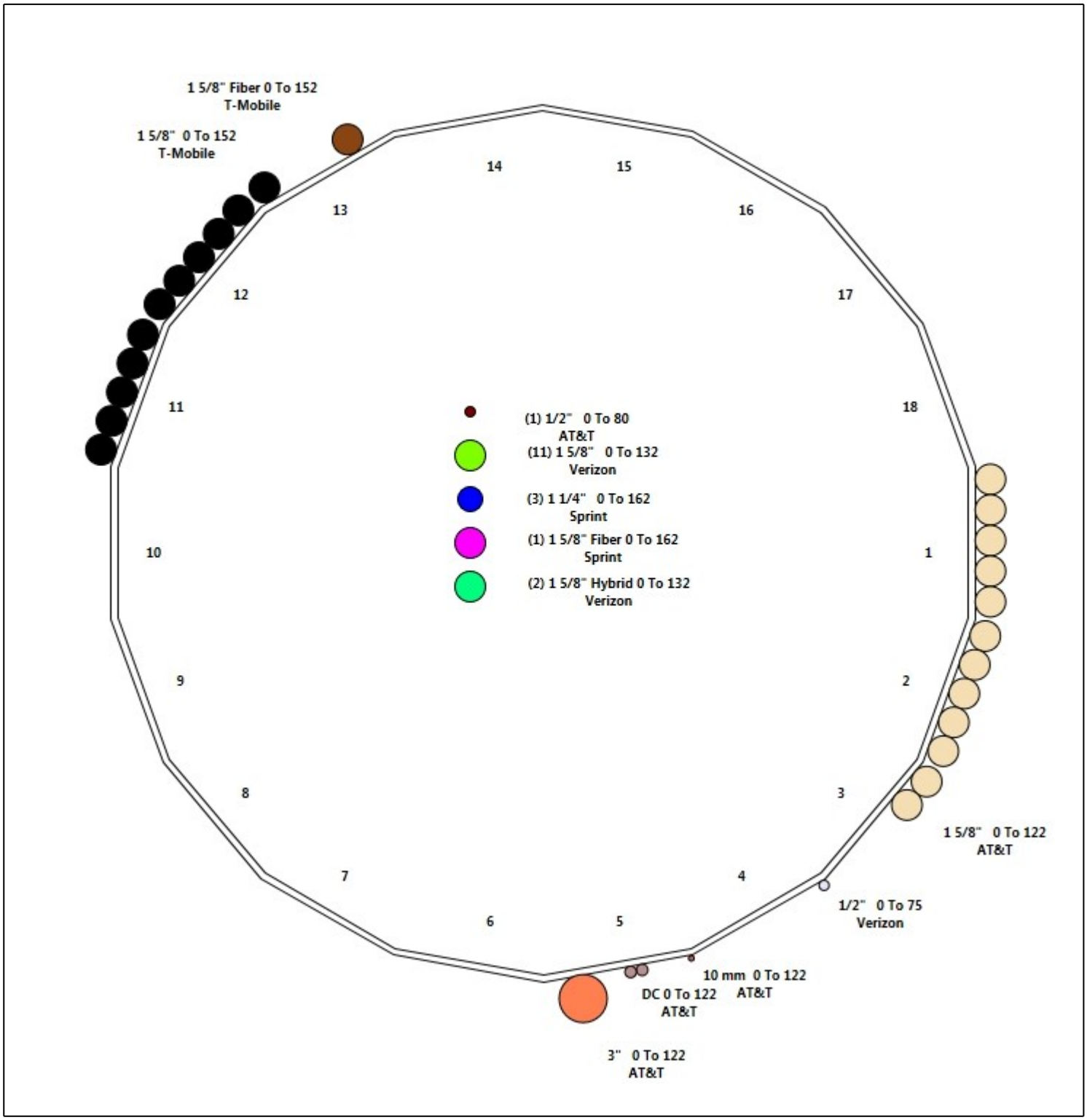

Shaft Properties

Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (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

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.4375	65		0.00	11,138
2	18	45.000	0.3750	65	Slip	75.00	8,141
3	18	45.000	0.3125	65	Slip	63.00	5,560
4	18	42.750	0.2500	65	Slip	51.00	3,284
					Total Shaft Weight:		**28,123**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	57.77	0.00	79.61	33061.69	21.87	132.05	47.87	45.00	65.86	18720.2	17.88	109.4	0.220031
2	49.99	38.75	59.06	18370.23	22.10	133.32	40.09	83.75	47.27	9421.47	17.44	106.9	0.220031
3	41.87	78.50	41.22	8995.46	22.22	133.99	31.97	123.50	31.40	3976.25	16.63	102.3	0.220031
4	33.41	119.2	26.31	3654.12	22.15	133.63	24.00	162.00	18.84	1343.00	15.52	96.00	0.220031

Load Summary

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (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	

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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	162.00	APXVTM14-C-120	3	56.00	6.34	0.79	217.90	7.463	0.79	0.00	0.50
2	162.00	TD-RRH8x20-25	3	70.00	4.05	0.69	181.50	4.870	0.69	0.00	0.00
3	162.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	231.19	10.835	0.83	0.00	0.50
4	162.00	1900MHz RRH	3	44.00	3.80	0.88	154.01	5.201	0.88	0.00	0.00
5	162.00	800 MHz RRU	3	53.00	2.49	0.75	127.53	3.643	0.75	0.00	0.00
6	162.00	800 MHz Ext. Filter	3	6.60	1.19	0.63	31.03	1.983	0.63	0.00	0.00
7	162.00	ACU-A20-N	4	1.00	0.14	0.75	5.33	0.439	0.75	0.00	0.50
8	162.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2255.22	46.104	1.00	0.00	0.00
9	162.00	Flush Mount	1	175.00	5.00	1.00	322.73	8.517	1.00	0.00	-2.00
10	152.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	546.56	22.143	0.70	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	71.00	1.97	0.86	124.45	2.518	0.86	0.00	0.00
12	152.00	APXV18-206516S-A20	3	18.50	4.36	0.76	87.92	6.606	0.78	0.00	0.00
13	152.00	KRY 112 144/1	3	11.00	0.35	0.73	21.80	0.756	0.78	0.00	0.00
14	152.00	782 11056	3	1.80	0.15	0.67	6.33	0.365	0.67	0.00	0.00
15	152.00	FE15501P77/75	3	17.50	0.54	0.65	23.40	0.874	0.65	0.00	0.00
16	152.00	Platform w/ Hand Rail (round)	1	2021.00	42.00	1.00	4676.88	78.698	1.00	0.00	0.00
17	152.00	RR90-17-02DP	6	13.50	4.36	0.73	112.37	5.347	0.73	0.00	0.00
18	132.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2792.29	39.437	1.00	0.00	0.00
19	132.00	SBNHH-1D65B	9	40.60	8.08	0.83	239.16	9.354	0.83	0.00	0.00
20	132.00	LPA-80080-4CF-EDIN-0	2	12.00	2.61	1.70	126.15	3.497	1.70	0.00	0.00
21	132.00	DB846F65ZAXY	4	21.00	7.05	0.93	215.40	8.264	0.93	0.00	0.00
22	132.00	RRH2X60-AWS	3	60.00	3.50	0.76	146.18	4.279	0.76	0.00	0.00
23	132.00	RRH2x60-1900	3	19.50	1.51	0.75	78.40	2.053	0.75	0.00	0.00
24	132.00	RRH2X60-700	3	60.00	3.50	0.76	146.18	4.279	0.76	0.00	0.00
25	132.00	FD9R6004/2C-3L	6	3.10	0.36	0.75	11.02	0.798	0.75	0.00	0.00
26	132.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	4.33	0.71	185.58	5.662	0.71	0.00	0.00
27	124.50	Flush Mount	1	175.00	5.00	1.00	318.89	8.426	1.00	0.00	0.00
28	124.50	RRUS-11	6	55.00	4.42	0.68	143.30	5.892	0.68	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	31.80	1.47	1.00	92.48	2.157	1.00	0.00	0.00
30	122.00	7770.00	6	35.00	5.50	0.73	166.79	6.542	0.73	0.00	0.00
31	122.00	LGP21401	6	14.10	1.29	0.75	38.59	2.109	0.75	0.00	0.00
32	122.00	LGP21903	6	5.50	0.27	0.75	13.76	0.660	0.75	0.00	0.00
33	122.00	AM-X-CD-16-65-00T-RET	3	33.00	6.05	0.81	174.83	8.106	0.81	0.00	0.00
34	122.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2225.72	45.514	1.00	0.00	0.00
35	105.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2210.44	45.209	1.00	0.00	0.00
36	80.00	738-449	1	0.50	0.01	1.00	2.38	0.068	1.00	0.00	0.35
37	75.00	GPS	1	10.00	1.00	1.00	37.36	1.664	1.00	0.00	0.00
		Totals:	**115**	**10,956.60**			**28,405.75**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	162.00	(3) 1 1/4" Coax	0.00	Inside
0.00	162.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	162.00	(1) Safety Cable	0.00	Outside
0.00	152.00	(11) 1 5/8" Coax	1.98	Outside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	152.00	(1) 1 5/8" Fiber			0.00	Outside					
0.00	132.00	(11) 1 5/8" Coax			0.00	Inside					
0.00	132.00	(2) 1 5/8" Hybrid			0.00	Inside					
0.00	122.00	(12) 1 5/8" Coax			0.00	Outside					
0.00	122.00	(1) 10 mm			0.00	Outside					
0.00	122.00	(1) 3" Coax			3.00	Outside					
0.00	122.00	(2) DC			0.00	Outside					
0.00	80.00	(1) 1/2" Coax			0.00	Inside					
0.00	75.00	(1) 1/2" Coax			0.00	Outside					

Shaft Section Properties

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (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

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	57.770	79.610	33061.7	21.87	132.05	75.7	1127.	0.0
5.00		0.4375	56.670	78.083	31194.7	21.43	129.53	76.2	1084.	1341.5
10.00		0.4375	55.570	76.555	29399.4	20.99	127.02	76.7	1042.	1315.5
15.00		0.4375	54.470	75.028	27674.3	20.54	124.50	77.2	1000.	1289.5
20.00		0.4375	53.369	73.500	26018.0	20.10	121.99	77.8	960.2	1263.5
25.00		0.4375	52.269	71.972	24429.2	19.66	119.47	78.3	920.5	1237.5
30.00		0.4375	51.169	70.445	22906.4	19.21	116.96	78.8	881.7	1211.5
35.00		0.4375	50.069	68.917	21448.3	18.77	114.44	79.3	843.7	1185.5
38.75	Bot - Section 2	0.4375	49.244	67.771	20396.2	18.44	112.56	79.7	815.8	872.1
40.00		0.4375	48.969	67.389	20053.4	18.33	111.93	79.8	806.6	538.0
45.00	Top - Section 1	0.3750	48.619	57.420	16884.8	21.45	129.65	0.0	0.0	2121.6
50.00		0.3750	47.518	56.110	15755.8	20.93	126.72	76.8	653.1	965.8
55.00		0.3750	46.418	54.801	14678.3	20.42	123.78	77.4	622.8	943.5
60.00		0.3750	45.318	53.492	13651.1	19.90	120.85	78.0	593.3	921.2
65.00		0.3750	44.218	52.182	12672.9	19.38	117.91	78.6	564.5	899.0
70.00		0.3750	43.118	50.873	11742.6	18.86	114.98	79.2	536.4	876.7
75.00		0.3750	42.018	49.563	10859.0	18.35	112.05	79.8	509.0	854.4
78.50	Bot - Section 3	0.3750	41.248	48.647	10267.7	17.98	109.99	80.2	490.3	584.8
80.00		0.3750	40.918	48.254	10020.9	17.83	109.11	80.4	482.4	456.9
83.75	Top - Section 2	0.3125	40.717	40.075	8266.0	21.56	130.30	0.0	0.0	1126.1
85.00		0.3125	40.442	39.802	8098.4	21.41	129.42	76.2	394.4	169.9
90.00		0.3125	39.342	38.711	7450.4	20.79	125.90	77.0	373.0	667.9
95.00		0.3125	38.242	37.620	6838.0	20.17	122.37	77.7	352.2	649.3
100.00		0.3125	37.142	36.529	6260.1	19.55	118.85	78.4	332.0	630.8
105.00		0.3125	36.042	35.438	5715.7	18.93	115.33	79.1	312.4	612.2
110.00		0.3125	34.942	34.347	5203.8	18.31	111.81	79.9	293.3	593.7
115.00		0.3125	33.841	33.255	4723.4	17.68	108.29	80.6	274.9	575.1
119.25	Bot - Section 4	0.3125	32.906	32.328	4339.1	17.16	105.30	81.2	259.7	474.2
120.00		0.3125	32.741	32.164	4273.5	17.06	104.77	81.3	257.1	149.3
122.00		0.3125	32.301	31.728	4101.9	16.82	103.36	81.6	250.1	394.4
123.50	Top - Section 3	0.2500	32.471	25.567	3353.6	21.49	129.88	0.0	0.0	292.3
124.50		0.2500	32.251	25.392	3285.3	21.34	129.00	76.3	200.6	86.7
125.00		0.2500	32.141	25.305	3251.6	21.26	128.56	76.4	199.3	43.1
130.00		0.2500	31.041	24.432	2926.5	20.48	124.16	77.3	185.7	423.1
132.00		0.2500	30.601	24.083	2802.9	20.17	122.40	77.7	180.4	165.1
135.00		0.2500	29.941	23.559	2623.9	19.71	119.76	78.2	172.6	243.2
140.00		0.2500	28.841	22.686	2342.9	18.93	115.36	79.1	160.0	393.4
145.00		0.2500	27.741	21.813	2082.7	18.15	110.96	80.0	147.9	378.5
150.00		0.2500	26.640	20.940	1842.6	17.38	106.56	81.0	136.2	363.7
152.00		0.2500	26.200	20.591	1751.9	17.07	104.80	81.3	131.7	141.3
155.00		0.2500	25.540	20.067	1621.6	16.60	102.16	81.9	125.1	207.5
160.00		0.2500	24.440	19.194	1419.0	15.83	97.76	82.5	114.4	334.0
162.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	129.4
										28122.8

Wind Loading - Shaft

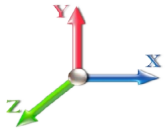
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	437.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	428.85	0.650	0.000	5.00	24.209	15.74	538.7	0.0	1609.8
10.00		1.00	0.85	19.450	21.40	420.52	0.650	0.000	5.00	23.744	15.43	528.3	0.0	1578.6
15.00		1.00	0.85	19.450	21.40	412.19	0.650	0.000	5.00	23.278	15.13	518.0	0.0	1547.4
20.00		1.00	0.90	20.638	22.70	416.01	0.650	0.000	5.00	22.813	14.83	538.6	0.0	1516.2
25.00		1.00	0.95	21.630	23.79	417.12	0.650	0.000	5.00	22.348	14.53	553.0	0.0	1485.0
30.00		1.00	0.98	22.477	24.72	416.25	0.650	0.000	5.00	21.882	14.22	562.7	0.0	1453.8
35.00		1.00	1.01	23.218	25.54	413.97	0.650	0.000	5.00	21.417	13.92	568.9	0.0	1422.6
38.75	Bot - Section 2	1.00	1.04	23.721	26.09	411.53	0.650	0.000	3.75	15.757	10.24	427.6	0.0	1046.5
40.00		1.00	1.04	23.880	26.27	410.60	0.650	0.000	1.25	5.273	3.43	144.1	0.0	645.5
45.00	Top - Section 1	1.00	1.07	24.479	26.93	406.38	0.653 *	0.000	5.00	20.803	13.57	584.8	0.0	2546.0
50.00		1.00	1.09	25.029	27.53	407.91	0.654 *	0.000	5.00	20.338	13.30	585.9	0.0	1159.0
55.00		1.00	1.12	25.536	28.09	402.48	0.659 *	0.000	5.00	19.872	13.09	588.2	0.0	1132.2
60.00		1.00	1.14	26.008	28.61	396.56	0.663 *	0.000	5.00	19.407	12.88	589.4	0.0	1105.5
65.00		1.00	1.16	26.450	29.09	390.21	0.669 *	0.000	5.00	18.941	12.66	589.6	0.0	1078.8
70.00		1.00	1.17	26.866	29.55	383.48	0.674 *	0.000	5.00	18.476	12.45	588.8	0.0	1052.0
75.00	Appurtenance(s)	1.00	1.19	27.259	29.98	376.42	0.680 *	0.000	5.00	18.010	12.24	587.3	0.0	1025.3
78.50	Bot - Section 3	1.00	1.20	27.522	30.27	371.30	0.685 *	0.000	3.50	12.330	8.44	408.9	0.0	701.8
80.00	Appurtenance(s)	1.00	1.21	27.632	30.39	369.06	0.688 *	0.000	1.50	5.294	3.64	177.1	0.0	548.2
83.75	Top - Section 2	1.00	1.22	27.899	30.69	363.37	0.691 *	0.000	3.75	13.051	9.02	442.9	0.0	1351.3
85.00		1.00	1.22	27.987	30.79	367.11	0.691 *	0.000	1.25	4.292	2.96	146.0	0.0	203.9
90.00		1.00	1.24	28.325	31.16	359.28	0.695 *	0.000	5.00	16.878	11.73	584.6	0.0	801.5
95.00		1.00	1.25	28.650	31.51	351.23	0.702 *	0.000	5.00	16.413	11.51	580.6	0.0	779.2
100.00		1.00	1.27	28.961	31.86	342.97	0.709 *	0.000	5.00	15.947	11.30	576.1	0.0	756.9
105.00	Appurtenance(s)	1.00	1.28	29.260	32.19	334.52	0.716 *	0.000	5.00	15.482	11.09	571.1	0.0	734.7
110.00		1.00	1.29	29.548	32.50	325.90	0.724 *	0.000	5.00	15.016	10.88	565.7	0.0	712.4
115.00		1.00	1.30	29.826	32.81	317.12	0.733 *	0.000	5.00	14.551	10.67	559.9	0.0	690.1
119.25	Bot - Section 4	1.00	1.31	30.054	33.06	309.54	0.742 *	0.000	4.25	12.002	8.90	470.8	0.0	569.1
120.00		1.00	1.32	30.094	33.10	308.19	0.746 *	0.000	0.75	2.115	1.58	83.6	0.0	179.1
122.00	Appurtenance(s)	1.00	1.32	30.199	33.22	304.58	0.749 *	0.000	2.00	5.588	4.19	222.5	0.0	473.3
123.50	Top - Section 3	1.00	1.32	30.277	33.30	301.86	0.650	0.000	1.50	4.142	2.69	143.5	0.0	350.7
124.50	Appurtenance(s)	1.00	1.33	30.328	33.36	304.76	0.650	0.000	1.00	2.738	1.78	95.0	0.0	104.0
125.00		1.00	1.33	30.354	33.39	303.85	0.650	0.000	0.50	1.362	0.89	47.3	0.0	51.8
130.00		1.00	1.34	30.605	33.67	294.66	0.650	0.000	5.00	13.366	8.69	468.0	0.0	507.7
132.00	Appurtenance(s)	1.00	1.34	30.704	33.77	290.95	0.650	0.000	2.00	5.216	3.39	183.2	0.0	198.1
135.00		1.00	1.35	30.850	33.93	285.35	0.650	0.000	3.00	7.684	4.99	271.2	0.0	291.8
140.00		1.00	1.36	31.087	34.20	275.92	0.650	0.000	5.00	12.435	8.08	442.2	0.0	472.1
145.00		1.00	1.37	31.317	34.45	266.37	0.650	0.000	5.00	11.970	7.78	428.8	0.0	454.3
150.00		1.00	1.38	31.541	34.70	256.72	0.650	0.000	5.00	11.504	7.48	415.1	0.0	436.4
152.00	Appurtenance(s)	1.00	1.38	31.630	34.79	252.84	0.650	0.000	2.00	4.471	2.91	161.8	0.0	169.6
155.00		1.00	1.39	31.760	34.94	246.97	0.650	0.000	3.00	6.567	4.27	238.6	0.0	249.0
160.00		1.00	1.40	31.973	35.17	237.13	0.650	0.000	5.00	10.573	6.87	386.7	0.0	400.8
162.00	Appurtenance(s)	1.00	1.40	32.057	35.26	233.16	0.650	0.000	2.00	4.099	2.66	150.3	0.0	155.3
								Totals:	**162.00**			**17,315.4**		**33,747.3**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

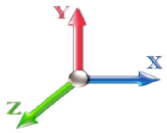
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	32.057	35.262	0.88	1.00	10.03	158.40	0.000	0.000	566.00	0.00	0.00
2	162.00	APXVTM14-C-120	3	32.077	35.285	0.63	0.80	12.02	201.60	0.000	0.500	678.64	0.00	339.32
3	162.00	TD-RRH8x20-25	3	32.057	35.262	0.69	1.00	8.38	252.00	0.000	0.000	472.99	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	32.077	35.285	0.66	0.80	15.98	205.20	0.000	0.500	901.94	0.00	450.97
5	162.00	Flush Mount	1	31.973	35.170	1.00	1.00	5.00	210.00	0.000	-2.000	281.36	0.00	-562.72
6	162.00	800 MHz Ext. Filter	3	32.057	35.262	0.63	1.00	2.25	23.76	0.000	0.000	126.89	0.00	0.00
7	162.00	ACU-A20-N	4	32.077	35.285	0.75	1.00	0.42	4.80	0.000	0.500	23.71	0.00	11.86
8	162.00	Low Profile Platform-flat	1	32.057	35.262	1.00	1.00	25.00	1440.00	0.000	0.000	1410.49	0.00	0.00
9	162.00	800 MHz RRU	3	32.057	35.262	0.75	1.00	5.60	190.80	0.000	0.000	316.09	0.00	0.00
10	152.00	KRY 112 144/1	3	31.630	34.792	0.55	0.75	0.57	39.60	0.000	0.000	32.00	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	31.630	34.792	0.52	0.75	31.88	460.80	0.000	0.000	1774.58	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	31.630	34.792	0.65	0.75	3.81	255.60	0.000	0.000	212.20	0.00	0.00
13	152.00	APXV18-206516S-A20	3	31.630	34.792	0.57	0.75	7.46	66.60	0.000	0.000	415.04	0.00	0.00
14	152.00	FE15501P77/75	3	31.630	34.792	0.49	0.75	0.79	63.00	0.000	0.000	43.96	0.00	0.00
15	152.00	782 11056	3	31.630	34.792	0.50	0.75	0.23	6.48	0.000	0.000	12.59	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	31.630	34.792	1.00	1.00	42.00	2425.20	0.000	0.000	2338.06	0.00	0.00
17	152.00	RR90-17-02DP	6	31.630	34.792	0.55	0.75	14.32	97.20	0.000	0.000	797.31	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	30.704	33.774	0.57	0.80	4.92	105.60	0.000	0.000	265.81	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	30.704	33.774	0.60	0.80	1.30	22.32	0.000	0.000	70.03	0.00	0.00
20	132.00	RRH2X60-700	3	30.704	33.774	0.61	0.80	6.38	216.00	0.000	0.000	344.98	0.00	0.00
21	132.00	RRH2x60-1900	3	30.704	33.774	0.60	0.80	2.72	70.20	0.000	0.000	146.88	0.00	0.00
22	132.00	RRH2X60-AWS	3	30.704	33.774	0.61	0.80	6.38	216.00	0.000	0.000	344.98	0.00	0.00
23	132.00	DB846F65ZAXY	4	30.704	33.774	0.74	0.80	20.98	100.80	0.000	0.000	1133.78	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	30.704	33.774	1.36	0.80	7.10	28.80	0.000	0.000	383.63	0.00	0.00
25	132.00	SBNHH-1D65B	9	30.704	33.774	0.66	0.80	48.29	438.48	0.000	0.000	2609.33	0.00	0.00
26	132.00	Low Profile	1	30.704	33.774	1.00	1.00	22.00	1800.00	0.000	0.000	1188.86	0.00	0.00
27	124.50	Flush Mount	1	30.328	33.361	1.00	1.00	5.00	210.00	0.000	0.000	266.89	0.00	0.00
28	124.50	RRUS-11	6	30.328	33.361	0.68	1.00	18.03	396.00	0.000	0.000	962.59	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	30.328	33.361	1.00	1.00	1.47	38.16	0.000	0.000	78.46	0.00	0.00
30	122.00	Low Profile Platform-flat	1	30.199	33.219	1.00	1.00	25.00	1440.00	0.000	0.000	1328.75	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	30.199	33.219	0.65	0.80	11.76	118.80	0.000	0.000	625.11	0.00	0.00
32	122.00	LGP21903	6	30.199	33.219	0.60	0.80	0.97	39.60	0.000	0.000	51.66	0.00	0.00
33	122.00	LGP21401	6	30.199	33.219	0.60	0.80	4.64	101.52	0.000	0.000	246.83	0.00	0.00
34	122.00	7770.00	6	30.199	33.219	0.58	0.80	19.27	252.00	0.000	0.000	1024.31	0.00	0.00
35	105.00	Low Profile Platform-flat	1	29.260	32.186	1.00	1.00	25.00	1440.00	0.000	0.000	1287.43	0.00	0.00
36	80.00	738-449	1	27.657	30.423	1.00	1.00	0.01	0.60	0.000	0.350	0.49	0.00	0.17
37	75.00	GPS	1	27.259	29.985	1.00	1.00	1.00	12.00	0.000	0.000	47.98	0.00	0.00
							Totals:		**13,147.92**			**22,812.65**		

Total Applied Force Summary

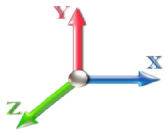
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		538.69	1879.62	0.00	0.00
10.00		528.33	1848.43	0.00	0.00
15.00		517.97	1817.24	0.00	0.00
20.00		538.60	1786.06	0.00	0.00
25.00		552.99	1754.87	0.00	0.00
30.00		562.66	1723.68	0.00	0.00
35.00		568.85	1692.49	0.00	0.00
38.75		427.59	1248.90	0.00	0.00
40.00		144.06	713.00	0.00	0.00
45.00		584.83	2815.80	0.00	0.00
50.00		585.86	1428.79	0.00	0.00
55.00		588.22	1402.06	0.00	0.00
60.00		589.40	1375.33	0.00	0.00
65.00		589.55	1348.59	0.00	0.00
70.00		588.81	1321.86	0.00	0.00
75.00	(1) attachments	635.24	1307.12	0.00	0.00
78.50		408.95	890.01	0.00	0.00
80.00	(1) attachments	177.56	629.50	0.00	0.17
83.75		442.90	1552.23	0.00	0.00
85.00		146.02	270.83	0.00	0.00
90.00		584.57	1069.41	0.00	0.00
95.00		580.58	1047.13	0.00	0.00
100.00		576.09	1024.85	0.00	0.00
105.00	(1) attachments	1858.56	2442.58	0.00	0.00
110.00		565.74	980.30	0.00	0.00
115.00		559.94	958.02	0.00	0.00
119.25		470.79	796.80	0.00	0.00
120.00		83.60	219.31	0.00	0.00
122.00	(22) attachments	3499.15	2532.34	0.00	0.00
123.50		143.48	403.89	0.00	0.00
124.50	(8) attachments	1402.95	783.64	0.00	0.00
125.00		47.30	69.47	0.00	0.00
130.00		467.98	684.92	0.00	0.00
132.00	(33) attachments	6671.50	3267.18	0.00	0.00
135.00		271.20	349.02	0.00	0.00
140.00		442.23	567.44	0.00	0.00
145.00		428.83	549.62	0.00	0.00
150.00		415.11	531.79	0.00	0.00
152.00	(25) attachments	5787.54	3622.21	0.00	0.00
155.00		238.61	261.10	0.00	0.00
160.00		386.74	420.91	0.00	0.00
162.00	(24) attachments	4928.45	2849.93	0.00	239.42
	Totals:	**40,128.01**	**54,238.27**	**0.00**	**239.59**

Linear Appurtenance Segment Forces (Factored)

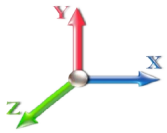
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	1.64
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	19.450	0.00	68.64
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	6.60
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	74.88
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.36
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	19.450	0.00	10.68
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	4.80
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.96
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	1.64
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	19.450	0.00	68.64
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	6.60
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	74.88
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.36
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	19.450	0.00	10.68
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	4.80
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.96
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	1.64
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	19.450	0.00	68.64
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	6.60
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	74.88
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.36
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	19.450	0.00	10.68
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	4.80
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.96
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	1.64
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	20.638	0.00	68.64
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	6.60
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	74.88
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.36
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	20.638	0.00	10.68
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	4.80
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.96
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	1.64
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	21.630	0.00	68.64
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	6.60
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	74.88
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.36
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	21.630	0.00	10.68
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	4.80
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.96
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	1.64
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	22.477	0.00	68.64
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	6.60
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	74.88
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.36
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	22.477	0.00	10.68
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	4.80

Linear Appurtenance Segment Forces (Factored)

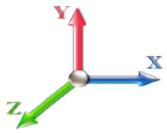
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.96
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	1.64
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	23.218	0.00	68.64
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	6.60
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	74.88
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.36
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	23.218	0.00	10.68
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	4.80
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.96
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	1.23
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	23.721	0.00	51.48
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	4.95
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	56.16
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.27
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	23.721	0.00	8.01
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	3.60
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.72
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.41
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	23.880	0.00	17.16
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.65
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	18.72
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.09
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	23.880	0.00	2.67
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.20
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.24
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	1.64
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	24.479	0.00	68.64
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	6.60
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	74.88
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.36
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	24.479	0.00	10.68
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	4.80
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.96
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	1.64
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	25.029	0.00	68.64
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	6.60
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	74.88
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.36
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	25.029	0.00	10.68
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	4.80
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.96
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	1.64
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	25.536	0.00	68.64
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	6.60
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	74.88
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.36
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	25.536	0.00	10.68

Linear Appurtenance Segment Forces (Factored)

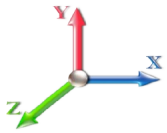
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	4.80
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.96
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	1.64
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	26.008	0.00	68.64
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	6.60
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	74.88
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.36
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	26.008	0.00	10.68
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	4.80
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.96
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	1.64
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	26.450	0.00	68.64
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	6.60
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	74.88
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.36
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	26.450	0.00	10.68
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	4.80
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.96
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	1.64
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	26.866	0.00	68.64
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	6.60
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	74.88
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.36
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	26.866	0.00	10.68
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	4.80
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.96
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	1.64
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	27.259	0.00	68.64
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	6.60
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	74.88
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.36
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	27.259	0.00	10.68
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	4.80
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.96
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	1.15
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	27.522	0.00	48.05
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	4.62
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	52.42
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.25
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	27.522	0.00	7.48
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	3.36
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.49
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	27.632	0.00	20.59
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.98
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	22.46
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.11
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	27.632	0.00	3.20

Linear Appurtenance Segment Forces (Factored)

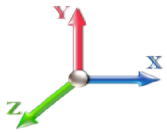
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.44
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	1.23
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	27.899	0.00	51.48
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	4.95
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	56.16
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.27
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	27.899	0.00	8.01
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	3.60
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.41
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	27.987	0.00	17.16
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.65
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	18.72
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.09
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	27.987	0.00	2.67
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.20
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	1.64
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	28.325	0.00	68.64
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	6.60
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	74.88
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	0.36
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	28.325	0.00	10.68
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	4.80
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	1.64
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	28.650	0.00	68.64
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	6.60
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	74.88
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	0.36
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	28.650	0.00	10.68
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	4.80
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	1.64
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	28.961	0.00	68.64
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	6.60
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	74.88
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	0.36
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	28.961	0.00	10.68
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	4.80
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	1.64
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	29.260	0.00	68.64
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	6.60
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	74.88
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	0.36
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	29.260	0.00	10.68
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	4.80
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	1.64
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	29.548	0.00	68.64
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	6.60
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	74.88

Linear Appurtenance Segment Forces (Factored)

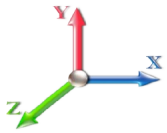
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	0.36
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	29.548	0.00	10.68
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	4.80
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	1.64
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	29.826	0.00	68.64
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	6.60
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	74.88
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	0.36
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	29.826	0.00	10.68
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	4.80
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	1.39
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	30.054	0.00	58.34
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	5.61
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	63.65
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	0.31
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	30.054	0.00	9.08
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	4.08
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.25
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	30.094	0.00	10.30
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.99
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	11.23
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.05
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	30.094	0.00	1.60
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.72
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.66
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	30.199	0.00	27.46
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	2.64
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	29.95
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.14
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	30.199	0.00	4.27
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.92
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	0.49
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	30.277	0.00	20.59
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	1.98
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.33
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	30.328	0.00	13.73
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	1.32
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.16
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	30.354	0.00	6.86
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.66
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	1.64
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	30.605	0.00	68.64
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	6.60
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	0.66
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	30.704	0.00	27.46
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	2.64
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	0.98

Linear Appurtenance Segment Forces (Factored)

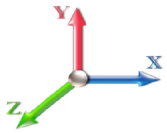
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	30.850	0.00	41.18
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	3.96
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	1.64
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	31.087	0.00	68.64
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	6.60
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	1.64
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	31.317	0.00	68.64
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	6.60
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	1.64
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	31.541	0.00	68.64
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	6.60
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	0.66
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	31.630	0.00	27.46
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	2.64
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	31.760	0.00	0.98
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.973	0.00	1.64
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	32.057	0.00	0.66
										Totals:	**0.0**	**4,568.3**

Calculated Forces

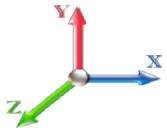
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-54.17	-40.22	0.00	-4753.0	0.00	4753.06	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.753
5.00	-52.15	-39.87	0.00	-4551.9	0.00	4551.94	5354.65	2677.32	12373.4	6195.90	0.11	-0.200	0.000	0.745
10.00	-50.16	-39.51	0.00	-4352.6	0.00	4352.62	5285.82	2642.91	11973.5	5995.67	0.43	-0.403	0.000	0.736
15.00	-48.21	-39.15	0.00	-4155.0	0.00	4155.09	5215.55	2607.78	11576.7	5796.99	0.96	-0.609	0.000	0.726
20.00	-46.29	-38.76	0.00	-3959.3	0.00	3959.36	5143.86	2571.93	11183.2	5599.96	1.71	-0.818	0.000	0.716
25.00	-44.40	-38.34	0.00	-3765.5	0.00	3765.58	5070.72	2535.36	10793.2	5404.66	2.68	-1.029	0.000	0.706
30.00	-42.54	-37.90	0.00	-3573.8	0.00	3573.89	4996.16	2498.08	10406.9	5211.21	3.87	-1.242	0.000	0.695
35.00	-40.74	-37.43	0.00	-3384.3	0.00	3384.38	4920.16	2460.08	10024.5	5019.70	5.29	-1.459	0.000	0.683
38.75	-39.43	-37.04	0.00	-3244.0	0.00	3244.02	4862.22	2431.11	9740.32	4877.40	6.50	-1.623	0.000	0.673
40.00	-38.64	-36.97	0.00	-3197.7	0.00	3197.71	4842.73	2421.36	9646.11	4830.22	6.93	-1.680	0.000	0.670
45.00	-35.70	-36.44	0.00	-3012.8	0.00	3012.85	3936.38	1968.19	7803.92	3907.76	8.81	-1.900	0.000	0.780
50.00	-34.14	-35.94	0.00	-2830.6	0.00	2830.66	3877.34	1938.67	7510.22	3760.69	10.92	-2.122	0.000	0.762
55.00	-32.61	-35.44	0.00	-2650.9	0.00	2650.94	3816.87	1908.43	7219.20	3614.96	13.27	-2.369	0.000	0.742
60.00	-31.11	-34.93	0.00	-2473.7	0.00	2473.73	3754.96	1877.48	6931.04	3470.67	15.89	-2.618	0.000	0.721
65.00	-29.65	-34.40	0.00	-2299.0	0.00	2299.09	3691.62	1845.81	6645.93	3327.91	18.76	-2.866	0.000	0.699
70.00	-28.21	-33.87	0.00	-2127.0	0.00	2127.07	3626.84	1813.42	6364.09	3186.77	21.90	-3.115	0.000	0.676
75.00	-26.82	-33.26	0.00	-1957.7	0.00	1957.72	3560.63	1780.31	6085.69	3047.37	25.29	-3.362	0.000	0.650
78.50	-25.89	-32.86	0.00	-1841.3	0.00	1841.31	3513.43	1756.71	5892.98	2950.87	27.82	-3.536	0.000	0.632
80.00	-25.19	-32.70	0.00	-1792.0	0.00	1792.03	3492.98	1746.49	5810.95	2909.79	28.94	-3.612	0.000	0.623
83.75	-23.60	-32.20	0.00	-1669.4	0.00	1669.42	2742.50	1371.25	4553.78	2280.28	31.85	-3.796	0.000	0.741
85.00	-23.25	-32.11	0.00	-1629.1	0.00	1629.17	2730.37	1365.18	4502.54	2254.62	32.86	-3.858	0.000	0.732
90.00	-22.07	-31.56	0.00	-1468.6	0.00	1468.62	2680.95	1340.47	4298.92	2152.65	37.04	-4.130	0.000	0.691
95.00	-20.93	-30.99	0.00	-1310.8	0.00	1310.84	2630.10	1315.05	4097.56	2051.82	41.51	-4.396	0.000	0.647
100.00	-19.82	-30.43	0.00	-1155.8	0.00	1155.87	2577.82	1288.91	3898.66	1952.23	46.25	-4.652	0.000	0.600
105.00	-17.43	-28.44	0.00	-1003.7	0.00	1003.74	2524.10	1262.05	3702.43	1853.97	51.25	-4.898	0.000	0.549
110.00	-16.39	-27.86	0.00	-861.53	0.00	861.53	2468.95	1234.47	3509.05	1757.13	56.50	-5.130	0.000	0.497
115.00	-15.40	-27.27	0.00	-722.23	0.00	722.23	2412.36	1206.18	3318.73	1661.83	61.98	-5.346	0.000	0.441
119.25	-14.60	-26.75	0.00	-606.36	0.00	606.36	2363.14	1181.57	3159.50	1582.10	66.81	-5.516	0.000	0.390
120.00	-14.37	-26.66	0.00	-586.30	0.00	586.30	2354.34	1177.17	3131.65	1568.15	67.68	-5.546	0.000	0.380
122.00	-12.16	-22.94	0.00	-532.99	0.00	532.99	2330.73	1165.37	3057.78	1531.16	70.02	-5.620	0.000	0.354
123.50	-11.76	-22.77	0.00	-498.58	0.00	498.58	1751.58	875.79	2319.28	1161.36	71.79	-5.674	0.000	0.437
124.50	-11.11	-21.30	0.00	-475.81	0.00	475.81	1743.79	871.89	2293.08	1148.24	72.98	-5.709	0.000	0.421
125.00	-11.00	-21.26	0.00	-465.16	0.00	465.16	1739.87	869.94	2280.00	1141.69	73.58	-5.729	0.000	0.414
130.00	-10.33	-20.75	0.00	-358.84	0.00	358.84	1699.92	849.96	2150.20	1076.70	79.67	-5.909	0.000	0.340
132.00	-7.75	-13.79	0.00	-317.34	0.00	317.34	1683.54	841.77	2098.80	1050.96	82.16	-5.975	0.000	0.307
135.00	-7.40	-13.50	0.00	-275.98	0.00	275.98	1658.53	829.27	2022.29	1012.65	85.93	-6.065	0.000	0.277
140.00	-6.86	-13.01	0.00	-208.50	0.00	208.50	1615.71	807.86	1896.47	949.64	92.35	-6.197	0.000	0.224
145.00	-6.34	-12.53	0.00	-143.46	0.00	143.46	1571.46	785.73	1772.93	887.78	98.89	-6.304	0.000	0.166
150.00	-5.85	-12.07	0.00	-80.79	0.00	80.79	1525.77	762.88	1651.87	827.16	105.52	-6.380	0.000	0.102
152.00	-2.89	-5.91	0.00	-56.66	0.00	56.66	1507.09	753.54	1604.19	803.29	108.19	-6.401	0.000	0.073
155.00	-2.65	-5.65	0.00	-38.92	0.00	38.92	1478.64	739.32	1533.49	767.89	112.21	-6.425	0.000	0.053
160.00	-2.28	-5.22	0.00	-10.67	0.00	10.67	1426.03	713.01	1413.96	708.03	118.94	-6.446	0.000	0.017
162.00	0.00	-4.93	0.00	-0.24	0.00	0.24	1400.09	700.04	1362.73	682.38	121.64	-6.449	0.000	0.000

Wind Loading - Shaft

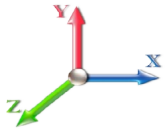
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	437.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	428.85	0.650	0.000	5.00	24.209	15.74	538.7	0.0	1207.3
10.00		1.00	0.85	19.450	21.40	420.52	0.650	0.000	5.00	23.744	15.43	528.3	0.0	1183.9
15.00		1.00	0.85	19.450	21.40	412.19	0.650	0.000	5.00	23.278	15.13	518.0	0.0	1160.6
20.00		1.00	0.90	20.638	22.70	416.01	0.650	0.000	5.00	22.813	14.83	538.6	0.0	1137.2
25.00		1.00	0.95	21.630	23.79	417.12	0.650	0.000	5.00	22.348	14.53	553.0	0.0	1113.8
30.00		1.00	0.98	22.477	24.72	416.25	0.650	0.000	5.00	21.882	14.22	562.7	0.0	1090.4
35.00		1.00	1.01	23.218	25.54	413.97	0.650	0.000	5.00	21.417	13.92	568.9	0.0	1067.0
38.75	Bot - Section 2	1.00	1.04	23.721	26.09	411.53	0.650	0.000	3.75	15.757	10.24	427.6	0.0	784.9
40.00		1.00	1.04	23.880	26.27	410.60	0.650	0.000	1.25	5.273	3.43	144.1	0.0	484.2
45.00	Top - Section 1	1.00	1.07	24.479	26.93	406.38	0.653 *	0.000	5.00	20.803	13.57	584.8	0.0	1909.5
50.00		1.00	1.09	25.029	27.53	407.91	0.654 *	0.000	5.00	20.338	13.30	585.9	0.0	869.2
55.00		1.00	1.12	25.536	28.09	402.48	0.659 *	0.000	5.00	19.872	13.09	588.2	0.0	849.2
60.00		1.00	1.14	26.008	28.61	396.56	0.663 *	0.000	5.00	19.407	12.88	589.4	0.0	829.1
65.00		1.00	1.16	26.450	29.09	390.21	0.669 *	0.000	5.00	18.941	12.66	589.6	0.0	809.1
70.00		1.00	1.17	26.866	29.55	383.48	0.674 *	0.000	5.00	18.476	12.45	588.8	0.0	789.0
75.00	Appurtenance(s)	1.00	1.19	27.259	29.98	376.42	0.680 *	0.000	5.00	18.010	12.24	587.3	0.0	769.0
78.50	Bot - Section 3	1.00	1.20	27.522	30.27	371.30	0.685 *	0.000	3.50	12.330	8.44	408.9	0.0	526.3
80.00	Appurtenance(s)	1.00	1.21	27.632	30.39	369.06	0.688 *	0.000	1.50	5.294	3.64	177.1	0.0	411.2
83.75	Top - Section 2	1.00	1.22	27.899	30.69	363.37	0.691 *	0.000	3.75	13.051	9.02	442.9	0.0	1013.5
85.00		1.00	1.22	27.987	30.79	367.11	0.691 *	0.000	1.25	4.292	2.96	146.0	0.0	152.9
90.00		1.00	1.24	28.325	31.16	359.28	0.695 *	0.000	5.00	16.878	11.73	584.6	0.0	601.1
95.00		1.00	1.25	28.650	31.51	351.23	0.702 *	0.000	5.00	16.413	11.51	580.6	0.0	584.4
100.00		1.00	1.27	28.961	31.86	342.97	0.709 *	0.000	5.00	15.947	11.30	576.1	0.0	567.7
105.00	Appurtenance(s)	1.00	1.28	29.260	32.19	334.52	0.716 *	0.000	5.00	15.482	11.09	571.1	0.0	551.0
110.00		1.00	1.29	29.548	32.50	325.90	0.724 *	0.000	5.00	15.016	10.88	565.7	0.0	534.3
115.00		1.00	1.30	29.826	32.81	317.12	0.733 *	0.000	5.00	14.551	10.67	559.9	0.0	517.6
119.25	Bot - Section 4	1.00	1.31	30.054	33.06	309.54	0.742 *	0.000	4.25	12.002	8.90	470.8	0.0	426.8
120.00		1.00	1.32	30.094	33.10	308.19	0.746 *	0.000	0.75	2.115	1.58	83.6	0.0	134.3
122.00	Appurtenance(s)	1.00	1.32	30.199	33.22	304.58	0.749 *	0.000	2.00	5.588	4.19	222.5	0.0	354.9
123.50	Top - Section 3	1.00	1.32	30.277	33.30	301.86	0.650	0.000	1.50	4.142	2.69	143.5	0.0	263.0
124.50	Appurtenance(s)	1.00	1.33	30.328	33.36	304.76	0.650	0.000	1.00	2.738	1.78	95.0	0.0	78.0
125.00		1.00	1.33	30.354	33.39	303.85	0.650	0.000	0.50	1.362	0.89	47.3	0.0	38.8
130.00		1.00	1.34	30.605	33.67	294.66	0.650	0.000	5.00	13.366	8.69	468.0	0.0	380.8
132.00	Appurtenance(s)	1.00	1.34	30.704	33.77	290.95	0.650	0.000	2.00	5.216	3.39	183.2	0.0	148.6
135.00		1.00	1.35	30.850	33.93	285.35	0.650	0.000	3.00	7.684	4.99	271.2	0.0	218.9
140.00		1.00	1.36	31.087	34.20	275.92	0.650	0.000	5.00	12.435	8.08	442.2	0.0	354.1
145.00		1.00	1.37	31.317	34.45	266.37	0.650	0.000	5.00	11.970	7.78	428.8	0.0	340.7
150.00		1.00	1.38	31.541	34.70	256.72	0.650	0.000	5.00	11.504	7.48	415.1	0.0	327.3
152.00	Appurtenance(s)	1.00	1.38	31.630	34.79	252.84	0.650	0.000	2.00	4.471	2.91	161.8	0.0	127.2
155.00		1.00	1.39	31.760	34.94	246.97	0.650	0.000	3.00	6.567	4.27	238.6	0.0	186.8
160.00		1.00	1.40	31.973	35.17	237.13	0.650	0.000	5.00	10.573	6.87	386.7	0.0	300.6
162.00	Appurtenance(s)	1.00	1.40	32.057	35.26	233.16	0.650	0.000	2.00	4.099	2.66	150.3	0.0	116.5
								Totals:	**162.00**			**17,315.4**		**25,310.5**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

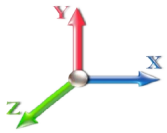
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	32.057	35.262	0.88	1.00	10.03	118.80	0.000	0.000	566.00	0.00	0.00
2	162.00	APXVTM14-C-120	3	32.077	35.285	0.63	0.80	12.02	151.20	0.000	0.500	678.64	0.00	339.32
3	162.00	TD-RRH8x20-25	3	32.057	35.262	0.69	1.00	8.38	189.00	0.000	0.000	472.99	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	32.077	35.285	0.66	0.80	15.98	153.90	0.000	0.500	901.94	0.00	450.97
5	162.00	Flush Mount	1	31.973	35.170	1.00	1.00	5.00	157.50	0.000	-2.000	281.36	0.00	-562.72
6	162.00	800 MHz Ext. Filter	3	32.057	35.262	0.63	1.00	2.25	17.82	0.000	0.000	126.89	0.00	0.00
7	162.00	ACU-A20-N	4	32.077	35.285	0.75	1.00	0.42	3.60	0.000	0.500	23.71	0.00	11.86
8	162.00	Low Profile Platform-flat	1	32.057	35.262	1.00	1.00	25.00	1080.00	0.000	0.000	1410.49	0.00	0.00
9	162.00	800 MHz RRU	3	32.057	35.262	0.75	1.00	5.60	143.10	0.000	0.000	316.09	0.00	0.00
10	152.00	KRY 112 144/1	3	31.630	34.792	0.55	0.75	0.57	29.70	0.000	0.000	32.00	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	31.630	34.792	0.52	0.75	31.88	345.60	0.000	0.000	1774.58	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	31.630	34.792	0.65	0.75	3.81	191.70	0.000	0.000	212.20	0.00	0.00
13	152.00	APXV18-206516S-A20	3	31.630	34.792	0.57	0.75	7.46	49.95	0.000	0.000	415.04	0.00	0.00
14	152.00	FE15501P77/75	3	31.630	34.792	0.49	0.75	0.79	47.25	0.000	0.000	43.96	0.00	0.00
15	152.00	782 11056	3	31.630	34.792	0.50	0.75	0.23	4.86	0.000	0.000	12.59	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	31.630	34.792	1.00	1.00	42.00	1818.90	0.000	0.000	2338.06	0.00	0.00
17	152.00	RR90-17-02DP	6	31.630	34.792	0.55	0.75	14.32	72.90	0.000	0.000	797.31	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	30.704	33.774	0.57	0.80	4.92	79.20	0.000	0.000	265.81	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	30.704	33.774	0.60	0.80	1.30	16.74	0.000	0.000	70.03	0.00	0.00
20	132.00	RRH2X60-700	3	30.704	33.774	0.61	0.80	6.38	162.00	0.000	0.000	344.98	0.00	0.00
21	132.00	RRH2x60-1900	3	30.704	33.774	0.60	0.80	2.72	52.65	0.000	0.000	146.88	0.00	0.00
22	132.00	RRH2X60-AWS	3	30.704	33.774	0.61	0.80	6.38	162.00	0.000	0.000	344.98	0.00	0.00
23	132.00	DB846F65ZAXY	4	30.704	33.774	0.74	0.80	20.98	75.60	0.000	0.000	1133.78	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	30.704	33.774	1.36	0.80	7.10	21.60	0.000	0.000	383.63	0.00	0.00
25	132.00	SBNHH-1D65B	9	30.704	33.774	0.66	0.80	48.29	328.86	0.000	0.000	2609.33	0.00	0.00
26	132.00	Low Profile	1	30.704	33.774	1.00	1.00	22.00	1350.00	0.000	0.000	1188.86	0.00	0.00
27	124.50	Flush Mount	1	30.328	33.361	1.00	1.00	5.00	157.50	0.000	0.000	266.89	0.00	0.00
28	124.50	RRUS-11	6	30.328	33.361	0.68	1.00	18.03	297.00	0.000	0.000	962.59	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	30.328	33.361	1.00	1.00	1.47	28.62	0.000	0.000	78.46	0.00	0.00
30	122.00	Low Profile Platform-flat	1	30.199	33.219	1.00	1.00	25.00	1080.00	0.000	0.000	1328.75	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	30.199	33.219	0.65	0.80	11.76	89.10	0.000	0.000	625.11	0.00	0.00
32	122.00	LGP21903	6	30.199	33.219	0.60	0.80	0.97	29.70	0.000	0.000	51.66	0.00	0.00
33	122.00	LGP21401	6	30.199	33.219	0.60	0.80	4.64	76.14	0.000	0.000	246.83	0.00	0.00
34	122.00	7770.00	6	30.199	33.219	0.58	0.80	19.27	189.00	0.000	0.000	1024.31	0.00	0.00
35	105.00	Low Profile Platform-flat	1	29.260	32.186	1.00	1.00	25.00	1080.00	0.000	0.000	1287.43	0.00	0.00
36	80.00	738-449	1	27.657	30.423	1.00	1.00	0.01	0.45	0.000	0.350	0.49	0.00	0.17
37	75.00	GPS	1	27.259	29.985	1.00	1.00	1.00	9.00	0.000	0.000	47.98	0.00	0.00
							Totals:		**9,860.94**			**22,812.65**		

Total Applied Force Summary

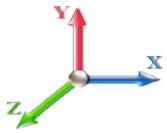
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		538.69	1409.72	0.00	0.00
10.00		528.33	1386.33	0.00	0.00
15.00		517.97	1362.93	0.00	0.00
20.00		538.60	1339.54	0.00	0.00
25.00		552.99	1316.15	0.00	0.00
30.00		562.66	1292.76	0.00	0.00
35.00		568.85	1269.37	0.00	0.00
38.75		427.59	936.67	0.00	0.00
40.00		144.06	534.75	0.00	0.00
45.00		584.83	2111.85	0.00	0.00
50.00		585.86	1071.60	0.00	0.00
55.00		588.22	1051.55	0.00	0.00
60.00		589.40	1031.49	0.00	0.00
65.00		589.55	1011.44	0.00	0.00
70.00		588.81	991.39	0.00	0.00
75.00	(1) attachments	635.24	980.34	0.00	0.00
78.50		408.95	667.51	0.00	0.00
80.00	(1) attachments	177.56	472.12	0.00	0.17
83.75		442.90	1164.17	0.00	0.00
85.00		146.02	203.13	0.00	0.00
90.00		584.57	802.06	0.00	0.00
95.00		580.58	785.35	0.00	0.00
100.00		576.09	768.64	0.00	0.00
105.00	(1) attachments	1858.56	1831.93	0.00	0.00
110.00		565.74	735.22	0.00	0.00
115.00		559.94	718.52	0.00	0.00
119.25		470.79	597.60	0.00	0.00
120.00		83.60	164.48	0.00	0.00
122.00	(22) attachments	3499.15	1899.25	0.00	0.00
123.50		143.48	302.91	0.00	0.00
124.50	(8) attachments	1402.95	587.73	0.00	0.00
125.00		47.30	52.10	0.00	0.00
130.00		467.98	513.69	0.00	0.00
132.00	(33) attachments	6671.50	2450.38	0.00	0.00
135.00		271.20	261.76	0.00	0.00
140.00		442.23	425.58	0.00	0.00
145.00		428.83	412.21	0.00	0.00
150.00		415.11	398.85	0.00	0.00
152.00	(25) attachments	5787.54	2716.66	0.00	0.00
155.00		238.61	195.83	0.00	0.00
160.00		386.74	315.68	0.00	0.00
162.00	(24) attachments	4928.45	2137.45	0.00	239.42
	Totals:	**40,128.01**	**40,678.70**	**0.00**	**239.59**

Linear Appurtenance Segment Forces (Factored)

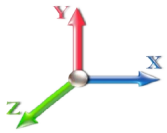
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	1.23
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	19.450	0.00	51.48
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	4.95
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	56.16
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.27
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	19.450	0.00	8.01
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	3.60
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.72
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	1.23
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	19.450	0.00	51.48
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	4.95
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	56.16
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.27
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	19.450	0.00	8.01
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	3.60
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.72
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	1.23
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	19.450	0.00	51.48
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	4.95
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	56.16
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.27
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	19.450	0.00	8.01
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	3.60
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.72
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	1.23
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	20.638	0.00	51.48
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	4.95
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	56.16
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.27
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	20.638	0.00	8.01
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	3.60
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.72
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	1.23
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	21.630	0.00	51.48
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	4.95
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	56.16
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.27
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	21.630	0.00	8.01
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	3.60
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.72
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	1.23
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	22.477	0.00	51.48
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	4.95
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	56.16
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.27
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	22.477	0.00	8.01
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	3.60

Linear Appurtenance Segment Forces (Factored)

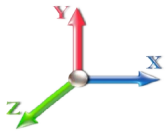
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.72
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	1.23
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	23.218	0.00	51.48
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	4.95
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	56.16
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.27
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	23.218	0.00	8.01
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	3.60
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.72
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.92
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	23.721	0.00	38.61
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	3.71
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	42.12
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.20
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	23.721	0.00	6.01
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	2.70
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.54
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.31
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	23.880	0.00	12.87
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.24
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	14.04
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	23.880	0.00	2.00
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.90
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.18
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	1.23
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	24.479	0.00	51.48
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	4.95
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	56.16
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.27
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	24.479	0.00	8.01
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	3.60
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.72
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	1.23
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	25.029	0.00	51.48
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	4.95
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	56.16
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.27
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	25.029	0.00	8.01
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	3.60
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.72
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	1.23
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	25.536	0.00	51.48
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	4.95
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	56.16
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.27
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	25.536	0.00	8.01

Linear Appurtenance Segment Forces (Factored)

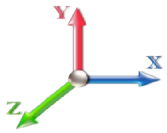
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	3.60
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.72
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	1.23
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	26.008	0.00	51.48
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	4.95
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	56.16
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.27
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	26.008	0.00	8.01
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	3.60
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.72
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	1.23
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	26.450	0.00	51.48
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	4.95
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	56.16
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.27
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	26.450	0.00	8.01
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	3.60
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.72
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	1.23
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	26.866	0.00	51.48
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	4.95
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	56.16
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.27
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	26.866	0.00	8.01
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	3.60
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.72
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	1.23
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	27.259	0.00	51.48
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	4.95
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	56.16
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.27
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	27.259	0.00	8.01
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	3.60
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.72
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.86
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	27.522	0.00	36.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	3.47
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	39.31
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.19
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	27.522	0.00	5.61
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	2.52
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.37
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	27.632	0.00	15.44
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.49
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	16.85
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.08
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	27.632	0.00	2.40

Linear Appurtenance Segment Forces (Factored)

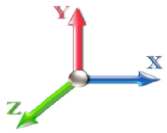
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.08
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.92
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	27.899	0.00	38.61
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	3.71
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	42.12
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.20
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	27.899	0.00	6.01
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	2.70
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.31
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	27.987	0.00	12.87
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.24
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	14.04
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	27.987	0.00	2.00
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.90
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	1.23
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	28.325	0.00	51.48
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	4.95
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	56.16
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	0.27
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	28.325	0.00	8.01
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	3.60
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	1.23
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	28.650	0.00	51.48
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	4.95
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	56.16
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	0.27
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	28.650	0.00	8.01
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	3.60
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	1.23
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	28.961	0.00	51.48
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	4.95
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	56.16
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	0.27
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	28.961	0.00	8.01
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	3.60
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	1.23
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	29.260	0.00	51.48
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	4.95
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	56.16
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	0.27
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	29.260	0.00	8.01
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	3.60
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	1.23
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	29.548	0.00	51.48
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	4.95
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	56.16

Linear Appurtenance Segment Forces (Factored)

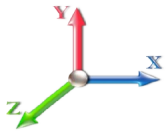
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	0.27
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	29.548	0.00	8.01
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	3.60
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	1.23
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	29.826	0.00	51.48
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	4.95
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	56.16
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	0.27
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	29.826	0.00	8.01
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	3.60
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	1.04
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	30.054	0.00	43.76
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	4.21
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	47.74
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	0.23
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	30.054	0.00	6.81
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	3.06
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.18
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	30.094	0.00	7.72
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.74
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	8.42
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.04
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	30.094	0.00	1.20
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.54
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.49
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	30.199	0.00	20.59
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.98
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	22.46
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.11
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	30.199	0.00	3.20
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.44
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	0.37
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	30.277	0.00	15.44
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	1.49
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.25
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	30.328	0.00	10.30
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.99
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.12
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	30.354	0.00	5.15
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.50
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	1.23
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	30.605	0.00	51.48
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	4.95
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	0.49
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	30.704	0.00	20.59
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	1.98
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	0.74

Linear Appurtenance Segment Forces (Factored)

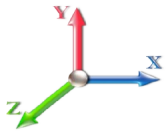
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	30.850	0.00	30.89
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	2.97
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	1.23
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	31.087	0.00	51.48
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	4.95
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	1.23
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	31.317	0.00	51.48
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	4.95
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	1.23
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	31.541	0.00	51.48
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	4.95
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	0.49
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	31.630	0.00	20.59
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	1.98
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	31.760	0.00	0.74
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.973	0.00	1.23
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	32.057	0.00	0.49
										Totals:	**0.0**	**3,426.3**

Calculated Forces

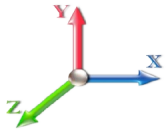
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.61	-40.20	0.00	-4702.3	0.00	4702.39	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.743
5.00	-39.06	-39.79	0.00	-4501.4	0.00	4501.40	5354.65	2677.32	12373.4	6195.90	0.11	-0.198	0.000	0.734
10.00	-37.54	-39.39	0.00	-4302.4	0.00	4302.43	5285.82	2642.91	11973.5	5995.67	0.42	-0.399	0.000	0.725
15.00	-36.04	-38.99	0.00	-4105.4	0.00	4105.48	5215.55	2607.78	11576.7	5796.99	0.95	-0.602	0.000	0.715
20.00	-34.57	-38.56	0.00	-3910.5	0.00	3910.53	5143.86	2571.93	11183.2	5599.96	1.69	-0.808	0.000	0.705
25.00	-33.12	-38.11	0.00	-3717.7	0.00	3717.74	5070.72	2535.36	10793.2	5404.66	2.65	-1.017	0.000	0.695
30.00	-31.70	-37.64	0.00	-3527.2	0.00	3527.20	4996.16	2498.08	10406.9	5211.21	3.83	-1.228	0.000	0.683
35.00	-30.32	-37.14	0.00	-3339.0	0.00	3339.01	4920.16	2460.08	10024.5	5019.70	5.23	-1.441	0.000	0.672
38.75	-29.33	-36.74	0.00	-3199.7	0.00	3199.75	4862.22	2431.11	9740.32	4877.40	6.42	-1.603	0.000	0.662
40.00	-28.71	-36.65	0.00	-3153.8	0.00	3153.82	4842.73	2421.36	9646.11	4830.22	6.85	-1.659	0.000	0.659
45.00	-26.48	-36.10	0.00	-2970.5	0.00	2970.56	3936.38	1968.19	7803.92	3907.76	8.71	-1.876	0.000	0.767
50.00	-25.29	-35.58	0.00	-2790.0	0.00	2790.05	3877.34	1938.67	7510.22	3760.69	10.79	-2.095	0.000	0.749
55.00	-24.11	-35.06	0.00	-2612.1	0.00	2612.14	3816.87	1908.43	7219.20	3614.96	13.11	-2.339	0.000	0.729
60.00	-22.96	-34.52	0.00	-2436.8	0.00	2436.86	3754.96	1877.48	6931.04	3470.67	15.69	-2.583	0.000	0.709
65.00	-21.83	-33.98	0.00	-2264.2	0.00	2264.25	3691.62	1845.81	6645.93	3327.91	18.53	-2.828	0.000	0.687
70.00	-20.73	-33.43	0.00	-2094.3	0.00	2094.35	3626.84	1813.42	6364.09	3186.77	21.62	-3.073	0.000	0.663
75.00	-19.67	-32.81	0.00	-1927.2	0.00	1927.21	3560.63	1780.31	6085.69	3047.37	24.97	-3.317	0.000	0.638
78.50	-18.96	-32.40	0.00	-1812.3	0.00	1812.37	3513.43	1756.71	5892.98	2950.87	27.47	-3.488	0.000	0.620
80.00	-18.42	-32.24	0.00	-1763.7	0.00	1763.76	3492.98	1746.49	5810.95	2909.79	28.57	-3.562	0.000	0.612
83.75	-17.22	-31.76	0.00	-1642.8	0.00	1642.87	2742.50	1371.25	4553.78	2280.28	31.44	-3.744	0.000	0.727
85.00	-16.94	-31.65	0.00	-1603.1	0.00	1603.17	2730.37	1365.18	4502.54	2254.62	32.43	-3.805	0.000	0.718
90.00	-16.03	-31.09	0.00	-1444.9	0.00	1444.92	2680.95	1340.47	4298.92	2152.65	36.56	-4.073	0.000	0.678
95.00	-15.16	-30.52	0.00	-1289.4	0.00	1289.49	2630.10	1315.05	4097.56	2051.82	40.96	-4.334	0.000	0.635
100.00	-14.31	-29.95	0.00	-1136.9	0.00	1136.91	2577.82	1288.91	3898.66	1952.23	45.64	-4.586	0.000	0.588
105.00	-12.52	-27.99	0.00	-987.19	0.00	987.19	2524.10	1262.05	3702.43	1853.97	50.57	-4.827	0.000	0.538
110.00	-11.73	-27.41	0.00	-847.22	0.00	847.22	2468.95	1234.47	3509.05	1757.13	55.74	-5.056	0.000	0.487
115.00	-10.98	-26.83	0.00	-710.16	0.00	710.16	2412.36	1206.18	3318.73	1661.83	61.14	-5.269	0.000	0.432
119.25	-10.38	-26.32	0.00	-596.14	0.00	596.14	2363.14	1181.57	3159.50	1582.10	65.91	-5.436	0.000	0.382
120.00	-10.20	-26.23	0.00	-576.41	0.00	576.41	2354.34	1177.17	3131.65	1568.15	66.76	-5.465	0.000	0.372
122.00	-8.62	-22.57	0.00	-523.95	0.00	523.95	2330.73	1165.37	3057.78	1531.16	69.06	-5.538	0.000	0.346
123.50	-8.32	-22.41	0.00	-490.09	0.00	490.09	1751.58	875.79	2319.28	1161.36	70.81	-5.591	0.000	0.427
124.50	-7.86	-20.96	0.00	-467.68	0.00	467.68	1743.79	871.89	2293.08	1148.24	71.98	-5.625	0.000	0.412
125.00	-7.77	-20.92	0.00	-457.20	0.00	457.20	1739.87	869.94	2280.00	1141.69	72.57	-5.645	0.000	0.406
130.00	-7.27	-20.42	0.00	-352.60	0.00	352.60	1699.92	849.96	2150.20	1076.70	78.57	-5.822	0.000	0.332
132.00	-5.49	-13.54	0.00	-311.76	0.00	311.76	1683.54	841.77	2098.80	1050.96	81.02	-5.887	0.000	0.300
135.00	-5.24	-13.25	0.00	-271.15	0.00	271.15	1658.53	829.27	2022.29	1012.65	84.75	-5.975	0.000	0.271
140.00	-4.83	-12.78	0.00	-204.89	0.00	204.89	1615.71	807.86	1896.47	949.64	91.07	-6.104	0.000	0.219
145.00	-4.45	-12.31	0.00	-141.00	0.00	141.00	1571.46	785.73	1772.93	887.78	97.51	-6.209	0.000	0.162
150.00	-4.09	-11.86	0.00	-79.43	0.00	79.43	1525.77	762.88	1651.87	827.16	104.04	-6.285	0.000	0.099
152.00	-2.02	-5.81	0.00	-55.71	0.00	55.71	1507.09	753.54	1604.19	803.29	106.67	-6.306	0.000	0.071
155.00	-1.85	-5.55	0.00	-38.28	0.00	38.28	1478.64	739.32	1533.49	767.89	110.64	-6.328	0.000	0.051
160.00	-1.58	-5.13	0.00	-10.51	0.00	10.51	1426.03	713.01	1413.96	708.03	117.26	-6.350	0.000	0.016
162.00	0.00	-4.93	0.00	-0.24	0.00	0.24	1400.09	700.04	1362.73	682.38	119.92	-6.352	0.000	0.000

Wind Loading - Shaft

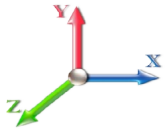
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	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	1.242	5.00	25.244	30.29	172.2	450.6	2060.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	24.853	29.82	169.5	474.5	2053.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.434	29.32	166.7	485.1	2032.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.002	28.80	173.7	489.7	2005.9
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.563	28.28	178.8	491.0	1976.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.120	27.74	182.3	490.0	1943.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.674	27.21	184.6	487.5	1910.1
38.75	Bot - Section 2	1.00	1.04	6.303	6.93	0.00	1.200	1.524	3.75	16.710	20.05	139.0	363.5	1410.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	1.25	5.592	6.71	46.8	122.7	768.3
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.205 *	1.547	5.00	22.092	26.61	190.4	486.2	3032.1
50.00		1.00	1.09	6.650	7.32	0.00	1.207 *	1.564	5.00	21.641	26.13	191.1	480.7	1639.7
55.00		1.00	1.12	6.785	7.46	0.00	1.216 *	1.579	5.00	21.188	25.76	192.3	474.6	1606.8
60.00		1.00	1.14	6.910	7.60	0.00	1.225 *	1.592	5.00	20.734	25.40	193.1	467.9	1573.4
65.00		1.00	1.16	7.028	7.73	0.00	1.234 *	1.605	5.00	20.279	25.03	193.5	460.7	1539.5
70.00		1.00	1.17	7.138	7.85	0.00	1.244 *	1.617	5.00	19.823	24.67	193.7	453.1	1505.1
75.00	Appurtenance(s)	1.00	1.19	7.243	7.97	0.00	1.255 *	1.628	5.00	19.367	24.30	193.6	445.1	1470.4
78.50	Bot - Section 3	1.00	1.20	7.313	8.04	0.00	1.264 *	1.636	3.50	13.284	16.79	135.1	307.5	1009.3
80.00	Appurtenance(s)	1.00	1.21	7.342	8.08	0.00	1.270 *	1.639	1.50	5.704	7.24	58.5	133.0	681.2
83.75	Top - Section 2	1.00	1.22	7.413	8.15	0.00	1.276 *	1.646	3.75	14.080	17.97	146.5	327.6	1678.9
85.00		1.00	1.22	7.436	8.18	0.00	1.275 *	1.649	1.25	4.636	5.91	48.4	108.7	312.5
90.00		1.00	1.24	7.526	8.28	0.00	1.283 *	1.658	5.00	18.260	23.42	193.9	425.8	1227.3
95.00		1.00	1.25	7.612	8.37	0.00	1.295 *	1.667	5.00	17.802	23.06	193.1	416.7	1195.9
100.00		1.00	1.27	7.695	8.46	0.00	1.308 *	1.676	5.00	17.344	22.69	192.1	407.4	1164.3
105.00	Appurtenance(s)	1.00	1.28	7.774	8.55	0.00	1.323 *	1.684	5.00	16.885	22.33	191.0	397.9	1132.5
110.00		1.00	1.29	7.851	8.64	0.00	1.337 *	1.692	5.00	16.426	21.97	189.7	388.1	1100.5
115.00		1.00	1.30	7.925	8.72	0.00	1.353 *	1.699	5.00	15.967	21.61	188.4	378.2	1068.3
119.25	Bot - Section 4	1.00	1.31	7.986	8.78	0.00	1.369 *	1.706	4.25	13.210	18.09	158.9	314.2	883.3
120.00		1.00	1.32	7.996	8.80	0.00	1.378 *	1.707	0.75	2.328	3.21	28.2	56.0	235.1
122.00	Appurtenance(s)	1.00	1.32	8.024	8.83	0.00	1.383 *	1.710	2.00	6.158	8.52	75.2	147.8	621.0
123.50	Top - Section 3	1.00	1.32	8.045	8.85	0.00	1.200	1.712	1.50	4.570	5.48	48.5	109.9	460.6
124.50	Appurtenance(s)	1.00	1.33	8.058	8.86	0.00	1.200	1.713	1.00	3.024	3.63	32.2	72.9	176.9
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	0.50	1.505	1.81	16.0	36.3	88.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	14.800	17.76	158.9	352.9	860.7
132.00	Appurtenance(s)	1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	5.790	6.95	62.4	139.5	337.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.00	8.548	10.26	92.5	205.5	497.3
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	13.879	16.66	151.3	331.8	803.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	13.419	16.10	147.4	321.0	775.3
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	12.958	15.55	143.4	310.2	746.6
152.00	Appurtenance(s)	1.00	1.38	8.404	9.24	0.00	1.200	1.748	2.00	5.054	6.06	56.1	122.3	291.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	3.00	7.443	8.93	82.9	179.5	428.5
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	5.00	12.037	14.44	135.0	288.1	688.9
162.00	Appurtenance(s)	1.00	1.40	8.518	9.37	0.00	1.200	1.759	2.00	4.685	5.62	52.7	113.4	268.8
								Totals:	**162.00**			**5,739.2**		**47,262.6**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

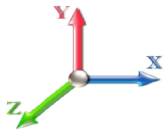
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	8.518	9.369	0.88	1.00	13.73	394.82	0.000	0.000	128.64	0.00	0.00
2	162.00	APXVTM14-C-120	3	8.523	9.375	0.63	0.80	14.15	687.31	0.000	0.500	132.65	0.00	66.33
3	162.00	TD-RRH8x20-25	3	8.518	9.369	0.69	1.00	10.08	586.49	0.000	0.000	94.45	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	8.523	9.375	0.66	0.80	21.58	579.26	0.000	0.500	202.36	0.00	101.18
5	162.00	Flush Mount	1	8.495	9.345	1.00	1.00	8.52	307.73	0.000	-2.000	79.59	0.00	-159.19
6	162.00	800 MHz Ext. Filter	3	8.518	9.369	0.63	1.00	3.75	76.34	0.000	0.000	35.11	0.00	0.00
7	162.00	ACU-A20-N	4	8.523	9.375	0.75	1.00	1.32	16.92	0.000	0.500	12.35	0.00	6.17
8	162.00	Low Profile Platform-flat	1	8.518	9.369	1.00	1.00	46.10	2195.22	0.000	0.000	431.97	0.00	0.00
9	162.00	800 MHz RRU	3	8.518	9.369	0.75	1.00	8.20	351.09	0.000	0.000	76.79	0.00	0.00
10	152.00	KRY 112 144/1	3	8.404	9.244	0.58	0.75	1.33	62.69	0.000	0.000	12.27	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	8.404	9.244	0.52	0.75	34.87	1716.47	0.000	0.000	322.40	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	8.404	9.244	0.65	0.75	4.87	375.15	0.000	0.000	45.04	0.00	0.00
13	152.00	APXV18-206516S-A20	3	8.404	9.244	0.58	0.75	11.59	214.25	0.000	0.000	107.18	0.00	0.00
14	152.00	FE15501P77/75	3	8.404	9.244	0.49	0.75	1.28	119.69	0.000	0.000	11.81	0.00	0.00
15	152.00	782 11056	3	8.404	9.244	0.50	0.75	0.55	11.97	0.000	0.000	5.09	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	8.404	9.244	1.00	1.00	78.70	4902.08	0.000	0.000	727.52	0.00	0.00
17	152.00	RR90-17-02DP	6	8.404	9.244	0.55	0.75	17.57	690.41	0.000	0.000	162.39	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	8.158	8.974	0.57	0.80	6.43	388.76	0.000	0.000	57.72	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	8.158	8.974	0.60	0.80	2.87	56.07	0.000	0.000	25.77	0.00	0.00
20	132.00	RRH2X60-700	3	8.158	8.974	0.61	0.80	7.81	414.24	0.000	0.000	70.04	0.00	0.00
21	132.00	RRH2x60-1900	3	8.158	8.974	0.60	0.80	3.69	246.89	0.000	0.000	33.16	0.00	0.00
22	132.00	RRH2X60-AWS	3	8.158	8.974	0.61	0.80	7.81	414.24	0.000	0.000	70.04	0.00	0.00
23	132.00	DB846F65ZAXY	4	8.158	8.974	0.74	0.80	24.59	878.42	0.000	0.000	220.70	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	8.158	8.974	1.36	0.80	9.51	190.90	0.000	0.000	85.35	0.00	0.00
25	132.00	SBNHH-1D65B	9	8.158	8.974	0.66	0.80	55.90	2225.53	0.000	0.000	501.66	0.00	0.00
26	132.00	Low Profile	1	8.158	8.974	1.00	1.00	39.44	2792.29	0.000	0.000	353.91	0.00	0.00
27	124.50	Flush Mount	1	8.058	8.864	1.00	1.00	8.43	303.89	0.000	0.000	74.69	0.00	0.00
28	124.50	RRUS-11	6	8.058	8.864	0.68	1.00	24.04	771.59	0.000	0.000	213.08	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	8.058	8.864	1.00	1.00	2.16	81.14	0.000	0.000	19.12	0.00	0.00
30	122.00	Low Profile Platform-flat	1	8.024	8.826	1.00	1.00	45.51	2165.72	0.000	0.000	401.72	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	8.024	8.826	0.65	0.80	15.76	419.78	0.000	0.000	139.09	0.00	0.00
32	122.00	LGP21903	6	8.024	8.826	0.60	0.80	2.37	74.73	0.000	0.000	20.96	0.00	0.00
33	122.00	LGP21401	6	8.024	8.826	0.60	0.80	7.59	205.86	0.000	0.000	67.00	0.00	0.00
34	122.00	7770.00	6	8.024	8.826	0.58	0.80	22.92	1042.76	0.000	0.000	202.33	0.00	0.00
35	105.00	Low Profile Platform-flat	1	7.774	8.552	1.00	1.00	45.21	2150.44	0.000	0.000	386.62	0.00	0.00
36	80.00	738-449	1	7.349	8.083	1.00	1.00	0.07	1.84	0.000	0.350	0.55	0.00	0.19
37	75.00	GPS	1	7.243	7.967	1.00	1.00	1.66	31.36	0.000	0.000	13.26	0.00	0.00
							Totals:		**28,144.33**			**5,544.39**		

Total Applied Force Summary

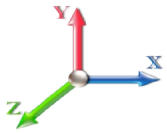
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		172.21	2707.73	0.00	0.00
10.00		169.54	2730.18	0.00	0.00
15.00		166.68	2728.31	0.00	0.00
20.00		173.73	2715.77	0.00	0.00
25.00		178.76	2697.10	0.00	0.00
30.00		182.26	2674.39	0.00	0.00
35.00		184.64	2648.80	0.00	0.00
38.75		139.02	1968.20	0.00	0.00
40.00		46.84	954.73	0.00	0.00
45.00		190.41	3784.54	0.00	0.00
50.00		191.12	2397.97	0.00	0.00
55.00		192.27	2370.51	0.00	0.00
60.00		193.05	2342.09	0.00	0.00
65.00		193.51	2312.84	0.00	0.00
70.00		193.68	2282.86	0.00	0.00
75.00	(1) attachments	206.87	2283.61	0.00	0.00
78.50		135.08	1543.41	0.00	0.00
80.00	(1) attachments	59.04	912.26	0.00	0.19
83.75		146.49	2253.17	0.00	0.00
85.00		48.35	504.15	0.00	0.00
90.00		193.89	1997.11	0.00	0.00
95.00		193.06	1968.86	0.00	0.00
100.00		192.08	1940.25	0.00	0.00
105.00	(1) attachments	577.59	4061.74	0.00	0.00
110.00		189.73	1882.04	0.00	0.00
115.00		188.37	1852.49	0.00	0.00
119.25		158.86	1551.67	0.00	0.00
120.00		28.22	353.15	0.00	0.00
122.00	(22) attachments	906.26	4844.95	0.00	0.00
123.50		48.53	584.06	0.00	0.00
124.50	(8) attachments	339.06	1415.85	0.00	0.00
125.00		16.02	129.25	0.00	0.00
130.00		158.86	1273.43	0.00	0.00
132.00	(33) attachments	1480.72	8110.21	0.00	0.00
135.00		92.49	696.43	0.00	0.00
140.00		151.33	1136.82	0.00	0.00
145.00		147.39	1109.19	0.00	0.00
150.00		143.35	1081.43	0.00	0.00
152.00	(25) attachments	1449.77	8518.68	0.00	0.00
155.00		82.91	453.40	0.00	0.00
160.00		134.98	730.44	0.00	0.00
162.00	(24) attachments	1246.59	5480.60	0.00	14.49
	Totals:	**11,283.61**	**95,984.66**	**0.00**	**14.68**

Linear Appurtenance Segment Forces (Factored)

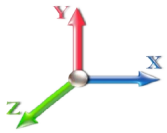
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	12.93
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.86	0.00	0.086	0.000	5.168	0.00	201.26
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	27.35
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	218.70
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	11.68
5.00	3" Coax	Yes	5.00	0.000	3.00	2.29	0.00	0.086	0.000	5.168	0.00	38.50
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	21.94
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	13.70
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	14.46
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.93	0.00	0.087	0.000	5.168	0.00	210.21
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	29.45
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	228.34
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	13.21
10.00	3" Coax	Yes	5.00	0.000	3.00	2.36	0.00	0.087	0.000	5.168	0.00	40.94
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	23.86
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	15.33
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	15.46
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.98	0.00	0.089	0.000	5.168	0.00	215.79
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	30.79
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	234.34
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	14.21
15.00	3" Coax	Yes	5.00	0.000	3.00	2.41	0.00	0.089	0.000	5.168	0.00	42.51
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	25.10
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	16.38
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	16.21
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.01	0.00	0.091	0.000	5.483	0.00	219.91
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	31.80
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	238.78
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	14.96
20.00	3" Coax	Yes	5.00	0.000	3.00	2.44	0.00	0.091	0.000	5.483	0.00	43.68
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	26.03
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	17.18
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	16.83
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.04	0.00	0.093	0.000	5.747	0.00	223.21
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	32.62
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	242.32
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	15.58
25.00	3" Coax	Yes	5.00	0.000	3.00	2.47	0.00	0.093	0.000	5.747	0.00	44.62
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	26.78
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	17.83
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	17.35
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.06	0.00	0.095	0.000	5.972	0.00	225.96
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	33.31
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	245.28
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	16.10
30.00	3" Coax	Yes	5.00	0.000	3.00	2.49	0.00	0.095	0.000	5.972	0.00	45.42
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	27.42

Linear Appurtenance Segment Forces (Factored)

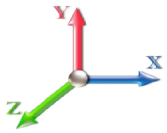
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	18.38
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	17.80
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.08	0.00	0.097	0.000	6.169	0.00	228.34
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	33.91
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	247.84
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	16.56
35.00	3" Coax	Yes	5.00	0.000	3.00	2.51	0.00	0.097	0.000	6.169	0.00	46.11
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	27.98
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	18.86
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	13.58
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.57	0.00	0.099	0.000	6.303	0.00	172.45
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	25.74
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	187.16
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	12.65
38.75	3" Coax	Yes	3.75	0.000	3.00	1.89	0.00	0.099	0.000	6.303	0.00	34.94
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	21.27
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	14.39
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.55
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.52	0.00	0.100	0.000	6.345	0.00	57.61
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	8.61
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	62.52
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.24
40.00	3" Coax	Yes	1.25	0.000	3.00	0.63	0.00	0.100	0.000	6.345	0.00	11.68
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	7.12
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.82
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	18.58
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.11	0.00	0.101	1.004	6.504	0.00	232.31
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	34.93
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	252.10
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	17.33
45.00	3" Coax	Yes	5.00	0.000	3.00	2.54	0.00	0.101	1.004	6.504	0.00	47.28
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	28.92
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	19.67
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	18.91
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.13	0.00	0.102	1.006	6.650	0.00	234.01
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	35.37
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	253.93
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	17.67
50.00	3" Coax	Yes	5.00	0.000	3.00	2.55	0.00	0.102	1.006	6.650	0.00	47.79
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	29.33
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	20.02
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	19.22
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.14	0.00	0.104	1.013	6.785	0.00	235.57
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	35.77
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	255.60
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	17.98
55.00	3" Coax	Yes	5.00	0.000	3.00	2.57	0.00	0.104	1.013	6.785	0.00	48.25

Linear Appurtenance Segment Forces (Factored)

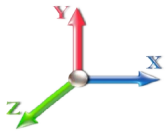
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	29.70
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	20.35
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	19.51
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.15	0.00	0.107	1.021	6.910	0.00	237.00
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	36.14
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	257.14
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	18.26
60.00	3" Coax	Yes	5.00	0.000	3.00	2.58	0.00	0.107	1.021	6.910	0.00	48.68
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	30.05
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	20.65
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	19.78
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.16	0.00	0.110	1.029	7.028	0.00	238.34
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	36.49
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	258.57
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	18.53
65.00	3" Coax	Yes	5.00	0.000	3.00	2.59	0.00	0.110	1.029	7.028	0.00	49.08
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	30.37
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	20.93
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	20.03
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.17	0.00	0.112	1.037	7.138	0.00	239.58
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	36.82
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	259.91
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	18.79
70.00	3" Coax	Yes	5.00	0.000	3.00	2.60	0.00	0.112	1.037	7.138	0.00	49.45
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	30.68
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	21.20
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	20.27
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.18	0.00	0.115	1.046	7.243	0.00	240.75
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	37.13
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	261.17
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	19.02
75.00	3" Coax	Yes	5.00	0.000	3.00	2.61	0.00	0.115	1.046	7.243	0.00	49.81
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	30.97
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	21.45
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	14.30
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	1.53	0.00	0.118	1.053	7.313	0.00	169.07
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	26.14
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	183.40
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	13.43
78.50	3" Coax	Yes	3.50	0.000	3.00	1.83	0.00	0.118	1.053	7.313	0.00	35.03
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	21.81
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	6.15
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.66	0.00	0.119	1.058	7.342	0.00	72.56
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	11.23
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	78.71
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	5.77
80.00	3" Coax	Yes	1.50	0.000	3.00	0.78	0.00	0.119	1.058	7.342	0.00	15.04

Linear Appurtenance Segment Forces (Factored)

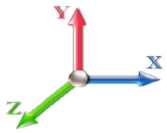
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	9.37
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	15.49
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.65	0.00	0.121	1.063	7.413	0.00	181.98
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	28.22
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	197.40
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	14.56
83.75	3" Coax	Yes	3.75	0.000	3.00	1.97	0.00	0.121	1.063	7.413	0.00	37.79
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	23.57
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	5.18
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.55	0.00	0.121	1.063	7.436	0.00	60.73
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	9.43
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	65.87
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	4.87
85.00	3" Coax	Yes	1.25	0.000	3.00	0.66	0.00	0.121	1.063	7.436	0.00	12.61
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	7.87
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	20.91
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.123	1.069	7.526	0.00	243.89
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	37.97
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	264.54
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	19.67
90.00	3" Coax	Yes	5.00	0.000	3.00	2.63	0.00	0.123	1.069	7.526	0.00	50.76
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	31.74
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	21.11
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.126	1.079	7.612	0.00	244.84
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	38.22
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	265.55
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	19.87
95.00	3" Coax	Yes	5.00	0.000	3.00	2.64	0.00	0.126	1.079	7.612	0.00	51.05
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	31.98
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	21.30
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.22	0.00	0.130	1.090	7.695	0.00	245.74
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	38.46
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	266.52
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	20.05
100.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.130	1.090	7.695	0.00	51.32
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	32.20
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	21.48
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.134	1.102	7.774	0.00	246.60
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	38.69
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	267.44
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	20.23
105.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.134	1.102	7.774	0.00	51.59
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	32.42
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	21.65
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.138	1.115	7.851	0.00	247.43
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	38.92
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	268.33

Linear Appurtenance Segment Forces (Factored)

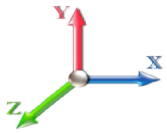
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	20.41
110.00	3" Coax	Yes	5.00	0.000	3.00	2.66	0.00	0.138	1.115	7.851	0.00	51.84
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	32.63
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	21.82
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.24	0.00	0.143	1.128	7.925	0.00	248.22
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	39.13
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	269.18
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	20.57
115.00	3" Coax	Yes	5.00	0.000	3.00	2.67	0.00	0.143	1.128	7.925	0.00	52.09
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	32.83
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	18.66
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	1.91	0.00	0.147	1.141	7.986	0.00	211.54
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	33.41
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	229.40
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	17.61
119.25	3" Coax	Yes	4.25	0.000	3.00	2.27	0.00	0.147	1.141	7.986	0.00	44.45
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	28.04
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.30
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.34	0.00	0.149	1.148	7.996	0.00	37.35
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	5.90
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	40.50
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.11
120.00	3" Coax	Yes	0.75	0.000	3.00	0.40	0.00	0.149	1.148	7.996	0.00	7.85
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	4.95
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.82
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.151	1.152	8.024	0.00	99.71
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	15.77
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	108.13
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.32
122.00	3" Coax	Yes	2.00	0.000	3.00	1.07	0.00	0.151	1.152	8.024	0.00	20.97
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	13.24
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	6.63
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.68	0.00	0.061	0.000	8.045	0.00	74.85
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	11.84
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	4.42
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.060	0.000	8.058	0.00	49.93
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	7.90
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	2.21
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.061	0.000	8.065	0.00	24.97
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	3.95
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	22.29
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.26	0.00	0.062	0.000	8.132	0.00	250.44
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	39.73
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	8.94
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.063	0.000	8.158	0.00	100.29
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	15.92
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	13.46

Linear Appurtenance Segment Forces (Factored)

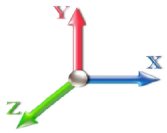
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.36	0.00	0.064	0.000	8.197	0.00	150.67
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	23.95
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	22.57
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.066	0.000	8.260	0.00	251.79
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	40.10
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	22.71
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.069	0.000	8.321	0.00	252.43
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	40.28
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	22.85
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.28	0.00	0.072	0.000	8.381	0.00	253.06
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	40.45
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	9.16
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.074	0.000	8.404	0.00	101.32
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	16.21
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	13.79
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	23.11
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.518	0.00	9.26
										Totals:	**0.0**	**17,803.1**

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

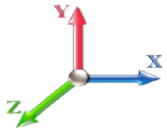
Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 24



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	-95.98	-11.33	0.00	-1346.5	0.00	1346.59	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.228
5.00	-93.26	-11.25	0.00	-1289.9	0.00	1289.93	5354.65	2677.32	12373.4	6195.90	0.03	-0.057	0.000	0.226
10.00	-90.52	-11.17	0.00	-1233.6	0.00	1233.68	5285.82	2642.91	11973.5	5995.67	0.12	-0.114	0.000	0.223
15.00	-87.78	-11.09	0.00	-1177.8	0.00	1177.83	5215.55	2607.78	11576.7	5796.99	0.27	-0.173	0.000	0.220
20.00	-85.05	-10.99	0.00	-1122.4	0.00	1122.41	5143.86	2571.93	11183.2	5599.96	0.48	-0.232	0.000	0.217
25.00	-82.35	-10.89	0.00	-1067.4	0.00	1067.45	5070.72	2535.36	10793.2	5404.66	0.76	-0.292	0.000	0.214
30.00	-79.66	-10.77	0.00	-1013.0	0.00	1013.03	4996.16	2498.08	10406.9	5211.21	1.10	-0.352	0.000	0.210
35.00	-77.00	-10.64	0.00	-959.16	0.00	959.16	4920.16	2460.08	10024.5	5019.70	1.50	-0.413	0.000	0.207
38.75	-75.03	-10.53	0.00	-919.25	0.00	919.25	4862.22	2431.11	9740.32	4877.40	1.84	-0.460	0.000	0.204
40.00	-74.07	-10.53	0.00	-906.09	0.00	906.09	4842.73	2421.36	9646.11	4830.22	1.97	-0.476	0.000	0.203
45.00	-70.27	-10.38	0.00	-853.45	0.00	853.45	3936.38	1968.19	7803.92	3907.76	2.50	-0.538	0.000	0.236
50.00	-67.87	-10.24	0.00	-801.56	0.00	801.56	3877.34	1938.67	7510.22	3760.69	3.10	-0.601	0.000	0.231
55.00	-65.49	-10.11	0.00	-750.34	0.00	750.34	3816.87	1908.43	7219.20	3614.96	3.76	-0.671	0.000	0.225
60.00	-63.13	-9.96	0.00	-699.82	0.00	699.82	3754.96	1877.48	6931.04	3470.67	4.50	-0.742	0.000	0.218
65.00	-60.81	-9.81	0.00	-650.02	0.00	650.02	3691.62	1845.81	6645.93	3327.91	5.32	-0.812	0.000	0.212
70.00	-58.52	-9.65	0.00	-600.97	0.00	600.97	3626.84	1813.42	6364.09	3186.77	6.21	-0.882	0.000	0.205
75.00	-56.23	-9.47	0.00	-552.70	0.00	552.70	3560.63	1780.31	6085.69	3047.37	7.17	-0.952	0.000	0.197
78.50	-54.69	-9.34	0.00	-519.55	0.00	519.55	3513.43	1756.71	5892.98	2950.87	7.88	-1.001	0.000	0.192
80.00	-53.77	-9.30	0.00	-505.54	0.00	505.54	3492.98	1746.49	5810.95	2909.79	8.20	-1.023	0.000	0.189
83.75	-51.51	-9.14	0.00	-470.67	0.00	470.67	2742.50	1371.25	4553.78	2280.28	9.03	-1.074	0.000	0.225
85.00	-51.00	-9.13	0.00	-459.24	0.00	459.24	2730.37	1365.18	4502.54	2254.62	9.31	-1.092	0.000	0.222
90.00	-49.00	-8.96	0.00	-413.59	0.00	413.59	2680.95	1340.47	4298.92	2152.65	10.50	-1.169	0.000	0.210
95.00	-47.02	-8.79	0.00	-368.79	0.00	368.79	2630.10	1315.05	4097.56	2051.82	11.76	-1.243	0.000	0.198
100.00	-45.08	-8.61	0.00	-324.87	0.00	324.87	2577.82	1288.91	3898.66	1952.23	13.10	-1.316	0.000	0.184
105.00	-41.02	-7.98	0.00	-281.84	0.00	281.84	2524.10	1262.05	3702.43	1853.97	14.52	-1.384	0.000	0.168
110.00	-39.13	-7.79	0.00	-241.93	0.00	241.93	2468.95	1234.47	3509.05	1757.13	16.00	-1.450	0.000	0.154
115.00	-37.28	-7.59	0.00	-202.99	0.00	202.99	2412.36	1206.18	3318.73	1661.83	17.55	-1.510	0.000	0.138
119.25	-35.73	-7.40	0.00	-170.75	0.00	170.75	2363.14	1181.57	3159.50	1582.10	18.92	-1.558	0.000	0.123
120.00	-35.38	-7.37	0.00	-165.20	0.00	165.20	2354.34	1177.17	3131.65	1568.15	19.17	-1.567	0.000	0.120
122.00	-30.55	-6.35	0.00	-150.45	0.00	150.45	2330.73	1165.37	3057.78	1531.16	19.83	-1.588	0.000	0.111
123.50	-29.97	-6.29	0.00	-140.93	0.00	140.93	1751.58	875.79	2319.28	1161.36	20.33	-1.603	0.000	0.139
124.50	-28.56	-5.91	0.00	-134.64	0.00	134.64	1743.79	871.89	2293.08	1148.24	20.67	-1.613	0.000	0.134
125.00	-28.43	-5.91	0.00	-131.69	0.00	131.69	1739.87	869.94	2280.00	1141.69	20.84	-1.618	0.000	0.132
130.00	-27.16	-5.73	0.00	-102.15	0.00	102.15	1699.92	849.96	2150.20	1076.70	22.56	-1.670	0.000	0.111
132.00	-19.10	-4.02	0.00	-90.70	0.00	90.70	1683.54	841.77	2098.80	1050.96	23.26	-1.688	0.000	0.098
135.00	-18.40	-3.91	0.00	-78.65	0.00	78.65	1658.53	829.27	2022.29	1012.65	24.33	-1.714	0.000	0.089
140.00	-17.27	-3.74	0.00	-59.07	0.00	59.07	1615.71	807.86	1896.47	949.64	26.15	-1.751	0.000	0.073
145.00	-16.16	-3.57	0.00	-40.38	0.00	40.38	1571.46	785.73	1772.93	887.78	28.00	-1.782	0.000	0.056
150.00	-15.08	-3.39	0.00	-22.55	0.00	22.55	1525.77	762.88	1651.87	827.16	29.88	-1.803	0.000	0.037
152.00	-6.61	-1.67	0.00	-15.77	0.00	15.77	1507.09	753.54	1604.19	803.29	30.63	-1.809	0.000	0.024
155.00	-6.16	-1.58	0.00	-10.74	0.00	10.74	1478.64	739.32	1533.49	767.89	31.77	-1.815	0.000	0.018
160.00	-5.44	-1.42	0.00	-2.85	0.00	2.85	1426.03	713.01	1413.96	708.03	33.68	-1.821	0.000	0.008
162.00	0.00	-1.25	0.00	-0.01	0.00	0.01	1400.09	700.04	1362.73	682.38	34.44	-1.822	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	22
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)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	24.14	
10.00		1315.5	0.01	0.05	0.03	34.74	
15.00		1289.5	0.02	0.06	0.04	39.61	
20.00		1263.5	0.03	0.07	0.04	41.71	
25.00		1237.5	0.05	0.07	0.04	42.49	
30.00		1211.5	0.06	0.07	0.04	42.71	
35.00		1185.5	0.09	0.07	0.04	42.75	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	31.98	
40.00		537.95	0.12	0.07	0.04	19.83	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	79.78	
50.00		965.80	0.18	0.07	0.03	36.75	
55.00		943.52	0.22	0.06	0.02	35.71	
60.00		921.24	0.26	0.05	0.02	33.61	
65.00		898.96	0.30	0.04	0.01	29.97	
70.00		876.68	0.35	0.03	0.01	24.34	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.72	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.88	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.74	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-1.59	
85.00		169.88	0.52	-0.02	0.01	-0.80	
90.00		667.91	0.58	-0.05	0.01	-11.68	
95.00		649.35	0.65	-0.07	0.02	-18.31	
100.00		630.78	0.72	-0.09	0.03	-22.31	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-69.31	
110.00		593.65	0.87	-0.12	0.08	-21.73	
115.00		575.09	0.95	-0.12	0.11	-17.53	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-10.35	
120.00		149.27	1.04	-0.10	0.15	-2.98	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-29.41	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-2.93	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-4.24	
125.00		43.13	1.13	-0.05	0.20	-0.22	
130.00		423.11	1.22	0.02	0.27	5.94	
132.00	Appurtenance(s)	2663.5	1.25	0.06	0.30	61.00	
135.00		243.17	1.31	0.14	0.35	9.12	
140.00		393.40	1.41	0.31	0.44	25.73	
145.00		378.55	1.51	0.54	0.56	37.01	
150.00		363.70	1.62	0.84	0.70	48.99	
152.00	Appurtenance(s)	2986.7	1.66	0.99	0.76	450.29	
155.00		207.52	1.73	1.24	0.86	36.58	
160.00		333.99	1.84	1.74	1.05	74.36	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	574.35	
	Totals:	**39,079.4**				**1,697.4**	**Total Wind:** **40,128.0**

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

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 22

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)**	0.34	**SA**	0.03			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-54.24	-1.91	0.00	-238.97	0.00	238.97	5422.04	2711.02	12776.1	6397.58		0.00	0.00	0.047
5.00	-52.36	-1.90	0.00	-229.39	0.00	229.39	5354.65	2677.32	12373.4	6195.90		0.01	-0.01	0.047
10.00	-50.51	-1.87	0.00	-219.89	0.00	219.89	5285.82	2642.91	11973.5	5995.67		0.02	-0.02	0.046
15.00	-48.69	-1.84	0.00	-210.52	0.00	210.52	5215.55	2607.78	11576.7	5796.99		0.05	-0.03	0.046
20.00	-46.91	-1.81	0.00	-201.31	0.00	201.31	5143.86	2571.93	11183.2	5599.96		0.09	-0.04	0.045
25.00	-45.15	-1.77	0.00	-192.27	0.00	192.27	5070.72	2535.36	10793.2	5404.66		0.14	-0.05	0.044
30.00	-43.43	-1.74	0.00	-183.41	0.00	183.41	4996.16	2498.08	10406.9	5211.21		0.20	-0.06	0.044
35.00	-41.73	-1.70	0.00	-174.73	0.00	174.73	4920.16	2460.08	10024.5	5019.70		0.27	-0.07	0.043
38.75	-40.48	-1.67	0.00	-168.36	0.00	168.36	4862.22	2431.11	9740.32	4877.40		0.33	-0.08	0.043
40.00	-39.77	-1.65	0.00	-166.27	0.00	166.27	4842.73	2421.36	9646.11	4830.22		0.35	-0.09	0.043
45.00	-36.96	-1.58	0.00	-158.00	0.00	158.00	3936.38	1968.19	7803.92	3907.76		0.45	-0.10	0.050
50.00	-35.53	-1.55	0.00	-150.12	0.00	150.12	3877.34	1938.67	7510.22	3760.69		0.56	-0.11	0.049
55.00	-34.12	-1.51	0.00	-142.39	0.00	142.39	3816.87	1908.43	7219.20	3614.96		0.68	-0.12	0.048
60.00	-32.75	-1.49	0.00	-134.82	0.00	134.82	3754.96	1877.48	6931.04	3470.67		0.81	-0.14	0.048
65.00	-31.40	-1.46	0.00	-127.39	0.00	127.39	3691.62	1845.81	6645.93	3327.91		0.96	-0.15	0.047
70.00	-30.08	-1.44	0.00	-120.09	0.00	120.09	3626.84	1813.42	6364.09	3186.77		1.12	-0.16	0.046
75.00	-28.77	-1.42	0.00	-112.90	0.00	112.90	3560.63	1780.31	6085.69	3047.37		1.30	-0.18	0.045
78.50	-27.88	-1.42	0.00	-107.91	0.00	107.91	3513.43	1756.71	5892.98	2950.87		1.44	-0.19	0.045
80.00	-27.25	-1.42	0.00	-105.78	0.00	105.78	3492.98	1746.49	5810.95	2909.79		1.50	-0.19	0.044
83.75	-25.70	-1.41	0.00	-100.47	0.00	100.47	2742.50	1371.25	4553.78	2280.28		1.65	-0.20	0.053
85.00	-25.43	-1.42	0.00	-98.70	0.00	98.70	2730.37	1365.18	4502.54	2254.62		1.70	-0.21	0.053
90.00	-24.36	-1.42	0.00	-91.61	0.00	91.61	2680.95	1340.47	4298.92	2152.65		1.93	-0.22	0.052
95.00	-23.31	-1.42	0.00	-84.51	0.00	84.51	2630.10	1315.05	4097.56	2051.82		2.17	-0.24	0.050
100.00	-22.28	-1.43	0.00	-77.39	0.00	77.39	2577.82	1288.91	3898.66	1952.23		2.43	-0.26	0.048
105.00	-19.84	-1.42	0.00	-70.26	0.00	70.26	2524.10	1262.05	3702.43	1853.97		2.71	-0.27	0.046
110.00	-18.86	-1.42	0.00	-63.16	0.00	63.16	2468.95	1234.47	3509.05	1757.13		3.01	-0.29	0.044
115.00	-17.90	-1.42	0.00	-56.05	0.00	56.05	2412.36	1206.18	3318.73	1661.83		3.32	-0.31	0.041
119.25	-17.11	-1.42	0.00	-50.01	0.00	50.01	2363.14	1181.57	3159.50	1582.10		3.60	-0.32	0.039
120.00	-16.89	-1.42	0.00	-48.95	0.00	48.95	2354.34	1177.17	3131.65	1568.15		3.65	-0.32	0.038
122.00	-14.35	-1.41	0.00	-46.11	0.00	46.11	2330.73	1165.37	3057.78	1531.16		3.78	-0.33	0.036
123.50	-13.95	-1.40	0.00	-44.00	0.00	44.00	1751.58	875.79	2319.28	1161.36		3.89	-0.33	0.046
124.50	-13.17	-1.40	0.00	-42.60	0.00	42.60	1743.79	871.89	2293.08	1148.24		3.96	-0.34	0.045
125.00	-13.10	-1.40	0.00	-41.90	0.00	41.90	1739.87	869.94	2280.00	1141.69		3.99	-0.34	0.044
130.00	-12.41	-1.39	0.00	-34.89	0.00	34.89	1699.92	849.96	2150.20	1076.70		4.36	-0.36	0.040
132.00	-9.14	-1.31	0.00	-32.10	0.00	32.10	1683.54	841.77	2098.80	1050.96		4.51	-0.36	0.036
135.00	-8.79	-1.31	0.00	-28.15	0.00	28.15	1658.53	829.27	2022.29	1012.65		4.74	-0.37	0.033
140.00	-8.23	-1.28	0.00	-21.63	0.00	21.63	1615.71	807.86	1896.47	949.64		5.13	-0.38	0.028
145.00	-7.68	-1.24	0.00	-15.24	0.00	15.24	1571.46	785.73	1772.93	887.78		5.54	-0.40	0.022
150.00	-7.15	-1.19	0.00	-9.05	0.00	9.05	1525.77	762.88	1651.87	827.16		5.96	-0.40	0.016
152.00	-3.53	-0.71	0.00	-6.68	0.00	6.68	1507.09	753.54	1604.19	803.29		6.13	-0.41	0.011
155.00	-3.27	-0.67	0.00	-4.55	0.00	4.55	1478.64	739.32	1533.49	767.89		6.39	-0.41	0.008
160.00	-2.85	-0.59	0.00	-1.19	0.00	1.19	1426.03	713.01	1413.96	708.03		6.82	-0.41	0.004
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		6.99	-0.41	0.000

Seismic Segment Forces (Factored)

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	22
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)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	24.14	
10.00		1315.5	0.01	0.05	0.03	34.74	
15.00		1289.5	0.02	0.06	0.04	39.61	
20.00		1263.5	0.03	0.07	0.04	41.71	
25.00		1237.5	0.05	0.07	0.04	42.49	
30.00		1211.5	0.06	0.07	0.04	42.71	
35.00		1185.5	0.09	0.07	0.04	42.75	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	31.98	
40.00		537.95	0.12	0.07	0.04	19.83	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	79.78	
50.00		965.80	0.18	0.07	0.03	36.75	
55.00		943.52	0.22	0.06	0.02	35.71	
60.00		921.24	0.26	0.05	0.02	33.61	
65.00		898.96	0.30	0.04	0.01	29.97	
70.00		876.68	0.35	0.03	0.01	24.34	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.72	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.88	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.74	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-1.59	
85.00		169.88	0.52	-0.02	0.01	-0.80	
90.00		667.91	0.58	-0.05	0.01	-11.68	
95.00		649.35	0.65	-0.07	0.02	-18.31	
100.00		630.78	0.72	-0.09	0.03	-22.31	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-69.31	
110.00		593.65	0.87	-0.12	0.08	-21.73	
115.00		575.09	0.95	-0.12	0.11	-17.53	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-10.35	
120.00		149.27	1.04	-0.10	0.15	-2.98	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-29.41	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-2.93	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-4.24	
125.00		43.13	1.13	-0.05	0.20	-0.22	
130.00		423.11	1.22	0.02	0.27	5.94	
132.00	Appurtenance(s)	2663.5	1.25	0.06	0.30	61.00	
135.00		243.17	1.31	0.14	0.35	9.12	
140.00		393.40	1.41	0.31	0.44	25.73	
145.00		378.55	1.51	0.54	0.56	37.01	
150.00		363.70	1.62	0.84	0.70	48.99	
152.00	Appurtenance(s)	2986.7	1.66	0.99	0.76	450.29	
155.00		207.52	1.73	1.24	0.86	36.58	
160.00		333.99	1.84	1.74	1.05	74.36	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	574.35	
	Totals:	**39,079.4**				**1,697.4**	**Total Wind:** **40,128.0**

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

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.19			**Iterations**	22
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03			**S1**	0.06
								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	-40.68	-1.91	0.00	-236.18	0.00	236.18	5422.04	2711.02	12776.1	6397.58		0.00	0.00	0.044
5.00	-39.27	-1.90	0.00	-226.61	0.00	226.61	5354.65	2677.32	12373.4	6195.90		0.01	-0.01	0.044
10.00	-37.88	-1.87	0.00	-217.13	0.00	217.13	5285.82	2642.91	11973.5	5995.67		0.02	-0.02	0.043
15.00	-36.52	-1.83	0.00	-207.79	0.00	207.79	5215.55	2607.78	11576.7	5796.99		0.05	-0.03	0.043
20.00	-35.18	-1.80	0.00	-198.62	0.00	198.62	5143.86	2571.93	11183.2	5599.96		0.09	-0.04	0.042
25.00	-33.86	-1.76	0.00	-189.63	0.00	189.63	5070.72	2535.36	10793.2	5404.66		0.13	-0.05	0.042
30.00	-32.57	-1.72	0.00	-180.82	0.00	180.82	4996.16	2498.08	10406.9	5211.21		0.19	-0.06	0.041
35.00	-31.30	-1.68	0.00	-172.21	0.00	172.21	4920.16	2460.08	10024.5	5019.70		0.26	-0.07	0.041
38.75	-30.36	-1.65	0.00	-165.89	0.00	165.89	4862.22	2431.11	9740.32	4877.40		0.33	-0.08	0.040
40.00	-29.83	-1.64	0.00	-163.82	0.00	163.82	4842.73	2421.36	9646.11	4830.22		0.35	-0.08	0.040
45.00	-27.72	-1.56	0.00	-155.64	0.00	155.64	3936.38	1968.19	7803.92	3907.76		0.44	-0.10	0.047
50.00	-26.64	-1.53	0.00	-147.84	0.00	147.84	3877.34	1938.67	7510.22	3760.69		0.55	-0.11	0.046
55.00	-25.59	-1.49	0.00	-140.21	0.00	140.21	3816.87	1908.43	7219.20	3614.96		0.67	-0.12	0.045
60.00	-24.56	-1.46	0.00	-132.74	0.00	132.74	3754.96	1877.48	6931.04	3470.67		0.80	-0.13	0.045
65.00	-23.55	-1.44	0.00	-125.41	0.00	125.41	3691.62	1845.81	6645.93	3327.91		0.95	-0.15	0.044
70.00	-22.56	-1.42	0.00	-118.23	0.00	118.23	3626.84	1813.42	6364.09	3186.77		1.11	-0.16	0.043
75.00	-21.58	-1.40	0.00	-111.15	0.00	111.15	3560.63	1780.31	6085.69	3047.37		1.28	-0.17	0.043
78.50	-20.91	-1.39	0.00	-106.24	0.00	106.24	3513.43	1756.71	5892.98	2950.87		1.42	-0.18	0.042
80.00	-20.44	-1.39	0.00	-104.15	0.00	104.15	3492.98	1746.49	5810.95	2909.79		1.47	-0.19	0.042
83.75	-19.27	-1.39	0.00	-98.93	0.00	98.93	2742.50	1371.25	4553.78	2280.28		1.63	-0.20	0.050
85.00	-19.07	-1.39	0.00	-97.19	0.00	97.19	2730.37	1365.18	4502.54	2254.62		1.68	-0.20	0.050
90.00	-18.27	-1.40	0.00	-90.23	0.00	90.23	2680.95	1340.47	4298.92	2152.65		1.90	-0.22	0.049
95.00	-17.48	-1.40	0.00	-83.25	0.00	83.25	2630.10	1315.05	4097.56	2051.82		2.14	-0.24	0.047
100.00	-16.71	-1.40	0.00	-76.26	0.00	76.26	2577.82	1288.91	3898.66	1952.23		2.40	-0.25	0.046
105.00	-14.88	-1.39	0.00	-69.27	0.00	69.27	2524.10	1262.05	3702.43	1853.97		2.67	-0.27	0.043
110.00	-14.14	-1.40	0.00	-62.29	0.00	62.29	2468.95	1234.47	3509.05	1757.13		2.96	-0.29	0.041
115.00	-13.42	-1.40	0.00	-55.32	0.00	55.32	2412.36	1206.18	3318.73	1661.83		3.27	-0.30	0.039
119.25	-12.83	-1.39	0.00	-49.39	0.00	49.39	2363.14	1181.57	3159.50	1582.10		3.55	-0.32	0.037
120.00	-12.66	-1.39	0.00	-48.34	0.00	48.34	2354.34	1177.17	3131.65	1568.15		3.60	-0.32	0.036
122.00	-10.76	-1.38	0.00	-45.55	0.00	45.55	2330.73	1165.37	3057.78	1531.16		3.73	-0.32	0.034
123.50	-10.46	-1.38	0.00	-43.48	0.00	43.48	1751.58	875.79	2319.28	1161.36		3.83	-0.33	0.043
124.50	-9.87	-1.38	0.00	-42.09	0.00	42.09	1743.79	871.89	2293.08	1148.24		3.90	-0.33	0.042
125.00	-9.82	-1.38	0.00	-41.40	0.00	41.40	1739.87	869.94	2280.00	1141.69		3.94	-0.33	0.042
130.00	-9.31	-1.37	0.00	-34.50	0.00	34.50	1699.92	849.96	2150.20	1076.70		4.30	-0.35	0.038
132.00	-6.86	-1.30	0.00	-31.75	0.00	31.75	1683.54	841.77	2098.80	1050.96		4.44	-0.36	0.034
135.00	-6.59	-1.29	0.00	-27.85	0.00	27.85	1658.53	829.27	2022.29	1012.65		4.67	-0.37	0.031
140.00	-6.17	-1.26	0.00	-21.40	0.00	21.40	1615.71	807.86	1896.47	949.64		5.06	-0.38	0.026
145.00	-5.76	-1.22	0.00	-15.09	0.00	15.09	1571.46	785.73	1772.93	887.78		5.46	-0.39	0.021
150.00	-5.36	-1.17	0.00	-8.97	0.00	8.97	1525.77	762.88	1651.87	827.16		5.88	-0.40	0.014
152.00	-2.64	-0.70	0.00	-6.62	0.00	6.62	1507.09	753.54	1604.19	803.29		6.05	-0.40	0.010
155.00	-2.45	-0.67	0.00	-4.51	0.00	4.51	1478.64	739.32	1533.49	767.89		6.30	-0.40	0.008
160.00	-2.13	-0.59	0.00	-1.18	0.00	1.18	1426.03	713.01	1413.96	708.03		6.72	-0.41	0.003
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		6.89	-0.41	0.000

Wind Loading - Shaft

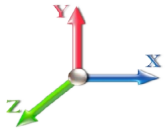
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	270.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	265.27	0.650	0.000	5.00	24.209	15.74	128.8	0.0	1341.5
10.00		1.00	0.85	7.442	8.19	260.12	0.650	0.000	5.00	23.744	15.43	126.3	0.0	1315.5
15.00		1.00	0.85	7.442	8.19	254.97	0.650	0.000	5.00	23.278	15.13	123.9	0.0	1289.5
20.00		1.00	0.90	7.896	8.69	257.33	0.650	0.000	5.00	22.813	14.83	128.8	0.0	1263.5
25.00		1.00	0.95	8.276	9.10	258.01	0.650	0.000	5.00	22.348	14.53	132.2	0.0	1237.5
30.00		1.00	0.98	8.600	9.46	257.48	0.650	0.000	5.00	21.882	14.22	134.6	0.0	1211.5
35.00		1.00	1.01	8.883	9.77	256.06	0.650	0.000	5.00	21.417	13.92	136.0	0.0	1185.5
38.75	Bot - Section 2	1.00	1.04	9.076	9.98	254.56	0.650	0.000	3.75	15.757	10.24	102.3	0.0	872.1
40.00		1.00	1.04	9.137	10.05	253.98	0.650	0.000	1.25	5.273	3.43	34.5	0.0	538.0
45.00	Top - Section 1	1.00	1.07	9.366	10.30	251.37	0.653 *	0.000	5.00	20.803	13.57	139.9	0.0	2121.6
50.00		1.00	1.09	9.576	10.53	252.32	0.654 *	0.000	5.00	20.338	13.30	140.1	0.0	965.8
55.00		1.00	1.12	9.770	10.75	248.96	0.659 *	0.000	5.00	19.872	13.09	140.7	0.0	943.5
60.00		1.00	1.14	9.951	10.95	245.30	0.663 *	0.000	5.00	19.407	12.88	140.9	0.0	921.2
65.00		1.00	1.16	10.120	11.13	241.37	0.669 *	0.000	5.00	18.941	12.66	141.0	0.0	899.0
70.00		1.00	1.17	10.279	11.31	237.20	0.674 *	0.000	5.00	18.476	12.45	140.8	0.0	876.7
75.00	Appurtenance(s)	1.00	1.19	10.430	11.47	232.84	0.680 *	0.000	5.00	18.010	12.24	140.4	0.0	854.4
78.50	Bot - Section 3	1.00	1.20	10.530	11.58	229.67	0.685 *	0.000	3.50	12.330	8.44	97.8	0.0	584.8
80.00	Appurtenance(s)	1.00	1.21	10.572	11.63	228.29	0.688 *	0.000	1.50	5.294	3.64	42.3	0.0	456.9
83.75	Top - Section 2	1.00	1.22	10.675	11.74	224.76	0.691 *	0.000	3.75	13.051	9.02	105.9	0.0	1126.1
85.00		1.00	1.22	10.708	11.78	227.08	0.691 *	0.000	1.25	4.292	2.96	34.9	0.0	169.9
90.00		1.00	1.24	10.838	11.92	222.23	0.695 *	0.000	5.00	16.878	11.73	139.8	0.0	667.9
95.00		1.00	1.25	10.962	12.06	217.25	0.702 *	0.000	5.00	16.413	11.51	138.8	0.0	649.3
100.00		1.00	1.27	11.081	12.19	212.15	0.709 *	0.000	5.00	15.947	11.30	137.8	0.0	630.8
105.00	Appurtenance(s)	1.00	1.28	11.195	12.31	206.92	0.716 *	0.000	5.00	15.482	11.09	136.6	0.0	612.2
110.00		1.00	1.29	11.305	12.44	201.59	0.724 *	0.000	5.00	15.016	10.88	135.3	0.0	593.7
115.00		1.00	1.30	11.412	12.55	196.16	0.733 *	0.000	5.00	14.551	10.67	133.9	0.0	575.1
119.25	Bot - Section 4	1.00	1.31	11.499	12.65	191.47	0.742 *	0.000	4.25	12.002	8.90	112.6	0.0	474.2
120.00		1.00	1.32	11.514	12.67	190.63	0.746 *	0.000	0.75	2.115	1.58	20.0	0.0	149.3
122.00	Appurtenance(s)	1.00	1.32	11.554	12.71	188.40	0.749 *	0.000	2.00	5.588	4.19	53.2	0.0	394.4
123.50	Top - Section 3	1.00	1.32	11.584	12.74	186.71	0.650	0.000	1.50	4.142	2.69	34.3	0.0	292.3
124.50	Appurtenance(s)	1.00	1.33	11.604	12.76	188.51	0.650	0.000	1.00	2.738	1.78	22.7	0.0	86.7
125.00		1.00	1.33	11.614	12.78	187.95	0.650	0.000	0.50	1.362	0.89	11.3	0.0	43.1
130.00		1.00	1.34	11.710	12.88	182.26	0.650	0.000	5.00	13.366	8.69	111.9	0.0	423.1
132.00	Appurtenance(s)	1.00	1.34	11.748	12.92	179.97	0.650	0.000	2.00	5.216	3.39	43.8	0.0	165.1
135.00		1.00	1.35	11.803	12.98	176.50	0.650	0.000	3.00	7.684	4.99	64.9	0.0	243.2
140.00		1.00	1.36	11.894	13.08	170.67	0.650	0.000	5.00	12.435	8.08	105.8	0.0	393.4
145.00		1.00	1.37	11.982	13.18	164.77	0.650	0.000	5.00	11.970	7.78	102.5	0.0	378.5
150.00		1.00	1.38	12.068	13.27	158.80	0.650	0.000	5.00	11.504	7.48	99.3	0.0	363.7
152.00	Appurtenance(s)	1.00	1.38	12.102	13.31	156.39	0.650	0.000	2.00	4.471	2.91	38.7	0.0	141.3
155.00		1.00	1.39	12.152	13.37	152.77	0.650	0.000	3.00	6.567	4.27	57.1	0.0	207.5
160.00		1.00	1.40	12.233	13.46	146.68	0.650	0.000	5.00	10.573	6.87	92.5	0.0	334.0
162.00	Appurtenance(s)	1.00	1.40	12.265	13.49	144.22	0.650	0.000	2.00	4.099	2.66	35.9	0.0	129.4
								Totals:	**162.00**			**4,140.7**		**28,122.8**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

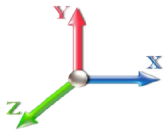
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	12.265	13.492	0.88	1.00	10.03	132.00	0.000	0.000	135.35	0.00	0.00
2	162.00	APXVTM14-C-120	3	12.273	13.501	0.63	0.80	12.02	168.00	0.000	0.500	162.29	0.00	81.14
3	162.00	TD-RRH8x20-25	3	12.265	13.492	0.69	1.00	8.38	210.00	0.000	0.000	113.11	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	12.273	13.501	0.66	0.80	15.98	171.00	0.000	0.500	215.68	0.00	107.84
5	162.00	Flush Mount	1	12.233	13.457	1.00	1.00	5.00	175.00	0.000	-2.000	67.28	0.00	-134.57
6	162.00	800 MHz Ext. Filter	3	12.265	13.492	0.63	1.00	2.25	19.80	0.000	0.000	30.34	0.00	0.00
7	162.00	ACU-A20-N	4	12.273	13.501	0.75	1.00	0.42	4.00	0.000	0.500	5.67	0.00	2.84
8	162.00	Low Profile Platform-flat	1	12.265	13.492	1.00	1.00	25.00	1200.00	0.000	0.000	337.30	0.00	0.00
9	162.00	800 MHz RRU	3	12.265	13.492	0.75	1.00	5.60	159.00	0.000	0.000	75.59	0.00	0.00
10	152.00	KRY 112 144/1	3	12.102	13.312	0.55	0.75	0.57	33.00	0.000	0.000	7.65	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	12.102	13.312	0.52	0.75	31.88	384.00	0.000	0.000	424.36	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	12.102	13.312	0.65	0.75	3.81	213.00	0.000	0.000	50.74	0.00	0.00
13	152.00	APXV18-206516S-A20	3	12.102	13.312	0.57	0.75	7.46	55.50	0.000	0.000	99.25	0.00	0.00
14	152.00	FE15501P77/75	3	12.102	13.312	0.49	0.75	0.79	52.50	0.000	0.000	10.51	0.00	0.00
15	152.00	782 11056	3	12.102	13.312	0.50	0.75	0.23	5.40	0.000	0.000	3.01	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	12.102	13.312	1.00	1.00	42.00	2021.00	0.000	0.000	559.11	0.00	0.00
17	152.00	RR90-17-02DP	6	12.102	13.312	0.55	0.75	14.32	81.00	0.000	0.000	190.66	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	11.748	12.922	0.57	0.80	4.92	88.00	0.000	0.000	63.56	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	11.748	12.922	0.60	0.80	1.30	18.60	0.000	0.000	16.75	0.00	0.00
20	132.00	RRH2X60-700	3	11.748	12.922	0.61	0.80	6.38	180.00	0.000	0.000	82.50	0.00	0.00
21	132.00	RRH2x60-1900	3	11.748	12.922	0.60	0.80	2.72	58.50	0.000	0.000	35.12	0.00	0.00
22	132.00	RRH2X60-AWS	3	11.748	12.922	0.61	0.80	6.38	180.00	0.000	0.000	82.50	0.00	0.00
23	132.00	DB846F65ZAXY	4	11.748	12.922	0.74	0.80	20.98	84.00	0.000	0.000	271.12	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	11.748	12.922	1.36	0.80	7.10	24.00	0.000	0.000	91.74	0.00	0.00
25	132.00	SBNHH-1D65B	9	11.748	12.922	0.66	0.80	48.29	365.40	0.000	0.000	623.98	0.00	0.00
26	132.00	Low Profile	1	11.748	12.922	1.00	1.00	22.00	1500.00	0.000	0.000	284.29	0.00	0.00
27	124.50	Flush Mount	1	11.604	12.764	1.00	1.00	5.00	175.00	0.000	0.000	63.82	0.00	0.00
28	124.50	RRUS-11	6	11.604	12.764	0.68	1.00	18.03	330.00	0.000	0.000	230.19	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	11.604	12.764	1.00	1.00	1.47	31.80	0.000	0.000	18.76	0.00	0.00
30	122.00	Low Profile Platform-flat	1	11.554	12.710	1.00	1.00	25.00	1200.00	0.000	0.000	317.75	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	11.554	12.710	0.65	0.80	11.76	99.00	0.000	0.000	149.48	0.00	0.00
32	122.00	LGP21903	6	11.554	12.710	0.60	0.80	0.97	33.00	0.000	0.000	12.35	0.00	0.00
33	122.00	LGP21401	6	11.554	12.710	0.60	0.80	4.64	84.60	0.000	0.000	59.02	0.00	0.00
34	122.00	7770.00	6	11.554	12.710	0.58	0.80	19.27	210.00	0.000	0.000	244.95	0.00	0.00
35	105.00	Low Profile Platform-flat	1	11.195	12.315	1.00	1.00	25.00	1200.00	0.000	0.000	307.87	0.00	0.00
36	80.00	738-449	1	10.582	11.640	1.00	1.00	0.01	0.50	0.000	0.350	0.12	0.00	0.04
37	75.00	GPS	1	10.430	11.473	1.00	1.00	1.00	10.00	0.000	0.000	11.47	0.00	0.00
							Totals:		**10,956.60**			**5,455.25**		

Total Applied Force Summary

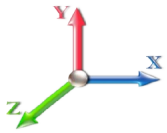
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	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		128.82	1566.35	0.00	0.00
10.00		126.34	1540.36	0.00	0.00
15.00		123.86	1514.37	0.00	0.00
20.00		128.80	1488.38	0.00	0.00
25.00		132.24	1462.39	0.00	0.00
30.00		134.55	1436.40	0.00	0.00
35.00		136.03	1410.41	0.00	0.00
38.75		102.25	1040.75	0.00	0.00
40.00		34.45	594.17	0.00	0.00
45.00		139.85	2346.50	0.00	0.00
50.00		140.10	1190.66	0.00	0.00
55.00		140.66	1168.38	0.00	0.00
60.00		140.94	1146.11	0.00	0.00
65.00		140.98	1123.83	0.00	0.00
70.00		140.80	1101.55	0.00	0.00
75.00	(1) attachments	151.91	1089.27	0.00	0.00
78.50		97.79	741.67	0.00	0.00
80.00	(1) attachments	42.46	524.58	0.00	0.04
83.75		105.91	1293.52	0.00	0.00
85.00		34.92	225.69	0.00	0.00
90.00		139.79	891.18	0.00	0.00
95.00		138.84	872.61	0.00	0.00
100.00		137.76	854.05	0.00	0.00
105.00	(1) attachments	444.44	2035.48	0.00	0.00
110.00		135.29	816.92	0.00	0.00
115.00		133.90	798.35	0.00	0.00
119.25		112.58	664.00	0.00	0.00
120.00		19.99	182.76	0.00	0.00
122.00	(22) attachments	836.76	2110.28	0.00	0.00
123.50		34.31	336.57	0.00	0.00
124.50	(8) attachments	335.49	653.03	0.00	0.00
125.00		11.31	57.89	0.00	0.00
130.00		111.91	570.77	0.00	0.00
132.00	(33) attachments	1595.38	2722.65	0.00	0.00
135.00		64.85	290.85	0.00	0.00
140.00		105.75	472.87	0.00	0.00
145.00		102.55	458.01	0.00	0.00
150.00		99.27	443.16	0.00	0.00
152.00	(25) attachments	1383.99	3018.51	0.00	0.00
155.00		57.06	217.58	0.00	0.00
160.00		92.48	350.76	0.00	0.00
162.00	(24) attachments	1178.55	2374.94	0.00	57.25
	Totals:	**9,595.92**	**45,198.56**	**0.00**	**57.29**

Linear Appurtenance Segment Forces (Factored)

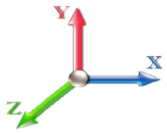
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	1.37
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	7.442	0.00	57.20
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	5.50
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	62.40
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.30
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	7.442	0.00	8.90
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	4.00
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.80
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	1.37
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	7.442	0.00	57.20
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	5.50
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	62.40
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.30
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	7.442	0.00	8.90
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	4.00
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.80
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	1.37
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	7.442	0.00	57.20
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	5.50
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	62.40
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.30
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	7.442	0.00	8.90
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	4.00
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.80
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	1.37
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	7.896	0.00	57.20
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	5.50
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	62.40
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.30
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	7.896	0.00	8.90
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	4.00
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.80
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	1.37
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	8.276	0.00	57.20
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	5.50
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	62.40
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.30
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	8.276	0.00	8.90
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	4.00
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.80
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	1.37
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	8.600	0.00	57.20
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	5.50
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	62.40
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.30
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	8.600	0.00	8.90
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	4.00

Linear Appurtenance Segment Forces (Factored)

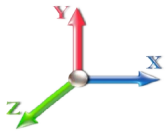
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.80
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	1.37
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	8.883	0.00	57.20
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	5.50
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	62.40
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.30
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	8.883	0.00	8.90
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	4.00
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.80
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	1.02
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	9.076	0.00	42.90
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	4.13
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	46.80
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.22
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	9.076	0.00	6.67
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	3.00
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.60
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.34
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	9.137	0.00	14.30
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.38
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	15.60
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	9.137	0.00	2.23
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.00
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.20
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	1.37
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	9.366	0.00	57.20
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	5.50
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	62.40
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.30
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	9.366	0.00	8.90
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	4.00
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.80
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	1.37
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	9.576	0.00	57.20
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	5.50
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	62.40
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.30
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	9.576	0.00	8.90
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	4.00
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.80
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	1.37
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	9.770	0.00	57.20
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	5.50
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	62.40
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.30
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	9.770	0.00	8.90

Linear Appurtenance Segment Forces (Factored)

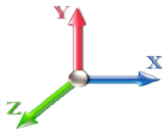
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	4.00
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.80
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	1.37
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	9.951	0.00	57.20
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	5.50
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	62.40
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.30
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	9.951	0.00	8.90
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	4.00
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.80
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	1.37
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	10.120	0.00	57.20
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	5.50
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	62.40
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.30
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	10.120	0.00	8.90
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	4.00
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.80
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	1.37
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	10.279	0.00	57.20
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	5.50
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	62.40
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.30
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	10.279	0.00	8.90
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	4.00
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.80
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	1.37
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	10.430	0.00	57.20
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	5.50
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	62.40
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.30
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	10.430	0.00	8.90
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	4.00
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.80
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.96
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	10.530	0.00	40.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	3.85
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	43.68
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.21
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	10.530	0.00	6.23
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	2.80
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.41
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	10.572	0.00	17.16
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.65
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	18.72
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.09
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	10.572	0.00	2.67

Linear Appurtenance Segment Forces (Factored)

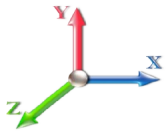
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.20
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	1.02
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	10.675	0.00	42.90
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	4.13
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	46.80
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	0.22
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	10.675	0.00	6.67
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	3.00
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.34
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	10.708	0.00	14.30
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.38
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	15.60
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	10.708	0.00	2.23
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.00
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	1.37
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	10.838	0.00	57.20
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	5.50
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	62.40
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	0.30
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	10.838	0.00	8.90
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	4.00
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	1.37
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	10.962	0.00	57.20
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	5.50
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	62.40
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	0.30
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	10.962	0.00	8.90
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	4.00
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	1.37
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	11.081	0.00	57.20
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	5.50
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	62.40
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	0.30
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	11.081	0.00	8.90
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	4.00
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	1.37
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	11.195	0.00	57.20
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	5.50
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	62.40
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	0.30
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	11.195	0.00	8.90
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	4.00
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	1.37
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	11.305	0.00	57.20
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	5.50
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

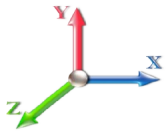
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	0.30
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	11.305	0.00	8.90
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	4.00
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	1.37
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	11.412	0.00	57.20
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	5.50
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	62.40
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	0.30
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	11.412	0.00	8.90
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	4.00
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	1.16
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	11.499	0.00	48.62
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	4.68
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	53.04
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	0.26
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	11.499	0.00	7.57
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	3.40
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.20
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	11.514	0.00	8.58
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.83
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	9.36
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.04
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	11.514	0.00	1.33
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.60
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.55
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	11.554	0.00	22.88
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	2.20
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	24.96
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.12
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	11.554	0.00	3.56
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	1.60
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	0.41
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	11.584	0.00	17.16
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	1.65
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	0.27
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	11.604	0.00	11.44
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	1.10
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.14
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	11.614	0.00	5.72
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.55
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	1.37
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	11.710	0.00	57.20
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	5.50
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	0.55
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	11.748	0.00	22.88
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	2.20
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	0.82

Linear Appurtenance Segment Forces (Factored)

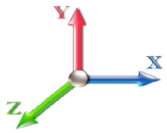
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	11.803	0.00	34.32
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	3.30
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	1.37
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	11.894	0.00	57.20
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	5.50
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	1.37
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	11.982	0.00	57.20
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	5.50
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	1.37
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	12.068	0.00	57.20
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	5.50
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	0.55
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	12.102	0.00	22.88
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	2.20
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	0.82
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	1.37
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.265	0.00	0.55
										Totals:	**0.0**	**3,806.9**

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

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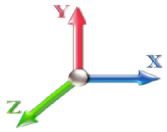
Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.19	-9.61	0.00	-1130.4	0.00	1130.40	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.185
5.00	-43.62	-9.52	0.00	-1082.3	0.00	1082.33	5354.65	2677.32	12373.4	6195.90	0.03	-0.048	0.000	0.183
10.00	-42.07	-9.43	0.00	-1034.7	0.00	1034.72	5285.82	2642.91	11973.5	5995.67	0.10	-0.096	0.000	0.181
15.00	-40.55	-9.34	0.00	-987.58	0.00	987.58	5215.55	2607.78	11576.7	5796.99	0.23	-0.145	0.000	0.178
20.00	-39.05	-9.24	0.00	-940.90	0.00	940.90	5143.86	2571.93	11183.2	5599.96	0.41	-0.194	0.000	0.176
25.00	-37.58	-9.13	0.00	-894.72	0.00	894.72	5070.72	2535.36	10793.2	5404.66	0.64	-0.245	0.000	0.173
30.00	-36.14	-9.02	0.00	-849.06	0.00	849.06	4996.16	2498.08	10406.9	5211.21	0.92	-0.295	0.000	0.170
35.00	-34.72	-8.91	0.00	-803.94	0.00	803.94	4920.16	2460.08	10024.5	5019.70	1.26	-0.347	0.000	0.167
38.75	-33.68	-8.81	0.00	-770.54	0.00	770.54	4862.22	2431.11	9740.32	4877.40	1.55	-0.386	0.000	0.165
40.00	-33.08	-8.79	0.00	-759.52	0.00	759.52	4842.73	2421.36	9646.11	4830.22	1.65	-0.399	0.000	0.164
45.00	-30.73	-8.66	0.00	-715.56	0.00	715.56	3936.38	1968.19	7803.92	3907.76	2.09	-0.451	0.000	0.191
50.00	-29.53	-8.54	0.00	-672.23	0.00	672.23	3877.34	1938.67	7510.22	3760.69	2.60	-0.504	0.000	0.186
55.00	-28.35	-8.42	0.00	-629.52	0.00	629.52	3816.87	1908.43	7219.20	3614.96	3.16	-0.563	0.000	0.182
60.00	-27.20	-8.30	0.00	-587.41	0.00	587.41	3754.96	1877.48	6931.04	3470.67	3.78	-0.622	0.000	0.177
65.00	-26.07	-8.17	0.00	-545.93	0.00	545.93	3691.62	1845.81	6645.93	3327.91	4.46	-0.681	0.000	0.171
70.00	-24.96	-8.04	0.00	-505.09	0.00	505.09	3626.84	1813.42	6364.09	3186.77	5.20	-0.740	0.000	0.165
75.00	-23.87	-7.89	0.00	-464.89	0.00	464.89	3560.63	1780.31	6085.69	3047.37	6.01	-0.799	0.000	0.159
78.50	-23.12	-7.80	0.00	-437.25	0.00	437.25	3513.43	1756.71	5892.98	2950.87	6.61	-0.840	0.000	0.155
80.00	-22.60	-7.76	0.00	-425.56	0.00	425.56	3492.98	1746.49	5810.95	2909.79	6.88	-0.858	0.000	0.153
83.75	-21.30	-7.65	0.00	-396.46	0.00	396.46	2742.50	1371.25	4553.78	2280.28	7.57	-0.902	0.000	0.182
85.00	-21.07	-7.62	0.00	-386.90	0.00	386.90	2730.37	1365.18	4502.54	2254.62	7.81	-0.917	0.000	0.179
90.00	-20.17	-7.49	0.00	-348.79	0.00	348.79	2680.95	1340.47	4298.92	2152.65	8.80	-0.981	0.000	0.170
95.00	-19.29	-7.36	0.00	-311.34	0.00	311.34	2630.10	1315.05	4097.56	2051.82	9.87	-1.044	0.000	0.159
100.00	-18.44	-7.22	0.00	-274.56	0.00	274.56	2577.82	1288.91	3898.66	1952.23	10.99	-1.105	0.000	0.148
105.00	-16.40	-6.75	0.00	-238.45	0.00	238.45	2524.10	1262.05	3702.43	1853.97	12.18	-1.163	0.000	0.135
110.00	-15.58	-6.62	0.00	-204.69	0.00	204.69	2468.95	1234.47	3509.05	1757.13	13.43	-1.219	0.000	0.123
115.00	-14.78	-6.48	0.00	-171.61	0.00	171.61	2412.36	1206.18	3318.73	1661.83	14.74	-1.270	0.000	0.109
119.25	-14.12	-6.35	0.00	-144.09	0.00	144.09	2363.14	1181.57	3159.50	1582.10	15.88	-1.310	0.000	0.097
120.00	-13.93	-6.33	0.00	-139.32	0.00	139.32	2354.34	1177.17	3131.65	1568.15	16.09	-1.317	0.000	0.095
122.00	-11.84	-5.45	0.00	-126.65	0.00	126.65	2330.73	1165.37	3057.78	1531.16	16.65	-1.335	0.000	0.088
123.50	-11.51	-5.41	0.00	-118.48	0.00	118.48	1751.58	875.79	2319.28	1161.36	17.07	-1.348	0.000	0.109
124.50	-10.86	-5.06	0.00	-113.07	0.00	113.07	1743.79	871.89	2293.08	1148.24	17.35	-1.356	0.000	0.105
125.00	-10.80	-5.05	0.00	-110.53	0.00	110.53	1739.87	869.94	2280.00	1141.69	17.49	-1.361	0.000	0.103
130.00	-10.23	-4.93	0.00	-85.27	0.00	85.27	1699.92	849.96	2150.20	1076.70	18.94	-1.404	0.000	0.085
132.00	-7.55	-3.27	0.00	-75.40	0.00	75.40	1683.54	841.77	2098.80	1050.96	19.54	-1.419	0.000	0.076
135.00	-7.26	-3.20	0.00	-65.58	0.00	65.58	1658.53	829.27	2022.29	1012.65	20.43	-1.441	0.000	0.069
140.00	-6.79	-3.09	0.00	-49.56	0.00	49.56	1615.71	807.86	1896.47	949.64	21.96	-1.472	0.000	0.056
145.00	-6.33	-2.98	0.00	-34.10	0.00	34.10	1571.46	785.73	1772.93	887.78	23.52	-1.497	0.000	0.042
150.00	-5.89	-2.87	0.00	-19.21	0.00	19.21	1525.77	762.88	1651.87	827.16	25.10	-1.516	0.000	0.027
152.00	-2.91	-1.41	0.00	-13.47	0.00	13.47	1507.09	753.54	1604.19	803.29	25.73	-1.521	0.000	0.019
155.00	-2.69	-1.34	0.00	-9.26	0.00	9.26	1478.64	739.32	1533.49	767.89	26.69	-1.526	0.000	0.014
160.00	-2.34	-1.24	0.00	-2.54	0.00	2.54	1426.03	713.01	1413.96	708.03	28.29	-1.531	0.000	0.005
162.00	0.00	-1.18	0.00	-0.06	0.00	0.06	1400.09	700.04	1362.73	682.38	28.93	-1.532	0.000	0.000

Final Analysis Summary

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

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 97 mph Wind	40.2	0.00	54.17	0.00	0.00	4753.06
0.9D + 1.6W 97 mph Wind	40.2	0.00	40.61	0.00	0.00	4702.39
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.3	0.00	95.98	0.00	0.00	1346.59
1.2D + 1.0E	1.9	0.00	54.24	0.00	0.00	238.97
0.9D + 1.0E	1.9	0.00	40.68	0.00	0.00	236.18
1.0D + 1.0W 60 mph Wind	9.6	0.00	45.19	0.00	0.00	1130.40

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 97 mph Wind	-35.70	-36.44	0.00	-3012.8	0.00	-3012.8	3936.38	1968.1	7803.92	3907.76	45.00	0.780
0.9D + 1.6W 97 mph Wind	-26.48	-36.10	0.00	-2970.5	0.00	-2970.5	3936.38	1968.1	7803.92	3907.76	45.00	0.767
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-70.27	-10.38	0.00	-853.45	0.00	-853.45	3936.38	1968.1	7803.92	3907.76	45.00	0.236
1.2D + 1.0E	-25.70	-1.41	0.00	-100.47	0.00	-100.47	2742.50	1371.2	4553.78	2280.28	83.75	0.053
0.9D + 1.0E	-19.27	-1.39	0.00	-98.93	0.00	-98.93	2742.50	1371.2	4553.78	2280.28	83.75	0.050
1.0D + 1.0W 60 mph Wind	-30.73	-8.66	0.00	-715.56	0.00	-715.56	3936.38	1968.1	7803.92	3907.76	45.00	0.191

Monopole Mat Foundation Design

				Date
				8/6/2019
	Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	162
	Site Number:	CT01698-S-SBA	**Engineer Name:**	F. Arinyedokia
	Engr. Number:	77166	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

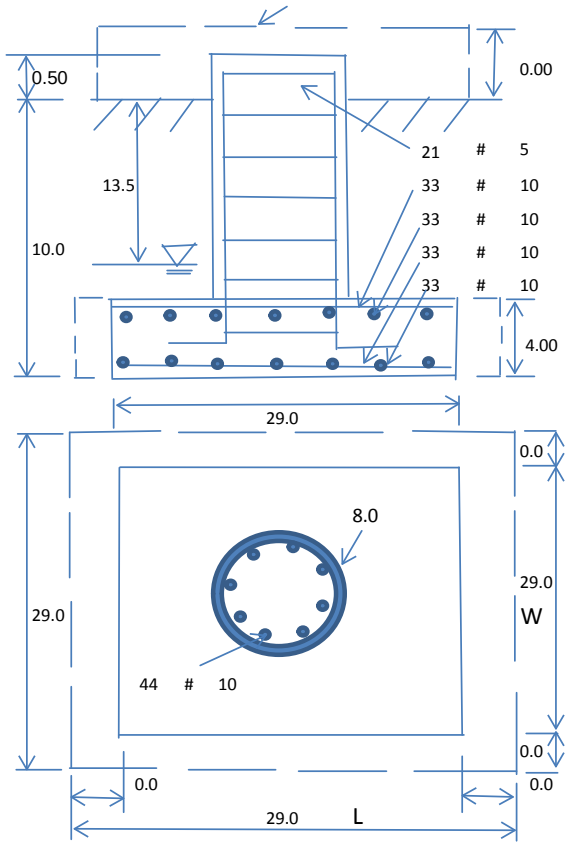
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	55.1	Shear Force (Kips):	40.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4826.5
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	10.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	29	Width of Pad (ft.):	29
Final Length of pad (ft)	29.0	Final width of pad (ft):	29.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	44	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	58.0	Pcf		
Water Table B.G.S. (ft):	13.5	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

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

Total Dry Soil Volume (cu. Ft.):	4744.41	Total Dry Soil Weight (Kips):	569.33
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	569.33	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3690.73	Total Dry Concrete Weight (Kips):	553.61
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	553.61	Total Vertical Load on Base (Kips):	1178.04

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2511	<	Allowable Factored Soil Bearing (psf):	3000	0.84	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	15453.3	>	Design Factored Momont (kips-ft):	5253	0.34	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.94	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.27		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	10399.3	>	Design Factored Moment (Mu, Kips-F	5090.4	0.49	OK!
Calculated Shear Capacity (Kips):	912.1	>	Design Factored Shear (Kips):	40.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3017.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9523.8	>	Design Factored Axial Load (Pu Kips):	55.1	0.01	OK!
Moment & Axial Strength Combination:	0.49	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.008		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1268.7	>	One-Way Factored Shear (L-D. Kips):	301.1	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1268.7	>	One-Way Factored Shear (W-D., Kips)	301.1	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1120.7	>	One-Way Factored Shear (C-C, Kips):	285.2	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0027		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	8101.7	>	Moment at Bottom (L-Dir. K-Ft):	2081.9	0.26	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	8101.7	>	Moment at Bottom (W-Dir. K-Ft):	2081.9	0.26	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	11366.0	>	Moment at Bottom (C-C Dir. K-Ft):	2944.3	0.26	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0027		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	8101.7	>	Moment at the top (L-Dir K-Ft):	860.7	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	8101.7	>	Moment at the top (W-Dir K-Ft):	860.7	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	11366.0	>	Moment at the top (C-C Dir. K-Ft):	807.1	0.07	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1930.6	k-ft.	Max. factored shear stress v_{u_CD}:		3.1	Psi
Max. factored shear stress v_{u_AB}:	7.4	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	7.4	Psi	Check Usage of Punching Shear Capacity:		0.05	OK!

EXHIBIT 8

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

Post-Mod Antenna Mount Analysis Report

Existing 162-Ft SUMMIT Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT01698-S-SBA

Customer Site Name: Durham

Carrier Name: T-Mobile (App#: 115954, V#1)

Carrier Site ID / Name: CT11287A / Durham

Site Location: 1605 Durham Road, Ct Route 68

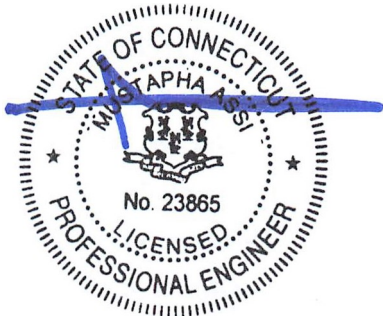
Wallingford, Connecticut

New Haven County

Latitude: 41.469574

Longitude: -72.742250

Exp.01/31/2020



08/02/2019

Analysis Result:

Max Structural Usage: 67.8% [Pass]

Report Prepared By: Saroj Dangol

Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Hand Rail at 152.00' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

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

Sources of Information

Mount Drawings	Mount mapping by Full Metal Tower Services dated 04/27/2019
Antenna Loading	SBA Application #: 115954, v1 dated 05/23/2019
Existing Modification	N/A
Proposed Modification	TES Project No. 82795

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State
Exposure Category: C
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(1) Platform w/ Hand Rail at 152.00' elevation at azimuths 75/180/310

Proposed Modifications

(1) METROSITE SUPPORT RAIL CENTER PIPE KIT: MS-HRCP-35
(1) METROSITE LIGHT COLLAR MOUNT ASSEMBLY: MS-1436
(6) 2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B: PST2375-6
(6) L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36: L252525-8

Final Antenna Configuration

6	EMS RR90-17-02DP
3	RFS APXV18-206516S-A20
3	RFS APXVAARR24_43-U-NA20
3	Kathrein 782 11056
3	Kathrein FE15501P77/75
3	Ericsson KRY 112 144/1
3	Ericsson Radio 4449 B71+B12

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 Platform w/ Hand Rail.

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 67.8%, which occurs in the mount pipe. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

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

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

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

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

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

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

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

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

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


04.27.2019 06:12


04.27.2019 06:39

Structure: CT01698-S-SBA - Durham

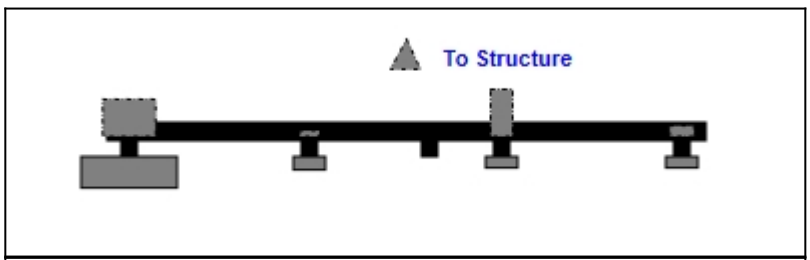
Sector: A

Structure Type: Monopole

Mount Elev: 152.00

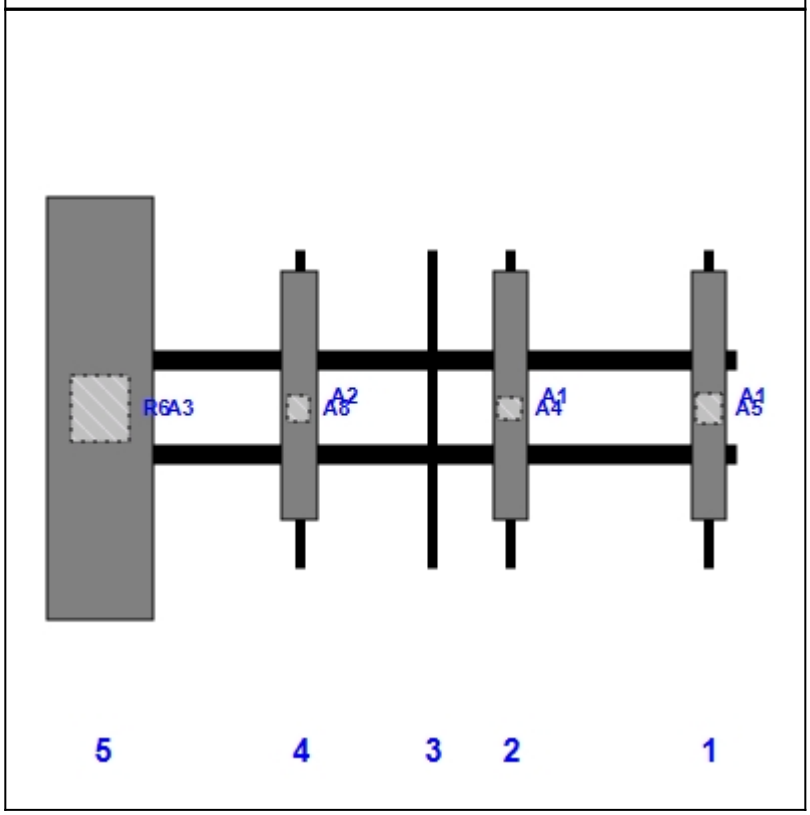
8/2/2019

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	RR90-17-02DP	56.00	8.00	144.00	1	a	Front	33.00	0.00
A5	KRY 112 144/1	6.90	6.10	144.00	1	a	Behind	36.00	0.00
A1	RR90-17-02DP	56.00	8.00	99.00	2	a	Front	33.00	0.00
A4	FE15501P77/75	5.40	5.50	99.00	2	a	Behind	36.00	0.00
A2	APXV18-206516S-A20	56.00	8.00	51.00	4	a	Front	33.00	0.00
A8	782 11056	5.70	5.00	51.00	4	a	Behind	36.00	0.00
A3	APXVAARR24_43-U-NA20	95.90	24.00	6.00	5	a	Front	36.00	0.00
R6	Radio 4449 B71+B12	15.00	13.20	6.00	5	a	Behind	36.00	0.00

Structure: CT01698-S-SBA - Durham

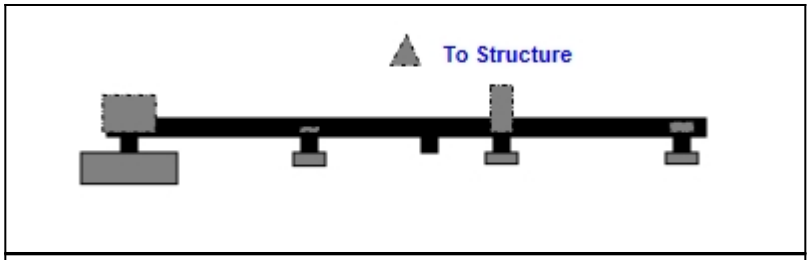
Sector: B

Structure Type: Monopole

Mount Elev: 152.00

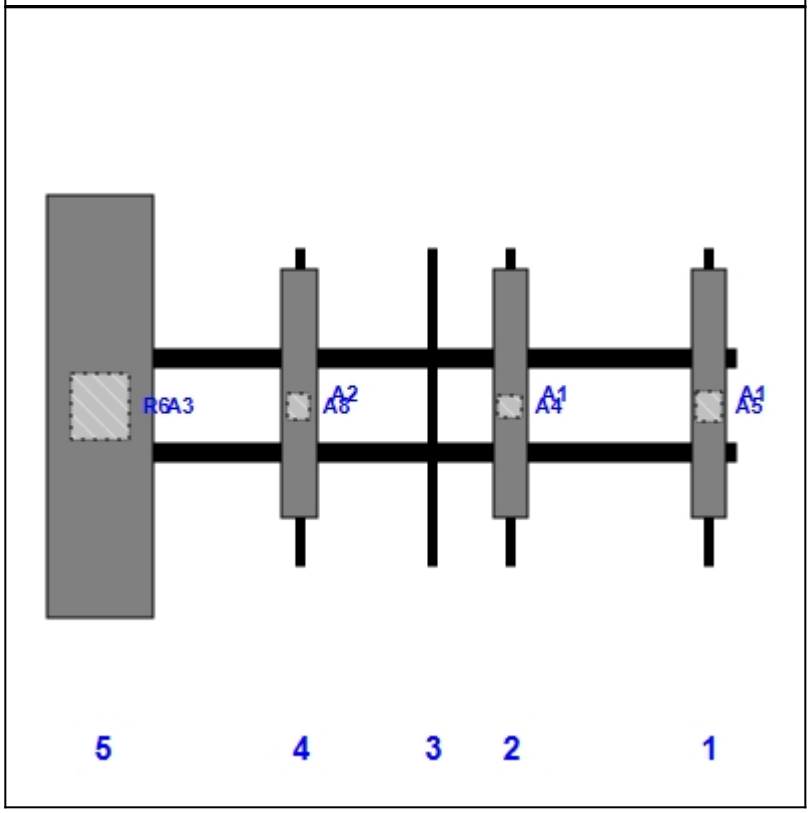
8/2/2019

Plan View



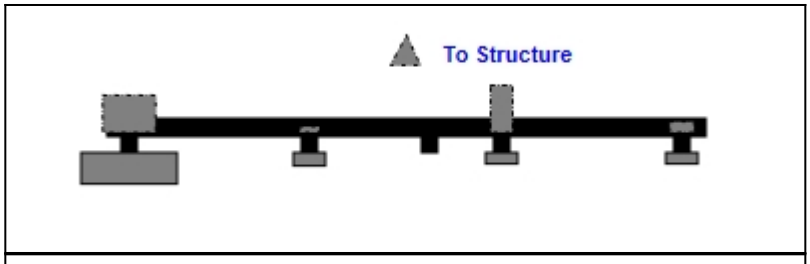
Front View

Looking Toward Structure



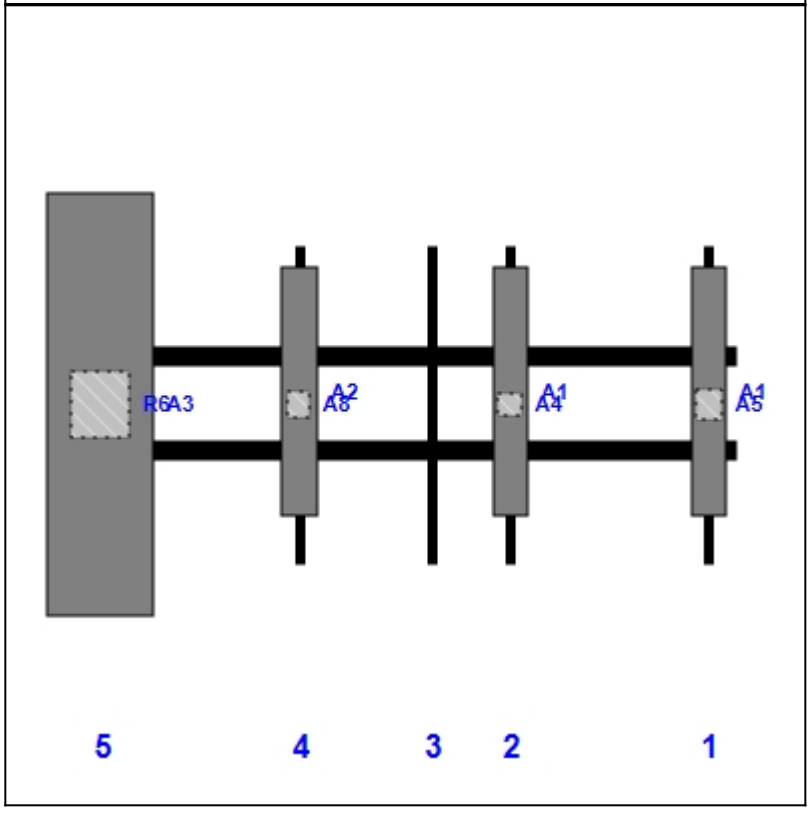
Ref	Model	Height (in)	Width (in)	H Dist From Left	Pipe	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A1	RR90-17-02DP	56.00	8.00	144.00	1	a	Front	33.00	0.00
A5	KRY 112 144/1	6.90	6.10	144.00	1	a	Behind	36.00	0.00
A1	RR90-17-02DP	56.00	8.00	99.00	2	a	Front	33.00	0.00
A4	FE15501P77/75	5.40	5.50	99.00	2	a	Behind	36.00	0.00
A2	APXV18-206516S-A20	56.00	8.00	51.00	4	a	Front	33.00	0.00
A8	782 11056	5.70	5.00	51.00	4	a	Behind	36.00	0.00
A3	APXVAARR24_43-U-NA20	95.90	24.00	6.00	5	a	Front	36.00	0.00
R6	Radio 4449 B71+B12	15.00	13.20	6.00	5	a	Behind	36.00	0.00

Plan View



Front View

Looking Toward Structure



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A1	RR90-17-02DP	56.00	8.00	144.00	1	a	Front	33.00	0.00
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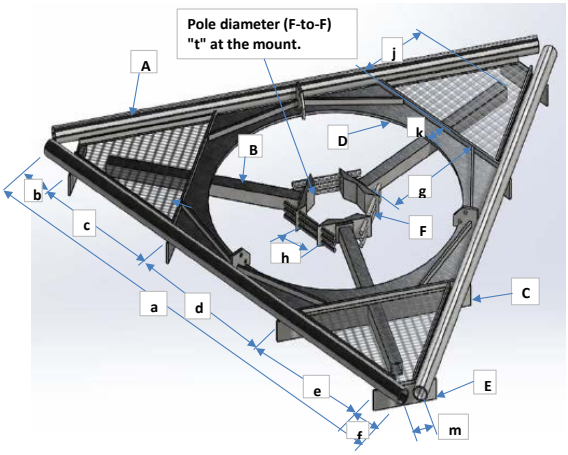
A1	RR90-17-02DP	56.00	8.00	99.00	2	a	Front	33.00	0.00
A4	FE15501P77/75	5.40	5.50	99.00	2	a	Behind	36.00	0.00
A2	APXV18-206516S-A20	56.00	8.00	51.00	4	a	Front	33.00	0.00
A8	782 11056	5.70	5.00	51.00	4	a	Behind	36.00	0.00
A3	APXVAARR24_43-U-NA20	95.90	24.00	6.00	5	a	Front	36.00	0.00
R6	Radio 4449 B71+B12	15.00	13.20	6.00	5	a	Behind	36.00	0.00

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

FCC # 1228227

Tower Owner:	SBA Communications	**Mapping Date:**	4/27/19
Site Name:	Durham	**Structure Type:**	Monopole
Site Number or ID:	CT01698-S-SBA	**Structure Height (Ft.):**	165
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	154.7



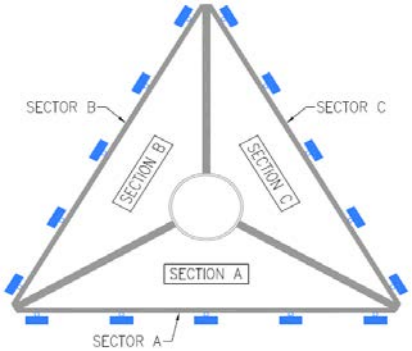
Geometries (Unit: inches)

a	150	**e**	35	**j**	16	**o**	N/A	**s**	N/A
b	15	**f**	15	**k**	10	**p**	N/A	**t**	23
c	35	**g**	30	**m**	12	**q**	N/A	**u ***	32
d	50	**h**	30	**n**	N/A	**r**	N/A	**v ***	72

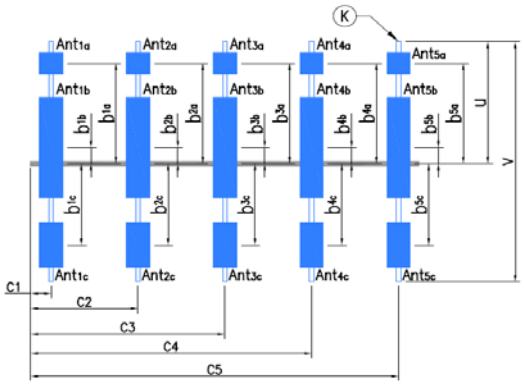
Members/Bolts (Unit: inches) * - See Ant. Layout for "u", "v" and member "K" (pipe)

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	**F**	5/8" Bolt		30	
B	Tubing 4x4x1/4	4	4	0.25	**G**				
C	3/8" Thick. Plate	0	0	0.375	**H**				
D	1/4" Thick. Plate	0	0	0.25	**J**				
E	3/8" Thick. Plate	0	0	0.375	**K* (pipe)**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)	
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)	N/A
Please enter the infomation below if members can't be found from the drop down lists	
Mount has additional bracing installed 20" above original mount.	



Climbing ladder is Located at Section A, at 135° Degree Azimuth



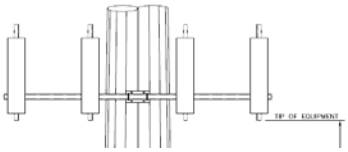
Antenna Layout

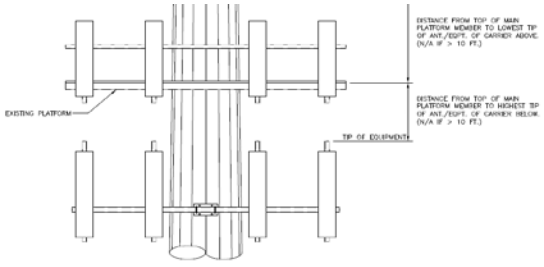
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector. Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Mounting Locations (Unit: inches) Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photos of antennas Photo Numbers
Sector A									
Ant_{1a}									
Ant_{1b}	Antenna A	7	3.5	53	1/2" (2)	+9"	6	7	
Ant_{1c}	TMA A	6	4	12	1/2" (2)	+11"	N/A	7	
Ant_{2a}									
Ant_{2b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	70	
Ant_{2c}									
Ant_{3a}									
Ant_{3b}	Antenna B	12	7.5	96.5	1/2" (2)	+14"	7	144	
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?	Yes	**Antennas on Sector B are the same as Sector A**							

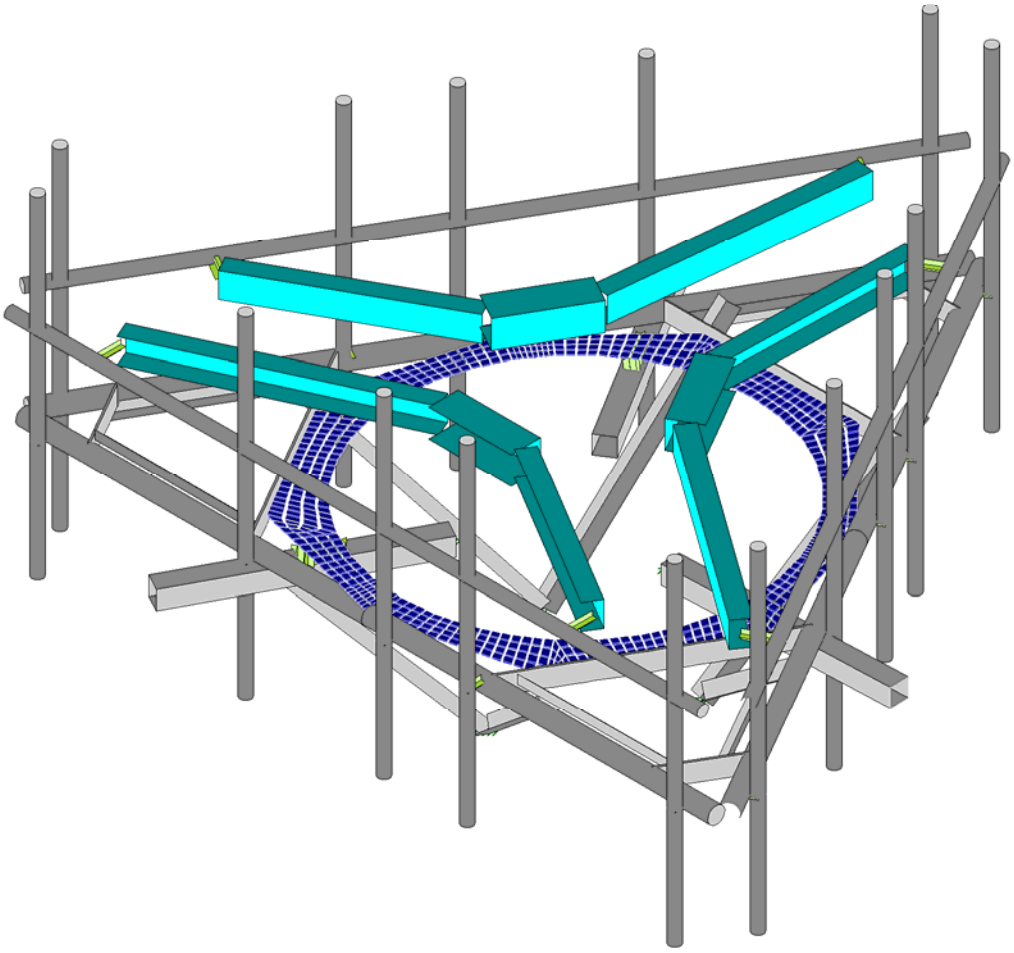
Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	75°	Deg	
Sector B:	180°	Deg	
Sector C:	310°	Deg	
Climbing	135°	Deg	Located at Section A
Climbing Facility	Corrosion Type:		No corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A

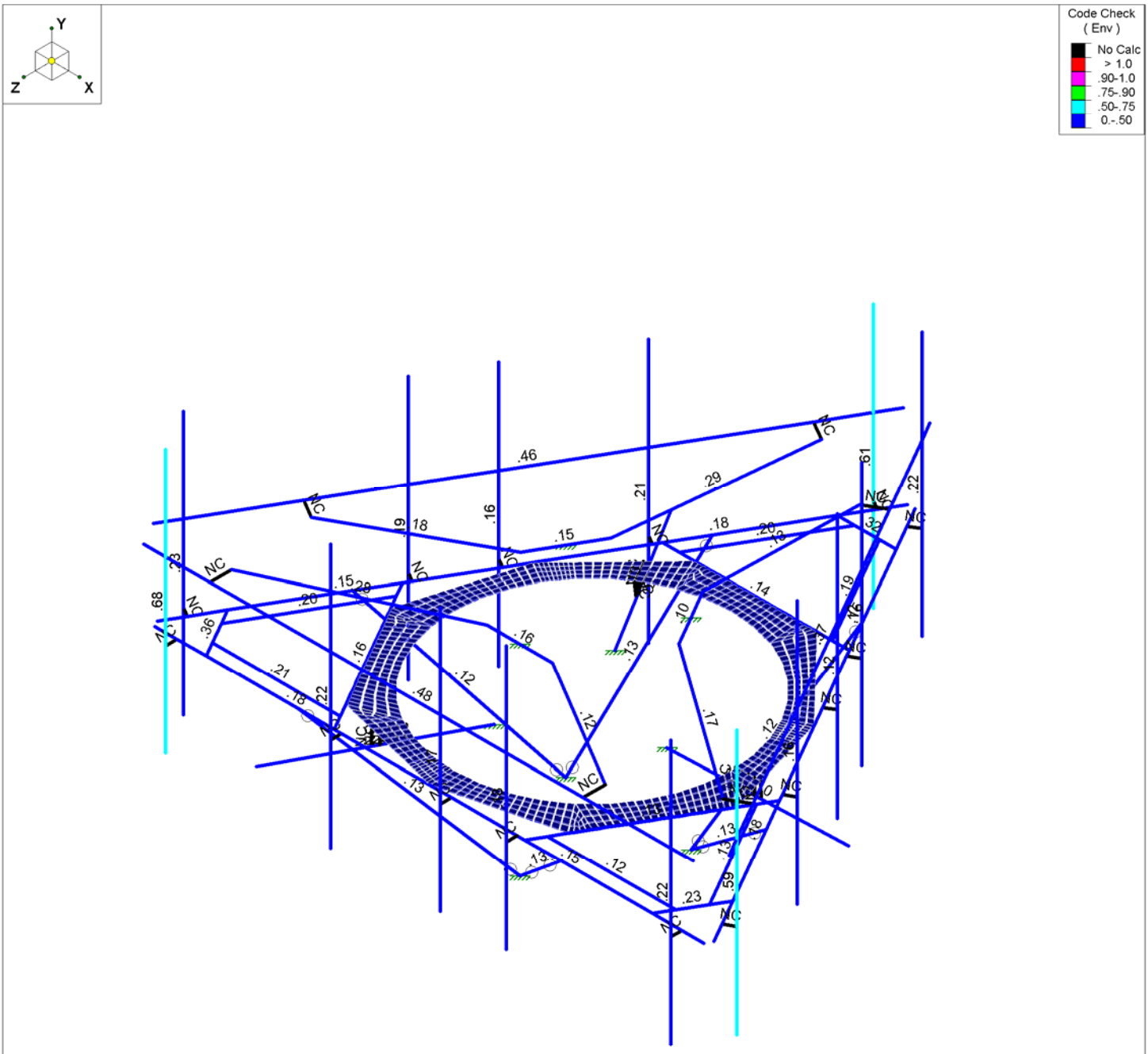
Are Ant same as sector A/B?	Same As A	**Antennas on Sector C are the same as Sector A**




DISTANCE FROM TOP OF MAIN PLATFORM MEMBER TO LOWEST TIP OF ANT./EQPT. OF CARRIER ABOVE. (N/A IF > 10 FT.)
DISTANCE FROM TOP OF MAIN PLATFORM MEMBER TO HIGHEST TIP OF ANT./EQPT. OF CARRIER BELOW. (N/A IF > 10 FT.)
EXISTING PLATFORM
TIP OF EQUIPMENT

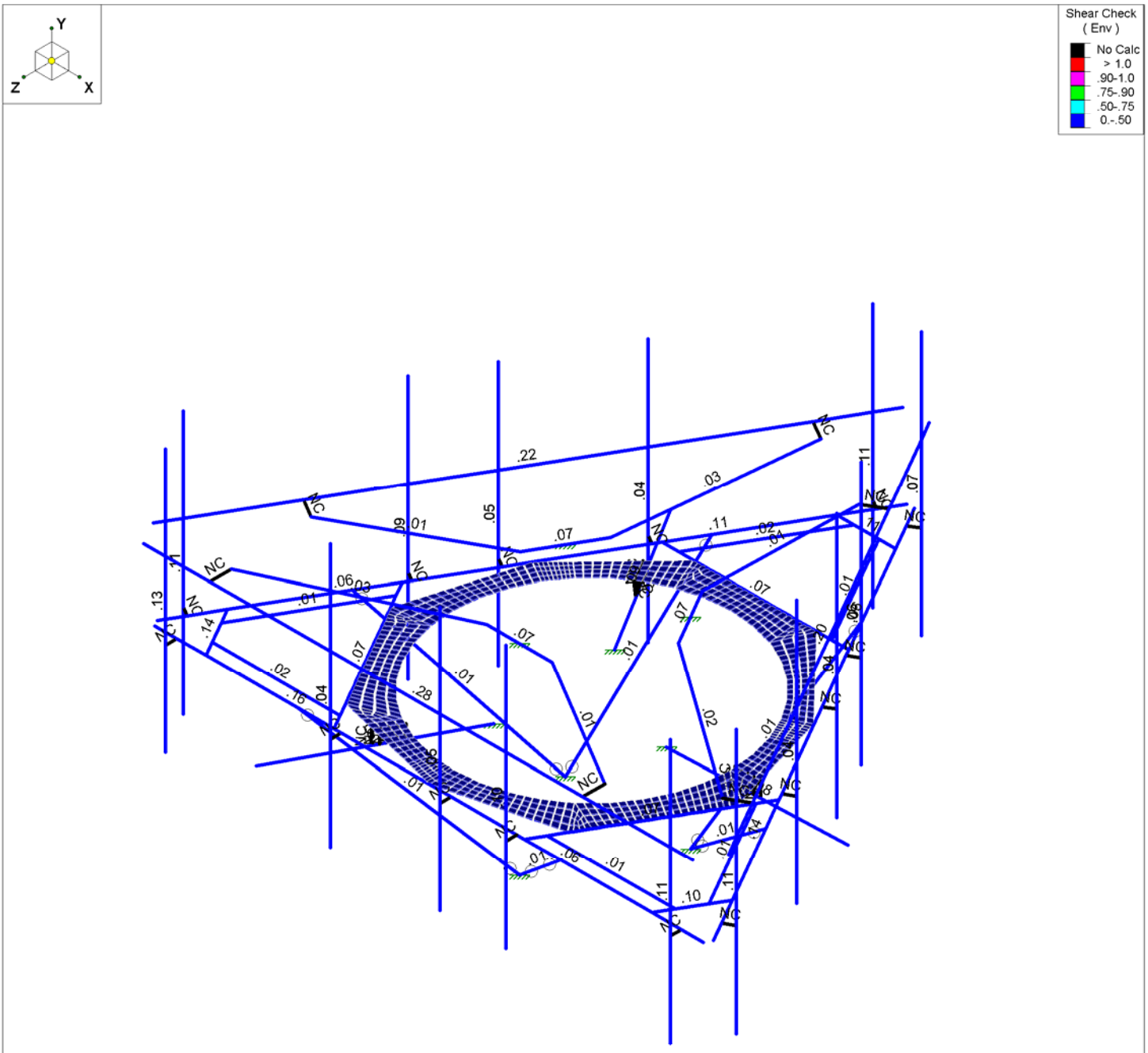


Tower Engineering Solutio...	CT01698-S-SBA_MT_LO_Loads Only_G	SK - 1
		Aug 2, 2019 at 9:34 AM
TES Project No. 82795		CT01698-S-SBA_82795_G_RISA_L...



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

Tower Engineering Solutio...	CT01698-S-SBA_MT_LO_Loads Only_G	SK - 2
		Aug 2, 2019 at 9:34 AM
TES Project No. 82795		CT01698-S-SBA_82795_G_RISA_L...



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

Tower Engineering Solutio...	CT01698-S-SBA_MT_LO_Loads Only_G	SK - 3
		Aug 2, 2019 at 9:35 AM
TES Project No. 82795		CT01698-S-SBA_82795_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					36			
2	Antenna Di	None					36			
3	Antenna W Front	None					36			
4	Antenna Wi Front	None					36			
5	Antenna W Side	None					36			
6	Antenna Wi Side	None					36			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						54	3	
11	Structure W Front	None						54		
12	Structure Wi Front	None						54		
13	Structure W Side	None						54		
14	Structure Wi Side	None						54		
15	BLC 9 Transient Area...	None						36		
16	BLC 10 Transient Are...	None						36		

Load Combinations

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

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	-6.25	0	3.704857	0	
2	N2	6.25	0	3.704857	0	
3	N4	-5.083	0	3.704857	0	
4	N5	-2.167	0	3.704857	0	
5	N6	2.167	0	3.704857	0	
6	N7	5.083	0	3.704857	0	
7	N8	6.3335	0	3.56023	0	
8	N9	0.0835	0	-7.265087	0	
9	N11	5.75	0	2.549579	0	
10	N12	4.292	0	0.024249	0	
11	N13	2.125	0	-3.729106	0	
12	N14	0.667	0	-6.254436	0	
13	N15	-0.0835	0	-7.265087	0	
14	N16	-6.3335	0	3.56023	0	
15	N18	-0.667	0	-6.254436	0	
16	N19	-2.125	0	-3.729106	0	
17	N20	-4.292	0	0.024249	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
18	N21	-5.75	0	2.549579	0	
19	N22	-5.275258	0	3.371857	0	
20	N23	-2.359258	0	3.371857	0	
21	N24	5.275258	0	3.371857	0	
22	N25	2.359258	0	3.371857	0	
23	N25A	5.557743	0	2.882579	0	
24	N26	4.099743	0	0.357249	0	
25	N27	0.282485	0	-6.254436	0	
26	N28	1.740485	0	-3.729106	0	
27	N30	-0.282485	0	-6.254436	0	
28	N31	-1.740485	0	-3.729106	0	
29	N32	-5.557743	0	2.882579	0	
30	N33	-4.099743	0	0.357249	0	
31	N34	0	0	3.704857	0	
32	N35	3.2085	0	-1.852429	0	
33	N36	-3.2085	0	-1.852429	0	
34	N86	-0.872129	-.333	-1.395698	0	
35	N86A	-1.407485	0	-3.729106	0	
36	N87A	1.407485	0	-3.729106	0	
37	N89	-2.525758	0	3.083471	0	
38	N90	-3.933243	0	0.645635	0	
39	N92	3.933243	0	0.645635	0	
40	N93	2.525758	0	3.083471	0	
41	N92A	-2e-14	0	-3.729106	0	
42	N93A	-2e-14	0	-3.146106	0	
43	N95	-0.546315	0	-3.098309	0	
44	N97	-1.076031	0	-2.956372	0	
45	N99	-1.573053	0	-2.724607	0	
46	N101	-2.022278	0	-2.410057	0	
47	N103	-2.410057	0	-2.022278	0	
48	N105	-2.724607	0	-1.573053	0	
49	N107	-2.956372	0	-1.076031	0	
50	N109	-3.098309	0	-0.546315	0	
51	N111	-3.146106	0	1e-14	0	
52	N113	-3.098309	0	0.546315	0	
53	N115	-2.956372	0	1.076031	0	
54	N117	-2.724607	0	1.573053	0	
55	N119	-2.410057	0	2.022278	0	
56	N121	-2.022278	0	2.410057	0	
57	N123	-1.573053	0	2.724607	0	
58	N125	-1.076031	0	2.956372	0	
59	N127	-0.546315	0	3.098309	0	
60	N129	0	0	3.146106	0	
61	N131	0.546315	0	3.098309	0	
62	N133	1.076031	0	2.956372	0	
63	N135	1.573053	0	2.724607	0	
64	N137	2.022278	0	2.410057	0	
65	N139	2.410057	0	2.022278	0	
66	N141	2.724607	0	1.573053	0	
67	N143	2.956372	0	1.076031	0	
68	N145	3.098309	0	0.546315	0	
69	N147	3.146106	0	-2e-14	0	
70	N149	3.098309	0	-0.546315	0	
71	N151	2.956372	0	-1.076031	0	
72	N153	2.724607	0	-1.573053	0	
73	N155	2.410057	0	-2.022278	0	
74	N157	2.022278	0	-2.410057	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
75	N159	1.573053	0	-2.724607	0	
76	N161	1.076031	0	-2.956372	0	
77	N163	0.546315	0	-3.098309	0	
78	N129A	.5	0	-3.729106	0	
79	N130	1	0	-3.729106	0	
80	N131A	-.5	0	-3.729106	0	
81	N132	-1	0	-3.729106	0	
82	N134	-3.2295	0	1.864553	0	
83	N135A	-3.4795	0	1.43154	0	
84	N136	-3.7295	0	0.998527	0	
85	N137A	-2.9795	0	2.297565	0	
86	N138	-2.7295	0	2.730578	0	
87	N140	3.2295	0	1.864553	0	
88	N141A	2.9795	0	2.297565	0	
89	N142	2.7295	0	2.730578	0	
90	N143A	3.4795	0	1.43154	0	
91	N144	3.7295	0	0.998527	0	
92	N143B	-1.894318	0	3.238817	0	
93	N144A	-1.262879	0	3.394164	0	
94	N145A	-0.631439	0	3.54951	0	
95	N146	0.631439	0	3.54951	0	
96	N147A	1.262879	0	3.394164	0	
97	N148	1.894318	0	3.238817	0	
98	N149A	3.752057	0	0.021119	0	
99	N150	3.570871	0	-0.603397	0	
100	N151A	3.389686	0	-1.227913	0	
101	N152	2.758246	0	-2.321598	0	
102	N153A	2.307993	0	-2.790767	0	
103	N154	1.857739	0	-3.259936	0	
104	N155A	-1.857739	0	-3.259936	0	
105	N156	-2.307993	0	-2.790767	0	
106	N157A	-2.758246	0	-2.321598	0	
107	N158	-3.389686	0	-1.227913	0	
108	N159A	-3.570871	0	-0.603397	0	
109	N160	-3.752057	0	0.021119	0	
110	N163A	-0.273158	0	3.122207	0	
111	N164	-0.317303	0	3.626794	0	
112	N166A	2.84049	0	-1.324542	0	
113	N167	3.299547	0	-1.538604	0	
114	N171	-2.567332	0	-1.797665	0	
115	N172	-2.982244	0	-2.08819	0	
116	N173A	-.875	0	-3.729106	0	
117	N174A	-.75	0	-3.729106	0	
118	N175	-.625	0	-3.729106	0	
119	N176	-1.019008	0	-3.535922	0	
120	N177	-0.892151	0	-3.544793	0	
121	N178	-0.765293	0	-3.553664	0	
122	N179	-0.638436	0	-3.562535	0	
123	N180	-0.511579	0	-3.571406	0	
124	N181	-1.038016	0	-3.342739	0	
125	N182	-0.909301	0	-3.360481	0	
126	N183	-0.780587	0	-3.378223	0	
127	N184	-0.651872	0	-3.395965	0	
128	N185	-0.523158	0	-3.413707	0	
129	N186	-1.057024	0	-3.149556	0	
130	N187	-0.926452	0	-3.176169	0	
131	N188	-0.79588	0	-3.202782	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
132	N189	-0.665308	0	-3.229395	0	
133	N190	-0.534737	0	-3.256008	0	
134	N191	-0.943602	0	-2.991856	0	
135	N192	-0.811173	0	-3.027341	0	
136	N193	-0.678744	0	-3.062825	0	
137	N194	-.375	0	-3.729106	0	
138	N195	-.25	0	-3.729106	0	
139	N196	-.125	0	-3.729106	0	
140	N197	-0.383684	0	-3.574394	0	
141	N198	-0.255789	0	-3.577381	0	
142	N199	-0.127895	0	-3.580368	0	
143	N200	-2e-14	0	-3.583356	0	
144	N201	-0.392368	0	-3.419682	0	
145	N202	-0.261579	0	-3.425656	0	
146	N203	-0.130789	0	-3.431631	0	
147	N204	-2e-14	0	-3.437606	0	
148	N205	-0.401052	0	-3.26497	0	
149	N206	-0.267368	0	-3.273932	0	
150	N207	-0.133684	0	-3.282894	0	
151	N208	-2e-14	0	-3.291856	0	
152	N209	-0.409737	0	-3.110258	0	
153	N210	-0.273158	0	-3.122207	0	
154	N211	-0.136579	0	-3.134156	0	
155	N212	.125	0	-3.729106	0	
156	N213	.25	0	-3.729106	0	
157	N214	.375	0	-3.729106	0	
158	N215	0.127895	0	-3.580368	0	
159	N216	0.255789	0	-3.577381	0	
160	N217	0.383684	0	-3.574394	0	
161	N218	0.511579	0	-3.571406	0	
162	N219	0.130789	0	-3.431631	0	
163	N220	0.261579	0	-3.425656	0	
164	N221	0.392368	0	-3.419682	0	
165	N222	0.523158	0	-3.413707	0	
166	N223	0.133684	0	-3.282894	0	
167	N224	0.267368	0	-3.273932	0	
168	N225	0.401052	0	-3.26497	0	
169	N226	0.534737	0	-3.256008	0	
170	N227	0.136579	0	-3.134156	0	
171	N228	0.273158	0	-3.122207	0	
172	N229	0.409737	0	-3.110258	0	
173	N230	.625	0	-3.729106	0	
174	N231	.75	0	-3.729106	0	
175	N232	.875	0	-3.729106	0	
176	N233	0.638436	0	-3.562535	0	
177	N234	0.765293	0	-3.553664	0	
178	N235	0.892151	0	-3.544793	0	
179	N236	1.019008	0	-3.535922	0	
180	N237	0.651872	0	-3.395965	0	
181	N238	0.780587	0	-3.378223	0	
182	N239	0.909301	0	-3.360481	0	
183	N240	1.038016	0	-3.342739	0	
184	N241	0.665308	0	-3.229395	0	
185	N242	0.79588	0	-3.202782	0	
186	N243	0.926452	0	-3.176169	0	
187	N244	1.057024	0	-3.149556	0	
188	N245	0.678744	0	-3.062825	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
189	N246	0.811173	0	-3.027341	0	
190	N247	0.943602	0	-2.991856	0	
191	N248	1.520048	0	-3.611813	0	
192	N249	1.632612	0	-3.494521	0	
193	N250	1.745175	0	-3.377229	0	
194	N251	1.324622	0	-3.535922	0	
195	N252	1.440108	0	-3.433468	0	
196	N253	1.555594	0	-3.331013	0	
197	N254	1.671081	0	-3.228559	0	
198	N255	1.786567	0	-3.126104	0	
199	N256	1.241758	0	-3.342739	0	
200	N257	1.360168	0	-3.255122	0	
201	N258	1.478577	0	-3.167505	0	
202	N259	1.596986	0	-3.079889	0	
203	N260	1.715396	0	-2.992272	0	
204	N261	1.158895	0	-3.149556	0	
205	N262	1.280227	0	-3.076777	0	
206	N263	1.40156	0	-3.003998	0	
207	N264	1.522892	0	-2.931219	0	
208	N265	1.644224	0	-2.85844	0	
209	N266	1.200287	0	-2.898431	0	
210	N267	1.324542	0	-2.84049	0	
211	N268	1.448797	0	-2.782549	0	
212	N269	1.970302	0	-3.142644	0	
213	N270	2.082866	0	-3.025352	0	
214	N271	2.195429	0	-2.908059	0	
215	N272	1.899066	0	-3.018475	0	
216	N273	2.011566	0	-2.910847	0	
217	N274	2.124065	0	-2.803218	0	
218	N275	2.236564	0	-2.695589	0	
219	N276	1.827831	0	-2.894307	0	
220	N277	1.940265	0	-2.796342	0	
221	N278	2.0527	0	-2.698377	0	
222	N279	2.165135	0	-2.600412	0	
223	N280	1.756595	0	-2.770138	0	
224	N281	1.868965	0	-2.681837	0	
225	N282	1.981336	0	-2.593536	0	
226	N283	2.093706	0	-2.505234	0	
227	N284	1.685359	0	-2.64597	0	
228	N285	1.797665	0	-2.567332	0	
229	N286	1.909971	0	-2.488694	0	
230	N287	2.420556	0	-2.673475	0	
231	N288	2.53312	0	-2.556182	0	
232	N289	2.645683	0	-2.43889	0	
233	N290	2.345223	0	-2.583384	0	
234	N291	2.453881	0	-2.471179	0	
235	N292	2.56254	0	-2.358973	0	
236	N293	2.671199	0	-2.246768	0	
237	N294	2.269889	0	-2.493293	0	
238	N295	2.374643	0	-2.386175	0	
239	N296	2.479397	0	-2.279056	0	
240	N297	2.584152	0	-2.171938	0	
241	N298	2.194556	0	-2.403203	0	
242	N299	2.295405	0	-2.301171	0	
243	N300	2.396255	0	-2.199139	0	
244	N301	2.497104	0	-2.097108	0	
245	N302	2.119222	0	-2.313112	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
246	N303	2.216167	0	-2.216167	0	
247	N304	2.313112	0	-2.119222	0	
248	N305	2.87081	0	-2.204305	0	
249	N306	2.983373	0	-2.087013	0	
250	N307	3.095937	0	-1.969721	0	
251	N308	2.775281	0	-2.130722	0	
252	N309	2.879363	0	-2.014676	0	
253	N310	2.983445	0	-1.89863	0	
254	N311	3.087527	0	-1.782585	0	
255	N312	2.679752	0	-2.057138	0	
256	N313	2.775353	0	-1.942339	0	
257	N314	2.870953	0	-1.82754	0	
258	N315	2.966554	0	-1.712741	0	
259	N316	2.584223	0	-1.983555	0	
260	N317	2.671342	0	-1.870002	0	
261	N318	2.758461	0	-1.756449	0	
262	N319	2.845581	0	-1.642897	0	
263	N320	2.488694	0	-1.909971	0	
264	N321	2.567332	0	-1.797665	0	
265	N322	2.64597	0	-1.685359	0	
266	N323	3.434982	0	-1.071784	0	
267	N324	3.480279	0	-0.915655	0	
268	N325	3.525575	0	-0.759526	0	
269	N326	3.281357	0	-1.189942	0	
270	N327	3.324201	0	-1.039738	0	
271	N328	3.367044	0	-0.889534	0	
272	N329	3.409888	0	-0.73933	0	
273	N330	3.452731	0	-0.589126	0	
274	N331	3.173029	0	-1.151972	0	
275	N332	3.213419	0	-1.007693	0	
276	N333	3.25381	0	-0.863414	0	
277	N334	3.2942	0	-0.719135	0	
278	N335	3.33459	0	-0.574856	0	
279	N336	3.064701	0	-1.114002	0	
280	N337	3.102638	0	-0.975648	0	
281	N338	3.140575	0	-0.837294	0	
282	N339	3.178512	0	-0.69894	0	
283	N340	3.21645	0	-0.560586	0	
284	N341	2.991856	0	-0.943602	0	
285	N342	3.027341	0	-0.811173	0	
286	N343	3.062825	0	-0.678744	0	
287	N344	3.616168	0	-0.447268	0	
288	N345	3.661464	0	-0.291139	0	
289	N346	3.706761	0	-0.13501	0	
290	N347	3.48969	0	-0.437885	0	
291	N348	3.52665	0	-0.286644	0	
292	N349	3.56361	0	-0.135402	0	
293	N350	3.600569	0	0.015839	0	
294	N351	3.363213	0	-0.428502	0	
295	N352	3.391836	0	-0.282148	0	
296	N353	3.420459	0	-0.135794	0	
297	N354	3.449081	0	0.01056	0	
298	N355	3.236736	0	-0.419119	0	
299	N356	3.257022	0	-0.277653	0	
300	N357	3.277307	0	-0.136187	0	
301	N358	3.297593	0	0.00528	0	
302	N359	3.110258	0	-0.409737	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
303	N360	3.122207	0	-0.273158	0	
304	N361	3.134156	0	-0.136579	0	
305	N362	3.780436	0	0.910304	0	
306	N363	3.831371	0	0.822081	0	
307	N364	3.882307	0	0.733858	0	
308	N365	3.571702	0	0.885474	0	
309	N366	3.612891	0	0.785162	0	
310	N367	3.65408	0	0.68485	0	
311	N368	3.695269	0	0.584538	0	
312	N369	3.736458	0	0.484226	0	
313	N370	3.413905	0	0.772421	0	
314	N371	3.445347	0	0.66002	0	
315	N372	3.476789	0	0.547619	0	
316	N373	3.508232	0	0.435218	0	
317	N374	3.539674	0	0.322818	0	
318	N375	3.256107	0	0.659368	0	
319	N376	3.277803	0	0.534879	0	
320	N377	3.299498	0	0.410389	0	
321	N378	3.321194	0	0.285899	0	
322	N379	3.34289	0	0.161409	0	
323	N380	3.110258	0	0.409737	0	
324	N381	3.122207	0	0.273158	0	
325	N382	3.134156	0	0.136579	0	
326	N383	3.062825	0	0.678744	0	
327	N384	3.027341	0	0.811173	0	
328	N385	2.991856	0	0.943602	0	
329	N386	3.213869	0	0.785754	0	
330	N387	3.171631	0	0.912139	0	
331	N388	3.129392	0	1.038524	0	
332	N389	3.087154	0	1.164909	0	
333	N390	3.364913	0	0.892763	0	
334	N391	3.31592	0	1.013104	0	
335	N392	3.266928	0	1.133445	0	
336	N393	3.217936	0	1.253786	0	
337	N394	3.515956	0	0.999772	0	
338	N395	3.46021	0	1.114069	0	
339	N396	3.404464	0	1.228366	0	
340	N397	3.348718	0	1.342663	0	
341	N398	3.667	0	1.106781	0	
342	N399	3.6045	0	1.215034	0	
343	N400	3.542	0	1.323287	0	
344	N401	2.898431	0	1.200287	0	
345	N402	2.84049	0	1.324542	0	
346	N403	2.782549	0	1.448797	0	
347	N404	3.028073	0	1.285163	0	
348	N405	2.968992	0	1.405418	0	
349	N406	2.909911	0	1.525673	0	
350	N407	2.850831	0	1.645928	0	
351	N408	3.157716	0	1.37004	0	
352	N409	3.097495	0	1.486294	0	
353	N410	3.037274	0	1.602549	0	
354	N411	2.977054	0	1.718803	0	
355	N412	3.287358	0	1.454917	0	
356	N413	3.225998	0	1.56717	0	
357	N414	3.164637	0	1.679424	0	
358	N415	3.103277	0	1.791678	0	
359	N416	3.417	0	1.539793	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
360	N417	3.3545	0	1.648046	0	
361	N418	3.292	0	1.7563	0	
362	N419	2.64597	0	1.685359	0	
363	N420	2.567332	0	1.797665	0	
364	N421	2.488694	0	1.909971	0	
365	N422	2.776227	0	1.757221	0	
366	N423	2.701624	0	1.868514	0	
367	N424	2.627021	0	1.979807	0	
368	N425	2.552418	0	2.0911	0	
369	N426	2.906485	0	1.829082	0	
370	N427	2.835916	0	1.939362	0	
371	N428	2.765347	0	2.049642	0	
372	N429	2.694778	0	2.159922	0	
373	N430	3.036743	0	1.900944	0	
374	N431	2.970208	0	2.010211	0	
375	N432	2.903674	0	2.119477	0	
376	N433	2.837139	0	2.228744	0	
377	N434	3.167	0	1.972806	0	
378	N435	3.1045	0	2.081059	0	
379	N436	3.042	0	2.189312	0	
380	N437	2.313112	0	2.119222	0	
381	N438	2.216167	0	2.216167	0	
382	N439	2.119222	0	2.313112	0	
383	N440	2.464084	0	2.190871	0	
384	N441	2.37575	0	2.290643	0	
385	N442	2.287417	0	2.390415	0	
386	N443	2.199083	0	2.490187	0	
387	N444	2.615056	0	2.262521	0	
388	N445	2.535334	0	2.365119	0	
389	N446	2.455611	0	2.467718	0	
390	N447	2.375889	0	2.570317	0	
391	N448	2.766028	0	2.33417	0	
392	N449	2.694917	0	2.439596	0	
393	N450	2.623806	0	2.545022	0	
394	N451	2.552695	0	2.650448	0	
395	N452	2.917	0	2.405819	0	
396	N453	2.8545	0	2.514072	0	
397	N454	2.792	0	2.622325	0	
398	N455	2.399888	0	2.915117	0	
399	N456	2.274018	0	2.746764	0	
400	N457	2.148148	0	2.57841	0	
401	N458	2.367898	0	3.122307	0	
402	N459	2.253416	0	2.963904	0	
403	N460	2.138935	0	2.805501	0	
404	N461	2.024453	0	2.647098	0	
405	N462	1.909971	0	2.488694	0	
406	N463	2.210038	0	3.161144	0	
407	N464	2.106945	0	3.012691	0	
408	N465	2.003852	0	2.864238	0	
409	N466	1.900758	0	2.715785	0	
410	N467	1.797665	0	2.567332	0	
411	N468	2.052178	0	3.199981	0	
412	N469	1.960473	0	3.061478	0	
413	N470	1.868769	0	2.922975	0	
414	N471	1.777064	0	2.784472	0	
415	N472	1.685359	0	2.64597	0	
416	N473	1.814002	0	3.110265	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
417	N474	1.733686	0	2.981712	0	
418	N475	1.653369	0	2.85316	0	
419	N476	1.736458	0	3.277654	0	
420	N477	1.664543	0	3.153877	0	
421	N478	1.592628	0	3.030101	0	
422	N479	1.520713	0	2.906325	0	
423	N480	1.448797	0	2.782549	0	
424	N481	1.578599	0	3.31649	0	
425	N482	1.515084	0	3.19749	0	
426	N483	1.45157	0	3.07849	0	
427	N484	1.388056	0	2.95949	0	
428	N485	1.324542	0	2.84049	0	
429	N486	1.420739	0	3.355327	0	
430	N487	1.365626	0	3.241103	0	
431	N488	1.310513	0	3.126879	0	
432	N489	1.2554	0	3.012655	0	
433	N490	1.200287	0	2.898431	0	
434	N491	1.216167	0	3.284716	0	
435	N492	1.169455	0	3.175268	0	
436	N493	1.122743	0	3.06582	0	
437	N494	1.105019	0	3.433	0	
438	N495	1.064665	0	3.322714	0	
439	N496	1.024311	0	3.212428	0	
440	N497	0.983957	0	3.102142	0	
441	N498	0.943602	0	2.991856	0	
442	N499	0.947159	0	3.471837	0	
443	N500	0.913163	0	3.360713	0	
444	N501	0.879166	0	3.249589	0	
445	N502	0.84517	0	3.138465	0	
446	N503	0.811173	0	3.027341	0	
447	N504	0.789299	0	3.510674	0	
448	N505	0.761661	0	3.398712	0	
449	N506	0.734022	0	3.286749	0	
450	N507	0.706383	0	3.174787	0	
451	N508	0.678744	0	3.062825	0	
452	N509	0.610158	0	3.43671	0	
453	N510	0.588877	0	3.32391	0	
454	N511	0.567596	0	3.211109	0	
455	N512	0.409737	0	3.110258	0	
456	N513	0.273158	0	3.122207	0	
457	N514	0.136579	0	3.134156	0	
458	N515	0.425697	0	3.22978	0	
459	N516	0.283798	0	3.248451	0	
460	N517	0.141899	0	3.267122	0	
461	N518	0	0	3.285793	0	
462	N519	0.441658	0	3.349303	0	
463	N520	0.294439	0	3.374696	0	
464	N521	0.147219	0	3.400088	0	
465	N522	0	0	3.425481	0	
466	N523	0.457619	0	3.468825	0	
467	N524	0.305079	0	3.50094	0	
468	N525	0.15254	0	3.533054	0	
469	N526	0	0	3.565169	0	
470	N527	0.47358	0	3.588347	0	
471	N528	0.31572	0	3.627184	0	
472	N529	0.15786	0	3.66602	0	
473	N530	-0.678744	0	3.062825	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
474	N531	-0.811173	0	3.027341	0	
475	N532	-0.943602	0	2.991856	0	
476	N533	-0.567596	0	3.211109	0	
477	N534	-0.706383	0	3.174787	0	
478	N535	-0.84517	0	3.138465	0	
479	N536	-0.983957	0	3.102142	0	
480	N537	-1.122743	0	3.06582	0	
481	N538	-0.588877	0	3.32391	0	
482	N539	-0.734022	0	3.286749	0	
483	N540	-0.879166	0	3.249589	0	
484	N541	-1.024311	0	3.212428	0	
485	N542	-1.169455	0	3.175268	0	
486	N543	-0.610158	0	3.43671	0	
487	N544	-0.761661	0	3.398712	0	
488	N545	-0.913163	0	3.360713	0	
489	N546	-1.064665	0	3.322714	0	
490	N547	-1.216167	0	3.284716	0	
491	N548	-0.789299	0	3.510674	0	
492	N549	-0.947159	0	3.471837	0	
493	N550	-1.105019	0	3.433	0	
494	N551	-1.448797	0	2.782549	0	
495	N552	-1.324542	0	2.84049	0	
496	N553	-1.200287	0	2.898431	0	
497	N554	-1.653369	0	2.85316	0	
498	N555	-1.520713	0	2.906325	0	
499	N556	-1.388056	0	2.95949	0	
500	N557	-1.2554	0	3.012655	0	
501	N558	-1.733686	0	2.981712	0	
502	N559	-1.592628	0	3.030101	0	
503	N560	-1.45157	0	3.07849	0	
504	N561	-1.310513	0	3.126879	0	
505	N562	-1.814002	0	3.110265	0	
506	N563	-1.664543	0	3.153877	0	
507	N564	-1.515084	0	3.19749	0	
508	N565	-1.365626	0	3.241103	0	
509	N566	-1.736458	0	3.277654	0	
510	N567	-1.578599	0	3.31649	0	
511	N568	-1.420739	0	3.355327	0	
512	N569	-1.685359	0	2.64597	0	
513	N570	-1.797665	0	2.567332	0	
514	N571	-1.909971	0	2.488694	0	
515	N572	-1.811229	0	2.814323	0	
516	N573	-1.908193	0	2.733289	0	
517	N574	-2.005156	0	2.652255	0	
518	N575	-2.10212	0	2.571221	0	
519	N576	-2.199083	0	2.490187	0	
520	N577	-2.049405	0	2.904039	0	
521	N578	-2.131026	0	2.820609	0	
522	N579	-2.212647	0	2.737178	0	
523	N580	-2.294268	0	2.653748	0	
524	N581	-2.375889	0	2.570317	0	
525	N582	-2.287581	0	2.993755	0	
526	N583	-2.35386	0	2.907928	0	
527	N584	-2.420138	0	2.822101	0	
528	N585	-2.486416	0	2.736275	0	
529	N586	-2.552695	0	2.650448	0	
530	N587	-2.576693	0	2.995247	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
531	N588	-2.627629	0	2.907024	0	
532	N589	-2.678565	0	2.818801	0	
533	N590	-2.119222	0	2.313112	0	
534	N591	-2.216167	0	2.216167	0	
535	N592	-2.313112	0	2.119222	0	
536	N593	-2.287417	0	2.390415	0	
537	N594	-2.37575	0	2.290643	0	
538	N595	-2.464084	0	2.190871	0	
539	N596	-2.552418	0	2.0911	0	
540	N597	-2.455611	0	2.467718	0	
541	N598	-2.535334	0	2.365119	0	
542	N599	-2.615056	0	2.262521	0	
543	N600	-2.694778	0	2.159922	0	
544	N601	-2.623806	0	2.545022	0	
545	N602	-2.694917	0	2.439596	0	
546	N603	-2.766028	0	2.33417	0	
547	N604	-2.837139	0	2.228744	0	
548	N605	-2.792	0	2.622325	0	
549	N606	-2.8545	0	2.514072	0	
550	N607	-2.917	0	2.405819	0	
551	N608	-2.488694	0	1.909971	0	
552	N609	-2.567332	0	1.797665	0	
553	N610	-2.64597	0	1.685359	0	
554	N611	-2.627021	0	1.979807	0	
555	N612	-2.701624	0	1.868514	0	
556	N613	-2.776227	0	1.757221	0	
557	N614	-2.850831	0	1.645928	0	
558	N615	-2.765347	0	2.049642	0	
559	N616	-2.835916	0	1.939362	0	
560	N617	-2.906485	0	1.829082	0	
561	N618	-2.977054	0	1.718803	0	
562	N619	-2.903674	0	2.119477	0	
563	N620	-2.970208	0	2.010211	0	
564	N621	-3.036743	0	1.900944	0	
565	N622	-3.103277	0	1.791678	0	
566	N623	-3.042	0	2.189312	0	
567	N624	-3.1045	0	2.081059	0	
568	N625	-3.167	0	1.972806	0	
569	N626	-2.782549	0	1.448797	0	
570	N627	-2.84049	0	1.324542	0	
571	N628	-2.898431	0	1.200287	0	
572	N629	-2.909911	0	1.525673	0	
573	N630	-2.968992	0	1.405418	0	
574	N631	-3.028073	0	1.285163	0	
575	N632	-3.087154	0	1.164909	0	
576	N633	-3.037274	0	1.602549	0	
577	N634	-3.097495	0	1.486294	0	
578	N635	-3.157716	0	1.37004	0	
579	N636	-3.217936	0	1.253786	0	
580	N637	-3.164637	0	1.679424	0	
581	N638	-3.225998	0	1.56717	0	
582	N639	-3.287358	0	1.454917	0	
583	N640	-3.348718	0	1.342663	0	
584	N641	-3.292	0	1.7563	0	
585	N642	-3.3545	0	1.648046	0	
586	N643	-3.417	0	1.539793	0	
587	N644	-2.991856	0	0.943602	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
588	N645	-3.027341	0	0.811173	0	
589	N646	-3.062825	0	0.678744	0	
590	N647	-3.129392	0	1.038524	0	
591	N648	-3.171631	0	0.912139	0	
592	N649	-3.213869	0	0.785754	0	
593	N650	-3.256107	0	0.659368	0	
594	N651	-3.266928	0	1.133445	0	
595	N652	-3.31592	0	1.013104	0	
596	N653	-3.364913	0	0.892763	0	
597	N654	-3.413905	0	0.772421	0	
598	N655	-3.404464	0	1.228366	0	
599	N656	-3.46021	0	1.114069	0	
600	N657	-3.515956	0	0.999772	0	
601	N658	-3.571702	0	0.885474	0	
602	N659	-3.542	0	1.323287	0	
603	N660	-3.6045	0	1.215034	0	
604	N661	-3.667	0	1.106781	0	
605	N662	-3.110258	0	0.409737	0	
606	N663	-3.122207	0	0.273158	0	
607	N664	-3.134156	0	0.136579	0	
608	N665	-3.307043	0	0.571145	0	
609	N666	-3.30468	0	0.429679	0	
610	N667	-3.302318	0	0.288213	0	
611	N668	-3.299956	0	0.146746	0	
612	N669	-3.297593	0	0.00528	0	
613	N670	-3.515776	0	0.595975	0	
614	N671	-3.499102	0	0.449621	0	
615	N672	-3.482429	0	0.303267	0	
616	N673	-3.465755	0	0.156913	0	
617	N674	-3.449081	0	0.01056	0	
618	N675	-3.724509	0	0.620805	0	
619	N676	-3.693524	0	0.469564	0	
620	N677	-3.662539	0	0.318322	0	
621	N678	-3.631554	0	0.167081	0	
622	N679	-3.600569	0	0.015839	0	
623	N680	-3.887946	0	0.489506	0	
624	N681	-3.84265	0	0.333377	0	
625	N682	-3.797353	0	0.177248	0	
626	N683	-3.134156	0	-0.136579	0	
627	N684	-3.122207	0	-0.273158	0	
628	N685	-3.110258	0	-0.409737	0	
629	N686	-3.277307	0	-0.136187	0	
630	N687	-3.257022	0	-0.277653	0	
631	N688	-3.236736	0	-0.419119	0	
632	N689	-3.21645	0	-0.560586	0	
633	N690	-3.420459	0	-0.135794	0	
634	N691	-3.391836	0	-0.282148	0	
635	N692	-3.363213	0	-0.428502	0	
636	N693	-3.33459	0	-0.574856	0	
637	N694	-3.56361	0	-0.135402	0	
638	N695	-3.52665	0	-0.286644	0	
639	N696	-3.48969	0	-0.437885	0	
640	N697	-3.452731	0	-0.589126	0	
641	N698	-3.706761	0	-0.13501	0	
642	N699	-3.661464	0	-0.291139	0	
643	N700	-3.616168	0	-0.447268	0	
644	N701	-3.062825	0	-0.678744	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
645	N702	-3.027341	0	-0.811173	0	
646	N703	-2.991856	0	-0.943602	0	
647	N704	-3.178512	0	-0.69894	0	
648	N705	-3.140575	0	-0.837294	0	
649	N706	-3.102638	0	-0.975648	0	
650	N707	-3.064701	0	-1.114002	0	
651	N708	-3.2942	0	-0.719135	0	
652	N709	-3.25381	0	-0.863414	0	
653	N710	-3.213419	0	-1.007693	0	
654	N711	-3.173029	0	-1.151972	0	
655	N712	-3.409888	0	-0.73933	0	
656	N713	-3.367044	0	-0.889534	0	
657	N714	-3.324201	0	-1.039738	0	
658	N715	-3.281357	0	-1.189942	0	
659	N716	-3.525575	0	-0.759526	0	
660	N717	-3.480279	0	-0.915655	0	
661	N718	-3.434982	0	-1.071784	0	
662	N719	-2.898431	0	-1.200287	0	
663	N720	-2.84049	0	-1.324542	0	
664	N721	-2.782549	0	-1.448797	0	
665	N722	-3.009921	0	-1.246225	0	
666	N723	-2.955141	0	-1.378449	0	
667	N724	-2.900361	0	-1.510673	0	
668	N725	-2.845581	0	-1.642897	0	
669	N726	-3.12141	0	-1.292164	0	
670	N727	-3.069791	0	-1.432356	0	
671	N728	-3.018173	0	-1.572548	0	
672	N729	-2.966554	0	-1.712741	0	
673	N730	-3.2329	0	-1.338103	0	
674	N731	-3.184442	0	-1.486263	0	
675	N732	-3.135985	0	-1.634424	0	
676	N733	-3.087527	0	-1.782585	0	
677	N734	-3.344389	0	-1.384042	0	
678	N735	-3.299093	0	-1.540171	0	
679	N736	-3.253797	0	-1.6963	0	
680	N737	-2.313112	0	-2.119222	0	
681	N738	-2.216167	0	-2.216167	0	
682	N739	-2.119222	0	-2.313112	0	
683	N740	-2.497104	0	-2.097108	0	
684	N741	-2.396255	0	-2.199139	0	
685	N742	-2.295405	0	-2.301171	0	
686	N743	-2.194556	0	-2.403203	0	
687	N744	-2.093706	0	-2.505234	0	
688	N745	-2.584152	0	-2.171938	0	
689	N746	-2.479397	0	-2.279056	0	
690	N747	-2.374643	0	-2.386175	0	
691	N748	-2.269889	0	-2.493293	0	
692	N749	-2.165135	0	-2.600412	0	
693	N750	-2.671199	0	-2.246768	0	
694	N751	-2.56254	0	-2.358973	0	
695	N752	-2.453881	0	-2.471179	0	
696	N753	-2.345223	0	-2.583384	0	
697	N754	-2.236564	0	-2.695589	0	
698	N755	-2.645683	0	-2.43889	0	
699	N756	-2.53312	0	-2.556182	0	
700	N757	-2.420556	0	-2.673475	0	
701	N758	-1.909971	0	-2.488694	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
702	N759	-1.797665	0	-2.567332	0	
703	N760	-1.685359	0	-2.64597	0	
704	N761	-1.981336	0	-2.593536	0	
705	N762	-1.868965	0	-2.681837	0	
706	N763	-1.756595	0	-2.770138	0	
707	N764	-1.644224	0	-2.85844	0	
708	N765	-2.0527	0	-2.698377	0	
709	N766	-1.940265	0	-2.796342	0	
710	N767	-1.827831	0	-2.894307	0	
711	N768	-1.715396	0	-2.992272	0	
712	N769	-2.124065	0	-2.803218	0	
713	N770	-2.011566	0	-2.910847	0	
714	N771	-1.899066	0	-3.018475	0	
715	N772	-1.786567	0	-3.126104	0	
716	N773	-2.195429	0	-2.908059	0	
717	N774	-2.082866	0	-3.025352	0	
718	N775	-1.970302	0	-3.142644	0	
719	N776	-1.448797	0	-2.782549	0	
720	N777	-1.324542	0	-2.84049	0	
721	N778	-1.200287	0	-2.898431	0	
722	N779	-1.522892	0	-2.931219	0	
723	N780	-1.40156	0	-3.003998	0	
724	N781	-1.280227	0	-3.076777	0	
725	N782	-1.158895	0	-3.149556	0	
726	N783	-1.596986	0	-3.079889	0	
727	N784	-1.478577	0	-3.167505	0	
728	N785	-1.360168	0	-3.255122	0	
729	N786	-1.241758	0	-3.342739	0	
730	N787	-1.671081	0	-3.228559	0	
731	N788	-1.555594	0	-3.331013	0	
732	N789	-1.440108	0	-3.433468	0	
733	N790	-1.324622	0	-3.535922	0	
734	N791	-1.745175	0	-3.377229	0	
735	N792	-1.632612	0	-3.494521	0	
736	N793	-1.520048	0	-3.611813	0	
737	N794	-0.478026	0	3.104284	0	
738	N795	-0.409737	0	3.110258	0	
739	N796	-0.341447	0	3.116233	0	
740	N797	-0.496746	0	3.220421	0	
741	N798	-0.425895	0	3.229732	0	
742	N799	-0.355045	0	3.239043	0	
743	N800	-0.284194	0	3.248354	0	
744	N801	-0.515466	0	3.336557	0	
745	N802	-0.442054	0	3.349205	0	
746	N803	-0.368642	0	3.361853	0	
747	N804	-0.295231	0	3.374501	0	
748	N805	-0.534186	0	3.452694	0	
749	N806	-0.458213	0	3.468679	0	
750	N807	-0.38224	0	3.484663	0	
751	N808	-0.306267	0	3.500647	0	
752	N809	-0.552905	0	3.568831	0	
753	N810	-0.474371	0	3.588152	0	
754	N811	-0.395837	0	3.607473	0	
755	N812	-0.204868	0	3.128182	0	
756	N813	-0.136579	0	3.134156	0	
757	N814	-0.068289	0	3.140131	0	
758	N815	-0.213146	0	3.257714	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
759	N816	-0.142097	0	3.267074	0	
760	N817	-0.071049	0	3.276434	0	
761	N818	-0.221423	0	3.387246	0	
762	N819	-0.147615	0	3.399991	0	
763	N820	-0.073808	0	3.412736	0	
764	N821	-0.2297	0	3.516778	0	
765	N822	-0.153133	0	3.532908	0	
766	N823	-0.076567	0	3.549039	0	
767	N824	-0.237978	0	3.64631	0	
768	N825	-0.158652	0	3.665826	0	
769	N826	-0.079326	0	3.685341	0	
770	N827	-3.151936	0	-1.911369	0	
771	N828	-3.095372	0	-1.970309	0	
772	N829	-3.038808	0	-2.029249	0	
773	N830	-3.035274	0	-1.840828	0	
774	N831	-2.983022	0	-1.899072	0	
775	N832	-2.930769	0	-1.957315	0	
776	N833	-2.878516	0	-2.015559	0	
777	N834	-2.918612	0	-1.770287	0	
778	N835	-2.870671	0	-1.827834	0	
779	N836	-2.822729	0	-1.885381	0	
780	N837	-2.774788	0	-1.942928	0	
781	N838	-2.80195	0	-1.699747	0	
782	N839	-2.75832	0	-1.756597	0	
783	N840	-2.71469	0	-1.813446	0	
784	N841	-2.67106	0	-1.870296	0	
785	N842	-2.685288	0	-1.629206	0	
786	N843	-2.64597	0	-1.685359	0	
787	N844	-2.606651	0	-1.741512	0	
788	N845	-2.926245	0	-2.146542	0	
789	N846	-2.870245	0	-2.204894	0	
790	N847	-2.814246	0	-2.263246	0	
791	N848	-2.826687	0	-2.073361	0	
792	N849	-2.774858	0	-2.131163	0	
793	N850	-2.723028	0	-2.188965	0	
794	N851	-2.727129	0	-2.00018	0	
795	N852	-2.67947	0	-2.057433	0	
796	N853	-2.631811	0	-2.114685	0	
797	N854	-2.627571	0	-1.926999	0	
798	N855	-2.584082	0	-1.983702	0	
799	N856	-2.540593	0	-2.040405	0	
800	N857	-2.528013	0	-1.853818	0	
801	N858	-2.488694	0	-1.909971	0	
802	N859	-2.449376	0	-1.966125	0	
803	N860	3.231262	0	-1.773972	0	
804	N861	3.254024	0	-1.695516	0	
805	N862	3.276786	0	-1.61706	0	
806	N863	3.111841	0	-1.708211	0	
807	N864	3.136155	0	-1.633837	0	
808	N865	3.160469	0	-1.559463	0	
809	N866	3.184783	0	-1.485089	0	
810	N867	2.99242	0	-1.642449	0	
811	N868	3.018286	0	-1.572157	0	
812	N869	3.044152	0	-1.501865	0	
813	N870	3.070019	0	-1.431573	0	
814	N871	2.872999	0	-1.576687	0	
815	N872	2.900417	0	-1.510477	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
816	N873	2.927836	0	-1.444267	0	
817	N874	2.955254	0	-1.378058	0	
818	N875	2.753578	0	-1.510925	0	
819	N876	2.782549	0	-1.448797	0	
820	N877	2.811519	0	-1.38667	0	
821	N878	3.322082	0	-1.460931	0	
822	N879	3.344617	0	-1.383258	0	
823	N880	3.367151	0	-1.305586	0	
824	N881	3.208927	0	-1.411302	0	
825	N882	3.23307	0	-1.337516	0	
826	N883	3.257214	0	-1.263729	0	
827	N884	3.095771	0	-1.361673	0	
828	N885	3.121524	0	-1.291773	0	
829	N886	3.147276	0	-1.221872	0	
830	N887	2.982616	0	-1.312044	0	
831	N888	3.009977	0	-1.24603	0	
832	N889	3.037339	0	-1.180016	0	
833	N890	2.86946	0	-1.262414	0	
834	N891	2.898431	0	-1.200287	0	
835	N892	2.927402	0	-1.138159	0	
836	N893	-1.203743	0	-3.729106	0	
837	N894	-1.161172	0	-3.471528	0	
838	N895	1.203743	0	-3.729106	0	
839	N896	1.161172	0	-3.471528	0	
840	N897	3.84265	0	0.333377	0	
841	N898	3.610468	0	0.222251	0	
842	N899	2.627629	0	2.907024	0	
843	N900	2.425845	0	2.741368	0	
844	N901	-2.210038	0	3.161144	0	
845	N902	-1.99771	0	3.015632	0	
846	N903	-3.831371	0	0.822081	0	
847	N904	-3.587017	0	0.730159	0	
848	N870A	5.75	3.875	3.954857	0	
849	N873A	5.75	-2.125	3.954857	0	
850	N903C	-3.551397	0	0.663067	0	
851	N904C	-3.716852	0	0.698463	0	
852	N905A	-3.709194	0	0.77612	0	
853	N906A	-3.882307	0	0.733858	0	
854	N907	-3.500461	0	0.75129	0	
855	N908	-3.640448	0	0.830797	0	
856	N909	-3.780436	0	0.910304	0	
857	N910	-3.403752	0	0.661218	0	
858	N911	-2.023557	0	2.959835	0	
859	N912A	-2.195728	0	3.041071	0	
860	N913A	-2.367898	0	3.122307	0	
861	N914A	-2.103874	0	3.088388	0	
862	N915A	-1.838463	0	2.906498	0	
863	N916A	-1.865698	0	2.998672	0	
864	N917	-1.958938	0	3.099326	0	
865	N918	-2.052178	0	3.199981	0	
866	N919	2.576693	0	2.995247	0	
867	N920	2.463312	0	2.869657	0	
868	N921	2.526737	0	2.824196	0	
869	N922A	2.349931	0	2.744066	0	
870	N923A	2.678565	0	2.818801	0	
871	N924A	2.539716	0	2.737322	0	
872	N925A	2.400867	0	2.655843	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
873	N926A	2.274507	0	2.617127	0	
874	N927	3.436332	0	0.138907	0	
875	N928	3.529775	0	0.116405	0	
876	N929	3.575071	0	0.272534	0	
877	N930	3.663564	0	0.146827	0	
878	N931	3.797353	0	0.177248	0	
879	N932	3.726559	0	0.277814	0	
880	N933	3.731509	0	0.38102	0	
881	N934	3.887946	0	0.489506	0	
882	N935	1.305614	0	-3.729106	0	
883	N936	1.182457	0	-3.600317	0	
884	N937	1.253539	0	-3.568119	0	
885	N938	1.201465	0	-3.407133	0	
886	N939	1.099594	0	-3.407133	0	
887	N940	1.129244	0	-3.278344	0	
888	N941	1.101871	0	-3.729106	0	
889	N942	1.100733	0	-3.568119	0	
890	N943	-1.101871	0	-3.729106	0	
891	N944	-1.182457	0	-3.600317	0	
892	N945	-1.100733	0	-3.568119	0	
893	N946	-1.099594	0	-3.407133	0	
894	N947	-1.305614	0	-3.729106	0	
895	N948	-1.253539	0	-3.568119	0	
896	N949	-1.201465	0	-3.407133	0	
897	N950	-1.129244	0	-3.278344	0	
898	N916B	5.75	0	3.704857	0	
899	N917A	5.75	0	3.954857	0	
900	N947B	-2.991808	-.333	-4.787893	0	
901	N947C	-0.772646	-.333	1.453135	0	
902	N949A	1.644774	-.333	-0.057437	0	
903	N926B	.5	3.875	3.954857	0	
904	N927A	.5	-2.125	3.954857	0	
905	N928A	.5	0	3.704857	0	
906	N929A	.5	0	3.954857	0	
907	N934A	-5.75	3.875	3.954857	0	
908	N935A	-5.75	-2.125	3.954857	0	
909	N936A	-5.75	0	3.704857	0	
910	N937A	-5.75	0	3.954857	0	
911	N938A	0.550007	3.875	-6.957075	0	
912	N939A	0.550007	-2.125	-6.957075	0	
913	N940A	0.3335	0	-6.832075	0	
914	N941A	0.550007	0	-6.957075	0	
915	N942A	3.175007	3.875	-2.410441	0	
916	N943A	3.175007	-2.125	-2.410441	0	
917	N944A	2.9585	0	-2.285441	0	
918	N945A	3.175007	0	-2.410441	0	
919	N950B	6.300007	3.875	3.002218	0	
920	N951	6.300007	-2.125	3.002218	0	
921	N952	6.0835	0	3.127218	0	
922	N953	6.300007	0	3.002218	0	
923	N954	-6.300007	3.875	3.002218	0	
924	N955	-6.300007	-2.125	3.002218	0	
925	N956	-6.0835	0	3.127218	0	
926	N957	-6.300007	0	3.002218	0	
927	N958	-3.675007	3.875	-1.544416	0	
928	N959	-3.675007	-2.125	-1.544416	0	
929	N960	-3.4585	0	-1.419416	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
930	N961	-3.675007	0	-1.544416	0	
931	N966A	-0.550007	3.875	-6.957075	0	
932	N967	-0.550007	-2.125	-6.957075	0	
933	N968	-0.3335	0	-6.832075	0	
934	N969	-0.550007	0	-6.957075	0	
935	N970	-6.25	1.75	3.954857	0	
936	N971	6.25	1.75	3.954857	0	
937	N972	6.550007	1.75	3.43523	0	
938	N973	0.300007	1.75	-7.390087	0	
939	N974	-0.300007	1.75	-7.390087	0	
940	N975	-6.550007	1.75	3.43523	0	
941	N968A	5.75	1.75	3.954857	0	
942	N969A	.5	1.75	3.954857	0	
943	N970A	-5.75	1.75	3.954857	0	
944	N971A	0.550007	1.75	-6.957075	0	
945	N972A	3.175007	1.75	-2.410441	0	
946	N973A	6.300007	1.75	3.002218	0	
947	N974A	-6.300007	1.75	3.002218	0	
948	N975A	-3.675007	1.75	-1.544416	0	
949	N976A	-0.550007	1.75	-6.957075	0	
950	N971B	-4.75	1.75	3.954857	0	
951	N972B	3.75	1.75	3.954857	0	
952	N974B	-1.425285	1.75033	-0.822889	0	
953	N975B	8e-14	1.75033	1.645777	0	
954	N976	1.425285	1.75033	-0.822888	0	
955	N977	-4.75	1.75	3.454857	0	
956	N978	3.75	1.75	3.454857	0	
957	N979	-0.75	1.75033	1.645777	0	
958	N981	0.75	1.75033	1.645777	0	
959	N981A	5.800007	1.75	2.136192	0	
960	N982	1.550007	1.75	-5.225024	0	
961	N983	5.366994	1.75	2.386192	0	
962	N984	1.116994	1.75	-4.975024	0	
963	N985	1.800285	1.75033	-0.173369	0	
964	N986	1.050285	1.75033	-1.472408	0	
965	N987	-1.050007	1.75	-6.091049	0	
966	N988	-5.300007	1.75	1.270167	0	
967	N989	-0.616994	1.75	-5.841049	0	
968	N990	-4.866994	1.75	1.520167	0	
969	N991	-1.050285	1.75033	-1.472408	0	
970	N992	-1.800285	1.75033	-0.173369	0	
971	N992A	-2.650533	-.333	4.984928	0	
972	N993	5.642341	-.333	-0.197035	0	
973	N992B	-2	3.875	3.954857	0	
974	N993A	-2	-2.125	3.954857	0	
975	N994	-2	0	3.704857	0	
976	N995	-2	0	3.954857	0	
977	N996	-2	1.75	3.954857	0	
978	N997	2	3.875	3.954857	0	
979	N998	2	-2.125	3.954857	0	
980	N999	2	0	3.704857	0	
981	N1000	2	0	3.954857	0	
982	N1001	2	1.75	3.954857	0	
983	N1002	4.425007	3.875	-0.245378	0	
984	N1003	4.425007	-2.125	-0.245378	0	
985	N1004	4.2085	0	-0.120378	0	
986	N1005	4.425007	0	-0.245378	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
987	N1006	4.425007	1.75	-0.245378	0	
988	N1007	2.425007	3.875	-3.709479	0	
989	N1008	2.425007	-2.125	-3.709479	0	
990	N1009	2.2085	0	-3.584479	0	
991	N1010	2.425007	0	-3.709479	0	
992	N1011	2.425007	1.75	-3.709479	0	
993	N1012	-2.425007	3.875	-3.709479	0	
994	N1013	-2.425007	-2.125	-3.709479	0	
995	N1014	-2.2085	0	-3.584479	0	
996	N1015	-2.425007	0	-3.709479	0	
997	N1016	-2.425007	1.75	-3.709479	0	
998	N1017	-4.425007	3.875	-0.245378	0	
999	N1018	-4.425007	-2.125	-0.245378	0	
1000	N1019	-4.2085	0	-0.120378	0	
1001	N1020	-4.425007	0	-0.245378	0	
1002	N1021	-4.425007	1.75	-0.245378	0	
1003	N1004A	-1.667008	-.333	-2.66777	0	
1004	N1005A	-1.476853	-.333	2.777556	0	
1005	N1006A	3.143861	-.333	-0.109786	0	
1006	N1007A	-1.742867	-.333	-2.78917	0	
1007	N1008A	-1.544059	-.333	2.903952	0	
1008	N1009A	3.286925	-.333	-0.114782	0	
1009	N1010A	-1.818726	-.333	-2.91057	0	
1010	N1011A	-1.611264	-.333	3.030348	0	
1011	N1012A	3.42999	-.333	-0.119778	0	
1012	N1013A	-1.894585	-.333	-3.03197	0	
1013	N1014A	-1.67847	-.333	3.156743	0	
1014	N1015A	3.573055	-.333	-0.124774	0	
1015	N1016A	-1.970444	-.333	-3.153369	0	
1016	N1017A	-1.745676	-.333	3.283139	0	
1017	N1018A	3.71612	-.333	-0.12977	0	
1018	N1018B	-1.425285	-2.83297	-0.822889	0	
1019	N1019A	8e-14	-2.83297	1.645777	0	
1020	N1020A	1.425285	-2.83297	-0.822888	0	
1021	N1021A	-3	0	3.704857	0	
1022	N1022	3	0	3.704857	0	
1023	N1024	4.7085	0	0.745648	0	
1024	N1025	1.7085	0	-4.450505	0	
1025	N1027	-1.7085	0	-4.450505	0	
1026	N1028	-4.7085	0	0.745648	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipes	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Footrails	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Plan Bracing	PL3/8x4	Beam	RECT	A36 Gr.36	Typical	1.5	.018	2	.066
4	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Grating Angle	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
6	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
7	Corner Brace	PL8.5x3/16	Beam	Single Angle	A36 Gr.36	Typical	1.559	1.715	4.118	.018
8	V Brace	L3X3X3	Beam	Single Angle	A36 Gr.36	Typical	1.09	.948	.948	.014

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	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N34			Footrails	Beam	Pipe	A53 Gr.B	Typical
2	M2	N8	N35			Footrails	Beam	Pipe	A53 Gr.B	Typical
3	M3	N15	N36			Footrails	Beam	Pipe	A53 Gr.B	Typical
4	M4	N21	N4			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
5	M5	N20	N5			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
6	M6	N7	N11			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
7	M7	N6	N12			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
8	M8	N14	N18			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
9	M9	N13	N19			Plan Bracing	Beam	RECT	A36 Gr.36	Typical
10	M10	N22	N23		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N24	N25			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N25A	N26		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N27	N28			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N30	N31		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N32	N33			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N34	N2			Footrails	Beam	Pipe	A53 Gr.B	Typical
17	M17	N35	N9			Footrails	Beam	Pipe	A53 Gr.B	Typical
18	M18	N36	N16			Footrails	Beam	Pipe	A53 Gr.B	Typical
19	M36	N86	N947B			Standoff Arm	Beam	SquareTube	A500 Gr.B Rect	Typical
20	MP1A	N870A	N873A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
21	M36A	N916B	N917A			RIGID	None	None	RIGID	Typical
22	M53A	N947C	N992A			Standoff Arm	Beam	SquareTube	A500 Gr.B Rect	Typical
23	M54A	N949A	N993			Standoff Arm	Beam	SquareTube	A500 Gr.B Rect	Typical
24	MP3A	N926B	N927A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
25	M42	N928A	N929A			RIGID	None	None	RIGID	Typical
26	MP5A	N934A	N935A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
27	M46A	N936A	N937A			RIGID	None	None	RIGID	Typical
28	MP1C	N938A	N939A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
29	M48A	N940A	N941A			RIGID	None	None	RIGID	Typical
30	MP3C	N942A	N943A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
31	M50A	N944A	N945A			RIGID	None	None	RIGID	Typical
32	MP5C	N950B	N951			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
33	M54B	N952	N953			RIGID	None	None	RIGID	Typical
34	MP1B	N954	N955			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
35	M56A	N956	N957			RIGID	None	None	RIGID	Typical
36	MP3B	N958	N959			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
37	M58A	N960	N961			RIGID	None	None	RIGID	Typical
38	MP5B	N966A	N967			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
39	M62	N968	N969			RIGID	None	None	RIGID	Typical
40	M63	N970	N971			Handrails	Beam	Pipe	A53 Gr.B	Typical
41	M64	N972	N973			Handrails	Beam	Pipe	A53 Gr.B	Typical
42	M65	N974	N975			Handrails	Beam	Pipe	A53 Gr.B	Typical
43	M60	N977	N971B			RIGID	None	None	RIGID	Typical
44	M61A	N978	N972B			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
45	M62A	N981	N979		180	V BraceP1	Beam	CU	A570 Gr.33	Typical
46	M63A	N979	N977		180	V BraceP2	Beam	CU	A570 Gr.33	Typical
47	M64A	N981	N978			V BraceP2	Beam	CU	A570 Gr.33	Typical
48	M65A	N983	N981A			RIGID	None	None	RIGID	Typical
49	M66	N984	N982			RIGID	None	None	RIGID	Typical
50	M67	N986	N985		180	V BraceP1	Beam	CU	A570 Gr.33	Typical
51	M68	N985	N983		180	V BraceP2	Beam	CU	A570 Gr.33	Typical
52	M69	N986	N984			V BraceP2	Beam	CU	A570 Gr.33	Typical
53	M70	N989	N987			RIGID	None	None	RIGID	Typical
54	M71	N990	N988			RIGID	None	None	RIGID	Typical
55	M72	N992	N991		180	V BraceP1	Beam	CU	A570 Gr.33	Typical
56	M73	N991	N989		180	V BraceP2	Beam	CU	A570 Gr.33	Typical
57	M74	N992	N990			V BraceP2	Beam	CU	A570 Gr.33	Typical
58	MP4A	N992B	N993A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
59	M76	N994	N995			RIGID	None	None	RIGID	Typical
60	MP2A	N997	N998			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
61	M78	N999	N1000			RIGID	None	None	RIGID	Typical
62	MP4C	N1002	N1003			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
63	M80	N1004	N1005			RIGID	None	None	RIGID	Typical
64	MP2C	N1007	N1008			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
65	M82	N1009	N1010			RIGID	None	None	RIGID	Typical
66	MP4B	N1012	N1013			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
67	M84	N1014	N1015			RIGID	None	None	RIGID	Typical
68	MP2B	N1017	N1018			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
69	M86	N1019	N1020			RIGID	None	None	RIGID	Typical
70	M70A	N760	N1004A			RIGID	None	None	RIGID	Typical
71	M71A	N763	N1007A			RIGID	None	None	RIGID	Typical
72	M72A	N767	N1010A			RIGID	None	None	RIGID	Typical
73	M73A	N771	N1013A			RIGID	None	None	RIGID	Typical
74	M74A	N775	N1016A			RIGID	None	None	RIGID	Typical
75	M75	N551	N1005A			RIGID	None	None	RIGID	Typical
76	M76A	N555	N1008A			RIGID	None	None	RIGID	Typical
77	M77	N559	N1011A			RIGID	None	None	RIGID	Typical
78	M78A	N563	N1014A			RIGID	None	None	RIGID	Typical
79	M79	N566	N1017A			RIGID	None	None	RIGID	Typical
80	M80A	N361	N1006A			RIGID	None	None	RIGID	Typical
81	M81	N357	N1009A			RIGID	None	None	RIGID	Typical
82	M82A	N353	N1012A			RIGID	None	None	RIGID	Typical
83	M83	N349	N1015A			RIGID	None	None	RIGID	Typical
84	M84A	N346	N1018A			RIGID	None	None	RIGID	Typical
85	M85	N1019A	N1021A			V Brace	Beam	Single Angle	A36 Gr.36	Typical
86	M86A	N1019A	N1022			V Brace	Beam	Single Angle	A36 Gr.36	Typical
87	M87	N1020A	N1024			V Brace	Beam	Single Angle	A36 Gr.36	Typical
88	M88	N1020A	N1025			V Brace	Beam	Single Angle	A36 Gr.36	Typical
89	M89	N1018B	N1027			V Brace	Beam	Single Angle	A36 Gr.36	Typical
90	M90	N1018B	N1028			V Brace	Beam	Single Angle	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	M36						Yes				None
20	MP1A						Yes				None
21	M36A						Yes	** NA **			None
22	M53A						Yes				None
23	M54A						Yes				None
24	MP3A						Yes				None
25	M42						Yes	** NA **			None
26	MP5A						Yes				None
27	M46A						Yes	** NA **			None
28	MP1C						Yes				None
29	M48A						Yes	** NA **			None
30	MP3C						Yes				None
31	M50A						Yes	** NA **			None
32	MP5C						Yes				None
33	M54B						Yes	** NA **			None
34	MP1B						Yes				None
35	M56A						Yes	** NA **			None
36	MP3B						Yes				None
37	M58A						Yes	** NA **			None
38	MP5B						Yes				None
39	M62						Yes	** NA **			None
40	M63						Yes				None
41	M64						Yes				None
42	M65						Yes				None
43	M60						Yes	** NA **			None
44	M61A						Yes	** NA **			None
45	M62A						Yes				None
46	M63A						Yes				None
47	M64A						Yes				None
48	M65A						Yes	** NA **			None
49	M66						Yes	** NA **			None
50	M67						Yes				None
51	M68						Yes				None
52	M69						Yes				None
53	M70						Yes	** NA **			None
54	M71						Yes	** NA **			None
55	M72						Yes				None
56	M73						Yes				None
57	M74						Yes				None
58	MP4A						Yes				None
59	M76						Yes	** NA **			None
60	MP2A						Yes				None
61	M78						Yes	** NA **			None
62	MP4C						Yes				None
63	M80						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
64	MP2C						Yes				None
65	M82						Yes	** NA **			None
66	MP4B						Yes				None
67	M84						Yes	** NA **			None
68	MP2B						Yes				None
69	M86						Yes	** NA **			None
70	M70A						Yes	** NA **			None
71	M71A						Yes	** NA **			None
72	M72A						Yes	** NA **			None
73	M73A						Yes	** NA **			None
74	M74A						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76A						Yes	** NA **			None
77	M77						Yes	** NA **			None
78	M78A						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80A						Yes	** NA **			None
81	M81						Yes	** NA **			None
82	M82A						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	M84A						Yes	** NA **			None
85	M85	BenPIN	BenPIN				Yes				None
86	M86A	BenPIN	BenPIN				Yes				None
87	M87	BenPIN	BenPIN				Yes				None
88	M88	BenPIN	BenPIN				Yes				None
89	M89	BenPIN	BenPIN				Yes				None
90	M90	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Footrails	6.25			Lbyy			1	1		Lateral
2	M2	Footrails	6.25			Lbyy			1	1		Lateral
3	M3	Footrails	6.25			Lbyy			1	1		Lateral
4	M4	Plan Bracing	1.334			Lbyy			.65	.65		Lateral
5	M5	Plan Bracing	4.25			Lbyy			.65	.65		Lateral
6	M6	Plan Bracing	1.334			Lbyy			.65	.65		Lateral
7	M7	Plan Bracing	4.25			Lbyy			.65	.65		Lateral
8	M8	Plan Bracing	1.334			Lbyy			.65	.65		Lateral
9	M9	Plan Bracing	4.25			Lbyy			.65	.65		Lateral
10	M10	Grating Angle	2.916			Lbyy			.65	.65		Lateral
11	M11	Grating Angle	2.916			Lbyy			.65	.65		Lateral
12	M12	Grating Angle	2.916			Lbyy			.65	.65		Lateral
13	M13	Grating Angle	2.916			Lbyy			.65	.65		Lateral
14	M14	Grating Angle	2.916			Lbyy			.65	.65		Lateral
15	M15	Grating Angle	2.916			Lbyy			.65	.65		Lateral
16	M16	Footrails	6.25			Lbyy			1	1		Lateral
17	M17	Footrails	6.25			Lbyy			1	1		Lateral
18	M18	Footrails	6.25			Lbyy			1	1		Lateral
19	M36	Standoff Arm	4			Lbyy			2.1	2.1		Lateral
20	MP1A	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
21	M53A	Standoff Arm	4			Lbyy			2.1	2.1		Lateral
22	M54A	Standoff Arm	4			Lbyy			2.1	2.1		Lateral
23	MP3A	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
24	MP5A	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
25	MP1C	Mount Pipes	6	4	4	Lbyy			2.1	2.1		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
26	MP3C	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
27	MP5C	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
28	MP1B	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
29	MP3B	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
30	MP5B	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
31	M63	Handrails	12.5			Lbyy						Lateral
32	M64	Handrails	12.5			Lbyy						Lateral
33	M65	Handrails	12.5			Lbyy						Lateral
34	MP4A	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
35	MP2A	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
36	MP4C	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
37	MP2C	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
38	MP4B	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
39	MP2B	Mount Pipes	6	4	4	Lbyy			2.1	2.1		Lateral
40	M85	V Brace	4.611			Lbyy						Lateral
41	M86A	V Brace	4.611			Lbyy						Lateral
42	M87	V Brace	4.611			Lbyy						Lateral
43	M88	V Brace	4.611			Lbyy						Lateral
44	M89	V Brace	4.611			Lbyy						Lateral
45	M90	V Brace	4.611			Lbyy						Lateral

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	MP1A	Y	-6.75	.5
2	MP1A	Y	-6.75	5
3	MP1B	Y	-6.75	.5
4	MP1B	Y	-6.75	5
5	MP1C	Y	-6.75	.5
6	MP1C	Y	-6.75	5
7	MP2A	Y	-6.75	.5
8	MP2A	Y	-6.75	5
9	MP2B	Y	-6.75	.5
10	MP2B	Y	-6.75	5
11	MP2C	Y	-6.75	.5
12	MP2C	Y	-6.75	5
13	MP4A	Y	-9.25	.5
14	MP4A	Y	-9.25	5
15	MP4B	Y	-9.25	.5
16	MP4B	Y	-9.25	5
17	MP4C	Y	-9.25	.5
18	MP4C	Y	-9.25	5
19	MP5A	Y	-64	0
20	MP5A	Y	-64	6
21	MP5B	Y	-64	0
22	MP5B	Y	-64	6
23	MP5C	Y	-64	0
24	MP5C	Y	-64	6
25	MP2A	Y	-17.5	3
26	MP2B	Y	-17.5	3
27	MP2C	Y	-17.5	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
28	MP1A	Y	-11	3
29	MP1B	Y	-11	3
30	MP1C	Y	-11	3
31	MP5A	Y	-70	3
32	MP5B	Y	-70	3
33	MP5C	Y	-70	3
34	MP4A	Y	-2.6	3
35	MP4B	Y	-2.6	3
36	MP4C	Y	-2.6	3

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Y	-49.434	.5
2	MP1A	Y	-49.434	5
3	MP1B	Y	-49.434	.5
4	MP1B	Y	-49.434	5
5	MP1C	Y	-49.434	.5
6	MP1C	Y	-49.434	5
7	MP2A	Y	-49.434	.5
8	MP2A	Y	-49.434	5
9	MP2B	Y	-49.434	.5
10	MP2B	Y	-49.434	5
11	MP2C	Y	-49.434	.5
12	MP2C	Y	-49.434	5
13	MP4A	Y	-51.345	.5
14	MP4A	Y	-51.345	5
15	MP4B	Y	-51.345	.5
16	MP4B	Y	-51.345	5
17	MP4C	Y	-51.345	.5
18	MP4C	Y	-51.345	5
19	MP5A	Y	-209.278	0
20	MP5A	Y	-209.278	6
21	MP5B	Y	-209.278	0
22	MP5B	Y	-209.278	6
23	MP5C	Y	-209.278	0
24	MP5C	Y	-209.278	6
25	MP2A	Y	-28.221	3
26	MP2B	Y	-28.221	3
27	MP2C	Y	-28.221	3
28	MP1A	Y	-16.342	3
29	MP1B	Y	-16.342	3
30	MP1C	Y	-16.342	3
31	MP5A	Y	-68.36	3
32	MP5B	Y	-68.36	3
33	MP5C	Y	-68.36	3
34	MP4A	Y	-11.259	3
35	MP4B	Y	-11.259	3
36	MP4C	Y	-11.259	3

Member Point Loads (BLC 3 : Antenna W Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Z	-75.848	.5
2	MP1A	Z	-75.848	5
3	MP1B	Z	-45.008	.5
4	MP1B	Z	-45.008	5
5	MP1C	Z	-45.008	.5

Member Point Loads (BLC 3 : Antenna W Front) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
6	MP1C	Z	-45.008	5
7	MP2A	Z	-75.848	.5
8	MP2A	Z	-75.848	5
9	MP2B	Z	-45.008	.5
10	MP2B	Z	-45.008	5
11	MP2C	Z	-45.008	.5
12	MP2C	Z	-45.008	5
13	MP4A	Z	-75.848	.5
14	MP4A	Z	-75.848	5
15	MP4B	Z	-47.968	.5
16	MP4B	Z	-47.968	5
17	MP4C	Z	-47.968	.5
18	MP4C	Z	-47.968	5
19	MP5A	Z	-352.1	0
20	MP5A	Z	-352.1	6
21	MP5B	Z	-194.871	0
22	MP5B	Z	-194.871	6
23	MP5C	Z	-194.871	0
24	MP5C	Z	-194.871	6
25	MP2A	Z	-18.788	3
26	MP2B	Z	-18.494	3
27	MP2C	Z	-18.494	3
28	MP1A	Z	-12.177	3
29	MP1B	Z	-7.104	3
30	MP1C	Z	-7.104	3
31	MP5A	Z	-57.408	3
32	MP5B	Z	-44.687	3
33	MP5C	Z	-44.687	3
34	MP4A	Z	-9.742	3
35	MP4B	Z	-4.384	3
36	MP4C	Z	-4.384	3

Member Point Loads (BLC 4 : Antenna Wi Front)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Z	-24.717	.5
2	MP1A	Z	-24.717	5
3	MP1B	Z	-16.251	.5
4	MP1B	Z	-16.251	5
5	MP1C	Z	-16.251	.5
6	MP1C	Z	-16.251	5
7	MP2A	Z	-24.717	.5
8	MP2A	Z	-24.717	5
9	MP2B	Z	-16.251	.5
10	MP2B	Z	-16.251	5
11	MP2C	Z	-16.251	.5
12	MP2C	Z	-16.251	5
13	MP4A	Z	-24.717	.5
14	MP4A	Z	-24.717	5
15	MP4B	Z	-17.101	.5
16	MP4B	Z	-17.101	5
17	MP4C	Z	-17.101	.5
18	MP4C	Z	-17.101	5
19	MP5A	Z	-102.349	0
20	MP5A	Z	-102.349	6
21	MP5B	Z	-59.455	0
22	MP5B	Z	-59.455	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
23	MP5C	Z	-59.455	0
24	MP5C	Z	-59.455	6
25	MP2A	Z	-4.549	3
26	MP2B	Z	-7.235	3
27	MP2C	Z	-7.235	3
28	MP1A	Z	-5.833	3
29	MP1B	Z	-4.077	3
30	MP1C	Z	-4.077	3
31	MP5A	Z	-20.231	3
32	MP5B	Z	-16.392	3
33	MP5C	Z	-16.392	3
34	MP4A	Z	-4.425	3
35	MP4B	Z	-2.86	3
36	MP4C	Z	-2.86	3

Member Point Loads (BLC 5 : Antenna W Side)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	34.728	.5
2	MP1A	X	34.728	5
3	MP1B	X	65.568	.5
4	MP1B	X	65.568	5
5	MP1C	X	65.568	.5
6	MP1C	X	65.568	5
7	MP2A	X	34.728	.5
8	MP2A	X	34.728	5
9	MP2B	X	65.568	.5
10	MP2B	X	65.568	5
11	MP2C	X	65.568	.5
12	MP2C	X	65.568	5
13	MP4A	X	38.674	.5
14	MP4A	X	38.674	5
15	MP4B	X	66.554	.5
16	MP4B	X	66.554	5
17	MP4C	X	66.554	.5
18	MP4C	X	66.554	5
19	MP5A	X	142.462	0
20	MP5A	X	142.462	6
21	MP5B	X	299.69	0
22	MP5B	X	299.69	6
23	MP5C	X	299.69	0
24	MP5C	X	299.69	6
25	MP2A	X	18.397	3
26	MP2B	X	18.69	3
27	MP2C	X	18.69	3
28	MP1A	X	5.413	3
29	MP1B	X	10.486	3
30	MP1C	X	10.486	3
31	MP5A	X	40.446	3
32	MP5B	X	53.167	3
33	MP5C	X	53.167	3
34	MP4A	X	2.598	3
35	MP4B	X	7.956	3
36	MP4C	X	7.956	3

Member Point Loads (BLC 6 : Antenna Wi Side)

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

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	13.429	.5
2	MP1A	X	13.429	5
3	MP1B	X	21.895	.5
4	MP1B	X	21.895	5
5	MP1C	X	21.895	.5
6	MP1C	X	21.895	5
7	MP2A	X	13.429	.5
8	MP2A	X	13.429	5
9	MP2B	X	21.895	.5
10	MP2B	X	21.895	5
11	MP2C	X	21.895	.5
12	MP2C	X	21.895	5
13	MP4A	X	14.562	.5
14	MP4A	X	14.562	5
15	MP4B	X	22.178	.5
16	MP4B	X	22.178	5
17	MP4C	X	22.178	.5
18	MP4C	X	22.178	5
19	MP5A	X	45.157	0
20	MP5A	X	45.157	6
21	MP5B	X	88.051	0
22	MP5B	X	88.051	6
23	MP5C	X	88.051	0
24	MP5C	X	88.051	6
25	MP2A	X	8.131	3
26	MP2B	X	5.444	3
27	MP2C	X	5.444	3
28	MP1A	X	3.492	3
29	MP1B	X	5.248	3
30	MP1C	X	5.248	3
31	MP5A	X	15.112	3
32	MP5B	X	18.952	3
33	MP5C	X	18.952	3
34	MP4A	X	2.338	3
35	MP4B	X	3.903	3
36	MP4C	X	3.903	3

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	-11.204	-11.204	0	%100
2	M2	Y	-11.204	-11.204	0	%100
3	M3	Y	-11.204	-11.204	0	%100
4	M4	Y	-10.697	-10.697	0	%100
5	M5	Y	-10.697	-10.697	0	%100
6	M6	Y	-10.697	-10.697	0	%100
7	M7	Y	-10.697	-10.697	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,%]
8	M8	Y	-10.697	-10.697	0	%100
9	M9	Y	-10.697	-10.697	0	%100
10	M10	Y	-7.812	-7.812	0	%100
11	M11	Y	-7.812	-7.812	0	%100
12	M12	Y	-7.812	-7.812	0	%100
13	M13	Y	-7.812	-7.812	0	%100
14	M14	Y	-7.812	-7.812	0	%100
15	M15	Y	-7.812	-7.812	0	%100
16	M16	Y	-11.204	-11.204	0	%100
17	M17	Y	-11.204	-11.204	0	%100
18	M18	Y	-11.204	-11.204	0	%100
19	M36	Y	-15.624	-15.624	0	%100
20	MP1A	Y	-8.802	-8.802	0	%100
21	M53A	Y	-15.624	-15.624	0	%100
22	M54A	Y	-15.624	-15.624	0	%100
23	MP3A	Y	-8.802	-8.802	0	%100
24	MP5A	Y	-8.802	-8.802	0	%100
25	MP1C	Y	-8.802	-8.802	0	%100
26	MP3C	Y	-8.802	-8.802	0	%100
27	MP5C	Y	-8.802	-8.802	0	%100
28	MP1B	Y	-8.802	-8.802	0	%100
29	MP3B	Y	-8.802	-8.802	0	%100
30	MP5B	Y	-8.802	-8.802	0	%100
31	M63	Y	-8.802	-8.802	0	%100
32	M64	Y	-8.802	-8.802	0	%100
33	M65	Y	-8.802	-8.802	0	%100
34	M62A	Y	-25.825	-25.825	0	%100
35	M63A	Y	-17.452	-17.452	0	%100
36	M64A	Y	-17.452	-17.452	0	%100
37	M67	Y	-25.825	-25.825	0	%100
38	M68	Y	-17.452	-17.452	0	%100
39	M69	Y	-17.452	-17.452	0	%100
40	M72	Y	-25.825	-25.825	0	%100
41	M73	Y	-17.452	-17.452	0	%100
42	M74	Y	-17.452	-17.452	0	%100
43	MP4A	Y	-8.802	-8.802	0	%100
44	MP2A	Y	-8.802	-8.802	0	%100
45	MP4C	Y	-8.802	-8.802	0	%100
46	MP2C	Y	-8.802	-8.802	0	%100
47	MP4B	Y	-8.802	-8.802	0	%100
48	MP2B	Y	-8.802	-8.802	0	%100
49	M85	Y	-10.53	-10.53	0	%100
50	M86A	Y	-10.53	-10.53	0	%100
51	M87	Y	-10.53	-10.53	0	%100
52	M88	Y	-10.53	-10.53	0	%100
53	M89	Y	-10.53	-10.53	0	%100
54	M90	Y	-10.53	-10.53	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	-12.177	-12.177	0	%100
2	M2	PZ	-12.177	-12.177	0	%100
3	M3	PZ	-12.177	-12.177	0	%100
4	M4	PZ	-23.195	-23.195	0	%100
5	M5	PZ	-23.195	-23.195	0	%100
6	M6	PZ	-23.195	-23.195	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,%]
7	M7	PZ	-23.195	-23.195	0	%100
8	M8	PZ	-23.195	-23.195	0	%100
9	M9	PZ	-23.195	-23.195	0	%100
10	M10	PZ	-11.597	-11.597	0	%100
11	M11	PZ	-11.597	-11.597	0	%100
12	M12	PZ	-11.597	-11.597	0	%100
13	M13	PZ	-11.597	-11.597	0	%100
14	M14	PZ	-11.597	-11.597	0	%100
15	M15	PZ	-11.597	-11.597	0	%100
16	M16	PZ	-12.177	-12.177	0	%100
17	M17	PZ	-12.177	-12.177	0	%100
18	M18	PZ	-12.177	-12.177	0	%100
19	M36	PZ	-23.195	-23.195	0	%100
20	MP1A	PZ	-8.263	-8.263	0	%100
21	M53A	PZ	-23.195	-23.195	0	%100
22	M54A	PZ	-23.195	-23.195	0	%100
23	MP3A	PZ	-8.263	-8.263	0	%100
24	MP5A	PZ	-8.263	-8.263	0	%100
25	MP1C	PZ	-8.263	-8.263	0	%100
26	MP3C	PZ	-8.263	-8.263	0	%100
27	MP5C	PZ	-8.263	-8.263	0	%100
28	MP1B	PZ	-8.263	-8.263	0	%100
29	MP3B	PZ	-8.263	-8.263	0	%100
30	MP5B	PZ	-8.263	-8.263	0	%100
31	M63	PZ	-8.263	-8.263	0	%100
32	M64	PZ	-8.263	-8.263	0	%100
33	M65	PZ	-8.263	-8.263	0	%100
34	M62A	PZ	-34.792	-34.792	0	%100
35	M63A	PZ	-31.545	-31.545	0	%100
36	M64A	PZ	-31.545	-31.545	0	%100
37	M67	PZ	-34.792	-34.792	0	%100
38	M68	PZ	-31.545	-31.545	0	%100
39	M69	PZ	-31.545	-31.545	0	%100
40	M72	PZ	-34.792	-34.792	0	%100
41	M73	PZ	-31.545	-31.545	0	%100
42	M74	PZ	-31.545	-31.545	0	%100
43	MP4A	PZ	-8.263	-8.263	0	%100
44	MP2A	PZ	-8.263	-8.263	0	%100
45	MP4C	PZ	-8.263	-8.263	0	%100
46	MP2C	PZ	-8.263	-8.263	0	%100
47	MP4B	PZ	-8.263	-8.263	0	%100
48	MP2B	PZ	-8.263	-8.263	0	%100
49	M85	PZ	-17.396	-17.396	0	%100
50	M86A	PZ	-17.396	-17.396	0	%100
51	M87	PZ	-17.396	-17.396	0	%100
52	M88	PZ	-17.396	-17.396	0	%100
53	M89	PZ	-17.396	-17.396	0	%100
54	M90	PZ	-17.396	-17.396	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	-6.467	-6.467	0	%100
2	M2	PZ	-6.467	-6.467	0	%100
3	M3	PZ	-6.467	-6.467	0	%100
4	M4	PZ	-9.394	-9.394	0	%100
5	M5	PZ	-9.394	-9.394	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,%]
6	M6	PZ	-9.394	-9.394	0	%100
7	M7	PZ	-9.394	-9.394	0	%100
8	M8	PZ	-9.394	-9.394	0	%100
9	M9	PZ	-9.394	-9.394	0	%100
10	M10	PZ	-6.312	-6.312	0	%100
11	M11	PZ	-6.312	-6.312	0	%100
12	M12	PZ	-6.312	-6.312	0	%100
13	M13	PZ	-6.312	-6.312	0	%100
14	M14	PZ	-6.312	-6.312	0	%100
15	M15	PZ	-6.312	-6.312	0	%100
16	M16	PZ	-6.467	-6.467	0	%100
17	M17	PZ	-6.467	-6.467	0	%100
18	M18	PZ	-6.467	-6.467	0	%100
19	M36	PZ	-9.394	-9.394	0	%100
20	MP1A	PZ	-5.427	-5.427	0	%100
21	M53A	PZ	-9.394	-9.394	0	%100
22	M54A	PZ	-9.394	-9.394	0	%100
23	MP3A	PZ	-5.427	-5.427	0	%100
24	MP5A	PZ	-5.427	-5.427	0	%100
25	MP1C	PZ	-5.427	-5.427	0	%100
26	MP3C	PZ	-5.427	-5.427	0	%100
27	MP5C	PZ	-5.427	-5.427	0	%100
28	MP1B	PZ	-5.427	-5.427	0	%100
29	MP3B	PZ	-5.427	-5.427	0	%100
30	MP5B	PZ	-5.427	-5.427	0	%100
31	M63	PZ	-5.427	-5.427	0	%100
32	M64	PZ	-5.427	-5.427	0	%100
33	M65	PZ	-5.427	-5.427	0	%100
34	M62A	PZ	-12.475	-12.475	0	%100
35	M63A	PZ	-11.613	-11.613	0	%100
36	M64A	PZ	-11.613	-11.613	0	%100
37	M67	PZ	-12.475	-12.475	0	%100
38	M68	PZ	-11.613	-11.613	0	%100
39	M69	PZ	-11.613	-11.613	0	%100
40	M72	PZ	-12.475	-12.475	0	%100
41	M73	PZ	-11.613	-11.613	0	%100
42	M74	PZ	-11.613	-11.613	0	%100
43	MP4A	PZ	-5.427	-5.427	0	%100
44	MP2A	PZ	-5.427	-5.427	0	%100
45	MP4C	PZ	-5.427	-5.427	0	%100
46	MP2C	PZ	-5.427	-5.427	0	%100
47	MP4B	PZ	-5.427	-5.427	0	%100
48	MP2B	PZ	-5.427	-5.427	0	%100
49	M85	PZ	-7.853	-7.853	0	%100
50	M86A	PZ	-7.853	-7.853	0	%100
51	M87	PZ	-7.853	-7.853	0	%100
52	M88	PZ	-7.853	-7.853	0	%100
53	M89	PZ	-7.853	-7.853	0	%100
54	M90	PZ	-7.853	-7.853	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	12.177	12.177	0	%100
2	M2	PX	12.177	12.177	0	%100
3	M3	PX	12.177	12.177	0	%100
4	M4	PX	23.195	23.195	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,%]
5	M5	PX	23.195	23.195	0	%100
6	M6	PX	23.195	23.195	0	%100
7	M7	PX	23.195	23.195	0	%100
8	M8	PX	23.195	23.195	0	%100
9	M9	PX	23.195	23.195	0	%100
10	M10	PX	11.597	11.597	0	%100
11	M11	PX	11.597	11.597	0	%100
12	M12	PX	11.597	11.597	0	%100
13	M13	PX	11.597	11.597	0	%100
14	M14	PX	11.597	11.597	0	%100
15	M15	PX	11.597	11.597	0	%100
16	M16	PX	12.177	12.177	0	%100
17	M17	PX	12.177	12.177	0	%100
18	M18	PX	12.177	12.177	0	%100
19	M36	PX	23.195	23.195	0	%100
20	MP1A	PX	8.263	8.263	0	%100
21	M53A	PX	23.195	23.195	0	%100
22	M54A	PX	23.195	23.195	0	%100
23	MP3A	PX	8.263	8.263	0	%100
24	MP5A	PX	8.263	8.263	0	%100
25	MP1C	PX	8.263	8.263	0	%100
26	MP3C	PX	8.263	8.263	0	%100
27	MP5C	PX	8.263	8.263	0	%100
28	MP1B	PX	8.263	8.263	0	%100
29	MP3B	PX	8.263	8.263	0	%100
30	MP5B	PX	8.263	8.263	0	%100
31	M63	PX	8.263	8.263	0	%100
32	M64	PX	8.263	8.263	0	%100
33	M65	PX	8.263	8.263	0	%100
34	M62A	PX	34.792	34.792	0	%100
35	M63A	PX	31.545	31.545	0	%100
36	M64A	PX	31.545	31.545	0	%100
37	M67	PX	34.792	34.792	0	%100
38	M68	PX	31.545	31.545	0	%100
39	M69	PX	31.545	31.545	0	%100
40	M72	PX	34.792	34.792	0	%100
41	M73	PX	31.545	31.545	0	%100
42	M74	PX	31.545	31.545	0	%100
43	MP4A	PX	8.263	8.263	0	%100
44	MP2A	PX	8.263	8.263	0	%100
45	MP4C	PX	8.263	8.263	0	%100
46	MP2C	PX	8.263	8.263	0	%100
47	MP4B	PX	8.263	8.263	0	%100
48	MP2B	PX	8.263	8.263	0	%100
49	M85	PX	17.396	17.396	0	%100
50	M86A	PX	17.396	17.396	0	%100
51	M87	PX	17.396	17.396	0	%100
52	M88	PX	17.396	17.396	0	%100
53	M89	PX	17.396	17.396	0	%100
54	M90	PX	17.396	17.396	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	6.467	6.467	0	%100
2	M2	PX	6.467	6.467	0	%100
3	M3	PX	6.467	6.467	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,%]
4	M4	PX	9.394	9.394	0	%100
5	M5	PX	9.394	9.394	0	%100
6	M6	PX	9.394	9.394	0	%100
7	M7	PX	9.394	9.394	0	%100
8	M8	PX	9.394	9.394	0	%100
9	M9	PX	9.394	9.394	0	%100
10	M10	PX	6.312	6.312	0	%100
11	M11	PX	6.312	6.312	0	%100
12	M12	PX	6.312	6.312	0	%100
13	M13	PX	6.312	6.312	0	%100
14	M14	PX	6.312	6.312	0	%100
15	M15	PX	6.312	6.312	0	%100
16	M16	PX	6.467	6.467	0	%100
17	M17	PX	6.467	6.467	0	%100
18	M18	PX	6.467	6.467	0	%100
19	M36	PX	9.394	9.394	0	%100
20	MP1A	PX	5.427	5.427	0	%100
21	M53A	PX	9.394	9.394	0	%100
22	M54A	PX	9.394	9.394	0	%100
23	MP3A	PX	5.427	5.427	0	%100
24	MP5A	PX	5.427	5.427	0	%100
25	MP1C	PX	5.427	5.427	0	%100
26	MP3C	PX	5.427	5.427	0	%100
27	MP5C	PX	5.427	5.427	0	%100
28	MP1B	PX	5.427	5.427	0	%100
29	MP3B	PX	5.427	5.427	0	%100
30	MP5B	PX	5.427	5.427	0	%100
31	M63	PX	5.427	5.427	0	%100
32	M64	PX	5.427	5.427	0	%100
33	M65	PX	5.427	5.427	0	%100
34	M62A	PX	12.475	12.475	0	%100
35	M63A	PX	11.613	11.613	0	%100
36	M64A	PX	11.613	11.613	0	%100
37	M67	PX	12.475	12.475	0	%100
38	M68	PX	11.613	11.613	0	%100
39	M69	PX	11.613	11.613	0	%100
40	M72	PX	12.475	12.475	0	%100
41	M73	PX	11.613	11.613	0	%100
42	M74	PX	11.613	11.613	0	%100
43	MP4A	PX	5.427	5.427	0	%100
44	MP2A	PX	5.427	5.427	0	%100
45	MP4C	PX	5.427	5.427	0	%100
46	MP2C	PX	5.427	5.427	0	%100
47	MP4B	PX	5.427	5.427	0	%100
48	MP2B	PX	5.427	5.427	0	%100
49	M85	PX	7.853	7.853	0	%100
50	M86A	PX	7.853	7.853	0	%100
51	M87	PX	7.853	7.853	0	%100
52	M88	PX	7.853	7.853	0	%100
53	M89	PX	7.853	7.853	0	%100
54	M90	PX	7.853	7.853	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	M4	Y	-.534	-.534	.099	1.099
2	M5	Y	-.673	-5.13	.425	1.558

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,%]
3	M5	Y	-5.13	-5.137	1.558	2.692
4	M5	Y	-5.137	-.673	2.692	3.825
5	M10	Y	-1.884	-3.796	0	.583
6	M10	Y	-3.796	-3.434	.583	1.166
7	M10	Y	-3.434	-2.559	1.166	1.75
8	M10	Y	-2.559	-3.446	1.75	2.333
9	M15	Y	-.706	-3.153	0	.583
10	M15	Y	-3.153	-3.2	.583	1.166
11	M15	Y	-3.2	-2.495	1.166	1.75
12	M15	Y	-2.495	-3.437	1.75	2.333
13	M8	Y	-.534	-.534	.235	1.235
14	M9	Y	-.673	-5.137	.425	1.558
15	M9	Y	-5.137	-5.13	1.558	2.692
16	M9	Y	-5.13	-.673	2.692	3.825
17	M13	Y	-1.884	-3.796	0	.583
18	M13	Y	-3.796	-3.434	.583	1.166
19	M13	Y	-3.434	-2.559	1.166	1.75
20	M13	Y	-2.559	-3.446	1.75	2.333
21	M14	Y	-.706	-3.153	0	.583
22	M14	Y	-3.153	-3.2	.583	1.166
23	M14	Y	-3.2	-2.495	1.166	1.75
24	M14	Y	-2.495	-3.437	1.75	2.333
25	M6	Y	-.532	-.532	.099	1.099
26	M7	Y	-.672	-5.132	.425	1.558
27	M7	Y	-5.132	-5.138	1.558	2.692
28	M7	Y	-5.138	-.672	2.692	3.825
29	M11	Y	-.706	-3.154	0	.583
30	M11	Y	-3.154	-3.2	.583	1.166
31	M11	Y	-3.2	-2.492	1.166	1.75
32	M11	Y	-2.492	-3.429	1.75	2.333
33	M12	Y	-1.886	-3.797	0	.583
34	M12	Y	-3.797	-3.435	.583	1.166
35	M12	Y	-3.435	-2.56	1.166	1.75
36	M12	Y	-2.56	-3.447	1.75	2.333

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	M4	Y	-1.317	-1.317	.099	1.099
2	M5	Y	-1.659	-12.65	.425	1.558
3	M5	Y	-12.65	-12.668	1.558	2.692
4	M5	Y	-12.668	-1.659	2.692	3.825
5	M10	Y	-4.645	-9.361	0	.583
6	M10	Y	-9.361	-8.468	.583	1.166
7	M10	Y	-8.468	-6.311	1.166	1.75
8	M10	Y	-6.311	-8.496	1.75	2.333
9	M15	Y	-1.74	-7.776	0	.583
10	M15	Y	-7.776	-7.892	.583	1.166
11	M15	Y	-7.892	-6.151	1.166	1.75
12	M15	Y	-6.151	-8.475	1.75	2.333
13	M8	Y	-1.317	-1.317	.235	1.235
14	M9	Y	-1.659	-12.668	.425	1.558
15	M9	Y	-12.668	-12.65	1.558	2.692
16	M9	Y	-12.65	-1.659	2.692	3.825
17	M13	Y	-4.645	-9.361	0	.583
18	M13	Y	-9.361	-8.468	.583	1.166
19	M13	Y	-8.468	-6.311	1.166	1.75

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,%]
20	M13	Y	-6.311	-8.496	1.75	2.333
21	M14	Y	-1.74	-7.776	0	.583
22	M14	Y	-7.776	-7.892	.583	1.166
23	M14	Y	-7.892	-6.151	1.166	1.75
24	M14	Y	-6.151	-8.475	1.75	2.333
25	M6	Y	-1.313	-1.313	.099	1.099
26	M7	Y	-1.657	-12.655	.425	1.558
27	M7	Y	-12.655	-12.67	1.558	2.692
28	M7	Y	-12.67	-1.657	2.692	3.825
29	M11	Y	-1.742	-7.777	0	.583
30	M11	Y	-7.777	-7.892	.583	1.166
31	M11	Y	-7.892	-6.145	1.166	1.75
32	M11	Y	-6.145	-8.456	1.75	2.333
33	M12	Y	-4.65	-9.364	0	.583
34	M12	Y	-9.364	-8.469	.583	1.166
35	M12	Y	-8.469	-6.312	1.166	1.75
36	M12	Y	-6.312	-8.5	1.75	2.333

Member Area Loads (BLC 9 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N32	N22	N23	N33	Y	Two Way	-.005
2	N30	N27	N28	N31	Y	Two Way	-.005
3	N26	N25A	N24	N25	Y	Two Way	-.005

Member Area Loads (BLC 10 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N32	N22	N23	N33	Y	Two Way	-.013
2	N30	N27	N28	N31	Y	Two Way	-.013
3	N26	N25A	N24	N25	Y	Two Way	-.013

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	N86	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N947C	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N949A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N974B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N975B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N976	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N979						
8	N981						
9	N985						
10	N986						
11	N991						
12	N992						
13	N1018B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N1019A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N1020A	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	N86	max	1544.558	4	118.4	5	1735.402	1	.679	1	1.875	3	.438	3
2		min	-1636.383	3	53.004	2	-1817.004	2	-.492	2	-1.868	4	-.544	4
3	N947C	max	1339.576	4	118.056	6	1456.73	1	.372	1	1.268	1	.358	3
4		min	-1365.769	3	45.228	9	-1340.453	2	-.559	2	-1.26	2	-.467	4
5	N949A	max	1429.907	4	118.811	7	1305.48	1	.391	1	1.297	2	.597	3
6		min	-1316.865	3	47.091	4	-1344.162	2	-.393	2	-1.29	1	-.381	4
7	N974B	max	1526.498	4	194.432	7	1302.125	1	.156	3	1.371	3	.056	3
8		min	-1503.479	3	-16.92	4	-1126.363	2	-.088	4	-1.483	4	-.065	4
9	N975B	max	830.478	4	203.972	5	2040.179	1	-.001	2	1.165	1	.136	2
10		min	-690.233	3	-68.712	2	-2145.598	2	-.068	5	-1.275	2	-.188	1
11	N976	max	1865.607	4	199.153	8	865.565	1	.072	3	.756	2	.109	8
12		min	-2028.113	3	-40.89	3	-932.606	2	-.097	4	-.868	1	-.04	3
13	N1018B	max	-389.305	4	2541.605	7	-40.936	9	0	2	0	9	0	1
14		min	-1487.235	7	657.811	4	-1072.963	7	0	1	0	4	0	2
15	N1019A	max	180.116	2	2535.408	8	1822.944	5	0	2	0	1	0	1
16		min	-716.329	9	698.428	2	378.498	2	0	1	0	2	0	2
17	N1020A	max	1675.442	8	2547.927	6	-135.966	2	0	4	0	5	0	4
18		min	281.994	1	666.274	1	-771.66	7	0	3	0	2	0	3
19	Totals:	max	8658.205	4	8438.681	8	8826.157	1						
20		min	-8658.205	3	2846.139	3	-8826.156	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
1	M1	1	max	0	11	0	11	0	11	0	11	0	11	0	11
2			min	0	1	-750	9	0	1	0	1	0	1	0	1
3		2	max	540.447	9	51.054	3	-63.015	1	.491	1	.293	2	.291	3
4			min	-67.035	2	-558.807	8	-238.312	8	-.351	2	-.299	1	-.312	4
5		3	max	540.447	9	37.847	3	-62.251	2	.491	1	.172	2	.816	5
6			min	-67.035	2	-589.519	8	-247.175	5	-.351	2	-.442	5	.122	2
7		4	max	172.536	3	174.469	1	57.669	1	.106	1	.183	2	.214	1
8			min	-1429.092	8	-121.934	2	-142.572	6	-.07	2	-.093	1	-.133	2
9		5	max	172.536	3	161.262	1	27.226	1	.106	1	.029	4	.068	2
10			min	-1429.092	8	-135.141	2	-133.474	7	-.07	2	-.056	3	-.049	1
11	M2	1	max	0	11	.002	6	.003	2	0	11	0	11	0	11
12			min	0	1	-.006	4	-.003	4	0	1	0	1	0	1
13		2	max	406.732	4	70.609	1	-54.476	3	.42	4	.186	1	.311	4
14			min	-184.587	3	-558.713	6	-244.105	8	-.28	3	-.192	2	-.332	3
15		3	max	419.914	4	57.402	1	-31.643	3	.42	4	.079	1	.823	8
16			min	-197.769	3	-589.426	6	-251.683	8	-.28	3	-.429	6	.093	3
17		4	max	387.568	1	116.462	4	48.529	2	.099	4	.17	5	.159	4
18			min	-1465.606	6	-64.744	3	-143.06	5	-.062	3	-.045	2	-.079	3
19		5	max	400.75	1	103.255	4	40.918	2	.099	4	.024	2	.061	5
20			min	-1469.981	6	-77.951	3	-140.534	5	-.062	3	-.052	1	-.032	2
21	M3	1	max	0	11	.002	7	.006	3	0	11	0	11	0	11
22			min	0	1	-.005	2	0	2	0	1	0	1	0	1
23		2	max	394.089	6	21.601	4	-43.53	1	.352	3	.298	4	.342	2
24			min	-87.74	1	-551.236	5	-245.003	6	-.212	4	-.304	3	-.362	1
25		3	max	398.464	6	8.394	4	-35.919	1	.352	3	.16	4	.805	6
26			min	-100.923	1	-581.949	5	-247.529	6	-.212	4	-.442	7	.185	1
27		4	max	305.317	4	164.086	3	61.616	3	.077	2	.192	4	.189	3
28			min	-1424.486	7	-111.509	4	-145.013	8	-.04	1	-.102	3	-.108	4
29		5	max	318.499	4	150.879	3	38.783	3	.077	2	-.004	4	.077	4
30			min	-1428.862	7	-124.717	4	-137.435	8	-.04	1	-.045	7	-.057	3
31	M4	1	max	38.421	1	472.459	9	133.539	1	.009	1	.045	2	.26	3
32			min	-199.686	6	-16.043	4	-128.492	2	-.007	2	-.045	1	-.235	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
33		2	max	33.062	1	470.266	9	130.445	1	.009	1	.01	3	.188	3
34			min	-200.328	8	-18.235	4	-125.398	2	-.007	2	-.009	4	-.229	4
35		3	max	243.321	1	460.568	9	397.912	1	.031	2	.002	2	.197	1
36			min	-353.313	2	-29.656	4	-367.64	2	-.038	1	-.002	1	-.295	2
37		4	max	382.227	1	464.686	9	237.073	1	.006	4	.005	4	.205	1
38			min	-488.699	2	-32.77	4	-200.466	2	-.012	3	-.007	3	-.393	9
39		5	max	376.868	1	462.58	9	233.979	1	.006	4	.074	1	.188	1
40			min	-483.34	2	-34.876	4	-197.372	2	-.012	3	-.063	2	-.547	9
41	M5	1	max	-45.46	2	100.677	2	253.054	1	-.001	1	.036	2	.138	2
42			min	-908.996	5	-30.809	1	-222.268	2	-.016	6	-.045	1	-.094	1
43		2	max	305.857	3	46.34	2	.484	1	.003	6	0	3	.055	3
44			min	-768.389	8	-42.71	9	-.413	2	0	1	0	4	-.069	4
45		3	max	88.398	1	30.468	2	.619	1	0	6	0	3	.049	3
46			min	-804.035	6	-58.976	9	-2.326	3	-.002	1	0	4	-.055	4
47		4	max	210.168	1	11.903	2	.588	2	0	2	0	1	.09	7
48			min	-813.384	6	-72.697	5	-.575	1	-.005	1	0	2	-.02	4
49		5	max	-41.734	1	20.436	2	256.467	1	.018	5	.043	1	.237	5
50			min	-1018.298	6	-171.206	5	-253.595	2	.001	2	-.046	2	-.039	2
51	M6	1	max	-15.749	4	306.32	5	92.801	4	.007	2	.027	3	.237	4
52			min	-211.031	6	-11.881	2	-87.319	3	-.006	1	-.028	4	-.213	3
53		2	max	-21.108	4	300.252	5	83.518	4	.007	2	.01	1	.206	4
54			min	-212.388	6	-14.074	2	-78.037	3	-.006	1	-.009	2	-.248	3
55		3	max	97.626	4	271.273	5	250.736	2	.021	3	.002	3	.199	4
56			min	-206.432	3	-32.368	2	-222.471	1	-.028	4	-.002	4	-.297	3
57		4	max	157.645	2	242.451	5	178.957	4	.008	2	.006	3	.185	4
58			min	-264.795	1	-28.107	2	-142.183	3	-.014	1	-.008	4	-.341	3
59		5	max	152.286	2	236.648	5	169.674	4	.008	2	.05	4	.159	4
60			min	-259.435	1	-30.212	2	-132.9	3	-.014	1	-.04	3	-.37	3
61	M7	1	max	-116.488	1	102.275	3	155.633	2	-.002	4	.018	3	.119	1
62			min	-901.931	6	-32.219	4	-125.117	1	-.015	7	-.028	4	-.073	4
63		2	max	331.592	1	54.057	3	.553	4	.003	5	0	1	.063	1
64			min	-772.818	6	-45.813	4	-.479	3	0	2	0	2	-.077	2
65		3	max	-121.466	4	38.486	3	1.812	3	0	5	0	4	.046	1
66			min	-751.027	7	-63.131	4	-1.194	1	-.001	2	0	7	-.053	2
67		4	max	290.618	2	19.471	3	.362	3	0	3	0	2	.107	4
68			min	-857.812	5	-77.078	4	-.348	4	-.005	4	0	1	-.063	3
69		5	max	-43.242	4	22.766	3	153.262	4	.018	8	.027	4	.25	8
70			min	-1005.653	7	-172.943	8	-150.777	3	0	3	-.03	3	-.089	3
71	M8	1	max	-22.57	1	299.183	6	108.518	3	.011	3	.041	4	.253	2
72			min	-202.881	6	35.907	3	-103.772	4	-.009	4	-.042	3	-.229	1
73		2	max	-22.57	1	293.379	6	108.518	3	.011	3	.006	4	.201	2
74			min	-202.881	6	33.801	3	-103.772	4	-.009	4	-.005	3	-.243	1
75		3	max	184.078	3	259.503	8	395.206	3	.025	4	0	4	.16	2
76			min	-295.077	4	7.302	3	-365.983	4	-.032	3	0	3	-.258	1
77		4	max	348.697	3	235.745	6	201.05	3	.008	3	.007	1	.113	2
78			min	-456.381	4	19.85	3	-164.734	4	-.013	4	-.009	2	-.268	1
79		5	max	348.697	3	229.676	6	201.05	3	.008	3	.066	3	.074	3
80			min	-456.381	4	17.657	3	-164.734	4	-.013	4	-.056	4	-.336	5
81	M9	1	max	27.731	4	76.715	5	251.978	3	-.001	3	.035	4	.119	4
82			min	-934.403	7	-5.886	3	-221.488	4	-.016	8	-.044	3	-.074	3
83		2	max	201.543	4	27.53	1	.548	2	.003	8	0	2	.055	4
84			min	-736.826	7	-18.996	2	-.473	1	0	3	0	1	-.069	3
85		3	max	56.639	3	11.597	1	2.679	1	0	4	0	2	.048	2
86			min	-804.486	8	-35.939	6	-.458	4	-.002	3	0	1	-.055	1
87		4	max	428.103	3	-6.63	1	.713	1	0	4	0	3	.099	2
88			min	-889.473	4	-71.061	6	-.841	2	-.004	3	0	4	-.056	1
89		5	max	-111.631	2	-11.173	4	237.955	3	.018	7	.038	3	.246	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
90			min	-995.191	8	-165.11	6	-234.972	4	.002	4	-.041	4	-.042	1
91	M10	1	max	213.666	2	46.294	1	24.526	2	0	1	.052	2	.12	1
92			min	-207.876	1	-39.42	2	-14.348	1	0	2	-.059	1	-.11	2
93		2	max	213.666	2	59.821	1	19.733	2	0	1	.04	2	.084	1
94			min	-207.876	1	-52.947	2	-19.141	1	0	2	-.04	1	-.075	2
95		3	max	213.666	2	73.348	1	14.585	2	0	1	.018	2	.039	1
96			min	-207.876	1	-66.474	2	-24.289	1	0	2	-.017	1	-.035	2
97		4	max	213.666	2	86.876	1	9.946	2	0	1	.01	1	.009	2
98			min	-207.876	1	-80.002	2	-33.109	5	0	2	-.014	2	-.017	9
99		5	max	213.666	2	100.403	1	7.213	2	0	1	.043	1	.058	2
100			min	-207.876	1	-93.529	2	-42.735	5	0	2	-.054	2	-.08	1
101	M11	1	max	248.517	2	27.711	8	30.07	3	0	4	.024	4	.077	4
102			min	-220.474	1	-5.076	3	-34.382	4	0	3	-.025	3	-.063	3
103		2	max	248.517	2	14.112	4	30.07	3	0	4	.024	2	.051	2
104			min	-220.474	1	-9.129	3	-34.382	4	0	3	-.021	1	-.044	1
105		3	max	248.517	2	9.234	4	30.07	3	0	4	.015	2	.032	2
106			min	-220.474	1	-14.006	3	-34.382	4	0	3	-.014	1	-.028	1
107		4	max	248.517	2	4.659	4	43.154	1	0	4	.004	3	.009	2
108			min	-220.474	1	-22.338	7	-47.374	2	0	3	-.011	4	-.002	1
109		5	max	248.517	2	1.93	4	56.681	1	0	4	.013	1	.033	1
110			min	-220.474	1	-31.952	7	-60.901	2	0	3	-.031	2	-.019	2
111	M12	1	max	190.089	1	30.58	2	22.468	5	0	4	.033	3	.076	2
112			min	-183.885	2	-23.916	1	-6.72	4	0	3	-.04	4	-.066	1
113		2	max	195.946	1	39.411	4	12.158	3	0	4	.026	3	.055	2
114			min	-189.742	2	-32.691	3	-11.515	4	0	3	-.027	4	-.046	1
115		3	max	201.804	1	49.557	4	7.01	3	0	4	.011	3	.029	2
116			min	-195.6	2	-42.837	3	-16.663	4	0	3	-.011	4	-.026	1
117		4	max	207.661	1	59.702	4	2.37	3	0	4	.007	4	.014	3
118			min	-201.457	2	-52.982	3	-31.776	6	0	3	-.011	3	-.022	4
119		5	max	213.519	1	69.848	4	-.363	3	0	4	.029	4	.045	3
120			min	-207.315	2	-63.128	3	-41.403	6	0	3	-.04	3	-.067	4
121	M13	1	max	351.196	3	31.885	7	32.927	4	0	3	.044	3	.115	3
122			min	-323.591	4	-9.437	4	-37.246	3	0	4	-.045	4	-.101	4
123		2	max	357.054	3	19.532	3	43.073	4	0	3	.034	3	.082	3
124			min	-329.448	4	-14.23	4	-47.392	3	0	4	-.031	4	-.075	4
125		3	max	362.911	3	14.383	3	53.218	4	0	3	.015	3	.046	3
126			min	-335.306	4	-19.378	4	-57.537	3	0	4	-.015	4	-.041	4
127		4	max	368.769	3	9.744	3	63.364	4	0	3	.004	4	.007	3
128			min	-341.163	4	-24.325	8	-67.683	3	0	4	-.011	3	0	4
129		5	max	374.626	3	7.012	3	73.509	4	0	3	.026	4	.048	4
130			min	-347.021	4	-33.951	8	-77.828	3	0	4	-.044	3	-.034	3
131	M14	1	max	255.991	4	45.547	3	22.692	4	0	3	.047	4	.119	3
132			min	-249.773	3	-38.778	4	-14.223	3	0	4	-.054	3	-.11	4
133		2	max	261.849	4	55.693	3	18.639	4	0	3	.035	4	.085	3
134			min	-255.631	3	-48.923	4	-18.275	3	0	4	-.036	3	-.076	4
135		3	max	267.706	4	65.838	3	13.761	4	0	3	.015	4	.043	3
136			min	-261.488	3	-59.069	4	-23.153	3	0	4	-.015	3	-.04	4
137		4	max	273.564	4	75.984	3	9.183	4	0	3	.008	3	.013	1
138			min	-267.346	3	-69.214	4	-32.536	7	0	4	-.012	4	-.021	2
139		5	max	279.421	4	86.129	3	6.453	4	0	3	.035	3	.041	4
140			min	-273.203	3	-79.36	4	-42.155	7	0	4	-.046	4	-.064	3
141	M15	1	max	341.065	1	29.25	5	48.071	2	0	1	.047	1	.124	1
142			min	-313.147	2	-11.814	2	-52.519	1	0	2	-.047	2	-.109	2
143		2	max	346.923	1	20.891	1	51.453	2	0	1	.03	1	.084	1
144			min	-319.004	2	-15.866	2	-55.901	1	0	2	-.028	2	-.077	2
145		3	max	352.78	1	16.013	1	54.834	2	0	1	.01	1	.045	1
146			min	-324.862	2	-20.744	2	-59.283	1	0	2	-.01	2	-.04	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
147		4	max	358.638	1	11.435	1	58.216	2	0	1	.007	2	.013	9
148			min	-330.719	2	-25.323	2	-62.664	1	0	2	-.014	1	0	3
149		5	max	364.495	1	8.705	1	61.598	2	0	1	.024	2	.046	2
150			min	-336.577	2	-33.496	6	-66.046	1	0	2	-.042	1	-.032	1
151	M16	1	max	335.36	4	147.409	1	225.555	1	.102	1	.029	4	.066	2
152			min	-1377.945	7	-147.467	2	-144.988	2	-.073	2	-.056	3	-.049	1
153		2	max	221.973	4	56.887	9	142.076	8	.11	2	.183	8	.062	8
154			min	-1357.645	7	-47.184	2	-37.769	3	-.095	1	-.069	3	-.008	3
155		3	max	288.627	8	502.943	7	196.659	7	.117	4	.051	4	.666	5
156			min	-143.118	3	91.613	2	-8.156	4	-.087	3	-.313	7	.177	2
157		4	max	288.627	8	472.231	7	196.659	7	.117	4	.076	2	.06	4
158			min	-143.118	3	78.405	2	-8.156	4	-.087	3	-.074	1	-.115	3
159		5	max	0	11	0	11	0	11	0	11	0	11	0	11
160			min	0	1	0	1	0	1	0	1	0	1	0	1
161	M17	1	max	392.734	2	87.888	4	159.382	6	.095	4	.024	2	.06	5
162			min	-1396.291	5	-88.416	3	-75.946	1	-.064	3	-.052	1	-.033	2
163		2	max	199.561	2	49.486	4	155.977	3	.083	3	.186	7	.064	6
164			min	-1361.031	5	-60.994	3	-73.457	4	-.069	2	-.075	4	-.013	1
165		3	max	296.95	6	503.277	8	201.034	8	.142	3	.105	3	.667	6
166			min	-150.209	1	87.643	3	-21.138	3	-.112	4	-.331	8	.184	1
167		4	max	292.575	6	472.564	8	193.456	8	.142	3	.09	3	.09	3
168			min	-137.027	1	74.436	3	1.694	3	-.112	4	-.088	4	-.146	4
169		5	max	0	11	.002	3	0	11	0	11	0	11	0	11
170			min	0	1	-.001	1	-.004	4	0	1	0	1	0	1
171	M18	1	max	435.875	3	138.016	3	252.156	3	.073	2	-.004	4	.075	4
172			min	-1388.429	8	-138.882	4	-171.385	4	-.042	1	-.045	7	-.058	3
173		2	max	184.634	3	33.469	2	184.739	1	.106	4	.225	1	.131	9
174			min	-1348.503	8	-54.288	9	-102.225	2	-.092	3	-.122	2	-.02	4
175		3	max	333.119	1	503.66	6	204.468	6	.163	1	.134	1	.672	7
176			min	-190.452	2	93.233	1	-48.126	1	-.133	2	-.333	6	.16	4
177		4	max	319.936	1	472.947	6	201.942	6	.163	1	.065	1	.09	1
178			min	-177.27	2	80.026	1	-40.516	1	-.133	2	-.063	2	-.146	2
179		5	max	0	11	.002	1	0	3	0	11	0	11	0	11
180			min	0	1	-.002	4	-.004	2	0	1	0	1	0	1
181	M36	1	max	1612.917	2	118.351	5	1713.07	4	.532	4	1.875	3	.625	1
182			min	-1495.303	1	52.594	2	-1747.625	3	-.542	3	-1.868	4	-.41	2
183		2	max	1596.239	2	87.927	5	1686.38	4	.532	4	.141	3	.554	1
184			min	-1478.625	1	37.794	2	-1720.934	3	-.542	3	-.168	4	-.455	2
185		3	max	349.648	2	53.638	6	1082.728	3	.379	3	.031	2	.1	1
186			min	-245.907	1	17.119	3	-1041.081	4	-.364	4	-.034	1	-.076	2
187		4	max	16.678	3	30.424	7	26.681	4	0	11	.013	3	.015	7
188			min	-16.678	1	14.788	1	-26.699	3	0	1	-.013	4	.007	1
189		5	max	0	11	0	7	.003	2	0	11	0	11	0	11
190			min	0	1	-.012	1	-.01	4	0	1	0	1	0	1
191	MP1A	1	max	0	11	.012	4	.044	5	0	11	0	11	0	11
192			min	0	1	-.023	7	-.016	2	0	1	0	1	0	1
193		2	max	76.984	8	75.408	4	141.207	1	0	11	.136	1	.07	3
194			min	14.347	1	-75.409	3	-141.204	2	0	1	-.136	2	-.07	4
195		3	max	57.981	7	360.538	5	171.817	2	.128	2	.093	1	.013	3
196			min	-36.572	4	-48.145	2	-166.952	1	-.126	1	-.074	2	-.103	8
197		4	max	-14.347	10	75.397	3	141.174	2	0	11	.076	1	.043	3
198			min	-76.984	5	-75.388	4	-141.174	1	0	1	-.076	2	-.043	4
199		5	max	0	11	.081	8	.021	5	0	11	0	11	0	11
200			min	0	1	0	3	-.014	2	0	1	0	1	0	1
201	M36A	1	max	73.673	3	154.42	7	48.088	2	.039	2	.116	2	.211	1
202			min	-68.001	4	-15.939	4	-364.768	8	-.413	5	-.064	1	-.218	2
203		2	max	73.673	3	154.42	7	48.088	2	.039	2	.119	2	.212	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
204			min	-68.001	4	-15.939	4	-364.768	8	-.413	5	-.079	1	-.223	2
205		3	max	73.673	3	154.42	7	48.088	2	.039	2	.122	2	.213	1
206			min	-68.001	4	-15.939	4	-364.768	8	-.413	5	-.095	1	-.228	2
207		4	max	73.673	3	154.42	7	48.088	2	.039	2	.125	2	.214	1
208			min	-68.001	4	-15.939	4	-364.768	8	-.413	5	-.111	1	-.233	2
209		5	max	73.673	3	154.42	7	48.088	2	.039	2	.128	2	.215	1
210			min	-68.001	4	-15.939	4	-364.768	8	-.413	5	-.126	1	-.238	2
211	M53A	1	max	1251.833	3	118.028	6	1119.622	2	.357	2	1.268	1	.492	4
212			min	-1131.909	4	45.221	9	-1154.899	1	-.366	1	-1.26	2	-.278	3
213		2	max	1236.45	3	87.604	6	1111.443	2	.357	2	.117	1	.428	4
214			min	-1116.526	4	30.422	9	-1146.719	1	-.366	1	-.145	2	-.33	3
215		3	max	318.004	3	53.976	7	1026.084	4	.361	4	.016	2	.09	4
216			min	-213.321	4	15.721	4	-984.859	3	-.346	3	-.02	1	-.066	3
217		4	max	15.384	3	30.424	7	28.933	3	0	11	.014	4	.015	7
218			min	-15.384	2	14.791	4	-28.932	4	0	1	-.014	3	.007	4
219		5	max	0	11	0	10	0	3	0	11	0	11	0	11
220			min	0	1	-.009	4	-.006	2	0	1	0	1	0	1
221	M54A	1	max	1425.636	4	118.766	7	1327.944	1	.394	1	1.297	2	.595	3
222			min	-1311.338	3	46.753	4	-1361.906	2	-.403	2	-1.29	1	-.38	4
223		2	max	1424.342	4	88.342	7	1290.877	1	.394	1	.022	10	.519	3
224			min	-1310.044	3	31.953	4	-1324.839	2	-.403	2	-.051	8	-.419	4
225		3	max	264.283	4	53.993	5	1173.013	2	.415	2	.015	4	.082	3
226			min	-160.28	3	15.35	2	-1132.129	1	-.401	1	-.019	3	-.057	4
227		4	max	1.294	4	30.424	6	37.066	1	0	11	.019	2	.015	6
228			min	-1.294	1	14.799	3	-37.067	2	0	1	-.019	1	.007	3
229		5	max	0	11	0	2	0	4	0	11	0	11	0	11
230			min	0	1	0	3	0	1	0	1	0	1	0	1
231	MP3A	1	max	0	11	.002	4	.013	1	0	11	0	11	0	11
232			min	0	1	-.003	7	-.014	6	0	1	0	1	0	1
233		2	max	19.45	8	19.834	4	19.845	1	0	11	.015	1	.015	3
234			min	6.248	1	-19.834	3	-19.845	2	0	1	-.015	2	-.015	4
235		3	max	85.929	1	212.421	1	112.363	1	.043	1	.148	1	.012	2
236			min	-125.961	2	-202.762	2	-113.819	2	-.047	2	-.136	2	-.014	1
237		4	max	-6.248	10	19.832	3	19.833	2	0	11	.015	1	.015	3
238			min	-19.45	5	-19.832	4	-19.832	1	0	1	-.015	2	-.015	4
239		5	max	0	11	.002	6	.009	6	0	11	0	11	0	11
240			min	0	1	-.001	1	0	1	0	1	0	1	0	1
241	M42	1	max	151.875	1	98.4	1	202.89	2	.19	2	.096	1	.183	2
242			min	-153.728	2	-113.533	2	-212.329	1	-.2	1	-.098	2	-.197	1
243		2	max	151.875	1	98.4	1	202.89	2	.19	2	.083	1	.19	2
244			min	-153.728	2	-113.533	2	-212.329	1	-.2	1	-.085	2	-.203	1
245		3	max	151.875	1	98.4	1	202.89	2	.19	2	.069	1	.197	2
246			min	-153.728	2	-113.533	2	-212.329	1	-.2	1	-.072	2	-.209	1
247		4	max	151.875	1	98.4	1	202.89	2	.19	2	.056	1	.204	2
248			min	-153.728	2	-113.533	2	-212.329	1	-.2	1	-.059	2	-.216	1
249		5	max	151.875	1	98.4	1	202.89	2	.19	2	.043	1	.211	2
250			min	-153.728	2	-113.533	2	-212.329	1	-.2	1	-.047	2	-.222	1
251	MP5A	1	max	286.078	8	228.416	4	564.745	1	0	11	0	11	0	11
252			min	76.8	1	-228.418	3	-564.734	2	0	1	0	1	0	1
253		2	max	305.528	8	248.248	4	584.576	1	0	11	.862	1	.358	3
254			min	83.047	1	-248.25	3	-584.566	2	0	1	-.862	2	-.357	4
255		3	max	396.089	8	-3.539	2	208.521	2	.095	1	.739	1	.207	3
256			min	3.819	9	-597.07	9	-127.541	1	-.117	2	-.654	2	-.116	4
257		4	max	-83.048	10	247.353	3	582.21	2	0	11	.858	1	.356	3
258			min	-305.528	5	-247.478	4	-582.101	1	0	1	-.858	2	-.356	4
259		5	max	-76.8	10	227.521	3	562.378	2	0	11	0	11	0	11
260			min	-286.078	5	-227.647	4	-562.269	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
261	M46A	1	max	475.334	1	721.343	8	596.944	9	.704	9	.019	1	.654	1
262			min	-394.367	2	93.593	9	-31.014	4	-.241	3	-.167	6	-.694	2
263		2	max	475.334	1	721.343	8	596.944	9	.704	9	.038	1	.639	1
264			min	-394.367	2	93.593	9	-31.014	4	-.241	3	-.139	6	-.707	2
265		3	max	475.334	1	721.343	8	596.944	9	.704	9	.057	1	.623	1
266			min	-394.367	2	93.593	9	-31.014	4	-.241	3	-.118	2	-.721	2
267		4	max	475.334	1	721.343	8	596.944	9	.704	9	.076	1	.608	1
268			min	-394.367	2	93.593	9	-31.014	4	-.241	3	-.117	2	-.735	2
269		5	max	475.334	1	721.343	8	596.944	9	.704	9	.095	1	.592	1
270			min	-394.367	2	93.593	9	-31.014	4	-.241	3	-.117	2	-.748	2
271	MP1C	1	max	0	11	.043	8	.013	1	0	11	0	11	0	11
272			min	0	1	-.013	3	-.022	6	0	1	0	1	0	1
273		2	max	76.984	8	124.756	4	91.857	1	0	11	.087	1	.12	3
274			min	14.348	1	-124.753	3	-91.858	2	0	1	-.087	2	-.12	4
275		3	max	81.388	1	115.671	1	-42.181	3	.082	1	.006	3	.1	3
276			min	-60.364	2	-211.506	2	-303.985	8	-.08	2	-.108	8	-.088	4
277		4	max	-14.347	10	124.722	3	91.836	2	0	11	.051	1	.067	3
278			min	-76.984	5	-124.726	4	-91.844	1	0	1	-.051	2	-.067	4
279		5	max	0	11	.014	4	0	1	0	11	0	11	0	11
280			min	0	1	-.048	7	-.074	6	0	1	0	1	0	1
281	M48A	1	max	95.638	1	158.459	5	65.553	1	.023	3	.107	7	.179	2
282			min	-90.001	2	-39.783	2	-375.251	6	-.412	8	-.037	4	-.187	1
283		2	max	95.638	1	158.459	5	65.553	1	.023	3	.086	7	.181	2
284			min	-90.001	2	-39.783	2	-375.251	6	-.412	8	-.045	4	-.194	1
285		3	max	95.638	1	158.459	5	65.553	1	.023	3	.08	3	.184	2
286			min	-90.001	2	-39.783	2	-375.251	6	-.412	8	-.053	4	-.2	1
287		4	max	95.638	1	158.459	5	65.553	1	.023	3	.078	1	.186	2
288			min	-90.001	2	-39.783	2	-375.251	6	-.412	8	-.064	2	-.207	1
289		5	max	95.638	1	158.459	5	65.553	1	.023	3	.082	1	.189	2
290			min	-90.001	2	-39.783	2	-375.251	6	-.412	8	-.08	2	-.213	1
291	MP3C	1	max	0	11	.008	4	.006	5	0	11	0	11	0	11
292			min	0	1	-.01	7	-.005	2	0	1	0	1	0	1
293		2	max	19.45	8	19.84	4	19.837	1	0	11	.015	1	.015	3
294			min	6.247	1	-19.84	3	-19.837	2	0	1	-.015	2	-.015	4
295		3	max	64.715	2	38.212	1	136.365	1	.03	2	.057	3	.087	3
296			min	-105.913	1	-42.79	2	-143.53	2	-.034	1	-.065	4	-.097	4
297		4	max	-6.248	10	19.832	3	19.833	2	0	11	.015	1	.015	3
298			min	-19.45	5	-19.831	4	-19.833	1	0	1	-.015	2	-.015	4
299		5	max	0	11	.006	7	0	2	0	11	0	11	0	11
300			min	0	1	0	3	-.006	5	0	1	0	1	0	1
301	M50A	1	max	119.821	4	77.206	2	171.651	1	.107	3	.075	2	.148	3
302			min	-120.594	3	-93.435	1	-179.981	2	-.117	4	-.077	1	-.163	4
303		2	max	119.821	4	77.206	2	171.651	1	.107	3	.064	2	.15	3
304			min	-120.594	3	-93.435	1	-179.981	2	-.117	4	-.066	1	-.165	4
305		3	max	119.821	4	77.206	2	171.651	1	.107	3	.053	2	.153	3
306			min	-120.594	3	-93.435	1	-179.981	2	-.117	4	-.056	1	-.166	4
307		4	max	119.821	4	77.206	2	171.651	1	.107	3	.041	2	.156	3
308			min	-120.594	3	-93.435	1	-179.981	2	-.117	4	-.045	1	-.168	4
309		5	max	119.821	4	77.206	2	171.651	1	.107	3	.03	2	.158	3
310			min	-120.594	3	-93.435	1	-179.981	2	-.117	4	-.034	1	-.17	4
311	MP5C	1	max	286.078	8	480.499	4	312.56	1	0	11	0	11	0	11
312			min	76.8	1	-480.49	3	-312.563	2	0	1	0	1	0	1
313		2	max	305.528	8	500.331	4	332.392	1	0	11	.484	1	.736	3
314			min	83.048	1	-500.322	3	-332.394	2	0	1	-.484	2	-.736	4
315		3	max	400.029	6	384.774	7	387.409	8	.068	4	.311	1	.434	3
316			min	18.135	1	-38.546	4	-40.997	3	-.091	3	-.274	2	-.552	4
317		4	max	-83.047	10	498.483	3	331.195	2	0	11	.482	1	.733	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
318			min	-305.528	5	-498.326	4	-331.141	1	0	1	-.482	2	-.733	4
319		5	max	-76.8	10	478.652	3	311.364	2	0	11	0	11	0	11
320			min	-286.078	5	-478.495	4	-311.309	1	0	1	0	1	0	1
321	M54B	1	max	283.237	4	725.367	6	541.233	8	.687	2	.02	2	.563	4
322			min	-201.839	3	107.374	1	-164.169	3	-.329	1	-.168	5	-.603	3
323		2	max	283.237	4	725.367	6	541.233	8	.687	2	.018	2	.555	4
324			min	-201.839	3	107.374	1	-164.169	3	-.329	1	-.136	5	-.624	3
325		3	max	283.237	4	725.367	6	541.233	8	.687	2	.017	2	.547	4
326			min	-201.839	3	107.374	1	-164.169	3	-.329	1	-.104	5	-.645	3
327		4	max	283.237	4	725.367	6	541.233	8	.687	2	.039	4	.539	4
328			min	-201.839	3	107.374	1	-164.169	3	-.329	1	-.08	3	-.666	3
329		5	max	283.237	4	725.367	6	541.233	8	.687	2	.068	4	.531	4
330			min	-201.839	3	107.374	1	-164.169	3	-.329	1	-.091	3	-.687	3
331	MP1B	1	max	0	11	.014	4	.011	1	0	11	0	11	0	11
332			min	0	1	-.035	7	-.035	6	0	1	0	1	0	1
333		2	max	76.984	8	124.755	4	91.855	1	0	11	.087	1	.12	3
334			min	14.348	1	-124.757	3	-91.857	2	0	1	-.087	2	-.12	4
335		3	max	90.006	4	52.286	3	325.399	7	.126	4	.09	1	.092	7
336			min	-72.942	9	-203.626	8	-126.991	4	-.124	3	-.051	2	-.031	4
337		4	max	-14.347	10	124.729	3	91.837	2	0	11	.051	1	.067	3
338			min	-76.984	5	-124.733	4	-91.829	1	0	1	-.051	2	-.067	4
339		5	max	0	11	.007	4	.073	5	0	11	0	11	0	11
340			min	0	1	-.054	7	-.007	2	0	1	0	1	0	1
341	M56A	1	max	74.957	4	158.131	8	103.215	4	-.02	4	.108	8	.241	3
342			min	-69.677	3	-52.355	9	-378.302	7	-.402	6	-.048	3	-.249	4
343		2	max	74.957	4	158.131	8	103.215	4	-.02	4	.106	4	.244	3
344			min	-69.677	3	-52.355	9	-378.302	7	-.402	6	-.067	3	-.256	4
345		3	max	74.957	4	158.131	8	103.215	4	-.02	4	.113	4	.247	3
346			min	-69.677	3	-52.355	9	-378.302	7	-.402	6	-.086	3	-.263	4
347		4	max	74.957	4	158.131	8	103.215	4	-.02	4	.119	4	.25	3
348			min	-69.677	3	-52.355	9	-378.302	7	-.402	6	-.105	3	-.27	4
349		5	max	74.957	4	158.131	8	103.215	4	-.02	4	.126	4	.253	3
350			min	-69.677	3	-52.355	9	-378.302	7	-.402	6	-.124	3	-.276	4
351	MP3B	1	max	0	11	.012	8	.004	5	0	11	0	11	0	11
352			min	0	1	-.011	3	-.003	2	0	1	0	1	0	1
353		2	max	19.45	8	19.843	4	19.835	1	0	11	.015	1	.015	3
354			min	6.248	1	-19.842	3	-19.835	2	0	1	-.015	2	-.015	4
355		3	max	104.618	3	181.794	4	145.076	3	.044	3	.042	4	.107	3
356			min	-145.257	4	-185.411	3	-136.481	4	-.048	4	-.046	3	-.096	4
357		4	max	-6.248	10	19.833	3	19.832	2	0	11	.015	1	.015	3
358			min	-19.45	5	-19.834	4	-19.832	1	0	1	-.015	2	-.015	4
359		5	max	0	11	0	3	0	4	0	11	0	11	0	11
360			min	0	1	-.009	8	-.003	7	0	1	0	1	0	1
361	M58A	1	max	122.229	3	117.09	3	229.096	4	.182	4	.104	3	.127	4
362			min	-123.782	4	-132.821	4	-238.051	3	-.192	3	-.106	4	-.142	3
363		2	max	122.229	3	117.09	3	229.096	4	.182	4	.089	3	.136	4
364			min	-123.782	4	-132.821	4	-238.051	3	-.192	3	-.091	4	-.15	3
365		3	max	122.229	3	117.09	3	229.096	4	.182	4	.074	3	.144	4
366			min	-123.782	4	-132.821	4	-238.051	3	-.192	3	-.077	4	-.157	3
367		4	max	122.229	3	117.09	3	229.096	4	.182	4	.059	3	.152	4
368			min	-123.782	4	-132.821	4	-238.051	3	-.192	3	-.063	4	-.164	3
369		5	max	122.229	3	117.09	3	229.096	4	.182	4	.044	3	.161	4
370			min	-123.782	4	-132.821	4	-238.051	3	-.192	3	-.048	4	-.172	3
371	MP5B	1	max	286.078	8	480.751	4	312.361	1	0	11	0	11	0	11
372			min	76.8	1	-480.758	3	-312.367	2	0	1	0	1	0	1
373		2	max	305.528	8	500.582	4	332.193	1	0	11	.483	1	.736	3
374			min	83.047	1	-500.589	3	-332.198	2	0	1	-.483	2	-.736	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
375		3	max	400.199	5	174.955	3	-30.09	4	.065	3	.177	1	.586	3
376			min	17.066	2	-92.132	4	-501.749	5	-.088	4	-.298	2	-.559	4
377		4	max	-83.048	10	498.536	3	330.966	2	0	11	.482	1	.733	3
378			min	-305.528	5	-498.567	4	-331.13	1	0	1	-.482	2	-.733	4
379		5	max	-76.8	10	478.704	3	311.135	2	0	11	0	11	0	11
380			min	-286.078	5	-478.736	4	-311.298	1	0	1	0	1	0	1
381	M62	1	max	435.161	3	725.384	5	537.218	6	.657	3	.049	3	.412	3
382			min	-354.836	4	106.484	2	-118.85	1	-.299	4	-.173	8	-.451	4
383		2	max	435.161	3	725.384	5	537.218	6	.657	3	.053	3	.39	3
384			min	-354.836	4	106.484	2	-118.85	1	-.299	4	-.142	8	-.458	4
385		3	max	435.161	3	725.384	5	537.218	6	.657	3	.057	3	.368	3
386			min	-354.836	4	106.484	2	-118.85	1	-.299	4	-.118	4	-.465	4
387		4	max	435.161	3	725.384	5	537.218	6	.657	3	.061	3	.346	3
388			min	-354.836	4	106.484	2	-118.85	1	-.299	4	-.103	4	-.472	4
389		5	max	435.161	3	725.384	5	537.218	6	.657	3	.065	3	.324	3
390			min	-354.836	4	106.484	2	-118.85	1	-.299	4	-.088	4	-.479	4
391	M63	1	max	0	11	0	11	0	11	0	11	0	11	0	11
392			min	0	1	0	1	0	1	0	1	0	1	0	1
393		2	max	1903.027	2	86.473	1	71.174	1	.019	2	.024	3	.108	9
394			min	-2049.802	1	-212.292	6	-85.89	2	-.03	1	-.029	4	-.026	2
395		3	max	1663.082	2	57.069	9	25.874	2	.066	2	.021	1	.029	2
396			min	-1938.826	1	-27.083	2	-21.185	1	-.068	1	-.021	2	-.033	1
397		4	max	1278.26	2	196.889	8	287.693	2	.061	6	.095	2	.049	1
398			min	-1457.826	1	-9.106	3	-276.175	1	-.03	1	-.092	1	-.025	2
399		5	max	0	11	0	11	0	11	0	11	0	11	0	11
400			min	0	1	0	1	0	1	0	1	0	1	0	1
401	M64	1	max	0	11	.004	1	.003	1	0	11	0	11	0	11
402			min	0	1	0	11	-.004	3	0	1	0	1	0	1
403		2	max	1310.681	3	108.887	2	55.239	4	.016	1	.03	1	.106	8
404			min	-1452.893	4	-227.862	1	-69.791	3	-.026	2	-.035	2	-.04	3
405		3	max	1097.374	3	51.281	2	29.333	3	.042	1	.016	4	.028	1
406			min	-1369.274	4	-24.204	1	-24.291	4	-.042	2	-.016	3	-.031	2
407		4	max	784.735	3	201.446	6	191.309	3	.063	3	.09	3	.043	8
408			min	-961.236	4	-40.541	1	-181.265	4	-.034	4	-.088	4	-.006	3
409		5	max	0	11	0	7	.002	2	0	11	0	11	0	11
410			min	0	1	-.002	1	-.004	3	0	1	0	1	0	1
411	M65	1	max	0	11	.005	4	.006	4	0	11	0	11	0	11
412			min	0	1	0	9	-.001	1	0	1	0	1	0	1
413		2	max	1583.992	4	162.924	3	51.828	3	.025	4	.034	4	.101	6
414			min	-1725.945	3	-281.403	4	-65.998	4	-.035	3	-.039	3	-.014	1
415		3	max	1405.344	4	57.248	3	21.132	1	.064	4	.019	3	.035	4
416			min	-1677.033	3	-29.952	4	-16.069	2	-.065	3	-.019	4	-.039	3
417		4	max	1144.027	4	197.3	7	260.859	4	.057	5	.066	4	.045	7
418			min	-1320.585	3	-39.176	4	-249.463	3	-.019	2	-.064	3	-.019	4
419		5	max	0	11	0	9	.004	3	0	11	0	11	0	11
420			min	0	1	-.002	4	-.003	1	0	1	0	1	0	1
421	M60	1	max	934.889	1	108.508	1	1745.376	1	.453	1	.327	2	.214	2
422			min	-1030.718	2	-150.451	2	-1907.668	2	-.466	2	-.286	1	-.21	1
423		2	max	934.889	1	108.508	1	1745.376	1	.453	1	.088	2	.233	2
424			min	-1030.718	2	-150.451	2	-1907.668	2	-.466	2	-.068	1	-.224	1
425		3	max	934.889	1	108.508	1	1745.376	1	.453	1	.15	1	.252	2
426			min	-1030.718	2	-150.451	2	-1907.668	2	-.466	2	-.15	2	-.237	1
427		4	max	934.889	1	108.508	1	1745.376	1	.453	1	.368	1	.271	2
428			min	-1030.718	2	-150.451	2	-1907.668	2	-.466	2	-.389	2	-.251	1
429		5	max	934.889	1	108.508	1	1745.376	1	.453	1	.586	1	.289	2
430			min	-1030.718	2	-150.451	2	-1907.668	2	-.466	2	-.627	2	-.264	1
431	M61A	1	max	668.484	1	-1.691	3	1229.121	2	.09	8	.263	1	.052	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
432			min	-678.076	2	-63.022	8	-1208.454	1	-.025	3	-.274	2	-.016	3
433		2	max	668.484	1	-1.691	3	1229.121	2	.09	8	.112	1	.06	8
434			min	-678.076	2	-63.022	8	-1208.454	1	-.025	3	-.12	2	-.016	3
435		3	max	668.484	1	-1.691	3	1229.121	2	.09	8	.033	2	.068	8
436			min	-678.076	2	-63.022	8	-1208.454	1	-.025	3	-.039	1	-.015	3
437		4	max	668.484	1	-1.691	3	1229.121	2	.09	8	.187	2	.075	8
438			min	-678.076	2	-63.022	8	-1208.454	1	-.025	3	-.19	1	-.015	3
439		5	max	668.484	1	-1.691	3	1229.121	2	.09	8	.341	2	.083	8
440			min	-678.076	2	-63.022	8	-1208.454	1	-.025	3	-.342	1	-.015	3
441	M62A	1	max	1207.478	1	41.433	7	829.433	2	-.003	1	.259	4	-.007	1
442			min	-1230.162	2	-3.211	4	-819.959	1	-.024	6	-.277	3	-.045	6
443		2	max	1207.478	1	57.994	7	850.309	2	-.003	1	.217	4	-.009	4
444			min	-1230.162	2	3.665	4	-840.835	1	-.024	6	-.23	3	-.063	7
445		3	max	1746.465	1	90.902	2	1178.807	1	.046	9	1.678	2	.104	2
446			min	-1906.493	2	-167.847	1	-1274.03	2	-.012	2	-1.577	1	-.215	1
447		4	max	1746.465	1	97.778	2	1157.932	1	.046	9	1.204	2	.069	2
448			min	-1906.493	2	-160.97	1	-1253.155	2	-.01	2	-1.139	1	-.153	1
449		5	max	1746.465	1	104.655	2	1137.056	1	.046	9	.738	2	.031	2
450			min	-1906.493	2	-154.094	1	-1232.279	2	-.01	2	-.709	1	-.11	9
451	M63A	1	max	2059.732	1	103.949	2	318.619	1	.003	2	.738	2	.032	2
452			min	-2245.03	2	-157.064	1	-334.6	2	-.005	1	-.709	1	-.12	9
453		2	max	2038.933	1	114.085	2	272.631	1	.003	2	.396	2	.066	1
454			min	-2224.231	2	-146.928	1	-288.612	2	-.005	1	-.384	1	-.087	2
455		3	max	2018.134	1	124.221	2	226.644	1	.003	2	.113	3	.221	1
456			min	-2203.432	2	-136.792	1	-242.624	2	-.005	1	-.118	4	-.218	2
457		4	max	1997.335	1	134.357	2	180.656	1	.003	2	.113	1	.366	1
458			min	-2182.633	2	-126.656	1	-196.637	2	-.005	1	-.136	2	-.36	2
459		5	max	1976.537	1	144.493	2	134.669	1	.003	2	.286	1	.499	1
460			min	-2161.834	2	-116.52	1	-150.649	2	-.005	1	-.327	2	-.513	2
461	M64A	1	max	1457.417	1	41.215	7	84.075	3	.003	5	.259	4	.051	6
462			min	-1481.796	2	-3.131	4	-82.19	4	0	2	-.277	3	.007	1
463		2	max	1437.869	1	22.372	3	72.287	3	.003	5	.272	1	.033	6
464			min	-1462.248	2	-11.219	4	-70.402	4	0	2	-.287	2	-.007	1
465		3	max	1418.321	1	14.284	3	60.499	3	.003	5	.297	1	.035	6
466			min	-1442.7	2	-19.308	4	-58.614	4	0	2	-.311	2	-.019	3
467		4	max	1398.773	1	6.195	3	48.711	3	.003	5	.294	1	.059	8
468			min	-1423.152	2	-39.637	8	-46.826	4	0	2	-.307	2	-.028	3
469		5	max	1379.226	1	-1.893	3	53.518	2	.003	5	.263	1	.104	8
470			min	-1403.604	2	-63.01	8	-52.082	1	0	2	-.274	2	-.029	3
471	M65A	1	max	776.923	4	71.423	4	1561.99	4	.302	4	.286	3	.146	3
472			min	-870.772	3	-107.892	3	-1726.12	3	-.318	3	-.244	4	-.14	4
473		2	max	776.923	4	71.423	4	1561.99	4	.302	4	.07	3	.159	3
474			min	-870.772	3	-107.892	3	-1726.12	3	-.318	3	-.048	4	-.149	4
475		3	max	776.923	4	71.423	4	1561.99	4	.302	4	.147	4	.173	3
476			min	-870.772	3	-107.892	3	-1726.12	3	-.318	3	-.146	3	-.158	4
477		4	max	776.923	4	71.423	4	1561.99	4	.302	4	.342	4	.186	3
478			min	-870.772	3	-107.892	3	-1726.12	3	-.318	3	-.361	3	-.167	4
479		5	max	776.923	4	71.423	4	1561.99	4	.302	4	.537	4	.2	3
480			min	-870.772	3	-107.892	3	-1726.12	3	-.318	3	-.577	3	-.176	4
481	M66	1	max	423.151	4	6.244	1	747.707	1	.096	7	.155	4	.055	7
482			min	-436.715	3	-63.797	6	-720.708	2	-.043	1	-.166	3	-.027	1
483		2	max	423.151	4	6.244	1	747.707	1	.096	7	.072	4	.063	7
484			min	-436.715	3	-63.797	6	-720.708	2	-.043	1	-.08	3	-.028	1
485		3	max	423.151	4	6.244	1	747.707	1	.096	7	.036	1	.071	7
486			min	-436.715	3	-63.797	6	-720.708	2	-.043	1	-.042	2	-.029	1
487		4	max	423.151	4	6.244	1	747.707	1	.096	7	.13	1	.079	7
488			min	-436.715	3	-63.797	6	-720.708	2	-.043	1	-.132	2	-.029	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
489		5	max	423.151	4	6.244	1	747.707	1	.096	7	.223	1	.087	7
490			min	-436.715	3	-63.797	6	-720.708	2	-.043	1	-.222	2	-.03	1
491	M67	1	max	723.138	2	42.263	8	589.775	3	-.002	2	.349	2	-.004	2
492			min	-751.158	1	-10.95	2	-576.291	4	-.025	5	-.367	1	-.046	5
493		2	max	732.177	2	58.824	8	605.432	3	-.002	2	.427	3	-.002	2
494			min	-760.198	1	-4.073	2	-591.947	4	-.025	5	-.439	4	-.065	5
495		3	max	1644.498	4	52.42	1	920.267	4	.045	8	.986	3	.064	3
496			min	-1808.997	3	-128.142	4	-1013.779	3	-.013	1	-.884	4	-.187	8
497		4	max	1635.459	4	58.002	3	904.61	4	.045	8	.662	1	.044	3
498			min	-1799.958	3	-121.265	4	-998.122	3	-.007	3	-.594	2	-.143	8
499		5	max	1626.42	4	64.879	3	888.954	4	.045	8	.536	1	.021	3
500			min	-1790.918	3	-114.389	4	-982.465	3	-.007	3	-.503	2	-.106	8
501	M68	1	max	1848.166	4	64.415	3	199.211	2	.002	3	.536	1	.022	3
502			min	-2036.723	3	-116.87	4	-216.184	1	-.003	4	-.503	2	-.115	8
503		2	max	1821.927	4	74.551	3	162.647	2	.002	3	.319	1	.032	4
504			min	-2010.483	3	-106.734	4	-179.619	1	-.003	4	-.305	2	-.054	3
505		3	max	1795.688	4	84.687	3	126.083	2	.002	3	.142	1	.144	4
506			min	-1984.244	3	-96.598	4	-143.055	1	-.003	4	-.146	2	-.142	3
507		4	max	1769.448	4	94.823	3	89.518	2	.002	3	.162	4	.244	4
508			min	-1958.004	3	-86.462	4	-106.491	1	-.003	4	-.186	3	-.24	3
509		5	max	1743.209	4	104.959	3	64.649	4	.002	3	.244	4	.333	4
510			min	-1931.765	3	-76.326	4	-81.536	3	-.003	4	-.286	3	-.35	3
511	M69	1	max	808.536	2	42.413	8	195.473	4	.002	8	.349	2	.052	5
512			min	-839.433	1	-10.857	2	-193.609	3	0	3	-.367	1	.005	2
513		2	max	807.695	2	30.027	1	151.284	4	.002	8	.297	2	.034	7
514			min	-838.591	1	-18.946	2	-149.421	3	0	3	-.313	1	-.011	4
515		3	max	806.853	2	21.938	1	107.096	4	.002	8	.244	2	.039	7
516			min	-837.749	1	-27.035	2	-105.233	3	0	3	-.259	1	-.027	4
517		4	max	806.011	2	13.85	1	62.908	4	.002	8	.191	2	.065	2
518			min	-836.908	1	-40.833	7	-61.045	3	0	3	-.205	1	-.043	1
519		5	max	805.17	2	5.761	1	61.814	1	.002	8	.155	4	.111	7
520			min	-836.066	1	-64.206	7	-60.115	2	0	3	-.166	3	-.051	1
521	M70	1	max	619.428	3	80.992	3	1079.005	3	.35	3	.235	4	.168	4
522			min	-715.935	4	-117.238	4	-1245.238	4	-.366	4	-.194	3	-.163	3
523		2	max	619.428	3	80.992	3	1079.005	3	.35	3	.079	4	.183	4
524			min	-715.935	4	-117.238	4	-1245.238	4	-.366	4	-.059	3	-.173	3
525		3	max	619.428	3	80.992	3	1079.005	3	.35	3	.09	2	.197	4
526			min	-715.935	4	-117.238	4	-1245.238	4	-.366	4	-.089	1	-.183	3
527		4	max	619.428	3	80.992	3	1079.005	3	.35	3	.21	3	.212	4
528			min	-715.935	4	-117.238	4	-1245.238	4	-.366	4	-.232	4	-.193	3
529		5	max	619.428	3	80.992	3	1079.005	3	.35	3	.345	3	.227	4
530			min	-715.935	4	-117.238	4	-1245.238	4	-.366	4	-.388	4	-.203	3
531	M71	1	max	618.57	3	-3.263	2	1210.364	4	.093	5	.24	3	.054	5
532			min	-628.579	4	-63.56	5	-1187.413	3	-.024	2	-.252	4	-.015	2
533		2	max	618.57	3	-3.263	2	1210.364	4	.093	5	.091	3	.062	5
534			min	-628.579	4	-63.56	5	-1187.413	3	-.024	2	-.101	4	-.015	2
535		3	max	618.57	3	-3.263	2	1210.364	4	.093	5	.051	4	.07	5
536			min	-628.579	4	-63.56	5	-1187.413	3	-.024	2	-.057	3	-.015	2
537		4	max	618.57	3	-3.263	2	1210.364	4	.093	5	.202	4	.077	5
538			min	-628.579	4	-63.56	5	-1187.413	3	-.024	2	-.205	3	-.014	2
539		5	max	618.57	3	-3.263	2	1210.364	4	.093	5	.353	4	.085	5
540			min	-628.579	4	-63.56	5	-1187.413	3	-.024	2	-.354	3	-.014	2
541	M72	1	max	1228.936	3	42.011	6	702.586	4	-.001	3	.463	3	-.004	3
542			min	-1254.388	4	-1.778	1	-692.615	3	-.025	8	-.48	4	-.046	8
543		2	max	1237.975	3	58.572	6	718.243	4	-.001	3	.434	1	-.005	3
544			min	-1263.428	4	5.099	1	-708.272	3	-.025	8	-.447	2	-.063	8
545		3	max	1247.015	3	66.469	7	841.833	3	.044	7	1.542	4	.059	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
546			min	-1272.467	4	-138.355	3	-938.032	4	-.02	9	-1.439	3	-.189	7
547		4	max	960.804	3	66.466	4	826.177	3	.044	7	1.193	4	.035	4
548			min	-1124.712	4	-131.478	3	-922.376	4	-.001	4	-1.127	3	-.144	7
549		5	max	969.843	3	73.342	4	810.52	3	.044	7	.85	4	.009	4
550			min	-1133.751	4	-124.601	3	-906.719	4	-.001	4	-.82	3	-.106	7
551	M73	1	max	1217.615	3	73.398	4	340.638	3	.002	4	.85	4	.009	4
552			min	-1406.728	4	-125.964	3	-356.844	4	-.004	3	-.82	3	-.115	7
553		2	max	1223.055	3	83.534	4	285.783	3	.002	4	.489	4	.055	3
554			min	-1412.169	4	-115.828	3	-301.99	4	-.004	3	-.476	3	-.077	4
555		3	max	1228.496	3	93.67	4	230.929	3	.002	4	.187	4	.177	3
556			min	-1417.609	4	-105.692	3	-247.135	4	-.004	3	-.192	3	-.174	4
557		4	max	1233.936	3	103.807	4	176.074	3	.002	4	.131	2	.287	3
558			min	-1423.05	4	-95.556	3	-192.28	4	-.004	3	-.155	1	-.283	4
559		5	max	1239.377	3	113.943	4	121.219	3	.002	4	.194	3	.386	3
560			min	-1428.49	4	-85.42	3	-137.426	4	-.004	3	-.235	4	-.402	4
561	M74	1	max	1410.053	3	41.947	6	180.903	2	.002	7	.463	3	.052	8
562			min	-1437.018	4	-1.819	1	-178.909	1	0	4	-.48	4	.004	3
563		2	max	1391.346	3	21.087	2	147.029	2	.002	7	.421	3	.044	9
564			min	-1418.311	4	-9.908	1	-145.035	1	0	4	-.437	4	-.005	2
565		3	max	1372.64	3	12.999	2	113.155	2	.002	7	.37	3	.051	9
566			min	-1399.605	4	-17.996	1	-111.161	1	0	4	-.384	4	-.02	2
567		4	max	1353.934	3	4.91	2	79.281	2	.002	7	.309	3	.066	9
568			min	-1380.899	4	-40.38	5	-77.287	1	0	4	-.322	4	-.028	2
569		5	max	1335.227	3	-3.178	2	85.805	4	.002	7	.24	3	.108	5
570			min	-1362.192	4	-63.753	5	-84.359	3	0	4	-.252	4	-.028	2
571	MP4A	1	max	0	11	.049	8	.058	1	0	11	0	11	0	11
572			min	0	1	-.009	3	-.069	6	0	1	0	1	0	1
573		2	max	81.895	8	81.725	4	141.246	1	0	11	.136	1	.077	3
574			min	17.348	1	-81.72	3	-141.247	2	0	1	-.136	2	-.077	4
575		3	max	398.485	6	110.985	1	125.012	1	.029	6	.28	1	.001	10
576			min	10.356	1	-243.109	6	-107.516	2	-.015	3	-.255	2	-.026	8
577		4	max	-17.347	10	81.708	3	141.18	2	0	11	.076	1	.046	3
578			min	-81.895	5	-81.71	4	-141.176	1	0	1	-.076	2	-.046	4
579		5	max	0	11	.005	2	.047	5	0	11	0	11	0	11
580			min	0	1	-.02	5	-.008	2	0	1	0	1	0	1
581	M76	1	max	286.012	1	499.793	6	257.65	7	.198	2	.051	4	.247	2
582			min	-267.988	2	34.077	1	-111.027	1	-.101	1	-.072	3	-.22	1
583		2	max	286.012	1	499.793	6	257.65	7	.198	2	.045	4	.232	2
584			min	-267.988	2	34.077	1	-111.027	1	-.101	1	-.058	3	-.222	1
585		3	max	286.012	1	499.793	6	257.65	7	.198	2	.038	4	.217	2
586			min	-267.988	2	34.077	1	-111.027	1	-.101	1	-.043	3	-.224	1
587		4	max	286.012	1	499.793	6	257.65	7	.198	2	.032	4	.203	2
588			min	-267.988	2	34.077	1	-111.027	1	-.101	1	-.029	3	-.226	1
589		5	max	286.012	1	499.793	6	257.65	7	.198	2	.029	6	.188	2
590			min	-267.988	2	34.077	1	-111.027	1	-.101	1	-.015	3	-.228	1
591	MP2A	1	max	0	11	.008	4	.044	5	0	11	0	11	0	11
592			min	0	1	-.042	7	-.029	6	0	1	0	1	0	1
593		2	max	76.984	8	75.405	4	141.217	1	0	11	.136	1	.07	3
594			min	14.348	1	-75.408	3	-141.216	2	0	1	-.136	2	-.07	4
595		3	max	443.252	6	268.67	1	101.219	2	.104	1	.122	1	.024	6
596			min	23.201	1	-182.143	2	-97.909	1	-.121	2	-.102	2	-.006	1
597		4	max	-14.348	10	75.395	3	141.182	2	0	11	.076	1	.043	3
598			min	-76.984	5	-75.394	4	-141.18	1	0	1	-.076	2	-.043	4
599		5	max	0	11	.016	8	.029	5	0	11	0	11	0	11
600			min	0	1	-.001	3	-.006	2	0	1	0	1	0	1
601	M78	1	max	63.102	1	539.684	6	181.952	2	.179	2	.171	1	.136	1
602			min	-59.641	2	43.806	1	-268.66	1	-.241	1	-.166	2	-.084	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
603		2	max	63.102	1	539.684	6	181.952	2	.179	2	.155	1	.133	1
604			min	-59.641	2	43.806	1	-268.66	1	-.241	1	-.155	2	-.099	2
605		3	max	63.102	1	539.684	6	181.952	2	.179	2	.138	1	.13	1
606			min	-59.641	2	43.806	1	-268.66	1	-.241	1	-.143	2	-.115	2
607		4	max	63.102	1	539.684	6	181.952	2	.179	2	.121	1	.128	1
608			min	-59.641	2	43.806	1	-268.66	1	-.241	1	-.132	2	-.131	2
609		5	max	63.102	1	539.684	6	181.952	2	.179	2	.104	1	.125	1
610			min	-59.641	2	43.806	1	-268.66	1	-.241	1	-.121	2	-.147	2
611	MP4C	1	max	0	11	.036	4	.022	1	0	11	0	11	0	11
612			min	0	1	-.064	7	-.056	6	0	1	0	1	0	1
613		2	max	81.895	8	126.354	4	96.602	1	0	11	.092	1	.121	3
614			min	17.348	1	-126.357	3	-96.606	2	0	1	-.092	2	-.121	4
615		3	max	405.198	5	149.848	8	200.49	5	.03	3	.085	3	.157	3
616			min	-17.591	2	-3.228	3	-92.85	2	-.019	4	-.112	4	-.171	4
617		4	max	-17.347	10	126.31	3	96.58	2	0	11	.053	1	.068	3
618			min	-81.895	5	-126.305	4	-96.581	1	0	1	-.053	2	-.068	4
619		5	max	0	11	.051	8	0	2	0	11	0	11	0	11
620			min	0	1	-.009	3	-.006	7	0	1	0	1	0	1
621	M80	1	max	214.626	4	506.542	5	302.009	1	.183	7	.061	2	.14	3
622			min	-197.153	3	5.987	2	-171.543	2	-.072	4	-.082	1	-.111	4
623		2	max	214.626	4	506.542	5	302.009	1	.183	7	.05	2	.134	3
624			min	-197.153	3	5.987	2	-171.543	2	-.072	4	-.063	1	-.123	4
625		3	max	214.626	4	506.542	5	302.009	1	.183	7	.039	2	.128	3
626			min	-197.153	3	5.987	2	-171.543	2	-.072	4	-.044	1	-.134	4
627		4	max	214.626	4	506.542	5	302.009	1	.183	7	.029	2	.121	3
628			min	-197.153	3	5.987	2	-171.543	2	-.072	4	-.025	1	-.145	4
629		5	max	214.626	4	506.542	5	302.009	1	.183	7	.03	3	.115	3
630			min	-197.153	3	5.987	2	-171.543	2	-.072	4	-.019	4	-.156	4
631	MP2C	1	max	0	11	.051	8	.039	5	0	11	0	11	0	11
632			min	0	1	-.021	3	-.012	2	0	1	0	1	0	1
633		2	max	76.984	8	124.764	4	91.859	1	0	11	.087	1	.12	3
634			min	14.348	1	-124.761	3	-91.857	2	0	1	-.087	2	-.12	4
635		3	max	438.642	7	126.662	1	58.976	3	.062	4	.053	3	.071	3
636			min	49.818	4	-166.023	2	-150.132	8	-.078	3	-.051	4	-.095	4
637		4	max	-14.347	10	124.734	3	91.841	2	0	11	.051	1	.067	3
638			min	-76.984	5	-124.733	4	-91.843	1	0	1	-.051	2	-.067	4
639		5	max	0	11	.02	8	.001	1	0	11	0	11	0	11
640			min	0	1	-.007	3	-.025	6	0	1	0	1	0	1
641	M82	1	max	98.297	4	535.07	7	194.089	1	.157	3	.13	2	.124	2
642			min	-94.13	3	70.442	4	-279.678	2	-.219	4	-.125	1	-.073	1
643		2	max	98.297	4	535.07	7	194.089	1	.157	3	.113	2	.117	2
644			min	-94.13	3	70.442	4	-279.678	2	-.219	4	-.112	1	-.084	1
645		3	max	98.297	4	535.07	7	194.089	1	.157	3	.095	2	.109	2
646			min	-94.13	3	70.442	4	-279.678	2	-.219	4	-.1	1	-.095	1
647		4	max	98.297	4	535.07	7	194.089	1	.157	3	.078	2	.102	2
648			min	-94.13	3	70.442	4	-279.678	2	-.219	4	-.088	1	-.106	1
649		5	max	98.297	4	535.07	7	194.089	1	.157	3	.062	4	.094	2
650			min	-94.13	3	70.442	4	-279.678	2	-.219	4	-.078	3	-.117	1
651	MP4B	1	max	0	11	.048	4	.051	5	0	11	0	11	0	11
652			min	0	1	-.066	7	-.012	3	0	1	0	1	0	1
653		2	max	81.895	8	126.366	4	96.597	1	0	11	.092	1	.121	3
654			min	17.347	1	-126.369	3	-96.592	2	0	1	-.092	2	-.121	4
655		3	max	413.494	8	216.845	4	72.04	3	.03	1	.115	4	.198	3
656			min	-65.015	3	-167.552	3	-219.947	8	-.019	2	-.113	3	-.168	4
657		4	max	-17.347	10	126.314	3	96.572	2	0	11	.053	1	.068	3
658			min	-81.895	5	-126.317	4	-96.576	1	0	1	-.053	2	-.068	4
659		5	max	0	11	.003	1	.004	1	0	11	0	11	0	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
660			min	0	1	-.03	6	-.04	6	0	1	0	1	0	1
661	M84	1	max	235.8	3	514.811	8	348.958	4	.178	8	.057	3	.235	4
662			min	-216.743	4	-41.395	3	-219.367	3	-.057	3	-.077	4	-.208	3
663		2	max	235.8	3	514.811	8	348.958	4	.178	8	.043	1	.216	4
664			min	-216.743	4	-41.395	3	-219.367	3	-.057	3	-.056	2	-.206	3
665		3	max	235.8	3	514.811	8	348.958	4	.178	8	.039	1	.196	4
666			min	-216.743	4	-41.395	3	-219.367	3	-.057	3	-.044	2	-.203	3
667		4	max	235.8	3	514.811	8	348.958	4	.178	8	.035	1	.177	4
668			min	-216.743	4	-41.395	3	-219.367	3	-.057	3	-.031	2	-.201	3
669		5	max	235.8	3	514.811	8	348.958	4	.178	8	.03	1	.157	4
670			min	-216.743	4	-41.395	3	-219.367	3	-.057	3	-.019	2	-.198	3
671	MP2B	1	max	0	11	.038	8	.012	1	0	11	0	11	0	11
672			min	0	1	-.023	3	-.047	6	0	1	0	1	0	1
673		2	max	76.984	8	124.764	4	91.856	1	0	11	.087	1	.12	3
674			min	14.347	1	-124.763	3	-91.859	2	0	1	-.087	2	-.12	4
675		3	max	436.12	8	8.771	1	285.837	3	.1	3	.016	1	.079	3
676			min	55.289	3	-93.694	6	-213.031	4	-.116	4	-.046	6	-.069	4
677		4	max	-14.347	10	124.734	3	91.841	2	0	11	.051	1	.067	3
678			min	-76.984	5	-124.737	4	-91.84	1	0	1	-.051	2	-.067	4
679		5	max	0	11	.004	4	.005	5	0	11	0	11	0	11
680			min	0	1	-.03	7	-.005	6	0	1	0	1	0	1
681	M86	1	max	87.646	2	532.56	8	249.303	4	.106	4	.184	3	.158	3
682			min	-83.339	1	75.885	3	-335.469	3	-.168	3	-.179	4	-.106	4
683		2	max	87.646	2	532.56	8	249.303	4	.106	4	.163	3	.153	3
684			min	-83.339	1	75.885	3	-335.469	3	-.168	3	-.163	4	-.12	4
685		3	max	87.646	2	532.56	8	249.303	4	.106	4	.142	3	.148	3
686			min	-83.339	1	75.885	3	-335.469	3	-.168	3	-.147	4	-.134	4
687		4	max	87.646	2	532.56	8	249.303	4	.106	4	.121	3	.144	3
688			min	-83.339	1	75.885	3	-335.469	3	-.168	3	-.132	4	-.148	4
689		5	max	87.646	2	532.56	8	249.303	4	.106	4	.1	3	.139	3
690			min	-83.339	1	75.885	3	-335.469	3	-.168	3	-.116	4	-.162	4
691	M70A	1	max	228.36	3	2405.439	3	1072.848	3	0	4	0	4	0	7
692			min	-201.999	4	-2287.277	4	-1060.975	4	0	3	-.001	3	0	4
693		2	max	228.36	3	2405.439	3	1072.848	3	0	4	.088	3	.191	4
694			min	-201.999	4	-2287.277	4	-1060.975	4	0	3	-.088	4	-.201	3
695		3	max	228.36	3	2405.439	3	1072.848	3	0	4	.178	3	.382	4
696			min	-201.999	4	-2287.277	4	-1060.975	4	0	3	-.177	4	-.402	3
697		4	max	228.36	3	2405.439	3	1072.848	3	0	4	.267	3	.573	4
698			min	-201.999	4	-2287.277	4	-1060.975	4	0	3	-.265	4	-.603	3
699		5	max	228.36	3	2405.439	3	1072.848	3	0	4	.357	3	.764	4
700			min	-201.999	4	-2287.277	4	-1060.975	4	0	3	-.354	4	-.804	3
701	M71A	1	max	58.702	3	689.173	3	209.873	3	0	4	.002	4	0	6
702			min	-49.261	4	-671.732	4	-205.723	4	0	3	-.003	3	0	1
703		2	max	58.702	3	689.173	3	209.873	3	0	4	.014	3	.056	4
704			min	-49.261	4	-671.732	4	-205.723	4	0	3	-.015	4	-.057	3
705		3	max	58.702	3	689.173	3	209.873	3	0	4	.032	3	.112	4
706			min	-49.261	4	-671.732	4	-205.723	4	0	3	-.032	4	-.115	3
707		4	max	58.702	3	689.173	3	209.873	3	0	4	.049	3	.168	4
708			min	-49.261	4	-671.732	4	-205.723	4	0	3	-.049	4	-.172	3
709		5	max	58.702	3	689.173	3	209.873	3	0	4	.067	3	.224	4
710			min	-49.261	4	-671.732	4	-205.723	4	0	3	-.066	4	-.23	3
711	M72A	1	max	11.236	4	73.003	1	80.837	4	0	4	.002	4	.001	2
712			min	-10.941	3	-95.407	2	-78.306	3	0	3	-.003	3	-.001	1
713		2	max	11.236	4	73.003	1	80.837	4	0	4	.009	4	.009	2
714			min	-10.941	3	-95.407	2	-78.306	3	0	3	-.01	3	-.007	1
715		3	max	11.236	4	73.003	1	80.837	4	0	4	.016	4	.017	2
716			min	-10.941	3	-95.407	2	-78.306	3	0	3	-.016	3	-.014	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
717		4	max	11.236	4	73.003	1	80.837	4	0	4	.022	4	.025	2
718			min	-10.941	3	-95.407	2	-78.306	3	0	3	-.023	3	-.02	1
719		5	max	11.236	4	73.003	1	80.837	4	0	4	.029	4	.033	2
720			min	-10.941	3	-95.407	2	-78.306	3	0	3	-.029	3	-.026	1
721	M73A	1	max	26.384	4	360.7	4	248.671	4	0	4	0	4	.002	2
722			min	-29.906	3	-411.705	3	-251.853	3	0	3	-.002	7	-.002	1
723		2	max	26.384	4	360.7	4	248.671	4	0	4	.022	4	.034	3
724			min	-29.906	3	-411.705	3	-251.853	3	0	3	-.023	3	-.03	4
725		3	max	26.384	4	360.7	4	248.671	4	0	4	.042	4	.068	3
726			min	-29.906	3	-411.705	3	-251.853	3	0	3	-.044	3	-.06	4
727		4	max	26.384	4	360.7	4	248.671	4	0	4	.063	4	.102	3
728			min	-29.906	3	-411.705	3	-251.853	3	0	3	-.065	3	-.09	4
729		5	max	26.384	4	360.7	4	248.671	4	0	4	.084	4	.137	3
730			min	-29.906	3	-411.705	3	-251.853	3	0	3	-.086	3	-.12	4
731	M74A	1	max	16.3	4	463.97	4	998.515	4	0	4	0	1	0	2
732			min	-30.975	3	-573.965	3	-980.231	3	0	3	-.001	6	0	1
733		2	max	16.3	4	463.97	4	998.515	4	0	4	.083	4	.047	3
734			min	-30.975	3	-573.965	3	-980.231	3	0	3	-.082	3	-.038	4
735		3	max	16.3	4	463.97	4	998.515	4	0	4	.166	4	.095	3
736			min	-30.975	3	-573.965	3	-980.231	3	0	3	-.164	3	-.077	4
737		4	max	16.3	4	463.97	4	998.515	4	0	4	.25	4	.143	3
738			min	-30.975	3	-573.965	3	-980.231	3	0	3	-.246	3	-.116	4
739		5	max	16.3	4	463.97	4	998.515	4	0	4	.333	4	.191	3
740			min	-30.975	3	-573.965	3	-980.231	3	0	3	-.327	3	-.154	4
741	M75	1	max	175.039	4	1814.397	4	1211.736	1	0	3	0	3	0	5
742			min	-149.228	3	-1697.694	3	-1202.098	2	0	4	-.001	4	0	2
743		2	max	175.039	4	1814.397	4	1211.736	1	0	3	.1	1	.142	3
744			min	-149.228	3	-1697.694	3	-1202.098	2	0	4	-.1	2	-.152	4
745		3	max	175.039	4	1814.397	4	1211.736	1	0	3	.202	1	.284	3
746			min	-149.228	3	-1697.694	3	-1202.098	2	0	4	-.201	2	-.303	4
747		4	max	175.039	4	1814.397	4	1211.736	1	0	3	.303	1	.426	3
748			min	-149.228	3	-1697.694	3	-1202.098	2	0	4	-.301	2	-.455	4
749		5	max	175.039	4	1814.397	4	1211.736	1	0	3	.404	1	.568	3
750			min	-149.228	3	-1697.694	3	-1202.098	2	0	4	-.402	2	-.607	4
751	M76A	1	max	46.397	4	473.024	4	211.951	1	0	2	.001	2	0	9
752			min	-35.72	3	-455.678	3	-211.108	2	0	1	-.002	1	0	2
753		2	max	46.397	4	473.024	4	211.951	1	0	2	.015	1	.039	3
754			min	-35.72	3	-455.678	3	-211.108	2	0	1	-.016	2	-.04	4
755		3	max	46.397	4	473.024	4	211.951	1	0	2	.033	1	.077	3
756			min	-35.72	3	-455.678	3	-211.108	2	0	1	-.034	2	-.08	4
757		4	max	46.397	4	473.024	4	211.951	1	0	2	.051	1	.115	3
758			min	-35.72	3	-455.678	3	-211.108	2	0	1	-.051	2	-.119	4
759		5	max	46.397	4	473.024	4	211.951	1	0	2	.068	1	.153	3
760			min	-35.72	3	-455.678	3	-211.108	2	0	1	-.069	2	-.159	4
761	M77	1	max	14.25	2	83.057	2	117.186	3	0	2	.002	2	.001	3
762			min	-14.915	1	-104.302	1	-113.538	4	0	1	-.003	1	-.002	4
763		2	max	14.25	2	83.057	2	117.186	3	0	2	.01	3	.009	1
764			min	-14.915	1	-104.302	1	-113.538	4	0	1	-.011	4	-.008	2
765		3	max	14.25	2	83.057	2	117.186	3	0	2	.02	3	.018	1
766			min	-14.915	1	-104.302	1	-113.538	4	0	1	-.021	4	-.015	2
767		4	max	14.25	2	83.057	2	117.186	3	0	2	.03	3	.027	1
768			min	-14.915	1	-104.302	1	-113.538	4	0	1	-.03	4	-.021	2
769		5	max	14.25	2	83.057	2	117.186	3	0	2	.04	3	.035	1
770			min	-14.915	1	-104.302	1	-113.538	4	0	1	-.04	4	-.028	2
771	M78A	1	max	23.425	2	286.096	2	186.936	2	0	2	.001	2	.002	3
772			min	-26.976	1	-337.456	1	-189.282	1	0	1	-.002	1	-.002	4
773		2	max	23.425	2	286.096	2	186.936	2	0	2	.017	2	.029	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
774			min	-26.976	1	-337.456	1	-189.282	1	0	1	-.018	1	-.025	2
775		3	max	23.425	2	286.096	2	186.936	2	0	2	.032	2	.057	1
776			min	-26.976	1	-337.456	1	-189.282	1	0	1	-.034	1	-.048	2
777		4	max	23.425	2	286.096	2	186.936	2	0	2	.048	2	.085	1
778			min	-26.976	1	-337.456	1	-189.282	1	0	1	-.049	1	-.072	2
779		5	max	23.425	2	286.096	2	186.936	2	0	2	.064	2	.113	1
780			min	-26.976	1	-337.456	1	-189.282	1	0	1	-.065	1	-.096	2
781	M79	1	max	12.025	3	295.018	3	1040.475	3	0	2	0	2	0	3
782			min	-26.823	4	-405.514	4	-1021.435	4	0	1	-.001	9	0	4
783		2	max	12.025	3	295.018	3	1040.475	3	0	2	.086	3	.033	4
784			min	-26.823	4	-405.514	4	-1021.435	4	0	1	-.085	4	-.024	3
785		3	max	12.025	3	295.018	3	1040.475	3	0	2	.173	3	.067	4
786			min	-26.823	4	-405.514	4	-1021.435	4	0	1	-.17	4	-.049	3
787		4	max	12.025	3	295.018	3	1040.475	3	0	2	.259	3	.101	4
788			min	-26.823	4	-405.514	4	-1021.435	4	0	1	-.255	4	-.073	3
789		5	max	12.025	3	295.018	3	1040.475	3	0	2	.346	3	.135	4
790			min	-26.823	4	-405.514	4	-1021.435	4	0	1	-.34	4	-.098	3
791	M80A	1	max	217.12	2	2264.251	2	816.795	4	0	1	0	1	0	8
792			min	-191.306	1	-2147.8	1	-807.094	3	0	2	-.002	2	0	3
793		2	max	217.12	2	2264.251	2	816.795	4	0	1	.068	4	.18	1
794			min	-191.306	1	-2147.8	1	-807.094	3	0	2	-.068	3	-.189	2
795		3	max	217.12	2	2264.251	2	816.795	4	0	1	.136	4	.359	1
796			min	-191.306	1	-2147.8	1	-807.094	3	0	2	-.136	3	-.378	2
797		4	max	217.12	2	2264.251	2	816.795	4	0	1	.205	4	.538	1
798			min	-191.306	1	-2147.8	1	-807.094	3	0	2	-.203	3	-.568	2
799		5	max	217.12	2	2264.251	2	816.795	4	0	1	.273	4	.718	1
800			min	-191.306	1	-2147.8	1	-807.094	3	0	2	-.27	3	-.757	2
801	M81	1	max	55.392	2	610.611	2	135.417	2	0	1	.002	1	0	8
802			min	-44.73	1	-593.273	1	-133.781	1	0	2	-.003	2	0	3
803		2	max	55.392	2	610.611	2	135.417	2	0	1	.008	2	.05	1
804			min	-44.73	1	-593.273	1	-133.781	1	0	2	-.009	1	-.052	2
805		3	max	55.392	2	610.611	2	135.417	2	0	1	.02	2	.099	1
806			min	-44.73	1	-593.273	1	-133.781	1	0	2	-.02	1	-.103	2
807		4	max	55.392	2	610.611	2	135.417	2	0	1	.031	2	.149	1
808			min	-44.73	1	-593.273	1	-133.781	1	0	2	-.032	1	-.154	2
809		5	max	55.392	2	610.611	2	135.417	2	0	1	.042	2	.199	1
810			min	-44.73	1	-593.273	1	-133.781	1	0	2	-.043	1	-.204	2
811	M82A	1	max	10.914	3	89.302	3	124.976	1	0	1	.001	1	.001	1
812			min	-11.549	4	-110.526	4	-121.136	2	0	2	-.002	2	-.001	2
813		2	max	10.914	3	89.302	3	124.976	1	0	1	.012	1	.01	4
814			min	-11.549	4	-110.526	4	-121.136	2	0	2	-.013	2	-.009	3
815		3	max	10.914	3	89.302	3	124.976	1	0	1	.022	1	.019	4
816			min	-11.549	4	-110.526	4	-121.136	2	0	2	-.023	2	-.016	3
817		4	max	10.914	3	89.302	3	124.976	1	0	1	.033	1	.029	4
818			min	-11.549	4	-110.526	4	-121.136	2	0	2	-.033	2	-.023	3
819		5	max	10.914	3	89.302	3	124.976	1	0	1	.043	1	.038	4
820			min	-11.549	4	-110.526	4	-121.136	2	0	2	-.043	2	-.031	3
821	M83	1	max	18.227	1	272.53	1	225.352	1	0	1	0	3	.001	1
822			min	-21.77	2	-324.269	2	-227.472	2	0	6	-.002	8	-.002	2
823		2	max	18.227	1	272.53	1	225.352	1	0	1	.019	1	.025	2
824			min	-21.77	2	-324.269	2	-227.472	2	0	6	-.02	2	-.021	1
825		3	max	18.227	1	272.53	1	225.352	1	0	1	.038	1	.052	2
826			min	-21.77	2	-324.269	2	-227.472	2	0	6	-.039	2	-.044	1
827		4	max	18.227	1	272.53	1	225.352	1	0	1	.056	1	.079	2
828			min	-21.77	2	-324.269	2	-227.472	2	0	6	-.058	2	-.067	1
829		5	max	18.227	1	272.53	1	225.352	1	0	1	.075	1	.107	2
830			min	-21.77	2	-324.269	2	-227.472	2	0	6	-.077	2	-.089	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
831	M84A	1	max	16.893	1	432.758	1	1148.191	1	0	3	0	3	0	1
832			min	-31.717	2	-543.284	2	-1128.658	2	0	4	-.001	4	0	2
833		2	max	16.893	1	432.758	1	1148.191	1	0	3	.095	1	.045	2
834			min	-31.717	2	-543.284	2	-1128.658	2	0	4	-.094	2	-.036	1
835		3	max	16.893	1	432.758	1	1148.191	1	0	3	.191	1	.09	2
836			min	-31.717	2	-543.284	2	-1128.658	2	0	4	-.188	2	-.072	1
837		4	max	16.893	1	432.758	1	1148.191	1	0	3	.286	1	.135	2
838			min	-31.717	2	-543.284	2	-1128.658	2	0	4	-.282	2	-.108	1
839		5	max	16.893	1	432.758	1	1148.191	1	0	3	.382	1	.18	2
840			min	-31.717	2	-543.284	2	-1128.658	2	0	4	-.376	2	-.144	1
841	M85	1	max	2193.178	8	34.221	8	47.345	2	0	1	0	11	0	11
842			min	394.391	2	-16.59	3	-47.345	1	0	2	0	1	0	1
843		2	max	2187.04	8	17.111	8	23.673	2	0	1	.046	2	.027	3
844			min	404.059	2	-8.295	3	-23.673	1	0	2	-.036	1	-.037	4
845		3	max	2180.903	8	0	11	0	11	0	1	.061	2	.036	3
846			min	413.457	3	0	1	0	1	0	2	-.048	1	-.049	4
847		4	max	2174.766	8	8.295	3	23.673	1	0	1	.046	2	.027	3
848			min	394.45	3	-17.111	8	-23.673	2	0	2	-.036	1	-.037	4
849		5	max	2168.629	8	16.59	3	47.345	1	0	1	0	11	0	11
850			min	375.444	3	-34.221	8	-47.345	2	0	2	0	1	0	1
851	M86A	1	max	1912.121	7	34.221	7	47.345	1	0	6	0	11	0	11
852			min	458.745	4	-16.59	4	-47.345	2	0	1	0	1	0	1
853		2	max	1905.984	7	17.111	7	23.673	1	0	6	.037	3	.036	1
854			min	439.739	4	-8.295	4	-23.673	2	0	1	-.027	4	-.046	2
855		3	max	1899.847	7	0	11	0	11	0	6	.049	3	.048	1
856			min	420.732	4	0	1	0	1	0	1	-.036	4	-.061	2
857		4	max	1893.71	7	8.295	4	23.673	2	0	6	.037	3	.036	1
858			min	401.726	4	-17.111	7	-23.673	1	0	1	-.027	4	-.046	2
859		5	max	1887.573	7	16.59	4	47.345	2	0	6	0	11	0	11
860			min	382.72	4	-34.221	7	-47.345	1	0	1	0	1	0	1
861	M87	1	max	2200.612	6	34.304	7	54.456	1	0	4	0	11	0	11
862			min	360.961	1	-16.884	4	-54.456	2	0	3	0	1	0	1
863		2	max	2192.897	6	17.152	7	27.228	1	0	4	.032	3	.038	1
864			min	347.545	1	-8.442	4	-27.228	2	0	3	-.022	4	-.048	2
865		3	max	2185.183	6	0	11	0	11	0	4	.043	3	.051	1
866			min	334.129	1	0	1	0	1	0	3	-.03	4	-.064	2
867		4	max	2177.469	6	8.442	4	27.228	2	0	4	.032	3	.038	1
868			min	320.713	1	-17.152	7	-27.228	1	0	3	-.022	4	-.048	2
869		5	max	2169.754	6	16.884	4	54.456	2	0	4	0	11	0	11
870			min	307.297	1	-34.304	7	-54.456	1	0	3	0	1	0	1
871	M88	1	max	1907.279	7	34.103	5	63.862	4	0	3	0	11	0	11
872			min	533.676	2	-16.17	2	-63.862	3	0	4	0	1	0	1
873		2	max	1897.224	7	17.051	5	31.931	4	0	3	.042	4	.036	4
874			min	514.939	2	-8.085	2	-31.931	3	0	4	-.032	3	-.046	3
875		3	max	1887.169	7	0	11	0	11	0	3	.056	4	.048	4
876			min	496.202	2	0	1	0	1	0	4	-.043	3	-.061	3
877		4	max	1880.451	5	8.085	2	31.931	3	0	3	.042	4	.036	4
878			min	477.465	2	-17.051	5	-31.931	4	0	4	-.032	3	-.046	3
879		5	max	1874.238	5	16.17	2	63.862	3	0	3	0	11	0	11
880			min	458.728	2	-34.103	5	-63.862	4	0	4	0	1	0	1
881	M89	1	max	2189.399	7	34.103	5	63.862	4	0	2	0	11	0	11
882			min	372.635	4	-16.17	2	-63.862	3	0	1	0	1	0	1
883		2	max	2178.234	7	17.051	5	31.931	4	0	2	.046	4	.032	4
884			min	371.45	4	-8.085	2	-31.931	3	0	1	-.036	3	-.042	3
885		3	max	2167.068	7	0	11	0	11	0	2	.061	4	.043	4
886			min	370.265	4	0	1	0	1	0	1	-.048	3	-.056	3
887		4	max	2155.903	7	8.085	2	31.931	3	0	2	.046	4	.032	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
888			min	369.08	4	-17.051	5	-31.931	4	0	1	-.036	3	-.042	3
889		5	max	2144.738	7	16.17	2	63.862	3	0	2	0	11	0	11
890			min	367.894	4	-34.103	5	-63.862	4	0	1	0	1	0	1
891	M90	1	max	1896.083	6	34.304	8	54.456	2	0	1	0	11	0	11
892			min	517.064	1	-16.884	3	-54.456	1	0	2	0	1	0	1
893		2	max	1888.368	6	17.152	8	27.228	2	0	1	.048	2	.022	3
894			min	503.648	1	-8.442	3	-27.228	1	0	2	-.038	1	-.032	4
895		3	max	1880.654	6	0	11	0	11	0	1	.064	2	.03	3
896			min	490.231	1	0	1	0	1	0	2	-.051	1	-.043	4
897		4	max	1872.94	6	8.442	3	27.228	1	0	1	.048	2	.022	3
898			min	476.815	1	-17.152	8	-27.228	2	0	2	-.038	1	-.032	4
899		5	max	1865.225	6	16.884	3	54.456	1	0	1	0	11	0	11
900			min	463.399	1	-34.304	8	-54.456	2	0	2	0	1	0	1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	MP5A	PIPE_2.0	.678	3.875	1	.132	2.125		2	13787.8...	32130	1.872	1.872	4...	H1-1b
2	MP5B	PIPE_2.0	.610	3.875	3	.106	2.125		4	13787.8...	32130	1.872	1.872	1...	H1-1b
3	MP5C	PIPE_2.0	.588	2.125	4	.107	2.125		3	13787.8...	32130	1.872	1.872	1	H1-1b
4	M63	PIPE_2.0	.482	1.563	2	.281	1.432		2	6295.422	32130	1.872	1.872	3...	H1-1a
5	M65	PIPE_2.0	.462	1.563	4	.219	1.432		4	6295.422	32130	1.872	1.872	4...	H1-1a
6	M64	PIPE_2.0	.366	1.432	3	.197	1.432		3	6295.422	32130	1.872	1.872	4	H1-1b
7	M4	PL3/8x4	.356	.389	1	.135	.389	y	1	29881.7...	48600	.38	3.878	1...	H1-1b
8	M8	PL3/8x4	.320	.945	4	.114	.389	y	3	29881.7...	48600	.38	4.05	1...	H1-1b
9	MP1B	PIPE_2.0	.226	3.875	7	.107	2.125		3	13787.8...	32130	1.872	1.872	2...	H1-1b
10	M6	PL3/8x4	.225	.389	4	.101	.389	y	4	29881.7...	48600	.38	4.05	1...	H1-1b
11	MP4A	PIPE_2.0	.225	3.875	2	.043	3.875		2	13787.8...	32130	1.872	1.872	4...	H1-1b
12	MP1A	PIPE_2.0	.223	3.875	5	.109	2.125		1	13787.8...	32130	1.872	1.872	1	H1-1b
13	MP1C	PIPE_2.0	.221	3.875	6	.072	3.875		2	13787.8...	32130	1.872	1.872	4...	H1-1b
14	M10	L2x2x3	.212	0	1	.021	2.916	y	1	19539.7...	23392.8	.558	1.239	1...	H2-1
15	MP4B	PIPE_2.0	.207	3.875	4	.041	3.875		8	13787.8...	32130	1.872	1.872	1	H1-1b
16	M14	L2x2x3	.203	0	3	.018	2.916	y	3	19539.7...	23392.8	.558	1.239	2...	H2-1
17	M15	L2x2x3	.201	0	1	.014	2.916	z	1	19539.7...	23392.8	.558	1.239	2...	H2-1
18	M13	L2x2x3	.190	0	3	.015	2.916	z	3	19539.7...	23392.8	.558	1.239	1...	H2-1
19	MP2B	PIPE_2.0	.187	2.125	3	.093	2.125		4	13787.8...	32130	1.872	1.872	1...	H1-1b
20	M1	PIPE_3.0	.182	3.255	5	.160	1.107		2	52901.4...	65205	5.749	5.749	1...	H1-1b
21	M3	PIPE_3.0	.181	3.255	7	.110	1.107		3	52901.4...	65205	5.749	5.749	1...	H1-1b
22	M2	PIPE_3.0	.180	3.255	6	.139	1.107		3	52901.4...	65205	5.749	5.749	1...	H1-1b
23	MP2A	PIPE_2.0	.177	2.125	1	.096	2.125		2	13787.8...	32130	1.872	1.872	4.8	H1-1b
24	MP3A	PIPE_2.0	.175	3.875	1	.053	3.875		2	13787.8...	32130	1.872	1.872	1	H1-1b
25	M5	PL3/8x4	.164	3.896	1	.073	4.25	y	5	3613.643	48600	.38	4.05	2...	H1-1b
26	MP4C	PIPE_2.0	.158	3.875	4	.041	2.125		7	13787.8...	32130	1.872	1.872	1	H1-1b
27	MP3B	PIPE_2.0	.157	3.875	3	.054	3.875		4	13787.8...	32130	1.872	1.872	2...	H1-1b
28	M18	PIPE_3.0	.147	2.995	6	.061	2.995		5	52901.4...	65205	5.749	5.749	1...	H1-1b
29	M17	PIPE_3.0	.147	2.995	8	.062	2.995		7	52901.4...	65205	5.749	5.749	1...	H1-1b
30	M16	PIPE_3.0	.146	2.995	5	.061	2.995		6	52901.4...	65205	5.749	5.749	1...	H1-1b
31	M9	PL3/8x4	.142	.354	3	.072	4.25	y	7	3613.643	48600	.38	4.05	2...	H1-1b
32	M85	L3X3X3	.134	2.306	6	.006	4.611	z	2	20999.8...	35316	1.32	2.485	1...	H2-1
33	M87	L3X3X3	.134	2.306	7	.005	4.611	z	2	20999.8...	35316	1.32	2.485	1...	H2-1
34	M89	L3X3X3	.134	2.306	5	.007	0	z	4	20999.8...	35316	1.32	2.485	1...	H2-1
35	M7	PL3/8x4	.133	3.852	4	.073	4.25	y	8	3613.643	48600	.38	4.05	2...	H1-1b
36	M12	L2x2x3	.129	0	4	.015	2.916	y	4	19539.7...	23392.8	.558	1.239	1...	H2-1
37	M36	HSS4X4X4	.127	0	4	.085	0	z	3	103844....	139518	16.181	16.181	2...	H1-1b
38	M86A	L3X3X3	.125	2.306	7	.005	4.611	z	2	20999.8...	35316	1.32	2.485	1...	H2-1
39	MP2C	PIPE_2.0	.125	2.125	4	.061	2.125		3	13787.8...	32130	1.872	1.872	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ..	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
40	M90	L3X3X3	.124	2.258	6	.007	0	z	1	20999.8...	35316	1.32	2.485	1...	H2-1
41	M88	L3X3X3	.122	2.306	5	.007	0	z	3	20999.8...	35316	1.32	2.485	1...	H2-1
42	MP3C	PIPE_2.0	.119	3.875	4	.036	3.875		1	13787.8...	32130	1.872	1.872	1	H1-1b
43	M11	L2x2x3	.115	0	4	.011	2.916	z	2	19539.7...	23392.8	.558	1.239	2...	H2-1
44	M53A	HSS4X4X4	.109	0	2	.067	1.75	z	4	103844....	139518	16.181	16.181	2...	H1-1b
45	M54A	HSS4X4X4	.100	0	2	.085	1.75	z	2	103844....	139518	16.181	16.181	2...	H1-1b

Linear Appurtenance Segment Forces (Factored)

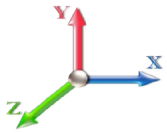
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.72
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	1.23
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	23.218	0.00	51.48
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	4.95
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	56.16
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.27
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	23.218	0.00	8.01
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	3.60
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.72
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.92
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	23.721	0.00	38.61
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	3.71
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	42.12
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.20
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	23.721	0.00	6.01
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	2.70
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.54
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.31
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	23.880	0.00	12.87
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.24
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	14.04
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	23.880	0.00	2.00
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.90
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.18
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	1.23
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	24.479	0.00	51.48
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	4.95
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	56.16
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.27
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	24.479	0.00	8.01
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	3.60
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.72
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	1.23
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	25.029	0.00	51.48
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	4.95
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	56.16
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.27
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	25.029	0.00	8.01
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	3.60
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.72
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	1.23
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	25.536	0.00	51.48
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	4.95
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	56.16
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.27
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	25.536	0.00	8.01

Linear Appurtenance Segment Forces (Factored)

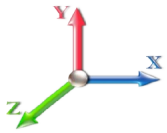
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	3.60
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.72
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	1.23
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	26.008	0.00	51.48
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	4.95
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	56.16
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.27
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	26.008	0.00	8.01
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	3.60
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.72
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	1.23
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	26.450	0.00	51.48
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	4.95
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	56.16
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.27
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	26.450	0.00	8.01
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	3.60
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.72
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	1.23
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	26.866	0.00	51.48
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	4.95
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	56.16
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.27
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	26.866	0.00	8.01
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	3.60
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.72
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	1.23
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	27.259	0.00	51.48
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	4.95
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	56.16
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.27
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	27.259	0.00	8.01
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	3.60
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.72
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.86
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	27.522	0.00	36.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	3.47
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	39.31
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.19
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	27.522	0.00	5.61
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	2.52
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.37
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	27.632	0.00	15.44
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.49
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	16.85
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.08
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	27.632	0.00	2.40

Linear Appurtenance Segment Forces (Factored)

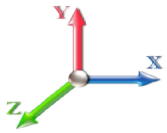
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.08
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.92
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	27.899	0.00	38.61
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	3.71
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	42.12
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.20
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	27.899	0.00	6.01
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	2.70
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.31
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	27.987	0.00	12.87
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.24
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	14.04
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	27.987	0.00	2.00
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.90
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	1.23
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	28.325	0.00	51.48
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	4.95
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	56.16
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	0.27
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	28.325	0.00	8.01
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	3.60
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	1.23
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	28.650	0.00	51.48
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	4.95
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	56.16
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	0.27
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	28.650	0.00	8.01
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	3.60
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	1.23
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	28.961	0.00	51.48
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	4.95
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	56.16
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	0.27
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	28.961	0.00	8.01
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	3.60
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	1.23
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	29.260	0.00	51.48
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	4.95
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	56.16
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	0.27
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	29.260	0.00	8.01
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	3.60
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	1.23
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	29.548	0.00	51.48
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	4.95
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	56.16

Linear Appurtenance Segment Forces (Factored)

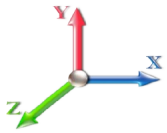
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	0.27
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	29.548	0.00	8.01
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	3.60
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	1.23
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	29.826	0.00	51.48
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	4.95
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	56.16
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	0.27
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	29.826	0.00	8.01
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	3.60
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	1.04
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	30.054	0.00	43.76
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	4.21
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	47.74
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	0.23
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	30.054	0.00	6.81
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	3.06
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.18
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	30.094	0.00	7.72
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.74
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	8.42
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.04
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	30.094	0.00	1.20
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.54
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.49
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	30.199	0.00	20.59
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.98
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	22.46
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.11
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	30.199	0.00	3.20
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.44
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	0.37
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	30.277	0.00	15.44
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	1.49
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.25
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	30.328	0.00	10.30
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.99
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.12
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	30.354	0.00	5.15
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.50
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	1.23
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	30.605	0.00	51.48
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	4.95
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	0.49
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	30.704	0.00	20.59
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	1.98
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	0.74

Linear Appurtenance Segment Forces (Factored)

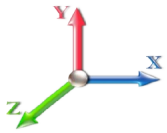
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	30.850	0.00	30.89
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	2.97
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	1.23
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	31.087	0.00	51.48
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	4.95
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	1.23
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	31.317	0.00	51.48
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	4.95
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	1.23
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	31.541	0.00	51.48
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	4.95
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	0.49
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	31.630	0.00	20.59
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	1.98
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	31.760	0.00	0.74
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.973	0.00	1.23
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	32.057	0.00	0.49
										Totals:	**0.0**	**3,426.3**

Calculated Forces

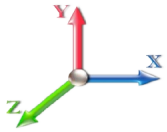
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.61	-40.20	0.00	-4702.3	0.00	4702.39	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.743
5.00	-39.06	-39.79	0.00	-4501.4	0.00	4501.40	5354.65	2677.32	12373.4	6195.90	0.11	-0.198	0.000	0.734
10.00	-37.54	-39.39	0.00	-4302.4	0.00	4302.43	5285.82	2642.91	11973.5	5995.67	0.42	-0.399	0.000	0.725
15.00	-36.04	-38.99	0.00	-4105.4	0.00	4105.48	5215.55	2607.78	11576.7	5796.99	0.95	-0.602	0.000	0.715
20.00	-34.57	-38.56	0.00	-3910.5	0.00	3910.53	5143.86	2571.93	11183.2	5599.96	1.69	-0.808	0.000	0.705
25.00	-33.12	-38.11	0.00	-3717.7	0.00	3717.74	5070.72	2535.36	10793.2	5404.66	2.65	-1.017	0.000	0.695
30.00	-31.70	-37.64	0.00	-3527.2	0.00	3527.20	4996.16	2498.08	10406.9	5211.21	3.83	-1.228	0.000	0.683
35.00	-30.32	-37.14	0.00	-3339.0	0.00	3339.01	4920.16	2460.08	10024.5	5019.70	5.23	-1.441	0.000	0.672
38.75	-29.33	-36.74	0.00	-3199.7	0.00	3199.75	4862.22	2431.11	9740.32	4877.40	6.42	-1.603	0.000	0.662
40.00	-28.71	-36.65	0.00	-3153.8	0.00	3153.82	4842.73	2421.36	9646.11	4830.22	6.85	-1.659	0.000	0.659
45.00	-26.48	-36.10	0.00	-2970.5	0.00	2970.56	3936.38	1968.19	7803.92	3907.76	8.71	-1.876	0.000	0.767
50.00	-25.29	-35.58	0.00	-2790.0	0.00	2790.05	3877.34	1938.67	7510.22	3760.69	10.79	-2.095	0.000	0.749
55.00	-24.11	-35.06	0.00	-2612.1	0.00	2612.14	3816.87	1908.43	7219.20	3614.96	13.11	-2.339	0.000	0.729
60.00	-22.96	-34.52	0.00	-2436.8	0.00	2436.86	3754.96	1877.48	6931.04	3470.67	15.69	-2.583	0.000	0.709
65.00	-21.83	-33.98	0.00	-2264.2	0.00	2264.25	3691.62	1845.81	6645.93	3327.91	18.53	-2.828	0.000	0.687
70.00	-20.73	-33.43	0.00	-2094.3	0.00	2094.35	3626.84	1813.42	6364.09	3186.77	21.62	-3.073	0.000	0.663
75.00	-19.67	-32.81	0.00	-1927.2	0.00	1927.21	3560.63	1780.31	6085.69	3047.37	24.97	-3.317	0.000	0.638
78.50	-18.96	-32.40	0.00	-1812.3	0.00	1812.37	3513.43	1756.71	5892.98	2950.87	27.47	-3.488	0.000	0.620
80.00	-18.42	-32.24	0.00	-1763.7	0.00	1763.76	3492.98	1746.49	5810.95	2909.79	28.57	-3.562	0.000	0.612
83.75	-17.22	-31.76	0.00	-1642.8	0.00	1642.87	2742.50	1371.25	4553.78	2280.28	31.44	-3.744	0.000	0.727
85.00	-16.94	-31.65	0.00	-1603.1	0.00	1603.17	2730.37	1365.18	4502.54	2254.62	32.43	-3.805	0.000	0.718
90.00	-16.03	-31.09	0.00	-1444.9	0.00	1444.92	2680.95	1340.47	4298.92	2152.65	36.56	-4.073	0.000	0.678
95.00	-15.16	-30.52	0.00	-1289.4	0.00	1289.49	2630.10	1315.05	4097.56	2051.82	40.96	-4.334	0.000	0.635
100.00	-14.31	-29.95	0.00	-1136.9	0.00	1136.91	2577.82	1288.91	3898.66	1952.23	45.64	-4.586	0.000	0.588
105.00	-12.52	-27.99	0.00	-987.19	0.00	987.19	2524.10	1262.05	3702.43	1853.97	50.57	-4.827	0.000	0.538
110.00	-11.73	-27.41	0.00	-847.22	0.00	847.22	2468.95	1234.47	3509.05	1757.13	55.74	-5.056	0.000	0.487
115.00	-10.98	-26.83	0.00	-710.16	0.00	710.16	2412.36	1206.18	3318.73	1661.83	61.14	-5.269	0.000	0.432
119.25	-10.38	-26.32	0.00	-596.14	0.00	596.14	2363.14	1181.57	3159.50	1582.10	65.91	-5.436	0.000	0.382
120.00	-10.20	-26.23	0.00	-576.41	0.00	576.41	2354.34	1177.17	3131.65	1568.15	66.76	-5.465	0.000	0.372
122.00	-8.62	-22.57	0.00	-523.95	0.00	523.95	2330.73	1165.37	3057.78	1531.16	69.06	-5.538	0.000	0.346
123.50	-8.32	-22.41	0.00	-490.09	0.00	490.09	1751.58	875.79	2319.28	1161.36	70.81	-5.591	0.000	0.427
124.50	-7.86	-20.96	0.00	-467.68	0.00	467.68	1743.79	871.89	2293.08	1148.24	71.98	-5.625	0.000	0.412
125.00	-7.77	-20.92	0.00	-457.20	0.00	457.20	1739.87	869.94	2280.00	1141.69	72.57	-5.645	0.000	0.406
130.00	-7.27	-20.42	0.00	-352.60	0.00	352.60	1699.92	849.96	2150.20	1076.70	78.57	-5.822	0.000	0.332
132.00	-5.49	-13.54	0.00	-311.76	0.00	311.76	1683.54	841.77	2098.80	1050.96	81.02	-5.887	0.000	0.300
135.00	-5.24	-13.25	0.00	-271.15	0.00	271.15	1658.53	829.27	2022.29	1012.65	84.75	-5.975	0.000	0.271
140.00	-4.83	-12.78	0.00	-204.89	0.00	204.89	1615.71	807.86	1896.47	949.64	91.07	-6.104	0.000	0.219
145.00	-4.45	-12.31	0.00	-141.00	0.00	141.00	1571.46	785.73	1772.93	887.78	97.51	-6.209	0.000	0.162
150.00	-4.09	-11.86	0.00	-79.43	0.00	79.43	1525.77	762.88	1651.87	827.16	104.04	-6.285	0.000	0.099
152.00	-2.02	-5.81	0.00	-55.71	0.00	55.71	1507.09	753.54	1604.19	803.29	106.67	-6.306	0.000	0.071
155.00	-1.85	-5.55	0.00	-38.28	0.00	38.28	1478.64	739.32	1533.49	767.89	110.64	-6.328	0.000	0.051
160.00	-1.58	-5.13	0.00	-10.51	0.00	10.51	1426.03	713.01	1413.96	708.03	117.26	-6.350	0.000	0.016
162.00	0.00	-4.93	0.00	-0.24	0.00	0.24	1400.09	700.04	1362.73	682.38	119.92	-6.352	0.000	0.000

Wind Loading - Shaft

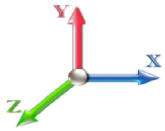
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	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	1.242	5.00	25.244	30.29	172.2	450.6	2060.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	24.853	29.82	169.5	474.5	2053.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.434	29.32	166.7	485.1	2032.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.002	28.80	173.7	489.7	2005.9
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.563	28.28	178.8	491.0	1976.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.120	27.74	182.3	490.0	1943.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.674	27.21	184.6	487.5	1910.1
38.75	Bot - Section 2	1.00	1.04	6.303	6.93	0.00	1.200	1.524	3.75	16.710	20.05	139.0	363.5	1410.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	1.25	5.592	6.71	46.8	122.7	768.3
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.205 *	1.547	5.00	22.092	26.61	190.4	486.2	3032.1
50.00		1.00	1.09	6.650	7.32	0.00	1.207 *	1.564	5.00	21.641	26.13	191.1	480.7	1639.7
55.00		1.00	1.12	6.785	7.46	0.00	1.216 *	1.579	5.00	21.188	25.76	192.3	474.6	1606.8
60.00		1.00	1.14	6.910	7.60	0.00	1.225 *	1.592	5.00	20.734	25.40	193.1	467.9	1573.4
65.00		1.00	1.16	7.028	7.73	0.00	1.234 *	1.605	5.00	20.279	25.03	193.5	460.7	1539.5
70.00		1.00	1.17	7.138	7.85	0.00	1.244 *	1.617	5.00	19.823	24.67	193.7	453.1	1505.1
75.00	Appurtenance(s)	1.00	1.19	7.243	7.97	0.00	1.255 *	1.628	5.00	19.367	24.30	193.6	445.1	1470.4
78.50	Bot - Section 3	1.00	1.20	7.313	8.04	0.00	1.264 *	1.636	3.50	13.284	16.79	135.1	307.5	1009.3
80.00	Appurtenance(s)	1.00	1.21	7.342	8.08	0.00	1.270 *	1.639	1.50	5.704	7.24	58.5	133.0	681.2
83.75	Top - Section 2	1.00	1.22	7.413	8.15	0.00	1.276 *	1.646	3.75	14.080	17.97	146.5	327.6	1678.9
85.00		1.00	1.22	7.436	8.18	0.00	1.275 *	1.649	1.25	4.636	5.91	48.4	108.7	312.5
90.00		1.00	1.24	7.526	8.28	0.00	1.283 *	1.658	5.00	18.260	23.42	193.9	425.8	1227.3
95.00		1.00	1.25	7.612	8.37	0.00	1.295 *	1.667	5.00	17.802	23.06	193.1	416.7	1195.9
100.00		1.00	1.27	7.695	8.46	0.00	1.308 *	1.676	5.00	17.344	22.69	192.1	407.4	1164.3
105.00	Appurtenance(s)	1.00	1.28	7.774	8.55	0.00	1.323 *	1.684	5.00	16.885	22.33	191.0	397.9	1132.5
110.00		1.00	1.29	7.851	8.64	0.00	1.337 *	1.692	5.00	16.426	21.97	189.7	388.1	1100.5
115.00		1.00	1.30	7.925	8.72	0.00	1.353 *	1.699	5.00	15.967	21.61	188.4	378.2	1068.3
119.25	Bot - Section 4	1.00	1.31	7.986	8.78	0.00	1.369 *	1.706	4.25	13.210	18.09	158.9	314.2	883.3
120.00		1.00	1.32	7.996	8.80	0.00	1.378 *	1.707	0.75	2.328	3.21	28.2	56.0	235.1
122.00	Appurtenance(s)	1.00	1.32	8.024	8.83	0.00	1.383 *	1.710	2.00	6.158	8.52	75.2	147.8	621.0
123.50	Top - Section 3	1.00	1.32	8.045	8.85	0.00	1.200	1.712	1.50	4.570	5.48	48.5	109.9	460.6
124.50	Appurtenance(s)	1.00	1.33	8.058	8.86	0.00	1.200	1.713	1.00	3.024	3.63	32.2	72.9	176.9
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	0.50	1.505	1.81	16.0	36.3	88.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	14.800	17.76	158.9	352.9	860.7
132.00	Appurtenance(s)	1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	5.790	6.95	62.4	139.5	337.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.00	8.548	10.26	92.5	205.5	497.3
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	13.879	16.66	151.3	331.8	803.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	13.419	16.10	147.4	321.0	775.3
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	12.958	15.55	143.4	310.2	746.6
152.00	Appurtenance(s)	1.00	1.38	8.404	9.24	0.00	1.200	1.748	2.00	5.054	6.06	56.1	122.3	291.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	3.00	7.443	8.93	82.9	179.5	428.5
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	5.00	12.037	14.44	135.0	288.1	688.9
162.00	Appurtenance(s)	1.00	1.40	8.518	9.37	0.00	1.200	1.759	2.00	4.685	5.62	52.7	113.4	268.8
								Totals:	**162.00**			**5,739.2**		**47,262.6**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

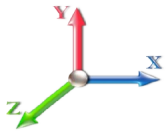
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	8.518	9.369	0.88	1.00	13.73	394.82	0.000	0.000	128.64	0.00	0.00
2	162.00	APXVTM14-C-120	3	8.523	9.375	0.63	0.80	14.15	687.31	0.000	0.500	132.65	0.00	66.33
3	162.00	TD-RRH8x20-25	3	8.518	9.369	0.69	1.00	10.08	586.49	0.000	0.000	94.45	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	8.523	9.375	0.66	0.80	21.58	579.26	0.000	0.500	202.36	0.00	101.18
5	162.00	Flush Mount	1	8.495	9.345	1.00	1.00	8.52	307.73	0.000	-2.000	79.59	0.00	-159.19
6	162.00	800 MHz Ext. Filter	3	8.518	9.369	0.63	1.00	3.75	76.34	0.000	0.000	35.11	0.00	0.00
7	162.00	ACU-A20-N	4	8.523	9.375	0.75	1.00	1.32	16.92	0.000	0.500	12.35	0.00	6.17
8	162.00	Low Profile Platform-flat	1	8.518	9.369	1.00	1.00	46.10	2195.22	0.000	0.000	431.97	0.00	0.00
9	162.00	800 MHz RRU	3	8.518	9.369	0.75	1.00	8.20	351.09	0.000	0.000	76.79	0.00	0.00
10	152.00	KRY 112 144/1	3	8.404	9.244	0.58	0.75	1.33	62.69	0.000	0.000	12.27	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	8.404	9.244	0.52	0.75	34.87	1716.47	0.000	0.000	322.40	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	8.404	9.244	0.65	0.75	4.87	375.15	0.000	0.000	45.04	0.00	0.00
13	152.00	APXV18-206516S-A20	3	8.404	9.244	0.58	0.75	11.59	214.25	0.000	0.000	107.18	0.00	0.00
14	152.00	FE15501P77/75	3	8.404	9.244	0.49	0.75	1.28	119.69	0.000	0.000	11.81	0.00	0.00
15	152.00	782 11056	3	8.404	9.244	0.50	0.75	0.55	11.97	0.000	0.000	5.09	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	8.404	9.244	1.00	1.00	78.70	4902.08	0.000	0.000	727.52	0.00	0.00
17	152.00	RR90-17-02DP	6	8.404	9.244	0.55	0.75	17.57	690.41	0.000	0.000	162.39	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	8.158	8.974	0.57	0.80	6.43	388.76	0.000	0.000	57.72	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	8.158	8.974	0.60	0.80	2.87	56.07	0.000	0.000	25.77	0.00	0.00
20	132.00	RRH2X60-700	3	8.158	8.974	0.61	0.80	7.81	414.24	0.000	0.000	70.04	0.00	0.00
21	132.00	RRH2x60-1900	3	8.158	8.974	0.60	0.80	3.69	246.89	0.000	0.000	33.16	0.00	0.00
22	132.00	RRH2X60-AWS	3	8.158	8.974	0.61	0.80	7.81	414.24	0.000	0.000	70.04	0.00	0.00
23	132.00	DB846F65ZAXY	4	8.158	8.974	0.74	0.80	24.59	878.42	0.000	0.000	220.70	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	8.158	8.974	1.36	0.80	9.51	190.90	0.000	0.000	85.35	0.00	0.00
25	132.00	SBNHH-1D65B	9	8.158	8.974	0.66	0.80	55.90	2225.53	0.000	0.000	501.66	0.00	0.00
26	132.00	Low Profile	1	8.158	8.974	1.00	1.00	39.44	2792.29	0.000	0.000	353.91	0.00	0.00
27	124.50	Flush Mount	1	8.058	8.864	1.00	1.00	8.43	303.89	0.000	0.000	74.69	0.00	0.00
28	124.50	RRUS-11	6	8.058	8.864	0.68	1.00	24.04	771.59	0.000	0.000	213.08	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	8.058	8.864	1.00	1.00	2.16	81.14	0.000	0.000	19.12	0.00	0.00
30	122.00	Low Profile Platform-flat	1	8.024	8.826	1.00	1.00	45.51	2165.72	0.000	0.000	401.72	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	8.024	8.826	0.65	0.80	15.76	419.78	0.000	0.000	139.09	0.00	0.00
32	122.00	LGP21903	6	8.024	8.826	0.60	0.80	2.37	74.73	0.000	0.000	20.96	0.00	0.00
33	122.00	LGP21401	6	8.024	8.826	0.60	0.80	7.59	205.86	0.000	0.000	67.00	0.00	0.00
34	122.00	7770.00	6	8.024	8.826	0.58	0.80	22.92	1042.76	0.000	0.000	202.33	0.00	0.00
35	105.00	Low Profile Platform-flat	1	7.774	8.552	1.00	1.00	45.21	2150.44	0.000	0.000	386.62	0.00	0.00
36	80.00	738-449	1	7.349	8.083	1.00	1.00	0.07	1.84	0.000	0.350	0.55	0.00	0.19
37	75.00	GPS	1	7.243	7.967	1.00	1.00	1.66	31.36	0.000	0.000	13.26	0.00	0.00
							Totals:		**28,144.33**			**5,544.39**		

Total Applied Force Summary

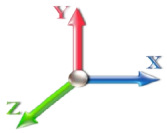
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		172.21	2707.73	0.00	0.00
10.00		169.54	2730.18	0.00	0.00
15.00		166.68	2728.31	0.00	0.00
20.00		173.73	2715.77	0.00	0.00
25.00		178.76	2697.10	0.00	0.00
30.00		182.26	2674.39	0.00	0.00
35.00		184.64	2648.80	0.00	0.00
38.75		139.02	1968.20	0.00	0.00
40.00		46.84	954.73	0.00	0.00
45.00		190.41	3784.54	0.00	0.00
50.00		191.12	2397.97	0.00	0.00
55.00		192.27	2370.51	0.00	0.00
60.00		193.05	2342.09	0.00	0.00
65.00		193.51	2312.84	0.00	0.00
70.00		193.68	2282.86	0.00	0.00
75.00	(1) attachments	206.87	2283.61	0.00	0.00
78.50		135.08	1543.41	0.00	0.00
80.00	(1) attachments	59.04	912.26	0.00	0.19
83.75		146.49	2253.17	0.00	0.00
85.00		48.35	504.15	0.00	0.00
90.00		193.89	1997.11	0.00	0.00
95.00		193.06	1968.86	0.00	0.00
100.00		192.08	1940.25	0.00	0.00
105.00	(1) attachments	577.59	4061.74	0.00	0.00
110.00		189.73	1882.04	0.00	0.00
115.00		188.37	1852.49	0.00	0.00
119.25		158.86	1551.67	0.00	0.00
120.00		28.22	353.15	0.00	0.00
122.00	(22) attachments	906.26	4844.95	0.00	0.00
123.50		48.53	584.06	0.00	0.00
124.50	(8) attachments	339.06	1415.85	0.00	0.00
125.00		16.02	129.25	0.00	0.00
130.00		158.86	1273.43	0.00	0.00
132.00	(33) attachments	1480.72	8110.21	0.00	0.00
135.00		92.49	696.43	0.00	0.00
140.00		151.33	1136.82	0.00	0.00
145.00		147.39	1109.19	0.00	0.00
150.00		143.35	1081.43	0.00	0.00
152.00	(25) attachments	1449.77	8518.68	0.00	0.00
155.00		82.91	453.40	0.00	0.00
160.00		134.98	730.44	0.00	0.00
162.00	(24) attachments	1246.59	5480.60	0.00	14.49
	Totals:	**11,283.61**	**95,984.66**	**0.00**	**14.68**

Linear Appurtenance Segment Forces (Factored)

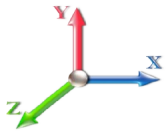
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	12.93
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.86	0.00	0.086	0.000	5.168	0.00	201.26
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	27.35
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	218.70
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	11.68
5.00	3" Coax	Yes	5.00	0.000	3.00	2.29	0.00	0.086	0.000	5.168	0.00	38.50
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	21.94
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	13.70
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	14.46
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.93	0.00	0.087	0.000	5.168	0.00	210.21
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	29.45
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	228.34
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	13.21
10.00	3" Coax	Yes	5.00	0.000	3.00	2.36	0.00	0.087	0.000	5.168	0.00	40.94
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	23.86
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	15.33
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	15.46
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.98	0.00	0.089	0.000	5.168	0.00	215.79
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	30.79
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	234.34
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	14.21
15.00	3" Coax	Yes	5.00	0.000	3.00	2.41	0.00	0.089	0.000	5.168	0.00	42.51
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	25.10
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	16.38
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	16.21
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.01	0.00	0.091	0.000	5.483	0.00	219.91
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	31.80
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	238.78
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	14.96
20.00	3" Coax	Yes	5.00	0.000	3.00	2.44	0.00	0.091	0.000	5.483	0.00	43.68
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	26.03
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	17.18
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	16.83
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.04	0.00	0.093	0.000	5.747	0.00	223.21
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	32.62
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	242.32
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	15.58
25.00	3" Coax	Yes	5.00	0.000	3.00	2.47	0.00	0.093	0.000	5.747	0.00	44.62
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	26.78
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	17.83
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	17.35
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.06	0.00	0.095	0.000	5.972	0.00	225.96
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	33.31
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	245.28
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	16.10
30.00	3" Coax	Yes	5.00	0.000	3.00	2.49	0.00	0.095	0.000	5.972	0.00	45.42
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	27.42

Linear Appurtenance Segment Forces (Factored)

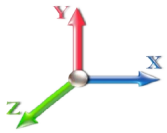
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	18.38
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	17.80
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.08	0.00	0.097	0.000	6.169	0.00	228.34
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	33.91
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	247.84
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	16.56
35.00	3" Coax	Yes	5.00	0.000	3.00	2.51	0.00	0.097	0.000	6.169	0.00	46.11
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	27.98
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	18.86
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	13.58
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.57	0.00	0.099	0.000	6.303	0.00	172.45
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	25.74
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	187.16
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	12.65
38.75	3" Coax	Yes	3.75	0.000	3.00	1.89	0.00	0.099	0.000	6.303	0.00	34.94
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	21.27
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	14.39
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.55
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.52	0.00	0.100	0.000	6.345	0.00	57.61
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	8.61
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	62.52
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.24
40.00	3" Coax	Yes	1.25	0.000	3.00	0.63	0.00	0.100	0.000	6.345	0.00	11.68
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	7.12
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.82
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	18.58
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.11	0.00	0.101	1.004	6.504	0.00	232.31
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	34.93
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	252.10
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	17.33
45.00	3" Coax	Yes	5.00	0.000	3.00	2.54	0.00	0.101	1.004	6.504	0.00	47.28
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	28.92
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	19.67
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	18.91
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.13	0.00	0.102	1.006	6.650	0.00	234.01
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	35.37
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	253.93
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	17.67
50.00	3" Coax	Yes	5.00	0.000	3.00	2.55	0.00	0.102	1.006	6.650	0.00	47.79
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	29.33
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	20.02
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	19.22
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.14	0.00	0.104	1.013	6.785	0.00	235.57
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	35.77
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	255.60
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	17.98
55.00	3" Coax	Yes	5.00	0.000	3.00	2.57	0.00	0.104	1.013	6.785	0.00	48.25

Linear Appurtenance Segment Forces (Factored)

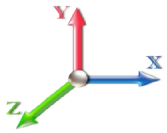
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	29.70
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	20.35
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	19.51
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.15	0.00	0.107	1.021	6.910	0.00	237.00
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	36.14
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	257.14
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	18.26
60.00	3" Coax	Yes	5.00	0.000	3.00	2.58	0.00	0.107	1.021	6.910	0.00	48.68
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	30.05
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	20.65
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	19.78
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.16	0.00	0.110	1.029	7.028	0.00	238.34
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	36.49
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	258.57
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	18.53
65.00	3" Coax	Yes	5.00	0.000	3.00	2.59	0.00	0.110	1.029	7.028	0.00	49.08
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	30.37
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	20.93
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	20.03
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.17	0.00	0.112	1.037	7.138	0.00	239.58
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	36.82
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	259.91
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	18.79
70.00	3" Coax	Yes	5.00	0.000	3.00	2.60	0.00	0.112	1.037	7.138	0.00	49.45
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	30.68
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	21.20
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	20.27
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.18	0.00	0.115	1.046	7.243	0.00	240.75
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	37.13
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	261.17
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	19.02
75.00	3" Coax	Yes	5.00	0.000	3.00	2.61	0.00	0.115	1.046	7.243	0.00	49.81
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	30.97
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	21.45
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	14.30
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	1.53	0.00	0.118	1.053	7.313	0.00	169.07
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	26.14
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	183.40
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	13.43
78.50	3" Coax	Yes	3.50	0.000	3.00	1.83	0.00	0.118	1.053	7.313	0.00	35.03
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	21.81
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	6.15
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.66	0.00	0.119	1.058	7.342	0.00	72.56
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	11.23
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	78.71
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	5.77
80.00	3" Coax	Yes	1.50	0.000	3.00	0.78	0.00	0.119	1.058	7.342	0.00	15.04

Linear Appurtenance Segment Forces (Factored)

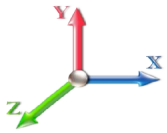
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	9.37
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	15.49
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.65	0.00	0.121	1.063	7.413	0.00	181.98
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	28.22
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	197.40
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	14.56
83.75	3" Coax	Yes	3.75	0.000	3.00	1.97	0.00	0.121	1.063	7.413	0.00	37.79
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	23.57
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	5.18
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.55	0.00	0.121	1.063	7.436	0.00	60.73
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	9.43
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	65.87
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	4.87
85.00	3" Coax	Yes	1.25	0.000	3.00	0.66	0.00	0.121	1.063	7.436	0.00	12.61
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	7.87
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	20.91
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.123	1.069	7.526	0.00	243.89
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	37.97
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	264.54
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	19.67
90.00	3" Coax	Yes	5.00	0.000	3.00	2.63	0.00	0.123	1.069	7.526	0.00	50.76
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	31.74
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	21.11
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.126	1.079	7.612	0.00	244.84
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	38.22
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	265.55
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	19.87
95.00	3" Coax	Yes	5.00	0.000	3.00	2.64	0.00	0.126	1.079	7.612	0.00	51.05
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	31.98
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	21.30
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.22	0.00	0.130	1.090	7.695	0.00	245.74
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	38.46
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	266.52
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	20.05
100.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.130	1.090	7.695	0.00	51.32
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	32.20
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	21.48
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.134	1.102	7.774	0.00	246.60
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	38.69
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	267.44
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	20.23
105.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.134	1.102	7.774	0.00	51.59
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	32.42
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	21.65
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.138	1.115	7.851	0.00	247.43
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	38.92
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	268.33

Linear Appurtenance Segment Forces (Factored)

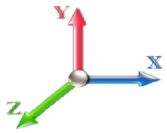
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	20.41
110.00	3" Coax	Yes	5.00	0.000	3.00	2.66	0.00	0.138	1.115	7.851	0.00	51.84
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	32.63
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	21.82
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.24	0.00	0.143	1.128	7.925	0.00	248.22
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	39.13
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	269.18
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	20.57
115.00	3" Coax	Yes	5.00	0.000	3.00	2.67	0.00	0.143	1.128	7.925	0.00	52.09
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	32.83
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	18.66
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	1.91	0.00	0.147	1.141	7.986	0.00	211.54
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	33.41
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	229.40
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	17.61
119.25	3" Coax	Yes	4.25	0.000	3.00	2.27	0.00	0.147	1.141	7.986	0.00	44.45
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	28.04
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.30
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.34	0.00	0.149	1.148	7.996	0.00	37.35
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	5.90
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	40.50
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.11
120.00	3" Coax	Yes	0.75	0.000	3.00	0.40	0.00	0.149	1.148	7.996	0.00	7.85
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	4.95
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.82
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.151	1.152	8.024	0.00	99.71
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	15.77
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	108.13
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.32
122.00	3" Coax	Yes	2.00	0.000	3.00	1.07	0.00	0.151	1.152	8.024	0.00	20.97
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	13.24
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	6.63
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.68	0.00	0.061	0.000	8.045	0.00	74.85
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	11.84
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	4.42
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.060	0.000	8.058	0.00	49.93
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	7.90
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	2.21
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.061	0.000	8.065	0.00	24.97
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	3.95
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	22.29
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.26	0.00	0.062	0.000	8.132	0.00	250.44
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	39.73
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	8.94
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.063	0.000	8.158	0.00	100.29
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	15.92
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	13.46

Linear Appurtenance Segment Forces (Factored)

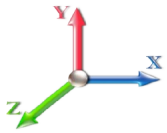
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.36	0.00	0.064	0.000	8.197	0.00	150.67
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	23.95
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	22.57
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.066	0.000	8.260	0.00	251.79
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	40.10
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	22.71
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.069	0.000	8.321	0.00	252.43
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	40.28
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	22.85
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.28	0.00	0.072	0.000	8.381	0.00	253.06
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	40.45
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	9.16
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.074	0.000	8.404	0.00	101.32
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	16.21
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	13.79
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	23.11
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.518	0.00	9.26
										Totals:	**0.0**	**17,803.1**

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

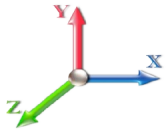
Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 24



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	-95.98	-11.33	0.00	-1346.5	0.00	1346.59	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.228
5.00	-93.26	-11.25	0.00	-1289.9	0.00	1289.93	5354.65	2677.32	12373.4	6195.90	0.03	-0.057	0.000	0.226
10.00	-90.52	-11.17	0.00	-1233.6	0.00	1233.68	5285.82	2642.91	11973.5	5995.67	0.12	-0.114	0.000	0.223
15.00	-87.78	-11.09	0.00	-1177.8	0.00	1177.83	5215.55	2607.78	11576.7	5796.99	0.27	-0.173	0.000	0.220
20.00	-85.05	-10.99	0.00	-1122.4	0.00	1122.41	5143.86	2571.93	11183.2	5599.96	0.48	-0.232	0.000	0.217
25.00	-82.35	-10.89	0.00	-1067.4	0.00	1067.45	5070.72	2535.36	10793.2	5404.66	0.76	-0.292	0.000	0.214
30.00	-79.66	-10.77	0.00	-1013.0	0.00	1013.03	4996.16	2498.08	10406.9	5211.21	1.10	-0.352	0.000	0.210
35.00	-77.00	-10.64	0.00	-959.16	0.00	959.16	4920.16	2460.08	10024.5	5019.70	1.50	-0.413	0.000	0.207
38.75	-75.03	-10.53	0.00	-919.25	0.00	919.25	4862.22	2431.11	9740.32	4877.40	1.84	-0.460	0.000	0.204
40.00	-74.07	-10.53	0.00	-906.09	0.00	906.09	4842.73	2421.36	9646.11	4830.22	1.97	-0.476	0.000	0.203
45.00	-70.27	-10.38	0.00	-853.45	0.00	853.45	3936.38	1968.19	7803.92	3907.76	2.50	-0.538	0.000	0.236
50.00	-67.87	-10.24	0.00	-801.56	0.00	801.56	3877.34	1938.67	7510.22	3760.69	3.10	-0.601	0.000	0.231
55.00	-65.49	-10.11	0.00	-750.34	0.00	750.34	3816.87	1908.43	7219.20	3614.96	3.76	-0.671	0.000	0.225
60.00	-63.13	-9.96	0.00	-699.82	0.00	699.82	3754.96	1877.48	6931.04	3470.67	4.50	-0.742	0.000	0.218
65.00	-60.81	-9.81	0.00	-650.02	0.00	650.02	3691.62	1845.81	6645.93	3327.91	5.32	-0.812	0.000	0.212
70.00	-58.52	-9.65	0.00	-600.97	0.00	600.97	3626.84	1813.42	6364.09	3186.77	6.21	-0.882	0.000	0.205
75.00	-56.23	-9.47	0.00	-552.70	0.00	552.70	3560.63	1780.31	6085.69	3047.37	7.17	-0.952	0.000	0.197
78.50	-54.69	-9.34	0.00	-519.55	0.00	519.55	3513.43	1756.71	5892.98	2950.87	7.88	-1.001	0.000	0.192
80.00	-53.77	-9.30	0.00	-505.54	0.00	505.54	3492.98	1746.49	5810.95	2909.79	8.20	-1.023	0.000	0.189
83.75	-51.51	-9.14	0.00	-470.67	0.00	470.67	2742.50	1371.25	4553.78	2280.28	9.03	-1.074	0.000	0.225
85.00	-51.00	-9.13	0.00	-459.24	0.00	459.24	2730.37	1365.18	4502.54	2254.62	9.31	-1.092	0.000	0.222
90.00	-49.00	-8.96	0.00	-413.59	0.00	413.59	2680.95	1340.47	4298.92	2152.65	10.50	-1.169	0.000	0.210
95.00	-47.02	-8.79	0.00	-368.79	0.00	368.79	2630.10	1315.05	4097.56	2051.82	11.76	-1.243	0.000	0.198
100.00	-45.08	-8.61	0.00	-324.87	0.00	324.87	2577.82	1288.91	3898.66	1952.23	13.10	-1.316	0.000	0.184
105.00	-41.02	-7.98	0.00	-281.84	0.00	281.84	2524.10	1262.05	3702.43	1853.97	14.52	-1.384	0.000	0.168
110.00	-39.13	-7.79	0.00	-241.93	0.00	241.93	2468.95	1234.47	3509.05	1757.13	16.00	-1.450	0.000	0.154
115.00	-37.28	-7.59	0.00	-202.99	0.00	202.99	2412.36	1206.18	3318.73	1661.83	17.55	-1.510	0.000	0.138
119.25	-35.73	-7.40	0.00	-170.75	0.00	170.75	2363.14	1181.57	3159.50	1582.10	18.92	-1.558	0.000	0.123
120.00	-35.38	-7.37	0.00	-165.20	0.00	165.20	2354.34	1177.17	3131.65	1568.15	19.17	-1.567	0.000	0.120
122.00	-30.55	-6.35	0.00	-150.45	0.00	150.45	2330.73	1165.37	3057.78	1531.16	19.83	-1.588	0.000	0.111
123.50	-29.97	-6.29	0.00	-140.93	0.00	140.93	1751.58	875.79	2319.28	1161.36	20.33	-1.603	0.000	0.139
124.50	-28.56	-5.91	0.00	-134.64	0.00	134.64	1743.79	871.89	2293.08	1148.24	20.67	-1.613	0.000	0.134
125.00	-28.43	-5.91	0.00	-131.69	0.00	131.69	1739.87	869.94	2280.00	1141.69	20.84	-1.618	0.000	0.132
130.00	-27.16	-5.73	0.00	-102.15	0.00	102.15	1699.92	849.96	2150.20	1076.70	22.56	-1.670	0.000	0.111
132.00	-19.10	-4.02	0.00	-90.70	0.00	90.70	1683.54	841.77	2098.80	1050.96	23.26	-1.688	0.000	0.098
135.00	-18.40	-3.91	0.00	-78.65	0.00	78.65	1658.53	829.27	2022.29	1012.65	24.33	-1.714	0.000	0.089
140.00	-17.27	-3.74	0.00	-59.07	0.00	59.07	1615.71	807.86	1896.47	949.64	26.15	-1.751	0.000	0.073
145.00	-16.16	-3.57	0.00	-40.38	0.00	40.38	1571.46	785.73	1772.93	887.78	28.00	-1.782	0.000	0.056
150.00	-15.08	-3.39	0.00	-22.55	0.00	22.55	1525.77	762.88	1651.87	827.16	29.88	-1.803	0.000	0.037
152.00	-6.61	-1.67	0.00	-15.77	0.00	15.77	1507.09	753.54	1604.19	803.29	30.63	-1.809	0.000	0.024
155.00	-6.16	-1.58	0.00	-10.74	0.00	10.74	1478.64	739.32	1533.49	767.89	31.77	-1.815	0.000	0.018
160.00	-5.44	-1.42	0.00	-2.85	0.00	2.85	1426.03	713.01	1413.96	708.03	33.68	-1.821	0.000	0.008
162.00	0.00	-1.25	0.00	-0.01	0.00	0.01	1400.09	700.04	1362.73	682.38	34.44	-1.822	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	22
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)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	24.14	
10.00		1315.5	0.01	0.05	0.03	34.74	
15.00		1289.5	0.02	0.06	0.04	39.61	
20.00		1263.5	0.03	0.07	0.04	41.71	
25.00		1237.5	0.05	0.07	0.04	42.49	
30.00		1211.5	0.06	0.07	0.04	42.71	
35.00		1185.5	0.09	0.07	0.04	42.75	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	31.98	
40.00		537.95	0.12	0.07	0.04	19.83	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	79.78	
50.00		965.80	0.18	0.07	0.03	36.75	
55.00		943.52	0.22	0.06	0.02	35.71	
60.00		921.24	0.26	0.05	0.02	33.61	
65.00		898.96	0.30	0.04	0.01	29.97	
70.00		876.68	0.35	0.03	0.01	24.34	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.72	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.88	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.74	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-1.59	
85.00		169.88	0.52	-0.02	0.01	-0.80	
90.00		667.91	0.58	-0.05	0.01	-11.68	
95.00		649.35	0.65	-0.07	0.02	-18.31	
100.00		630.78	0.72	-0.09	0.03	-22.31	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-69.31	
110.00		593.65	0.87	-0.12	0.08	-21.73	
115.00		575.09	0.95	-0.12	0.11	-17.53	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-10.35	
120.00		149.27	1.04	-0.10	0.15	-2.98	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-29.41	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-2.93	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-4.24	
125.00		43.13	1.13	-0.05	0.20	-0.22	
130.00		423.11	1.22	0.02	0.27	5.94	
132.00	Appurtenance(s)	2663.5	1.25	0.06	0.30	61.00	
135.00		243.17	1.31	0.14	0.35	9.12	
140.00		393.40	1.41	0.31	0.44	25.73	
145.00		378.55	1.51	0.54	0.56	37.01	
150.00		363.70	1.62	0.84	0.70	48.99	
152.00	Appurtenance(s)	2986.7	1.66	0.99	0.76	450.29	
155.00		207.52	1.73	1.24	0.86	36.58	
160.00		333.99	1.84	1.74	1.05	74.36	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	574.35	
	Totals:	**39,079.4**				**1,697.4**	**Total Wind:** **40,128.0**

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

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 22

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)**	0.34	**SA**	0.03			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-54.24	-1.91	0.00	-238.97	0.00	238.97	5422.04	2711.02	12776.1	6397.58		0.00	0.00	0.047
5.00	-52.36	-1.90	0.00	-229.39	0.00	229.39	5354.65	2677.32	12373.4	6195.90		0.01	-0.01	0.047
10.00	-50.51	-1.87	0.00	-219.89	0.00	219.89	5285.82	2642.91	11973.5	5995.67		0.02	-0.02	0.046
15.00	-48.69	-1.84	0.00	-210.52	0.00	210.52	5215.55	2607.78	11576.7	5796.99		0.05	-0.03	0.046
20.00	-46.91	-1.81	0.00	-201.31	0.00	201.31	5143.86	2571.93	11183.2	5599.96		0.09	-0.04	0.045
25.00	-45.15	-1.77	0.00	-192.27	0.00	192.27	5070.72	2535.36	10793.2	5404.66		0.14	-0.05	0.044
30.00	-43.43	-1.74	0.00	-183.41	0.00	183.41	4996.16	2498.08	10406.9	5211.21		0.20	-0.06	0.044
35.00	-41.73	-1.70	0.00	-174.73	0.00	174.73	4920.16	2460.08	10024.5	5019.70		0.27	-0.07	0.043
38.75	-40.48	-1.67	0.00	-168.36	0.00	168.36	4862.22	2431.11	9740.32	4877.40		0.33	-0.08	0.043
40.00	-39.77	-1.65	0.00	-166.27	0.00	166.27	4842.73	2421.36	9646.11	4830.22		0.35	-0.09	0.043
45.00	-36.96	-1.58	0.00	-158.00	0.00	158.00	3936.38	1968.19	7803.92	3907.76		0.45	-0.10	0.050
50.00	-35.53	-1.55	0.00	-150.12	0.00	150.12	3877.34	1938.67	7510.22	3760.69		0.56	-0.11	0.049
55.00	-34.12	-1.51	0.00	-142.39	0.00	142.39	3816.87	1908.43	7219.20	3614.96		0.68	-0.12	0.048
60.00	-32.75	-1.49	0.00	-134.82	0.00	134.82	3754.96	1877.48	6931.04	3470.67		0.81	-0.14	0.048
65.00	-31.40	-1.46	0.00	-127.39	0.00	127.39	3691.62	1845.81	6645.93	3327.91		0.96	-0.15	0.047
70.00	-30.08	-1.44	0.00	-120.09	0.00	120.09	3626.84	1813.42	6364.09	3186.77		1.12	-0.16	0.046
75.00	-28.77	-1.42	0.00	-112.90	0.00	112.90	3560.63	1780.31	6085.69	3047.37		1.30	-0.18	0.045
78.50	-27.88	-1.42	0.00	-107.91	0.00	107.91	3513.43	1756.71	5892.98	2950.87		1.44	-0.19	0.045
80.00	-27.25	-1.42	0.00	-105.78	0.00	105.78	3492.98	1746.49	5810.95	2909.79		1.50	-0.19	0.044
83.75	-25.70	-1.41	0.00	-100.47	0.00	100.47	2742.50	1371.25	4553.78	2280.28		1.65	-0.20	0.053
85.00	-25.43	-1.42	0.00	-98.70	0.00	98.70	2730.37	1365.18	4502.54	2254.62		1.70	-0.21	0.053
90.00	-24.36	-1.42	0.00	-91.61	0.00	91.61	2680.95	1340.47	4298.92	2152.65		1.93	-0.22	0.052
95.00	-23.31	-1.42	0.00	-84.51	0.00	84.51	2630.10	1315.05	4097.56	2051.82		2.17	-0.24	0.050
100.00	-22.28	-1.43	0.00	-77.39	0.00	77.39	2577.82	1288.91	3898.66	1952.23		2.43	-0.26	0.048
105.00	-19.84	-1.42	0.00	-70.26	0.00	70.26	2524.10	1262.05	3702.43	1853.97		2.71	-0.27	0.046
110.00	-18.86	-1.42	0.00	-63.16	0.00	63.16	2468.95	1234.47	3509.05	1757.13		3.01	-0.29	0.044
115.00	-17.90	-1.42	0.00	-56.05	0.00	56.05	2412.36	1206.18	3318.73	1661.83		3.32	-0.31	0.041
119.25	-17.11	-1.42	0.00	-50.01	0.00	50.01	2363.14	1181.57	3159.50	1582.10		3.60	-0.32	0.039
120.00	-16.89	-1.42	0.00	-48.95	0.00	48.95	2354.34	1177.17	3131.65	1568.15		3.65	-0.32	0.038
122.00	-14.35	-1.41	0.00	-46.11	0.00	46.11	2330.73	1165.37	3057.78	1531.16		3.78	-0.33	0.036
123.50	-13.95	-1.40	0.00	-44.00	0.00	44.00	1751.58	875.79	2319.28	1161.36		3.89	-0.33	0.046
124.50	-13.17	-1.40	0.00	-42.60	0.00	42.60	1743.79	871.89	2293.08	1148.24		3.96	-0.34	0.045
125.00	-13.10	-1.40	0.00	-41.90	0.00	41.90	1739.87	869.94	2280.00	1141.69		3.99	-0.34	0.044
130.00	-12.41	-1.39	0.00	-34.89	0.00	34.89	1699.92	849.96	2150.20	1076.70		4.36	-0.36	0.040
132.00	-9.14	-1.31	0.00	-32.10	0.00	32.10	1683.54	841.77	2098.80	1050.96		4.51	-0.36	0.036
135.00	-8.79	-1.31	0.00	-28.15	0.00	28.15	1658.53	829.27	2022.29	1012.65		4.74	-0.37	0.033
140.00	-8.23	-1.28	0.00	-21.63	0.00	21.63	1615.71	807.86	1896.47	949.64		5.13	-0.38	0.028
145.00	-7.68	-1.24	0.00	-15.24	0.00	15.24	1571.46	785.73	1772.93	887.78		5.54	-0.40	0.022
150.00	-7.15	-1.19	0.00	-9.05	0.00	9.05	1525.77	762.88	1651.87	827.16		5.96	-0.40	0.016
152.00	-3.53	-0.71	0.00	-6.68	0.00	6.68	1507.09	753.54	1604.19	803.29		6.13	-0.41	0.011
155.00	-3.27	-0.67	0.00	-4.55	0.00	4.55	1478.64	739.32	1533.49	767.89		6.39	-0.41	0.008
160.00	-2.85	-0.59	0.00	-1.19	0.00	1.19	1426.03	713.01	1413.96	708.03		6.82	-0.41	0.004
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		6.99	-0.41	0.000

Seismic Segment Forces (Factored)

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	22
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)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	24.14	
10.00		1315.5	0.01	0.05	0.03	34.74	
15.00		1289.5	0.02	0.06	0.04	39.61	
20.00		1263.5	0.03	0.07	0.04	41.71	
25.00		1237.5	0.05	0.07	0.04	42.49	
30.00		1211.5	0.06	0.07	0.04	42.71	
35.00		1185.5	0.09	0.07	0.04	42.75	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	31.98	
40.00		537.95	0.12	0.07	0.04	19.83	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	79.78	
50.00		965.80	0.18	0.07	0.03	36.75	
55.00		943.52	0.22	0.06	0.02	35.71	
60.00		921.24	0.26	0.05	0.02	33.61	
65.00		898.96	0.30	0.04	0.01	29.97	
70.00		876.68	0.35	0.03	0.01	24.34	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.72	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.88	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.74	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-1.59	
85.00		169.88	0.52	-0.02	0.01	-0.80	
90.00		667.91	0.58	-0.05	0.01	-11.68	
95.00		649.35	0.65	-0.07	0.02	-18.31	
100.00		630.78	0.72	-0.09	0.03	-22.31	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-69.31	
110.00		593.65	0.87	-0.12	0.08	-21.73	
115.00		575.09	0.95	-0.12	0.11	-17.53	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-10.35	
120.00		149.27	1.04	-0.10	0.15	-2.98	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-29.41	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-2.93	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-4.24	
125.00		43.13	1.13	-0.05	0.20	-0.22	
130.00		423.11	1.22	0.02	0.27	5.94	
132.00	Appurtenance(s)	2663.5	1.25	0.06	0.30	61.00	
135.00		243.17	1.31	0.14	0.35	9.12	
140.00		393.40	1.41	0.31	0.44	25.73	
145.00		378.55	1.51	0.54	0.56	37.01	
150.00		363.70	1.62	0.84	0.70	48.99	
152.00	Appurtenance(s)	2986.7	1.66	0.99	0.76	450.29	
155.00		207.52	1.73	1.24	0.86	36.58	
160.00		333.99	1.84	1.74	1.05	74.36	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	574.35	
	Totals:	**39,079.4**				**1,697.4**	**Total Wind:** **40,128.0**

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

Calculated Forces

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.19			**Iterations**	22
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03			**S1**	0.06
								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	-40.68	-1.91	0.00	-236.18	0.00	236.18	5422.04	2711.02	12776.1	6397.58		0.00	0.00	0.044
5.00	-39.27	-1.90	0.00	-226.61	0.00	226.61	5354.65	2677.32	12373.4	6195.90		0.01	-0.01	0.044
10.00	-37.88	-1.87	0.00	-217.13	0.00	217.13	5285.82	2642.91	11973.5	5995.67		0.02	-0.02	0.043
15.00	-36.52	-1.83	0.00	-207.79	0.00	207.79	5215.55	2607.78	11576.7	5796.99		0.05	-0.03	0.043
20.00	-35.18	-1.80	0.00	-198.62	0.00	198.62	5143.86	2571.93	11183.2	5599.96		0.09	-0.04	0.042
25.00	-33.86	-1.76	0.00	-189.63	0.00	189.63	5070.72	2535.36	10793.2	5404.66		0.13	-0.05	0.042
30.00	-32.57	-1.72	0.00	-180.82	0.00	180.82	4996.16	2498.08	10406.9	5211.21		0.19	-0.06	0.041
35.00	-31.30	-1.68	0.00	-172.21	0.00	172.21	4920.16	2460.08	10024.5	5019.70		0.26	-0.07	0.041
38.75	-30.36	-1.65	0.00	-165.89	0.00	165.89	4862.22	2431.11	9740.32	4877.40		0.33	-0.08	0.040
40.00	-29.83	-1.64	0.00	-163.82	0.00	163.82	4842.73	2421.36	9646.11	4830.22		0.35	-0.08	0.040
45.00	-27.72	-1.56	0.00	-155.64	0.00	155.64	3936.38	1968.19	7803.92	3907.76		0.44	-0.10	0.047
50.00	-26.64	-1.53	0.00	-147.84	0.00	147.84	3877.34	1938.67	7510.22	3760.69		0.55	-0.11	0.046
55.00	-25.59	-1.49	0.00	-140.21	0.00	140.21	3816.87	1908.43	7219.20	3614.96		0.67	-0.12	0.045
60.00	-24.56	-1.46	0.00	-132.74	0.00	132.74	3754.96	1877.48	6931.04	3470.67		0.80	-0.13	0.045
65.00	-23.55	-1.44	0.00	-125.41	0.00	125.41	3691.62	1845.81	6645.93	3327.91		0.95	-0.15	0.044
70.00	-22.56	-1.42	0.00	-118.23	0.00	118.23	3626.84	1813.42	6364.09	3186.77		1.11	-0.16	0.043
75.00	-21.58	-1.40	0.00	-111.15	0.00	111.15	3560.63	1780.31	6085.69	3047.37		1.28	-0.17	0.043
78.50	-20.91	-1.39	0.00	-106.24	0.00	106.24	3513.43	1756.71	5892.98	2950.87		1.42	-0.18	0.042
80.00	-20.44	-1.39	0.00	-104.15	0.00	104.15	3492.98	1746.49	5810.95	2909.79		1.47	-0.19	0.042
83.75	-19.27	-1.39	0.00	-98.93	0.00	98.93	2742.50	1371.25	4553.78	2280.28		1.63	-0.20	0.050
85.00	-19.07	-1.39	0.00	-97.19	0.00	97.19	2730.37	1365.18	4502.54	2254.62		1.68	-0.20	0.050
90.00	-18.27	-1.40	0.00	-90.23	0.00	90.23	2680.95	1340.47	4298.92	2152.65		1.90	-0.22	0.049
95.00	-17.48	-1.40	0.00	-83.25	0.00	83.25	2630.10	1315.05	4097.56	2051.82		2.14	-0.24	0.047
100.00	-16.71	-1.40	0.00	-76.26	0.00	76.26	2577.82	1288.91	3898.66	1952.23		2.40	-0.25	0.046
105.00	-14.88	-1.39	0.00	-69.27	0.00	69.27	2524.10	1262.05	3702.43	1853.97		2.67	-0.27	0.043
110.00	-14.14	-1.40	0.00	-62.29	0.00	62.29	2468.95	1234.47	3509.05	1757.13		2.96	-0.29	0.041
115.00	-13.42	-1.40	0.00	-55.32	0.00	55.32	2412.36	1206.18	3318.73	1661.83		3.27	-0.30	0.039
119.25	-12.83	-1.39	0.00	-49.39	0.00	49.39	2363.14	1181.57	3159.50	1582.10		3.55	-0.32	0.037
120.00	-12.66	-1.39	0.00	-48.34	0.00	48.34	2354.34	1177.17	3131.65	1568.15		3.60	-0.32	0.036
122.00	-10.76	-1.38	0.00	-45.55	0.00	45.55	2330.73	1165.37	3057.78	1531.16		3.73	-0.32	0.034
123.50	-10.46	-1.38	0.00	-43.48	0.00	43.48	1751.58	875.79	2319.28	1161.36		3.83	-0.33	0.043
124.50	-9.87	-1.38	0.00	-42.09	0.00	42.09	1743.79	871.89	2293.08	1148.24		3.90	-0.33	0.042
125.00	-9.82	-1.38	0.00	-41.40	0.00	41.40	1739.87	869.94	2280.00	1141.69		3.94	-0.33	0.042
130.00	-9.31	-1.37	0.00	-34.50	0.00	34.50	1699.92	849.96	2150.20	1076.70		4.30	-0.35	0.038
132.00	-6.86	-1.30	0.00	-31.75	0.00	31.75	1683.54	841.77	2098.80	1050.96		4.44	-0.36	0.034
135.00	-6.59	-1.29	0.00	-27.85	0.00	27.85	1658.53	829.27	2022.29	1012.65		4.67	-0.37	0.031
140.00	-6.17	-1.26	0.00	-21.40	0.00	21.40	1615.71	807.86	1896.47	949.64		5.06	-0.38	0.026
145.00	-5.76	-1.22	0.00	-15.09	0.00	15.09	1571.46	785.73	1772.93	887.78		5.46	-0.39	0.021
150.00	-5.36	-1.17	0.00	-8.97	0.00	8.97	1525.77	762.88	1651.87	827.16		5.88	-0.40	0.014
152.00	-2.64	-0.70	0.00	-6.62	0.00	6.62	1507.09	753.54	1604.19	803.29		6.05	-0.40	0.010
155.00	-2.45	-0.67	0.00	-4.51	0.00	4.51	1478.64	739.32	1533.49	767.89		6.30	-0.40	0.008
160.00	-2.13	-0.59	0.00	-1.18	0.00	1.18	1426.03	713.01	1413.96	708.03		6.72	-0.41	0.003
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		6.89	-0.41	0.000

Wind Loading - Shaft

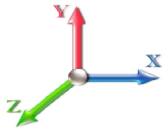
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	270.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	265.27	0.650	0.000	5.00	24.209	15.74	128.8	0.0	1341.5
10.00		1.00	0.85	7.442	8.19	260.12	0.650	0.000	5.00	23.744	15.43	126.3	0.0	1315.5
15.00		1.00	0.85	7.442	8.19	254.97	0.650	0.000	5.00	23.278	15.13	123.9	0.0	1289.5
20.00		1.00	0.90	7.896	8.69	257.33	0.650	0.000	5.00	22.813	14.83	128.8	0.0	1263.5
25.00		1.00	0.95	8.276	9.10	258.01	0.650	0.000	5.00	22.348	14.53	132.2	0.0	1237.5
30.00		1.00	0.98	8.600	9.46	257.48	0.650	0.000	5.00	21.882	14.22	134.6	0.0	1211.5
35.00		1.00	1.01	8.883	9.77	256.06	0.650	0.000	5.00	21.417	13.92	136.0	0.0	1185.5
38.75	Bot - Section 2	1.00	1.04	9.076	9.98	254.56	0.650	0.000	3.75	15.757	10.24	102.3	0.0	872.1
40.00		1.00	1.04	9.137	10.05	253.98	0.650	0.000	1.25	5.273	3.43	34.5	0.0	538.0
45.00	Top - Section 1	1.00	1.07	9.366	10.30	251.37	0.653 *	0.000	5.00	20.803	13.57	139.9	0.0	2121.6
50.00		1.00	1.09	9.576	10.53	252.32	0.654 *	0.000	5.00	20.338	13.30	140.1	0.0	965.8
55.00		1.00	1.12	9.770	10.75	248.96	0.659 *	0.000	5.00	19.872	13.09	140.7	0.0	943.5
60.00		1.00	1.14	9.951	10.95	245.30	0.663 *	0.000	5.00	19.407	12.88	140.9	0.0	921.2
65.00		1.00	1.16	10.120	11.13	241.37	0.669 *	0.000	5.00	18.941	12.66	141.0	0.0	899.0
70.00		1.00	1.17	10.279	11.31	237.20	0.674 *	0.000	5.00	18.476	12.45	140.8	0.0	876.7
75.00	Appurtenance(s)	1.00	1.19	10.430	11.47	232.84	0.680 *	0.000	5.00	18.010	12.24	140.4	0.0	854.4
78.50	Bot - Section 3	1.00	1.20	10.530	11.58	229.67	0.685 *	0.000	3.50	12.330	8.44	97.8	0.0	584.8
80.00	Appurtenance(s)	1.00	1.21	10.572	11.63	228.29	0.688 *	0.000	1.50	5.294	3.64	42.3	0.0	456.9
83.75	Top - Section 2	1.00	1.22	10.675	11.74	224.76	0.691 *	0.000	3.75	13.051	9.02	105.9	0.0	1126.1
85.00		1.00	1.22	10.708	11.78	227.08	0.691 *	0.000	1.25	4.292	2.96	34.9	0.0	169.9
90.00		1.00	1.24	10.838	11.92	222.23	0.695 *	0.000	5.00	16.878	11.73	139.8	0.0	667.9
95.00		1.00	1.25	10.962	12.06	217.25	0.702 *	0.000	5.00	16.413	11.51	138.8	0.0	649.3
100.00		1.00	1.27	11.081	12.19	212.15	0.709 *	0.000	5.00	15.947	11.30	137.8	0.0	630.8
105.00	Appurtenance(s)	1.00	1.28	11.195	12.31	206.92	0.716 *	0.000	5.00	15.482	11.09	136.6	0.0	612.2
110.00		1.00	1.29	11.305	12.44	201.59	0.724 *	0.000	5.00	15.016	10.88	135.3	0.0	593.7
115.00		1.00	1.30	11.412	12.55	196.16	0.733 *	0.000	5.00	14.551	10.67	133.9	0.0	575.1
119.25	Bot - Section 4	1.00	1.31	11.499	12.65	191.47	0.742 *	0.000	4.25	12.002	8.90	112.6	0.0	474.2
120.00		1.00	1.32	11.514	12.67	190.63	0.746 *	0.000	0.75	2.115	1.58	20.0	0.0	149.3
122.00	Appurtenance(s)	1.00	1.32	11.554	12.71	188.40	0.749 *	0.000	2.00	5.588	4.19	53.2	0.0	394.4
123.50	Top - Section 3	1.00	1.32	11.584	12.74	186.71	0.650	0.000	1.50	4.142	2.69	34.3	0.0	292.3
124.50	Appurtenance(s)	1.00	1.33	11.604	12.76	188.51	0.650	0.000	1.00	2.738	1.78	22.7	0.0	86.7
125.00		1.00	1.33	11.614	12.78	187.95	0.650	0.000	0.50	1.362	0.89	11.3	0.0	43.1
130.00		1.00	1.34	11.710	12.88	182.26	0.650	0.000	5.00	13.366	8.69	111.9	0.0	423.1
132.00	Appurtenance(s)	1.00	1.34	11.748	12.92	179.97	0.650	0.000	2.00	5.216	3.39	43.8	0.0	165.1
135.00		1.00	1.35	11.803	12.98	176.50	0.650	0.000	3.00	7.684	4.99	64.9	0.0	243.2
140.00		1.00	1.36	11.894	13.08	170.67	0.650	0.000	5.00	12.435	8.08	105.8	0.0	393.4
145.00		1.00	1.37	11.982	13.18	164.77	0.650	0.000	5.00	11.970	7.78	102.5	0.0	378.5
150.00		1.00	1.38	12.068	13.27	158.80	0.650	0.000	5.00	11.504	7.48	99.3	0.0	363.7
152.00	Appurtenance(s)	1.00	1.38	12.102	13.31	156.39	0.650	0.000	2.00	4.471	2.91	38.7	0.0	141.3
155.00		1.00	1.39	12.152	13.37	152.77	0.650	0.000	3.00	6.567	4.27	57.1	0.0	207.5
160.00		1.00	1.40	12.233	13.46	146.68	0.650	0.000	5.00	10.573	6.87	92.5	0.0	334.0
162.00	Appurtenance(s)	1.00	1.40	12.265	13.49	144.22	0.650	0.000	2.00	4.099	2.66	35.9	0.0	129.4
								Totals:	**162.00**			**4,140.7**		**28,122.8**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

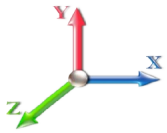
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	12.265	13.492	0.88	1.00	10.03	132.00	0.000	0.000	135.35	0.00	0.00
2	162.00	APXVTM14-C-120	3	12.273	13.501	0.63	0.80	12.02	168.00	0.000	0.500	162.29	0.00	81.14
3	162.00	TD-RRH8x20-25	3	12.265	13.492	0.69	1.00	8.38	210.00	0.000	0.000	113.11	0.00	0.00
4	162.00	APXVSPP18-C-A20	3	12.273	13.501	0.66	0.80	15.98	171.00	0.000	0.500	215.68	0.00	107.84
5	162.00	Flush Mount	1	12.233	13.457	1.00	1.00	5.00	175.00	0.000	-2.000	67.28	0.00	-134.57
6	162.00	800 MHz Ext. Filter	3	12.265	13.492	0.63	1.00	2.25	19.80	0.000	0.000	30.34	0.00	0.00
7	162.00	ACU-A20-N	4	12.273	13.501	0.75	1.00	0.42	4.00	0.000	0.500	5.67	0.00	2.84
8	162.00	Low Profile Platform-flat	1	12.265	13.492	1.00	1.00	25.00	1200.00	0.000	0.000	337.30	0.00	0.00
9	162.00	800 MHz RRU	3	12.265	13.492	0.75	1.00	5.60	159.00	0.000	0.000	75.59	0.00	0.00
10	152.00	KRY 112 144/1	3	12.102	13.312	0.55	0.75	0.57	33.00	0.000	0.000	7.65	0.00	0.00
11	152.00	APXVAARR24_43-U-NA2	3	12.102	13.312	0.52	0.75	31.88	384.00	0.000	0.000	424.36	0.00	0.00
12	152.00	Radio 4449 B71+B12	3	12.102	13.312	0.65	0.75	3.81	213.00	0.000	0.000	50.74	0.00	0.00
13	152.00	APXV18-206516S-A20	3	12.102	13.312	0.57	0.75	7.46	55.50	0.000	0.000	99.25	0.00	0.00
14	152.00	FE15501P77/75	3	12.102	13.312	0.49	0.75	0.79	52.50	0.000	0.000	10.51	0.00	0.00
15	152.00	782 11056	3	12.102	13.312	0.50	0.75	0.23	5.40	0.000	0.000	3.01	0.00	0.00
16	152.00	Platform w/ Hand Rail	1	12.102	13.312	1.00	1.00	42.00	2021.00	0.000	0.000	559.11	0.00	0.00
17	152.00	RR90-17-02DP	6	12.102	13.312	0.55	0.75	14.32	81.00	0.000	0.000	190.66	0.00	0.00
18	132.00	RFS DB-T1-6Z-8AB-0Z	2	11.748	12.922	0.57	0.80	4.92	88.00	0.000	0.000	63.56	0.00	0.00
19	132.00	FD9R6004/2C-3L	6	11.748	12.922	0.60	0.80	1.30	18.60	0.000	0.000	16.75	0.00	0.00
20	132.00	RRH2X60-700	3	11.748	12.922	0.61	0.80	6.38	180.00	0.000	0.000	82.50	0.00	0.00
21	132.00	RRH2x60-1900	3	11.748	12.922	0.60	0.80	2.72	58.50	0.000	0.000	35.12	0.00	0.00
22	132.00	RRH2X60-AWS	3	11.748	12.922	0.61	0.80	6.38	180.00	0.000	0.000	82.50	0.00	0.00
23	132.00	DB846F65ZAXY	4	11.748	12.922	0.74	0.80	20.98	84.00	0.000	0.000	271.12	0.00	0.00
24	132.00	LPA-80080-4CF-EDIN-0	2	11.748	12.922	1.36	0.80	7.10	24.00	0.000	0.000	91.74	0.00	0.00
25	132.00	SBNHH-1D65B	9	11.748	12.922	0.66	0.80	48.29	365.40	0.000	0.000	623.98	0.00	0.00
26	132.00	Low Profile	1	11.748	12.922	1.00	1.00	22.00	1500.00	0.000	0.000	284.29	0.00	0.00
27	124.50	Flush Mount	1	11.604	12.764	1.00	1.00	5.00	175.00	0.000	0.000	63.82	0.00	0.00
28	124.50	RRUS-11	6	11.604	12.764	0.68	1.00	18.03	330.00	0.000	0.000	230.19	0.00	0.00
29	124.50	DC6-48-60-18-8F	1	11.604	12.764	1.00	1.00	1.47	31.80	0.000	0.000	18.76	0.00	0.00
30	122.00	Low Profile Platform-flat	1	11.554	12.710	1.00	1.00	25.00	1200.00	0.000	0.000	317.75	0.00	0.00
31	122.00	AM-X-CD-16-65-00T-RET	3	11.554	12.710	0.65	0.80	11.76	99.00	0.000	0.000	149.48	0.00	0.00
32	122.00	LGP21903	6	11.554	12.710	0.60	0.80	0.97	33.00	0.000	0.000	12.35	0.00	0.00
33	122.00	LGP21401	6	11.554	12.710	0.60	0.80	4.64	84.60	0.000	0.000	59.02	0.00	0.00
34	122.00	7770.00	6	11.554	12.710	0.58	0.80	19.27	210.00	0.000	0.000	244.95	0.00	0.00
35	105.00	Low Profile Platform-flat	1	11.195	12.315	1.00	1.00	25.00	1200.00	0.000	0.000	307.87	0.00	0.00
36	80.00	738-449	1	10.582	11.640	1.00	1.00	0.01	0.50	0.000	0.350	0.12	0.00	0.04
37	75.00	GPS	1	10.430	11.473	1.00	1.00	1.00	10.00	0.000	0.000	11.47	0.00	0.00
							Totals:		**10,956.60**			**5,455.25**		

Total Applied Force Summary

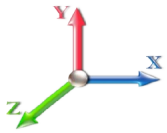
Structure:	CT01698-S-SBA		**Code:**	EIA/TIA-222-G	8/6/2019
Site Name:	Durham		**Exposure:**	C	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	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		128.82	1566.35	0.00	0.00
10.00		126.34	1540.36	0.00	0.00
15.00		123.86	1514.37	0.00	0.00
20.00		128.80	1488.38	0.00	0.00
25.00		132.24	1462.39	0.00	0.00
30.00		134.55	1436.40	0.00	0.00
35.00		136.03	1410.41	0.00	0.00
38.75		102.25	1040.75	0.00	0.00
40.00		34.45	594.17	0.00	0.00
45.00		139.85	2346.50	0.00	0.00
50.00		140.10	1190.66	0.00	0.00
55.00		140.66	1168.38	0.00	0.00
60.00		140.94	1146.11	0.00	0.00
65.00		140.98	1123.83	0.00	0.00
70.00		140.80	1101.55	0.00	0.00
75.00	(1) attachments	151.91	1089.27	0.00	0.00
78.50		97.79	741.67	0.00	0.00
80.00	(1) attachments	42.46	524.58	0.00	0.04
83.75		105.91	1293.52	0.00	0.00
85.00		34.92	225.69	0.00	0.00
90.00		139.79	891.18	0.00	0.00
95.00		138.84	872.61	0.00	0.00
100.00		137.76	854.05	0.00	0.00
105.00	(1) attachments	444.44	2035.48	0.00	0.00
110.00		135.29	816.92	0.00	0.00
115.00		133.90	798.35	0.00	0.00
119.25		112.58	664.00	0.00	0.00
120.00		19.99	182.76	0.00	0.00
122.00	(22) attachments	836.76	2110.28	0.00	0.00
123.50		34.31	336.57	0.00	0.00
124.50	(8) attachments	335.49	653.03	0.00	0.00
125.00		11.31	57.89	0.00	0.00
130.00		111.91	570.77	0.00	0.00
132.00	(33) attachments	1595.38	2722.65	0.00	0.00
135.00		64.85	290.85	0.00	0.00
140.00		105.75	472.87	0.00	0.00
145.00		102.55	458.01	0.00	0.00
150.00		99.27	443.16	0.00	0.00
152.00	(25) attachments	1383.99	3018.51	0.00	0.00
155.00		57.06	217.58	0.00	0.00
160.00		92.48	350.76	0.00	0.00
162.00	(24) attachments	1178.55	2374.94	0.00	57.25
	Totals:	**9,595.92**	**45,198.56**	**0.00**	**57.29**

Linear Appurtenance Segment Forces (Factored)

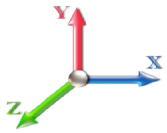
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	1.37
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	7.442	0.00	57.20
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	5.50
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	62.40
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.30
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	7.442	0.00	8.90
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	4.00
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.80
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	1.37
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	7.442	0.00	57.20
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	5.50
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	62.40
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.30
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	7.442	0.00	8.90
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	4.00
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.80
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	1.37
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	7.442	0.00	57.20
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	5.50
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	62.40
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.30
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	7.442	0.00	8.90
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	4.00
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.80
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	1.37
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	7.896	0.00	57.20
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	5.50
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	62.40
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.30
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	7.896	0.00	8.90
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	4.00
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.80
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	1.37
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	8.276	0.00	57.20
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	5.50
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	62.40
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.30
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	8.276	0.00	8.90
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	4.00
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.80
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	1.37
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	8.600	0.00	57.20
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	5.50
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	62.40
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.30
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	8.600	0.00	8.90
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	4.00

Linear Appurtenance Segment Forces (Factored)

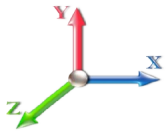
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.80
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	1.37
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	8.883	0.00	57.20
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	5.50
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	62.40
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.30
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	8.883	0.00	8.90
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	4.00
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.80
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	1.02
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	9.076	0.00	42.90
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	4.13
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	46.80
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.22
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	9.076	0.00	6.67
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	3.00
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.60
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.34
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	9.137	0.00	14.30
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.38
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	15.60
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	9.137	0.00	2.23
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.00
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.20
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	1.37
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	9.366	0.00	57.20
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	5.50
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	62.40
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.30
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	9.366	0.00	8.90
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	4.00
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.80
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	1.37
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	9.576	0.00	57.20
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	5.50
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	62.40
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.30
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	9.576	0.00	8.90
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	4.00
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.80
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	1.37
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	9.770	0.00	57.20
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	5.50
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	62.40
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.30
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	9.770	0.00	8.90

Linear Appurtenance Segment Forces (Factored)

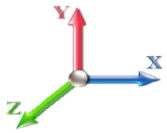
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	4.00
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.80
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	1.37
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	9.951	0.00	57.20
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	5.50
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	62.40
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.30
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	9.951	0.00	8.90
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	4.00
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.80
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	1.37
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	10.120	0.00	57.20
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	5.50
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	62.40
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.30
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	10.120	0.00	8.90
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	4.00
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.80
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	1.37
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	10.279	0.00	57.20
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	5.50
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	62.40
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.30
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	10.279	0.00	8.90
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	4.00
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.80
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	1.37
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	10.430	0.00	57.20
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	5.50
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	62.40
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.30
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	10.430	0.00	8.90
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	4.00
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.80
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.96
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	10.530	0.00	40.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	3.85
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	43.68
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.21
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	10.530	0.00	6.23
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	2.80
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.41
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	10.572	0.00	17.16
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.65
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	18.72
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.09
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	10.572	0.00	2.67

Linear Appurtenance Segment Forces (Factored)

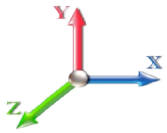
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.20
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	1.02
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	10.675	0.00	42.90
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	4.13
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	46.80
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	0.22
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	10.675	0.00	6.67
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	3.00
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.34
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	10.708	0.00	14.30
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.38
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	15.60
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	10.708	0.00	2.23
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.00
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	1.37
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	10.838	0.00	57.20
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	5.50
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	62.40
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	0.30
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	10.838	0.00	8.90
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	4.00
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	1.37
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	10.962	0.00	57.20
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	5.50
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	62.40
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	0.30
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	10.962	0.00	8.90
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	4.00
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	1.37
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	11.081	0.00	57.20
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	5.50
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	62.40
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	0.30
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	11.081	0.00	8.90
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	4.00
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	1.37
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	11.195	0.00	57.20
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	5.50
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	62.40
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	0.30
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	11.195	0.00	8.90
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	4.00
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	1.37
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	11.305	0.00	57.20
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	5.50
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

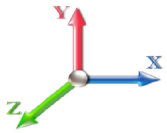
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	0.30
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	11.305	0.00	8.90
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	4.00
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	1.37
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	11.412	0.00	57.20
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	5.50
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	62.40
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	0.30
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	11.412	0.00	8.90
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	4.00
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	1.16
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	11.499	0.00	48.62
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	4.68
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	53.04
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	0.26
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	11.499	0.00	7.57
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	3.40
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.20
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	11.514	0.00	8.58
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.83
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	9.36
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.04
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	11.514	0.00	1.33
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.60
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.55
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	11.554	0.00	22.88
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	2.20
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	24.96
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.12
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	11.554	0.00	3.56
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	1.60
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	0.41
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	11.584	0.00	17.16
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	1.65
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	0.27
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	11.604	0.00	11.44
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	1.10
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.14
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	11.614	0.00	5.72
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.55
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	1.37
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	11.710	0.00	57.20
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	5.50
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	0.55
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	11.748	0.00	22.88
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	2.20
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	0.82

Linear Appurtenance Segment Forces (Factored)

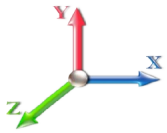
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	11.803	0.00	34.32
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	3.30
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	1.37
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	11.894	0.00	57.20
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	5.50
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	1.37
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	11.982	0.00	57.20
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	5.50
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	1.37
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	12.068	0.00	57.20
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	5.50
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	0.55
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	12.102	0.00	22.88
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	2.20
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	0.82
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	1.37
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.265	0.00	0.55
										Totals:	**0.0**	**3,806.9**

Calculated Forces

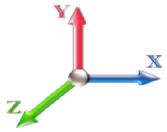
Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.19	-9.61	0.00	-1130.4	0.00	1130.40	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.185
5.00	-43.62	-9.52	0.00	-1082.3	0.00	1082.33	5354.65	2677.32	12373.4	6195.90	0.03	-0.048	0.000	0.183
10.00	-42.07	-9.43	0.00	-1034.7	0.00	1034.72	5285.82	2642.91	11973.5	5995.67	0.10	-0.096	0.000	0.181
15.00	-40.55	-9.34	0.00	-987.58	0.00	987.58	5215.55	2607.78	11576.7	5796.99	0.23	-0.145	0.000	0.178
20.00	-39.05	-9.24	0.00	-940.90	0.00	940.90	5143.86	2571.93	11183.2	5599.96	0.41	-0.194	0.000	0.176
25.00	-37.58	-9.13	0.00	-894.72	0.00	894.72	5070.72	2535.36	10793.2	5404.66	0.64	-0.245	0.000	0.173
30.00	-36.14	-9.02	0.00	-849.06	0.00	849.06	4996.16	2498.08	10406.9	5211.21	0.92	-0.295	0.000	0.170
35.00	-34.72	-8.91	0.00	-803.94	0.00	803.94	4920.16	2460.08	10024.5	5019.70	1.26	-0.347	0.000	0.167
38.75	-33.68	-8.81	0.00	-770.54	0.00	770.54	4862.22	2431.11	9740.32	4877.40	1.55	-0.386	0.000	0.165
40.00	-33.08	-8.79	0.00	-759.52	0.00	759.52	4842.73	2421.36	9646.11	4830.22	1.65	-0.399	0.000	0.164
45.00	-30.73	-8.66	0.00	-715.56	0.00	715.56	3936.38	1968.19	7803.92	3907.76	2.09	-0.451	0.000	0.191
50.00	-29.53	-8.54	0.00	-672.23	0.00	672.23	3877.34	1938.67	7510.22	3760.69	2.60	-0.504	0.000	0.186
55.00	-28.35	-8.42	0.00	-629.52	0.00	629.52	3816.87	1908.43	7219.20	3614.96	3.16	-0.563	0.000	0.182
60.00	-27.20	-8.30	0.00	-587.41	0.00	587.41	3754.96	1877.48	6931.04	3470.67	3.78	-0.622	0.000	0.177
65.00	-26.07	-8.17	0.00	-545.93	0.00	545.93	3691.62	1845.81	6645.93	3327.91	4.46	-0.681	0.000	0.171
70.00	-24.96	-8.04	0.00	-505.09	0.00	505.09	3626.84	1813.42	6364.09	3186.77	5.20	-0.740	0.000	0.165
75.00	-23.87	-7.89	0.00	-464.89	0.00	464.89	3560.63	1780.31	6085.69	3047.37	6.01	-0.799	0.000	0.159
78.50	-23.12	-7.80	0.00	-437.25	0.00	437.25	3513.43	1756.71	5892.98	2950.87	6.61	-0.840	0.000	0.155
80.00	-22.60	-7.76	0.00	-425.56	0.00	425.56	3492.98	1746.49	5810.95	2909.79	6.88	-0.858	0.000	0.153
83.75	-21.30	-7.65	0.00	-396.46	0.00	396.46	2742.50	1371.25	4553.78	2280.28	7.57	-0.902	0.000	0.182
85.00	-21.07	-7.62	0.00	-386.90	0.00	386.90	2730.37	1365.18	4502.54	2254.62	7.81	-0.917	0.000	0.179
90.00	-20.17	-7.49	0.00	-348.79	0.00	348.79	2680.95	1340.47	4298.92	2152.65	8.80	-0.981	0.000	0.170
95.00	-19.29	-7.36	0.00	-311.34	0.00	311.34	2630.10	1315.05	4097.56	2051.82	9.87	-1.044	0.000	0.159
100.00	-18.44	-7.22	0.00	-274.56	0.00	274.56	2577.82	1288.91	3898.66	1952.23	10.99	-1.105	0.000	0.148
105.00	-16.40	-6.75	0.00	-238.45	0.00	238.45	2524.10	1262.05	3702.43	1853.97	12.18	-1.163	0.000	0.135
110.00	-15.58	-6.62	0.00	-204.69	0.00	204.69	2468.95	1234.47	3509.05	1757.13	13.43	-1.219	0.000	0.123
115.00	-14.78	-6.48	0.00	-171.61	0.00	171.61	2412.36	1206.18	3318.73	1661.83	14.74	-1.270	0.000	0.109
119.25	-14.12	-6.35	0.00	-144.09	0.00	144.09	2363.14	1181.57	3159.50	1582.10	15.88	-1.310	0.000	0.097
120.00	-13.93	-6.33	0.00	-139.32	0.00	139.32	2354.34	1177.17	3131.65	1568.15	16.09	-1.317	0.000	0.095
122.00	-11.84	-5.45	0.00	-126.65	0.00	126.65	2330.73	1165.37	3057.78	1531.16	16.65	-1.335	0.000	0.088
123.50	-11.51	-5.41	0.00	-118.48	0.00	118.48	1751.58	875.79	2319.28	1161.36	17.07	-1.348	0.000	0.109
124.50	-10.86	-5.06	0.00	-113.07	0.00	113.07	1743.79	871.89	2293.08	1148.24	17.35	-1.356	0.000	0.105
125.00	-10.80	-5.05	0.00	-110.53	0.00	110.53	1739.87	869.94	2280.00	1141.69	17.49	-1.361	0.000	0.103
130.00	-10.23	-4.93	0.00	-85.27	0.00	85.27	1699.92	849.96	2150.20	1076.70	18.94	-1.404	0.000	0.085
132.00	-7.55	-3.27	0.00	-75.40	0.00	75.40	1683.54	841.77	2098.80	1050.96	19.54	-1.419	0.000	0.076
135.00	-7.26	-3.20	0.00	-65.58	0.00	65.58	1658.53	829.27	2022.29	1012.65	20.43	-1.441	0.000	0.069
140.00	-6.79	-3.09	0.00	-49.56	0.00	49.56	1615.71	807.86	1896.47	949.64	21.96	-1.472	0.000	0.056
145.00	-6.33	-2.98	0.00	-34.10	0.00	34.10	1571.46	785.73	1772.93	887.78	23.52	-1.497	0.000	0.042
150.00	-5.89	-2.87	0.00	-19.21	0.00	19.21	1525.77	762.88	1651.87	827.16	25.10	-1.516	0.000	0.027
152.00	-2.91	-1.41	0.00	-13.47	0.00	13.47	1507.09	753.54	1604.19	803.29	25.73	-1.521	0.000	0.019
155.00	-2.69	-1.34	0.00	-9.26	0.00	9.26	1478.64	739.32	1533.49	767.89	26.69	-1.526	0.000	0.014
160.00	-2.34	-1.24	0.00	-2.54	0.00	2.54	1426.03	713.01	1413.96	708.03	28.29	-1.531	0.000	0.005
162.00	0.00	-1.18	0.00	-0.06	0.00	0.06	1400.09	700.04	1362.73	682.38	28.93	-1.532	0.000	0.000

Final Analysis Summary

Structure:	CT01698-S-SBA	**Code:**	EIA/TIA-222-G	8/6/2019	
Site Name:	Durham	**Exposure:**	C		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

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 97 mph Wind	40.2	0.00	54.17	0.00	0.00	4753.06
0.9D + 1.6W 97 mph Wind	40.2	0.00	40.61	0.00	0.00	4702.39
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.3	0.00	95.98	0.00	0.00	1346.59
1.2D + 1.0E	1.9	0.00	54.24	0.00	0.00	238.97
0.9D + 1.0E	1.9	0.00	40.68	0.00	0.00	236.18
1.0D + 1.0W 60 mph Wind	9.6	0.00	45.19	0.00	0.00	1130.40

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 97 mph Wind	-35.70	-36.44	0.00	-3012.8	0.00	-3012.8	3936.38	1968.1	7803.92	3907.76	45.00	0.780
0.9D + 1.6W 97 mph Wind	-26.48	-36.10	0.00	-2970.5	0.00	-2970.5	3936.38	1968.1	7803.92	3907.76	45.00	0.767
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-70.27	-10.38	0.00	-853.45	0.00	-853.45	3936.38	1968.1	7803.92	3907.76	45.00	0.236
1.2D + 1.0E	-25.70	-1.41	0.00	-100.47	0.00	-100.47	2742.50	1371.2	4553.78	2280.28	83.75	0.053
0.9D + 1.0E	-19.27	-1.39	0.00	-98.93	0.00	-98.93	2742.50	1371.2	4553.78	2280.28	83.75	0.050
1.0D + 1.0W 60 mph Wind	-30.73	-8.66	0.00	-715.56	0.00	-715.56	3936.38	1968.1	7803.92	3907.76	45.00	0.191

Monopole Mat Foundation Design

				Date
				8/6/2019
	Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	162
	Site Number:	CT01698-S-SBA	**Engineer Name:**	F. Arinyedokia
	Engr. Number:	77166	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

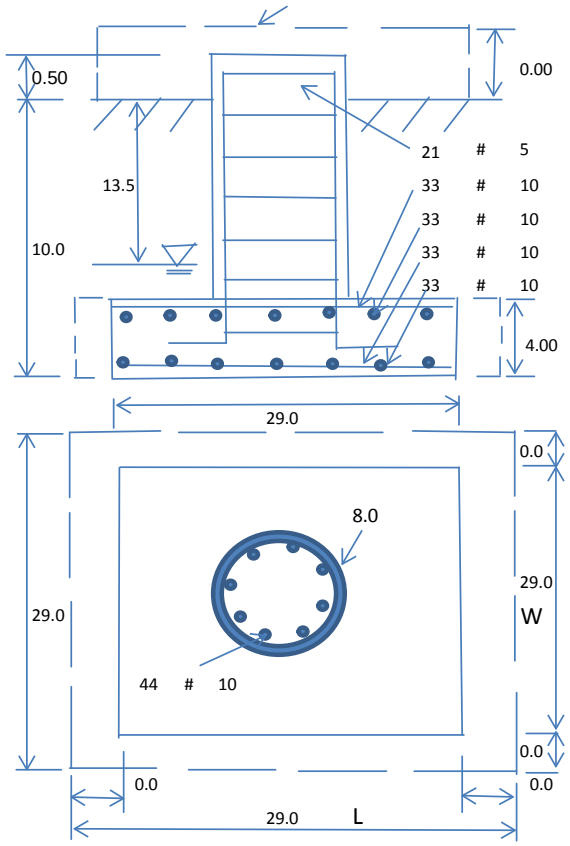
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	55.1	Shear Force (Kips):	40.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4826.5
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	10.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	29	Width of Pad (ft.):	29
Final Length of pad (ft)	29.0	Final width of pad (ft):	29.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	44	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	58.0	Pcf		
Water Table B.G.S. (ft):	13.5	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

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

Total Dry Soil Volume (cu. Ft.):	4744.41	Total Dry Soil Weight (Kips):	569.33
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	569.33	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3690.73	Total Dry Concrete Weight (Kips):	553.61
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	553.61	Total Vertical Load on Base (Kips):	1178.04

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2511	<	Allowable Factored Soil Bearing (psf):	3000	0.84	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	15453.3	>	Design Factored Momont (kips-ft):	5253	0.34	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.94	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.27		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	10399.3	>	Design Factored Moment (Mu, Kips-F	5090.4	0.49	OK!
Calculated Shear Capacity (Kips):	912.1	>	Design Factored Shear (Kips):	40.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3017.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9523.8	>	Design Factored Axial Load (Pu Kips):	55.1	0.01	OK!
Moment & Axial Strength Combination:	0.49	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.008		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1268.7	>	One-Way Factored Shear (L-D. Kips):	301.1	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1268.7	>	One-Way Factored Shear (W-D., Kips)	301.1	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1120.7	>	One-Way Factored Shear (C-C, Kips):	285.2	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0027		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	8101.7	>	Moment at Bottom (L-Dir. K-Ft):	2081.9	0.26	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	8101.7	>	Moment at Bottom (W-Dir. K-Ft):	2081.9	0.26	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	11366.0	>	Moment at Bottom (C-C Dir. K-Ft):	2944.3	0.26	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0027		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	8101.7	>	Moment at the top (L-Dir K-Ft):	860.7	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	8101.7	>	Moment at the top (W-Dir K-Ft):	860.7	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	11366.0	>	Moment at the top (C-C Dir. K-Ft):	807.1	0.07	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1930.6	k-ft.	Max. factored shear stress v_{u_CD}:		3.1	Psi
Max. factored shear stress v_{u_AB}:	7.4	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	7.4	Psi	Check Usage of Punching Shear Capacity:		0.05	OK!

EXHIBIT 9

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING SUMMIT MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT01698-S

CARRIER SITE #/NAME: CT11287A / DURHAM

COORDINATES (LATITUDE: 41.469574°, LONGITUDE: -72.742250°)

PLEASE NOTE THIS SET OF DRAWINGS ARE FOR INSTALLATION AND ASSEMBLY ONLY. FABRICATION DETAIL DRAWINGS ARE NOT PROVIDED AND MUST BE COMPLETED BY THE STEEL FABRICATOR SELECTED. TES CAN PROVIDE THE FABRICATION DETAIL DRAWINGS FOR AN ADDITIONAL FEE.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
D-2	STANDARD DETAILS	
MS-1436	METROSITE LIGHT COLLAR MOUNT PLATE ASSEMBLY DETAIL	
MPW-1	METROSITE LIGHT COLLAR MOUNT PLATE WELDMENT DETAIL	
MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT	

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. 76901, DATED 06/12/19.

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO: 82795

CUSTOMER SITE NO: CT01698-S-SBA

CUSTOMER SITE NAME: DURHAM

1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

Exp.01/31/2020

STATE OF CONNECTICUT
MICHAPHA A. SI
No. 23865
LICENSED
PROFESSIONAL ENGINEER

08/02/2019

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
2	2	MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT	A-1, MS-HRCP-35	23.0	46.0	Galvanized
1	1	MS-1436	METROSITE LIGHT COLLAR MOUNT ASSEMBLY	A-1, MS-1436	87.0	87.0	Galvanized
			FOLLOWING ITEMS ARE "CUSTOM" PARTS				
6	6	PST2375-6	2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B	D-1	22.60	135.6	GALVANIZED
6	6	L252525-8	L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36	D-1	33.50	201.0	GALVANIZED (FINAL CUT LENGTH TO BE DETERMINED IN FIELD)
12	13	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	D-1	1.45	19.8	(2) HHN & LKW-EA GALVANIZED
18	19	---	BOLT 5/8" X 2" A325	D-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
6	6	PL375-42595	PL 3/8" X 4 1/4" X 9 1/2" A36	D-1	4.40	26.4	GALVANIZED
6	6	AL-533	L 5" X 3" X 1/4" X 3" A36	D-1	1.70	10.2	GALVANIZED
3	3	BRKW-6S	WELDMENT BRACKET	D-1	7.50	22.5	GALVANIZED
6	7	---	BOLT 5/8" X 2 1/4" A325	D-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
6	7	---	BOLT 5/8" X 1 3/4" A325	D-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
6	6	PL2375-2375	PL 3/8" X 7 1/8" X 10" A36	D-2	7.70	46.2	GALVANIZED
24	26	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	D-2	1.17	31.9	(2) HHN & LKW-EA GALVANIZED

ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.

180 IND PARK BLVD COMMERCE, GA 30529
OFFICE: (706) 335-7045
FAX: (706) 335-7056

NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

TOTAL WEIGHT (LBS) = **626.6**

TES

Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
82795

CUSTOMER SITE NO:
CT01698-S-SBA
CUSTOMER SITE NAME:
DURHAM
1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, 2018 CONNECTICUT STATE BUILDING CODE AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.
7. IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
8. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNO. (E70XX UNLESS NOTED OTHERWISE).
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES.
3. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
4. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
5. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC.
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
5. HB HOLLO-BOLT SHALL BE INSTALLED PER ICC ESR-3330 INSTRUCTIONS.

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2015 SECTION 1705 FOR STEEL CONSTRUCTION AND TABLE 1705.3 FOR CONCRETE CONSTRUCTION.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING [a,b]

BOLT LENGTH [c]	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 [d]	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS [d]
NOT MORE THAN $4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN $4d_b$ BUT NOT MORE THAN $8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN $8d_b$ BUT NOT MORE THAN $12d_b$	2/3 TURN	5/6 TURN	1 TURN

[a] NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.

[b] APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

[c] WHEN THE BOLT LENGTH EXCEEDS $12d_b$, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

[d] BEVELED WASHER NOT USED.

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

1. HB12 HOLLO BOLT: 59 FT-LBS
2. HB16 HOLLO BOLT: 140 FT-LBS
3. HB20 HOLLO BOLT: 221 FT-LBS
4. M20 AJAX BOLT: 280 FT-LBS.

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

1. CONTRACTOR'S RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
2. HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPT.
3. CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
5. ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASE, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
6. FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
7. CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
8. ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
9. IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING THE PLATES.
10. PLEASE REPORT ANY FIELD ISSUE TO TES @ 972-483-0607.

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
82795

CUSTOMER SITE NO:
CT01698-S-SBA
CUSTOMER SITE NAME:
DURHAM
1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
GENERAL NOTES

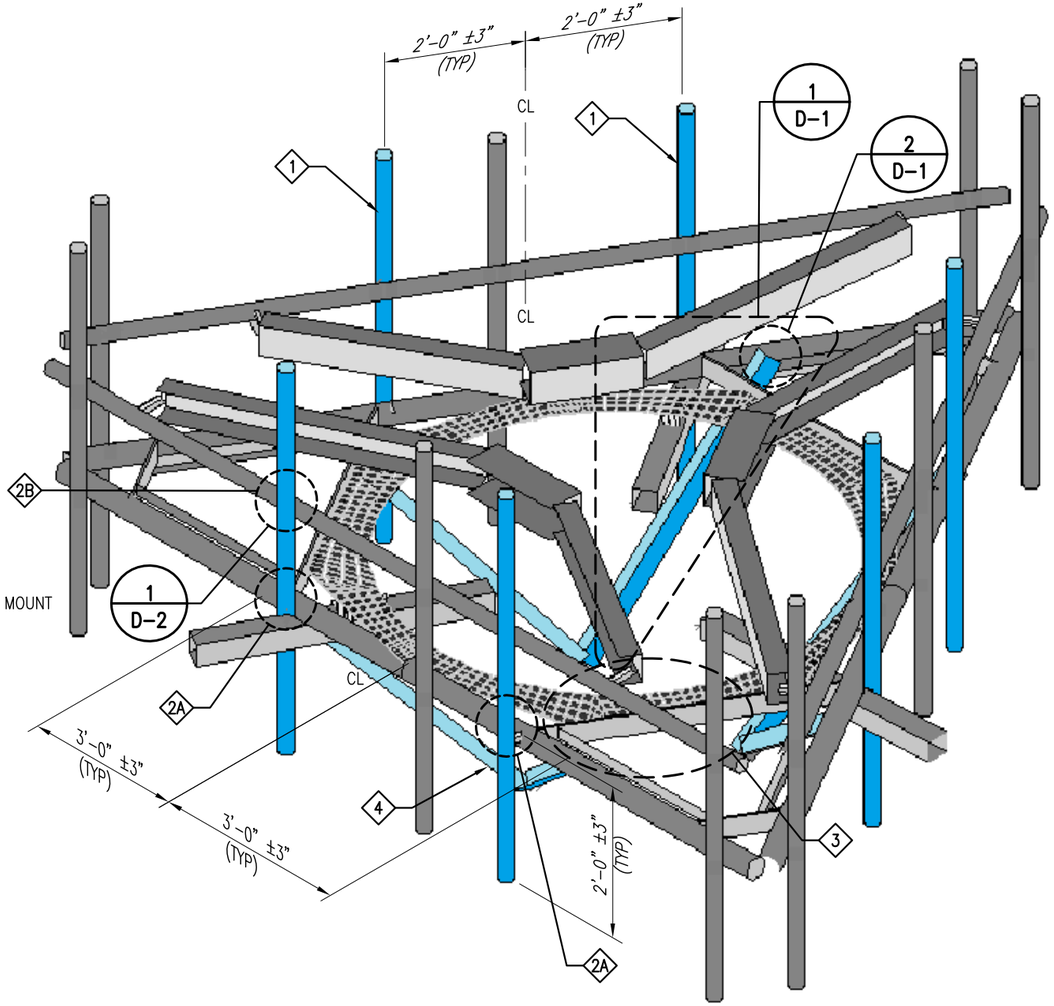
SHEET NUMBER: GN-1
REV #: 0

SCOPE OF WORK

1. INSTALL NEW 2" PST (6'-0" LONG) ANTENNA MOUNT PIPE. (2) PER SECTOR.
2. A. INSTALL NEW SUPPORT RAIL CENTER PIPE KIT TO ATTACH NEW ANTENNA MOUNT PIPES TO THE EXISTING BOTTOM HORIZONTAL. SEE SHEET MS-HRCP-35 FOR DETAILS.

   B. INSTALL NEW CROSSOVER PLATE TO ATTACH NEW ANTENNA MOUNT PIPE TO THE EXISTING TOP HORIZONTAL. SEE SHEET D-2 FOR DETAILS.
3. INSTALL NEW LIGHT COLLAR MOUNT (NOT SHOWN FOR CLARITY). SEE SHEETS D-1 & MS-1436 FOR DETAILS.
4. INSTALL NEW V-BRACING. SEE SHEET D-1 FOR DETAILS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

PHOTO 1



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 152' ELEV.

GC NOTE:
1. **IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES WITH (PORT HOLES, SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.**
2. **PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US**

NOTES:
1. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE LEGS AND/OR ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR.
2. WHEN FIELD CUTTING AND DRILLING ANGLES, USE SAME GAGE LINES AND EDGE DISTANCES AS INDICATED ON SHOP CUT AND DRILLED ENDS.
3. APPLY (2) COATS OF ZINC RICH GALVANIZING COMPOUND AS PER THE MANUFACTURER'S SPECIFICATIONS TO ALL FIELD CUT AND DRILLED AREAS.
4. **MEMBERS IN BLUE COLOR ARE NEW REINFORCEMENTS.**

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	PST2375-6	2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B
2	2	MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO: 82795

CUSTOMER SITE NO: CT01698-S-SBA

CUSTOMER SITE NAME: DURHAM

1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
ANTENNA MOUNT MODIFICATION DETAILS

SHEET NUMBER: A-1

REV #: 0

PHOTO 1

PHOTO 2

PHOTO 3

Tower Engineering Solutions
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IRVING, TX 75038
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5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
82795

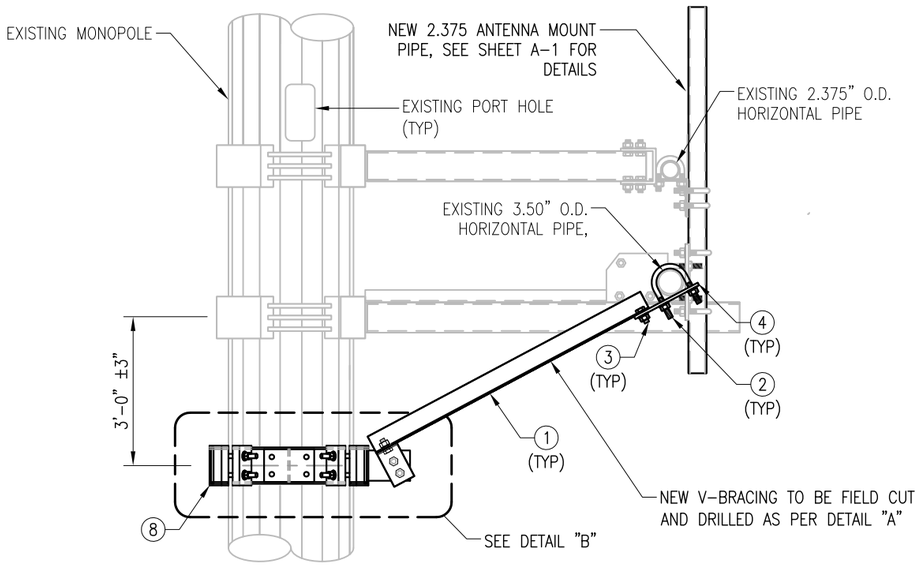
CUSTOMER SITE NO:
CT01698-S-SBA
CUSTOMER SITE NAME:
DURHAM
1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

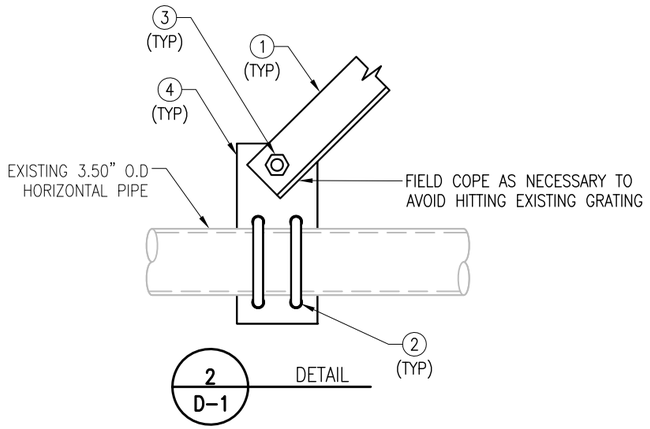
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
ANTENNA MOUNT PHOTOS

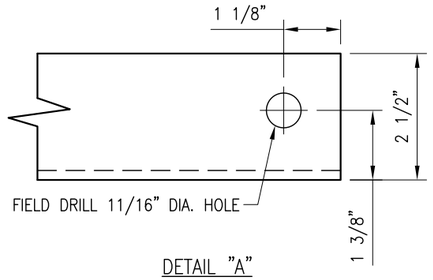
SHEET NUMBER: A-2
REV #: 0



1 / D-1 SIDE VIEW



2 / D-1 DETAIL



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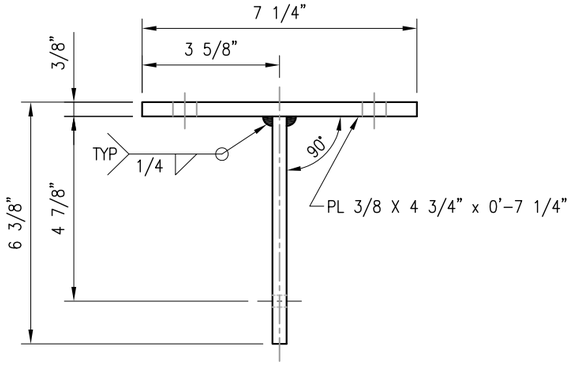
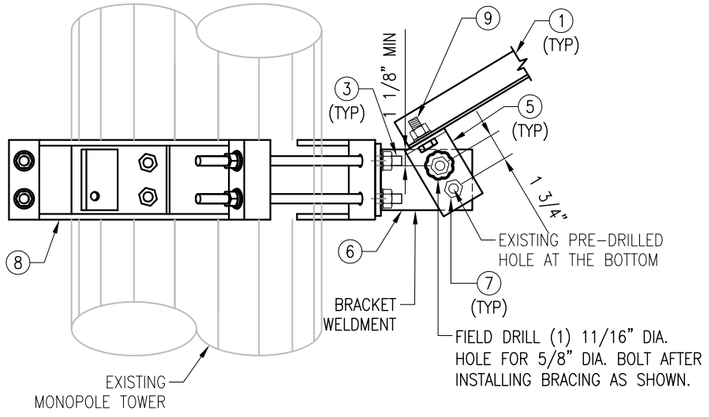


TOP VIEW
BRKW-6S WELDMENT



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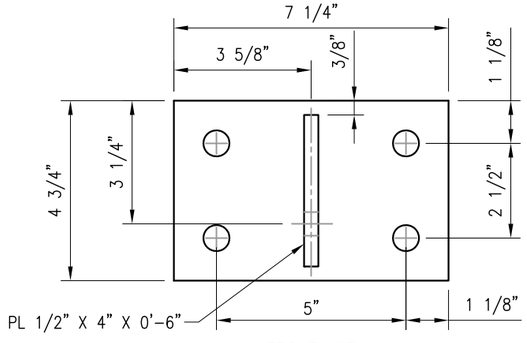

FRONT VIEW
BRKW-6S WELDMENT

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. ALL HOLES ARE 11/16" DIA. U.N.O

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	L252525-8	L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36
2	12	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)
3	18	---	BOLT 5/8" X 2" A325
4	6	PL375-42595	PL 3/8" X 4 1/4" X 9 1/2" A36
5	6	AL-533	L 5" X 3" X 1/4" X 3" A36
6	3	BRKW-6S	WELDMENT BRACKET
7	6	---	BOLT 5/8" X 2 1/4" A325
8	1	MS-1436	METROSITE LIGHT COLLAR MOUNT ASSEMBLY
9	6	---	BOLT 5/8" X 1 3/4" A325

TES
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(800)-487-SITE

TES JOB NO:
82795

CUSTOMER SITE NO:
CT01698-S-SBA

CUSTOMER SITE NAME:
DURHAM

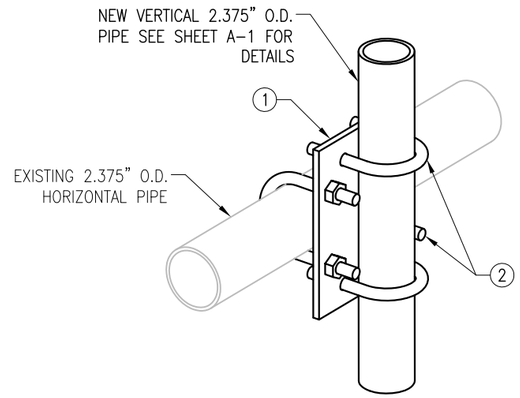
1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
STANDARD DETAILS

SHEET NUMBER: D-1
REV #: 0



1
D-2 DETAIL

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. ALL HOLES ARE 11/16" DIA. U.N.O

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	PL2375-2375	PL 3/8" X 7 1/8" X 10" A36
2	24	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)

TES
Tower Engineering Solutions
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IRVING, TX 75038
PH: (972) 483-0607

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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
82795

CUSTOMER SITE NO:
CT01698-S-SBA
CUSTOMER SITE NAME:
DURHAM
1605 DURHAM ROAD, CT ROUTE 68
WALLINGFORD, CT 06492

DRAWN BY: RK | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	08/02/19

SHEET TITLE:
STANDARD DETAILS

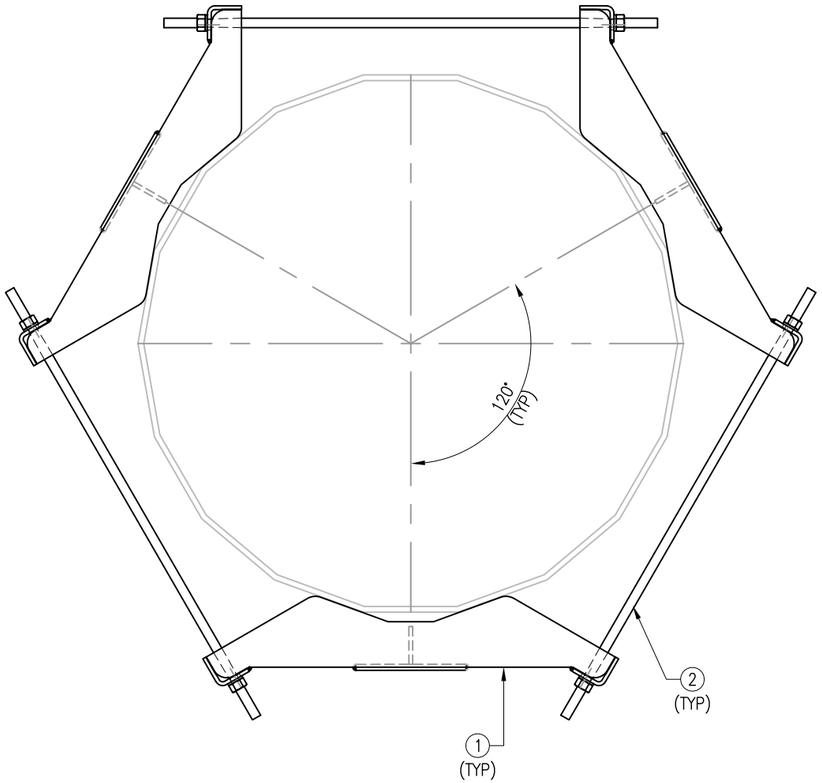
SHEET NUMBER: D-2
REV #: 0

THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

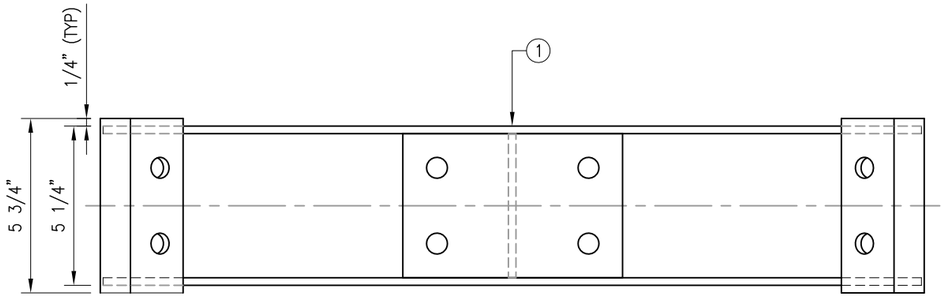
NOTE:
1) FITS 12" DIA TO 32" DIA.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 5/8" X 2'-4 3/4" W/ 2 HHN & LK EA A36

GALVANIZED WEIGHT: 65.6 LBS



TOP VIEW



FRONT VIEW

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH
STANDARD SHEET TOLERANCES
DECIMALS .X ± 0.1, .XX ± 0.02, .XXX ± 0.005
ANGLES ± 1°
FRACTIONS ± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

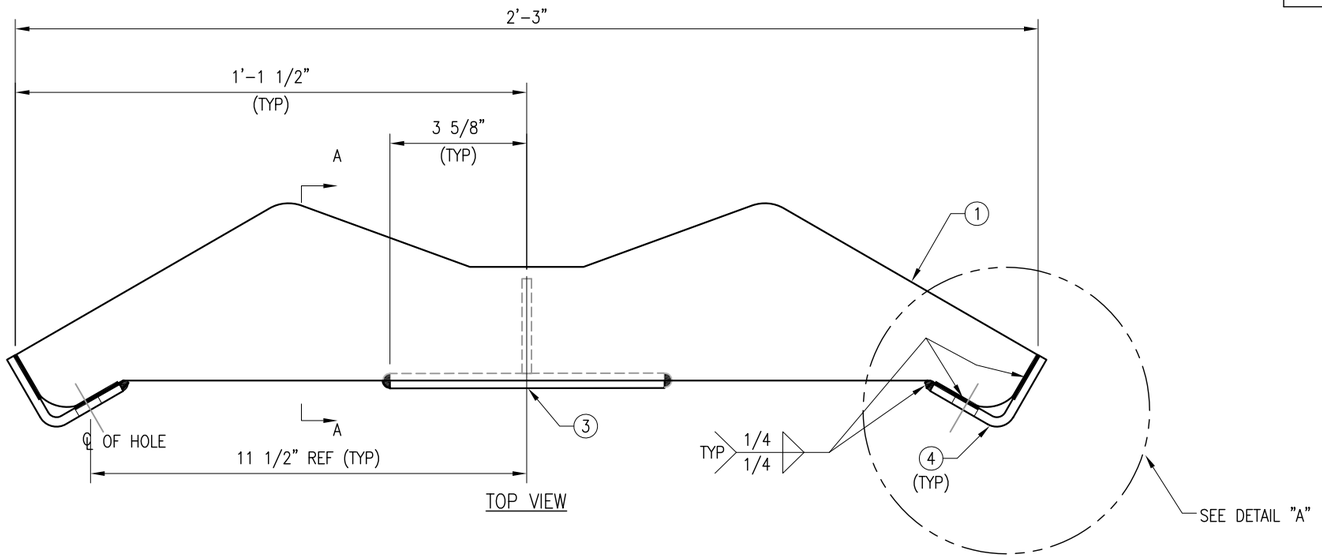
TITLE
LIGHT COLLAR MOUNT PLATE
ASSEMBLY DETAIL MS-1436

SIZE	DWG NO	REV
B	MS-1436	1

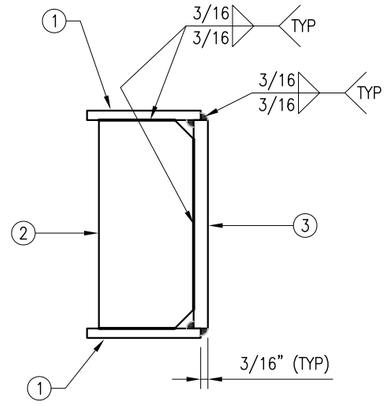
SCALE -
SHEET 1 OF 1

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. WELD TYPE: E70XX.

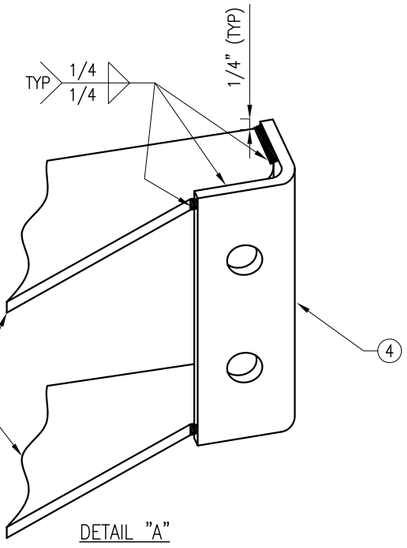
MPW-1 WELDMENT						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	2	PL-1	PL 1/4" X 5 3/8" X 2'-3"	A36	F-2	12.6
2	1	PL-2	PL 1/4" X 2 1/2" X 0'-4 3/4"	A36	F-2	.83
3	1	PL-3	PL 3/8" X 4 3/4" X 0'-7 1/4"	A36	F-2	3.7
4	2	PL-8	PL 1/4" x 4 1/8" x 5 3/4"	A36	F-2	3.2
					BLACK WT	20.3
					GALVANIZED WT	21



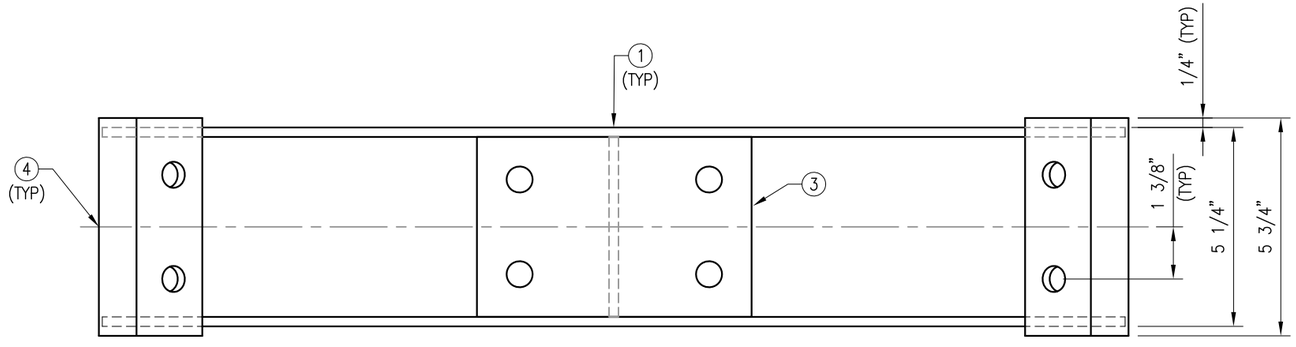
TOP VIEW



SECTION "A-A"



DETAIL "A"



FRONT VIEW

MPW-1 WELDMENT

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE
LIGHT COLLAR MOUNT
PLATE WELDMENT DETAIL

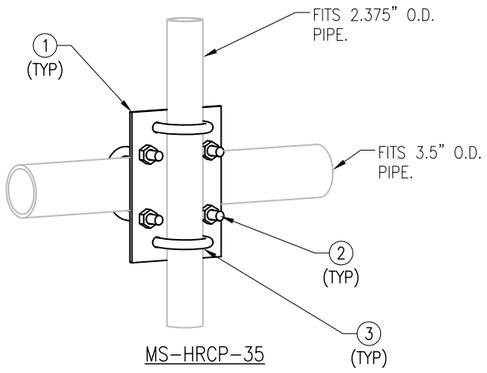
SIZE	DWG NO	REV
B	MPW-1	0

SCALE - SHEET 1 OF 1

NOTES:
1. 1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.

MS-HRCP-35

ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	PL375-10	PL 3/8" X 7 1/8" X 10"	A36	TAF-1	23.1
2	6	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
3	6	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
					GALVANIZED WT	23



THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE
MS-HRCP-35
SUPPORT RAIL CENTER PIPE KIT

SIZE	DWG NO	REV
B	MS-HRCP-35	0

SCALE -
SHEET 1 OF 1

EXHIBIT 10

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11287A

Durham
1605 Durham Road (Rt. 68)
Wallingford, CT 06492

May 15, 2019

Transcom Engineering Project Number: 737001-0003

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**8.09 %**

Transcom Engineering, Inc.

Wireless Network Design and Deployment

May 15, 2019

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

Emissions Analysis for Site: **CT11287A – Durham**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **1605 Durham Road (Rt. 68), Wallingford, 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 & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) 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 **1605 Durham Road (Rt. 68), Wallingford, 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, 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
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, 700 MHz and 1900 MHz (PCS) 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 APXV18-206516S-C-A20	152
A	2	RFS APXVAARR24_43-U-NA20	152
B	1	RFS APXV18-206516S-C-A20	152
B	2	RFS APXVAARR24_43-U-NA20	152
C	1	RFS APXV18-206516S-C-A20	152
C	2	RFS APXVAARR24_43-U-NA20	152

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	1.26
Antenna A2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	0.98
						Sector A Composite MPE%	**2.24**
Antenna B1	RFS APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	1.26
Antenna B2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	0.98
						Sector B Composite MPE%	**2.24**
Antenna C1	RFS APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	1.26
Antenna C2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	0.98
						Sector C Composite MPE%	**2.24**

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	**2.24 %**
Nextel	0.30 %
Verizon Wireless	2.74 %
Sprint	0.42 %
AT&T	2.39 %
Site Total MPE %:	**8.09 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.24 %
T-MOBILE Sector B Total:	2.24 %
T-MOBILE Sector C Total:	2.24 %
Site Total:	8.09 %

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	1,706.32	152	11.51	1900 MHz (PCS)	1000	1.15%
T-Mobile 1900 MHz (PCS) GSM	1	639.87	152	1.08	1900 MHz (PCS)	1000	0.11%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	152	2.66	600 MHz	400	0.67%
T-Mobile 700 MHz LTE	2	432.54	152	1.46	700 MHz	467	0.31%
						Total:	**2.24%**

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:	2.24 %
Sector B:	2.24 %
Sector C:	2.24 %
T-MOBILE Maximum Total (per sector):	2.24 %
Site Total:	8.09 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.09 %** 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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