UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE

November 26, 2019

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

Regarding: Notice of Exempt Modification – AT&T Site CT5050
Address: 197 / 275 North Street, Easton, CT 06612

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (hereinafter "AT&T") currently maintains a wireless telecommunications facility on an existing 185' Monopine Tower (the "Tower") at the above-referenced address, latitude 41.316417, longitude -73.314022. Said Tower is owned by SBA Towers, LLC.

AT&T desires to modify its existing telecommunications facility on the Tower by swapping (6) antennas, swapping (6) remote radio heads, adding (1) surge arrestor with (1) fiber cable and (2) DC power lines as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group LLC, dated October 3, 2019. Please also see the enclosed Mount Analysis prepared by Hudson Design Group LLC dated October 9. 2019. The centerline height of the antennas is and will remain at 155 feet.

The Tower was approved by the Easton Planning and Zoning Commission for a special permit for the Wireless Telecommunication Facility dated July 14, 1999 and recorded on September 9, 1999 (the "Approval"). Please find enclosed a copy of the Approval. The proposed modifications comply with the conditions set forth in the Approval. Enclosed please also find copies of the Council's prior decisions for modifications to the Tower from June 17, 2008 and July 6, 2011.

Please accept this letter as notification pursuant to R.C.S.A §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 following individuals: The Honorable David Bindelglass, First Selectman, Town of Easton; Anthony Ballaro, Building Official, Town of Easton; Robert Maquat, Chair of the Planning and Zoning Commission, Town of Easton; and SBA Towers, LLC as the Tower owner. Please note the Town of Easton, CT is the property owner and the property cards and GIS map are enclosed herein.

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

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

2. The proposed modifications will not require an 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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF Emissions Analysis Report for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the Structural Analysis Report dated October 30, 2019 and prepared by Tower Engineering Solutions enclosed herewith.*

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

Sincerely,

Patricia Nowak
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
pnowak@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings
Exhibit 2 - Mount Analysis
Exhibit 3 – Town Approval and prior CSC Approvals
Exhibit 4 – Property Cards
Exhibit 5 – RF Emissions Analysis Report
Exhibit 6 – Structural Analysis

cc: The Honorable David Bindelglass, First Selectman, Town of Easton
Anthony Ballaro, Building Official, Town of Easton
Robert Maquat, Chair of the Planning and Zoning Commission, Town of Easton
SBA Towers, LLC, Tower owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING MONOPINE:
- NEW AT&T ANTENNAS: DMP65R-BU6DA (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DC & FIBER SURGE ARRESTOR DC6-48-60-18-8C-EV
(TOTAL OF 1) WITH (2) DC POWER & (1) FIBER RUN.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- SWAP BB WITH (2) 6630.
- ADD (1) XMU.
- ADD (1) IDLe.
- ADD (1) DC12.

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS: P65-16-XLH-RR (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:
- (3) ANTENNAS, (6) TMA'S (1) SURGE ARRESTOR,
(12) COAX CABLES, (2) DC POWER & (1) FIBER.

SITE ADDRESS:	275 NORTH STREET EASTON, CT 06612
LATITUDE:	41.316391° N, 41° 18' 59.01" N
LONGITUDE:	73.313598° W, 73° 18' 48.96" W
TYPE OF SITE:	MONOPINE / OUTDOOR
STRUCTURE HEIGHT:	190'-0"±
RAD CENTER:	155'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT5050

SITE NAME: HIGH RIDGE

FA CODE: 10108710

PACE ID: MRCTB040822, MRCTB040832, MRCTB040675, MRCTB040388

PROJECT: LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

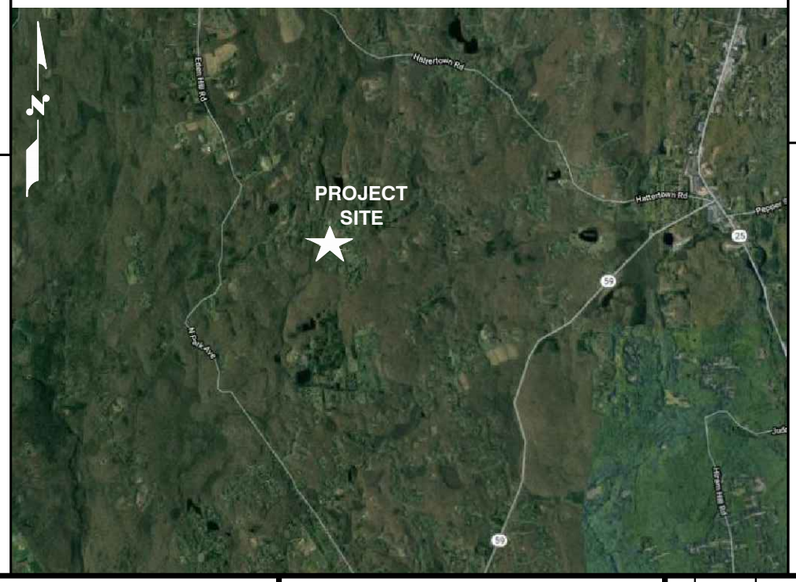
DRAWING INDEX

SBA SITE #: CT00707

VICINITY MAP

DIRECTIONS TO SITE:

UPDATED 10/18 EASTON NORTH CT-050 MERRITT PARKWAY NORTH. GET OFF EXIT 49N (RT 25) FOLLOW TO RT 111. CONTINUE ON RT 25 FOR 3 MILES.MAKE LEFT ONTO RT 59. LOOK FOR NORTH PARKAVE ON RIGHT. TAKE TO END THEN MAKE RIGHT ONTO NORTH ST. LOOK FOR A HILLEY ACCESS ROAD WITH SBA SIGN ON GATE(VISIBLE FROM STREET) ON RIGHT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

STATE OF CONNECTICUT · DANIEL P. HAMM · No.24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	T-1	A

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – CENTERLINE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

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

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

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

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

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 SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, 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.

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 OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. 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.

18. THE EXISTING CELL SITE IS 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.

19. SINCE THE 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 ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

    FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

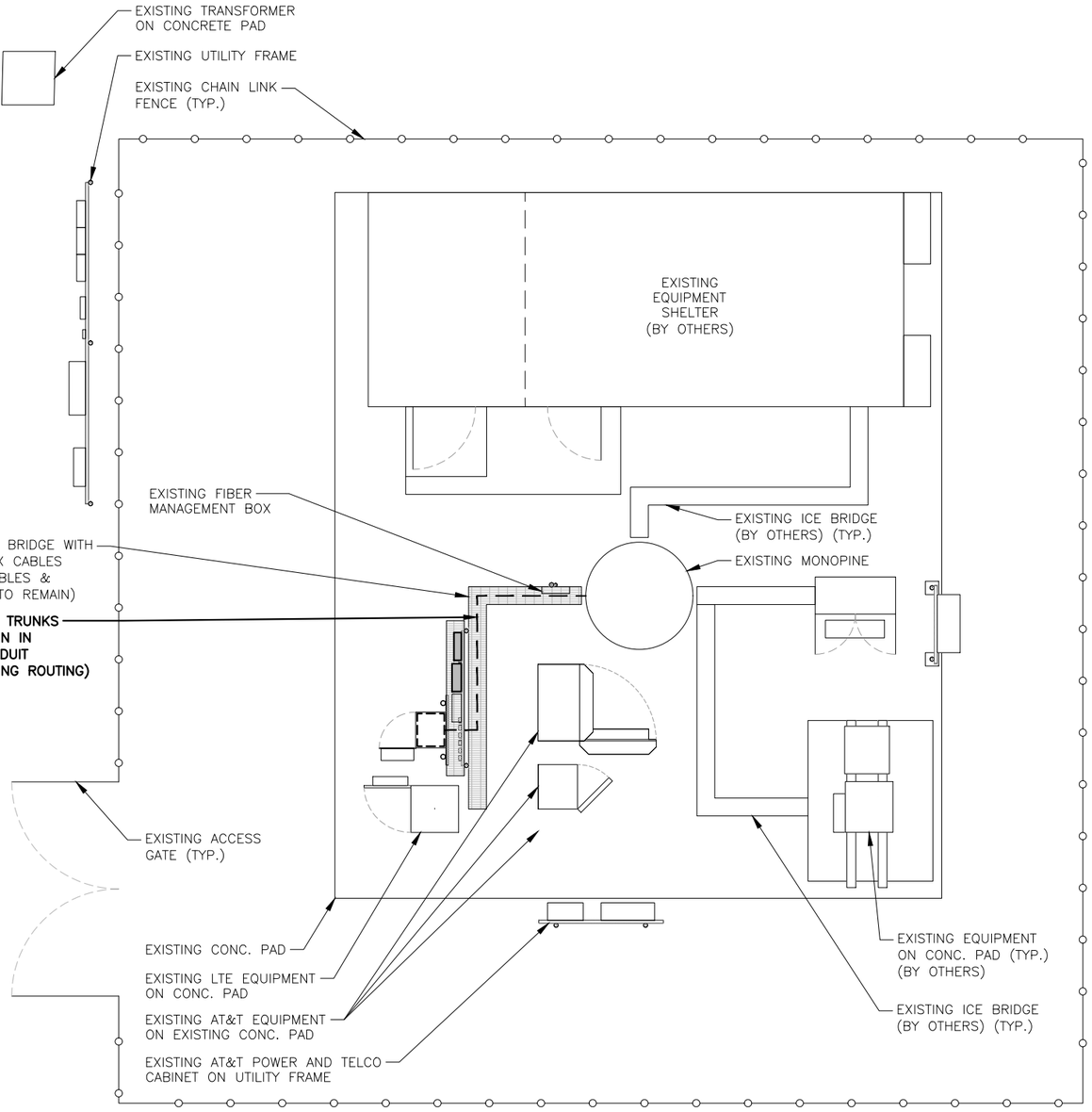
STATE OF CONNECTICUT · DANIEL P. HAMM · No.24178 · LICENSED PROFESSIONAL ENGINEER

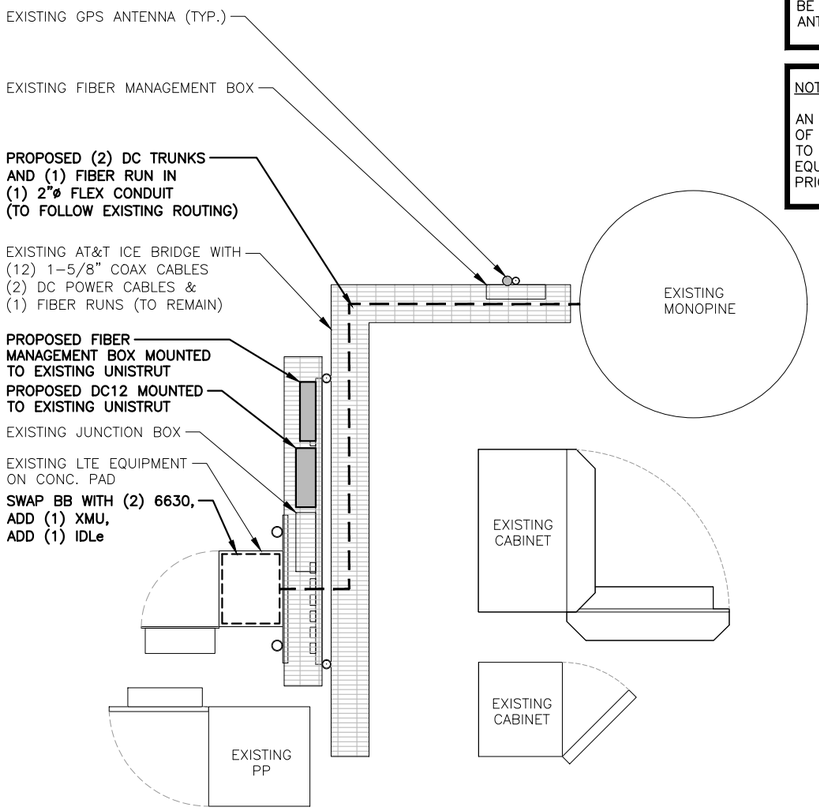
AT&T

GENERAL NOTES

LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	GN-1	A





NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A STRUCTURAL ANALYSIS BE PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

13°21'
MAGNETIC NORTH
TRUE NORTH

COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
0 2'-0" 4'-0" 8'-0" 12'-0"

13°21'
MAGNETIC NORTH
TRUE NORTH

EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

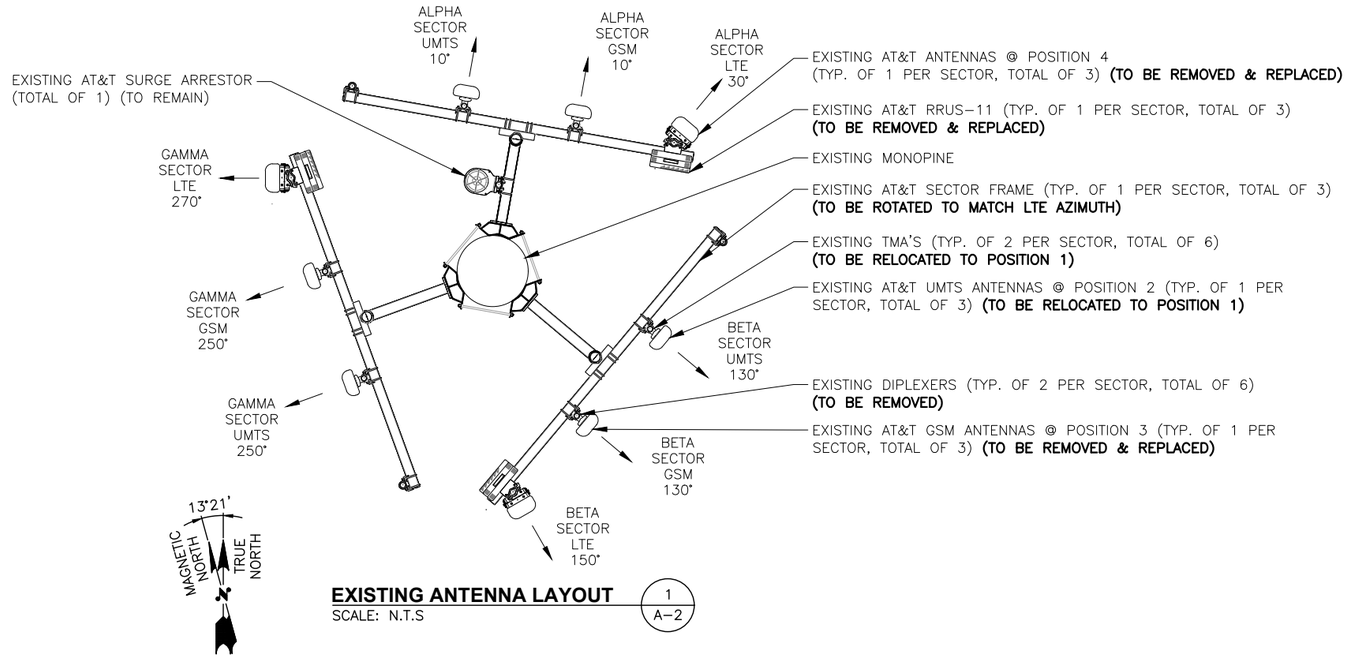
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

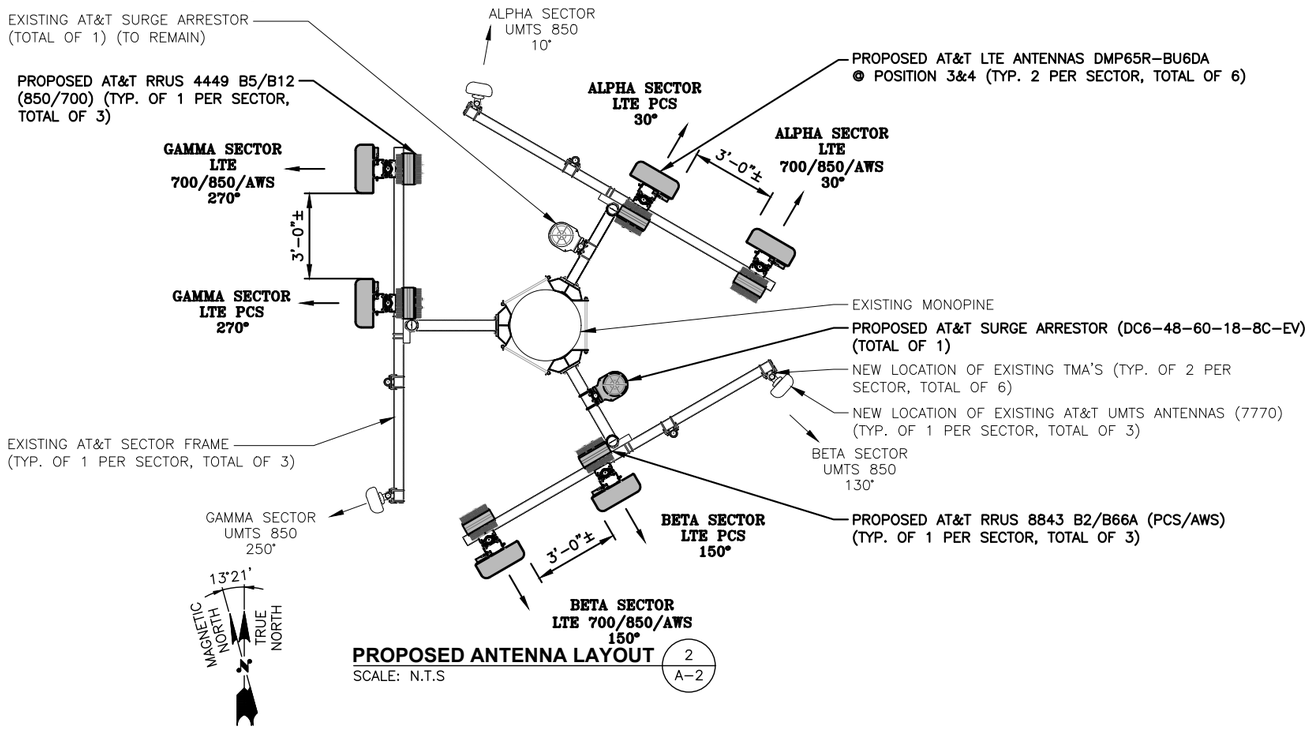
AT&T

COMPOUND & EQUIPMENT PLANS
LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

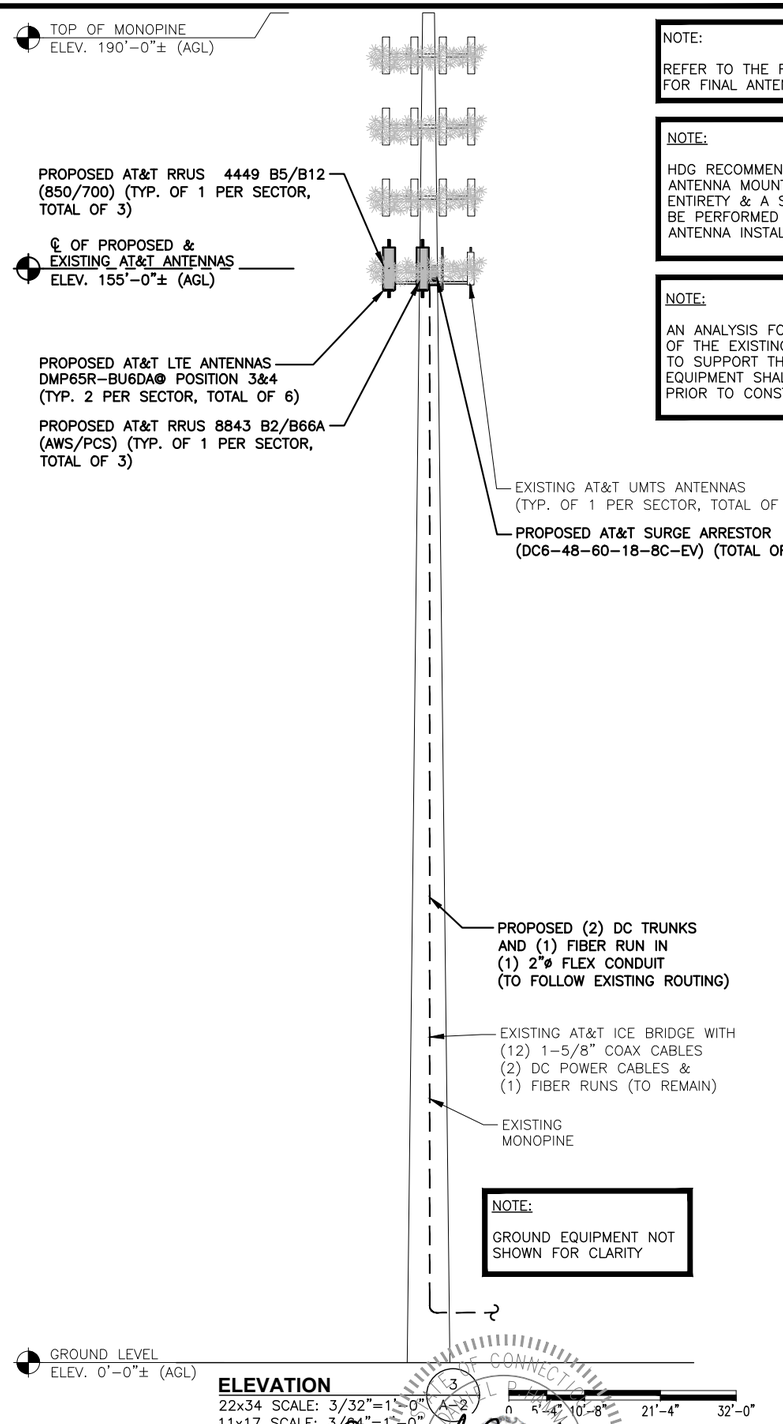
SITE NUMBER	DRAWING NUMBER	REV
CT5050	A-1	A



EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



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



ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A STRUCTURAL ANALYSIS BE PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

Daniel P. Hamm No.24178 LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	A-2	A

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	155'-0"±	10°	(2)(E) LGP21901 (2)(E) LGP21401	–	–	(2)1-5/8 COAX (2)1-5/8 COAX (SPARE)	(E)(1) RAYCAP DC6-48-60-18-8F
A2	–	–	–	–	–	–	–	–	–	–	
A3	**PROPOSED**	**LTE PCS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**30°**	–	**(P)(1) 8843 B2/B66A**	**14.9X13.2X10.9**	–	
A4	**PROPOSED**	**LTE 700/850/AWS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**30°**	–	**(P)(1) 4449 B5/B12**	**14.9X13.2X10.4**	–	
B1	EXISTING	UMTS 850	7770	55X11X5	155'-0"±	130°	(2)(E) LGP21901 (2)(E) LGP21401	–	–	(2)1-5/8 COAX (2)1-5/8 COAX (SPARE)	**(P)(1) RAYCAP DC6-48-60-18-8C-EV**
B2	–	–	–	–	–	–	–	–	–	–	
B3	**PROPOSED**	**LTE PCS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**150°**	–	**(P)(1) 8843 B2/B66A**	**14.9X13.2X10.9**	–	
B4	**PROPOSED**	**LTE 700/850/AWS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**150°**	–	**(P)(1) 4449 B5/B12**	**14.9X13.2X10.4**	–	
C1	EXISTING	UMTS 850	7770	55X11X5	155'-0"±	250°	(2)(E) LGP21901 (2)(E) LGP21401	–	–	(2)1-5/8 COAX (2)1-5/8 COAX (SPARE)	
C2	–	–	–	–	–	–	–	–	–	–	
C3	**PROPOSED**	**LTE PCS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**270°**	–	**(P)(1) 8843 B2/B66A**	**14.9X13.2X10.9**	–	
C4	**PROPOSED**	**LTE 700/850/AWS**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**155'-0"±**	**270°**	–	**(P)(1) 4449 B5/B12**	**14.9X13.2X10.4**	–	

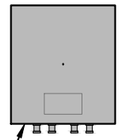
FINAL ANTENNA SCHEDULE 1 / A-3
SCALE: N.T.S

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 (850/700)	14.9"x13.2"x10.4"
P(3)	8843 (AWS/PCS)	14.9"x13.2"x10.9"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

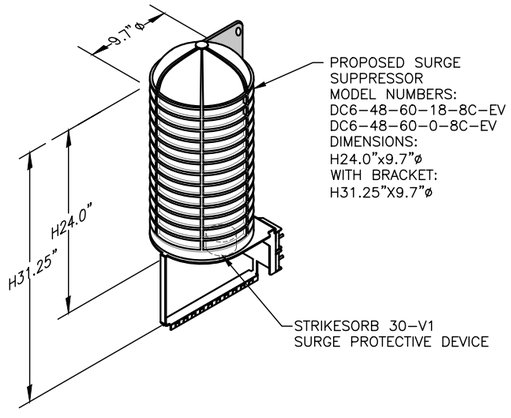
PROPOSED RRUS DETAIL 2 / A-3
SCALE: N.T.S

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A STRUCTURAL ANALYSIS BE PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

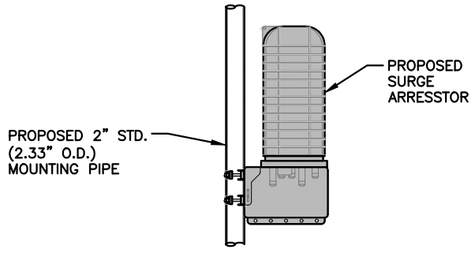
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
MAINTAIN 8" (MIN.) BETWEEN RRH(S) AND BACK OF ANTENNA(S).



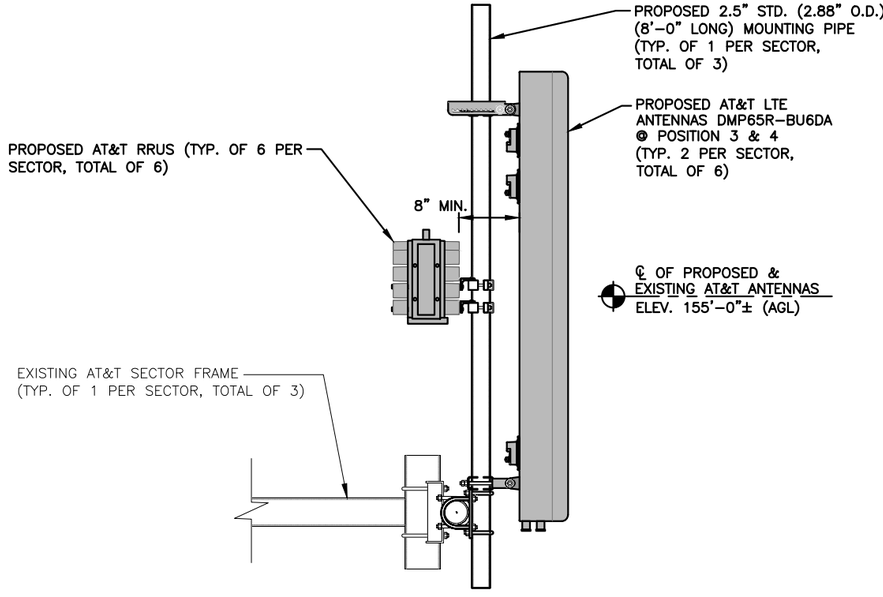
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL 3 / A-3
SCALE: N.T.S



PROPOSED SURGE ARRESTOR MOUNTING DETAIL 4 / A-3
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED LTE ANTENNA MOUNTING DETAIL 5 / A-3
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

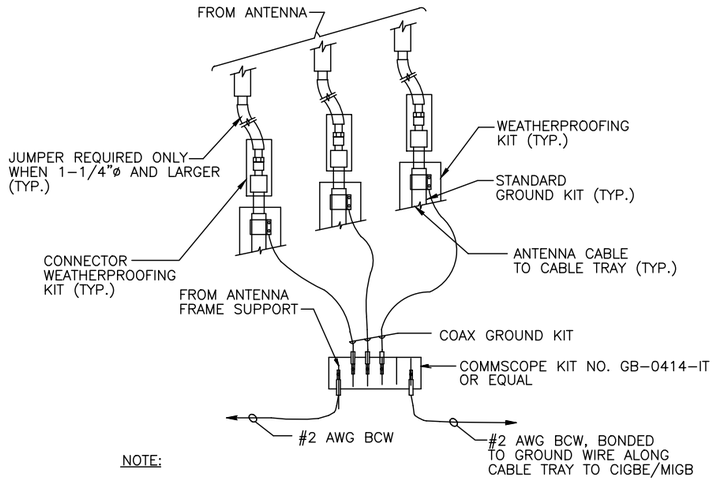
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

Daniel P. Hamm
No. 24178
STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	A-3	A

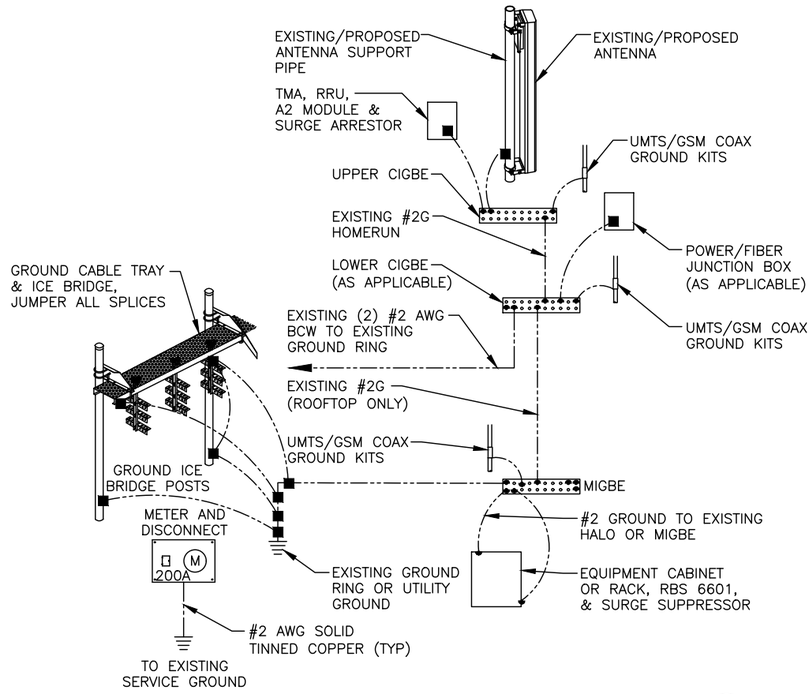


NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

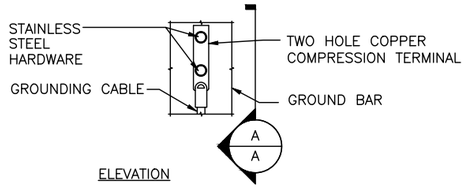
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL (3 / G-1)

SCALE: N.T.S

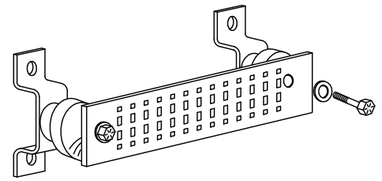
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
+24V POWER SUPPLY RETURN BAR (#2 AWG)
-48V POWER SUPPLY RETURN BAR (#2 AWG)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2 AWG)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL (4 / G-1)

SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

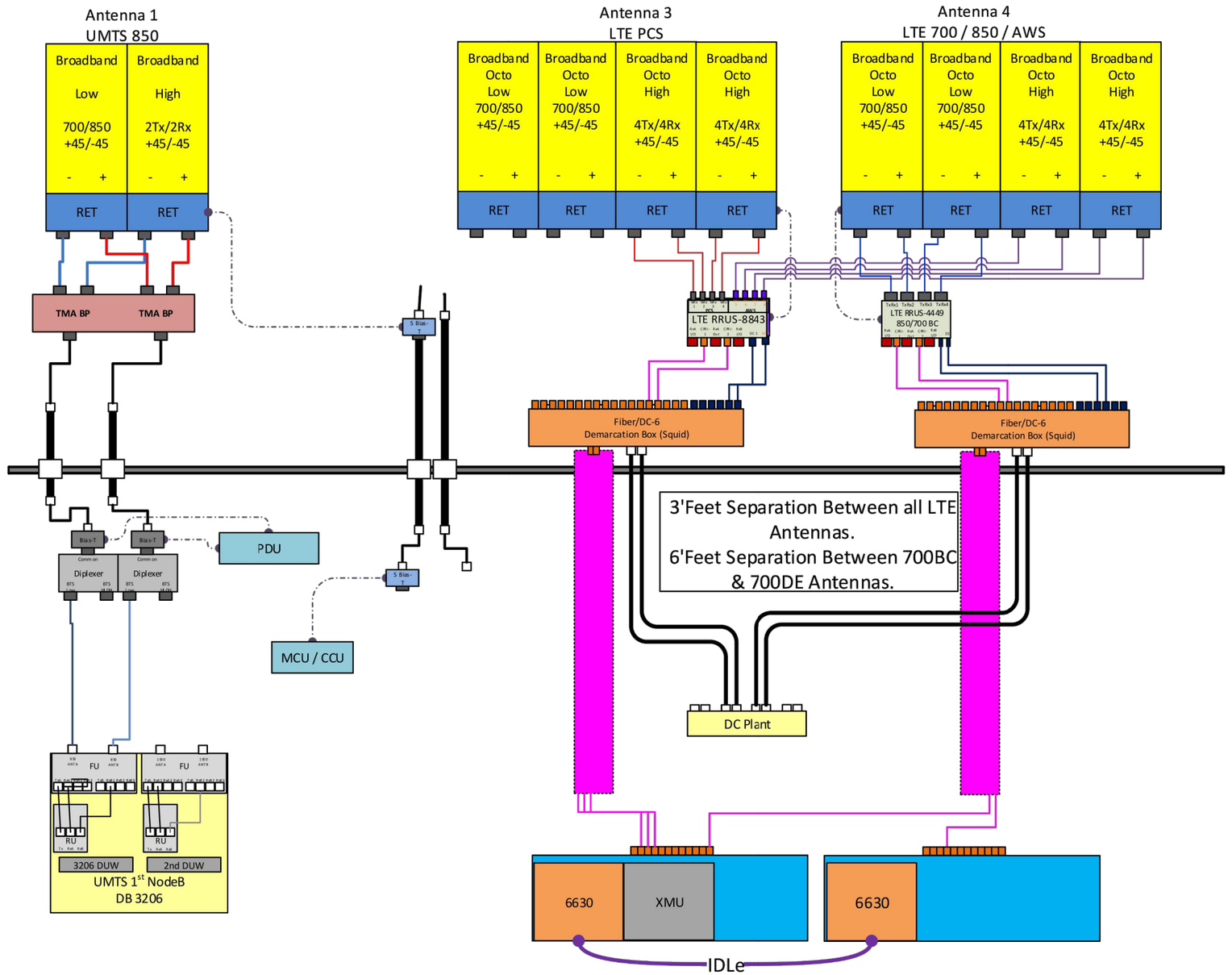
STATE OF CONNECTICUT — DANIEL P. HAMM — No.24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS

LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	G-1	A



RF PLUMBING DIAGRAM 1 RF–1
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5050
SITE NAME: HIGH RIDGE
SBA SITE # ID: CT00707

275 NORTH STREET
EASTON, CT 06612
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	10/03/19	ISSUED FOR REVIEW	RP	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RP

AT&T

RF PLUMBING DIAGRAM
LTE 2C_3C_4C 4TX4RX 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5050	RF–1	A

EXHIBIT 2

October 9, 2019

CENTERLINE COMMUNICATIONS at&t

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE:		
	Site Number:	CT5050 (LTE 2C/3C/4C)
	FA Number:	10108710
	PACE Number:	MRCTB040822
	PT Number:	2051A0PQVF
	Site Name:	HIGH RIDGE
	Site Address:	275 North Street Easton, CT 06612

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (6) LGP 21903 Diplexers (6.3"x4.4"x3.0" – Wt. = 6 lbs. /each) (Ground)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(6) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on June 27, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.17 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- AT&T policy forbids walking on or suspending below T-arm mounts. This Analysis does not include live load conditions for this mount.
- The existing mount is secured to the existing monopine with a ring mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mounts **ARE NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new 2" std. (2.38" O.D.) horizontal pipe secured to existing antenna pipes (typ. of 1 per sector, total of 3).**
- **Install new 2" std. (2.38" O.D.) pipe brace secured to existing mount and adjacent mount standoff (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C/3C/4C) Mount Rating	2	LC2	115%	**FAIL**
Modified (LTE 2C/3C/4C) Mount Rating	10	LC1	98%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

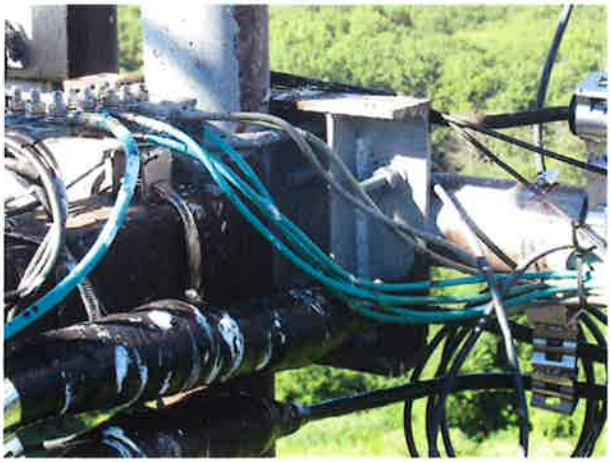
Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:



p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01 (z/z_g)^{2/\alpha}$

	z=	156 (ft)
	z_g=	1200 (ft)
K_z= **1.122**	α=	7.0

$Kzmin \leq Kz \leq 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= **#DIV/0!**

K_h=	#DIV/0!	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	156	
z_s=	570	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	0.98	(from 2.6.8)

(If Category 1 then K_{zt} =1.0)

Category=	1

2.6.10 Design Ice Thickness

Max Ice Thickness =
Importance Factor =

t_i =	**1.00**	in
I=	**1.0**	(from Table 2-3)
K_{iz} =	**1.17**	(from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = **1.17** in

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	190	G_h=	0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$$F = q_z * G_h * (EPA)_A$$

$$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$$

		K_z=	1.122	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**45.18**	K_e=	0.98	(from 2.6.8)
$q_{z\,(ice)}$=	**6.68**	K_d=	0.95	(from Table 2-2)
$q_{z\,(30)}$=	**2.41**	V_{max}=	130	mph (Ultimate Wind Speed)
		$V_{max\,(ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.17** in | **Angle = 0 (deg)** | **Equivalent Angle = 180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**249**	**47**	**13**
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	**574**	**98**	**31**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	**74**	**15**	**4**
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	**0**	**2**	**0**
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	**74**	**15**	**4**
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	**0**	**2**	**0**
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	**16**	**5**	**1**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**51**	**10**	**3**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**11**	**4**	**1**
3" Pipe	3.5	12.0		0.29	0.29	1.20	**16**	**5**	**1**
4x4 HSS	4.0	12.0		0.33	0.33	1.25	**19**	**5**	**1**

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	**249**	**132**	**220**
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	**574**	**254**	**494**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	**74**	**61**	**71**
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	**37**	**61**	**43**
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	**74**	**58**	**70**
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	**37**	**58**	**42**
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	**16**	**49**	**24**

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.31	2.92	4.30	7.82	1.28	1.43	**45**	**28**	**41**
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.76	5.13	3.19	7.33	1.23	1.41	**97**	**48**	**85**
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	**15**	**13**	**14**
B2/B66A 8843 RRH (Shielded)	17.2	7.8	13.2	0.93	1.58	2.22	1.30	1.20	1.20	**7**	**13**	**9**
B5/B12 4449 RRH	17.2	15.5	12.7	1.86	1.52	1.11	1.35	1.20	1.20	**15**	**12**	**14**
B5/B12 4449 RRH (Shielded)	17.2	7.8	12.7	0.93	1.52	2.22	1.35	1.20	1.20	**7**	**12**	**9**
LGP21401 TMA	16.7	5.0	11.3	0.59	1.32	3.32	1.48	1.24	1.20	**5**	**11**	**6**

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	**13**	**7**	**12**
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	**31**	**14**	**26**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	**4**	**3**	**4**
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	**2**	**3**	**2**
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	**4**	**3**	**4**
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	**2**	**3**	**2**
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	**1**	**3**	**1**

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	249	132	161
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	574	254	334
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	74	61	64
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	56	61	60
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	74	58	62
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	56	58	58
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	16	49	41

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.31	2.92	4.30	7.82	1.28	1.43	45	28	32
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.76	5.13	3.19	7.33	1.23	1.41	97	48	60
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	15	13	13
B2/B66A 8843 RRH (Shielded)	17.2	11.7	13.2	1.39	1.58	1.48	1.30	1.20	1.20	11	13	12
B5/B12 4449 RRH	17.2	15.5	12.7	1.86	1.52	1.11	1.35	1.20	1.20	15	12	13
B5/B12 4449 RRH (Shielded)	17.2	11.7	12.7	1.39	1.52	1.48	1.35	1.20	1.20	11	12	12
LGP21401 TMA	16.7	5.0	11.3	0.59	1.32	3.32	1.48	1.24	1.20	5	11	9

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	9
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	31	14	18
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	249	132	132
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	574	254	254
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	74	61	61
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	61	61
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	74	58	58
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	58	58
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	16	49	49

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.31	2.92	4.30	7.82	1.28	1.43	45	28	28
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.76	5.13	3.19	7.33	1.23	1.41	97	48	48
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	15	13	13
B2/B66A 8843 RRH (Shielded)	17.2	2.3	13.2	0.28	1.58	7.38	1.30	1.41	1.20	3	13	13
B5/B12 4449 RRH	17.2	15.5	12.7	1.86	1.52	1.11	1.35	1.20	1.20	15	12	12
B5/B12 4449 RRH (Shielded)	17.2	2.3	12.7	0.28	1.52	7.38	1.35	1.41	1.20	3	12	12
LGP21401 TMA	16.7	5.0	11.3	0.59	1.32	3.32	1.48	1.24	1.20	5	11	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	7
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	31	14	14
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	249	132	161
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	574	254	334
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	74	61	64
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	56	61	60
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	74	58	62
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	56	58	58
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	16	49	41

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.31	2.92	4.30	7.82	1.28	1.43	45	28	32
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.76	5.13	3.19	7.33	1.23	1.41	97	48	60
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	15	13	13
B2/B66A 8843 RRH (Shielded)	17.2	11.7	13.2	1.39	1.58	1.48	1.30	1.20	1.20	11	13	12
B5/B12 4449 RRH	17.2	15.5	12.7	1.86	1.52	1.11	1.35	1.20	1.20	15	12	13
B5/B12 4449 RRH (Shielded)	17.2	11.7	12.7	1.39	1.52	1.48	1.35	1.20	1.20	11	12	12
LGP21401 TMA	16.7	5.0	11.3	0.59	1.32	3.32	1.48	1.24	1.20	5	11	9

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	9
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	31	14	18
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.17 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	249	132	220
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	574	254	494
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	74	61	71
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	37	61	43
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	74	58	70
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	37	58	42
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	16	49	24

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.31	2.92	4.30	7.82	1.28	1.43	45	28	41
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.76	5.13	3.19	7.33	1.23	1.41	97	48	85
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	15	13	14
B2/B66A 8843 RRH (Shielded)	17.2	7.8	13.2	0.93	1.58	2.22	1.30	1.20	1.20	7	13	9
B5/B12 4449 RRH	17.2	15.5	12.7	1.86	1.52	1.11	1.35	1.20	1.20	15	12	14
B5/B12 4449 RRH (Shielded)	17.2	7.8	12.7	0.93	1.52	2.22	1.35	1.20	1.20	7	12	9
LGP21401 TMA	16.7	5.0	11.3	0.59	1.32	3.32	1.48	1.24	1.20	5	11	6

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	12
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	31	14	26
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	3	2
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	1

Date: 10/9/2019
Project Name: HIGH RIDGE
Project No.: CT5050
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.17 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		87 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		122 lbs

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in):	71.2	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		197 lbs
Weight of object:	80.0 lbs	
Combined weight of ice and object:		277 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		32 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		104 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		32 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		105 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		18 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		37 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		31 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		64 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		7 plf

HSS 4x4

Weight of ice based on total radial SF area:

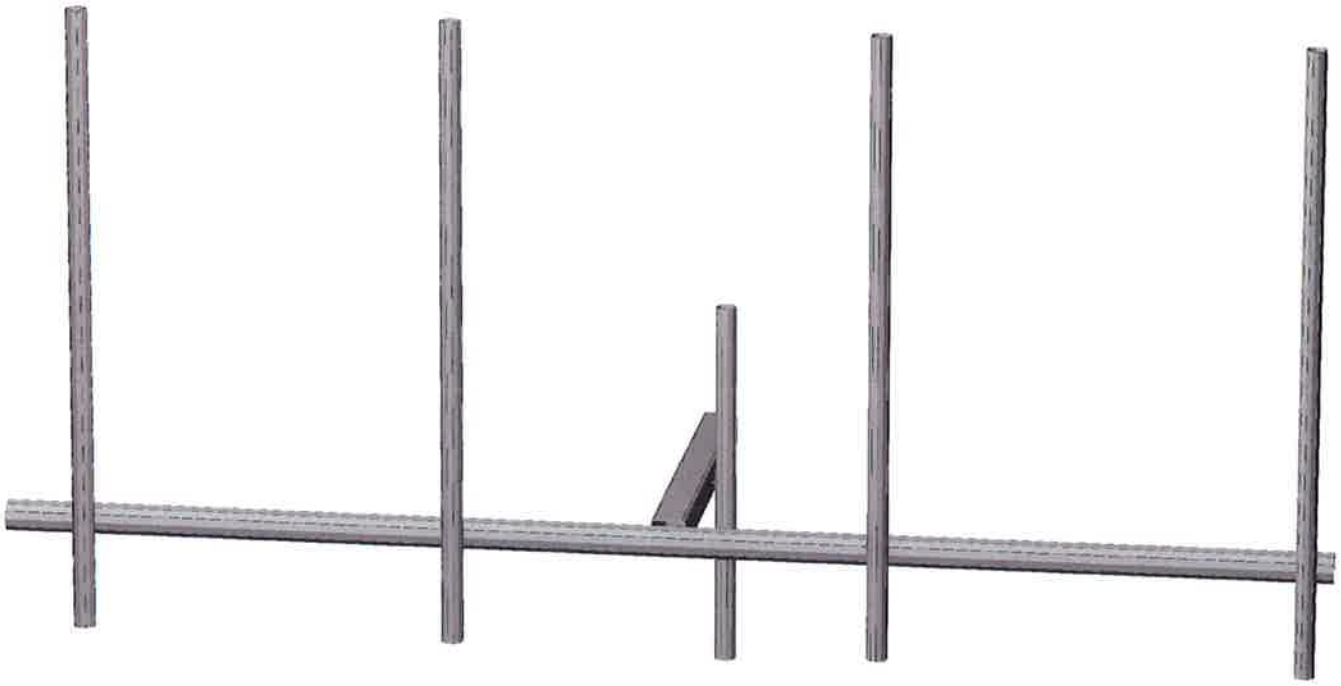
Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

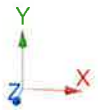
HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

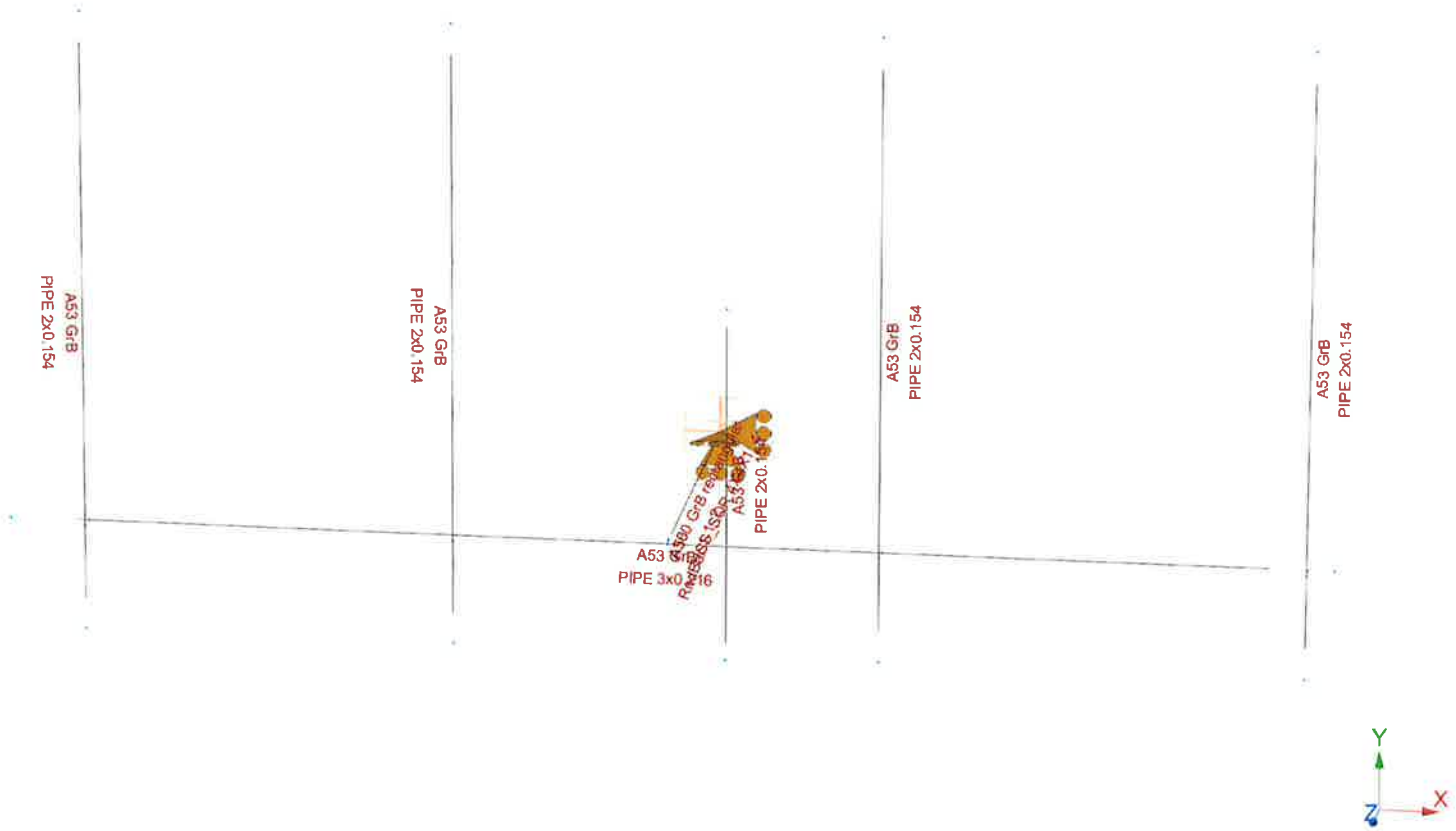
Current Date: 10/9/2019 10:16 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4





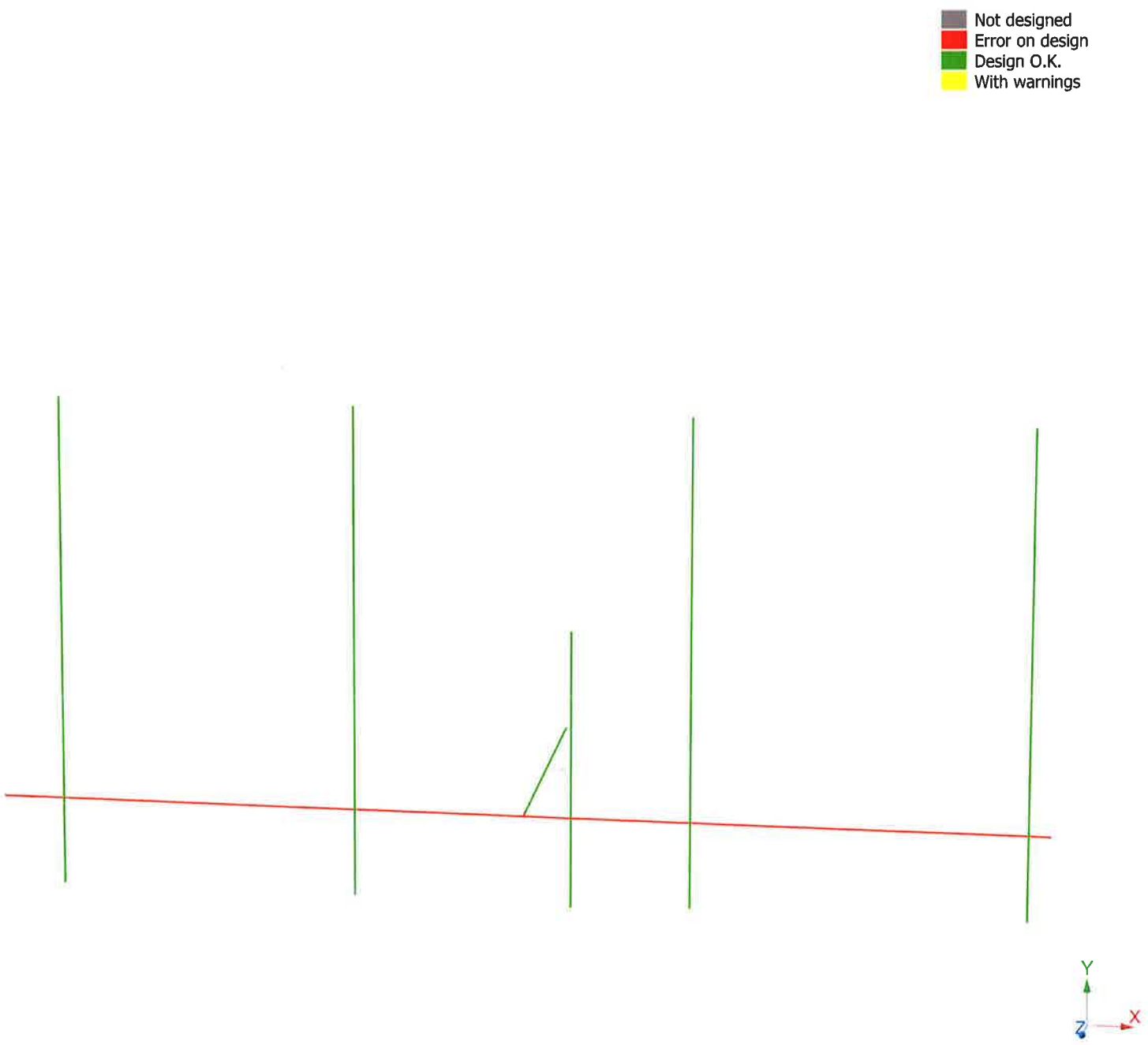
Bentley

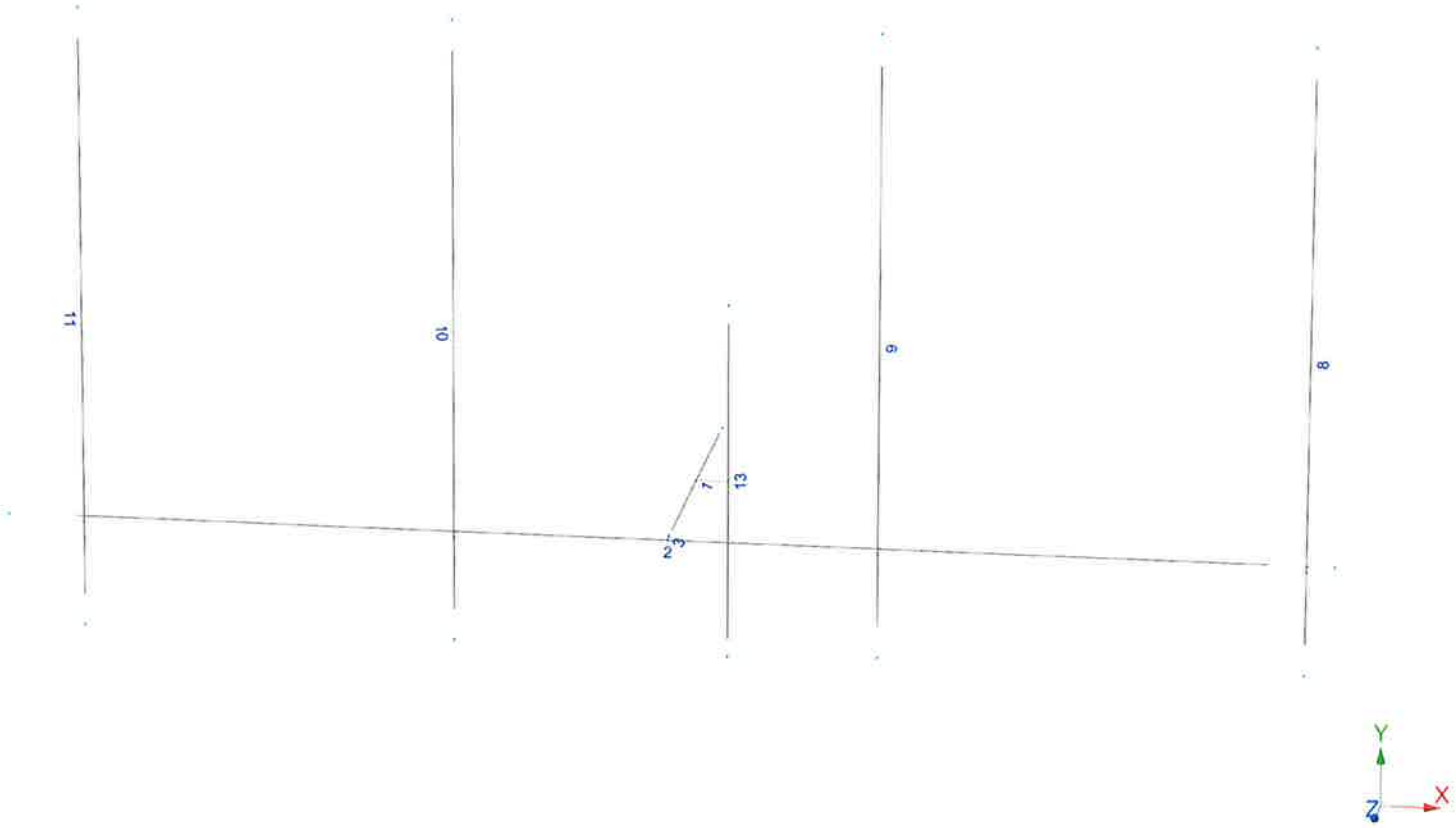
Current Date: 10/9/2019 10:16 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4



Bentley

Current Date: 10/9/2019 10:16 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4




11
10
9
8
7
13
2
3
Y
X
Z

Bentley

Current Date: 10/9/2019 10:16 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C).retx\

Load data

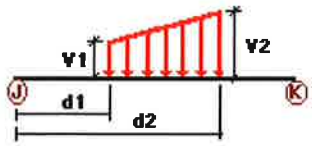
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND

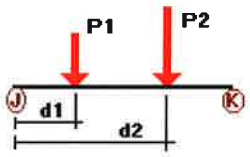
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.016	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	13	z	-0.011	0.00	0.00	No	0.00	No
W30	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.016	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	13	z	-0.011	0.00	0.00	No	0.00	No

W60	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
W90	1	x	-0.019	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
W120	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
W150	1	z	0.019	0.00	0.00	No	0.00	No
	2	z	0.016	0.00	0.00	No	0.00	No
	9	z	0.011	0.00	0.00	No	0.00	No
	13	z	0.011	0.00	0.00	No	0.00	No
Di	1	y	-0.01	0.00	0.00	No	0.00	No
	2	y	-0.007	0.00	0.00	No	0.00	No
	8	y	-0.005	0.00	0.00	No	0.00	No
	9	y	-0.005	0.00	0.00	No	0.00	No
	10	y	-0.005	0.00	0.00	No	0.00	No
	11	y	-0.005	0.00	0.00	No	0.00	No
	13	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	8	y	-0.018	0.50	No
		y	-0.018	4.00	No
		y	-0.038	3.00	No
	10	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.072	3.00	No
	11	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.073	3.00	No
	13	y	-0.033	1.00	No
Wo	8	z	-0.125	0.50	No
		z	-0.125	4.00	No
		z	-0.032	3.00	No
	10	z	-0.288	0.50	No

		z	-0.288	5.50	No
	11	z	-0.288	0.50	No
		z	-0.288	5.50	No
	13	z	-0.051	1.00	No
W30	8	3	-0.11	0.50	No
		3	-0.11	4.00	No
		3	-0.049	3.00	No
	10	3	-0.248	0.50	No
		3	-0.248	5.50	No
		3	-0.043	3.00	No
	11	3	-0.248	0.50	No
		3	-0.248	5.50	No
		3	-0.042	3.00	No
	13	3	-0.051	1.00	No
W60	8	3	-0.081	0.50	No
		3	-0.081	4.00	No
		3	-0.081	3.00	No
	10	3	-0.167	0.50	No
		3	-0.167	5.50	No
		3	-0.06	3.00	No
	11	3	-0.167	0.50	No
		3	-0.167	5.50	No
		3	-0.058	3.00	No
	13	3	-0.051	1.00	No
W90	8	x	-0.067	0.50	No
		x	-0.067	4.00	No
		x	-0.098	3.00	No
	10	x	-0.127	0.50	No
		x	-0.127	5.50	No
		x	-0.061	3.00	No
	11	x	-0.127	0.50	No
		x	-0.127	5.50	No
		x	-0.058	3.00	No
	13	x	-0.051	1.00	No
W120	8	2	-0.081	0.50	No
		2	-0.081	4.00	No
		2	-0.081	3.00	No
	10	2	-0.167	0.50	No
		2	-0.167	5.50	No
		2	-0.06	3.00	No
	11	2	-0.167	0.50	No
		2	-0.167	5.50	No
		2	-0.058	3.00	No
	13	2	-0.051	1.00	No
W150	8	2	-0.11	0.50	No
		2	-0.11	4.00	No
		2	-0.049	3.00	No
	10	2	-0.248	0.50	No
		2	-0.248	5.50	No
		2	-0.043	3.00	No
	11	2	-0.248	0.50	No
		2	-0.248	5.50	No
		2	-0.042	3.00	No
	13	2	-0.051	1.00	No
Di	8	y	-0.044	0.50	No
		y	-0.044	4.00	No
		y	-0.036	3.00	No
	10	y	-0.099	0.50	No
		y	-0.099	5.50	No
		y	-0.032	3.00	No

	11	y	-0.099	0.50	No
		y	-0.099	5.50	No
		y	-0.032	3.00	No
	13	y	-0.031	1.00	No
WI0	8	z	-0.024	0.50	No
		z	-0.024	4.00	No
		z	-0.01	3.00	No
	10	z	-0.049	0.50	No
		z	-0.049	5.50	No
		z	-0.002	3.00	No
	11	z	-0.049	0.50	No
		z	-0.049	5.50	No
		z	-0.002	3.00	No
	13	z	-0.01	1.00	No
WI30	8	3	-0.021	0.50	No
		3	-0.021	4.00	No
		3	-0.013	3.00	No
	10	3	-0.043	0.50	No
		3	-0.043	5.50	No
		3	-0.009	3.00	No
	11	3	-0.043	0.50	No
		3	-0.043	5.50	No
		3	-0.009	3.00	No
	13	3	-0.01	1.00	No
WI60	8	3	-0.017	0.50	No
		3	-0.017	4.00	No
		3	-0.018	3.00	No
	10	3	-0.031	0.50	No
		3	-0.031	5.50	No
		3	-0.012	3.00	No
	11	3	-0.031	0.50	No
		3	-0.031	5.50	No
		3	-0.012	3.00	No
	13	3	-0.01	1.00	No
WI90	8	x	-0.014	0.50	No
		x	-0.014	4.00	No
		x	-0.021	3.00	No
	10	x	-0.025	0.50	No
		x	-0.025	5.50	No
		x	-0.013	3.00	No
	11	x	-0.025	0.50	No
		x	-0.025	5.50	No
		x	-0.012	3.00	No
	13	x	-0.01	1.00	No
WI120	8	2	-0.017	0.50	No
		2	-0.017	4.00	No
		2	-0.018	3.00	No
	10	2	-0.031	0.50	No
		2	-0.031	5.50	No
		2	-0.012	3.00	No
	11	2	-0.031	0.50	No
		2	-0.031	5.50	No
		2	-0.012	3.00	No
	13	2	-0.01	1.00	No
WI150	8	2	-0.021	0.50	No
		2	-0.021	4.00	No
		2	-0.013	3.00	No
	10	2	-0.043	0.50	No
		2	-0.043	5.50	No
		2	-0.009	3.00	No

	11	2	-0.043	0.50	No
		2	-0.043	5.50	No
		2	-0.009	3.00	No
	13	2	-0.01	1.00	No
WL0	8	z	-0.007	0.50	No
		z	-0.007	4.00	No
		z	-0.002	3.00	No
	10	z	-0.016	0.50	No
		z	-0.016	5.50	No
	11	z	-0.016	0.50	No
		z	-0.016	5.50	No
	13	z	-0.003	1.00	No
WL30	8	3	-0.006	0.50	No
		3	-0.006	4.00	No
		3	-0.003	3.00	No
	10	3	-0.014	0.50	No
		3	-0.014	5.50	No
		3	-0.002	3.00	No
	11	3	-0.014	0.50	No
		3	-0.014	5.50	No
		3	-0.002	3.00	No
	13	3	-0.003	1.00	No
WL60	8	3	-0.005	0.50	No
		3	-0.005	4.00	No
		3	-0.004	3.00	No
	10	3	-0.009	0.50	No
		3	-0.009	5.50	No
		3	-0.003	3.00	No
	11	3	-0.009	0.50	No
		3	-0.009	5.50	No
		3	-0.003	3.00	No
	13	3	-0.003	1.00	No
WL90	8	x	-0.004	0.50	No
		x	-0.004	4.00	No
		x	-0.005	3.00	No
	10	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.003	3.00	No
	11	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.003	3.00	No
	13	x	-0.003	1.00	No
WL120	8	2	-0.005	0.50	No
		2	-0.005	4.00	No
		2	-0.004	3.00	No
	10	2	-0.009	0.50	No
		2	-0.009	5.50	No
		2	-0.003	3.00	No
	11	2	-0.009	0.50	No
		2	-0.009	5.50	No
		2	-0.003	3.00	No
	13	2	-0.003	1.00	No
WL150	8	2	-0.006	0.50	No
		2	-0.006	4.00	No
		2	-0.003	3.00	No
	10	2	-0.014	0.50	No
		2	-0.014	5.50	No
		2	-0.002	3.00	No
	11	2	-0.014	0.50	No
		2	-0.014	5.50	No

	2	-0.002	3.00	No
13	2	-0.003	1.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00

WL150	0.00	0.00	0.00

Bentley

Current Date: 10/11/2019 8:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C).retx\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**1**	LC8 at 0.00%	**0.64**	**OK**	
	PIPE 2x0.154	**8**	LC1 at 81.25%	0.54	OK	
		9	LC8 at 81.25%	0.07	OK	
		10	LC1 at 81.25%	0.96	OK	
		11	LC1 at 81.25%	**0.96**	**OK**	
		13	LC1 at 46.88%	0.04	OK	
	PIPE 3x0.216	**2**	LC2 at 50.00%	**1.15**	**N.G.**	

Bentley

Current Date: 10/9/2019 10:17 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C).retx\

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	0.00	0.00	3.55	0
3	6.25	0.00	3.70	0
4	-6.25	0.00	3.70	0
5	0.00	0.00	3.70	0
14	2.00	-1.00	3.90	0
15	6.00	-1.00	3.90	0
16	-5.50	-1.00	3.90	0
17	-2.00	-1.00	3.90	0
18	2.00	5.00	3.90	0
19	6.00	5.00	3.90	0
20	-5.50	5.00	3.90	0
21	-2.00	5.00	3.90	0
24	0.30	-1.75	1.775	0
25	0.30	1.75	1.775	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	3	4		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
3	2	5		RndBar 1-1_2	A36	0.00	0.00	0.00
8	19	15		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	18	14		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	21	17		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	20	16		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	25	24		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

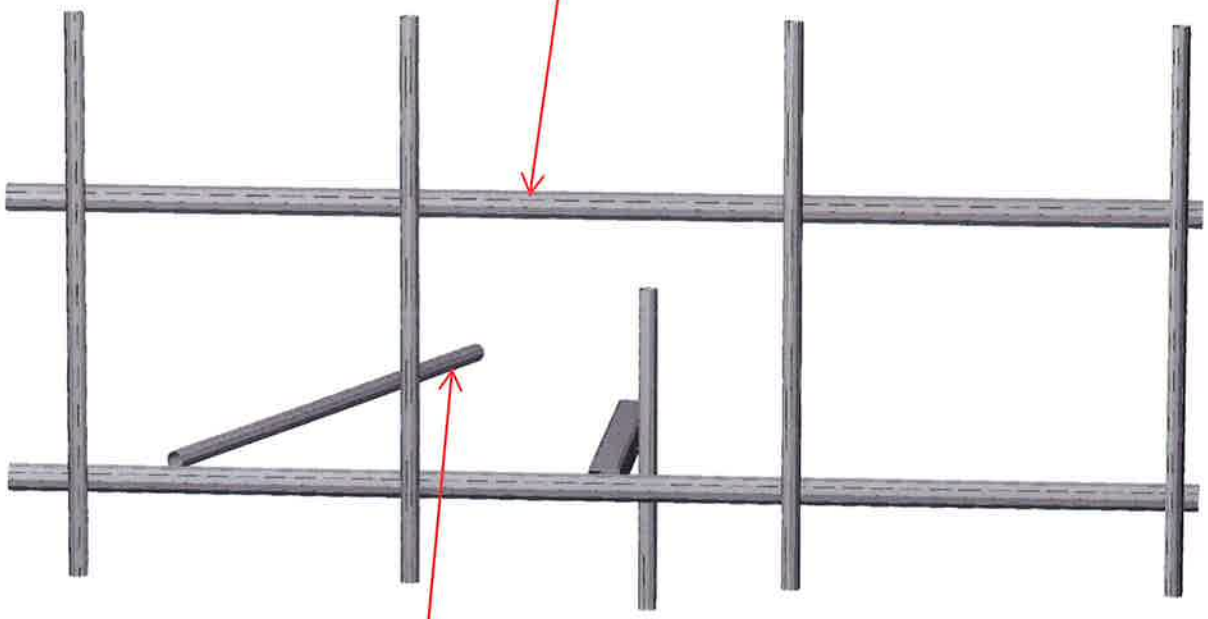
Member	Rotation [Deg]	Axes23	NX	NY	NZ
8	315.00	0	0.00	0.00	0.00
10	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00
13	315.00	0	0.00	0.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Modified Conditions)

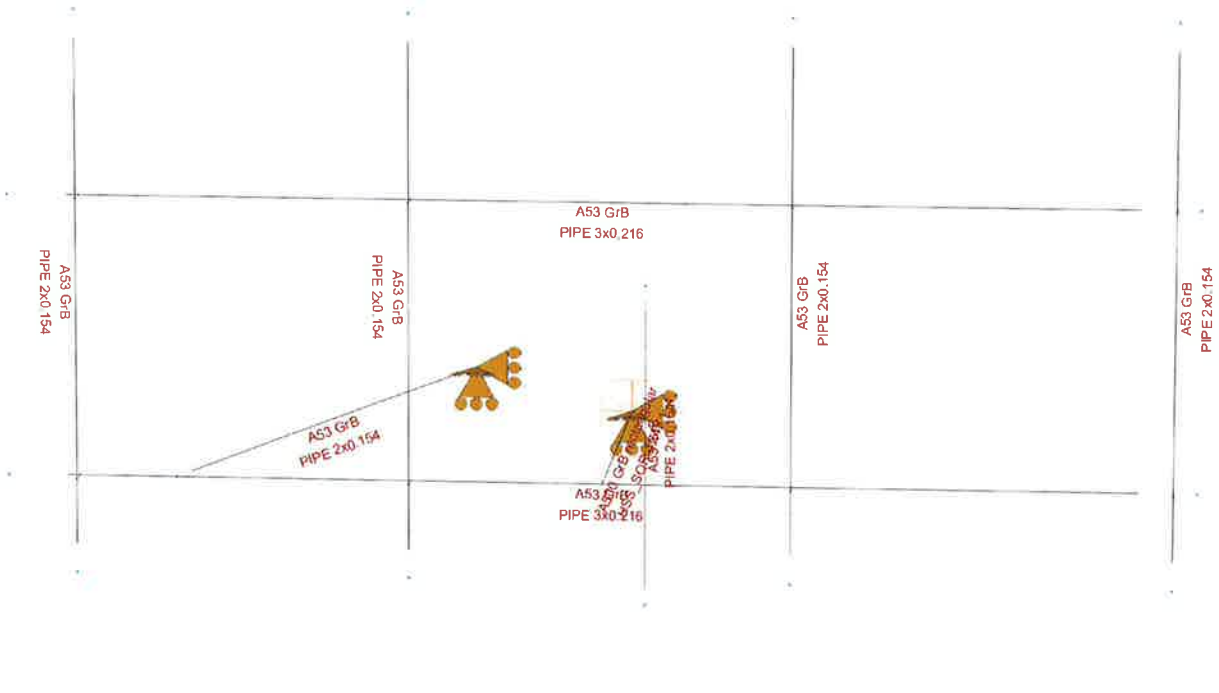
Bentley

Current Date: 10/11/2019 3:45 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C)(MODS

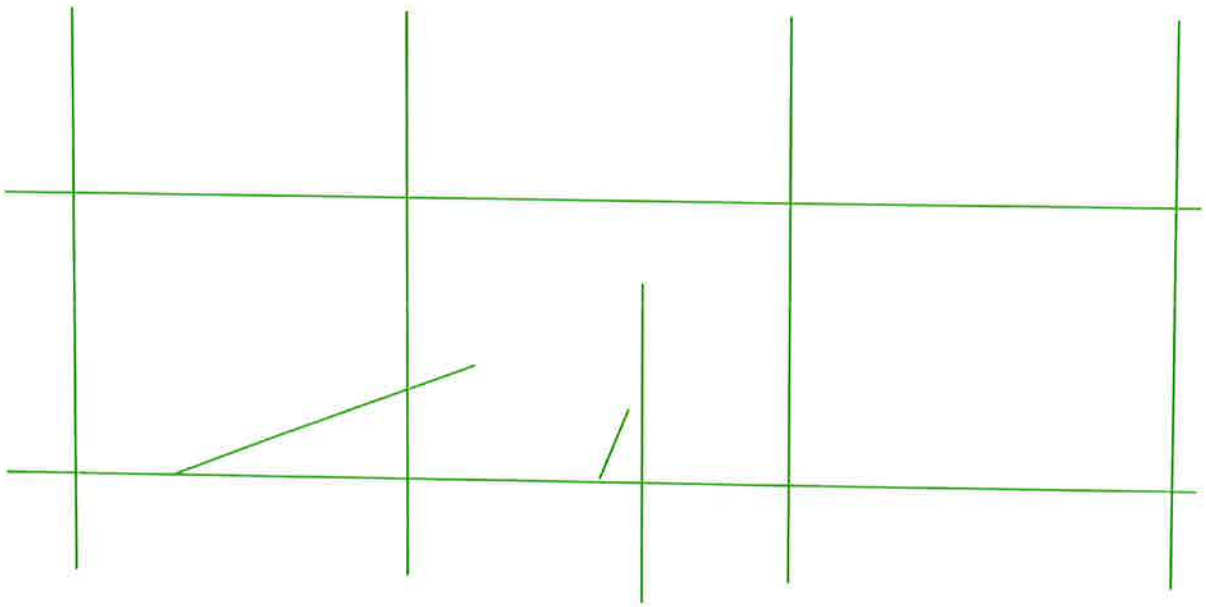


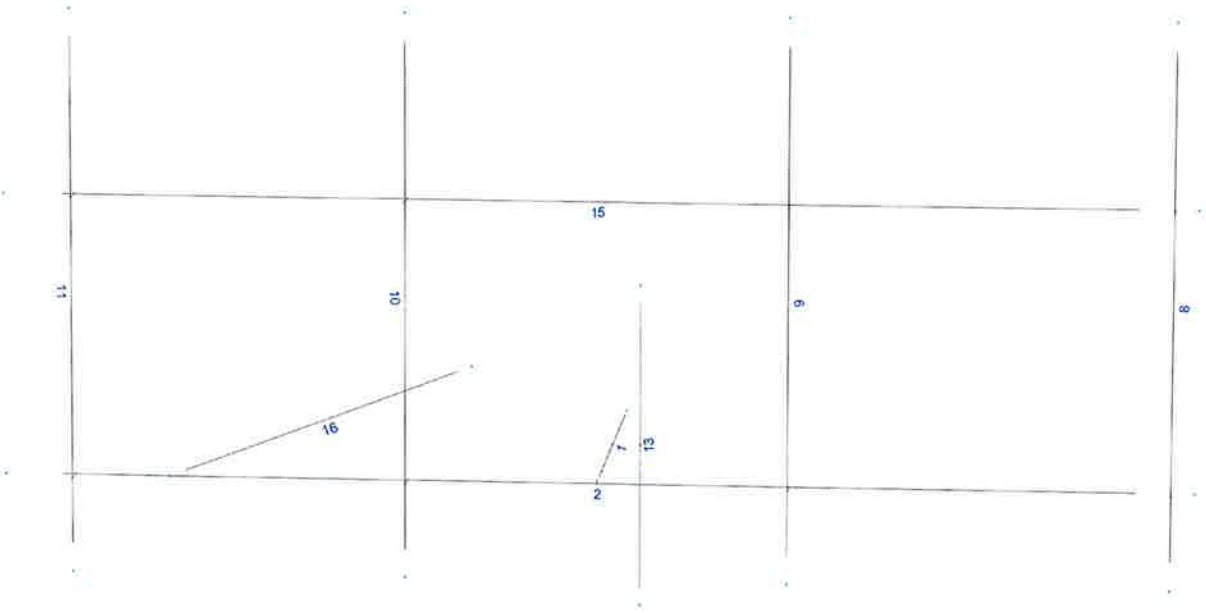
Bentley

Current Date: 10/11/2019 3:48 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4



Not designed
Error on design
Design O.K.
With warnings




15
11
10
9
8
16
1
13
2


Y
Z
X

Current Date: 10/11/2019 3:48 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C)(MODS).retx\

Load data

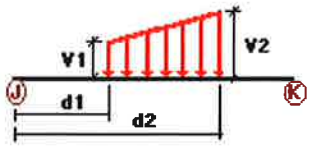
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND

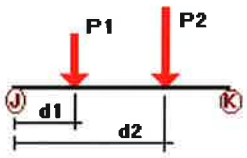
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.016	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	13	z	-0.011	0.00	0.00	No	0.00	No
	15	z	-0.016	0.00	0.00	No	0.00	No
W30	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.016	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No

	13	z	-0.011	0.00	0.00	No	0.00	No
	15	z	-0.016	0.00	0.00	No	0.00	No
W60	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
	15	x	-0.016	0.00	0.00	No	0.00	No
W90	1	x	-0.019	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
W120	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.011	0.00	0.00	No	0.00	No
	13	x	-0.011	0.00	0.00	No	0.00	No
	15	x	-0.016	0.00	0.00	No	0.00	No
W150	1	z	0.019	0.00	0.00	No	0.00	No
	2	z	0.016	0.00	0.00	No	0.00	No
	9	z	0.011	0.00	0.00	No	0.00	No
	13	z	0.011	0.00	0.00	No	0.00	No
	15	z	0.016	0.00	0.00	No	0.00	No
Di	1	y	-0.01	0.00	0.00	No	0.00	No
	2	y	-0.007	0.00	0.00	No	0.00	No
	8	y	-0.005	0.00	0.00	No	0.00	No
	9	y	-0.005	0.00	0.00	No	0.00	No
	10	y	-0.005	0.00	0.00	No	0.00	No
	11	y	-0.005	0.00	0.00	No	0.00	No
	13	y	-0.005	0.00	0.00	No	0.00	No
	15	y	-0.007	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	8	y	-0.018	0.50	No
		y	-0.018	4.00	No
		y	-0.038	3.00	No
	10	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.072	3.00	No
	11	y	-0.04	0.50	No
		y	-0.04	5.50	No

		y	-0.073	3.00	No
	13	y	-0.033	1.00	No
Wo	8	z	-0.125	0.50	No
		z	-0.125	4.00	No
		z	-0.032	3.00	No
	10	z	-0.288	0.50	No
		z	-0.288	5.50	No
	11	z	-0.288	0.50	No
		z	-0.288	5.50	No
	13	z	-0.051	1.00	No
W30	8	3	-0.11	0.50	No
		3	-0.11	4.00	No
		3	-0.049	3.00	No
	10	3	-0.248	0.50	No
		3	-0.248	5.50	No
		3	-0.043	3.00	No
	11	3	-0.248	0.50	No
		3	-0.248	5.50	No
		3	-0.042	3.00	No
	13	3	-0.051	1.00	No
W60	8	3	-0.081	0.50	No
		3	-0.081	4.00	No
		3	-0.081	3.00	No
	10	3	-0.167	0.50	No
		3	-0.167	5.50	No
		3	-0.06	3.00	No
	11	3	-0.167	0.50	No
		3	-0.167	5.50	No
		3	-0.058	3.00	No
	13	3	-0.051	1.00	No
W90	8	x	-0.067	0.50	No
		x	-0.067	4.00	No
		x	-0.098	3.00	No
	10	x	-0.127	0.50	No
		x	-0.127	5.50	No
		x	-0.061	3.00	No
	11	x	-0.127	0.50	No
		x	-0.127	5.50	No
		x	-0.058	3.00	No
	13	x	-0.051	1.00	No
W120	8	2	-0.081	0.50	No
		2	-0.081	4.00	No
		2	-0.081	3.00	No
	10	2	-0.167	0.50	No
		2	-0.167	5.50	No
		2	-0.06	3.00	No
	11	2	-0.167	0.50	No
		2	-0.167	5.50	No
		2	-0.058	3.00	No
	13	2	-0.051	1.00	No
W150	8	2	-0.11	0.50	No
		2	-0.11	4.00	No
		2	-0.049	3.00	No
	10	2	-0.248	0.50	No
		2	-0.248	5.50	No
		2	-0.043	3.00	No
	11	2	-0.248	0.50	No
		2	-0.248	5.50	No
		2	-0.042	3.00	No
	13	2	-0.051	1.00	No

Di	8	y	-0.044	0.50	No
		y	-0.044	4.00	No
		y	-0.036	3.00	No
	10	y	-0.099	0.50	No
		y	-0.099	5.50	No
		y	-0.032	3.00	No
	11	y	-0.099	0.50	No
		y	-0.099	5.50	No
		y	-0.032	3.00	No
	13	y	-0.031	1.00	No
WI0	8	z	-0.024	0.50	No
		z	-0.024	4.00	No
		z	-0.01	3.00	No
	10	z	-0.049	0.50	No
		z	-0.049	5.50	No
		z	-0.002	3.00	No
	11	z	-0.049	0.50	No
		z	-0.049	5.50	No
		z	-0.002	3.00	No
	13	z	-0.01	1.00	No
WI30	8	3	-0.021	0.50	No
		3	-0.021	4.00	No
		3	-0.013	3.00	No
	10	3	-0.043	0.50	No
		3	-0.043	5.50	No
		3	-0.009	3.00	No
	11	3	-0.043	0.50	No
		3	-0.043	5.50	No
		3	-0.009	3.00	No
	13	3	-0.01	1.00	No
WI60	8	3	-0.017	0.50	No
		3	-0.017	4.00	No
		3	-0.018	3.00	No
	10	3	-0.031	0.50	No
		3	-0.031	5.50	No
		3	-0.012	3.00	No
	11	3	-0.031	0.50	No
		3	-0.031	5.50	No
		3	-0.012	3.00	No
	13	3	-0.01	1.00	No
WI90	8	x	-0.014	0.50	No
		x	-0.014	4.00	No
		x	-0.021	3.00	No
	10	x	-0.025	0.50	No
		x	-0.025	5.50	No
		x	-0.013	3.00	No
	11	x	-0.025	0.50	No
		x	-0.025	5.50	No
		x	-0.012	3.00	No
	13	x	-0.01	1.00	No
WI120	8	2	-0.017	0.50	No
		2	-0.017	4.00	No
		2	-0.018	3.00	No
	10	2	-0.031	0.50	No
		2	-0.031	5.50	No
		2	-0.012	3.00	No
	11	2	-0.031	0.50	No
		2	-0.031	5.50	No
		2	-0.012	3.00	No
	13	2	-0.01	1.00	No

WI150	8	2	-0.021	0.50	No
		2	-0.021	4.00	No
		2	-0.013	3.00	No
	10	2	-0.043	0.50	No
		2	-0.043	5.50	No
		2	-0.009	3.00	No
	11	2	-0.043	0.50	No
		2	-0.043	5.50	No
		2	-0.009	3.00	No
	13	2	-0.01	1.00	No
WL0	8	z	-0.007	0.50	No
		z	-0.007	4.00	No
		z	-0.002	3.00	No
	10	z	-0.016	0.50	No
		z	-0.016	5.50	No
	11	z	-0.016	0.50	No
		z	-0.016	5.50	No
	13	z	-0.003	1.00	No
WL30	8	3	-0.006	0.50	No
		3	-0.006	4.00	No
		3	-0.003	3.00	No
	10	3	-0.014	0.50	No
		3	-0.014	5.50	No
		3	-0.002	3.00	No
	11	3	-0.014	0.50	No
		3	-0.014	5.50	No
		3	-0.002	3.00	No
	13	3	-0.003	1.00	No
WL60	8	3	-0.005	0.50	No
		3	-0.005	4.00	No
		3	-0.004	3.00	No
	10	3	-0.009	0.50	No
		3	-0.009	5.50	No
		3	-0.003	3.00	No
	11	3	-0.009	0.50	No
		3	-0.009	5.50	No
		3	-0.003	3.00	No
	13	3	-0.003	1.00	No
WL90	8	x	-0.004	0.50	No
		x	-0.004	4.00	No
		x	-0.005	3.00	No
	10	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.003	3.00	No
	11	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.003	3.00	No
	13	x	-0.003	1.00	No
WL120	8	2	-0.005	0.50	No
		2	-0.005	4.00	No
		2	-0.004	3.00	No
	10	2	-0.009	0.50	No
		2	-0.009	5.50	No
		2	-0.003	3.00	No
	11	2	-0.009	0.50	No
		2	-0.009	5.50	No
		2	-0.003	3.00	No
	13	2	-0.003	1.00	No
WL150	8	2	-0.006	0.50	No
		2	-0.006	4.00	No

	2	-0.003	3.00	No
10	2	-0.014	0.50	No
	2	-0.014	5.50	No
	2	-0.002	3.00	No
11	2	-0.014	0.50	No
	2	-0.014	5.50	No
	2	-0.002	3.00	No
13	2	-0.003	1.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00

WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00

Bentley

Current Date: 10/11/2019 3:49 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C)(MODS).retx\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**1**	LC6 at 0.00%	**0.56**	**OK**	
	PIPE 2x0.154	**8**	LC1 at 81.25%	0.40	OK	
		9	LC6 at 81.25%	0.67	OK	
		10	LC1 at 81.25%	**0.98**	**OK**	
		11	LC1 at 81.25%	0.79	OK	
		13	LC10 at 46.88%	0.04	OK	
		16	LC7 at 0.00%	0.45	OK	
	PIPE 3x0.216	**2**	LC6 at 50.00%	**0.65**	**OK**	
		15	LC6 at 65.00%	0.23	OK	

Bentley

Current Date: 10/11/2019 3:49 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5050\LTE 2C-3C-4C\CT5050 (LTE 2C-3C-4C)(MODS).retx\

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
3	6.25	0.00	3.70	0
4	-6.25	0.00	3.70	0
14	2.00	-1.00	3.90	0
15	6.00	-1.00	3.90	0
16	-5.50	-1.00	3.90	0
17	-2.00	-1.00	3.90	0
18	2.00	5.00	3.90	0
19	6.00	5.00	3.90	0
20	-5.50	5.00	3.90	0
21	-2.00	5.00	3.90	0
24	0.30	-1.75	1.775	0
25	0.30	1.75	1.775	0
36	6.25	3.00	3.70	0
37	-6.25	3.00	3.70	0
38	-4.50	0.00	3.70	0
40	-1.95	0.00	-2.234	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
40	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	3	4		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
8	19	15		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	18	14		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	21	17		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	20	16		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	25	24		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	36	37		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
16	38	40		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
8	315.00	0	0.00	0.00	0.00
10	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00
13	315.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
16	0.00	2.50	0.00	0.00	2.50	0.00

EXHIBIT 3

EASTON PLANNING & ZONING COMMISSION VOL 0302 PAGE 106

002030

225 CENTER ROAD

EASTON, CT., 06612

July 14, 1999

Ms. Esther McNany
S.B.A.
125 Shaw Street
New London, Connecticut 06320

RE: SP-99-02, S.B.A. Inc./Omnipoint/Sprint PCS
Location: 275 North Street (Landfill)

Dear Ms. McNany:

Please be advised that the Easton Planning & Zoning Commission, at its regular meeting of June 28, 1999 and voted to APPROVE your application for Special Permit for Wireless Telecommunication Facility at the above site with the stipulations and modifications set forth in EXHIBIT A , attached hereto and part of this letter.

Upon receipt of this letter, this original copy and all attached exhibits must be filed in the Easton land records at the applicant's expense. The effective date of this decision is July 14, 1999.

Yours truly,

EASTON PLANNING & ZONING COMMISSION

by _____
Robert Maqua
Acting Chairman

EXHIBIT A VOL 0302 PAGE 107

RE: Special Permit for Wireless Telecommunication Facility for
SBA/Inc./Omnipoint/Sprint PCS, 275 North Street(Landfill)
6/28/99

The stipulations and modifications set forth below are an integral part of the approval of the subject-named Special Permit application for construction of a Tower for mounting of Telecommunication Antenna. Special Permit plans and design information shall be revised to meet the following:

1. The Tower Construction be a Monopine, as presented in renderings during the hearing.
2. Landscaping around the base tower site be subject to inspection by this Commission at the time of installation and at monthly intervals thereafter to assure that all fencing and equipment structure are suitably screened from Public view. Upon request by this Commission following any such inspection, SBA will make additions or other modifications to the landscaping to comply; with any such request.

EASTON PLANNING & ZONING COMMISSION

by _____
Robert Maquat
Acting Chairman

RECEIVED FOR RECORD September 9 1999
AT 3:35 PM ATTEST _____
EASTON TOWN CLERK

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

June 17, 2008

UMTS #53
5050 - EASTON

Steven L. Levine
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-046-080514** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 197/275 North Street, Easton, Connecticut.

Dear Mr. Levine:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The proposed diplexers and tower mounted amplifiers are installed behind the antennas; and
- The proposed coax lines are installed inside the monopole's shaft.

The proposed modifications are to be implemented as specified here and in your notice dated May 14, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/MP

c: Honorable Thomas A. Herrmann, Town of Easton
Philip Doremus, Planning and Zoning Official, Town of Easton
SBA

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

July 6, 2011

Douglas L. Culp, Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-046-110614** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 275 North Street, Easton, Connecticut.

Dear Mr. Culp:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The proposed coax, tower mounted amplifiers, and remote radio heads be installed in accordance with recommendations made in the Structural Analysis prepared by FDH Engineering dated June 2, 2011 and stamped by Christopher Murphy; and
- Following the installation of the proposed equipment, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the installation complied with the engineer's recommendations.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated June 14, 2011. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such

CSC
CONNECTICUT SITING COUNCIL

notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts LAB

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Thomas A. Herrmann, First Selectman, Town of Easton
Philip Doremus, Planning & Zoning Official, Town of Easton
SBA

EXHIBIT 4

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2016.

Easton, CT

Information on the Property Records for the Municipality of Easton was last updated on 11/23/2019.

Parcel Information

Location:	197 NORTH STREET	Property Use:	Residential	Primary Use:	Residential
Unique ID:	00084500	Map Block Lot:	3784 3785A 2&2A	Acres:	12.20
490 Acres:	0.00	Zone:	R3	Volume / Page:	0000/0000
Developers Map / Lot:	1434	Census:	1052		

Value Information

	Appraised Value	Assessed Value
Land	424,568	297,200
Buildings	0	0
Detached Outbuildings	0	0
Total	424,568	297,200

Owner's Information

Owner's Data
EASTON TOWN OF 225 CENTER ROAD EASTON CT 06612

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
15919E	Generator	09/18/2018		Needs Visit	GENERATOR FOR CELL TOWER
15331	Electrical	02/03/2017		Needs Visit	12 ANTENNA PANELS & REMOTE HEAD REPLACED
14820	Commercial	08/10/2015		Needs Visit	REINFORCEMENT OF EXISTING CELL TOWER
14755	Electrical	06/26/2015		Needs Visit	INSTALL NEW CELLULAR ENTENNAS & RADIOS ON EXIST TOWER

SIDE CARD L-22 1 OF 1 TAX CODE: 046 SEWER PHASE DISTRICT

LOCATION	ZONE	DEV MAP	DEV LOT	MAP / BLOCK / LOT	ACCOUNT NUMBER	
197 NORTH STREET	R3			3784 3785A 2&2A	CENSUS TRACT:	00084500 0001052

CURRENT OWNER	MAILING ADDRESS	VOLUME / PAGE	PURCHASE DATE	SALES PRICE	VALID SALE
EASTON TOWN OF	225 CENTER ROAD 06612 EASTON CT	/			

CO-OWNER INFORMATION

IMPROVEMENT FINISH

BUILDING CLASS	9 /	FINISH AREA	S/F AREA
TYPE	0 FAMILY / /	SEMI FIN %	WET / LOW BSMT
DESIGN		BASEMENT FINISH QUALITY	
OCCUPANCY	VACANT LAND	# OF CARS IN BSMT GARAGE	
LAND USE CODE		BASEMENT ACCESS	

ASSESSMENT BREAKDOWN

ASSESSMENT YEAR 2002

CATEGORY	DESCRIPTION	UNIT	ACRES	ASSESSMENT
11	RESIDENTIAL LOT		3.00	170100
51	VACANT LAND		9.12	111380

TOTAL ASSESSMENT 281480

EXTERIOR

FOUNDATION			
BASEMENT FULL		CRAWL %	
PART%		SLAB%	
EXTERIOR SIDING	-1		
	-2		
	-3		
BRICK / STONE		LN	HGT
INSULATION			
EXTERIOR MILLWORK			
ROOF TYPE			
DORMER (L.F.)			
ROOFING			
PLAIN FIREPLACES			
DETAILED FIREPLACES			
HEATING DEPRECIATION			
CHIMNEY(S)			
SKYLIGHTS			

HEATING AND COOLING SYSTEM

HEATING % AIR COND %

ATTIC ACCESS

ATTIC ACCESS

PLUMBING

FIXTURES	BATH TYPE	FIXTURES	LAV TYPE

CONDITION

SITE UTILITIES	
CONDITION / DESIR / UTIL	
YEAR BUILT	
RENOVATION YEAR	
ADDITION YEAR	
ROAD TYPE	

ROOM LAYOUT

	KIT	DR	LR	BR	FR	OTHER	TOTAL	BATH
BASEMENT								
1ST FLR								
2ND FLR								
3RD FLR								
TOTAL								

INTERIOR

INTERIOR MILLWORK	
% OF INTERIOR FINISH	

BUILDING PERMIT / C.O. INFORMATION

PERMIT NUMBER	PERMIT STATUS
PERCENT COMPLETE	DATE OF CERTIFICATE

BP#8179 INSTALLATION - TEL TOWER 8-1999

NEIGHBORHOOD	20
SINGLE CARD	YES
REFER ACCT #	
LAST UPDATE	03/15/2002
INSPECTION DATE	
INSPECTOR	TR
ENTRY	PF
PREVIOUS GROSS ASSESSMENT	349960

INTERIOR FINISH

	WALL FINISH	FLOOR FINISH
BASEMENT		
1ST FLOOR		
2ND FLOOR		
3RD FLOOR		

ASSESSMENT HISTORY DATA

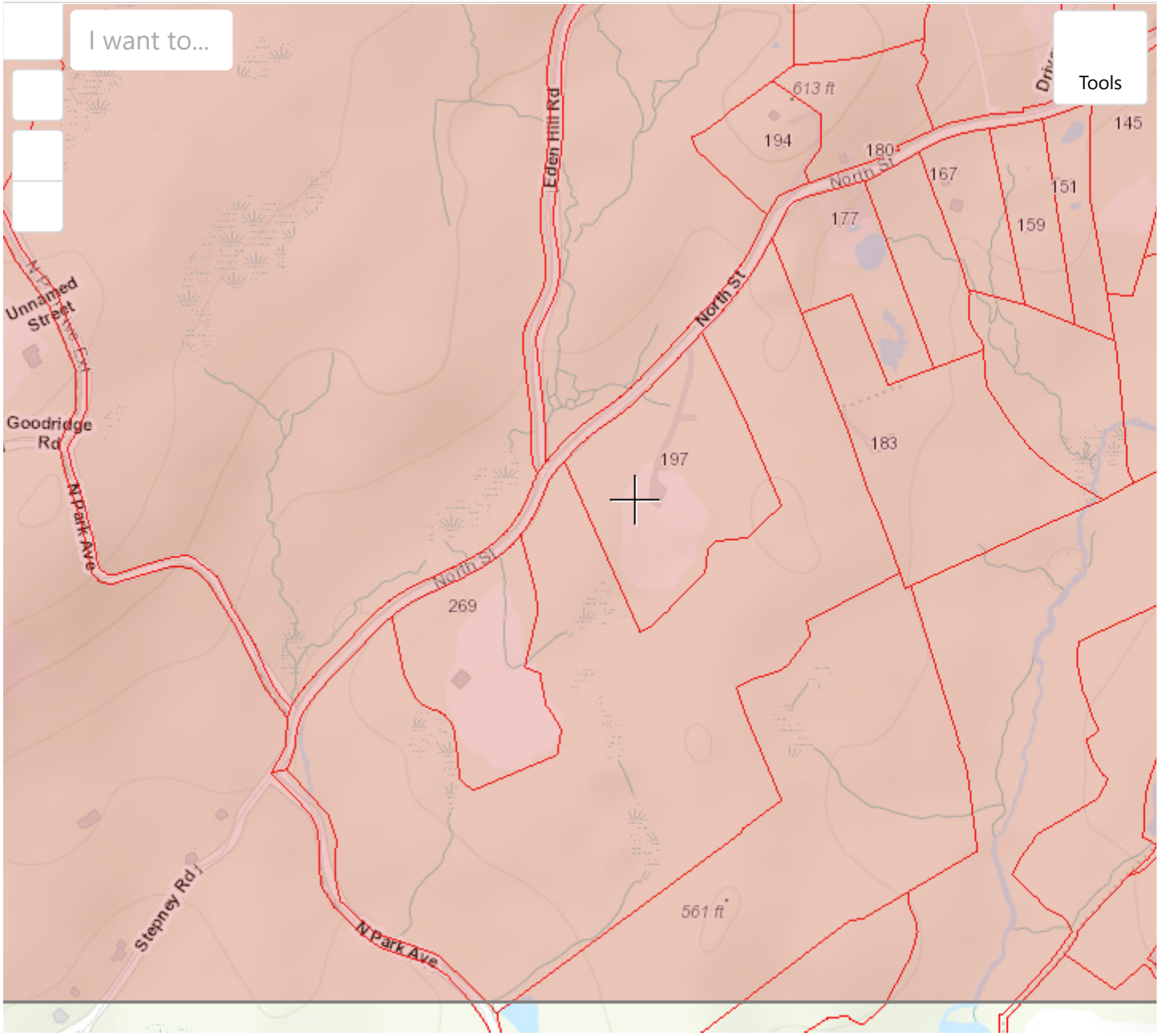
YEAR	GROSS	REASON	UPDATE

COMMENTS

LAND VALUE BASED CELL LEASE;-10% VAC;

Search...

Sign in



WORLD ...

0 300 600ft

EXHIBIT 5

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5050

High Ridge
275 North Street
Easton, CT 06612

November 15, 2019

Centerline Communications Project Number: 950012-321

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**0.18%**

October 7, 2019

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5050 – High Ridge**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **275 North Street, Easton, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T 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 ($\mu W/cm^2$). 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 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 AT&T Wireless antenna facility located at **275 North Street, Easton, Connecticut**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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)
UMTS	850 MHz	2	40
5G	850 MHz	2	40
LTE	700 MHz	4	40
LTE	2100 MHz (AWS)	4	40
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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	Powerwave 7770	155
A	2	CCI DMP65R-BU6D	155
A	3	CCI DMP65R-BU6D	155
B	1	Powerwave 7770	155
B	2	CCI DMP65R-BU6D	155
B	3	CCI DMP65R-BU6DA	155
C	1	Powerwave 7770	155
C	2	CCI DMP65R-BU6D	155
C	3	CCI DMP65R-BU6D	155

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T 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	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	13.5 dBi	2	80	1091.67	0.01%
Antenna A2	CCI DMP65R-BU6D	1900 MHz	14.85 dBd	4	160	4887.87	0.01%
Antenna A3	CCI DMP65R-BU6D	700 MHz / 850 MHz / 2100 MHz / 850 MHz	11.45 dBd / 11.35 dBd / 15.25 dBd / 11.35 dBd	12	480	9776.97	0.04%
						Sector A Composite MPE%	**0.16%**
Antenna B1	Powerwave 7770	850 MHz	13.5 dBi	2	80	1091.67	0.01%
Antenna B2	CCI DMP65R-BU6D	1900 MHz	14.35 dBd	4	320	4356.32	0.01%
Antenna B3	CCI DMP65R-BU6D	700 MHz / 850 MHz / 2100 MHz / 850 MHz	11.65 dBd / 11.45 dBd / 15.35 dBd / 11.45 dBd	12	480	10057.96	0.04%
						Sector B Composite MPE%	**0.16%**
Antenna C1	Powerwave 7770	850 MHz	13.5 dBi	2	80	1091.67	0.01%
Antenna C2	CCI DMP65R-BU6D	1900 MHz	14.85 dBd	4	160	4887.87	0.01%
Antenna C3	CCI DMP65R-BU6D	700 MHz / 850 MHz / 2100 MHz / 850 MHz	11.75 dBd / 11.45 dBd / 15.25 dBd / 11.45 dBd	12	480	9987.61	0.04%
						Sector C Composite MPE%	**0.16%**

Table 3: AT&T 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 AT&T 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 AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**0.18 %**
No additional carrier	
Site Total MPE %:	**0.18 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	0.18 %
AT&T Sector B Total:	0.18 %
AT&T Sector C Total:	0.18 %
Site Total:	0.18 %

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 AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($i.tW/cm^2$)	Frequency (MHz)	Allowable MPE ($i.tW/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	545.83	155.0	0.057	850 MHz UMTS	567	0.01%
AT&T 1900 MHz LTE	4	1221.97	155.0	0.100	1900 MHz LTE	1000	0.01%
AT&T 700 MHz LTE	4	558.55	155.0	0.187	700 MHz LTE	467	0.04%
AT&T 850 MHz LTE	2	545.83	155.0	0.227	850 MHz LTE	567	0.04%
AT&T 2100 MHz LTE AWS	4	1339.86	155.0	0.400	2100 MHz LTE	1000	0.04%
AT&T 850 MHz 5G	2	545.83	155.0	0.227	850 MHz 5G	567	0.04%
						Total:	**0.18%**

Table 6: AT&T 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 AT&T 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:

AT&T Sector	Power Density Value (%)
Sector A:	0.18 %
Sector B:	0.18 %
Sector C:	0.18 %
AT&T Maximum Total (per sector):	0.18 %
Site Total:	0.18 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **0.18 %** 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.

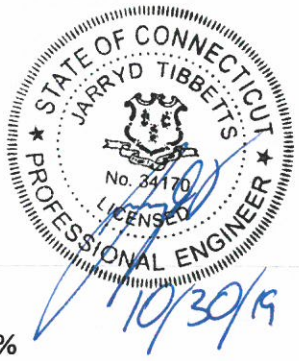
Samuel Cosgrove
RF EME Technical Writer
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

EXHIBIT 6

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

Structural Analysis Report

Existing 185 ft Sterling Monopine
Customer Name: SBA Communications Corp
Customer Site Number: CT00707-S
Customer Site Name: North Easton
Carrier Name: AT&T (App#: 125896, V1)
Carrier Site ID / Name: CT5050 / High Ridge
Site Location: 275 North Street
Easton, Connecticut
Fairfield County
Latitude: 41.316417
Longitude: -73.314022



Analysis Result:

Max Structural Usage: 85.2% [Pass]
Max Foundation Usage: 66.0% [Pass]
Additional Usage Caused by Mount Modification: +1.0%

Report Prepared By: Younus Alkarawi

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

Structural Analysis Report

Existing 185 ft Sterling Monopine

Customer Name: SBA Communications Corp

Customer Site Number: CT00707-S

Customer Site Name: North Easton

Carrier Name: AT&T (App#: 125896, V1)

Carrier Site ID / Name: CT5050 / High Ridge

Site Location: 275 North Street

Easton, Connecticut

Fairfield County

Latitude: 41.316417

Longitude: -73.314022

Analysis Result:

Max Structural Usage: 85.2% [Pass]

Max Foundation Usage: 66.0% [Pass]

Additional Usage Caused by Mount Modification: +1.0%

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 185 ft Sterling 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	Monopole original structural design report & shaft section data prepared by Paul J. Ford and Company. Dated 08-10-1999. Job No 20099-146.
Foundation Drawing	Monopole foundation drawing prepared by Paul J. Ford and Company. Dated 08-10-1999. Job No 20099-146.
Geotechnical Report	Monopole geotechnical report prepared by Jaworski Geotech, Inc. Dated 07-30-1999. Project No C98404G.
Modification Drawings	Modification Drawing prepared by TES, Job #14918 dated 4/23/15

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} = 130.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.213, S_1 = 0.066

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	185.0	-	6' Pole Branch	Direct	-	-
2	185.0	3	RFS APX16DWV-16DWVS-E-A20	(3) Cobra Arms (1) Sitepro LWRM (Ring Mount Assembly) (3) Sitepro SV197-36 (36" Support Arms) (3) Sitepro SP216-12-NS (Cellular Pipe Frames)	(9) 1 5/8" Coax (3) 1 5/8" Fiber	T-Mobile
3		3	RFS APXVAARR24_43-U-NA20			
4		6	Allen Telecom FE15S01P77/75			
5		3	Ericsson Radio 4415 B25			
6		3	Kathrein 782 11056			
7		3	Ericsson Radio 4415 B66A			
8		3	Ericsson Radio 4449 B71+B12			
9	179.5	-	6' Pole Branch	Direct	-	-
10	175.0	3	Alcatel Lucent - 1900 MHz RRUs	(3) Cobra Arms	(4) 1 1/4" Coax	Sprint
11		3	Alcatel Lucent - 800 MHz Filters			
12		3	Alcatel Lucent - 800 MHz RRUs			
13		3	Alcatel Lucent - TD-RRH8x20-25			
14		4	RFS - ACU-A20-N RETs			
15		3	RFS - APXVSPP18-C-A20			
16		3	RFS - APXVTM14-C-120			
17	174.5	-	7' Pole Branch	Direct	-	-
18	169.5	-	8' Pole Branch	Direct	-	-
19	165.0	4	Swedcom - SC-E 6014 Rev 2 - Panel	(3) Cobra Arms	(12) 1 5/8" (2) 1 5/8" Fiber	Verizon
20		2	Antel - LPA 80063/6CF - Panel			
21		6	Andrew - SBNHH-1D65B - Panel			
22		3	Alcatel Lucent - RRH2X60-700 - RRU			
23		3	Alcatel Lucent - RRH4X45-AWS - RRU			
24		2	RFS - DB-B1-6C-12AB-0Z - Distribution Box			
25	164.5	-	8' Pole Branch	Direct	-	-
26	159.5	-	9' Pole Branch	Direct	-	-
-	155.0	6	Ericsson - RRUS-11 RRUs	(3) Cobra Arms	(12) 1 5/8"; (1) Fiber; (2) DC Power	AT&T Wireless
-		6	Powerwave - 7770.00			
-		6	Powerwave - LGP 21401 TMAs			
-		6	Powerwave - LGP21903 Diplexers			
-		3	Powerwave - P65-16-XLH-RR			
-		1	Raycap - DC6-48-60-18-8F Surge			
35	154.5	-	9' Pole Branch	Direct	-	-
36	149.5	-	10' Pole Branch	Direct	-	-
37	144.5	-	11' Pole Branch	Direct	-	-

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
27	155.0	6	CCI DMP65R-BU6DA- Panel	(3) Modified Cobra Arms W/ (3) 2" std. (2.38" O.D.) Horizontal pipe & (3) 2" std. (2.38" O.D.) Pipe Brace	(12) 1-5/8" (2) 1/2" Fiber (4) DC Power	AT&T
28		3	Ericsson 4449 B5/B12			
29		3	Ericsson RRUS 8843 B2 B66A			
30		1	Raycap DC6-48-60-18-8F			
31		3	Powerwave 7770- Panel			
32		6	Powerwave LGP21401TMAs			
33		6	Powerwave LGP21901Diplexers			
34		1	Raycap DC6-48-60-18-8C-EV			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**85.2%**	**78.0%**	**62.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	7275.0	52.5
Analysis Reactions	7713.4	53.7
Factored Reactions*	9821.3	70.9
% of Design Reactions	78.5%	75.7%

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

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.5645 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.

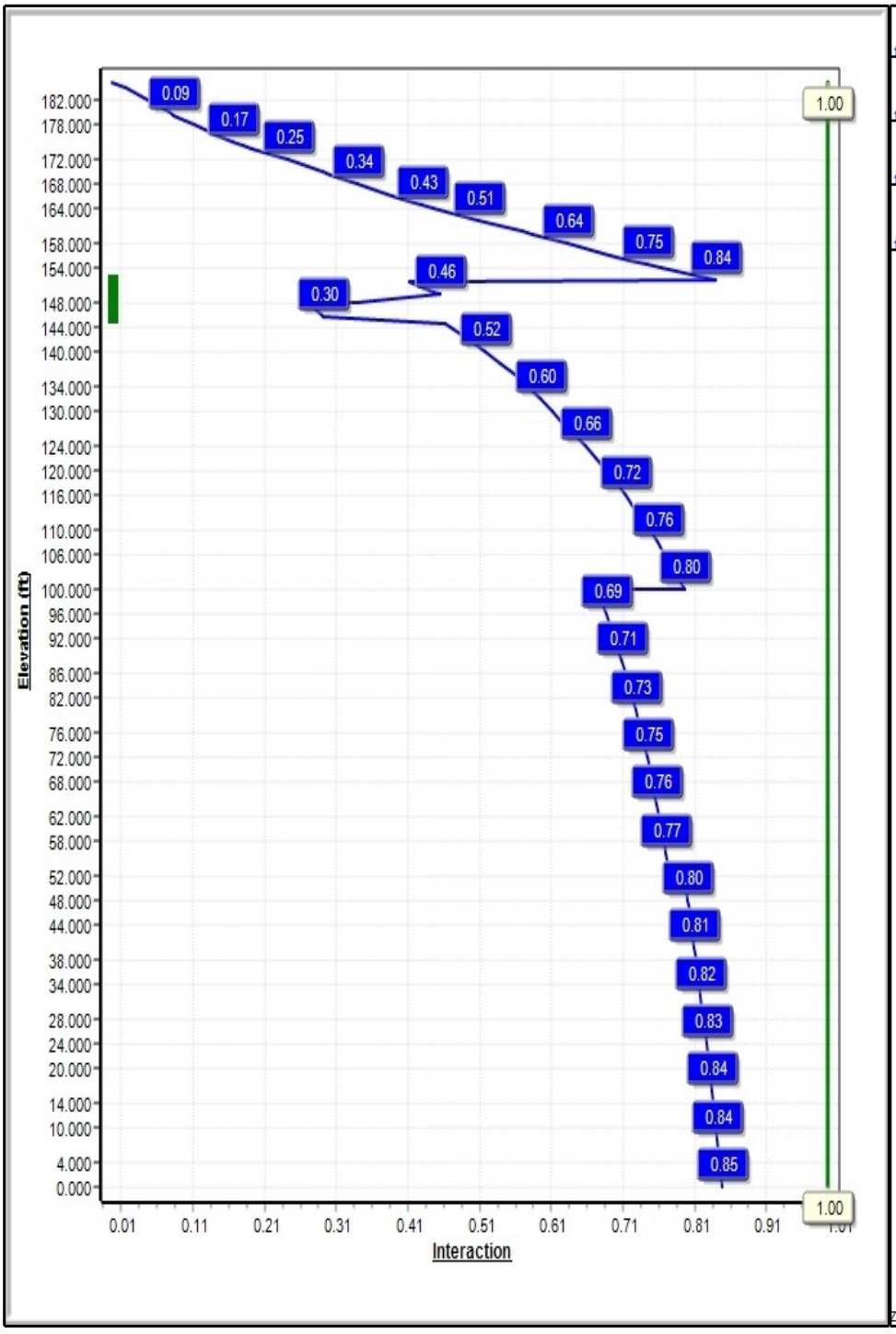
Usage Diagram - Max Ratio 85.18% at 0.0ft

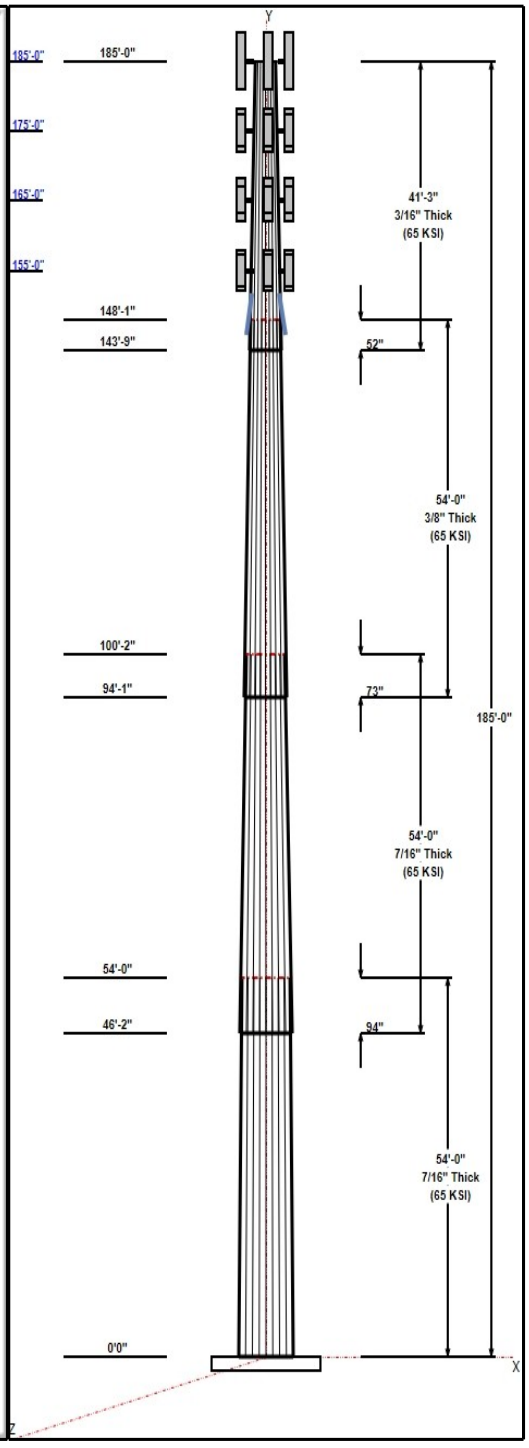
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	29
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 101 mph Wind





Structure: CT00707-S-SBA

Type: Tapered
Site Name: North Easton
Height: 185.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.28716

10/30/2019

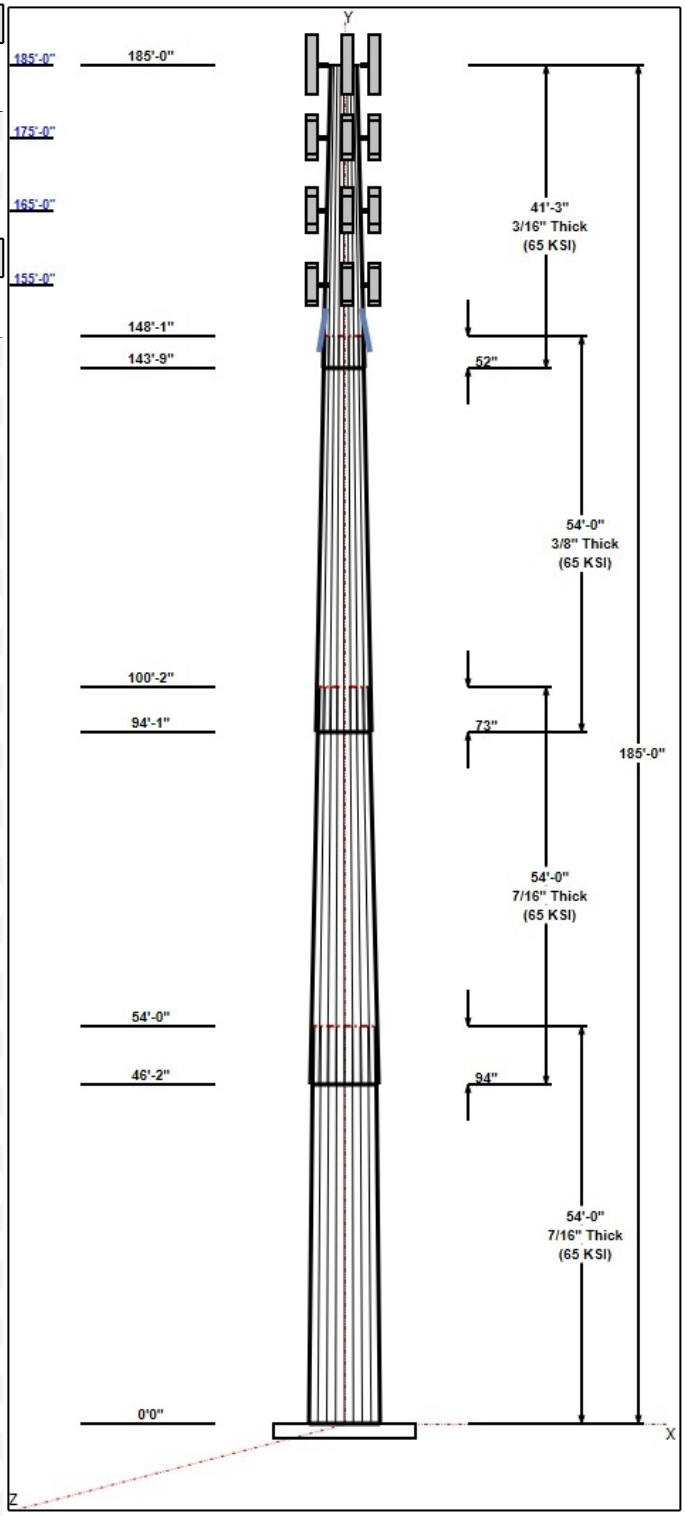
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	54.00	56.99	72.50	0.438		0.28716	65
2	54.00	44.61	60.12	0.438	Slip	0.28716	65
3	54.00	31.60	47.11	0.375	Slip	0.28716	65
4	41.25	21.38	33.22	0.188	Slip	0.28716	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
185.00	187.00	3	Kathrein 782 11056	T-Mobile
185.00	187.00	6	Allen Telecom	T-Mobile
185.00	185.00	3	Cobra Arms	T-Mobile
185.00	185.00	1	6' Pole Branch	---
185.00	185.00	3	APX16DWV-16DWV-S-E-	T-Mobile
185.00	185.00	3	APXVAA24_43-U-A20	T-Mobile
185.00	185.00	1	(3) Sitepro SV197-36	T-Mobile
185.00	185.00	1	Ring mount (Sitepro	T-Mobile
185.00	185.00	3	Radio 4449 B71+B12	T-Mobile
185.00	185.00	3	Radio 4415 B66A	T-Mobile
185.00	185.00	3	RRUS 4415 B25	T-Mobile
179.50	179.50	1	6' Pole Branch	---
175.00	175.00	3	Cobra Arms	Sprint
175.00	175.00	3	RFS APXVTM14-C-120	Sprint
175.00	175.00	3	RFS APXVSPP18-C-A20	Sprint
175.00	175.00	3	Alcatel Lucent 800 MHz	Sprint
175.00	175.00	3	Alcatel Lucent	Sprint
175.00	175.00	3	Alcatel Lucent 1900 MHz	Sprint
175.00	175.00	3	Alcatel Lucent 800 MHz	Sprint
175.00	175.00	4	RFS ACU-A20-N RETs	Sprint
174.50	174.50	1	7' Pole Branch	---
169.50	169.50	1	8' Pole Branch	---
165.00	165.00	3	Cobra Arms	Verizon
165.00	165.00	4	Swedcom SC-E 6014 Rev	Verizon
165.00	165.00	2	Antel LPA 80063/6CF	Verizon
165.00	165.00	6	SBNHH-1D65B	Verizon
165.00	165.00	3	RRH2X60-700	Verizon
165.00	165.00	3	RRH4X45-AWS	Verizon
165.00	165.00	2	DB-B1-6C-12AB-0Z	Verizon
164.50	164.50	1	8' Pole Branch	---
159.50	159.50	1	9' Pole Branch	---
155.00	155.00	3	Cobra Arms	AT&T
155.00	155.00	3	Powerwave 7770.00	AT&T
155.00	155.00	6	Powerwave LGP 21401	AT&T
155.00	155.00	6	Powerwave LGP21901	AT&T
155.00	155.00	1	Raycap DC6-48-60-18-8F	AT&T
155.00	155.00	6	DMP65R-BU6DA	AT&T
155.00	155.00	3	4449 B5/B12	AT&T
155.00	155.00	3	RRUS 8843 B2 B66A	AT&T
155.00	155.00	3	Horizontal Pipe	AT&T
155.00	155.00	3	pipe brace	AT&T
155.00	155.00	1	DC6-48-60-18-8C-EV	AT&T
154.50	154.50	1	9' Pole Branch	---
149.50	149.50	1	10' Pole Branch	---
144.50	144.50	1	11' Pole Branch	---



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	185.00	Outside	1 5/8" Coax	T-Mobile
3.00	185.00	Inside	1 5/8" Fiber	T-Mobile
3.00	175.00	Inside	1 1/4" Coax	Sprint
0.00	165.00	Outside	1 5/8" Hybrid	Verizon
3.00	165.00	Inside	1 5/8" Coax	Verizon
3.00	155.00	Inside	1 5/8" Coax	AT&T
3.00	155.00	Inside	1/2" Fiber	AT&T
3.00	155.00	Inside	DC Power	AT&T
143.75	153.75	Outside	1" Reinforcing plate	

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.5000	79.6	50.0	Square

Reactions

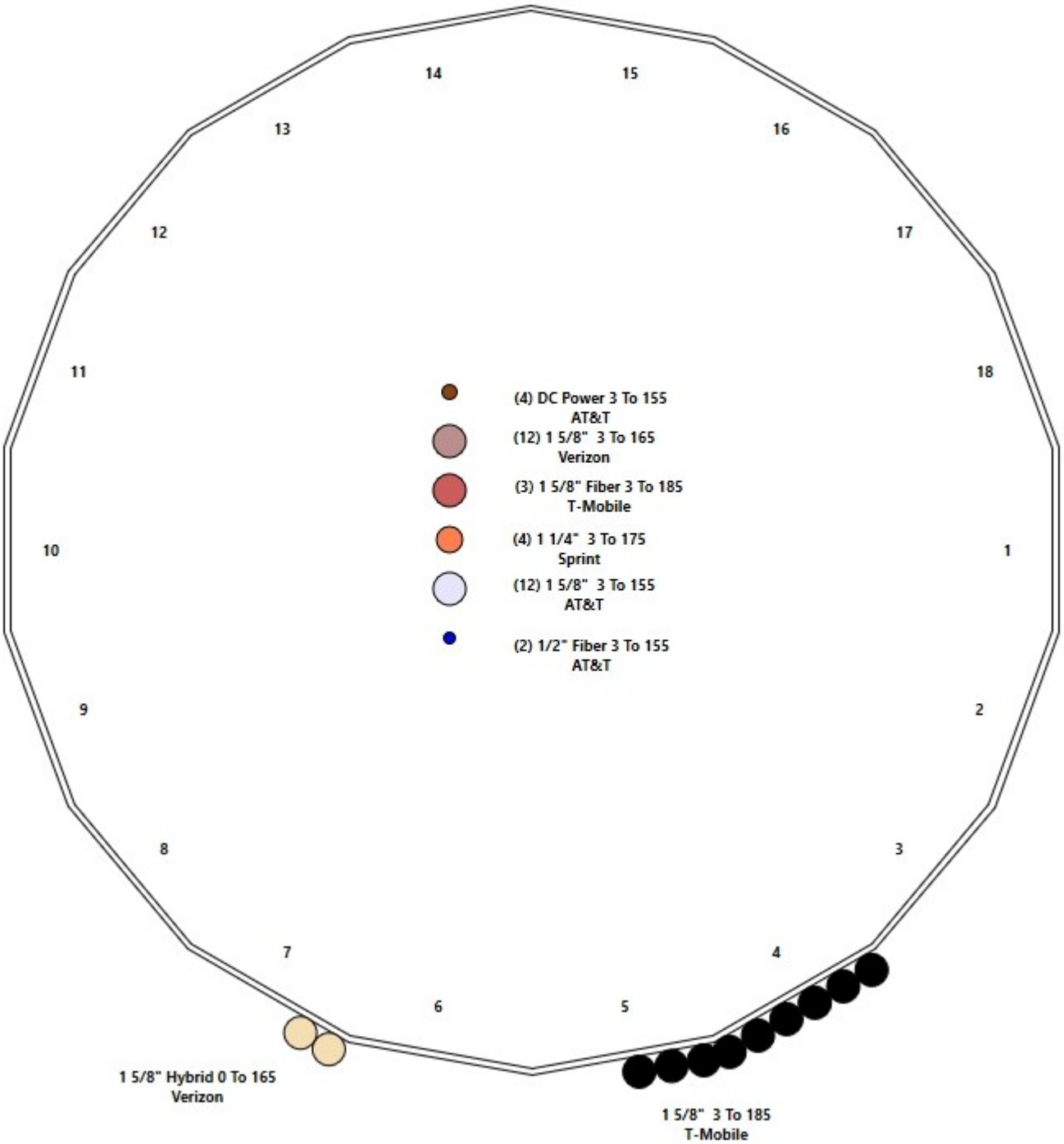
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	7713.4	53.7	74.5
0.9D + 1.6W 101 mph Wind	7628.8	53.7	55.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	2091.5	14.3	121.6
1.2D + 1.0E	455.1	3.3	74.5
0.9D + 1.0E	449.9	3.3	55.9
1.0D + 1.0W 60 mph Wind	1692.5	11.8	62.1

Structure: CT00707-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Easton
Height: 185.00 (ft)

10/30/2019

TES Tower Engineering Solutions



Shaft Properties

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	54.000	0.4375	65		0.00	16,409
2	18	54.000	0.4375	65	Slip	94.00	13,249
3	18	54.000	0.3750	65	Slip	73.00	8,525
4	18	41.250	0.1875	65	Slip	52.00	2,265
					Total Shaft Weight:		**40,447**

	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	72.50	0.00	100.0	65652.37	27.81	165.71	56.99	54.00	78.53	31736.0	21.56	130.2	0.287162
2	60.12	46.17	82.87	37291.75	22.82	137.41	44.61	100.17	61.34	15121.8	16.57	101.9	0.287162
3	47.11	94.08	55.62	15347.65	20.74	125.62	31.60	148.08	37.17	4578.55	13.45	84.27	0.287162
4	33.22	143.7	19.66	2710.11	29.83	177.18	21.38	185.00	12.61	715.13	18.69	114.0	0.287162

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	**Elev To (ft)**	**Qty**	**Description**	**Fy (ksi)**	**Fu (ksi)**	**Offset (in)**	**Description**	**Spacing (in)**	**Description**	**Spacing (in)**	**Lower Qty**	**Upper Qty**
145.7	151.7	3	LNP LP6X100-G-10CT	65	80	0.00	5/8" Hollo Bolt	24.00	M20 Hollo Bolt	3.00	8	8

Load Summary

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	185.00	Kathrein 782 11056	3	2.90	0.13	0.67	6.98	0.428	0.67	0.00	2.00
2	185.00	Allen Telecom FE15S01P77/75	6	17.50	0.55	0.75	46.16	1.161	0.75	0.00	2.00
3	185.00	Cobra Arms	3	350.00	6.50	0.75	629.45	9.836	0.75	0.00	0.00
4	185.00	6' Pole Branch	1	300.00	16.06	1.00	663.57	30.371	1.00	0.00	0.00
5	185.00	APX16DWV-16DWV-S-E-A20	3	40.70	6.46	0.62	181.27	7.599	0.62	0.00	0.00
6	185.00	APXVAA24_43-U-A20	3	99.00	20.24	0.73	536.92	22.182	0.73	0.00	0.00
7	185.00	(3) Sitepro SV197-36	1	500.00	16.50	1.00	1105.95	32.968	1.00	0.00	0.00
8	185.00	Ring mount (Sitepro LWRM)	1	65.60	1.50	1.00	159.13	3.104	1.00	0.00	0.00
9	185.00	Radio 4449 B71+B12	3	71.00	1.97	0.67	125.51	2.529	0.67	0.00	0.00
10	185.00	Radio 4415 B66A	3	46.00	1.64	0.67	87.97	2.166	0.67	0.00	0.00
11	185.00	RRUS 4415 B25	3	46.00	1.64	0.67	87.97	2.166	0.67	0.00	0.00
12	179.50	6' Pole Branch	1	300.00	46.00	1.00	662.47	86.867	1.00	0.00	0.00
13	175.00	Cobra Arms	3	400.00	13.50	0.75	717.60	20.391	0.75	0.00	0.00
14	175.00	RFS APXVTM14-C-120	3	56.00	6.34	0.79	219.42	7.472	0.79	0.00	0.00
15	175.00	RFS APXVSPP18-C-A20	3	57.00	8.02	0.83	232.54	10.857	0.83	0.00	0.00
16	175.00	Alcatel Lucent 800 MHz RRUs	3	53.00	2.49	0.75	128.11	3.651	0.75	0.00	0.00
17	175.00	Alcatel Lucent TD-RRH8x20-25	3	70.00	4.05	0.75	182.54	4.877	0.75	0.00	0.00
18	175.00	Alcatel Lucent 1900 MHz RRUs	3	44.00	3.80	0.75	154.86	5.212	0.75	0.00	0.00
19	175.00	Alcatel Lucent 800 MHz Filters	3	17.50	2.91	0.75	43.59	4.146	0.75	0.00	0.00
20	175.00	RFS ACU-A20-N RETs	4	1.00	0.14	0.67	5.36	0.441	0.67	0.00	0.00
21	174.50	7' Pole Branch	1	460.00	15.00	1.00	1014.23	28.289	1.00	0.00	0.00
22	169.50	8' Pole Branch	1	560.00	35.00	1.00	1232.75	65.917	1.00	0.00	0.00
23	165.00	Cobra Arms	3	400.00	13.50	0.75	715.74	20.350	0.75	0.00	0.00
24	165.00	Swedcom SC-E 6014 Rev 2	4	15.00	3.33	0.97	110.69	5.015	0.97	0.00	0.00
25	165.00	Antel LPA 80063/6CF	2	27.00	9.60	0.94	318.22	10.966	0.94	0.00	0.00
26	165.00	SBNHH-1D65B	6	40.00	8.16	0.83	245.45	9.473	0.85	0.00	0.00
27	165.00	RRH2X60-700	3	55.00	3.50	0.76	135.78	4.297	0.78	0.00	0.00
28	165.00	RRH4X45-AWS	3	64.00	2.60	0.80	148.59	3.311	0.82	0.00	0.00
29	165.00	DB-B1-6C-12AB-0Z	2	21.40	4.10	0.91	141.15	4.909	0.92	0.00	0.00
30	164.50	8' Pole Branch	1	560.00	24.24	1.00	1230.74	45.588	1.00	0.00	0.00
31	159.50	9' Pole Branch	1	660.00	45.00	1.00	1448.08	84.509	1.00	0.00	0.00
32	155.00	Cobra Arms	3	400.00	13.50	0.75	713.77	20.308	0.75	0.00	0.00
33	155.00	Powerwave 7770.00	3	35.00	5.50	0.73	170.72	6.569	0.73	0.00	0.00
34	155.00	Powerwave LGP 21401 TMAs	6	17.50	0.95	0.67	45.87	1.234	0.67	0.00	0.00
35	155.00	Powerwave LGP21901 Diplexers	6	5.50	0.27	0.84	13.96	0.669	0.84	0.00	0.00
36	155.00	Raycap DC6-48-60-18-8F Surge	1	31.80	1.47	1.00	93.83	2.172	1.00	0.00	0.00
37	155.00	DMP65R-BU6DA	6	63.30	12.71	0.73	351.84	14.203	0.73	0.00	0.00
38	155.00	4449 B5/B12	3	71.00	1.97	0.67	124.56	2.519	0.67	0.00	0.00
39	155.00	RRUS 8843 B2 B66A	3	72.00	1.64	0.67	119.00	2.139	0.67	0.00	0.00
40	155.00	Horizontal Pipe	3	72.50	3.59	1.00	143.59	8.124	1.00	0.00	0.00
41	155.00	pipe brace	3	87.00	4.31	1.00	221.05	9.713	1.00	0.00	0.00
42	155.00	DC6-48-60-18-8C-EV	1	33.00	1.29	1.00	120.34	1.968	1.00	0.00	0.00
43	154.50	9' Pole Branch	1	660.00	33.48	1.00	1445.57	62.781	1.00	0.00	0.00
44	149.50	10' Pole Branch	1	700.00	50.00	1.00	1530.45	93.616	1.00	0.00	0.00
45	144.50	11' Pole Branch	1	720.00	42.72	1.00	1571.27	79.859	1.00	0.00	0.00
		Totals:	**124**	**14,402.80**			**35,363.56**				

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)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	185.00	(9) 1 5/8" Coax	1.98	Outside
3.00	185.00	(3) 1 5/8" Fiber	0.00	Inside
3.00	175.00	(4) 1 1/4" Coax	0.00	Inside
0.00	165.00	(2) 1 5/8" Hybrid	2.00	Outside
3.00	165.00	(12) 1 5/8" Coax	0.00	Inside
3.00	155.00	(12) 1 5/8" Coax	0.00	Inside
3.00	155.00	(2) 1/2" Fiber	0.00	Inside
3.00	155.00	(4) DC Power	0.00	Inside
143.7	153.75	(3) 1" Reinforcing plate	1.00	Outside

Shaft Section Properties

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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: **2 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.4375	72.500	100.064	65652.4	27.81	165.71	65	69	0.0				
2.00		0.4375	71.926	99.267	64095.1	27.58	164.40	65	69	678.3				
4.00		0.4375	71.351	98.469	62562.7	27.35	163.09	65	69	672.9				
6.00		0.4375	70.777	97.672	61054.9	27.11	161.78	65	70	667.4				
8.00		0.4375	70.203	96.874	59571.6	26.88	160.46	65	70	662.0				
10.00		0.4375	69.628	96.077	58112.4	26.65	159.15	65	70	656.6				
12.00		0.4375	69.054	95.279	56677.3	26.42	157.84	65	70	651.1				
14.00		0.4375	68.480	94.482	55266.0	26.19	156.53	65	71	645.7				
16.00		0.4375	67.905	93.684	53878.3	25.96	155.21	65	71	640.3				
18.00		0.4375	67.331	92.887	52514.1	25.73	153.90	65	71	634.9				
20.00		0.4375	66.757	92.089	51173.1	25.49	152.59	65	71	629.4				
22.00		0.4375	66.182	91.292	49855.1	25.26	151.27	65	72	624.0				
24.00		0.4375	65.608	90.494	48559.9	25.03	149.96	65	72	618.6				
26.00		0.4375	65.034	89.697	47287.4	24.80	148.65	65	72	613.2				
28.00		0.4375	64.459	88.899	46037.2	24.57	147.34	65	73	607.7				
30.00		0.4375	63.885	88.102	44809.4	24.34	146.02	65	73	602.3				
32.00		0.4375	63.311	87.304	43603.5	24.11	144.71	65	73	596.9				
34.00		0.4375	62.736	86.507	42419.5	23.87	143.40	65	73	591.4				
36.00		0.4375	62.162	85.709	41257.1	23.64	142.08	65	74	586.0				
38.00		0.4375	61.588	84.912	40116.1	23.41	140.77	65	74	580.6				
40.00		0.4375	61.014	84.114	38996.4	23.18	139.46	65	74	575.2				
42.00		0.4375	60.439	83.317	37897.7	22.95	138.15	65	74	569.7				
44.00		0.4375	59.865	82.519	36819.8	22.72	136.83	65	75	564.3				
46.00		0.4375	59.291	81.722	35762.6	22.49	135.52	65	75	558.9				
46.17	Bot - Section 2	0.4375	59.243	81.655	35675.4	22.47	135.41	65	75	46.3				
48.00		0.4375	58.716	80.924	34725.8	22.25	134.21	65	75	1021.8				
50.00		0.4375	58.142	80.127	33709.2	22.02	132.90	65	75	1104.3				
52.00		0.4375	57.568	79.329	32712.7	21.79	131.58	65	76	1093.5				
54.00	Top - Section 1	0.4375	57.868	79.747	33231.9	21.91	132.27	65	76	1082.6				
56.00		0.4375	57.294	78.949	32244.9	21.68	130.96	65	76	540.0				
58.00		0.4375	56.720	78.152	31277.6	21.45	129.64	65	76	534.6				
60.00		0.4375	56.145	77.354	30329.8	21.22	128.33	65	76	529.2				
62.00		0.4375	55.571	76.557	29401.4	20.99	127.02	65	77	523.7				
64.00		0.4375	54.997	75.759	28492.1	20.75	125.71	65	77	518.3				
66.00		0.4375	54.422	74.962	27601.8	20.52	124.39	65	77	512.9				
68.00		0.4375	53.848	74.164	26730.2	20.29	123.08	65	78	507.4				
70.00		0.4375	53.274	73.367	25877.1	20.06	121.77	65	78	502.0				
72.00		0.4375	52.699	72.569	25042.4	19.83	120.46	65	78	496.6				
74.00		0.4375	52.125	71.772	24225.8	19.60	119.14	65	78	491.2				
76.00		0.4375	51.551	70.974	23427.2	19.37	117.83	65	79	485.7				
78.00		0.4375	50.976	70.177	22646.4	19.13	116.52	65	79	480.3				
80.00		0.4375	50.402	69.379	21883.0	18.90	115.20	65	79	474.9				
82.00		0.4375	49.828	68.582	21137.1	18.67	113.89	65	79	469.5				
84.00		0.4375	49.253	67.785	20408.2	18.44	112.58	65	80	464.0				
86.00		0.4375	48.679	66.987	19696.4	18.21	111.27	65	80	458.6				
88.00		0.4375	48.105	66.190	19001.2	17.98	109.95	65	80	453.2				
90.00		0.4375	47.530	65.392	18322.7	17.75	108.64	65	81	447.7				
92.00		0.4375	46.956	64.595	17660.5	17.51	107.33	65	81	442.3				
94.00		0.4375	46.382	63.797	17014.4	17.28	106.02	65	81	436.9				
94.08	Bot - Section 3	0.4375	46.358	63.764	16987.8	17.27	105.96	65	81	18.1				

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
96.00		0.4375	45.807	63.000	16384.3	17.05	104.70	65	81	774.0				
98.00		0.4375	45.233	62.202	15769.9	16.82	103.39	65	82	797.8				
100.00		0.4375	44.659	61.405	15171.1	16.59	102.08	65	82	787.7				
100.17	Top - Section 2	0.3750	45.361	53.543	13690.1	19.92	120.96	65	78	65.2				
102.00		0.3750	44.834	52.916	13215.0	19.67	119.56	65	78	332.1				
104.00		0.3750	44.260	52.232	12709.5	19.40	118.03	65	79	357.8				
106.00		0.3750	43.686	51.549	12217.0	19.13	116.50	65	79	353.1				
108.00		0.3750	43.111	50.865	11737.4	18.86	114.96	65	79	348.5				
110.00		0.3750	42.537	50.182	11270.5	18.59	113.43	65	80	343.8				
112.00		0.3750	41.963	49.498	10816.2	18.32	111.90	65	80	339.2				
114.00		0.3750	41.389	48.815	10374.2	18.05	110.37	65	80	334.5				
116.00		0.3750	40.814	48.131	9944.5	17.78	108.84	65	80	329.9				
118.00		0.3750	40.240	47.447	9526.8	17.51	107.31	65	81	325.2				
120.00		0.3750	39.666	46.764	9120.9	17.24	105.77	65	81	320.6				
122.00		0.3750	39.091	46.080	8726.8	16.97	104.24	65	81	315.9				
124.00		0.3750	38.517	45.397	8344.2	16.70	102.71	65	82	311.3				
126.00		0.3750	37.943	44.713	7972.9	16.43	101.18	65	82	306.6				
128.00		0.3750	37.368	44.030	7612.8	16.16	99.65	65	82	302.0				
130.00		0.3750	36.794	43.346	7263.7	15.89	98.12	65	83	297.3				
132.00		0.3750	36.220	42.662	6925.4	15.62	96.59	65	83	292.7				
134.00		0.3750	35.645	41.979	6597.8	15.35	95.05	65	83	288.0				
136.00		0.3750	35.071	41.295	6280.8	15.08	93.52	65	83	283.4				
138.00		0.3750	34.497	40.612	5974.0	14.81	91.99	65	83	278.7				
140.00		0.3750	33.922	39.928	5677.4	14.54	90.46	65	83	274.1				
142.00		0.3750	33.348	39.245	5390.8	14.27	88.93	65	83	269.4				
143.75	Bot - Section 4	0.3750	32.845	38.647	5148.0	14.03	87.59	65	83	231.9				
144.00		0.3750	32.774	38.561	5113.9	14.00	87.40	65	83	49.5				
144.50		0.3750	32.630	38.390	5046.3	13.93	87.01	65	83	98.8				
145.75	RB1	0.3750	32.271	37.963	4879.7	13.76	86.06	65	83	245.0	18.00	2574.9	2574.9	76.6
146.00		0.3750	32.199	37.878	4846.8	13.73	85.86	65	83	48.7	18.00	2564.0	2564.0	15.3
148.00		0.3750	31.625	37.194	4589.1	13.46	84.33	65	83	385.5	18.00	2478.0	2478.0	122.5
148.08	Top - Section 3	0.1875	31.976	18.917	2415.2	28.66	170.54	65	68	15.9	18.00	2474.4	2474.4	5.1
149.50		0.1875	31.569	18.675	2323.7	28.28	168.37	65	68	90.6	18.00	2414.5	2414.5	86.8
150.00		0.1875	31.426	18.590	2291.9	28.14	167.60	65	68	31.7	18.00	2393.5	2393.5	30.6
151.75	RT1	0.1875	30.923	18.291	2183.1	27.67	164.92	65	69	109.8	18.00	2320.7	2320.7	107.2
152.00		0.1875	30.851	18.248	2167.8	27.60	164.54	65	69	15.5				
154.00		0.1875	30.277	17.906	2048.3	27.06	161.48	65	70	123.0				
154.50		0.1875	30.133	17.821	2019.1	26.93	160.71	65	70	30.4				
155.00		0.1875	29.990	17.735	1990.2	26.79	159.95	65	70	30.2				
156.00		0.1875	29.703	17.565	1933.2	26.52	158.41	65	70	60.1				
158.00		0.1875	29.128	17.223	1822.6	25.98	155.35	65	71	118.4				
159.50		0.1875	28.698	16.966	1742.4	25.58	153.05	65	71	87.3				
160.00		0.1875	28.554	16.881	1716.2	25.44	152.29	65	71	28.8				
162.00		0.1875	27.980	16.539	1614.0	24.90	149.23	65	72	113.7				
164.00		0.1875	27.405	16.197	1516.0	24.36	146.16	65	73	111.4				
164.50		0.1875	27.262	16.112	1492.2	24.23	145.40	65	73	27.5				
165.00		0.1875	27.118	16.027	1468.6	24.09	144.63	65	73	27.3				
166.00		0.1875	26.831	15.856	1422.1	23.82	143.10	65	73	54.2				
168.00		0.1875	26.257	15.514	1332.1	23.28	140.04	65	74	106.7				
169.50		0.1875	25.826	15.258	1267.1	22.88	137.74	65	74	78.5				
170.00		0.1875	25.682	15.172	1246.0	22.74	136.97	65	75	25.9				
172.00		0.1875	25.108	14.830	1163.6	22.20	133.91	65	75	102.1				
174.00		0.1875	24.534	14.489	1085.0	21.66	130.85	65	76	99.8				
174.50		0.1875	24.390	14.403	1066.0	21.53	130.08	65	76	24.6				
175.00		0.1875	24.247	14.318	1047.1	21.39	129.32	65	76	24.4				
176.00		0.1875	23.959	14.147	1010.0	21.12	127.78	65	77	48.4				
178.00		0.1875	23.385	13.805	938.6	20.58	124.72	65	77	95.1				
179.50		0.1875	22.954	13.549	887.3	20.18	122.42	65	78	69.8				
180.00		0.1875	22.811	13.463	870.6	20.04	121.66	65	78	23.0				
182.00		0.1875	22.236	13.121	806.0	19.50	118.59	65	78	90.5				

Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ixp (in^4)	Additional Reinforcing Iyp (in^4)	Additional Reinforcing Weight (lb)
184.00		0.1875	21.662	12.780	744.6	18.96	115.53	65	79	88.1				
185.00		0.1875	21.375	12.609	715.1	18.69	114.00	65	79	43.2				
									Total Weight	**40447.1**				**444.1**

Wind Loading - Shaft

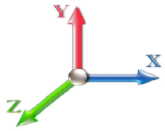
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	17.366	19.10	518.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	17.366	19.10	514.31	0.650	0.000	2.00	12.221	7.94	242.8	0.0	813.9
4.00		1.00	0.70	17.366	19.10	510.20	0.650	0.000	2.00	12.124	7.88	240.9	0.0	807.4
6.00		1.00	0.70	17.366	19.10	506.09	0.650	0.000	2.00	12.027	7.82	238.9	0.0	800.9
8.00		1.00	0.70	17.366	19.10	501.99	0.650	0.000	2.00	11.930	7.75	237.0	0.0	794.4
10.00		1.00	0.70	17.366	19.10	497.88	0.650	0.000	2.00	11.832	7.69	235.1	0.0	787.9
12.00		1.00	0.70	17.366	19.10	493.77	0.650	0.000	2.00	11.735	7.63	233.1	0.0	781.4
14.00		1.00	0.70	17.366	19.10	489.67	0.650	0.000	2.00	11.638	7.56	231.2	0.0	774.9
16.00		1.00	0.70	17.366	19.10	485.56	0.650	0.000	2.00	11.541	7.50	229.3	0.0	768.3
18.00		1.00	0.70	17.366	19.10	481.45	0.650	0.000	2.00	11.444	7.44	227.3	0.0	761.8
20.00		1.00	0.70	17.366	19.10	477.35	0.650	0.000	2.00	11.346	7.38	225.4	0.0	755.3
22.00		1.00	0.70	17.366	19.10	473.24	0.650	0.000	2.00	11.249	7.31	223.5	0.0	748.8
24.00		1.00	0.70	17.366	19.10	469.13	0.650	0.000	2.00	11.152	7.25	221.6	0.0	742.3
26.00		1.00	0.70	17.366	19.10	465.03	0.650	0.000	2.00	11.055	7.19	219.6	0.0	735.8
28.00		1.00	0.70	17.366	19.10	460.92	0.650	0.000	2.00	10.958	7.12	217.7	0.0	729.3
30.00		1.00	0.70	17.381	19.12	457.00	0.650	0.000	2.00	10.860	7.06	215.9	0.0	722.8
32.00		1.00	0.71	17.704	19.47	457.09	0.650	0.000	2.00	10.763	7.00	218.0	0.0	716.2
34.00		1.00	0.73	18.014	19.82	456.88	0.650	0.000	2.00	10.666	6.93	219.8	0.0	709.7
36.00		1.00	0.74	18.310	20.14	456.41	0.650	0.000	2.00	10.569	6.87	221.4	0.0	703.2
38.00		1.00	0.75	18.595	20.45	455.70	0.650	0.000	2.00	10.472	6.81	222.8	0.0	696.7
40.00		1.00	0.76	18.870	20.76	454.77	0.650	0.000	2.00	10.374	6.74	224.0	0.0	690.2
42.00		1.00	0.77	19.135	21.05	453.64	0.650	0.000	2.00	10.277	6.68	225.0	0.0	683.7
44.00		1.00	0.78	19.391	21.33	452.33	0.650	0.000	2.00	10.180	6.62	225.8	0.0	677.2
46.00		1.00	0.79	19.639	21.60	450.84	0.650	0.000	2.00	10.083	6.55	226.5	0.0	670.7
46.17	Bot - Section 2	1.00	0.79	19.659	21.62	450.71	0.650	0.000	0.17	0.836	0.54	18.8	0.0	55.6
48.00		1.00	0.80	19.879	21.87	449.20	0.650	0.000	1.83	9.285	6.04	211.2	0.0	1226.2
50.00		1.00	0.81	20.112	22.12	447.41	0.650	0.000	2.00	10.036	6.52	230.9	0.0	1325.2
52.00		1.00	0.82	20.339	22.37	445.48	0.650	0.000	2.00	9.939	6.46	231.3	0.0	1312.1
54.00	Top - Section 1	1.00	0.83	20.559	22.62	443.42	0.650	0.000	2.00	9.842	6.40	231.5	0.0	1299.1
56.00		1.00	0.84	20.774	22.85	448.08	0.650	0.000	2.00	9.745	6.33	231.6	0.0	648.0
58.00		1.00	0.85	20.983	23.08	445.82	0.650	0.000	2.00	9.648	6.27	231.6	0.0	641.5
60.00		1.00	0.85	21.187	23.31	443.44	0.650	0.000	2.00	9.550	6.21	231.5	0.0	635.0
62.00		1.00	0.86	21.387	23.53	440.97	0.650	0.000	2.00	9.453	6.14	231.3	0.0	628.5
64.00		1.00	0.87	21.582	23.74	438.39	0.650	0.000	2.00	9.356	6.08	231.0	0.0	622.0
66.00		1.00	0.88	21.772	23.95	435.73	0.650	0.000	2.00	9.259	6.02	230.6	0.0	615.4
68.00		1.00	0.89	21.959	24.15	432.97	0.650	0.000	2.00	9.162	5.96	230.2	0.0	608.9
70.00		1.00	0.89	22.142	24.36	430.13	0.650	0.000	2.00	9.065	5.89	229.6	0.0	602.4
72.00		1.00	0.90	22.320	24.55	427.21	0.650	0.000	2.00	8.967	5.83	229.0	0.0	595.9
74.00		1.00	0.91	22.496	24.75	424.21	0.650	0.000	2.00	8.870	5.77	228.3	0.0	589.4
76.00		1.00	0.91	22.668	24.93	421.14	0.650	0.000	2.00	8.773	5.70	227.5	0.0	582.9
78.00		1.00	0.92	22.837	25.12	418.00	0.650	0.000	2.00	8.676	5.64	226.7	0.0	576.4
80.00		1.00	0.93	23.003	25.30	414.78	0.650	0.000	2.00	8.579	5.58	225.7	0.0	569.9
82.00		1.00	0.93	23.165	25.48	411.51	0.650	0.000	2.00	8.481	5.51	224.8	0.0	563.3
84.00		1.00	0.94	23.325	25.66	408.17	0.650	0.000	2.00	8.384	5.45	223.7	0.0	556.8
86.00		1.00	0.95	23.483	25.83	404.76	0.650	0.000	2.00	8.287	5.39	222.6	0.0	550.3
88.00		1.00	0.95	23.638	26.00	401.31	0.650	0.000	2.00	8.190	5.32	221.5	0.0	543.8
90.00		1.00	0.96	23.790	26.17	397.79	0.650	0.000	2.00	8.093	5.26	220.2	0.0	537.3

Wind Loading - Shaft

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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

92.00	1.00	0.96	23.940	26.33	394.22	0.650	0.000	2.00	7.995	5.20	219.0	0.0	530.8
94.00	1.00	0.97	24.087	26.50	390.59	0.650	0.000	2.00	7.898	5.13	217.6	0.0	524.3
94.08 Bot - Section 3	1.00	0.97	24.093	26.50	390.44	0.650	0.000	0.08	0.327	0.21	9.0	0.0	21.7
96.00	1.00	0.98	24.233	26.66	386.92	0.650	0.000	1.92	7.596	4.94	210.6	0.0	928.8
98.00	1.00	0.98	24.376	26.81	383.20	0.650	0.000	2.00	7.831	5.09	218.4	0.0	957.3
100.00	1.00	0.99	24.517	26.97	379.42	0.650	0.000	2.00	7.733	5.03	216.9	0.0	945.2
100.17 Top - Section 2	1.00	0.99	24.529	26.98	379.11	0.650	0.000	0.17	0.640	0.42	18.0	0.0	78.2
102.00	1.00	0.99	24.656	27.12	382.00	0.650	0.000	1.83	6.996	4.55	197.3	0.0	398.5
104.00	1.00	1.00	24.793	27.27	378.15	0.650	0.000	2.00	7.539	4.90	213.8	0.0	429.4
106.00	1.00	1.00	24.928	27.42	374.26	0.650	0.000	2.00	7.442	4.84	212.2	0.0	423.8
108.00	1.00	1.01	25.062	27.57	370.33	0.650	0.000	2.00	7.345	4.77	210.6	0.0	418.2
110.00	1.00	1.02	25.194	27.71	366.35	0.650	0.000	2.00	7.247	4.71	208.9	0.0	412.6
112.00	1.00	1.02	25.324	27.86	362.34	0.650	0.000	2.00	7.150	4.65	207.1	0.0	407.0
114.00	1.00	1.03	25.452	28.00	358.28	0.650	0.000	2.00	7.053	4.58	205.4	0.0	401.4
116.00	1.00	1.03	25.579	28.14	354.19	0.650	0.000	2.00	6.956	4.52	203.5	0.0	395.9
118.00	1.00	1.04	25.704	28.27	350.06	0.650	0.000	2.00	6.859	4.46	201.7	0.0	390.3
120.00	1.00	1.04	25.828	28.41	345.89	0.650	0.000	2.00	6.762	4.39	199.8	0.0	384.7
122.00	1.00	1.05	25.950	28.55	341.69	0.650	0.000	2.00	6.664	4.33	197.8	0.0	379.1
124.00	1.00	1.05	26.071	28.68	337.45	0.652 *	0.000	2.00	6.567	4.28	196.5	0.0	373.5
126.00	1.00	1.06	26.190	28.81	333.18	0.655 *	0.000	2.00	6.470	4.24	195.3	0.0	367.9
128.00	1.00	1.06	26.309	28.94	328.88	0.658 *	0.000	2.00	6.373	4.19	194.2	0.0	362.4
130.00	1.00	1.07	26.425	29.07	324.54	0.661 *	0.000	2.00	6.276	4.15	193.0	0.0	356.8
132.00	1.00	1.07	26.541	29.19	320.17	0.664 *	0.000	2.00	6.178	4.10	191.7	0.0	351.2
134.00	1.00	1.07	26.655	29.32	315.77	0.668 *	0.000	2.00	6.081	4.06	190.5	0.0	345.6
136.00	1.00	1.08	26.768	29.44	311.35	0.671 *	0.000	2.00	5.984	4.02	189.2	0.0	340.0
138.00	1.00	1.08	26.880	29.57	306.89	0.675 *	0.000	2.00	5.887	3.97	187.9	0.0	334.5
140.00	1.00	1.09	26.991	29.69	302.40	0.678 *	0.000	2.00	5.790	3.93	186.6	0.0	328.9
142.00	1.00	1.09	27.100	29.81	297.88	0.682 *	0.000	2.00	5.692	3.88	185.2	0.0	323.3
143.75 Bot - Section 4	1.00	1.10	27.195	29.91	293.91	0.686 *	0.000	1.75	4.901	3.36	160.9	0.0	278.3
144.00	1.00	1.10	27.209	29.93	293.34	0.746 *	0.000	0.25	0.702	0.52	25.1	0.0	59.5
144.50 Appurtenance(s)	1.00	1.10	27.236	29.96	292.20	0.747 *	0.000	0.50	1.399	1.05	50.1	0.0	118.5
145.75 RB1	1.00	1.10	27.303	30.03	289.34	0.750 *	0.000	1.25	3.472	2.60	125.1	0.0	294.0
146.00	1.00	1.10	27.316	30.05	288.76	0.752 *	0.000	0.25	0.690	0.52	24.9	0.0	58.4
148.00	1.00	1.11	27.423	30.17	284.17	0.755 *	0.000	2.00	5.464	4.12	199.0	0.0	462.5
148.08 Top - Section 3	1.00	1.11	27.427	30.17	283.97	0.758 *	0.000	0.08	0.226	0.17	8.2	0.0	19.1
149.50 Appurtenance(s)	1.00	1.11	27.502	30.25	284.07	0.756 *	0.000	1.42	3.809	2.88	139.4	0.0	108.7
150.00	1.00	1.11	27.528	30.28	282.92	0.759 *	0.000	0.50	1.333	1.01	49.0	0.0	38.0
151.75 RT1	1.00	1.11	27.620	30.38	278.85	0.762 *	0.000	1.75	4.616	3.52	170.9	0.0	131.8
152.00	1.00	1.11	27.633	30.40	278.27	0.765 *	0.000	0.25	0.653	0.50	24.3	0.0	18.7
154.00	1.00	1.12	27.736	30.51	273.60	0.760 *	0.000	2.00	5.173	3.93	191.9	0.0	147.6
154.50 Appurtenance(s)	1.00	1.12	27.762	30.54	272.43	0.708 *	0.000	0.50	1.278	0.90	44.2	0.0	36.5
155.00 Appurtenance(s)	1.00	1.12	27.787	30.57	271.26	0.709 *	0.000	0.50	1.272	0.90	44.1	0.0	36.3
156.00	1.00	1.12	27.838	30.62	268.91	0.711 *	0.000	1.00	2.526	1.80	88.0	0.0	72.1
158.00	1.00	1.13	27.940	30.73	264.19	0.715 *	0.000	2.00	4.978	3.56	175.0	0.0	142.0
159.50 Appurtenance(s)	1.00	1.13	28.015	30.82	260.63	0.719 *	0.000	1.50	3.670	2.64	130.2	0.0	104.7
160.00	1.00	1.13	28.040	30.84	259.45	0.722 *	0.000	0.50	1.211	0.87	43.2	0.0	34.6
162.00	1.00	1.13	28.140	30.95	254.68	0.725 *	0.000	2.00	4.784	3.47	171.9	0.0	136.5
164.00	1.00	1.14	28.239	31.06	249.89	0.731 *	0.000	2.00	4.687	3.43	170.3	0.0	133.7
164.50 Appurtenance(s)	1.00	1.14	28.264	31.09	248.69	0.735 *	0.000	0.50	1.156	0.85	42.3	0.0	33.0
165.00 Appurtenance(s)	1.00	1.14	28.288	31.12	247.48	0.736 *	0.000	0.50	1.150	0.85	42.2	0.0	32.8
166.00	1.00	1.14	28.337	31.17	245.08	0.650	0.000	1.00	2.283	1.48	74.0	0.0	65.1
168.00	1.00	1.15	28.434	31.28	240.24	0.650	0.000	2.00	4.492	2.92	146.1	0.0	128.1
169.50 Appurtenance(s)	1.00	1.15	28.506	31.36	236.60	0.650	0.000	1.50	3.305	2.15	107.8	0.0	94.2
170.00	1.00	1.15	28.530	31.38	235.38	0.650	0.000	0.50	1.090	0.71	35.6	0.0	31.1
172.00	1.00	1.15	28.626	31.49	230.50	0.650	0.000	2.00	4.298	2.79	140.7	0.0	122.5
174.00	1.00	1.16	28.721	31.59	225.60	0.650	0.000	2.00	4.201	2.73	138.0	0.0	119.7
174.50 Appurtenance(s)	1.00	1.16	28.744	31.62	224.38	0.650	0.000	0.50	1.035	0.67	34.0	0.0	29.5

Wind Loading - Shaft

Structure: CT00707-S-SBA
Site Name: North Easton
Height: 185.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

10/30/2019

Tower Engineering Solutions

175.00 Appurtenance(s)	1.00	1.16	28.768	31.64	223.15	0.650	0.000	0.50	1.029	0.67	33.9	0.0	29.3
176.00	1.00	1.16	28.815	31.70	220.68	0.650	0.000	1.00	2.040	1.33	67.2	0.0	58.1
178.00	1.00	1.17	28.908	31.80	215.74	0.650	0.000	2.00	4.006	2.60	132.5	0.0	114.1
179.50 Appurtenance(s)	1.00	1.17	28.977	31.87	212.02	0.650	0.000	1.50	2.941	1.91	97.5	0.0	83.8
180.00	1.00	1.17	29.000	31.90	210.78	0.650	0.000	0.50	0.968	0.63	32.1	0.0	27.6
182.00	1.00	1.17	29.092	32.00	205.80	0.650	0.000	2.00	3.812	2.48	126.9	0.0	108.6
184.00	1.00	1.18	29.183	32.10	200.79	0.650	0.000	2.00	3.715	2.41	124.0	0.0	105.8
185.00 Appurtenance(s)	1.00	1.18	29.228	32.15	198.29	0.650	0.000	1.00	1.821	1.18	60.9	0.0	51.8
							Totals:	**185.00**			**18,992.6**		**48,536.5**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

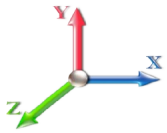
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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	185.00	APX16DWV-16DWV-S-E-	3	29.228	32.151	0.62	1.00	12.02	146.52	0.000	0.000	618.10	0.00	0.00
2	185.00	Kathrein 782 11056	3	29.318	32.250	0.67	1.00	0.26	10.44	0.000	2.000	13.48	0.00	26.97
3	185.00	Allen Telecom	6	29.318	32.250	0.75	1.00	2.48	126.00	0.000	2.000	127.71	0.00	255.42
4	185.00	Cobra Arms	3	29.228	32.151	0.75	1.00	14.63	1260.00	0.000	0.000	752.33	0.00	0.00
5	185.00	6' Pole Branch	1	29.228	32.151	1.00	1.00	16.06	360.00	0.000	0.000	826.15	0.00	0.00
6	185.00	RRUS 4415 B25	3	29.228	32.151	0.67	1.00	3.30	165.60	0.000	0.000	169.57	0.00	0.00
7	185.00	(3) Sitepro SV197-36	1	29.228	32.151	1.00	1.00	16.50	600.00	0.000	0.000	848.78	0.00	0.00
8	185.00	Ring mount (Sitepro	1	29.228	32.151	1.00	1.00	1.50	78.72	0.000	0.000	77.16	0.00	0.00
9	185.00	Radio 4449 B71+B12	3	29.228	32.151	0.67	1.00	3.96	255.60	0.000	0.000	203.69	0.00	0.00
10	185.00	Radio 4415 B66A	3	29.228	32.151	0.67	1.00	3.30	165.60	0.000	0.000	169.57	0.00	0.00
11	185.00	APXVAA24_43-U-A20	3	29.228	32.151	0.73	1.00	44.33	356.40	0.000	0.000	2280.17	0.00	0.00
12	179.50	6' Pole Branch	1	28.977	31.875	1.00	1.00	46.00	360.00	0.000	0.000	2345.98	0.00	0.00
13	175.00	Alcatel Lucent 800 MHz	3	28.768	31.644	0.60	0.80	4.48	190.80	0.000	0.000	226.93	0.00	0.00
14	175.00	Cobra Arms	3	28.768	31.644	0.56	0.75	22.78	1440.00	0.000	0.000	1153.44	0.00	0.00
15	175.00	RFS APXVTM14-C-120	3	28.768	31.644	0.63	0.80	12.02	201.60	0.000	0.000	608.62	0.00	0.00
16	175.00	RFS APXVSPP18-C-A20	3	28.768	31.644	0.66	0.80	15.98	205.20	0.000	0.000	808.87	0.00	0.00
17	175.00	Alcatel Lucent 800 MHz	3	28.768	31.644	0.60	0.80	5.24	63.00	0.000	0.000	265.21	0.00	0.00
18	175.00	Alcatel Lucent	3	28.768	31.644	0.60	0.80	7.29	252.00	0.000	0.000	369.10	0.00	0.00
19	175.00	Alcatel Lucent 1900 MHz	3	28.768	31.644	0.60	0.80	6.84	158.40	0.000	0.000	346.32	0.00	0.00
20	175.00	RFS ACU-A20-N RETs	4	28.768	31.644	0.54	0.80	0.30	4.80	0.000	0.000	15.20	0.00	0.00
21	174.50	7' Pole Branch	1	28.744	31.619	1.00	1.00	15.00	552.00	0.000	0.000	758.85	0.00	0.00
22	169.50	8' Pole Branch	1	28.506	31.357	1.00	1.00	35.00	672.00	0.000	0.000	1755.99	0.00	0.00
23	165.00	DB-B1-6C-12AB-0Z	2	28.288	31.117	0.73	0.80	5.97	51.36	0.000	0.000	297.21	0.00	0.00
24	165.00	RRH4X45-AWS	3	28.288	31.117	0.64	0.80	4.99	230.40	0.000	0.000	248.54	0.00	0.00
25	165.00	RRH2X60-700	3	28.288	31.117	0.61	0.80	6.38	198.00	0.000	0.000	317.84	0.00	0.00
26	165.00	SBNHH-1D65B	6	28.288	31.117	0.66	0.80	32.51	288.00	0.000	0.000	1618.55	0.00	0.00
27	165.00	Antel LPA 80063/6CF	2	28.288	31.117	0.75	0.80	14.44	64.80	0.000	0.000	718.84	0.00	0.00
28	165.00	Swedcom SC-E 6014 Rev	4	28.288	31.117	0.78	0.80	10.34	72.00	0.000	0.000	514.61	0.00	0.00
29	165.00	Cobra Arms	3	28.288	31.117	0.56	0.75	22.78	1440.00	0.000	0.000	1134.21	0.00	0.00
30	164.50	8' Pole Branch	1	28.264	31.090	1.00	1.00	24.24	672.00	0.000	0.000	1205.79	0.00	0.00
31	159.50	9' Pole Branch	1	28.015	30.817	1.00	1.00	45.00	792.00	0.000	0.000	2218.82	0.00	0.00
32	155.00	Powerwave LGP21901	6	27.787	30.566	0.67	0.80	1.09	39.60	0.000	0.000	53.24	0.00	0.00
33	155.00	Powerwave LGP 21401	6	27.787	30.566	0.54	0.80	3.06	126.00	0.000	0.000	149.42	0.00	0.00
34	155.00	Raycap DC6-48-60-18-8F	1	27.787	30.566	0.80	0.80	1.18	38.16	0.000	0.000	57.51	0.00	0.00
35	155.00	Powerwave 7770.00	3	27.787	30.566	0.58	0.80	9.64	126.00	0.000	0.000	471.25	0.00	0.00
36	155.00	Cobra Arms	3	27.787	30.566	0.56	0.75	22.78	1440.00	0.000	0.000	1114.13	0.00	0.00
37	155.00	Horizontal Pipe	3	27.787	30.566	1.00	1.00	10.78	261.00	0.000	0.000	527.27	0.00	0.00
38	155.00	DMP65R-BU6DA	6	27.787	30.566	0.58	0.80	44.54	455.76	0.000	0.000	2178.05	0.00	0.00
39	155.00	4449 B5/B12	3	27.787	30.566	0.54	0.80	3.17	255.60	0.000	0.000	154.92	0.00	0.00
40	155.00	RRUS 8843 B2 B66A	3	27.787	30.566	0.54	0.80	2.64	259.20	0.000	0.000	128.97	0.00	0.00
41	155.00	pipe brace	3	27.787	30.566	1.00	1.00	12.93	313.20	0.000	0.000	632.35	0.00	0.00
42	155.00	DC6-48-60-18-8C-EV	1	27.787	30.566	0.80	0.80	1.03	39.60	0.000	0.000	50.47	0.00	0.00
43	154.50	9' Pole Branch	1	27.762	30.538	1.00	1.00	33.48	792.00	0.000	0.000	1635.85	0.00	0.00
44	149.50	10' Pole Branch	1	27.502	30.252	1.00	1.00	50.00	840.00	0.000	0.000	2420.17	0.00	0.00
45	144.50	11' Pole Branch	1	27.236	29.959	1.00	1.00	42.72	864.00	0.000	0.000	2047.79	0.00	0.00
							Totals:		**17,283.36**			**34,637.01**		

Total Applied Force Summary

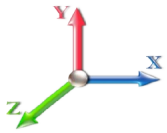
Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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
2.00		242.80	819.21	0.00	0.00
4.00		240.87	862.86	0.00	0.00
6.00		238.93	906.51	0.00	0.00
8.00		237.00	900.00	0.00	0.00
10.00		235.07	893.48	0.00	0.00
12.00		233.14	886.97	0.00	0.00
14.00		231.21	880.46	0.00	0.00
16.00		229.28	873.94	0.00	0.00
18.00		227.35	867.43	0.00	0.00
20.00		225.42	860.92	0.00	0.00
22.00		223.49	854.41	0.00	0.00
24.00		221.56	847.89	0.00	0.00
26.00		219.62	841.38	0.00	0.00
28.00		217.69	834.87	0.00	0.00
30.00		215.94	828.35	0.00	0.00
32.00		217.99	821.84	0.00	0.00
34.00		219.80	815.33	0.00	0.00
36.00		221.38	808.82	0.00	0.00
38.00		222.76	802.30	0.00	0.00
40.00		223.95	795.79	0.00	0.00
42.00		224.97	789.28	0.00	0.00
44.00		225.82	782.76	0.00	0.00
46.00		226.53	776.25	0.00	0.00
46.17		18.80	64.39	0.00	0.00
48.00		211.17	1322.99	0.00	0.00
50.00		230.92	1430.77	0.00	0.00
52.00		231.26	1417.75	0.00	0.00
54.00		231.48	1404.72	0.00	0.00
56.00		231.59	753.61	0.00	0.00
58.00		231.59	747.10	0.00	0.00
60.00		231.49	740.58	0.00	0.00
62.00		231.29	734.07	0.00	0.00
64.00		231.00	727.56	0.00	0.00
66.00		230.62	721.05	0.00	0.00
68.00		230.15	714.53	0.00	0.00
70.00		229.60	708.02	0.00	0.00
72.00		228.98	701.51	0.00	0.00
74.00		228.27	694.99	0.00	0.00
76.00		227.50	688.48	0.00	0.00
78.00		226.66	681.97	0.00	0.00
80.00		225.74	675.46	0.00	0.00
82.00		224.77	668.94	0.00	0.00
84.00		223.72	662.43	0.00	0.00
86.00		222.62	655.92	0.00	0.00
88.00		221.46	649.40	0.00	0.00
90.00		220.24	642.89	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

92.00		218.97	636.38	0.00	0.00
94.00		217.64	629.87	0.00	0.00
94.08		9.01	26.10	0.00	0.00
96.00		210.57	1030.00	0.00	0.00
98.00		218.37	1062.94	0.00	0.00
100.00		216.90	1050.85	0.00	0.00
100.17		17.96	87.02	0.00	0.00
102.00		197.34	495.28	0.00	0.00
104.00		213.83	534.96	0.00	0.00
106.00		212.23	529.37	0.00	0.00
108.00		210.58	523.79	0.00	0.00
110.00		208.88	518.21	0.00	0.00
112.00		207.15	512.63	0.00	0.00
114.00		205.37	507.04	0.00	0.00
116.00		203.55	501.46	0.00	0.00
118.00		201.68	495.88	0.00	0.00
120.00		199.78	490.30	0.00	0.00
122.00		197.84	484.71	0.00	0.00
124.00		196.46	479.13	0.00	0.00
126.00		195.32	473.55	0.00	0.00
128.00		194.15	467.97	0.00	0.00
130.00		192.96	462.38	0.00	0.00
132.00		191.74	456.80	0.00	0.00
134.00		190.49	451.22	0.00	0.00
136.00		189.21	445.64	0.00	0.00
138.00		187.91	440.05	0.00	0.00
140.00		186.58	434.47	0.00	0.00
142.00		185.23	428.89	0.00	0.00
143.75		160.91	370.70	0.00	0.00
144.00		25.10	72.65	0.00	0.00
144.50	(1) attachments	2097.93	1008.92	0.00	0.00
145.75		125.08	360.00	0.00	0.00
146.00		24.93	71.61	0.00	0.00
148.00		199.03	568.15	0.00	0.00
148.08		8.25	23.49	0.00	0.00
149.50	(1) attachments	2559.54	1023.53	0.00	0.00
150.00		48.98	64.44	0.00	0.00
151.75		170.95	224.17	0.00	0.00
152.00		24.30	31.85	0.00	0.00
154.00		191.91	253.23	0.00	0.00
154.50	(1) attachments	1680.06	854.87	0.00	0.00
155.00	(38) attachments	5561.70	3416.82	0.00	0.00
156.00		87.99	107.83	0.00	0.00
158.00		174.99	213.57	0.00	0.00
159.50	(1) attachments	2348.98	950.34	0.00	0.00
160.00		43.15	52.43	0.00	0.00
162.00		171.86	207.99	0.00	0.00
164.00		170.27	205.19	0.00	0.00
164.50	(1) attachments	1248.05	722.86	0.00	0.00
165.00	(23) attachments	4891.96	2395.25	0.00	0.00
166.00		73.99	83.24	0.00	0.00
168.00		146.13	164.38	0.00	0.00
169.50	(1) attachments	1863.79	793.45	0.00	0.00
170.00		35.56	40.14	0.00	0.00
172.00		140.75	158.80	0.00	0.00
174.00		138.02	156.01	0.00	0.00
174.50	(1) attachments	792.88	590.57	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

175.00	(25) attachments	3827.54	2554.19	0.00	0.00
176.00		67.23	73.09	0.00	0.00
178.00		132.49	144.09	0.00	0.00
179.50	(1) attachments	2443.48	466.23	0.00	0.00
180.00		32.12	35.06	0.00	0.00
182.00		126.86	138.51	0.00	0.00
184.00		124.01	135.71	0.00	0.00
185.00	(30) attachments	6147.60	3591.69	0.00	282.38
	Totals:	**53,629.57**	**74,542.15**	**0.00**	**282.38**

Linear Appurtenance Segment Forces (Factored)

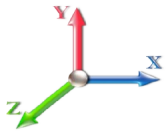
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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)
2.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.027	0.000	17.366	0.00	5.28
4.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.041	0.000	17.366	0.00	11.23
4.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.041	0.000	17.366	0.00	5.28
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	17.366	0.00	22.46
6.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.055	0.000	17.366	0.00	5.28
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	17.366	0.00	22.46
8.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	17.366	0.00	5.28
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	17.366	0.00	22.46
10.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	17.366	0.00	5.28
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	22.46
12.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	5.28
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	22.46
14.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	5.28
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	22.46
16.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	5.28
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	17.366	0.00	22.46
18.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	17.366	0.00	5.28
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	17.366	0.00	22.46
20.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	17.366	0.00	5.28
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	17.366	0.00	22.46
22.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	17.366	0.00	5.28
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	17.366	0.00	22.46
24.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	17.366	0.00	5.28
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	17.366	0.00	22.46
26.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.060	0.000	17.366	0.00	5.28
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	17.366	0.00	22.46
28.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	17.366	0.00	5.28
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	17.381	0.00	22.46
30.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	17.381	0.00	5.28
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	17.704	0.00	22.46
32.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	17.704	0.00	5.28
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	18.014	0.00	22.46
34.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	18.014	0.00	5.28
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	18.310	0.00	22.46
36.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	18.310	0.00	5.28
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	18.595	0.00	22.46
38.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	18.595	0.00	5.28
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.064	0.000	18.870	0.00	22.46
40.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.064	0.000	18.870	0.00	5.28
42.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	19.135	0.00	22.46
42.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	19.135	0.00	5.28
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	19.391	0.00	22.46
44.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	19.391	0.00	5.28
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	19.639	0.00	22.46
46.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	19.639	0.00	5.28
46.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.066	0.000	19.659	0.00	1.87
46.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.066	0.000	19.659	0.00	0.44

Linear Appurtenance Segment Forces (Factored)

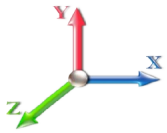
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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)
48.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.066	0.000	19.879	0.00	20.59
48.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.066	0.000	19.879	0.00	4.84
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	20.112	0.00	22.46
50.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.067	0.000	20.112	0.00	5.28
52.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.339	0.00	22.46
52.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.339	0.00	5.28
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.559	0.00	22.46
54.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.559	0.00	5.28
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.774	0.00	22.46
56.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.774	0.00	5.28
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	20.983	0.00	22.46
58.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	20.983	0.00	5.28
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	21.187	0.00	22.46
60.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	21.187	0.00	5.28
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	21.387	0.00	22.46
62.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.387	0.00	5.28
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	21.582	0.00	22.46
64.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.582	0.00	5.28
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	21.772	0.00	22.46
66.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.772	0.00	5.28
68.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	21.959	0.00	22.46
68.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.959	0.00	5.28
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	22.142	0.00	22.46
70.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	22.142	0.00	5.28
72.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	22.320	0.00	22.46
72.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	22.320	0.00	5.28
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	22.496	0.00	22.46
74.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	22.496	0.00	5.28
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	22.668	0.00	22.46
76.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	22.668	0.00	5.28
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	22.837	0.00	22.46
78.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	22.837	0.00	5.28
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	23.003	0.00	22.46
80.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	23.003	0.00	5.28
82.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.078	0.000	23.165	0.00	22.46
82.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	23.165	0.00	5.28
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	23.325	0.00	22.46
84.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	23.325	0.00	5.28
86.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.080	0.000	23.483	0.00	22.46
86.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	23.483	0.00	5.28
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	23.638	0.00	22.46
88.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	23.638	0.00	5.28
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	23.790	0.00	22.46
90.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.082	0.000	23.790	0.00	5.28
92.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.083	0.000	23.940	0.00	22.46
92.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	23.940	0.00	5.28
94.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.084	0.000	24.087	0.00	22.46

Linear Appurtenance Segment Forces (Factored)

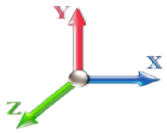
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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)
94.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	24.087	0.00	5.28
94.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.085	0.000	24.093	0.00	0.94
94.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.085	0.000	24.093	0.00	0.22
96.00	1 5/8" Coax	Yes	1.92	0.000	1.98	0.32	0.00	0.085	0.000	24.233	0.00	21.53
96.00	1 5/8" Hybrid	Yes	1.92	0.000	2.00	0.32	0.00	0.085	0.000	24.233	0.00	5.06
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.086	0.000	24.376	0.00	22.46
98.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	24.376	0.00	5.28
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	24.517	0.00	22.46
100.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	24.517	0.00	5.28
100.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.088	0.000	24.529	0.00	1.87
100.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.088	0.000	24.529	0.00	0.44
102.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.087	0.000	24.656	0.00	20.59
102.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.087	0.000	24.656	0.00	4.84
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.088	0.000	24.793	0.00	22.46
104.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.088	0.000	24.793	0.00	5.28
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	24.928	0.00	22.46
106.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	24.928	0.00	5.28
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.090	0.000	25.062	0.00	22.46
108.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	25.062	0.00	5.28
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.092	0.000	25.194	0.00	22.46
110.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	25.194	0.00	5.28
112.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.093	0.000	25.324	0.00	22.46
112.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	25.324	0.00	5.28
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.094	0.000	25.452	0.00	22.46
114.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	25.452	0.00	5.28
116.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.095	0.000	25.579	0.00	22.46
116.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	25.579	0.00	5.28
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.097	0.000	25.704	0.00	22.46
118.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.097	0.000	25.704	0.00	5.28
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.098	0.000	25.828	0.00	22.46
120.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.098	0.000	25.828	0.00	5.28
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.100	0.000	25.950	0.00	22.46
122.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.100	0.000	25.950	0.00	5.28
124.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.003	26.071	0.00	22.46
124.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.101	1.003	26.071	0.00	5.28
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.008	26.190	0.00	22.46
126.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.103	1.008	26.190	0.00	5.28
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.012	26.309	0.00	22.46
128.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.104	1.012	26.309	0.00	5.28
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	26.425	0.00	22.46
130.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.106	1.017	26.425	0.00	5.28
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.107	1.022	26.541	0.00	22.46
132.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.107	1.022	26.541	0.00	5.28
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.109	1.027	26.655	0.00	22.46
134.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.109	1.027	26.655	0.00	5.28
136.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.111	1.033	26.768	0.00	22.46
136.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	26.768	0.00	5.28

Linear Appurtenance Segment Forces (Factored)

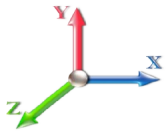
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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)
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.113	1.038	26.880	0.00	22.46
138.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.113	1.038	26.880	0.00	5.28
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.115	1.044	26.991	0.00	22.46
140.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.115	1.044	26.991	0.00	5.28
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.117	1.050	27.100	0.00	22.46
142.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.117	1.050	27.100	0.00	5.28
143.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.118	1.055	27.195	0.00	19.66
143.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.118	1.055	27.195	0.00	4.62
144.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.149	1.148	27.209	0.00	2.81
144.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.149	1.148	27.209	0.00	0.66
144.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.149	1.148	27.209	0.00	0.00
144.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.150	1.150	27.236	0.00	5.62
144.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.150	1.150	27.236	0.00	1.32
144.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.150	1.150	27.236	0.00	0.00
145.75	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.151	1.153	27.303	0.00	14.04
145.75	1 5/8" Hybrid	Yes	1.25	0.000	2.00	0.21	0.00	0.151	1.153	27.303	0.00	3.30
145.75	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.151	1.153	27.303	0.00	0.00
146.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.152	1.156	27.316	0.00	2.81
146.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.152	1.156	27.316	0.00	0.66
146.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.152	1.156	27.316	0.00	0.00
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.154	1.161	27.423	0.00	22.46
148.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.154	1.161	27.423	0.00	5.28
148.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.154	1.161	27.423	0.00	0.00
148.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.155	1.165	27.427	0.00	0.94
148.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.155	1.165	27.427	0.00	0.22
148.08	1" Reinforcing plate	Yes	0.08	0.000	1.00	0.01	0.00	0.155	1.165	27.427	0.00	0.00
149.50	1 5/8" Coax	Yes	1.42	0.000	1.98	0.23	0.00	0.154	1.163	27.502	0.00	15.91
149.50	1 5/8" Hybrid	Yes	1.42	0.000	2.00	0.24	0.00	0.154	1.163	27.502	0.00	3.74
149.50	1" Reinforcing plate	Yes	1.42	0.000	1.00	0.12	0.00	0.154	1.163	27.502	0.00	0.00
150.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.156	1.167	27.528	0.00	5.62
150.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.156	1.167	27.528	0.00	1.32
150.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.156	1.167	27.528	0.00	0.00
151.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.157	1.172	27.620	0.00	19.66
151.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.157	1.172	27.620	0.00	4.62
151.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.157	1.172	27.620	0.00	0.00
152.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.159	1.176	27.633	0.00	2.81
152.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.159	1.176	27.633	0.00	0.66
152.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.159	1.176	27.633	0.00	0.00
154.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.156	1.169	27.736	0.00	22.46
154.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.156	1.169	27.736	0.00	5.28
154.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.156	1.169	27.736	0.00	0.00
154.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.089	27.762	0.00	5.62
154.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.089	27.762	0.00	1.32
155.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.091	27.787	0.00	5.62
155.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.091	27.787	0.00	1.32
156.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.094	27.838	0.00	11.23
156.00	1 5/8" Hybrid	Yes	1.00	0.000	2.00	0.17	0.00	0.131	1.094	27.838	0.00	2.64

Linear Appurtenance Segment Forces (Factored)

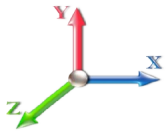
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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)
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.100	27.940	0.00	22.46
158.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.133	1.100	27.940	0.00	5.28
159.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.136	1.107	28.015	0.00	16.85
159.50	1 5/8" Hybrid	Yes	1.50	0.000	2.00	0.25	0.00	0.136	1.107	28.015	0.00	3.96
160.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.137	1.111	28.040	0.00	5.62
160.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.137	1.111	28.040	0.00	1.32
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.139	1.116	28.140	0.00	22.46
162.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.139	1.116	28.140	0.00	5.28
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.142	1.125	28.239	0.00	22.46
164.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.142	1.125	28.239	0.00	5.28
164.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.143	1.130	28.264	0.00	5.62
164.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.143	1.130	28.264	0.00	1.32
165.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.144	1.132	28.288	0.00	5.62
165.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.144	1.132	28.288	0.00	1.32
166.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.072	0.000	28.337	0.00	11.23
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	28.434	0.00	22.46
169.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.075	0.000	28.506	0.00	16.85
170.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.076	0.000	28.530	0.00	5.62
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	28.626	0.00	22.46
174.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	28.721	0.00	22.46
174.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	28.744	0.00	5.62
175.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	28.768	0.00	5.62
176.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.081	0.000	28.815	0.00	11.23
178.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	28.908	0.00	22.46
179.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.084	0.000	28.977	0.00	16.85
180.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.085	0.000	29.000	0.00	5.62
182.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	29.092	0.00	22.46
184.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	29.183	0.00	22.46
185.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.091	0.000	29.228	0.00	11.23
									Totals:		**0.0**	**2,479.8**

Calculated Forces

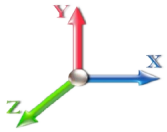
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 29

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	-74.51	-53.67	0.00	-7713.4	0.00	7713.40	6186.26	3093.13	18350.4	9188.88	0.00	0.000	0.000	0.852
2.00	-73.63	-53.52	0.00	-7606.0	0.00	7606.05	6161.28	3080.64	18129.8	9078.39	0.01	-0.066	0.000	0.850
4.00	-72.70	-53.36	0.00	-7499.0	0.00	7499.02	6135.91	3067.96	17909.2	8967.93	0.06	-0.133	0.000	0.848
6.00	-71.73	-53.20	0.00	-7392.3	0.00	7392.31	6110.15	3055.07	17688.7	8857.51	0.13	-0.201	0.000	0.847
8.00	-70.77	-53.05	0.00	-7285.9	0.00	7285.90	6084.00	3042.00	17468.3	8747.14	0.23	-0.270	0.000	0.845
10.00	-69.81	-52.89	0.00	-7179.8	0.00	7179.81	6057.45	3028.73	17248.0	8636.84	0.36	-0.339	0.000	0.843
12.00	-68.86	-52.74	0.00	-7074.0	0.00	7074.03	6030.52	3015.26	17027.9	8526.61	0.51	-0.408	0.000	0.841
14.00	-67.92	-52.58	0.00	-6968.5	0.00	6968.56	6003.19	3001.60	16807.9	8416.48	0.70	-0.479	0.000	0.840
16.00	-66.98	-52.43	0.00	-6863.3	0.00	6863.39	5975.47	2987.74	16588.2	8306.46	0.92	-0.550	0.000	0.838
18.00	-66.05	-52.28	0.00	-6758.5	0.00	6758.53	5947.37	2973.68	16368.7	8196.55	1.16	-0.622	0.000	0.836
20.00	-65.13	-52.13	0.00	-6653.9	0.00	6653.98	5918.87	2959.43	16149.5	8086.79	1.44	-0.695	0.000	0.834
22.00	-64.21	-51.97	0.00	-6549.7	0.00	6549.73	5889.98	2944.99	15930.6	7977.17	1.75	-0.768	0.000	0.832
24.00	-63.30	-51.82	0.00	-6445.7	0.00	6445.79	5860.70	2930.35	15712.0	7867.72	2.09	-0.842	0.000	0.830
26.00	-62.39	-51.67	0.00	-6342.1	0.00	6342.15	5831.03	2915.51	15493.8	7758.44	2.46	-0.917	0.000	0.828
28.00	-61.49	-51.52	0.00	-6238.8	0.00	6238.81	5800.97	2900.48	15276.0	7649.36	2.86	-0.993	0.000	0.827
30.00	-60.60	-51.37	0.00	-6135.7	0.00	6135.76	5770.52	2885.26	15058.5	7540.48	3.29	-1.069	0.000	0.825
32.00	-59.71	-51.22	0.00	-6033.0	0.00	6033.02	5739.67	2869.84	14841.5	7431.82	3.75	-1.147	0.000	0.823
34.00	-58.83	-51.06	0.00	-5930.5	0.00	5930.58	5708.44	2854.22	14625.0	7323.39	4.25	-1.225	0.000	0.820
36.00	-57.96	-50.90	0.00	-5828.4	0.00	5828.46	5676.81	2838.41	14409.0	7215.22	4.78	-1.304	0.000	0.818
38.00	-57.09	-50.74	0.00	-5726.6	0.00	5726.65	5644.80	2822.40	14193.5	7107.30	5.35	-1.383	0.000	0.816
40.00	-56.23	-50.58	0.00	-5625.1	0.00	5625.17	5612.39	2806.20	13978.5	6999.66	5.94	-1.464	0.000	0.814
42.00	-55.37	-50.41	0.00	-5524.0	0.00	5524.01	5579.60	2789.80	13764.1	6892.30	6.57	-1.545	0.000	0.812
44.00	-54.53	-50.24	0.00	-5423.1	0.00	5423.19	5546.41	2773.20	13550.3	6785.25	7.24	-1.627	0.000	0.809
46.00	-53.72	-50.04	0.00	-5322.7	0.00	5322.71	5512.83	2756.41	13337.2	6678.52	7.94	-1.710	0.000	0.807
46.17	-53.62	-50.06	0.00	-5314.3	0.00	5314.37	5510.01	2755.01	13319.4	6669.64	8.00	-1.717	0.000	0.807
48.00	-52.23	-49.88	0.00	-5222.6	0.00	5222.60	5478.86	2739.43	13124.7	6572.12	8.67	-1.794	0.000	0.805
50.00	-50.73	-49.68	0.00	-5122.8	0.00	5122.85	5444.50	2722.25	12912.9	6466.06	9.45	-1.879	0.000	0.802
52.00	-49.25	-49.47	0.00	-5023.5	0.00	5023.50	5409.75	2704.87	12701.8	6360.36	10.25	-1.965	0.000	0.799
54.00	-47.78	-49.26	0.00	-4924.5	0.00	4924.56	5427.99	2713.99	12812.2	6415.65	11.09	-2.051	0.000	0.777
56.00	-46.96	-49.08	0.00	-4826.0	0.00	4826.03	5393.05	2696.53	12601.5	6310.13	11.97	-2.139	0.000	0.774
58.00	-46.15	-48.88	0.00	-4727.8	0.00	4727.88	5357.72	2678.86	12391.5	6204.99	12.89	-2.223	0.000	0.771
60.00	-45.35	-48.69	0.00	-4630.1	0.00	4630.12	5322.01	2661.00	12182.3	6100.24	13.84	-2.308	0.000	0.768
62.00	-44.55	-48.50	0.00	-4532.7	0.00	4532.74	5285.90	2642.95	11974.0	5995.90	14.82	-2.394	0.000	0.765
64.00	-43.76	-48.30	0.00	-4435.7	0.00	4435.75	5249.40	2624.70	11766.4	5891.98	15.84	-2.481	0.000	0.762
66.00	-42.98	-48.11	0.00	-4339.1	0.00	4339.15	5212.50	2606.25	11559.8	5788.50	16.90	-2.568	0.000	0.758
68.00	-42.20	-47.91	0.00	-4242.9	0.00	4242.94	5175.22	2587.61	11354.0	5685.46	18.00	-2.657	0.000	0.755
70.00	-41.43	-47.71	0.00	-4147.1	0.00	4147.12	5137.55	2568.77	11149.2	5582.89	19.13	-2.746	0.000	0.751
72.00	-40.66	-47.51	0.00	-4051.7	0.00	4051.71	5099.49	2549.74	10945.3	5480.80	20.30	-2.836	0.000	0.748
74.00	-39.90	-47.31	0.00	-3956.6	0.00	3956.68	5061.03	2530.52	10742.4	5379.19	21.51	-2.927	0.000	0.744
76.00	-39.15	-47.11	0.00	-3862.0	0.00	3862.06	5022.19	2511.09	10540.5	5278.10	22.75	-3.019	0.000	0.740
78.00	-38.41	-46.91	0.00	-3767.8	0.00	3767.83	4982.95	2491.47	10339.6	5177.52	24.04	-3.112	0.000	0.736
80.00	-37.67	-46.71	0.00	-3674.0	0.00	3674.01	4943.32	2471.66	10139.8	5077.48	25.36	-3.205	0.000	0.732
82.00	-36.94	-46.51	0.00	-3580.5	0.00	3580.59	4903.30	2451.65	9941.18	4977.98	26.72	-3.300	0.000	0.727
84.00	-36.21	-46.31	0.00	-3487.5	0.00	3487.57	4862.90	2431.45	9743.60	4879.04	28.13	-3.395	0.000	0.723
86.00	-35.49	-46.11	0.00	-3394.9	0.00	3394.95	4822.10	2411.05	9547.17	4780.68	29.57	-3.491	0.000	0.718
88.00	-34.78	-45.91	0.00	-3302.7	0.00	3302.74	4780.91	2390.45	9351.91	4682.91	31.05	-3.587	0.000	0.713
90.00	-34.08	-45.70	0.00	-3210.9	0.00	3210.93	4739.33	2369.66	9157.86	4585.74	32.57	-3.685	0.000	0.708
92.00	-33.38	-45.50	0.00	-3119.5	0.00	3119.53	4697.35	2348.68	8965.05	4489.19	34.14	-3.783	0.000	0.702

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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

94.00	-32.72	-45.27	0.00	-3028.5	0.00	3028.53	4654.99	2327.50	8773.49	4393.27	35.74	-3.882	0.000	0.697
94.08	-32.66	-45.29	0.00	-3024.7	0.00	3024.76	4653.22	2326.61	8765.54	4389.28	35.81	-3.887	0.000	0.697
96.00	-31.57	-45.06	0.00	-2937.9	0.00	2937.96	4612.24	2306.12	8583.22	4297.99	37.39	-3.982	0.000	0.691
98.00	-30.44	-44.82	0.00	-2847.8	0.00	2847.83	4569.09	2284.55	8394.27	4203.37	39.08	-4.083	0.000	0.685
100.00	-29.37	-44.56	0.00	-2758.1	0.00	2758.19	4525.56	2262.78	8206.66	4109.43	40.81	-4.184	0.000	0.678
100.17	-29.24	-44.56	0.00	-2750.7	0.00	2750.76	3757.39	1878.70	6942.18	3476.25	40.96	-4.192	0.000	0.800
102.00	-28.68	-44.38	0.00	-2669.0	0.00	2669.07	3727.29	1863.64	6805.30	3407.71	42.59	-4.286	0.000	0.792
104.00	-28.08	-44.18	0.00	-2580.3	0.00	2580.32	3694.07	1847.03	6656.80	3333.35	44.40	-4.399	0.000	0.782
106.00	-27.48	-43.98	0.00	-2491.9	0.00	2491.95	3660.46	1830.23	6509.18	3259.43	46.27	-4.512	0.000	0.773
108.00	-26.89	-43.79	0.00	-2403.9	0.00	2403.99	3626.46	1813.23	6362.47	3185.96	48.18	-4.627	0.000	0.763
110.00	-26.30	-43.59	0.00	-2316.4	0.00	2316.42	3592.07	1796.03	6216.70	3112.97	50.14	-4.741	0.000	0.752
112.00	-25.72	-43.39	0.00	-2229.2	0.00	2229.25	3557.29	1778.64	6071.91	3040.47	52.15	-4.856	0.000	0.741
114.00	-25.15	-43.19	0.00	-2142.4	0.00	2142.47	3522.12	1761.06	5928.11	2968.46	54.21	-4.971	0.000	0.729
116.00	-24.58	-42.99	0.00	-2056.0	0.00	2056.09	3486.55	1743.28	5785.33	2896.97	56.32	-5.086	0.000	0.717
118.00	-24.02	-42.80	0.00	-1970.1	0.00	1970.10	3450.60	1725.30	5643.61	2826.00	58.47	-5.201	0.000	0.705
120.00	-23.46	-42.60	0.00	-1884.5	0.00	1884.51	3414.26	1707.13	5502.97	2755.57	60.67	-5.316	0.000	0.691
122.00	-22.91	-42.40	0.00	-1799.3	0.00	1799.31	3377.52	1688.76	5363.43	2685.70	62.92	-5.431	0.000	0.677
124.00	-22.37	-42.21	0.00	-1714.5	0.00	1714.50	3340.40	1670.20	5225.04	2616.40	65.22	-5.546	0.000	0.663
126.00	-21.83	-42.01	0.00	-1630.0	0.00	1630.08	3302.88	1651.44	5087.80	2547.68	67.56	-5.660	0.000	0.647
128.00	-21.31	-41.81	0.00	-1546.0	0.00	1546.06	3264.97	1632.49	4951.76	2479.56	69.95	-5.773	0.000	0.631
130.00	-20.78	-41.61	0.00	-1462.4	0.00	1462.44	3220.40	1610.20	4807.57	2407.36	72.39	-5.885	0.000	0.615
132.00	-20.27	-41.42	0.00	-1379.2	0.00	1379.21	3169.61	1584.80	4656.37	2331.65	74.88	-5.997	0.000	0.599
134.00	-19.76	-41.22	0.00	-1296.3	0.00	1296.38	3118.82	1559.41	4507.59	2257.15	77.41	-6.107	0.000	0.581
136.00	-19.26	-41.02	0.00	-1213.9	0.00	1213.95	3068.04	1534.02	4361.23	2183.86	79.99	-6.215	0.000	0.563
138.00	-18.77	-40.82	0.00	-1131.9	0.00	1131.91	3017.25	1508.63	4217.28	2111.78	82.61	-6.321	0.000	0.543
140.00	-18.29	-40.62	0.00	-1050.2	0.00	1050.28	2966.47	1483.23	4075.75	2040.91	85.28	-6.425	0.000	0.522
142.00	-17.82	-40.41	0.00	-969.05	0.00	969.05	2915.68	1457.84	3936.64	1971.24	87.98	-6.526	0.000	0.498
143.75	-17.43	-40.23	0.00	-898.33	0.00	898.33	2871.25	1435.62	3816.89	1911.28	90.39	-6.612	0.000	0.477
144.00	-17.35	-40.20	0.00	-888.28	0.00	888.28	2864.90	1432.45	3799.94	1902.79	90.73	-6.625	0.000	0.474
144.50	-16.56	-38.01	0.00	-868.18	0.00	868.18	2852.20	1426.10	3766.14	1885.87	91.43	-6.649	0.000	0.467
145.75	-16.20	-37.85	0.00	-820.67	0.00	820.67	2820.46	1410.23	3682.30	1843.89	93.17	-6.709	0.000	0.296
146.00	-16.11	-37.83	0.00	-811.20	0.00	811.20	2814.11	1407.06	3665.65	1835.55	93.53	-6.717	0.000	0.294
148.00	-15.55	-37.57	0.00	-735.55	0.00	735.55	2763.33	1381.66	3533.78	1769.52	96.35	-6.776	0.000	0.274
148.08	-15.51	-37.57	0.00	-732.42	0.00	732.42	1152.50	576.25	1508.33	755.29	96.46	-6.778	0.000	0.341
149.50	-14.78	-34.91	0.00	-679.20	0.00	679.20	1145.31	572.66	1479.63	740.91	98.48	-6.819	0.000	0.460
150.00	-14.69	-34.87	0.00	-661.74	0.00	661.74	1142.73	571.37	1469.50	735.84	99.19	-6.839	0.000	0.450
151.75	-14.47	-34.68	0.00	-600.72	0.00	600.72	1133.50	566.75	1434.03	718.08	101.71	-6.906	0.000	0.416
151.75	-14.47	-34.68	0.00	-600.72	0.00	600.72	1133.50	566.75	1434.03	718.08	101.71	-6.906	0.000	0.416
152.00	-14.39	-34.67	0.00	-592.05	0.00	592.05	1132.15	566.08	1428.97	715.55	102.07	-6.915	0.000	0.844
154.00	-14.11	-34.47	0.00	-522.71	0.00	522.71	1121.19	560.59	1388.46	695.26	104.99	-7.062	0.000	0.768
154.50	-13.45	-32.71	0.00	-505.47	0.00	505.47	1118.38	559.19	1378.34	690.19	105.73	-7.097	0.000	0.748
155.00	-10.72	-26.78	0.00	-489.12	0.00	489.12	1115.56	557.78	1368.22	685.13	106.47	-7.132	0.000	0.726
156.00	-10.58	-26.69	0.00	-462.34	0.00	462.34	1109.83	554.91	1348.00	675.00	107.97	-7.200	0.000	0.697
158.00	-10.34	-26.51	0.00	-408.95	0.00	408.95	1098.08	549.04	1307.61	654.78	111.01	-7.329	0.000	0.636
159.50	-9.67	-24.07	0.00	-369.18	0.00	369.18	1089.01	544.51	1277.39	639.64	113.32	-7.420	0.000	0.588
160.00	-9.60	-24.03	0.00	-357.14	0.00	357.14	1085.94	542.97	1267.33	634.61	114.10	-7.449	0.000	0.574
162.00	-9.37	-23.85	0.00	-309.08	0.00	309.08	1073.41	536.70	1227.17	614.50	117.24	-7.560	0.000	0.514
164.00	-9.16	-23.67	0.00	-261.37	0.00	261.37	1060.49	530.24	1187.18	594.47	120.42	-7.660	0.000	0.450
164.50	-8.60	-22.34	0.00	-249.53	0.00	249.53	1057.19	528.60	1177.21	589.48	121.22	-7.684	0.000	0.433
165.00	-6.88	-17.17	0.00	-238.36	0.00	238.36	1053.88	526.94	1167.25	584.49	122.02	-7.708	0.000	0.415
166.00	-6.78	-17.10	0.00	-221.19	0.00	221.19	1047.17	523.59	1147.37	574.54	123.64	-7.752	0.000	0.393
168.00	-6.62	-16.94	0.00	-187.00	0.00	187.00	1033.47	516.74	1107.78	554.71	126.90	-7.834	0.000	0.345
169.50	-6.08	-14.99	0.00	-161.59	0.00	161.59	1022.94	511.47	1078.24	539.92	129.36	-7.890	0.000	0.306
170.00	-6.04	-14.95	0.00	-154.10	0.00	154.10	1019.38	509.69	1068.43	535.01	130.18	-7.907	0.000	0.295
172.00	-5.88	-14.79	0.00	-124.20	0.00	124.20	1004.89	502.45	1029.34	515.44	133.50	-7.971	0.000	0.248
174.00	-5.74	-14.64	0.00	-94.61	0.00	94.61	990.02	495.01	990.56	496.02	136.84	-8.024	0.000	0.197
174.50	-5.26	-13.77	0.00	-87.29	0.00	87.29	986.24	493.12	980.92	491.19	137.68	-8.036	0.000	0.184

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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	

175.00	-3.27	-9.63	0.00	-80.40	0.00	80.40	982.43	491.22	971.29	486.37	138.52	-8.047	0.000	0.169
176.00	-3.20	-9.55	0.00	-70.78	0.00	70.78	974.75	487.37	952.10	476.76	140.20	-8.068	0.000	0.152
178.00	-3.07	-9.40	0.00	-51.67	0.00	51.67	959.09	479.55	914.00	457.68	143.58	-8.102	0.000	0.116
179.50	-2.95	-6.92	0.00	-37.57	0.00	37.57	947.09	473.55	885.67	443.49	146.12	-8.123	0.000	0.088
180.00	-2.92	-6.88	0.00	-34.11	0.00	34.11	943.04	471.52	876.28	438.79	146.97	-8.129	0.000	0.081
182.00	-2.80	-6.74	0.00	-20.35	0.00	20.35	926.61	463.30	838.97	420.11	150.37	-8.146	0.000	0.052
184.00	-2.68	-6.60	0.00	-6.88	0.00	6.88	909.78	454.89	802.09	401.64	153.77	-8.156	0.000	0.020
185.00	0.00	-6.15	0.00	-0.28	0.00	0.28	901.22	450.61	783.83	392.50	155.47	-8.157	0.000	0.001

Wind Loading - Shaft

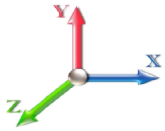
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	17.366	19.10	518.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	17.366	19.10	514.31	0.650	0.000	2.00	12.221	7.94	242.8	0.0	610.5
4.00		1.00	0.70	17.366	19.10	510.20	0.650	0.000	2.00	12.124	7.88	240.9	0.0	605.6
6.00		1.00	0.70	17.366	19.10	506.09	0.650	0.000	2.00	12.027	7.82	238.9	0.0	600.7
8.00		1.00	0.70	17.366	19.10	501.99	0.650	0.000	2.00	11.930	7.75	237.0	0.0	595.8
10.00		1.00	0.70	17.366	19.10	497.88	0.650	0.000	2.00	11.832	7.69	235.1	0.0	590.9
12.00		1.00	0.70	17.366	19.10	493.77	0.650	0.000	2.00	11.735	7.63	233.1	0.0	586.0
14.00		1.00	0.70	17.366	19.10	489.67	0.650	0.000	2.00	11.638	7.56	231.2	0.0	581.1
16.00		1.00	0.70	17.366	19.10	485.56	0.650	0.000	2.00	11.541	7.50	229.3	0.0	576.3
18.00		1.00	0.70	17.366	19.10	481.45	0.650	0.000	2.00	11.444	7.44	227.3	0.0	571.4
20.00		1.00	0.70	17.366	19.10	477.35	0.650	0.000	2.00	11.346	7.38	225.4	0.0	566.5
22.00		1.00	0.70	17.366	19.10	473.24	0.650	0.000	2.00	11.249	7.31	223.5	0.0	561.6
24.00		1.00	0.70	17.366	19.10	469.13	0.650	0.000	2.00	11.152	7.25	221.6	0.0	556.7
26.00		1.00	0.70	17.366	19.10	465.03	0.650	0.000	2.00	11.055	7.19	219.6	0.0	551.8
28.00		1.00	0.70	17.366	19.10	460.92	0.650	0.000	2.00	10.958	7.12	217.7	0.0	547.0
30.00		1.00	0.70	17.381	19.12	457.00	0.650	0.000	2.00	10.860	7.06	215.9	0.0	542.1
32.00		1.00	0.71	17.704	19.47	457.09	0.650	0.000	2.00	10.763	7.00	218.0	0.0	537.2
34.00		1.00	0.73	18.014	19.82	456.88	0.650	0.000	2.00	10.666	6.93	219.8	0.0	532.3
36.00		1.00	0.74	18.310	20.14	456.41	0.650	0.000	2.00	10.569	6.87	221.4	0.0	527.4
38.00		1.00	0.75	18.595	20.45	455.70	0.650	0.000	2.00	10.472	6.81	222.8	0.0	522.5
40.00		1.00	0.76	18.870	20.76	454.77	0.650	0.000	2.00	10.374	6.74	224.0	0.0	517.6
42.00		1.00	0.77	19.135	21.05	453.64	0.650	0.000	2.00	10.277	6.68	225.0	0.0	512.8
44.00		1.00	0.78	19.391	21.33	452.33	0.650	0.000	2.00	10.180	6.62	225.8	0.0	507.9
46.00		1.00	0.79	19.639	21.60	450.84	0.650	0.000	2.00	10.083	6.55	226.5	0.0	503.0
46.17	Bot - Section 2	1.00	0.79	19.659	21.62	450.71	0.650	0.000	0.17	0.836	0.54	18.8	0.0	41.7
48.00		1.00	0.80	19.879	21.87	449.20	0.650	0.000	1.83	9.285	6.04	211.2	0.0	919.6
50.00		1.00	0.81	20.112	22.12	447.41	0.650	0.000	2.00	10.036	6.52	230.9	0.0	993.9
52.00		1.00	0.82	20.339	22.37	445.48	0.650	0.000	2.00	9.939	6.46	231.3	0.0	984.1
54.00	Top - Section 1	1.00	0.83	20.559	22.62	443.42	0.650	0.000	2.00	9.842	6.40	231.5	0.0	974.3
56.00		1.00	0.84	20.774	22.85	448.08	0.650	0.000	2.00	9.745	6.33	231.6	0.0	486.0
58.00		1.00	0.85	20.983	23.08	445.82	0.650	0.000	2.00	9.648	6.27	231.6	0.0	481.1
60.00		1.00	0.85	21.187	23.31	443.44	0.650	0.000	2.00	9.550	6.21	231.5	0.0	476.2
62.00		1.00	0.86	21.387	23.53	440.97	0.650	0.000	2.00	9.453	6.14	231.3	0.0	471.4
64.00		1.00	0.87	21.582	23.74	438.39	0.650	0.000	2.00	9.356	6.08	231.0	0.0	466.5
66.00		1.00	0.88	21.772	23.95	435.73	0.650	0.000	2.00	9.259	6.02	230.6	0.0	461.6
68.00		1.00	0.89	21.959	24.15	432.97	0.650	0.000	2.00	9.162	5.96	230.2	0.0	456.7
70.00		1.00	0.89	22.142	24.36	430.13	0.650	0.000	2.00	9.065	5.89	229.6	0.0	451.8
72.00		1.00	0.90	22.320	24.55	427.21	0.650	0.000	2.00	8.967	5.83	229.0	0.0	446.9
74.00		1.00	0.91	22.496	24.75	424.21	0.650	0.000	2.00	8.870	5.77	228.3	0.0	442.0
76.00		1.00	0.91	22.668	24.93	421.14	0.650	0.000	2.00	8.773	5.70	227.5	0.0	437.2
78.00		1.00	0.92	22.837	25.12	418.00	0.650	0.000	2.00	8.676	5.64	226.7	0.0	432.3
80.00		1.00	0.93	23.003	25.30	414.78	0.650	0.000	2.00	8.579	5.58	225.7	0.0	427.4
82.00		1.00	0.93	23.165	25.48	411.51	0.650	0.000	2.00	8.481	5.51	224.8	0.0	422.5
84.00		1.00	0.94	23.325	25.66	408.17	0.650	0.000	2.00	8.384	5.45	223.7	0.0	417.6
86.00		1.00	0.95	23.483	25.83	404.76	0.650	0.000	2.00	8.287	5.39	222.6	0.0	412.7
88.00		1.00	0.95	23.638	26.00	401.31	0.650	0.000	2.00	8.190	5.32	221.5	0.0	407.9
90.00		1.00	0.96	23.790	26.17	397.79	0.650	0.000	2.00	8.093	5.26	220.2	0.0	403.0

Wind Loading - Shaft

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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

92.00	1.00	0.96	23.940	26.33	394.22	0.650	0.000	2.00	7.995	5.20	219.0	0.0	398.1
94.00	1.00	0.97	24.087	26.50	390.59	0.650	0.000	2.00	7.898	5.13	217.6	0.0	393.2
94.08 Bot - Section 3	1.00	0.97	24.093	26.50	390.44	0.650	0.000	0.08	0.327	0.21	9.0	0.0	16.3
96.00	1.00	0.98	24.233	26.66	386.92	0.650	0.000	1.92	7.596	4.94	210.6	0.0	696.6
98.00	1.00	0.98	24.376	26.81	383.20	0.650	0.000	2.00	7.831	5.09	218.4	0.0	718.0
100.00	1.00	0.99	24.517	26.97	379.42	0.650	0.000	2.00	7.733	5.03	216.9	0.0	708.9
100.17 Top - Section 2	1.00	0.99	24.529	26.98	379.11	0.650	0.000	0.17	0.640	0.42	18.0	0.0	58.7
102.00	1.00	0.99	24.656	27.12	382.00	0.650	0.000	1.83	6.996	4.55	197.3	0.0	298.9
104.00	1.00	1.00	24.793	27.27	378.15	0.650	0.000	2.00	7.539	4.90	213.8	0.0	322.0
106.00	1.00	1.00	24.928	27.42	374.26	0.650	0.000	2.00	7.442	4.84	212.2	0.0	317.8
108.00	1.00	1.01	25.062	27.57	370.33	0.650	0.000	2.00	7.345	4.77	210.6	0.0	313.6
110.00	1.00	1.02	25.194	27.71	366.35	0.650	0.000	2.00	7.247	4.71	208.9	0.0	309.5
112.00	1.00	1.02	25.324	27.86	362.34	0.650	0.000	2.00	7.150	4.65	207.1	0.0	305.3
114.00	1.00	1.03	25.452	28.00	358.28	0.650	0.000	2.00	7.053	4.58	205.4	0.0	301.1
116.00	1.00	1.03	25.579	28.14	354.19	0.650	0.000	2.00	6.956	4.52	203.5	0.0	296.9
118.00	1.00	1.04	25.704	28.27	350.06	0.650	0.000	2.00	6.859	4.46	201.7	0.0	292.7
120.00	1.00	1.04	25.828	28.41	345.89	0.650	0.000	2.00	6.762	4.39	199.8	0.0	288.5
122.00	1.00	1.05	25.950	28.55	341.69	0.650	0.000	2.00	6.664	4.33	197.8	0.0	284.3
124.00	1.00	1.05	26.071	28.68	337.45	0.652 *	0.000	2.00	6.567	4.28	196.5	0.0	280.1
126.00	1.00	1.06	26.190	28.81	333.18	0.655 *	0.000	2.00	6.470	4.24	195.3	0.0	276.0
128.00	1.00	1.06	26.309	28.94	328.88	0.658 *	0.000	2.00	6.373	4.19	194.2	0.0	271.8
130.00	1.00	1.07	26.425	29.07	324.54	0.661 *	0.000	2.00	6.276	4.15	193.0	0.0	267.6
132.00	1.00	1.07	26.541	29.19	320.17	0.664 *	0.000	2.00	6.178	4.10	191.7	0.0	263.4
134.00	1.00	1.07	26.655	29.32	315.77	0.668 *	0.000	2.00	6.081	4.06	190.5	0.0	259.2
136.00	1.00	1.08	26.768	29.44	311.35	0.671 *	0.000	2.00	5.984	4.02	189.2	0.0	255.0
138.00	1.00	1.08	26.880	29.57	306.89	0.675 *	0.000	2.00	5.887	3.97	187.9	0.0	250.8
140.00	1.00	1.09	26.991	29.69	302.40	0.678 *	0.000	2.00	5.790	3.93	186.6	0.0	246.7
142.00	1.00	1.09	27.100	29.81	297.88	0.682 *	0.000	2.00	5.692	3.88	185.2	0.0	242.5
143.75 Bot - Section 4	1.00	1.10	27.195	29.91	293.91	0.686 *	0.000	1.75	4.901	3.36	160.9	0.0	208.7
144.00	1.00	1.10	27.209	29.93	293.34	0.746 *	0.000	0.25	0.702	0.52	25.1	0.0	44.6
144.50 Appurtenance(s)	1.00	1.10	27.236	29.96	292.20	0.747 *	0.000	0.50	1.399	1.05	50.1	0.0	88.9
145.75 RB1	1.00	1.10	27.303	30.03	289.34	0.750 *	0.000	1.25	3.472	2.60	125.1	0.0	220.5
146.00	1.00	1.10	27.316	30.05	288.76	0.752 *	0.000	0.25	0.690	0.52	24.9	0.0	43.8
148.00	1.00	1.11	27.423	30.17	284.17	0.755 *	0.000	2.00	5.464	4.12	199.0	0.0	346.9
148.08 Top - Section 3	1.00	1.11	27.427	30.17	283.97	0.758 *	0.000	0.08	0.226	0.17	8.2	0.0	14.3
149.50 Appurtenance(s)	1.00	1.11	27.502	30.25	284.07	0.756 *	0.000	1.42	3.809	2.88	139.4	0.0	81.5
150.00	1.00	1.11	27.528	30.28	282.92	0.759 *	0.000	0.50	1.333	1.01	49.0	0.0	28.5
151.75 RT1	1.00	1.11	27.620	30.38	278.85	0.762 *	0.000	1.75	4.616	3.52	170.9	0.0	98.8
152.00	1.00	1.11	27.633	30.40	278.27	0.765 *	0.000	0.25	0.653	0.50	24.3	0.0	14.0
154.00	1.00	1.12	27.736	30.51	273.60	0.760 *	0.000	2.00	5.173	3.93	191.9	0.0	110.7
154.50 Appurtenance(s)	1.00	1.12	27.762	30.54	272.43	0.708 *	0.000	0.50	1.278	0.90	44.2	0.0	27.4
155.00 Appurtenance(s)	1.00	1.12	27.787	30.57	271.26	0.709 *	0.000	0.50	1.272	0.90	44.1	0.0	27.2
156.00	1.00	1.12	27.838	30.62	268.91	0.711 *	0.000	1.00	2.526	1.80	88.0	0.0	54.1
158.00	1.00	1.13	27.940	30.73	264.19	0.715 *	0.000	2.00	4.978	3.56	175.0	0.0	106.5
159.50 Appurtenance(s)	1.00	1.13	28.015	30.82	260.63	0.719 *	0.000	1.50	3.670	2.64	130.2	0.0	78.5
160.00	1.00	1.13	28.040	30.84	259.45	0.722 *	0.000	0.50	1.211	0.87	43.2	0.0	25.9
162.00	1.00	1.13	28.140	30.95	254.68	0.725 *	0.000	2.00	4.784	3.47	171.9	0.0	102.3
164.00	1.00	1.14	28.239	31.06	249.89	0.731 *	0.000	2.00	4.687	3.43	170.3	0.0	100.3
164.50 Appurtenance(s)	1.00	1.14	28.264	31.09	248.69	0.735 *	0.000	0.50	1.156	0.85	42.3	0.0	24.7
165.00 Appurtenance(s)	1.00	1.14	28.288	31.12	247.48	0.736 *	0.000	0.50	1.150	0.85	42.2	0.0	24.6
166.00	1.00	1.14	28.337	31.17	245.08	0.650	0.000	1.00	2.283	1.48	74.0	0.0	48.8
168.00	1.00	1.15	28.434	31.28	240.24	0.650	0.000	2.00	4.492	2.92	146.1	0.0	96.1
169.50 Appurtenance(s)	1.00	1.15	28.506	31.36	236.60	0.650	0.000	1.50	3.305	2.15	107.8	0.0	70.7
170.00	1.00	1.15	28.530	31.38	235.38	0.650	0.000	0.50	1.090	0.71	35.6	0.0	23.3
172.00	1.00	1.15	28.626	31.49	230.50	0.650	0.000	2.00	4.298	2.79	140.7	0.0	91.9
174.00	1.00	1.16	28.721	31.59	225.60	0.650	0.000	2.00	4.201	2.73	138.0	0.0	89.8
174.50 Appurtenance(s)	1.00	1.16	28.744	31.62	224.38	0.650	0.000	0.50	1.035	0.67	34.0	0.0	22.1

Wind Loading - Shaft

Structure: CT00707-S-SBA
Site Name: North Easton
Height: 185.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

10/30/2019

Tower Engineering Solutions

175.00 Appurtenance(s)	1.00	1.16	28.768	31.64	223.15	0.650	0.000	0.50	1.029	0.67	33.9	0.0	22.0
176.00	1.00	1.16	28.815	31.70	220.68	0.650	0.000	1.00	2.040	1.33	67.2	0.0	43.6
178.00	1.00	1.17	28.908	31.80	215.74	0.650	0.000	2.00	4.006	2.60	132.5	0.0	85.6
179.50 Appurtenance(s)	1.00	1.17	28.977	31.87	212.02	0.650	0.000	1.50	2.941	1.91	97.5	0.0	62.8
180.00	1.00	1.17	29.000	31.90	210.78	0.650	0.000	0.50	0.968	0.63	32.1	0.0	20.7
182.00	1.00	1.17	29.092	32.00	205.80	0.650	0.000	2.00	3.812	2.48	126.9	0.0	81.4
184.00	1.00	1.18	29.183	32.10	200.79	0.650	0.000	2.00	3.715	2.41	124.0	0.0	79.3
185.00 Appurtenance(s)	1.00	1.18	29.228	32.15	198.29	0.650	0.000	1.00	1.821	1.18	60.9	0.0	38.9
							Totals:	**185.00**			**18,992.6**		**36,402.3**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

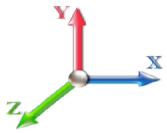
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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	185.00	APX16DWV-16DWV-S-E-	3	29.228	32.151	0.62	1.00	12.02	109.89	0.000	0.000	618.10	0.00	0.00
2	185.00	Kathrein 782 11056	3	29.318	32.250	0.67	1.00	0.26	7.83	0.000	2.000	13.48	0.00	26.97
3	185.00	Allen Telecom	6	29.318	32.250	0.75	1.00	2.48	94.50	0.000	2.000	127.71	0.00	255.42
4	185.00	Cobra Arms	3	29.228	32.151	0.75	1.00	14.63	945.00	0.000	0.000	752.33	0.00	0.00
5	185.00	6' Pole Branch	1	29.228	32.151	1.00	1.00	16.06	270.00	0.000	0.000	826.15	0.00	0.00
6	185.00	RRUS 4415 B25	3	29.228	32.151	0.67	1.00	3.30	124.20	0.000	0.000	169.57	0.00	0.00
7	185.00	(3) Sitepro SV197-36	1	29.228	32.151	1.00	1.00	16.50	450.00	0.000	0.000	848.78	0.00	0.00
8	185.00	Ring mount (Sitepro	1	29.228	32.151	1.00	1.00	1.50	59.04	0.000	0.000	77.16	0.00	0.00
9	185.00	Radio 4449 B71+B12	3	29.228	32.151	0.67	1.00	3.96	191.70	0.000	0.000	203.69	0.00	0.00
10	185.00	Radio 4415 B66A	3	29.228	32.151	0.67	1.00	3.30	124.20	0.000	0.000	169.57	0.00	0.00
11	185.00	APXVAA24_43-U-A20	3	29.228	32.151	0.73	1.00	44.33	267.30	0.000	0.000	2280.17	0.00	0.00
12	179.50	6' Pole Branch	1	28.977	31.875	1.00	1.00	46.00	270.00	0.000	0.000	2345.98	0.00	0.00
13	175.00	Alcatel Lucent 800 MHz	3	28.768	31.644	0.60	0.80	4.48	143.10	0.000	0.000	226.93	0.00	0.00
14	175.00	Cobra Arms	3	28.768	31.644	0.56	0.75	22.78	1080.00	0.000	0.000	1153.44	0.00	0.00
15	175.00	RFS APXVTM14-C-120	3	28.768	31.644	0.63	0.80	12.02	151.20	0.000	0.000	608.62	0.00	0.00
16	175.00	RFS APXVSPP18-C-A20	3	28.768	31.644	0.66	0.80	15.98	153.90	0.000	0.000	808.87	0.00	0.00
17	175.00	Alcatel Lucent 800 MHz	3	28.768	31.644	0.60	0.80	5.24	47.25	0.000	0.000	265.21	0.00	0.00
18	175.00	Alcatel Lucent	3	28.768	31.644	0.60	0.80	7.29	189.00	0.000	0.000	369.10	0.00	0.00
19	175.00	Alcatel Lucent 1900 MHz	3	28.768	31.644	0.60	0.80	6.84	118.80	0.000	0.000	346.32	0.00	0.00
20	175.00	RFS ACU-A20-N RETs	4	28.768	31.644	0.54	0.80	0.30	3.60	0.000	0.000	15.20	0.00	0.00
21	174.50	7' Pole Branch	1	28.744	31.619	1.00	1.00	15.00	414.00	0.000	0.000	758.85	0.00	0.00
22	169.50	8' Pole Branch	1	28.506	31.357	1.00	1.00	35.00	504.00	0.000	0.000	1755.99	0.00	0.00
23	165.00	DB-B1-6C-12AB-0Z	2	28.288	31.117	0.73	0.80	5.97	38.52	0.000	0.000	297.21	0.00	0.00
24	165.00	RRH4X45-AWS	3	28.288	31.117	0.64	0.80	4.99	172.80	0.000	0.000	248.54	0.00	0.00
25	165.00	RRH2X60-700	3	28.288	31.117	0.61	0.80	6.38	148.50	0.000	0.000	317.84	0.00	0.00
26	165.00	SBNHH-1D65B	6	28.288	31.117	0.66	0.80	32.51	216.00	0.000	0.000	1618.55	0.00	0.00
27	165.00	Antel LPA 80063/6CF	2	28.288	31.117	0.75	0.80	14.44	48.60	0.000	0.000	718.84	0.00	0.00
28	165.00	Swedcom SC-E 6014 Rev	4	28.288	31.117	0.78	0.80	10.34	54.00	0.000	0.000	514.61	0.00	0.00
29	165.00	Cobra Arms	3	28.288	31.117	0.56	0.75	22.78	1080.00	0.000	0.000	1134.21	0.00	0.00
30	164.50	8' Pole Branch	1	28.264	31.090	1.00	1.00	24.24	504.00	0.000	0.000	1205.79	0.00	0.00
31	159.50	9' Pole Branch	1	28.015	30.817	1.00	1.00	45.00	594.00	0.000	0.000	2218.82	0.00	0.00
32	155.00	Powerwave LGP21901	6	27.787	30.566	0.67	0.80	1.09	29.70	0.000	0.000	53.24	0.00	0.00
33	155.00	Powerwave LGP 21401	6	27.787	30.566	0.54	0.80	3.06	94.50	0.000	0.000	149.42	0.00	0.00
34	155.00	Raycap DC6-48-60-18-8F	1	27.787	30.566	0.80	0.80	1.18	28.62	0.000	0.000	57.51	0.00	0.00
35	155.00	Powerwave 7770.00	3	27.787	30.566	0.58	0.80	9.64	94.50	0.000	0.000	471.25	0.00	0.00
36	155.00	Cobra Arms	3	27.787	30.566	0.56	0.75	22.78	1080.00	0.000	0.000	1114.13	0.00	0.00
37	155.00	Horizontal Pipe	3	27.787	30.566	1.00	1.00	10.78	195.75	0.000	0.000	527.27	0.00	0.00
38	155.00	DMP65R-BU6DA	6	27.787	30.566	0.58	0.80	44.54	341.82	0.000	0.000	2178.05	0.00	0.00
39	155.00	4449 B5/B12	3	27.787	30.566	0.54	0.80	3.17	191.70	0.000	0.000	154.92	0.00	0.00
40	155.00	RRUS 8843 B2 B66A	3	27.787	30.566	0.54	0.80	2.64	194.40	0.000	0.000	128.97	0.00	0.00
41	155.00	pipe brace	3	27.787	30.566	1.00	1.00	12.93	234.90	0.000	0.000	632.35	0.00	0.00
42	155.00	DC6-48-60-18-8C-EV	1	27.787	30.566	0.80	0.80	1.03	29.70	0.000	0.000	50.47	0.00	0.00
43	154.50	9' Pole Branch	1	27.762	30.538	1.00	1.00	33.48	594.00	0.000	0.000	1635.85	0.00	0.00
44	149.50	10' Pole Branch	1	27.502	30.252	1.00	1.00	50.00	630.00	0.000	0.000	2420.17	0.00	0.00
45	144.50	11' Pole Branch	1	27.236	29.959	1.00	1.00	42.72	648.00	0.000	0.000	2047.79	0.00	0.00
							Totals:		**12,962.52**			**34,637.01**		

Total Applied Force Summary

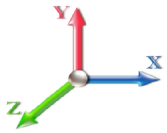
Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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
2.00		242.80	614.41	0.00	0.00
4.00		240.87	647.15	0.00	0.00
6.00		238.93	679.88	0.00	0.00
8.00		237.00	675.00	0.00	0.00
10.00		235.07	670.11	0.00	0.00
12.00		233.14	665.23	0.00	0.00
14.00		231.21	660.34	0.00	0.00
16.00		229.28	655.46	0.00	0.00
18.00		227.35	650.57	0.00	0.00
20.00		225.42	645.69	0.00	0.00
22.00		223.49	640.80	0.00	0.00
24.00		221.56	635.92	0.00	0.00
26.00		219.62	631.04	0.00	0.00
28.00		217.69	626.15	0.00	0.00
30.00		215.94	621.27	0.00	0.00
32.00		217.99	616.38	0.00	0.00
34.00		219.80	611.50	0.00	0.00
36.00		221.38	606.61	0.00	0.00
38.00		222.76	601.73	0.00	0.00
40.00		223.95	596.84	0.00	0.00
42.00		224.97	591.96	0.00	0.00
44.00		225.82	587.07	0.00	0.00
46.00		226.53	582.19	0.00	0.00
46.17		18.80	48.30	0.00	0.00
48.00		211.17	992.24	0.00	0.00
50.00		230.92	1073.08	0.00	0.00
52.00		231.26	1063.31	0.00	0.00
54.00		231.48	1053.54	0.00	0.00
56.00		231.59	565.21	0.00	0.00
58.00		231.59	560.32	0.00	0.00
60.00		231.49	555.44	0.00	0.00
62.00		231.29	550.55	0.00	0.00
64.00		231.00	545.67	0.00	0.00
66.00		230.62	540.78	0.00	0.00
68.00		230.15	535.90	0.00	0.00
70.00		229.60	531.01	0.00	0.00
72.00		228.98	526.13	0.00	0.00
74.00		228.27	521.25	0.00	0.00
76.00		227.50	516.36	0.00	0.00
78.00		226.66	511.48	0.00	0.00
80.00		225.74	506.59	0.00	0.00
82.00		224.77	501.71	0.00	0.00
84.00		223.72	496.82	0.00	0.00
86.00		222.62	491.94	0.00	0.00
88.00		221.46	487.05	0.00	0.00
90.00		220.24	482.17	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

92.00		218.97	477.28	0.00	0.00
94.00		217.64	472.40	0.00	0.00
94.08		9.01	19.58	0.00	0.00
96.00		210.57	772.50	0.00	0.00
98.00		218.37	797.21	0.00	0.00
100.00		216.90	788.14	0.00	0.00
100.17		17.96	65.27	0.00	0.00
102.00		197.34	371.46	0.00	0.00
104.00		213.83	401.22	0.00	0.00
106.00		212.23	397.03	0.00	0.00
108.00		210.58	392.84	0.00	0.00
110.00		208.88	388.66	0.00	0.00
112.00		207.15	384.47	0.00	0.00
114.00		205.37	380.28	0.00	0.00
116.00		203.55	376.10	0.00	0.00
118.00		201.68	371.91	0.00	0.00
120.00		199.78	367.72	0.00	0.00
122.00		197.84	363.54	0.00	0.00
124.00		196.46	359.35	0.00	0.00
126.00		195.32	355.16	0.00	0.00
128.00		194.15	350.97	0.00	0.00
130.00		192.96	346.79	0.00	0.00
132.00		191.74	342.60	0.00	0.00
134.00		190.49	338.41	0.00	0.00
136.00		189.21	334.23	0.00	0.00
138.00		187.91	330.04	0.00	0.00
140.00		186.58	325.85	0.00	0.00
142.00		185.23	321.67	0.00	0.00
143.75		160.91	278.02	0.00	0.00
144.00		25.10	54.49	0.00	0.00
144.50	(1) attachments	2097.93	756.69	0.00	0.00
145.75		125.08	270.00	0.00	0.00
146.00		24.93	53.71	0.00	0.00
148.00		199.03	426.11	0.00	0.00
148.08		8.25	17.62	0.00	0.00
149.50	(1) attachments	2559.54	767.65	0.00	0.00
150.00		48.98	48.33	0.00	0.00
151.75		170.95	168.13	0.00	0.00
152.00		24.30	23.89	0.00	0.00
154.00		191.91	189.92	0.00	0.00
154.50	(1) attachments	1680.06	641.15	0.00	0.00
155.00	(38) attachments	5561.70	2562.61	0.00	0.00
156.00		87.99	80.87	0.00	0.00
158.00		174.99	160.18	0.00	0.00
159.50	(1) attachments	2348.98	712.76	0.00	0.00
160.00		43.15	39.32	0.00	0.00
162.00		171.86	155.99	0.00	0.00
164.00		170.27	153.90	0.00	0.00
164.50	(1) attachments	1248.05	542.15	0.00	0.00
165.00	(23) attachments	4891.96	1796.44	0.00	0.00
166.00		73.99	62.43	0.00	0.00
168.00		146.13	123.29	0.00	0.00
169.50	(1) attachments	1863.79	595.09	0.00	0.00
170.00		35.56	30.10	0.00	0.00
172.00		140.75	119.10	0.00	0.00
174.00		138.02	117.01	0.00	0.00
174.50	(1) attachments	792.88	442.92	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

175.00	(25) attachments	3827.54	1915.64	0.00	0.00
176.00		67.23	54.82	0.00	0.00
178.00		132.49	108.07	0.00	0.00
179.50	(1) attachments	2443.48	349.68	0.00	0.00
180.00		32.12	26.30	0.00	0.00
182.00		126.86	103.88	0.00	0.00
184.00		124.01	101.79	0.00	0.00
185.00	(30) attachments	6147.60	2693.77	0.00	282.38
	Totals:	**53,629.57**	**55,906.61**	**0.00**	**282.38**

Linear Appurtenance Segment Forces (Factored)

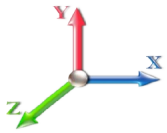
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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)
2.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.027	0.000	17.366	0.00	3.96
4.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.041	0.000	17.366	0.00	8.42
4.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.041	0.000	17.366	0.00	3.96
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	17.366	0.00	16.85
6.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.055	0.000	17.366	0.00	3.96
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	17.366	0.00	16.85
8.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	17.366	0.00	3.96
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	17.366	0.00	16.85
10.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	17.366	0.00	3.96
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	16.85
12.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	3.96
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	16.85
14.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	3.96
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	17.366	0.00	16.85
16.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	17.366	0.00	3.96
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	17.366	0.00	16.85
18.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	17.366	0.00	3.96
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	17.366	0.00	16.85
20.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	17.366	0.00	3.96
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	17.366	0.00	16.85
22.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	17.366	0.00	3.96
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	17.366	0.00	16.85
24.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	17.366	0.00	3.96
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	17.366	0.00	16.85
26.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.060	0.000	17.366	0.00	3.96
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	17.366	0.00	16.85
28.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	17.366	0.00	3.96
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	17.381	0.00	16.85
30.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	17.381	0.00	3.96
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	17.704	0.00	16.85
32.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	17.704	0.00	3.96
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	18.014	0.00	16.85
34.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	18.014	0.00	3.96
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	18.310	0.00	16.85
36.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	18.310	0.00	3.96
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	18.595	0.00	16.85
38.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	18.595	0.00	3.96
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.064	0.000	18.870	0.00	16.85
40.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.064	0.000	18.870	0.00	3.96
42.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	19.135	0.00	16.85
42.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	19.135	0.00	3.96
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	19.391	0.00	16.85
44.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	19.391	0.00	3.96
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	19.639	0.00	16.85
46.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	19.639	0.00	3.96
46.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.066	0.000	19.659	0.00	1.40
46.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.066	0.000	19.659	0.00	0.33

Linear Appurtenance Segment Forces (Factored)

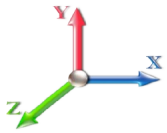
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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)
48.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.066	0.000	19.879	0.00	15.44
48.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.066	0.000	19.879	0.00	3.63
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	20.112	0.00	16.85
50.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.067	0.000	20.112	0.00	3.96
52.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.339	0.00	16.85
52.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.339	0.00	3.96
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.559	0.00	16.85
54.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.559	0.00	3.96
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	20.774	0.00	16.85
56.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	20.774	0.00	3.96
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	20.983	0.00	16.85
58.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	20.983	0.00	3.96
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	21.187	0.00	16.85
60.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	21.187	0.00	3.96
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	21.387	0.00	16.85
62.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.387	0.00	3.96
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	21.582	0.00	16.85
64.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.582	0.00	3.96
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	21.772	0.00	16.85
66.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.772	0.00	3.96
68.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	21.959	0.00	16.85
68.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.959	0.00	3.96
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	22.142	0.00	16.85
70.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	22.142	0.00	3.96
72.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	22.320	0.00	16.85
72.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	22.320	0.00	3.96
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	22.496	0.00	16.85
74.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	22.496	0.00	3.96
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	22.668	0.00	16.85
76.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	22.668	0.00	3.96
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	22.837	0.00	16.85
78.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	22.837	0.00	3.96
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	23.003	0.00	16.85
80.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	23.003	0.00	3.96
82.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.078	0.000	23.165	0.00	16.85
82.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	23.165	0.00	3.96
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	23.325	0.00	16.85
84.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	23.325	0.00	3.96
86.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.080	0.000	23.483	0.00	16.85
86.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	23.483	0.00	3.96
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	23.638	0.00	16.85
88.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	23.638	0.00	3.96
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	23.790	0.00	16.85
90.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.082	0.000	23.790	0.00	3.96
92.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.083	0.000	23.940	0.00	16.85
92.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	23.940	0.00	3.96
94.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.084	0.000	24.087	0.00	16.85

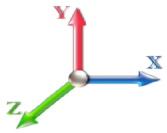
Linear Appurtenance Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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)
94.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	24.087	0.00	3.96
94.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.085	0.000	24.093	0.00	0.70
94.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.085	0.000	24.093	0.00	0.16
96.00	1 5/8" Coax	Yes	1.92	0.000	1.98	0.32	0.00	0.085	0.000	24.233	0.00	16.15
96.00	1 5/8" Hybrid	Yes	1.92	0.000	2.00	0.32	0.00	0.085	0.000	24.233	0.00	3.80
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.086	0.000	24.376	0.00	16.85
98.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	24.376	0.00	3.96
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	24.517	0.00	16.85
100.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	24.517	0.00	3.96
100.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.088	0.000	24.529	0.00	1.40
100.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.088	0.000	24.529	0.00	0.33
102.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.087	0.000	24.656	0.00	15.44
102.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.087	0.000	24.656	0.00	3.63
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.088	0.000	24.793	0.00	16.85
104.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.088	0.000	24.793	0.00	3.96
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	24.928	0.00	16.85
106.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	24.928	0.00	3.96
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.090	0.000	25.062	0.00	16.85
108.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	25.062	0.00	3.96
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.092	0.000	25.194	0.00	16.85
110.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	25.194	0.00	3.96
112.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.093	0.000	25.324	0.00	16.85
112.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	25.324	0.00	3.96
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.094	0.000	25.452	0.00	16.85
114.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	25.452	0.00	3.96
116.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.095	0.000	25.579	0.00	16.85
116.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	25.579	0.00	3.96
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.097	0.000	25.704	0.00	16.85
118.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.097	0.000	25.704	0.00	3.96
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.098	0.000	25.828	0.00	16.85
120.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.098	0.000	25.828	0.00	3.96
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.100	0.000	25.950	0.00	16.85
122.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.100	0.000	25.950	0.00	3.96
124.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.003	26.071	0.00	16.85
124.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.101	1.003	26.071	0.00	3.96
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.008	26.190	0.00	16.85
126.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.103	1.008	26.190	0.00	3.96
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.012	26.309	0.00	16.85
128.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.104	1.012	26.309	0.00	3.96
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	26.425	0.00	16.85
130.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.106	1.017	26.425	0.00	3.96
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.107	1.022	26.541	0.00	16.85
132.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.107	1.022	26.541	0.00	3.96
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.109	1.027	26.655	0.00	16.85
134.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.109	1.027	26.655	0.00	3.96
136.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.111	1.033	26.768	0.00	16.85
136.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	26.768	0.00	3.96

Linear Appurtenance Segment Forces (Factored)

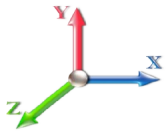
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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)
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.113	1.038	26.880	0.00	16.85
138.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.113	1.038	26.880	0.00	3.96
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.115	1.044	26.991	0.00	16.85
140.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.115	1.044	26.991	0.00	3.96
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.117	1.050	27.100	0.00	16.85
142.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.117	1.050	27.100	0.00	3.96
143.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.118	1.055	27.195	0.00	14.74
143.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.118	1.055	27.195	0.00	3.47
144.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.149	1.148	27.209	0.00	2.11
144.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.149	1.148	27.209	0.00	0.50
144.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.149	1.148	27.209	0.00	0.00
144.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.150	1.150	27.236	0.00	4.21
144.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.150	1.150	27.236	0.00	0.99
144.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.150	1.150	27.236	0.00	0.00
145.75	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.151	1.153	27.303	0.00	10.53
145.75	1 5/8" Hybrid	Yes	1.25	0.000	2.00	0.21	0.00	0.151	1.153	27.303	0.00	2.48
145.75	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.151	1.153	27.303	0.00	0.00
146.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.152	1.156	27.316	0.00	2.11
146.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.152	1.156	27.316	0.00	0.50
146.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.152	1.156	27.316	0.00	0.00
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.154	1.161	27.423	0.00	16.85
148.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.154	1.161	27.423	0.00	3.96
148.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.154	1.161	27.423	0.00	0.00
148.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.155	1.165	27.427	0.00	0.70
148.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.155	1.165	27.427	0.00	0.16
148.08	1" Reinforcing plate	Yes	0.08	0.000	1.00	0.01	0.00	0.155	1.165	27.427	0.00	0.00
149.50	1 5/8" Coax	Yes	1.42	0.000	1.98	0.23	0.00	0.154	1.163	27.502	0.00	11.93
149.50	1 5/8" Hybrid	Yes	1.42	0.000	2.00	0.24	0.00	0.154	1.163	27.502	0.00	2.81
149.50	1" Reinforcing plate	Yes	1.42	0.000	1.00	0.12	0.00	0.154	1.163	27.502	0.00	0.00
150.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.156	1.167	27.528	0.00	4.21
150.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.156	1.167	27.528	0.00	0.99
150.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.156	1.167	27.528	0.00	0.00
151.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.157	1.172	27.620	0.00	14.74
151.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.157	1.172	27.620	0.00	3.47
151.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.157	1.172	27.620	0.00	0.00
152.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.159	1.176	27.633	0.00	2.11
152.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.159	1.176	27.633	0.00	0.50
152.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.159	1.176	27.633	0.00	0.00
154.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.156	1.169	27.736	0.00	16.85
154.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.156	1.169	27.736	0.00	3.96
154.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.156	1.169	27.736	0.00	0.00
154.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.089	27.762	0.00	4.21
154.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.089	27.762	0.00	0.99
155.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.091	27.787	0.00	4.21
155.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.091	27.787	0.00	0.99
156.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.094	27.838	0.00	8.42
156.00	1 5/8" Hybrid	Yes	1.00	0.000	2.00	0.17	0.00	0.131	1.094	27.838	0.00	1.98

Linear Appurtenance Segment Forces (Factored)

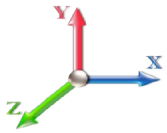
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

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)
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.100	27.940	0.00	16.85
158.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.133	1.100	27.940	0.00	3.96
159.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.136	1.107	28.015	0.00	12.64
159.50	1 5/8" Hybrid	Yes	1.50	0.000	2.00	0.25	0.00	0.136	1.107	28.015	0.00	2.97
160.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.137	1.111	28.040	0.00	4.21
160.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.137	1.111	28.040	0.00	0.99
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.139	1.116	28.140	0.00	16.85
162.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.139	1.116	28.140	0.00	3.96
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.142	1.125	28.239	0.00	16.85
164.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.142	1.125	28.239	0.00	3.96
164.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.143	1.130	28.264	0.00	4.21
164.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.143	1.130	28.264	0.00	0.99
165.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.144	1.132	28.288	0.00	4.21
165.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.144	1.132	28.288	0.00	0.99
166.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.072	0.000	28.337	0.00	8.42
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	28.434	0.00	16.85
169.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.075	0.000	28.506	0.00	12.64
170.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.076	0.000	28.530	0.00	4.21
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	28.626	0.00	16.85
174.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	28.721	0.00	16.85
174.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	28.744	0.00	4.21
175.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	28.768	0.00	4.21
176.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.081	0.000	28.815	0.00	8.42
178.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	28.908	0.00	16.85
179.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.084	0.000	28.977	0.00	12.64
180.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.085	0.000	29.000	0.00	4.21
182.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	29.092	0.00	16.85
184.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	29.183	0.00	16.85
185.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.091	0.000	29.228	0.00	8.42
										Totals:	**0.0**	**1,859.9**

Calculated Forces

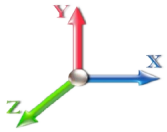
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 29

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.87	-53.66	0.00	-7628.8	0.00	7628.81	6186.26	3093.13	18350.4	9188.88	0.00	0.000	0.000	0.840
2.00	-55.20	-53.48	0.00	-7521.4	0.00	7521.49	6161.28	3080.64	18129.8	9078.39	0.01	-0.066	0.000	0.838
4.00	-54.49	-53.30	0.00	-7414.5	0.00	7414.53	6135.91	3067.96	17909.2	8967.93	0.06	-0.132	0.000	0.836
6.00	-53.75	-53.13	0.00	-7307.9	0.00	7307.92	6110.15	3055.07	17688.7	8857.51	0.13	-0.199	0.000	0.834
8.00	-53.01	-52.95	0.00	-7201.6	0.00	7201.67	6084.00	3042.00	17468.3	8747.14	0.23	-0.267	0.000	0.832
10.00	-52.28	-52.77	0.00	-7095.7	0.00	7095.77	6057.45	3028.73	17248.0	8636.84	0.35	-0.335	0.000	0.831
12.00	-51.55	-52.60	0.00	-6990.2	0.00	6990.23	6030.52	3015.26	17027.9	8526.61	0.51	-0.404	0.000	0.829
14.00	-50.83	-52.42	0.00	-6885.0	0.00	6885.03	6003.19	3001.60	16807.9	8416.48	0.69	-0.473	0.000	0.827
16.00	-50.11	-52.25	0.00	-6780.1	0.00	6780.19	5975.47	2987.74	16588.2	8306.46	0.91	-0.544	0.000	0.825
18.00	-49.40	-52.08	0.00	-6675.6	0.00	6675.69	5947.37	2973.68	16368.7	8196.55	1.15	-0.615	0.000	0.823
20.00	-48.69	-51.91	0.00	-6571.5	0.00	6571.53	5918.87	2959.43	16149.5	8086.79	1.42	-0.687	0.000	0.821
22.00	-47.99	-51.74	0.00	-6467.7	0.00	6467.72	5889.98	2944.99	15930.6	7977.17	1.73	-0.759	0.000	0.819
24.00	-47.29	-51.57	0.00	-6364.2	0.00	6364.25	5860.70	2930.35	15712.0	7867.72	2.06	-0.832	0.000	0.817
26.00	-46.59	-51.40	0.00	-6261.1	0.00	6261.11	5831.03	2915.51	15493.8	7758.44	2.43	-0.906	0.000	0.815
28.00	-45.90	-51.23	0.00	-6158.3	0.00	6158.32	5800.97	2900.48	15276.0	7649.36	2.82	-0.981	0.000	0.813
30.00	-45.22	-51.06	0.00	-6055.8	0.00	6055.86	5770.52	2885.26	15058.5	7540.48	3.25	-1.056	0.000	0.811
32.00	-44.54	-50.89	0.00	-5953.7	0.00	5953.73	5739.67	2869.84	14841.5	7431.82	3.71	-1.133	0.000	0.809
34.00	-43.86	-50.72	0.00	-5851.9	0.00	5851.95	5708.44	2854.22	14625.0	7323.39	4.20	-1.210	0.000	0.807
36.00	-43.19	-50.55	0.00	-5750.5	0.00	5750.51	5676.81	2838.41	14409.0	7215.22	4.73	-1.288	0.000	0.805
38.00	-42.53	-50.37	0.00	-5649.4	0.00	5649.42	5644.80	2822.40	14193.5	7107.30	5.28	-1.366	0.000	0.803
40.00	-41.87	-50.19	0.00	-5548.6	0.00	5548.69	5612.39	2806.20	13978.5	6999.66	5.87	-1.446	0.000	0.800
42.00	-41.21	-50.00	0.00	-5448.3	0.00	5448.31	5579.60	2789.80	13764.1	6892.30	6.50	-1.526	0.000	0.798
44.00	-40.56	-49.82	0.00	-5348.3	0.00	5348.31	5546.41	2773.20	13550.3	6785.25	7.15	-1.607	0.000	0.796
46.00	-39.94	-49.61	0.00	-5248.6	0.00	5248.67	5512.83	2756.41	13337.2	6678.52	7.84	-1.689	0.000	0.793
46.17	-39.86	-49.62	0.00	-5240.4	0.00	5240.40	5510.01	2755.01	13319.4	6669.64	7.90	-1.696	0.000	0.793
48.00	-38.81	-49.43	0.00	-5149.4	0.00	5149.44	5478.86	2739.43	13124.7	6572.12	8.57	-1.772	0.000	0.791
50.00	-37.67	-49.22	0.00	-5050.5	0.00	5050.58	5444.50	2722.25	12912.9	6466.06	9.33	-1.855	0.000	0.788
52.00	-36.54	-49.01	0.00	-4952.1	0.00	4952.14	5409.75	2704.87	12701.8	6360.36	10.13	-1.940	0.000	0.786
54.00	-35.42	-48.79	0.00	-4854.1	0.00	4854.12	5427.99	2713.99	12812.2	6415.65	10.96	-2.025	0.000	0.763
56.00	-34.79	-48.59	0.00	-4756.5	0.00	4756.54	5393.05	2696.53	12601.5	6310.13	11.82	-2.111	0.000	0.761
58.00	-34.17	-48.39	0.00	-4659.3	0.00	4659.35	5357.72	2678.86	12391.5	6204.99	12.73	-2.194	0.000	0.758
60.00	-33.56	-48.19	0.00	-4562.5	0.00	4562.57	5322.01	2661.00	12182.3	6100.24	13.66	-2.278	0.000	0.755
62.00	-32.94	-47.98	0.00	-4466.2	0.00	4466.20	5285.90	2642.95	11974.0	5995.90	14.64	-2.363	0.000	0.751
64.00	-32.34	-47.78	0.00	-4370.2	0.00	4370.24	5249.40	2624.70	11766.4	5891.98	15.65	-2.448	0.000	0.748
66.00	-31.74	-47.57	0.00	-4274.6	0.00	4274.68	5212.50	2606.25	11559.8	5788.50	16.69	-2.535	0.000	0.745
68.00	-31.14	-47.37	0.00	-4179.5	0.00	4179.54	5175.22	2587.61	11354.0	5685.46	17.77	-2.622	0.000	0.741
70.00	-30.55	-47.16	0.00	-4084.8	0.00	4084.81	5137.55	2568.77	11149.2	5582.89	18.89	-2.710	0.000	0.738
72.00	-29.96	-46.95	0.00	-3990.5	0.00	3990.50	5099.49	2549.74	10945.3	5480.80	20.04	-2.798	0.000	0.734
74.00	-29.37	-46.74	0.00	-3896.6	0.00	3896.60	5061.03	2530.52	10742.4	5379.19	21.23	-2.888	0.000	0.731
76.00	-28.80	-46.54	0.00	-3803.1	0.00	3803.11	5022.19	2511.09	10540.5	5278.10	22.46	-2.978	0.000	0.727
78.00	-28.22	-46.33	0.00	-3710.0	0.00	3710.04	4982.95	2491.47	10339.6	5177.52	23.73	-3.070	0.000	0.723
80.00	-27.66	-46.12	0.00	-3617.3	0.00	3617.39	4943.32	2471.66	10139.8	5077.48	25.04	-3.162	0.000	0.718
82.00	-27.09	-45.91	0.00	-3525.1	0.00	3525.15	4903.30	2451.65	9941.18	4977.98	26.38	-3.255	0.000	0.714
84.00	-26.54	-45.70	0.00	-3433.3	0.00	3433.33	4862.90	2431.45	9743.60	4879.04	27.76	-3.348	0.000	0.709
86.00	-25.98	-45.49	0.00	-3341.9	0.00	3341.93	4822.10	2411.05	9547.17	4780.68	29.19	-3.443	0.000	0.705
88.00	-25.43	-45.29	0.00	-3250.9	0.00	3250.94	4780.91	2390.45	9351.91	4682.91	30.65	-3.538	0.000	0.700
90.00	-24.89	-45.08	0.00	-3160.3	0.00	3160.37	4739.33	2369.66	9157.86	4585.74	32.15	-3.634	0.000	0.695
92.00	-24.35	-44.87	0.00	-3070.2	0.00	3070.21	4697.35	2348.68	8965.05	4489.19	33.69	-3.731	0.000	0.689

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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

94.00	-23.86	-44.64	0.00	-2980.4	0.00	2980.48	4654.99	2327.50	8773.49	4393.27	35.28	-3.828	0.000	0.684
94.08	-23.80	-44.65	0.00	-2976.7	0.00	2976.76	4653.22	2326.61	8765.54	4389.28	35.34	-3.832	0.000	0.684
96.00	-22.97	-44.43	0.00	-2891.1	0.00	2891.17	4612.24	2306.12	8583.22	4297.99	36.90	-3.927	0.000	0.678
98.00	-22.11	-44.19	0.00	-2802.3	0.00	2802.31	4569.09	2284.55	8394.27	4203.37	38.57	-4.025	0.000	0.672
100.00	-21.30	-43.94	0.00	-2713.9	0.00	2713.93	4525.56	2262.78	8206.66	4109.43	40.27	-4.125	0.000	0.665
100.17	-21.20	-43.94	0.00	-2706.6	0.00	2706.60	3757.39	1878.70	6942.18	3476.25	40.42	-4.133	0.000	0.785
102.00	-20.76	-43.75	0.00	-2626.0	0.00	2626.05	3727.29	1863.64	6805.30	3407.71	42.02	-4.225	0.000	0.777
104.00	-20.29	-43.55	0.00	-2538.5	0.00	2538.55	3694.07	1847.03	6656.80	3333.35	43.81	-4.337	0.000	0.768
106.00	-19.83	-43.34	0.00	-2451.4	0.00	2451.45	3660.46	1830.23	6509.18	3259.43	45.65	-4.448	0.000	0.758
108.00	-19.37	-43.14	0.00	-2364.7	0.00	2364.77	3626.46	1813.23	6362.47	3185.96	47.54	-4.560	0.000	0.748
110.00	-18.91	-42.94	0.00	-2278.4	0.00	2278.48	3592.07	1796.03	6216.70	3112.97	49.47	-4.673	0.000	0.738
112.00	-18.46	-42.74	0.00	-2192.6	0.00	2192.61	3557.29	1778.64	6071.91	3040.47	51.45	-4.786	0.000	0.727
114.00	-18.02	-42.54	0.00	-2107.1	0.00	2107.13	3522.12	1761.06	5928.11	2968.46	53.48	-4.899	0.000	0.716
116.00	-17.58	-42.34	0.00	-2022.0	0.00	2022.06	3486.55	1743.28	5785.33	2896.97	55.56	-5.012	0.000	0.704
118.00	-17.14	-42.14	0.00	-1937.3	0.00	1937.39	3450.60	1725.30	5643.61	2826.00	57.68	-5.125	0.000	0.691
120.00	-16.71	-41.94	0.00	-1853.1	0.00	1853.11	3414.26	1707.13	5502.97	2755.57	59.85	-5.239	0.000	0.678
122.00	-16.28	-41.74	0.00	-1769.2	0.00	1769.24	3377.52	1688.76	5363.43	2685.70	62.06	-5.352	0.000	0.664
124.00	-15.86	-41.54	0.00	-1685.7	0.00	1685.76	3340.40	1670.20	5225.04	2616.40	64.33	-5.464	0.000	0.650
126.00	-15.45	-41.34	0.00	-1602.6	0.00	1602.68	3302.88	1651.44	5087.80	2547.68	66.64	-5.576	0.000	0.634
128.00	-15.04	-41.14	0.00	-1520.0	0.00	1520.00	3264.97	1632.49	4951.76	2479.56	69.00	-5.688	0.000	0.618
130.00	-14.63	-40.95	0.00	-1437.7	0.00	1437.71	3220.40	1610.20	4807.57	2407.36	71.40	-5.798	0.000	0.602
132.00	-14.24	-40.75	0.00	-1355.8	0.00	1355.82	3169.61	1584.80	4656.37	2331.65	73.85	-5.908	0.000	0.587
134.00	-13.84	-40.55	0.00	-1274.3	0.00	1274.33	3118.82	1559.41	4507.59	2257.15	76.34	-6.016	0.000	0.570
136.00	-13.46	-40.35	0.00	-1193.2	0.00	1193.23	3068.04	1534.02	4361.23	2183.86	78.88	-6.122	0.000	0.551
138.00	-13.08	-40.15	0.00	-1112.5	0.00	1112.53	3017.25	1508.63	4217.28	2111.78	81.46	-6.227	0.000	0.532
140.00	-12.70	-39.95	0.00	-1032.2	0.00	1032.23	2966.47	1483.23	4075.75	2040.91	84.09	-6.329	0.000	0.511
142.00	-12.34	-39.75	0.00	-952.33	0.00	952.33	2915.68	1457.84	3936.64	1971.24	86.76	-6.428	0.000	0.488
143.75	-12.05	-39.57	0.00	-882.76	0.00	882.76	2871.25	1435.62	3816.89	1911.28	89.13	-6.513	0.000	0.467
144.00	-11.98	-39.54	0.00	-872.87	0.00	872.87	2864.90	1432.45	3799.94	1902.79	89.47	-6.525	0.000	0.464
144.50	-11.44	-37.38	0.00	-853.09	0.00	853.09	2852.20	1426.10	3766.14	1885.87	90.15	-6.549	0.000	0.457
145.75	-11.17	-37.23	0.00	-806.37	0.00	806.37	2820.46	1410.23	3682.30	1843.89	91.87	-6.608	0.000	0.290
146.00	-11.10	-37.21	0.00	-797.06	0.00	797.06	2814.11	1407.06	3665.65	1835.55	92.22	-6.615	0.000	0.287
148.00	-10.68	-36.97	0.00	-722.64	0.00	722.64	2763.33	1381.66	3533.78	1769.52	95.00	-6.674	0.000	0.269
148.08	-10.65	-36.96	0.00	-719.56	0.00	719.56	1152.50	576.25	1508.33	755.29	95.11	-6.676	0.000	0.334
149.50	-10.17	-34.33	0.00	-667.20	0.00	667.20	1145.31	572.66	1479.63	740.91	97.09	-6.716	0.000	0.450
150.00	-10.10	-34.29	0.00	-650.04	0.00	650.04	1142.73	571.37	1469.50	735.84	97.80	-6.735	0.000	0.440
151.75	-9.93	-34.10	0.00	-590.03	0.00	590.03	1133.50	566.75	1434.03	718.08	100.27	-6.801	0.000	0.406
151.75	-9.93	-34.10	0.00	-590.03	0.00	590.03	1133.50	566.75	1434.03	718.08	100.27	-6.801	0.000	0.406
152.00	-9.86	-34.09	0.00	-581.51	0.00	581.51	1132.15	566.08	1428.97	715.55	100.63	-6.811	0.000	0.825
154.00	-9.64	-33.89	0.00	-513.32	0.00	513.32	1121.19	560.59	1388.46	695.26	103.51	-6.954	0.000	0.751
154.50	-9.19	-32.15	0.00	-496.38	0.00	496.38	1118.38	559.19	1378.34	690.19	104.24	-6.989	0.000	0.731
155.00	-7.30	-26.33	0.00	-480.30	0.00	480.30	1115.56	557.78	1368.22	685.13	104.97	-7.024	0.000	0.710
156.00	-7.19	-26.24	0.00	-453.97	0.00	453.97	1109.83	554.91	1348.00	675.00	106.45	-7.090	0.000	0.681
158.00	-7.00	-26.06	0.00	-401.49	0.00	401.49	1098.08	549.04	1307.61	654.78	109.44	-7.216	0.000	0.622
159.50	-6.57	-23.65	0.00	-362.40	0.00	362.40	1089.01	544.51	1277.39	639.64	111.72	-7.306	0.000	0.574
160.00	-6.51	-23.61	0.00	-350.58	0.00	350.58	1085.94	542.97	1267.33	634.61	112.48	-7.335	0.000	0.560
162.00	-6.33	-23.43	0.00	-303.36	0.00	303.36	1073.41	536.70	1227.17	614.50	115.57	-7.443	0.000	0.501
164.00	-6.18	-23.25	0.00	-256.50	0.00	256.50	1060.49	530.24	1187.18	594.47	118.70	-7.542	0.000	0.439
164.50	-5.80	-21.94	0.00	-244.88	0.00	244.88	1057.19	528.60	1177.21	589.48	119.49	-7.566	0.000	0.423
165.00	-4.65	-16.86	0.00	-233.91	0.00	233.91	1053.88	526.94	1167.25	584.49	120.28	-7.588	0.000	0.406
166.00	-4.58	-16.78	0.00	-217.05	0.00	217.05	1047.17	523.59	1147.37	574.54	121.87	-7.632	0.000	0.383
168.00	-4.46	-16.62	0.00	-183.49	0.00	183.49	1033.47	516.74	1107.78	554.71	125.08	-7.712	0.000	0.336
169.50	-4.11	-14.70	0.00	-158.56	0.00	158.56	1022.94	511.47	1078.24	539.92	127.50	-7.767	0.000	0.299
170.00	-4.08	-14.66	0.00	-151.21	0.00	151.21	1019.38	509.69	1068.43	535.01	128.32	-7.784	0.000	0.287
172.00	-3.96	-14.51	0.00	-121.88	0.00	121.88	1004.89	502.45	1029.34	515.44	131.58	-7.847	0.000	0.241
174.00	-3.86	-14.36	0.00	-92.85	0.00	92.85	990.02	495.01	990.56	496.02	134.87	-7.899	0.000	0.192
174.50	-3.53	-13.52	0.00	-85.67	0.00	85.67	986.24	493.12	980.92	491.19	135.70	-7.911	0.000	0.179

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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	

175.00	-2.15	-9.46	0.00	-78.92	0.00	78.92	982.43	491.22	971.29	486.37	136.52	-7.922	0.000	0.165
176.00	-2.10	-9.39	0.00	-69.46	0.00	69.46	974.75	487.37	952.10	476.76	138.18	-7.942	0.000	0.148
178.00	-2.01	-9.24	0.00	-50.68	0.00	50.68	959.09	479.55	914.00	457.68	141.51	-7.976	0.000	0.113
179.50	-2.00	-6.78	0.00	-36.81	0.00	36.81	947.09	473.55	885.67	443.49	144.01	-7.996	0.000	0.085
180.00	-1.98	-6.74	0.00	-33.43	0.00	33.43	943.04	471.52	876.28	438.79	144.84	-8.001	0.000	0.078
182.00	-1.89	-6.60	0.00	-19.95	0.00	19.95	926.61	463.30	838.97	420.11	148.19	-8.019	0.000	0.050
184.00	-1.81	-6.46	0.00	-6.75	0.00	6.75	909.78	454.89	802.09	401.64	151.54	-8.028	0.000	0.019
185.00	0.00	-6.15	0.00	-0.28	0.00	0.28	901.22	450.61	783.83	392.50	153.22	-8.030	0.000	0.001

Wind Loading - Shaft

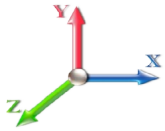
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	4.256	4.68	0.00	1.200	1.133	2.00	12.599	15.12	70.8	207.5	1021.4
4.00		1.00	0.70	4.256	4.68	0.00	1.200	1.215	2.00	12.529	15.03	70.4	220.9	1028.3
6.00		1.00	0.70	4.256	4.68	0.00	1.200	1.265	2.00	12.448	14.94	69.9	228.4	1029.3
8.00		1.00	0.70	4.256	4.68	0.00	1.200	1.302	2.00	12.363	14.84	69.5	233.3	1027.7
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	2.00	12.276	14.73	69.0	236.7	1024.6
12.00		1.00	0.70	4.256	4.68	0.00	1.200	1.356	2.00	12.187	14.62	68.5	239.2	1020.6
14.00		1.00	0.70	4.256	4.68	0.00	1.200	1.377	2.00	12.097	14.52	68.0	241.0	1015.9
16.00		1.00	0.70	4.256	4.68	0.00	1.200	1.395	2.00	12.006	14.41	67.4	242.3	1010.6
18.00		1.00	0.70	4.256	4.68	0.00	1.200	1.412	2.00	11.914	14.30	66.9	243.2	1005.0
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	2.00	11.822	14.19	66.4	243.8	999.1
22.00		1.00	0.70	4.256	4.68	0.00	1.200	1.440	2.00	11.729	14.08	65.9	244.1	992.9
24.00		1.00	0.70	4.256	4.68	0.00	1.200	1.453	2.00	11.636	13.96	65.4	244.2	986.5
26.00		1.00	0.70	4.256	4.68	0.00	1.200	1.465	2.00	11.543	13.85	64.8	244.1	979.8
28.00		1.00	0.70	4.256	4.68	0.00	1.200	1.476	2.00	11.449	13.74	64.3	243.8	973.1
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	2.00	11.356	13.63	63.8	243.4	966.1
32.00		1.00	0.71	4.339	4.77	0.00	1.200	1.495	2.00	11.262	13.51	64.5	242.8	959.1
34.00		1.00	0.73	4.415	4.86	0.00	1.200	1.504	2.00	11.167	13.40	65.1	242.2	951.9
36.00		1.00	0.74	4.487	4.94	0.00	1.200	1.513	2.00	11.073	13.29	65.6	241.4	944.6
38.00		1.00	0.75	4.557	5.01	0.00	1.200	1.521	2.00	10.979	13.17	66.0	240.6	937.3
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	2.00	10.884	13.06	66.4	239.6	929.8
42.00		1.00	0.77	4.689	5.16	0.00	1.200	1.537	2.00	10.789	12.95	66.8	238.6	922.3
44.00		1.00	0.78	4.752	5.23	0.00	1.200	1.544	2.00	10.695	12.83	67.1	237.5	914.7
46.00		1.00	0.79	4.813	5.29	0.00	1.200	1.551	2.00	10.600	12.72	67.3	236.4	907.0
46.17	Bot - Section 2	1.00	0.79	4.818	5.30	0.00	1.200	1.551	0.17	0.879	1.05	5.6	19.7	75.3
48.00		1.00	0.80	4.872	5.36	0.00	1.200	1.557	1.83	9.761	11.71	62.8	218.7	1444.9
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	2.00	10.558	12.67	68.7	237.4	1562.5
52.00		1.00	0.82	4.984	5.48	0.00	1.200	1.570	2.00	10.463	12.56	68.8	236.0	1548.2
54.00	Top - Section 1	1.00	0.83	5.039	5.54	0.00	1.200	1.576	2.00	10.367	12.44	69.0	234.7	1533.8
56.00		1.00	0.84	5.091	5.60	0.00	1.200	1.581	2.00	10.272	12.33	69.0	233.3	881.3
58.00		1.00	0.85	5.142	5.66	0.00	1.200	1.587	2.00	10.177	12.21	69.1	231.9	873.4
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	2.00	10.081	12.10	69.1	230.4	865.4
62.00		1.00	0.86	5.241	5.77	0.00	1.200	1.598	2.00	9.986	11.98	69.1	228.8	857.3
64.00		1.00	0.87	5.289	5.82	0.00	1.200	1.603	2.00	9.890	11.87	69.1	227.3	849.2
66.00		1.00	0.88	5.336	5.87	0.00	1.200	1.608	2.00	9.795	11.75	69.0	225.7	841.1
68.00		1.00	0.89	5.382	5.92	0.00	1.200	1.612	2.00	9.699	11.64	68.9	224.1	833.0
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	2.00	9.604	11.52	68.8	222.4	824.8
72.00		1.00	0.90	5.470	6.02	0.00	1.200	1.622	2.00	9.508	11.41	68.7	220.7	816.6
74.00		1.00	0.91	5.513	6.06	0.00	1.200	1.626	2.00	9.412	11.29	68.5	219.0	808.4
76.00		1.00	0.91	5.555	6.11	0.00	1.200	1.631	2.00	9.316	11.18	68.3	217.3	800.1
78.00		1.00	0.92	5.597	6.16	0.00	1.200	1.635	2.00	9.221	11.06	68.1	215.5	791.9
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	2.00	9.125	10.95	67.9	213.7	783.5
82.00		1.00	0.93	5.677	6.24	0.00	1.200	1.643	2.00	9.029	10.83	67.7	211.9	775.2
84.00		1.00	0.94	5.716	6.29	0.00	1.200	1.647	2.00	8.933	10.72	67.4	210.0	766.9
86.00		1.00	0.95	5.755	6.33	0.00	1.200	1.651	2.00	8.837	10.60	67.1	208.2	758.5
88.00		1.00	0.95	5.793	6.37	0.00	1.200	1.655	2.00	8.741	10.49	66.8	206.3	750.1
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	2.00	8.645	10.37	66.5	204.4	741.7

Wind Loading - Shaft

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (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

92.00	1.00	0.96	5.867	6.45	0.00	1.200	1.662	2.00	8.549	10.26	66.2	202.4	733.2
94.00	1.00	0.97	5.903	6.49	0.00	1.200	1.666	2.00	8.453	10.14	65.9	200.5	724.8
94.08 Bot - Section 3	1.00	0.97	5.905	6.50	0.00	1.200	1.666	0.08	0.350	0.42	2.7	8.4	30.1
96.00	1.00	0.98	5.939	6.53	0.00	1.200	1.669	1.92	8.129	9.75	63.7	193.3	1122.1
98.00	1.00	0.98	5.974	6.57	0.00	1.200	1.672	2.00	8.388	10.07	66.1	199.7	1157.0
100.00	1.00	0.99	6.008	6.61	0.00	1.200	1.676	2.00	8.292	9.95	65.8	197.7	1142.9
100.17 Top - Section 2	1.00	0.99	6.011	6.61	0.00	1.200	1.676	0.17	0.687	0.82	5.4	16.5	94.7
102.00	1.00	0.99	6.043	6.65	0.00	1.200	1.679	1.83	7.509	9.01	59.9	179.4	577.8
104.00	1.00	1.00	6.076	6.68	0.00	1.200	1.682	2.00	8.100	9.72	65.0	193.6	623.0
106.00	1.00	1.00	6.109	6.72	0.00	1.200	1.686	2.00	8.004	9.60	64.5	191.6	615.4
108.00	1.00	1.01	6.142	6.76	0.00	1.200	1.689	2.00	7.908	9.49	64.1	189.5	607.7
110.00	1.00	1.02	6.174	6.79	0.00	1.200	1.692	2.00	7.811	9.37	63.7	187.5	600.1
112.00	1.00	1.02	6.206	6.83	0.00	1.200	1.695	2.00	7.715	9.26	63.2	185.4	592.4
114.00	1.00	1.03	6.238	6.86	0.00	1.200	1.698	2.00	7.619	9.14	62.7	183.3	584.7
116.00	1.00	1.03	6.269	6.90	0.00	1.200	1.701	2.00	7.523	9.03	62.2	181.2	577.0
118.00	1.00	1.04	6.299	6.93	0.00	1.200	1.704	2.00	7.427	8.91	61.8	179.0	569.3
120.00	1.00	1.04	6.330	6.96	0.00	1.200	1.707	2.00	7.330	8.80	61.2	176.9	561.6
122.00	1.00	1.05	6.360	7.00	0.00	1.200	1.710	2.00	7.234	8.68	60.7	174.7	553.8
124.00	1.00	1.05	6.389	7.03	0.00	1.204 *	1.712	2.00	7.138	8.59	60.4	172.6	546.1
126.00	1.00	1.06	6.419	7.06	0.00	1.209 *	1.715	2.00	7.042	8.51	60.1	170.4	538.3
128.00	1.00	1.06	6.448	7.09	0.00	1.215 *	1.718	2.00	6.945	8.44	59.8	168.2	530.6
130.00	1.00	1.07	6.476	7.12	0.00	1.221 *	1.720	2.00	6.849	8.36	59.6	166.0	522.8
132.00	1.00	1.07	6.504	7.15	0.00	1.227 *	1.723	2.00	6.753	8.28	59.3	163.8	515.0
134.00	1.00	1.07	6.532	7.19	0.00	1.233 *	1.726	2.00	6.656	8.21	59.0	161.5	507.2
136.00	1.00	1.08	6.560	7.22	0.00	1.239 *	1.728	2.00	6.560	8.13	58.7	159.3	499.3
138.00	1.00	1.08	6.588	7.25	0.00	1.246 *	1.731	2.00	6.464	8.05	58.3	157.1	491.5
140.00	1.00	1.09	6.615	7.28	0.00	1.252 *	1.733	2.00	6.367	7.97	58.0	154.8	483.7
142.00	1.00	1.09	6.642	7.31	0.00	1.260 *	1.736	2.00	6.271	7.90	57.7	152.5	475.8
143.75 Bot - Section 4	1.00	1.10	6.665	7.33	0.00	1.266 *	1.738	1.75	5.408	6.85	50.2	131.7	410.0
144.00	1.00	1.10	6.668	7.34	0.00	1.378 *	1.738	0.25	0.774	1.07	7.8	19.0	78.4
144.50 Appurtenance(s)	1.00	1.10	6.675	7.34	0.00	1.380 *	1.739	0.50	1.544	2.13	15.6	37.8	156.3
145.75 RB1	1.00	1.10	6.691	7.36	0.00	1.384 *	1.740	1.25	3.835	5.31	39.1	93.7	387.7
146.00	1.00	1.10	6.695	7.36	0.00	1.388 *	1.741	0.25	0.762	1.06	7.8	18.7	77.1
148.00	1.00	1.11	6.721	7.39	0.00	1.393 *	1.743	2.00	6.045	8.42	62.3	147.3	609.8
148.08 Top - Section 3	1.00	1.11	6.722	7.39	0.00	1.398 *	1.743	0.08	0.250	0.35	2.6	6.1	25.2
149.50 Appurtenance(s)	1.00	1.11	6.740	7.41	0.00	1.396 *	1.745	1.42	4.221	5.89	43.7	103.1	211.8
150.00	1.00	1.11	6.746	7.42	0.00	1.401 *	1.745	0.50	1.478	2.07	15.4	36.2	74.3
151.75 RT1	1.00	1.11	6.769	7.45	0.00	1.406 *	1.747	1.75	5.126	7.21	53.7	125.1	256.9
152.00	1.00	1.11	6.772	7.45	0.00	1.412 *	1.748	0.25	0.726	1.03	7.6	17.8	36.5
154.00	1.00	1.12	6.797	7.48	0.00	1.403 *	1.750	2.00	5.756	8.08	60.4	140.4	288.0
154.50 Appurtenance(s)	1.00	1.12	6.804	7.48	0.00	1.307 *	1.750	0.50	1.424	1.86	13.9	34.9	71.4
155.00 Appurtenance(s)	1.00	1.12	6.810	7.49	0.00	1.309 *	1.751	0.50	1.418	1.86	13.9	34.8	71.1
156.00	1.00	1.12	6.822	7.50	0.00	1.313 *	1.752	1.00	2.818	3.70	27.8	69.0	141.1
158.00	1.00	1.13	6.847	7.53	0.00	1.320 *	1.754	2.00	5.563	7.34	55.3	135.7	277.7
159.50 Appurtenance(s)	1.00	1.13	6.866	7.55	0.00	1.328 *	1.756	1.50	4.109	5.46	41.2	100.4	205.2
160.00	1.00	1.13	6.872	7.56	0.00	1.333 *	1.757	0.50	1.358	1.81	13.7	33.3	67.9
162.00	1.00	1.13	6.896	7.59	0.00	1.339 *	1.759	2.00	5.370	7.19	54.6	131.0	267.4
164.00	1.00	1.14	6.921	7.61	0.00	1.350 *	1.761	2.00	5.274	7.12	54.2	128.6	262.3
164.50 Appurtenance(s)	1.00	1.14	6.927	7.62	0.00	1.356 *	1.761	0.50	1.303	1.77	13.5	32.0	65.0
165.00 Appurtenance(s)	1.00	1.14	6.933	7.63	0.00	1.359 *	1.762	0.50	1.297	1.76	13.4	31.9	64.7
166.00	1.00	1.14	6.945	7.64	0.00	1.200	1.763	1.00	2.576	3.09	23.6	63.1	128.2
168.00	1.00	1.15	6.968	7.67	0.00	1.200	1.765	2.00	5.081	6.10	46.7	123.9	252.0
169.50 Appurtenance(s)	1.00	1.15	6.986	7.68	0.00	1.200	1.767	1.50	3.747	4.50	34.6	91.6	185.8
170.00	1.00	1.15	6.992	7.69	0.00	1.200	1.767	0.50	1.237	1.48	11.4	30.4	61.4
172.00	1.00	1.15	7.015	7.72	0.00	1.200	1.769	2.00	4.888	5.87	45.3	119.1	241.6
174.00	1.00	1.16	7.039	7.74	0.00	1.200	1.771	2.00	4.791	5.75	44.5	116.7	236.4
174.50 Appurtenance(s)	1.00	1.16	7.044	7.75	0.00	1.200	1.772	0.50	1.183	1.42	11.0	29.0	58.5

Wind Loading - Shaft

Structure: CT00707-S-SBA | **Code:** EIA/TIA-222-G | 10/30/2019

Site Name: North Easton | **Exposure:** B

Height: 185.00 (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

175.00 Appurtenance(s)	1.00	1.16	7.050	7.76	0.00	1.200	1.772	0.50	1.177	1.41	10.9	28.9	58.2
176.00	1.00	1.16	7.062	7.77	0.00	1.200	1.773	1.00	2.335	2.80	21.8	57.1	115.2
178.00	1.00	1.17	7.085	7.79	0.00	1.200	1.775	2.00	4.598	5.52	43.0	111.8	226.0
179.50 Appurtenance(s)	1.00	1.17	7.102	7.81	0.00	1.200	1.777	1.50	3.385	4.06	31.7	82.5	166.3
180.00	1.00	1.17	7.107	7.82	0.00	1.200	1.777	0.50	1.116	1.34	10.5	27.4	54.9
182.00	1.00	1.17	7.130	7.84	0.00	1.200	1.779	2.00	4.405	5.29	41.5	107.0	215.5
184.00	1.00	1.18	7.152	7.87	0.00	1.200	1.781	2.00	4.308	5.17	40.7	104.6	210.3
185.00 Appurtenance(s)	1.00	1.18	7.163	7.88	0.00	1.200	1.782	1.00	2.118	2.54	20.0	51.7	103.5
							Totals:	**185.00**			**5,764.3**		**66,328.4**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

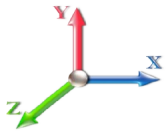
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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	185.00	APX16DWV-16DWV-S-E-	3	7.163	7.879	0.62	1.00	14.13	568.22	0.000	0.000	111.37	0.00	0.00
2	185.00	Kathrein 782 11056	3	7.185	7.904	0.67	1.00	0.86	19.38	0.000	2.000	6.80	0.00	13.60
3	185.00	Allen Telecom	6	7.185	7.904	0.75	1.00	5.22	306.94	0.000	2.000	41.29	0.00	82.58
4	185.00	Cobra Arms	3	7.163	7.879	0.75	1.00	22.13	1498.35	0.000	0.000	174.38	0.00	0.00
5	185.00	6' Pole Branch	1	7.163	7.879	1.00	1.00	30.37	1003.57	0.000	0.000	239.30	0.00	0.00
6	185.00	RRUS 4415 B25	3	7.163	7.879	0.67	1.00	4.35	263.32	0.000	0.000	34.31	0.00	0.00
7	185.00	(3) Sitepro SV197-36	1	7.163	7.879	1.00	1.00	32.97	1055.95	0.000	0.000	259.76	0.00	0.00
8	185.00	Ring mount (Sitepro	1	7.163	7.879	1.00	1.00	3.10	143.35	0.000	0.000	24.46	0.00	0.00
9	185.00	Radio 4449 B71+B12	3	7.163	7.879	0.67	1.00	5.08	378.34	0.000	0.000	40.05	0.00	0.00
10	185.00	Radio 4415 B66A	3	7.163	7.879	0.67	1.00	4.35	263.32	0.000	0.000	34.31	0.00	0.00
11	185.00	APXVAA24_43-U-A20	3	7.163	7.879	0.73	1.00	48.58	1670.17	0.000	0.000	382.77	0.00	0.00
12	179.50	6' Pole Branch	1	7.102	7.812	1.00	1.00	86.87	1002.47	0.000	0.000	678.58	0.00	0.00
13	175.00	Alcatel Lucent 800 MHz	3	7.050	7.755	0.60	0.80	6.57	352.83	0.000	0.000	50.97	0.00	0.00
14	175.00	Cobra Arms	3	7.050	7.755	0.56	0.75	34.41	1942.80	0.000	0.000	266.85	0.00	0.00
15	175.00	RFS APXVTM14-C-120	3	7.050	7.755	0.63	0.80	14.17	691.85	0.000	0.000	109.87	0.00	0.00
16	175.00	RFS APXVSPP18-C-A20	3	7.050	7.755	0.66	0.80	21.63	583.31	0.000	0.000	167.73	0.00	0.00
17	175.00	Alcatel Lucent 800 MHz	3	7.050	7.755	0.60	0.80	7.46	-69.63	0.000	0.000	57.87	0.00	0.00
18	175.00	Alcatel Lucent	3	7.050	7.755	0.60	0.80	8.78	589.63	0.000	0.000	68.08	0.00	0.00
19	175.00	Alcatel Lucent 1900 MHz	3	7.050	7.755	0.60	0.80	9.38	397.38	0.000	0.000	72.75	0.00	0.00
20	175.00	RFS ACU-A20-N RETs	4	7.050	7.755	0.54	0.80	0.95	17.05	0.000	0.000	7.34	0.00	0.00
21	174.50	7' Pole Branch	1	7.044	7.749	1.00	1.00	28.29	1546.23	0.000	0.000	219.21	0.00	0.00
22	169.50	8' Pole Branch	1	6.986	7.685	1.00	1.00	65.92	1884.75	0.000	0.000	506.56	0.00	0.00
23	165.00	DB-B1-6C-12AB-0Z	2	6.933	7.626	0.74	0.80	7.23	231.46	0.000	0.000	55.11	0.00	0.00
24	165.00	RRH4X45-AWS	3	6.933	7.626	0.66	0.80	6.52	484.16	0.000	0.000	49.70	0.00	0.00
25	165.00	RRH2X60-700	3	6.933	7.626	0.62	0.80	8.04	380.04	0.000	0.000	61.34	0.00	0.00
26	165.00	SBNHH-1D65B	6	6.933	7.626	0.68	0.80	38.65	1520.73	0.000	0.000	294.75	0.00	0.00
27	165.00	Antel LPA 80063/6CF	2	6.933	7.626	0.75	0.80	16.49	647.23	0.000	0.000	125.78	0.00	0.00
28	165.00	Swedcom SC-E 6014 Rev	4	6.933	7.626	0.78	0.80	15.57	346.38	0.000	0.000	118.71	0.00	0.00
29	165.00	Cobra Arms	3	6.933	7.626	0.56	0.75	34.34	1937.21	0.000	0.000	261.88	0.00	0.00
30	164.50	8' Pole Branch	1	6.927	7.619	1.00	1.00	45.59	1882.74	0.000	0.000	347.35	0.00	0.00
31	159.50	9' Pole Branch	1	6.866	7.552	1.00	1.00	84.51	2220.08	0.000	0.000	638.25	0.00	0.00
32	155.00	Powerwave LGP21901	6	6.810	7.491	0.67	0.80	2.70	75.93	0.000	0.000	20.21	0.00	0.00
33	155.00	Powerwave LGP 21401	6	6.810	7.491	0.54	0.80	3.97	296.20	0.000	0.000	29.72	0.00	0.00
34	155.00	Raycap DC6-48-60-18-8F	1	6.810	7.491	0.80	0.80	1.74	82.49	0.000	0.000	13.02	0.00	0.00
35	155.00	Powerwave 7770.00	3	6.810	7.491	0.58	0.80	11.51	533.16	0.000	0.000	86.21	0.00	0.00
36	155.00	Cobra Arms	3	6.810	7.491	0.56	0.75	34.27	1931.31	0.000	0.000	256.71	0.00	0.00
37	155.00	Horizontal Pipe	3	6.810	7.491	1.00	1.00	24.37	421.77	0.000	0.000	182.58	0.00	0.00
38	155.00	DMP65R-BU6DA	6	6.810	7.491	0.58	0.80	49.77	2187.02	0.000	0.000	372.81	0.00	0.00
39	155.00	4449 B5/B12	3	6.810	7.491	0.54	0.80	4.05	375.47	0.000	0.000	30.34	0.00	0.00
40	155.00	RRUS 8843 B2 B66A	3	6.810	7.491	0.54	0.80	3.44	364.19	0.000	0.000	25.76	0.00	0.00
41	155.00	pipe brace	3	6.810	7.491	1.00	1.00	29.14	622.36	0.000	0.000	218.29	0.00	0.00
42	155.00	DC6-48-60-18-8C-EV	1	6.810	7.491	0.80	0.80	1.57	124.84	0.000	0.000	11.79	0.00	0.00
43	154.50	9' Pole Branch	1	6.804	7.484	1.00	1.00	62.78	2217.57	0.000	0.000	469.86	0.00	0.00
44	149.50	10' Pole Branch	1	6.740	7.414	1.00	1.00	93.62	2350.45	0.000	0.000	694.07	0.00	0.00
45	144.50	11' Pole Branch	1	6.675	7.342	1.00	1.00	79.86	2415.27	0.000	0.000	586.35	0.00	0.00
							Totals:		**39,757.62**			**8,505.16**		

Total Applied Force Summary

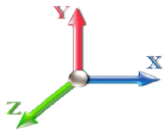
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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
2.00		70.78	1038.24	0.00	0.00
4.00		70.39	1117.83	0.00	0.00
6.00		69.93	1192.85	0.00	0.00
8.00		69.46	1192.96	0.00	0.00
10.00		68.97	1191.26	0.00	0.00
12.00		68.47	1188.39	0.00	0.00
14.00		67.96	1184.68	0.00	0.00
16.00		67.45	1180.34	0.00	0.00
18.00		66.93	1175.51	0.00	0.00
20.00		66.41	1170.29	0.00	0.00
22.00		65.89	1164.74	0.00	0.00
24.00		65.37	1158.92	0.00	0.00
26.00		64.85	1152.86	0.00	0.00
28.00		64.32	1146.61	0.00	0.00
30.00		63.85	1140.18	0.00	0.00
32.00		64.50	1133.59	0.00	0.00
34.00		65.08	1126.86	0.00	0.00
36.00		65.59	1120.01	0.00	0.00
38.00		66.04	1113.05	0.00	0.00
40.00		66.44	1105.98	0.00	0.00
42.00		66.79	1098.82	0.00	0.00
44.00		67.09	1091.58	0.00	0.00
46.00		67.34	1084.26	0.00	0.00
46.17		5.59	90.05	0.00	0.00
48.00		62.77	1607.64	0.00	0.00
50.00		68.69	1740.37	0.00	0.00
52.00		68.84	1726.35	0.00	0.00
54.00		68.95	1712.26	0.00	0.00
56.00		69.03	1060.03	0.00	0.00
58.00		69.08	1052.35	0.00	0.00
60.00		69.10	1044.62	0.00	0.00
62.00		69.09	1036.85	0.00	0.00
64.00		69.05	1029.02	0.00	0.00
66.00		68.99	1021.16	0.00	0.00
68.00		68.90	1013.26	0.00	0.00
70.00		68.79	1005.32	0.00	0.00
72.00		68.65	997.35	0.00	0.00
74.00		68.50	989.34	0.00	0.00
76.00		68.32	981.30	0.00	0.00
78.00		68.12	973.22	0.00	0.00
80.00		67.90	965.12	0.00	0.00
82.00		67.66	956.99	0.00	0.00
84.00		67.41	948.83	0.00	0.00
86.00		67.13	940.65	0.00	0.00
88.00		66.84	932.44	0.00	0.00
90.00		66.53	924.20	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

92.00		66.21	915.95	0.00	0.00
94.00		65.87	907.67	0.00	0.00
94.08		2.73	37.67	0.00	0.00
96.00		63.72	1297.52	0.00	0.00
98.00		66.14	1340.29	0.00	0.00
100.00		65.77	1326.37	0.00	0.00
100.17		5.45	109.97	0.00	0.00
102.00		59.90	746.15	0.00	0.00
104.00		64.97	806.77	0.00	0.00
106.00		64.54	799.30	0.00	0.00
108.00		64.11	791.82	0.00	0.00
110.00		63.66	784.32	0.00	0.00
112.00		63.20	776.80	0.00	0.00
114.00		62.73	769.27	0.00	0.00
116.00		62.25	761.72	0.00	0.00
118.00		61.75	754.15	0.00	0.00
120.00		61.25	746.57	0.00	0.00
122.00		60.73	738.97	0.00	0.00
124.00		60.38	731.36	0.00	0.00
126.00		60.11	723.74	0.00	0.00
128.00		59.83	716.10	0.00	0.00
130.00		59.55	708.45	0.00	0.00
132.00		59.26	700.78	0.00	0.00
134.00		58.96	693.11	0.00	0.00
136.00		58.66	685.42	0.00	0.00
138.00		58.34	677.71	0.00	0.00
140.00		58.03	670.00	0.00	0.00
142.00		57.70	662.27	0.00	0.00
143.75		50.21	573.26	0.00	0.00
144.00		7.83	103.76	0.00	0.00
144.50	(1) attachments	601.99	2622.27	0.00	0.00
145.75		39.06	514.37	0.00	0.00
146.00		7.79	102.45	0.00	0.00
148.00		62.26	812.73	0.00	0.00
148.08		2.58	33.68	0.00	0.00
149.50	(1) attachments	737.74	2706.08	0.00	0.00
150.00		15.36	125.05	0.00	0.00
151.75		53.68	434.64	0.00	0.00
152.00		7.64	61.88	0.00	0.00
154.00		60.39	489.30	0.00	0.00
154.50	(1) attachments	483.79	2335.79	0.00	0.00
155.00	(38) attachments	1261.34	7132.65	0.00	0.00
156.00		27.76	217.69	0.00	0.00
158.00		55.30	431.07	0.00	0.00
159.50	(1) attachments	679.46	2540.29	0.00	0.00
160.00		13.68	106.25	0.00	0.00
162.00		54.56	421.00	0.00	0.00
164.00		54.18	415.96	0.00	0.00
164.50	(1) attachments	360.82	1986.15	0.00	0.00
165.00	(23) attachments	980.71	5650.31	0.00	0.00
166.00		23.62	177.54	0.00	0.00
168.00		46.73	350.68	0.00	0.00
169.50	(1) attachments	541.11	2144.63	0.00	0.00
170.00		11.42	86.13	0.00	0.00
172.00		45.26	340.46	0.00	0.00
174.00		44.51	335.34	0.00	0.00
174.50	(1) attachments	230.20	1629.48	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (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

175.00	(25) attachments	812.40	4588.15	0.00	0.00
176.00		21.77	161.59	0.00	0.00
178.00		43.00	318.74	0.00	0.00
179.50	(1) attachments	710.31	1238.37	0.00	0.00
180.00		10.47	78.14	0.00	0.00
182.00		41.46	308.44	0.00	0.00
184.00		40.67	303.29	0.00	0.00
185.00	(30) attachments	1368.82	7320.90	0.00	96.18
	Totals:	**14,269.51**	**121,597.24**	**0.00**	**96.18**

Linear Appurtenance Segment Forces (Factored)

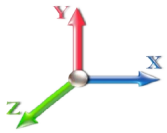
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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)
2.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.71	0.00	0.027	0.000	4.256	0.00	16.81
4.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.37	0.00	0.041	0.000	4.256	0.00	32.81
4.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.74	0.00	0.041	0.000	4.256	0.00	17.78
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.75	0.00	0.055	0.000	4.256	0.00	67.33
6.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.75	0.00	0.055	0.000	4.256	0.00	18.40
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.76	0.00	0.056	0.000	4.256	0.00	68.58
8.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.77	0.00	0.056	0.000	4.256	0.00	18.86
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.77	0.00	0.056	0.000	4.256	0.00	69.58
10.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.78	0.00	0.056	0.000	4.256	0.00	19.23
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.78	0.00	0.057	0.000	4.256	0.00	70.42
12.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.79	0.00	0.057	0.000	4.256	0.00	19.54
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.79	0.00	0.057	0.000	4.256	0.00	71.15
14.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.79	0.00	0.057	0.000	4.256	0.00	19.81
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.80	0.00	0.057	0.000	4.256	0.00	71.79
16.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.80	0.00	0.057	0.000	4.256	0.00	20.05
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.80	0.00	0.058	0.000	4.256	0.00	72.36
18.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.80	0.00	0.058	0.000	4.256	0.00	20.27
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.058	0.000	4.256	0.00	72.88
20.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.81	0.00	0.058	0.000	4.256	0.00	20.47
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.059	0.000	4.256	0.00	73.35
22.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.81	0.00	0.059	0.000	4.256	0.00	20.65
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.059	0.000	4.256	0.00	73.79
24.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.82	0.00	0.059	0.000	4.256	0.00	20.81
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.82	0.00	0.060	0.000	4.256	0.00	74.20
26.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.82	0.00	0.060	0.000	4.256	0.00	20.97
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.82	0.00	0.061	0.000	4.256	0.00	74.58
28.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.83	0.00	0.061	0.000	4.256	0.00	21.12
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.061	0.000	4.260	0.00	74.93
30.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.83	0.00	0.061	0.000	4.260	0.00	21.25
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.062	0.000	4.339	0.00	75.27
32.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.83	0.00	0.062	0.000	4.339	0.00	21.38
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.062	0.000	4.415	0.00	75.59
34.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.83	0.00	0.062	0.000	4.415	0.00	21.51
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.063	0.000	4.487	0.00	75.89
36.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.84	0.00	0.063	0.000	4.487	0.00	21.62
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.063	0.000	4.557	0.00	76.18
38.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.84	0.00	0.063	0.000	4.557	0.00	21.74
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.064	0.000	4.625	0.00	76.45
40.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.84	0.00	0.064	0.000	4.625	0.00	21.84
42.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.065	0.000	4.689	0.00	76.72
42.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.85	0.00	0.065	0.000	4.689	0.00	21.95
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.065	0.000	4.752	0.00	76.97
44.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.85	0.00	0.065	0.000	4.752	0.00	22.04
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.066	0.000	4.813	0.00	77.21
46.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.85	0.00	0.066	0.000	4.813	0.00	22.14
46.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.07	0.00	0.066	0.000	4.818	0.00	6.44
46.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.07	0.00	0.066	0.000	4.818	0.00	1.85

Linear Appurtenance Segment Forces (Factored)

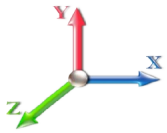
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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)
48.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.78	0.00	0.066	0.000	4.872	0.00	70.99
48.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.78	0.00	0.066	0.000	4.872	0.00	20.38
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.067	0.000	4.929	0.00	77.67
50.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.85	0.00	0.067	0.000	4.929	0.00	22.32
52.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.068	0.000	4.984	0.00	77.89
52.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.86	0.00	0.068	0.000	4.984	0.00	22.40
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.068	0.000	5.039	0.00	78.10
54.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.86	0.00	0.068	0.000	5.039	0.00	22.49
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.068	0.000	5.091	0.00	78.30
56.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.86	0.00	0.068	0.000	5.091	0.00	22.57
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.069	0.000	5.142	0.00	78.50
58.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.86	0.00	0.069	0.000	5.142	0.00	22.64
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.069	0.000	5.193	0.00	78.69
60.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.86	0.00	0.069	0.000	5.193	0.00	22.72
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.070	0.000	5.241	0.00	78.88
62.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.070	0.000	5.241	0.00	22.79
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.071	0.000	5.289	0.00	79.06
64.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.071	0.000	5.289	0.00	22.86
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.072	0.000	5.336	0.00	79.23
66.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.072	0.000	5.336	0.00	22.93
68.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.072	0.000	5.382	0.00	79.40
68.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.072	0.000	5.382	0.00	23.00
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.073	0.000	5.426	0.00	79.57
70.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.073	0.000	5.426	0.00	23.07
72.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.074	0.000	5.470	0.00	79.73
72.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.87	0.00	0.074	0.000	5.470	0.00	23.13
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.075	0.000	5.513	0.00	79.89
74.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.075	0.000	5.513	0.00	23.20
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.076	0.000	5.555	0.00	80.05
76.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.076	0.000	5.555	0.00	23.26
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.076	0.000	5.597	0.00	80.20
78.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.076	0.000	5.597	0.00	23.32
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.077	0.000	5.637	0.00	80.35
80.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.077	0.000	5.637	0.00	23.38
82.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.078	0.000	5.677	0.00	80.49
82.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.078	0.000	5.677	0.00	23.43
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.079	0.000	5.716	0.00	80.63
84.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.079	0.000	5.716	0.00	23.49
86.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.080	0.000	5.755	0.00	80.77
86.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.080	0.000	5.755	0.00	23.55
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.081	0.000	5.793	0.00	80.91
88.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.88	0.00	0.081	0.000	5.793	0.00	23.60
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.082	0.000	5.830	0.00	81.04
90.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.082	0.000	5.830	0.00	23.65
92.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.083	0.000	5.867	0.00	81.17
92.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.083	0.000	5.867	0.00	23.71
94.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.084	0.000	5.903	0.00	81.30

Linear Appurtenance Segment Forces (Factored)

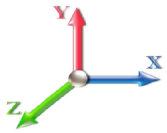
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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)
94.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.084	0.000	5.903	0.00	23.76
94.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.04	0.00	0.085	0.000	5.905	0.00	3.39
94.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.04	0.00	0.085	0.000	5.905	0.00	0.99
96.00	1 5/8" Coax	Yes	1.92	0.000	1.98	0.85	0.00	0.085	0.000	5.939	0.00	78.03
96.00	1 5/8" Hybrid	Yes	1.92	0.000	2.00	0.85	0.00	0.085	0.000	5.939	0.00	22.82
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.086	0.000	5.974	0.00	81.55
98.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.086	0.000	5.974	0.00	23.86
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.087	0.000	6.008	0.00	81.67
100.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.087	0.000	6.008	0.00	23.91
100.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.07	0.00	0.088	0.000	6.011	0.00	6.81
100.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.07	0.00	0.088	0.000	6.011	0.00	1.99
102.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.82	0.00	0.087	0.000	6.043	0.00	74.97
102.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.82	0.00	0.087	0.000	6.043	0.00	21.96
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.088	0.000	6.076	0.00	81.91
104.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.89	0.00	0.088	0.000	6.076	0.00	24.00
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.089	0.000	6.109	0.00	82.02
106.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.089	0.000	6.109	0.00	24.05
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.090	0.000	6.142	0.00	82.14
108.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.090	0.000	6.142	0.00	24.09
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.092	0.000	6.174	0.00	82.25
110.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.092	0.000	6.174	0.00	24.14
112.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.093	0.000	6.206	0.00	82.36
112.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.093	0.000	6.206	0.00	24.18
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.094	0.000	6.238	0.00	82.47
114.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.094	0.000	6.238	0.00	24.23
116.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.095	0.000	6.269	0.00	82.57
116.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.095	0.000	6.269	0.00	24.27
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.097	0.000	6.299	0.00	82.68
118.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.097	0.000	6.299	0.00	24.31
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.098	0.000	6.330	0.00	82.78
120.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.098	0.000	6.330	0.00	24.35
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.100	0.000	6.360	0.00	82.88
122.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.100	0.000	6.360	0.00	24.39
124.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.101	1.003	6.389	0.00	82.98
124.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.90	0.00	0.101	1.003	6.389	0.00	24.43
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.103	1.008	6.419	0.00	83.08
126.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.103	1.008	6.419	0.00	24.47
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.104	1.012	6.448	0.00	83.18
128.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.104	1.012	6.448	0.00	24.51
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.106	1.017	6.476	0.00	83.28
130.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.106	1.017	6.476	0.00	24.55
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.107	1.022	6.504	0.00	83.37
132.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.107	1.022	6.504	0.00	24.59
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.109	1.027	6.532	0.00	83.46
134.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.109	1.027	6.532	0.00	24.63
136.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.111	1.033	6.560	0.00	83.56
136.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.111	1.033	6.560	0.00	24.67

Linear Appurtenance Segment Forces (Factored)

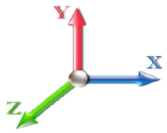
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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)
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.113	1.038	6.588	0.00	83.65
138.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.113	1.038	6.588	0.00	24.70
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.115	1.044	6.615	0.00	83.74
140.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.115	1.044	6.615	0.00	24.74
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.117	1.050	6.642	0.00	83.83
142.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.117	1.050	6.642	0.00	24.78
143.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.80	0.00	0.118	1.055	6.665	0.00	73.42
143.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.80	0.00	0.118	1.055	6.665	0.00	21.71
144.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.11	0.00	0.149	1.148	6.668	0.00	10.49
144.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.11	0.00	0.149	1.148	6.668	0.00	3.10
144.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.09	0.00	0.149	1.148	6.668	0.00	2.00
144.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.150	1.150	6.675	0.00	20.98
144.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.150	1.150	6.675	0.00	6.21
144.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.19	0.00	0.150	1.150	6.675	0.00	4.00
145.75	1 5/8" Coax	Yes	1.25	0.000	1.98	0.57	0.00	0.151	1.153	6.691	0.00	52.49
145.75	1 5/8" Hybrid	Yes	1.25	0.000	2.00	0.57	0.00	0.151	1.153	6.691	0.00	15.53
145.75	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.47	0.00	0.151	1.153	6.691	0.00	10.01
146.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.11	0.00	0.152	1.156	6.695	0.00	10.50
146.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.11	0.00	0.152	1.156	6.695	0.00	3.11
146.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.09	0.00	0.152	1.156	6.695	0.00	2.00
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.154	1.161	6.721	0.00	84.09
148.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.91	0.00	0.154	1.161	6.721	0.00	24.88
148.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.75	0.00	0.154	1.161	6.721	0.00	16.06
148.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.04	0.00	0.155	1.165	6.722	0.00	3.50
148.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.04	0.00	0.155	1.165	6.722	0.00	1.04
148.08	1" Reinforcing plate	Yes	0.08	0.000	1.00	0.03	0.00	0.155	1.165	6.722	0.00	0.67
149.50	1 5/8" Coax	Yes	1.42	0.000	1.98	0.65	0.00	0.154	1.163	6.740	0.00	59.61
149.50	1 5/8" Hybrid	Yes	1.42	0.000	2.00	0.65	0.00	0.154	1.163	6.740	0.00	17.64
149.50	1" Reinforcing plate	Yes	1.42	0.000	1.00	0.53	0.00	0.154	1.163	6.740	0.00	11.39
150.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.156	1.167	6.746	0.00	21.04
150.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.156	1.167	6.746	0.00	6.23
150.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.19	0.00	0.156	1.167	6.746	0.00	4.02
151.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.80	0.00	0.157	1.172	6.769	0.00	73.72
151.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.80	0.00	0.157	1.172	6.769	0.00	21.83
151.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.66	0.00	0.157	1.172	6.769	0.00	14.10
152.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.11	0.00	0.159	1.176	6.772	0.00	10.53
152.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.11	0.00	0.159	1.176	6.772	0.00	3.12
152.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.09	0.00	0.159	1.176	6.772	0.00	2.01
154.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.156	1.169	6.797	0.00	84.34
154.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.92	0.00	0.156	1.169	6.797	0.00	24.98
154.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.66	0.00	0.156	1.169	6.797	0.00	14.13
154.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.130	1.089	6.804	0.00	21.09
154.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.130	1.089	6.804	0.00	6.25
155.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.130	1.091	6.810	0.00	21.10
155.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.130	1.091	6.810	0.00	6.25
156.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.131	1.094	6.822	0.00	42.21
156.00	1 5/8" Hybrid	Yes	1.00	0.000	2.00	0.46	0.00	0.131	1.094	6.822	0.00	12.51

Linear Appurtenance Segment Forces (Factored)

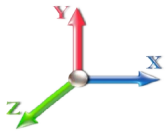
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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)
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.133	1.100	6.847	0.00	84.50
158.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.92	0.00	0.133	1.100	6.847	0.00	25.05
159.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.69	0.00	0.136	1.107	6.866	0.00	63.42
159.50	1 5/8" Hybrid	Yes	1.50	0.000	2.00	0.69	0.00	0.136	1.107	6.866	0.00	18.81
160.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.137	1.111	6.872	0.00	21.15
160.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.137	1.111	6.872	0.00	6.27
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.139	1.116	6.896	0.00	84.66
162.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.92	0.00	0.139	1.116	6.896	0.00	25.12
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.142	1.125	6.921	0.00	84.74
164.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.92	0.00	0.142	1.125	6.921	0.00	25.15
164.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.143	1.130	6.927	0.00	21.19
164.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.143	1.130	6.927	0.00	6.29
165.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.144	1.132	6.933	0.00	21.19
165.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.23	0.00	0.144	1.132	6.933	0.00	6.29
166.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.072	0.000	6.945	0.00	42.41
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.073	0.000	6.968	0.00	84.89
169.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.69	0.00	0.075	0.000	6.986	0.00	63.71
170.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.076	0.000	6.992	0.00	21.24
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.077	0.000	7.015	0.00	85.05
174.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.079	0.000	7.039	0.00	85.12
174.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.080	0.000	7.044	0.00	21.28
175.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.080	0.000	7.050	0.00	21.29
176.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.081	0.000	7.062	0.00	42.60
178.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.082	0.000	7.085	0.00	85.27
179.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.69	0.00	0.084	0.000	7.102	0.00	63.99
180.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.085	0.000	7.107	0.00	21.33
182.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.087	0.000	7.130	0.00	85.41
184.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.089	0.000	7.152	0.00	85.48
185.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.091	0.000	7.163	0.00	42.76
										Totals:	**0.0**	**9,268.8**

Calculated Forces

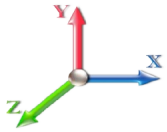
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 28

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	-121.5	-14.29	0.00	-2091.5	0.00	2091.54	6186.26	3093.13	18350.4	9188.88	0.00	0.000	0.000	0.247
2.00	-120.5	-14.26	0.00	-2062.9	0.00	2062.97	6161.28	3080.64	18129.8	9078.39	0.00	-0.018	0.000	0.247
4.00	-119.4	-14.22	0.00	-2034.4	0.00	2034.46	6135.91	3067.96	17909.2	8967.93	0.02	-0.036	0.000	0.246
6.00	-118.2	-14.19	0.00	-2006.0	0.00	2006.01	6110.15	3055.07	17688.7	8857.51	0.03	-0.055	0.000	0.246
8.00	-117.0	-14.16	0.00	-1977.6	0.00	1977.64	6084.00	3042.00	17468.3	8747.14	0.06	-0.073	0.000	0.245
10.00	-115.8	-14.12	0.00	-1949.3	0.00	1949.32	6057.45	3028.73	17248.0	8636.84	0.10	-0.092	0.000	0.245
12.00	-114.6	-14.09	0.00	-1921.0	0.00	1921.08	6030.52	3015.26	17027.9	8526.61	0.14	-0.111	0.000	0.244
14.00	-113.4	-14.06	0.00	-1892.8	0.00	1892.89	6003.19	3001.60	16807.9	8416.48	0.19	-0.130	0.000	0.244
16.00	-112.2	-14.03	0.00	-1864.7	0.00	1864.78	5975.47	2987.74	16588.2	8306.46	0.25	-0.149	0.000	0.243
18.00	-111.0	-14.00	0.00	-1836.7	0.00	1836.72	5947.37	2973.68	16368.7	8196.55	0.32	-0.169	0.000	0.243
20.00	-109.9	-13.96	0.00	-1808.7	0.00	1808.73	5918.87	2959.43	16149.5	8086.79	0.39	-0.189	0.000	0.242
22.00	-108.7	-13.93	0.00	-1780.8	0.00	1780.81	5889.98	2944.99	15930.6	7977.17	0.47	-0.209	0.000	0.242
24.00	-107.5	-13.90	0.00	-1752.9	0.00	1752.95	5860.70	2930.35	15712.0	7867.72	0.57	-0.229	0.000	0.241
26.00	-106.4	-13.87	0.00	-1725.1	0.00	1725.15	5831.03	2915.51	15493.8	7758.44	0.67	-0.249	0.000	0.241
28.00	-105.2	-13.84	0.00	-1697.4	0.00	1697.41	5800.97	2900.48	15276.0	7649.36	0.78	-0.270	0.000	0.240
30.00	-104.1	-13.81	0.00	-1669.7	0.00	1669.74	5770.52	2885.26	15058.5	7540.48	0.89	-0.291	0.000	0.240
32.00	-102.9	-13.77	0.00	-1642.1	0.00	1642.13	5739.67	2869.84	14841.5	7431.82	1.02	-0.312	0.000	0.239
34.00	-101.8	-13.74	0.00	-1614.5	0.00	1614.59	5708.44	2854.22	14625.0	7323.39	1.15	-0.333	0.000	0.238
36.00	-100.7	-13.70	0.00	-1587.1	0.00	1587.11	5676.81	2838.41	14409.0	7215.22	1.30	-0.354	0.000	0.238
38.00	-99.62	-13.67	0.00	-1559.7	0.00	1559.70	5644.80	2822.40	14193.5	7107.30	1.45	-0.376	0.000	0.237
40.00	-98.51	-13.63	0.00	-1532.3	0.00	1532.36	5612.39	2806.20	13978.5	6999.66	1.61	-0.398	0.000	0.236
42.00	-97.40	-13.60	0.00	-1505.1	0.00	1505.10	5579.60	2789.80	13764.1	6892.30	1.79	-0.420	0.000	0.236
44.00	-96.31	-13.56	0.00	-1477.9	0.00	1477.91	5546.41	2773.20	13550.3	6785.25	1.97	-0.442	0.000	0.235
46.00	-95.22	-13.50	0.00	-1450.7	0.00	1450.79	5512.83	2756.41	13337.2	6678.52	2.16	-0.465	0.000	0.235
46.17	-95.13	-13.52	0.00	-1448.5	0.00	1448.54	5510.01	2755.01	13319.4	6669.64	2.17	-0.467	0.000	0.234
48.00	-93.52	-13.48	0.00	-1423.7	0.00	1423.76	5478.86	2739.43	13124.7	6572.12	2.36	-0.488	0.000	0.234
50.00	-91.77	-13.43	0.00	-1396.8	0.00	1396.81	5444.50	2722.25	12912.9	6466.06	2.57	-0.511	0.000	0.233
52.00	-90.04	-13.38	0.00	-1369.9	0.00	1369.95	5409.75	2704.87	12701.8	6360.36	2.79	-0.534	0.000	0.232
54.00	-88.32	-13.33	0.00	-1343.1	0.00	1343.19	5427.99	2713.99	12812.2	6415.65	3.01	-0.558	0.000	0.226
56.00	-87.26	-13.29	0.00	-1316.5	0.00	1316.52	5393.05	2696.53	12601.5	6310.13	3.25	-0.582	0.000	0.225
58.00	-86.20	-13.24	0.00	-1289.9	0.00	1289.94	5357.72	2678.86	12391.5	6204.99	3.50	-0.605	0.000	0.224
60.00	-85.15	-13.20	0.00	-1263.4	0.00	1263.46	5322.01	2661.00	12182.3	6100.24	3.76	-0.628	0.000	0.223
62.00	-84.11	-13.15	0.00	-1237.0	0.00	1237.06	5285.90	2642.95	11974.0	5995.90	4.03	-0.652	0.000	0.222
64.00	-83.08	-13.11	0.00	-1210.7	0.00	1210.76	5249.40	2624.70	11766.4	5891.98	4.31	-0.675	0.000	0.221
66.00	-82.05	-13.06	0.00	-1184.5	0.00	1184.54	5212.50	2606.25	11559.8	5788.50	4.60	-0.699	0.000	0.220
68.00	-81.03	-13.01	0.00	-1158.4	0.00	1158.43	5175.22	2587.61	11354.0	5685.46	4.89	-0.723	0.000	0.219
70.00	-80.02	-12.96	0.00	-1132.4	0.00	1132.40	5137.55	2568.77	11149.2	5582.89	5.20	-0.748	0.000	0.218
72.00	-79.02	-12.92	0.00	-1106.4	0.00	1106.48	5099.49	2549.74	10945.3	5480.80	5.52	-0.772	0.000	0.217
74.00	-78.03	-12.87	0.00	-1080.6	0.00	1080.64	5061.03	2530.52	10742.4	5379.19	5.85	-0.797	0.000	0.216
76.00	-77.04	-12.82	0.00	-1054.9	0.00	1054.91	5022.19	2511.09	10540.5	5278.10	6.19	-0.822	0.000	0.215
78.00	-76.06	-12.77	0.00	-1029.2	0.00	1029.27	4982.95	2491.47	10339.6	5177.52	6.54	-0.848	0.000	0.214
80.00	-75.09	-12.72	0.00	-1003.7	0.00	1003.72	4943.32	2471.66	10139.8	5077.48	6.90	-0.873	0.000	0.213
82.00	-74.13	-12.67	0.00	-978.28	0.00	978.28	4903.30	2451.65	9941.18	4977.98	7.27	-0.899	0.000	0.212
84.00	-73.18	-12.63	0.00	-952.93	0.00	952.93	4862.90	2431.45	9743.60	4879.04	7.65	-0.925	0.000	0.210
86.00	-72.23	-12.58	0.00	-927.68	0.00	927.68	4822.10	2411.05	9547.17	4780.68	8.05	-0.951	0.000	0.209
88.00	-71.30	-12.53	0.00	-902.53	0.00	902.53	4780.91	2390.45	9351.91	4682.91	8.45	-0.978	0.000	0.208
90.00	-70.37	-12.48	0.00	-877.48	0.00	877.48	4739.33	2369.66	9157.86	4585.74	8.87	-1.004	0.000	0.206
92.00	-69.45	-12.43	0.00	-852.53	0.00	852.53	4697.35	2348.68	8965.05	4489.19	9.29	-1.031	0.000	0.205

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 54

Tower Engineering Solutions

94.00	-68.54	-12.36	0.00	-827.67	0.00	827.67	4654.99	2327.50	8773.49	4393.27	9.73	-1.058	0.000	0.203
94.08	-68.50	-12.37	0.00	-826.64	0.00	826.64	4653.22	2326.61	8765.54	4389.28	9.75	-1.059	0.000	0.203
96.00	-67.20	-12.32	0.00	-802.93	0.00	802.93	4612.24	2306.12	8583.22	4297.99	10.18	-1.085	0.000	0.201
98.00	-65.85	-12.26	0.00	-778.29	0.00	778.29	4569.09	2284.55	8394.27	4203.37	10.64	-1.113	0.000	0.200
100.00	-64.52	-12.18	0.00	-753.78	0.00	753.78	4525.56	2262.78	8206.66	4109.43	11.11	-1.141	0.000	0.198
100.17	-64.41	-12.19	0.00	-751.75	0.00	751.75	3757.39	1878.70	6942.18	3476.25	11.15	-1.143	0.000	0.233
102.00	-63.66	-12.15	0.00	-729.40	0.00	729.40	3727.29	1863.64	6805.30	3407.71	11.60	-1.168	0.000	0.231
104.00	-62.85	-12.10	0.00	-705.11	0.00	705.11	3694.07	1847.03	6656.80	3333.35	12.09	-1.199	0.000	0.229
106.00	-62.04	-12.05	0.00	-680.91	0.00	680.91	3660.46	1830.23	6509.18	3259.43	12.60	-1.230	0.000	0.226
108.00	-61.25	-12.00	0.00	-656.81	0.00	656.81	3626.46	1813.23	6362.47	3185.96	13.13	-1.261	0.000	0.223
110.00	-60.46	-11.96	0.00	-632.80	0.00	632.80	3592.07	1796.03	6216.70	3112.97	13.66	-1.293	0.000	0.220
112.00	-59.68	-11.91	0.00	-608.89	0.00	608.89	3557.29	1778.64	6071.91	3040.47	14.21	-1.324	0.000	0.217
114.00	-58.90	-11.86	0.00	-585.08	0.00	585.08	3522.12	1761.06	5928.11	2968.46	14.77	-1.355	0.000	0.214
116.00	-58.14	-11.81	0.00	-561.36	0.00	561.36	3486.55	1743.28	5785.33	2896.97	15.35	-1.387	0.000	0.210
118.00	-57.38	-11.76	0.00	-537.74	0.00	537.74	3450.60	1725.30	5643.61	2826.00	15.93	-1.418	0.000	0.207
120.00	-56.63	-11.71	0.00	-514.22	0.00	514.22	3414.26	1707.13	5502.97	2755.57	16.53	-1.450	0.000	0.203
122.00	-55.88	-11.66	0.00	-490.79	0.00	490.79	3377.52	1688.76	5363.43	2685.70	17.15	-1.481	0.000	0.199
124.00	-55.15	-11.61	0.00	-467.46	0.00	467.46	3340.40	1670.20	5225.04	2616.40	17.78	-1.512	0.000	0.195
126.00	-54.42	-11.56	0.00	-444.24	0.00	444.24	3302.88	1651.44	5087.80	2547.68	18.42	-1.543	0.000	0.191
128.00	-53.70	-11.51	0.00	-421.11	0.00	421.11	3264.97	1632.49	4951.76	2479.56	19.07	-1.574	0.000	0.186
130.00	-52.98	-11.46	0.00	-398.08	0.00	398.08	3220.40	1610.20	4807.57	2407.36	19.74	-1.605	0.000	0.182
132.00	-52.28	-11.41	0.00	-375.16	0.00	375.16	3169.61	1584.80	4656.37	2331.65	20.41	-1.635	0.000	0.177
134.00	-51.58	-11.36	0.00	-352.33	0.00	352.33	3118.82	1559.41	4507.59	2257.15	21.11	-1.665	0.000	0.173
136.00	-50.89	-11.31	0.00	-329.62	0.00	329.62	3068.04	1534.02	4361.23	2183.86	21.81	-1.695	0.000	0.168
138.00	-50.21	-11.25	0.00	-307.00	0.00	307.00	3017.25	1508.63	4217.28	2111.78	22.53	-1.723	0.000	0.162
140.00	-49.54	-11.20	0.00	-284.50	0.00	284.50	2966.47	1483.23	4075.75	2040.91	23.25	-1.752	0.000	0.156
142.00	-48.87	-11.14	0.00	-262.10	0.00	262.10	2915.68	1457.84	3936.64	1971.24	23.99	-1.779	0.000	0.150
143.75	-48.30	-11.09	0.00	-242.60	0.00	242.60	2871.25	1435.62	3816.89	1911.28	24.65	-1.802	0.000	0.144
144.00	-48.20	-11.08	0.00	-239.83	0.00	239.83	2864.90	1432.45	3799.94	1902.79	24.75	-1.806	0.000	0.143
144.50	-45.59	-10.40	0.00	-234.29	0.00	234.29	2852.20	1426.10	3766.14	1885.87	24.94	-1.812	0.000	0.140
145.75	-45.08	-10.35	0.00	-221.29	0.00	221.29	2820.46	1410.23	3682.30	1843.89	25.41	-1.828	0.000	0.089
146.00	-44.97	-10.35	0.00	-218.70	0.00	218.70	2814.11	1407.06	3665.65	1835.55	25.51	-1.830	0.000	0.089
148.00	-44.16	-10.27	0.00	-198.00	0.00	198.00	2763.33	1381.66	3533.78	1769.52	26.28	-1.846	0.000	0.083
148.08	-44.13	-10.27	0.00	-197.15	0.00	197.15	1152.50	576.25	1508.33	755.29	26.31	-1.847	0.000	0.103
149.50	-41.44	-9.45	0.00	-182.60	0.00	182.60	1145.31	572.66	1479.63	740.91	26.86	-1.858	0.000	0.140
150.00	-41.32	-9.44	0.00	-177.87	0.00	177.87	1142.73	571.37	1469.50	735.84	27.05	-1.863	0.000	0.137
151.75	-40.88	-9.38	0.00	-161.35	0.00	161.35	1133.50	566.75	1434.03	718.08	27.74	-1.881	0.000	0.127
151.75	-40.88	-9.38	0.00	-161.35	0.00	161.35	1133.50	566.75	1434.03	718.08	27.74	-1.881	0.000	0.127
152.00	-40.82	-9.39	0.00	-159.01	0.00	159.01	1132.15	566.08	1428.97	715.55	27.84	-1.884	0.000	0.259
154.00	-40.33	-9.33	0.00	-140.24	0.00	140.24	1121.19	560.59	1388.46	695.26	28.64	-1.923	0.000	0.238
154.50	-38.01	-8.77	0.00	-135.58	0.00	135.58	1118.38	559.19	1378.34	690.19	28.84	-1.933	0.000	0.231
155.00	-30.92	-7.28	0.00	-131.19	0.00	131.19	1115.56	557.78	1368.22	685.13	29.04	-1.942	0.000	0.219
156.00	-30.70	-7.25	0.00	-123.92	0.00	123.92	1109.83	554.91	1348.00	675.00	29.45	-1.960	0.000	0.211
158.00	-30.27	-7.20	0.00	-109.41	0.00	109.41	1098.08	549.04	1307.61	654.78	30.28	-1.995	0.000	0.195
159.50	-27.75	-6.44	0.00	-98.61	0.00	98.61	1089.01	544.51	1277.39	639.64	30.91	-2.019	0.000	0.180
160.00	-27.64	-6.43	0.00	-95.39	0.00	95.39	1085.94	542.97	1267.33	634.61	31.12	-2.027	0.000	0.176
162.00	-27.22	-6.38	0.00	-82.53	0.00	82.53	1073.41	536.70	1227.17	614.50	31.98	-2.056	0.000	0.160
164.00	-26.81	-6.31	0.00	-69.78	0.00	69.78	1060.49	530.24	1187.18	594.47	32.85	-2.083	0.000	0.143
164.50	-24.83	-5.88	0.00	-66.62	0.00	66.62	1057.19	528.60	1177.21	589.48	33.07	-2.090	0.000	0.137
165.00	-19.22	-4.70	0.00	-63.68	0.00	63.68	1053.88	526.94	1167.25	584.49	33.28	-2.096	0.000	0.127
166.00	-19.04	-4.68	0.00	-58.98	0.00	58.98	1047.17	523.59	1147.37	574.54	33.73	-2.108	0.000	0.121
168.00	-18.69	-4.62	0.00	-49.63	0.00	49.63	1033.47	516.74	1107.78	554.71	34.61	-2.129	0.000	0.108
169.50	-16.57	-4.00	0.00	-42.70	0.00	42.70	1022.94	511.47	1078.24	539.92	35.28	-2.144	0.000	0.095
170.00	-16.48	-3.99	0.00	-40.70	0.00	40.70	1019.38	509.69	1068.43	535.01	35.51	-2.149	0.000	0.092
172.00	-16.14	-3.94	0.00	-32.72	0.00	32.72	1004.89	502.45	1029.34	515.44	36.41	-2.166	0.000	0.080
174.00	-15.81	-3.88	0.00	-24.84	0.00	24.84	990.02	495.01	990.56	496.02	37.32	-2.180	0.000	0.066
174.50	-14.19	-3.59	0.00	-22.90	0.00	22.90	986.24	493.12	980.92	491.19	37.55	-2.183	0.000	0.061

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 55	

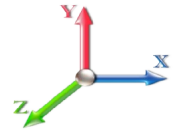
175.00	-9.64	-2.61	0.00	-21.10	0.00	21.10	982.43	491.22	971.29	486.37	37.78	-2.186	0.000	0.053
176.00	-9.48	-2.58	0.00	-18.49	0.00	18.49	974.75	487.37	952.10	476.76	38.24	-2.191	0.000	0.049
178.00	-9.16	-2.53	0.00	-13.34	0.00	13.34	959.09	479.55	914.00	457.68	39.16	-2.200	0.000	0.039
179.50	-7.95	-1.77	0.00	-9.55	0.00	9.55	947.09	473.55	885.67	443.49	39.85	-2.205	0.000	0.030
180.00	-7.87	-1.76	0.00	-8.66	0.00	8.66	943.04	471.52	876.28	438.79	40.08	-2.207	0.000	0.028
182.00	-7.56	-1.70	0.00	-5.15	0.00	5.15	926.61	463.30	838.97	420.11	41.01	-2.211	0.000	0.020
184.00	-7.26	-1.65	0.00	-1.75	0.00	1.75	909.78	454.89	802.09	401.64	41.93	-2.214	0.000	0.012
185.00	0.00	-1.37	0.00	-0.10	0.00	0.10	901.22	450.61	783.83	392.50	42.40	-2.214	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	26
Gust Response Factor	1.10			**Sds**	0.23	**Ss**	0.21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.11	**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**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	
2.00		678.28	0.00	0.01	0.01	7.32	
4.00		672.85	0.00	0.02	0.01	12.36	
6.00		667.42	0.00	0.03	0.02	15.99	
8.00		662.00	0.00	0.04	0.02	18.68	
10.00		656.57	0.01	0.05	0.03	20.69	
12.00		651.14	0.01	0.05	0.03	22.20	
14.00		645.71	0.01	0.06	0.03	23.33	
16.00		640.29	0.01	0.06	0.03	24.16	
18.00		634.86	0.02	0.06	0.04	24.77	
20.00		629.43	0.02	0.07	0.04	25.20	
22.00		624.00	0.03	0.07	0.04	25.49	
24.00		618.58	0.03	0.07	0.04	25.69	
26.00		613.15	0.04	0.07	0.04	25.80	
28.00		607.72	0.04	0.07	0.04	25.86	
30.00		602.30	0.05	0.07	0.04	25.88	
32.00		596.87	0.06	0.07	0.04	25.87	
34.00		591.44	0.06	0.07	0.04	25.85	
36.00		586.01	0.07	0.07	0.04	25.81	
38.00		580.59	0.08	0.07	0.04	25.77	
40.00		575.16	0.09	0.07	0.04	25.73	
42.00		569.73	0.10	0.07	0.04	25.69	
44.00		564.30	0.11	0.07	0.04	25.65	
46.00		558.88	0.12	0.07	0.03	25.60	
46.17	Bot - Section 2	46.33	0.12	0.07	0.03	2.12	
48.00		1021.8	0.13	0.07	0.03	47.17	
50.00		1104.3	0.14	0.07	0.03	51.36	
52.00		1093.4	0.15	0.07	0.03	51.19	
54.00	Top - Section 1	1082.6	0.16	0.07	0.03	50.98	
56.00		540.01	0.17	0.07	0.03	25.54	
58.00		534.58	0.19	0.06	0.03	25.35	
60.00		529.15	0.20	0.06	0.02	25.10	
62.00		523.73	0.21	0.06	0.02	24.78	
64.00		518.30	0.23	0.06	0.02	24.38	
66.00		512.87	0.24	0.06	0.02	23.87	
68.00		507.44	0.26	0.05	0.02	23.25	
70.00		502.02	0.27	0.05	0.01	22.49	
72.00		496.59	0.29	0.05	0.01	21.59	
74.00		491.16	0.30	0.04	0.01	20.52	
76.00		485.73	0.32	0.04	0.01	19.28	
78.00		480.31	0.34	0.04	0.01	17.84	
80.00		474.88	0.35	0.03	0.01	16.19	
82.00		469.45	0.37	0.03	0.01	14.35	
84.00		464.02	0.39	0.02	0.01	12.30	
86.00		458.60	0.41	0.02	0.01	10.07	
88.00		453.17	0.43	0.01	0.01	7.66	

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 57	

90.00		447.74	0.45	0.00	0.01	5.13
92.00		442.32	0.47	0.00	0.01	2.49
94.00		436.89	0.49	-0.01	0.01	-0.18
94.08	Bot - Section 3	18.09	0.49	-0.01	0.01	-0.01
96.00		774.00	0.51	-0.02	0.01	-5.10
98.00		797.79	0.53	-0.03	0.01	-10.18
100.00		787.71	0.55	-0.04	0.01	-14.79
100.17	Top - Section 2	65.19	0.55	-0.04	0.01	-1.26
102.00		332.07	0.57	-0.04	0.01	-8.14
104.00		357.80	0.60	-0.05	0.01	-10.69
106.00		353.14	0.62	-0.06	0.02	-12.27
108.00		348.49	0.64	-0.07	0.02	-13.60
110.00		343.84	0.67	-0.08	0.02	-14.69
112.00		339.19	0.69	-0.08	0.03	-15.51
114.00		334.54	0.72	-0.09	0.03	-16.09
116.00		329.88	0.74	-0.10	0.04	-16.41
118.00		325.23	0.77	-0.11	0.05	-16.50
120.00		320.58	0.80	-0.11	0.05	-16.35
122.00		315.93	0.82	-0.12	0.06	-16.00
124.00		311.28	0.85	-0.12	0.07	-15.43
126.00		306.62	0.88	-0.12	0.08	-14.68
128.00		301.97	0.90	-0.12	0.09	-13.75
130.00		297.32	0.93	-0.12	0.10	-12.66
132.00		292.67	0.96	-0.12	0.11	-11.40
134.00		288.02	0.99	-0.11	0.13	-10.01
136.00		283.36	1.02	-0.10	0.14	-8.47
138.00		278.71	1.05	-0.09	0.16	-6.82
140.00		274.06	1.08	-0.08	0.18	-5.04
142.00		269.41	1.11	-0.06	0.20	-3.16
143.75	Bot - Section 4	231.92	1.14	-0.04	0.21	-1.26
144.00		49.54	1.15	-0.04	0.22	-0.22
144.50	Appurtenance(s)	818.76	1.15	-0.04	0.22	-2.09
145.75	RB1	245.00	1.17	-0.02	0.24	0.59
146.00		48.67	1.18	-0.02	0.24	0.17
148.00		385.46	1.21	0.01	0.26	4.59
148.08	Top - Section 3	15.91	1.21	0.02	0.26	0.20
149.50	Appurtenance(s)	790.61	1.23	0.04	0.28	14.76
150.00		31.70	1.24	0.05	0.29	0.67
151.75	RT1	109.81	1.27	0.08	0.31	3.24
152.00		15.54	1.28	0.09	0.32	0.48
154.00		123.03	1.31	0.13	0.34	5.05
154.50	Appurtenance(s)	690.39	1.32	0.15	0.35	30.20
155.00	Appurtenance(s)	2825.3	1.33	0.16	0.36	131.29
156.00		60.06	1.34	0.19	0.38	3.12
158.00		118.37	1.38	0.24	0.41	7.53
159.50	Appurtenance(s)	747.25	1.40	0.29	0.44	54.35
160.00		28.79	1.41	0.31	0.45	2.18
162.00		113.72	1.45	0.38	0.48	10.09
164.00		111.40	1.49	0.47	0.53	11.39
164.50	Appurtenance(s)	587.49	1.49	0.49	0.54	62.10
165.00	Appurtenance(s)	1981.1	1.50	0.51	0.55	216.37
166.00		54.24	1.52	0.56	0.57	6.31
168.00		106.74	1.56	0.66	0.62	14.00
169.50	Appurtenance(s)	638.53	1.59	0.74	0.65	91.13
170.00		25.89	1.60	0.77	0.66	3.80
172.00		102.09	1.63	0.89	0.72	16.62
174.00		99.77	1.67	1.02	0.77	17.92

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 58	

Tower Engineering Solutions

174.50	Appurtenance(s)	484.58	1.68	1.05	0.79	89.11			
175.00	Appurtenance(s)	2120.9	1.69	1.09	0.80	399.25			
176.00		48.43	1.71	1.16	0.83	9.54			
178.00		95.11	1.75	1.32	0.89	20.47			
179.50	Appurtenance(s)	369.81	1.78	1.45	0.94	84.79			
180.00		22.98	1.79	1.49	0.96	5.38			
182.00		90.46	1.83	1.67	1.03	22.94			
184.00		88.14	1.87	1.87	1.10	24.14			
185.00	Appurtenance(s)	2980.6	1.89	1.98	1.14	847.15			
	Totals:	**54,849.9**				**2,992.6**	**Total Wind:**	**53,629.6**	

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

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 59	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 26

Gust Response Factor	1.10			**Sds**	0.23			**Ss**	0.21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.11			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**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	-74.54	-3.29	0.00	-455.14	0.00	455.14	6186.26	3093.13	18350.4	9188.88		0.00	0.00	0.062
2.00	-73.72	-3.28	0.00	-448.57	0.00	448.57	6161.28	3080.64	18129.8	9078.39		0.00	0.00	0.061
4.00	-72.86	-3.28	0.00	-442.00	0.00	442.00	6135.91	3067.96	17909.2	8967.93		0.00	-0.01	0.061
6.00	-71.95	-3.27	0.00	-435.45	0.00	435.45	6110.15	3055.07	17688.7	8857.51		0.01	-0.01	0.061
8.00	-71.05	-3.25	0.00	-428.92	0.00	428.92	6084.00	3042.00	17468.3	8747.14		0.01	-0.02	0.061
10.00	-70.16	-3.24	0.00	-422.42	0.00	422.42	6057.45	3028.73	17248.0	8636.84		0.02	-0.02	0.060
12.00	-69.27	-3.22	0.00	-415.95	0.00	415.95	6030.52	3015.26	17027.9	8526.61		0.03	-0.02	0.060
14.00	-68.39	-3.20	0.00	-409.51	0.00	409.51	6003.19	3001.60	16807.9	8416.48		0.04	-0.03	0.060
16.00	-67.52	-3.18	0.00	-403.11	0.00	403.11	5975.47	2987.74	16588.2	8306.46		0.05	-0.03	0.060
18.00	-66.65	-3.16	0.00	-396.76	0.00	396.76	5947.37	2973.68	16368.7	8196.55		0.07	-0.04	0.060
20.00	-65.79	-3.14	0.00	-390.44	0.00	390.44	5918.87	2959.43	16149.5	8086.79		0.08	-0.04	0.059
22.00	-64.93	-3.12	0.00	-384.16	0.00	384.16	5889.98	2944.99	15930.6	7977.17		0.10	-0.05	0.059
24.00	-64.09	-3.10	0.00	-377.93	0.00	377.93	5860.70	2930.35	15712.0	7867.72		0.12	-0.05	0.059
26.00	-63.24	-3.07	0.00	-371.74	0.00	371.74	5831.03	2915.51	15493.8	7758.44		0.14	-0.05	0.059
28.00	-62.41	-3.05	0.00	-365.59	0.00	365.59	5800.97	2900.48	15276.0	7649.36		0.17	-0.06	0.059
30.00	-61.58	-3.03	0.00	-359.49	0.00	359.49	5770.52	2885.26	15058.5	7540.48		0.19	-0.06	0.058
32.00	-60.76	-3.01	0.00	-353.43	0.00	353.43	5739.67	2869.84	14841.5	7431.82		0.22	-0.07	0.058
34.00	-59.94	-2.99	0.00	-347.41	0.00	347.41	5708.44	2854.22	14625.0	7323.39		0.25	-0.07	0.058
36.00	-59.13	-2.96	0.00	-341.44	0.00	341.44	5676.81	2838.41	14409.0	7215.22		0.28	-0.08	0.058
38.00	-58.33	-2.94	0.00	-335.52	0.00	335.52	5644.80	2822.40	14193.5	7107.30		0.31	-0.08	0.058
40.00	-57.53	-2.92	0.00	-329.63	0.00	329.63	5612.39	2806.20	13978.5	6999.66		0.35	-0.09	0.057
42.00	-56.75	-2.90	0.00	-323.79	0.00	323.79	5579.60	2789.80	13764.1	6892.30		0.39	-0.09	0.057
44.00	-55.96	-2.88	0.00	-318.00	0.00	318.00	5546.41	2773.20	13550.3	6785.25		0.43	-0.10	0.057
46.00	-55.19	-2.85	0.00	-312.25	0.00	312.25	5512.83	2756.41	13337.2	6678.52		0.47	-0.10	0.057
46.17	-55.12	-2.85	0.00	-311.77	0.00	311.77	5510.01	2755.01	13319.4	6669.64		0.47	-0.10	0.057
48.00	-53.80	-2.81	0.00	-306.55	0.00	306.55	5478.86	2739.43	13124.7	6572.12		0.51	-0.11	0.056
50.00	-52.37	-2.76	0.00	-300.94	0.00	300.94	5444.50	2722.25	12912.9	6466.06		0.56	-0.11	0.056
52.00	-50.95	-2.71	0.00	-295.42	0.00	295.42	5409.75	2704.87	12701.8	6360.36		0.60	-0.12	0.056
54.00	-49.54	-2.66	0.00	-290.01	0.00	290.01	5427.99	2713.99	12812.2	6415.65		0.65	-0.12	0.054
56.00	-48.79	-2.63	0.00	-284.69	0.00	284.69	5393.05	2696.53	12601.5	6310.13		0.70	-0.13	0.054
58.00	-48.04	-2.61	0.00	-279.43	0.00	279.43	5357.72	2678.86	12391.5	6204.99		0.76	-0.13	0.054
60.00	-47.30	-2.59	0.00	-274.20	0.00	274.20	5322.01	2661.00	12182.3	6100.24		0.81	-0.14	0.054
62.00	-46.57	-2.57	0.00	-269.02	0.00	269.02	5285.90	2642.95	11974.0	5995.90		0.87	-0.14	0.054
64.00	-45.84	-2.54	0.00	-263.89	0.00	263.89	5249.40	2624.70	11766.4	5891.98		0.93	-0.15	0.054
66.00	-45.12	-2.52	0.00	-258.80	0.00	258.80	5212.50	2606.25	11559.8	5788.50		0.99	-0.15	0.053
68.00	-44.41	-2.50	0.00	-253.76	0.00	253.76	5175.22	2587.61	11354.0	5685.46		1.06	-0.16	0.053
70.00	-43.70	-2.48	0.00	-248.75	0.00	248.75	5137.55	2568.77	11149.2	5582.89		1.12	-0.16	0.053
72.00	-43.00	-2.46	0.00	-243.79	0.00	243.79	5099.49	2549.74	10945.3	5480.80		1.19	-0.17	0.053
74.00	-42.30	-2.44	0.00	-238.86	0.00	238.86	5061.03	2530.52	10742.4	5379.19		1.26	-0.17	0.053
76.00	-41.61	-2.43	0.00	-233.98	0.00	233.98	5022.19	2511.09	10540.5	5278.10		1.34	-0.18	0.053
78.00	-40.93	-2.41	0.00	-229.12	0.00	229.12	4982.95	2491.47	10339.6	5177.52		1.41	-0.18	0.052
80.00	-40.25	-2.40	0.00	-224.30	0.00	224.30	4943.32	2471.66	10139.8	5077.48		1.49	-0.19	0.052
82.00	-39.58	-2.38	0.00	-219.51	0.00	219.51	4903.30	2451.65	9941.18	4977.98		1.57	-0.20	0.052
84.00	-38.92	-2.37	0.00	-214.74	0.00	214.74	4862.90	2431.45	9743.60	4879.04		1.66	-0.20	0.052
86.00	-38.27	-2.36	0.00	-210.00	0.00	210.00	4822.10	2411.05	9547.17	4780.68		1.74	-0.21	0.052
88.00	-37.62	-2.36	0.00	-205.27	0.00	205.27	4780.91	2390.45	9351.91	4682.91		1.83	-0.21	0.052
90.00	-36.97	-2.35	0.00	-200.55	0.00	200.55	4739.33	2369.66	9157.86	4585.74		1.92	-0.22	0.052

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 60	

Tower Engineering Solutions

92.00	-36.34	-2.35	0.00	-195.84	0.00	195.84	4697.35	2348.68	8965.05	4489.19	2.01	-0.23	0.051
94.00	-35.71	-2.35	0.00	-191.14	0.00	191.14	4654.99	2327.50	8773.49	4393.27	2.11	-0.23	0.051
94.08	-35.68	-2.36	0.00	-190.94	0.00	190.94	4653.22	2326.61	8765.54	4389.28	2.11	-0.23	0.051
96.00	-34.65	-2.35	0.00	-186.43	0.00	186.43	4612.24	2306.12	8583.22	4297.99	2.21	-0.24	0.051
98.00	-33.59	-2.35	0.00	-181.72	0.00	181.72	4569.09	2284.55	8394.27	4203.37	2.31	-0.24	0.051
100.00	-32.54	-2.35	0.00	-177.01	0.00	177.01	4525.56	2262.78	8206.66	4109.43	2.41	-0.25	0.050
100.17	-32.45	-2.35	0.00	-176.62	0.00	176.62	3757.39	1878.70	6942.18	3476.25	2.42	-0.25	0.059
102.00	-31.95	-2.35	0.00	-172.30	0.00	172.30	3727.29	1863.64	6805.30	3407.71	2.52	-0.26	0.059
104.00	-31.42	-2.36	0.00	-167.59	0.00	167.59	3694.07	1847.03	6656.80	3333.35	2.63	-0.26	0.059
106.00	-30.89	-2.36	0.00	-162.88	0.00	162.88	3660.46	1830.23	6509.18	3259.43	2.74	-0.27	0.058
108.00	-30.36	-2.36	0.00	-158.17	0.00	158.17	3626.46	1813.23	6362.47	3185.96	2.86	-0.28	0.058
110.00	-29.85	-2.36	0.00	-153.45	0.00	153.45	3592.07	1796.03	6216.70	3112.97	2.97	-0.29	0.058
112.00	-29.33	-2.36	0.00	-148.73	0.00	148.73	3557.29	1778.64	6071.91	3040.47	3.10	-0.29	0.057
114.00	-28.83	-2.36	0.00	-144.00	0.00	144.00	3522.12	1761.06	5928.11	2968.46	3.22	-0.30	0.057
116.00	-28.32	-2.36	0.00	-139.28	0.00	139.28	3486.55	1743.28	5785.33	2896.97	3.35	-0.31	0.056
118.00	-27.83	-2.37	0.00	-134.55	0.00	134.55	3450.60	1725.30	5643.61	2826.00	3.48	-0.32	0.056
120.00	-27.34	-2.37	0.00	-129.82	0.00	129.82	3414.26	1707.13	5502.97	2755.57	3.62	-0.33	0.055
122.00	-26.85	-2.37	0.00	-125.08	0.00	125.08	3377.52	1688.76	5363.43	2685.70	3.75	-0.33	0.055
124.00	-26.37	-2.37	0.00	-120.35	0.00	120.35	3340.40	1670.20	5225.04	2616.40	3.90	-0.34	0.054
126.00	-25.90	-2.37	0.00	-115.61	0.00	115.61	3302.88	1651.44	5087.80	2547.68	4.04	-0.35	0.053
128.00	-25.43	-2.37	0.00	-110.87	0.00	110.87	3264.97	1632.49	4951.76	2479.56	4.19	-0.36	0.053
130.00	-24.97	-2.37	0.00	-106.13	0.00	106.13	3220.40	1610.20	4807.57	2407.36	4.34	-0.37	0.052
132.00	-24.51	-2.37	0.00	-101.39	0.00	101.39	3169.61	1584.80	4656.37	2331.65	4.50	-0.37	0.051
134.00	-24.06	-2.37	0.00	-96.65	0.00	96.65	3118.82	1559.41	4507.59	2257.15	4.65	-0.38	0.051
136.00	-23.61	-2.37	0.00	-91.91	0.00	91.91	3068.04	1534.02	4361.23	2183.86	4.82	-0.39	0.050
138.00	-23.17	-2.37	0.00	-87.16	0.00	87.16	3017.25	1508.63	4217.28	2111.78	4.98	-0.40	0.049
140.00	-22.74	-2.37	0.00	-82.42	0.00	82.42	2966.47	1483.23	4075.75	2040.91	5.15	-0.41	0.048
142.00	-22.31	-2.37	0.00	-77.67	0.00	77.67	2915.68	1457.84	3936.64	1971.24	5.32	-0.41	0.047
143.75	-21.94	-2.37	0.00	-73.52	0.00	73.52	2871.25	1435.62	3816.89	1911.28	5.48	-0.42	0.046
144.00	-21.86	-2.37	0.00	-72.93	0.00	72.93	2864.90	1432.45	3799.94	1902.79	5.50	-0.42	0.046
144.50	-20.86	-2.37	0.00	-71.74	0.00	71.74	2852.20	1426.10	3766.14	1885.87	5.54	-0.42	0.045
145.75	-20.50	-2.36	0.00	-68.79	0.00	68.79	2820.46	1410.23	3682.30	1843.89	5.65	-0.43	0.029
146.00	-20.42	-2.36	0.00	-68.20	0.00	68.20	2814.11	1407.06	3665.65	1835.55	5.68	-0.43	0.029
148.00	-19.86	-2.36	0.00	-63.47	0.00	63.47	2763.33	1381.66	3533.78	1769.52	5.86	-0.44	0.028
148.08	-19.83	-2.36	0.00	-63.27	0.00	63.27	1152.50	576.25	1508.33	755.29	5.87	-0.44	0.035
149.50	-18.81	-2.33	0.00	-59.94	0.00	59.94	1145.31	572.66	1479.63	740.91	6.00	-0.44	0.048
150.00	-18.74	-2.33	0.00	-58.77	0.00	58.77	1142.73	571.37	1469.50	735.84	6.04	-0.44	0.047
151.75	-18.52	-2.33	0.00	-54.68	0.00	54.68	1133.50	566.75	1434.03	718.08	6.20	-0.45	0.045
151.75	-18.52	-2.33	0.00	-54.68	0.00	54.68	1133.50	566.75	1434.03	718.08	6.20	-0.45	0.045
152.00	-18.49	-2.33	0.00	-54.10	0.00	54.10	1132.15	566.08	1428.97	715.55	6.23	-0.45	0.092
154.00	-18.23	-2.33	0.00	-49.44	0.00	49.44	1121.19	560.59	1388.46	695.26	6.42	-0.46	0.087
154.50	-17.38	-2.29	0.00	-48.27	0.00	48.27	1118.38	559.19	1378.34	690.19	6.47	-0.46	0.085
155.00	-13.96	-2.13	0.00	-47.13	0.00	47.13	1115.56	557.78	1368.22	685.13	6.52	-0.47	0.081
156.00	-13.86	-2.13	0.00	-44.99	0.00	44.99	1109.83	554.91	1348.00	675.00	6.61	-0.47	0.079
158.00	-13.64	-2.13	0.00	-40.73	0.00	40.73	1098.08	549.04	1307.61	654.78	6.82	-0.49	0.075
159.50	-12.69	-2.06	0.00	-37.54	0.00	37.54	1089.01	544.51	1277.39	639.64	6.97	-0.50	0.070
160.00	-12.64	-2.06	0.00	-36.51	0.00	36.51	1085.94	542.97	1267.33	634.61	7.02	-0.50	0.069
162.00	-12.43	-2.05	0.00	-32.38	0.00	32.38	1073.41	536.70	1227.17	614.50	7.23	-0.51	0.064
164.00	-12.23	-2.04	0.00	-28.28	0.00	28.28	1060.49	530.24	1187.18	594.47	7.45	-0.52	0.059
164.50	-11.50	-1.97	0.00	-27.26	0.00	27.26	1057.19	528.60	1177.21	589.48	7.51	-0.52	0.057
165.00	-9.11	-1.74	0.00	-26.27	0.00	26.27	1053.88	526.94	1167.25	584.49	7.56	-0.53	0.054
166.00	-9.03	-1.73	0.00	-24.53	0.00	24.53	1047.17	523.59	1147.37	574.54	7.67	-0.53	0.051
168.00	-8.86	-1.72	0.00	-21.07	0.00	21.07	1033.47	516.74	1107.78	554.71	7.90	-0.54	0.047
169.50	-8.07	-1.62	0.00	-18.50	0.00	18.50	1022.94	511.47	1078.24	539.92	8.07	-0.55	0.042
170.00	-8.03	-1.61	0.00	-17.69	0.00	17.69	1019.38	509.69	1068.43	535.01	8.13	-0.55	0.041
172.00	-7.87	-1.60	0.00	-14.46	0.00	14.46	1004.89	502.45	1029.34	515.44	8.36	-0.56	0.036
174.00	-7.71	-1.58	0.00	-11.27	0.00	11.27	990.02	495.01	990.56	496.02	8.59	-0.56	0.031

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 61	

174.50	-7.12	-1.48	0.00	-10.48	0.00	10.48	986.24	493.12	980.92	491.19	8.65	-0.56	0.029
175.00	-4.57	-1.06	0.00	-9.74	0.00	9.74	982.43	491.22	971.29	486.37	8.71	-0.57	0.025
176.00	-4.50	-1.05	0.00	-8.68	0.00	8.68	974.75	487.37	952.10	476.76	8.83	-0.57	0.023
178.00	-4.36	-1.03	0.00	-6.58	0.00	6.58	959.09	479.55	914.00	457.68	9.07	-0.57	0.019
179.50	-3.89	-0.94	0.00	-5.04	0.00	5.04	947.09	473.55	885.67	443.49	9.25	-0.57	0.015
180.00	-3.86	-0.93	0.00	-4.57	0.00	4.57	943.04	471.52	876.28	438.79	9.31	-0.58	0.015
182.00	-3.72	-0.91	0.00	-2.70	0.00	2.70	926.61	463.30	838.97	420.11	9.55	-0.58	0.010
184.00	-3.58	-0.88	0.00	-0.88	0.00	0.88	909.78	454.89	802.09	401.64	9.79	-0.58	0.006
185.00	0.00	-0.85	0.00	0.00	0.00	0.00	901.22	450.61	783.83	392.50	9.91	-0.58	0.000

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 62	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	26
Gust Response Factor	1.10			**Sds**	0.23	**Ss**	0.21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.11	**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**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	
2.00		678.28	0.00	0.01	0.01	7.32	
4.00		672.85	0.00	0.02	0.01	12.36	
6.00		667.42	0.00	0.03	0.02	15.99	
8.00		662.00	0.00	0.04	0.02	18.68	
10.00		656.57	0.01	0.05	0.03	20.69	
12.00		651.14	0.01	0.05	0.03	22.20	
14.00		645.71	0.01	0.06	0.03	23.33	
16.00		640.29	0.01	0.06	0.03	24.16	
18.00		634.86	0.02	0.06	0.04	24.77	
20.00		629.43	0.02	0.07	0.04	25.20	
22.00		624.00	0.03	0.07	0.04	25.49	
24.00		618.58	0.03	0.07	0.04	25.69	
26.00		613.15	0.04	0.07	0.04	25.80	
28.00		607.72	0.04	0.07	0.04	25.86	
30.00		602.30	0.05	0.07	0.04	25.88	
32.00		596.87	0.06	0.07	0.04	25.87	
34.00		591.44	0.06	0.07	0.04	25.85	
36.00		586.01	0.07	0.07	0.04	25.81	
38.00		580.59	0.08	0.07	0.04	25.77	
40.00		575.16	0.09	0.07	0.04	25.73	
42.00		569.73	0.10	0.07	0.04	25.69	
44.00		564.30	0.11	0.07	0.04	25.65	
46.00		558.88	0.12	0.07	0.03	25.60	
46.17	Bot - Section 2	46.33	0.12	0.07	0.03	2.12	
48.00		1021.8	0.13	0.07	0.03	47.17	
50.00		1104.3	0.14	0.07	0.03	51.36	
52.00		1093.4	0.15	0.07	0.03	51.19	
54.00	Top - Section 1	1082.6	0.16	0.07	0.03	50.98	
56.00		540.01	0.17	0.07	0.03	25.54	
58.00		534.58	0.19	0.06	0.03	25.35	
60.00		529.15	0.20	0.06	0.02	25.10	
62.00		523.73	0.21	0.06	0.02	24.78	
64.00		518.30	0.23	0.06	0.02	24.38	
66.00		512.87	0.24	0.06	0.02	23.87	
68.00		507.44	0.26	0.05	0.02	23.25	
70.00		502.02	0.27	0.05	0.01	22.49	
72.00		496.59	0.29	0.05	0.01	21.59	
74.00		491.16	0.30	0.04	0.01	20.52	
76.00		485.73	0.32	0.04	0.01	19.28	
78.00		480.31	0.34	0.04	0.01	17.84	
80.00		474.88	0.35	0.03	0.01	16.19	
82.00		469.45	0.37	0.03	0.01	14.35	
84.00		464.02	0.39	0.02	0.01	12.30	
86.00		458.60	0.41	0.02	0.01	10.07	
88.00		453.17	0.43	0.01	0.01	7.66	

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 63	

90.00		447.74	0.45	0.00	0.01	5.13
92.00		442.32	0.47	0.00	0.01	2.49
94.00		436.89	0.49	-0.01	0.01	-0.18
94.08	Bot - Section 3	18.09	0.49	-0.01	0.01	-0.01
96.00		774.00	0.51	-0.02	0.01	-5.10
98.00		797.79	0.53	-0.03	0.01	-10.18
100.00		787.71	0.55	-0.04	0.01	-14.79
100.17	Top - Section 2	65.19	0.55	-0.04	0.01	-1.26
102.00		332.07	0.57	-0.04	0.01	-8.14
104.00		357.80	0.60	-0.05	0.01	-10.69
106.00		353.14	0.62	-0.06	0.02	-12.27
108.00		348.49	0.64	-0.07	0.02	-13.60
110.00		343.84	0.67	-0.08	0.02	-14.69
112.00		339.19	0.69	-0.08	0.03	-15.51
114.00		334.54	0.72	-0.09	0.03	-16.09
116.00		329.88	0.74	-0.10	0.04	-16.41
118.00		325.23	0.77	-0.11	0.05	-16.50
120.00		320.58	0.80	-0.11	0.05	-16.35
122.00		315.93	0.82	-0.12	0.06	-16.00
124.00		311.28	0.85	-0.12	0.07	-15.43
126.00		306.62	0.88	-0.12	0.08	-14.68
128.00		301.97	0.90	-0.12	0.09	-13.75
130.00		297.32	0.93	-0.12	0.10	-12.66
132.00		292.67	0.96	-0.12	0.11	-11.40
134.00		288.02	0.99	-0.11	0.13	-10.01
136.00		283.36	1.02	-0.10	0.14	-8.47
138.00		278.71	1.05	-0.09	0.16	-6.82
140.00		274.06	1.08	-0.08	0.18	-5.04
142.00		269.41	1.11	-0.06	0.20	-3.16
143.75	Bot - Section 4	231.92	1.14	-0.04	0.21	-1.26
144.00		49.54	1.15	-0.04	0.22	-0.22
144.50	Appurtenance(s)	818.76	1.15	-0.04	0.22	-2.09
145.75	RB1	245.00	1.17	-0.02	0.24	0.59
146.00		48.67	1.18	-0.02	0.24	0.17
148.00		385.46	1.21	0.01	0.26	4.59
148.08	Top - Section 3	15.91	1.21	0.02	0.26	0.20
149.50	Appurtenance(s)	790.61	1.23	0.04	0.28	14.76
150.00		31.70	1.24	0.05	0.29	0.67
151.75	RT1	109.81	1.27	0.08	0.31	3.24
152.00		15.54	1.28	0.09	0.32	0.48
154.00		123.03	1.31	0.13	0.34	5.05
154.50	Appurtenance(s)	690.39	1.32	0.15	0.35	30.20
155.00	Appurtenance(s)	2825.3	1.33	0.16	0.36	131.29
156.00		60.06	1.34	0.19	0.38	3.12
158.00		118.37	1.38	0.24	0.41	7.53
159.50	Appurtenance(s)	747.25	1.40	0.29	0.44	54.35
160.00		28.79	1.41	0.31	0.45	2.18
162.00		113.72	1.45	0.38	0.48	10.09
164.00		111.40	1.49	0.47	0.53	11.39
164.50	Appurtenance(s)	587.49	1.49	0.49	0.54	62.10
165.00	Appurtenance(s)	1981.1	1.50	0.51	0.55	216.37
166.00		54.24	1.52	0.56	0.57	6.31
168.00		106.74	1.56	0.66	0.62	14.00
169.50	Appurtenance(s)	638.53	1.59	0.74	0.65	91.13
170.00		25.89	1.60	0.77	0.66	3.80
172.00		102.09	1.63	0.89	0.72	16.62
174.00		99.77	1.67	1.02	0.77	17.92

Seismic Segment Forces (Factored)

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 64	

174.50	Appurtenance(s)		484.58	1.68	1.05	0.79	89.11		
175.00	Appurtenance(s)		2120.9	1.69	1.09	0.80	399.25		
176.00			48.43	1.71	1.16	0.83	9.54		
178.00			95.11	1.75	1.32	0.89	20.47		
179.50	Appurtenance(s)		369.81	1.78	1.45	0.94	84.79		
180.00			22.98	1.79	1.49	0.96	5.38		
182.00			90.46	1.83	1.67	1.03	22.94		
184.00			88.14	1.87	1.87	1.10	24.14		
185.00	Appurtenance(s)		2980.6	1.89	1.98	1.14	847.15		
		Totals:	**54,849.9**				**2,992.6**	**Total Wind:**	**53,629.6**

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

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 65	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 26

Gust Response Factor	1.10			**Sds**	0.23			**Ss**	0.21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.11			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**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	-55.91	-3.29	0.00	-449.93	0.00	449.93	6186.26	3093.13	18350.4	9188.88		0.00	0.00	0.058
2.00	-55.29	-3.28	0.00	-443.36	0.00	443.36	6161.28	3080.64	18129.8	9078.39		0.00	0.00	0.058
4.00	-54.64	-3.27	0.00	-436.80	0.00	436.80	6135.91	3067.96	17909.2	8967.93		0.00	-0.01	0.058
6.00	-53.96	-3.26	0.00	-430.25	0.00	430.25	6110.15	3055.07	17688.7	8857.51		0.01	-0.01	0.057
8.00	-53.29	-3.25	0.00	-423.73	0.00	423.73	6084.00	3042.00	17468.3	8747.14		0.01	-0.02	0.057
10.00	-52.62	-3.23	0.00	-417.24	0.00	417.24	6057.45	3028.73	17248.0	8636.84		0.02	-0.02	0.057
12.00	-51.95	-3.21	0.00	-410.78	0.00	410.78	6030.52	3015.26	17027.9	8526.61		0.03	-0.02	0.057
14.00	-51.29	-3.19	0.00	-404.36	0.00	404.36	6003.19	3001.60	16807.9	8416.48		0.04	-0.03	0.057
16.00	-50.64	-3.17	0.00	-397.99	0.00	397.99	5975.47	2987.74	16588.2	8306.46		0.05	-0.03	0.056
18.00	-49.99	-3.15	0.00	-391.65	0.00	391.65	5947.37	2973.68	16368.7	8196.55		0.07	-0.04	0.056
20.00	-49.34	-3.13	0.00	-385.35	0.00	385.35	5918.87	2959.43	16149.5	8086.79		0.08	-0.04	0.056
22.00	-48.70	-3.10	0.00	-379.10	0.00	379.10	5889.98	2944.99	15930.6	7977.17		0.10	-0.04	0.056
24.00	-48.06	-3.08	0.00	-372.90	0.00	372.90	5860.70	2930.35	15712.0	7867.72		0.12	-0.05	0.056
26.00	-47.43	-3.06	0.00	-366.74	0.00	366.74	5831.03	2915.51	15493.8	7758.44		0.14	-0.05	0.055
28.00	-46.81	-3.03	0.00	-360.62	0.00	360.62	5800.97	2900.48	15276.0	7649.36		0.17	-0.06	0.055
30.00	-46.18	-3.01	0.00	-354.55	0.00	354.55	5770.52	2885.26	15058.5	7540.48		0.19	-0.06	0.055
32.00	-45.57	-2.99	0.00	-348.53	0.00	348.53	5739.67	2869.84	14841.5	7431.82		0.22	-0.07	0.055
34.00	-44.96	-2.97	0.00	-342.55	0.00	342.55	5708.44	2854.22	14625.0	7323.39		0.25	-0.07	0.055
36.00	-44.35	-2.94	0.00	-336.62	0.00	336.62	5676.81	2838.41	14409.0	7215.22		0.28	-0.08	0.054
38.00	-43.75	-2.92	0.00	-330.74	0.00	330.74	5644.80	2822.40	14193.5	7107.30		0.31	-0.08	0.054
40.00	-43.15	-2.90	0.00	-324.90	0.00	324.90	5612.39	2806.20	13978.5	6999.66		0.35	-0.08	0.054
42.00	-42.56	-2.87	0.00	-319.10	0.00	319.10	5579.60	2789.80	13764.1	6892.30		0.38	-0.09	0.054
44.00	-41.97	-2.85	0.00	-313.36	0.00	313.36	5546.41	2773.20	13550.3	6785.25		0.42	-0.09	0.054
46.00	-41.39	-2.83	0.00	-307.66	0.00	307.66	5512.83	2756.41	13337.2	6678.52		0.46	-0.10	0.054
46.17	-41.34	-2.83	0.00	-307.18	0.00	307.18	5510.01	2755.01	13319.4	6669.64		0.46	-0.10	0.054
48.00	-40.35	-2.78	0.00	-302.01	0.00	302.01	5478.86	2739.43	13124.7	6572.12		0.50	-0.10	0.053
50.00	-39.27	-2.73	0.00	-296.45	0.00	296.45	5444.50	2722.25	12912.9	6466.06		0.55	-0.11	0.053
52.00	-38.21	-2.68	0.00	-290.99	0.00	290.99	5409.75	2704.87	12701.8	6360.36		0.59	-0.11	0.053
54.00	-37.16	-2.63	0.00	-285.63	0.00	285.63	5427.99	2713.99	12812.2	6415.65		0.64	-0.12	0.051
56.00	-36.59	-2.61	0.00	-280.37	0.00	280.37	5393.05	2696.53	12601.5	6310.13		0.69	-0.12	0.051
58.00	-36.03	-2.58	0.00	-275.16	0.00	275.16	5357.72	2678.86	12391.5	6204.99		0.75	-0.13	0.051
60.00	-35.48	-2.56	0.00	-269.99	0.00	269.99	5322.01	2661.00	12182.3	6100.24		0.80	-0.13	0.051
62.00	-34.93	-2.54	0.00	-264.87	0.00	264.87	5285.90	2642.95	11974.0	5995.90		0.86	-0.14	0.051
64.00	-34.38	-2.51	0.00	-259.80	0.00	259.80	5249.40	2624.70	11766.4	5891.98		0.92	-0.14	0.051
66.00	-33.84	-2.49	0.00	-254.77	0.00	254.77	5212.50	2606.25	11559.8	5788.50		0.98	-0.15	0.051
68.00	-33.30	-2.47	0.00	-249.79	0.00	249.79	5175.22	2587.61	11354.0	5685.46		1.04	-0.15	0.050
70.00	-32.77	-2.45	0.00	-244.85	0.00	244.85	5137.55	2568.77	11149.2	5582.89		1.11	-0.16	0.050
72.00	-32.24	-2.43	0.00	-239.95	0.00	239.95	5099.49	2549.74	10945.3	5480.80		1.18	-0.16	0.050
74.00	-31.72	-2.41	0.00	-235.09	0.00	235.09	5061.03	2530.52	10742.4	5379.19		1.25	-0.17	0.050
76.00	-31.21	-2.39	0.00	-230.27	0.00	230.27	5022.19	2511.09	10540.5	5278.10		1.32	-0.18	0.050
78.00	-30.70	-2.38	0.00	-225.49	0.00	225.49	4982.95	2491.47	10339.6	5177.52		1.39	-0.18	0.050
80.00	-30.19	-2.36	0.00	-220.73	0.00	220.73	4943.32	2471.66	10139.8	5077.48		1.47	-0.19	0.050
82.00	-29.69	-2.35	0.00	-216.01	0.00	216.01	4903.30	2451.65	9941.18	4977.98		1.55	-0.19	0.049
84.00	-29.19	-2.34	0.00	-211.32	0.00	211.32	4862.90	2431.45	9743.60	4879.04		1.63	-0.20	0.049
86.00	-28.70	-2.33	0.00	-206.64	0.00	206.64	4822.10	2411.05	9547.17	4780.68		1.72	-0.20	0.049
88.00	-28.21	-2.32	0.00	-201.99	0.00	201.99	4780.91	2390.45	9351.91	4682.91		1.80	-0.21	0.049
90.00	-27.73	-2.32	0.00	-197.34	0.00	197.34	4739.33	2369.66	9157.86	4585.74		1.89	-0.22	0.049

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 66	

Tower Engineering Solutions

92.00	-27.25	-2.32	0.00	-192.71	0.00	192.71	4697.35	2348.68	8965.05	4489.19	1.99	-0.22	0.049
94.00	-26.78	-2.32	0.00	-188.08	0.00	188.08	4654.99	2327.50	8773.49	4393.27	2.08	-0.23	0.049
94.08	-26.76	-2.32	0.00	-187.88	0.00	187.88	4653.22	2326.61	8765.54	4389.28	2.08	-0.23	0.049
96.00	-25.99	-2.32	0.00	-183.44	0.00	183.44	4612.24	2306.12	8583.22	4297.99	2.18	-0.23	0.048
98.00	-25.19	-2.32	0.00	-178.81	0.00	178.81	4569.09	2284.55	8394.27	4203.37	2.28	-0.24	0.048
100.00	-24.40	-2.31	0.00	-174.18	0.00	174.18	4525.56	2262.78	8206.66	4109.43	2.38	-0.25	0.048
100.17	-24.33	-2.32	0.00	-173.79	0.00	173.79	3757.39	1878.70	6942.18	3476.25	2.39	-0.25	0.056
102.00	-23.96	-2.32	0.00	-169.55	0.00	169.55	3727.29	1863.64	6805.30	3407.71	2.48	-0.25	0.056
104.00	-23.56	-2.32	0.00	-164.91	0.00	164.91	3694.07	1847.03	6656.80	3333.35	2.59	-0.26	0.056
106.00	-23.16	-2.32	0.00	-160.28	0.00	160.28	3660.46	1830.23	6509.18	3259.43	2.70	-0.27	0.056
108.00	-22.77	-2.32	0.00	-155.64	0.00	155.64	3626.46	1813.23	6362.47	3185.96	2.82	-0.28	0.055
110.00	-22.38	-2.32	0.00	-151.00	0.00	151.00	3592.07	1796.03	6216.70	3112.97	2.93	-0.28	0.055
112.00	-22.00	-2.32	0.00	-146.36	0.00	146.36	3557.29	1778.64	6071.91	3040.47	3.05	-0.29	0.054
114.00	-21.62	-2.32	0.00	-141.71	0.00	141.71	3522.12	1761.06	5928.11	2968.46	3.18	-0.30	0.054
116.00	-21.24	-2.32	0.00	-137.07	0.00	137.07	3486.55	1743.28	5785.33	2896.97	3.30	-0.31	0.053
118.00	-20.87	-2.32	0.00	-132.42	0.00	132.42	3450.60	1725.30	5643.61	2826.00	3.43	-0.31	0.053
120.00	-20.50	-2.33	0.00	-127.77	0.00	127.77	3414.26	1707.13	5502.97	2755.57	3.56	-0.32	0.052
122.00	-20.14	-2.33	0.00	-123.12	0.00	123.12	3377.52	1688.76	5363.43	2685.70	3.70	-0.33	0.052
124.00	-19.78	-2.33	0.00	-118.46	0.00	118.46	3340.40	1670.20	5225.04	2616.40	3.84	-0.34	0.051
126.00	-19.42	-2.33	0.00	-113.81	0.00	113.81	3302.88	1651.44	5087.80	2547.68	3.98	-0.34	0.051
128.00	-19.07	-2.33	0.00	-109.15	0.00	109.15	3264.97	1632.49	4951.76	2479.56	4.13	-0.35	0.050
130.00	-18.72	-2.33	0.00	-104.50	0.00	104.50	3220.40	1610.20	4807.57	2407.36	4.28	-0.36	0.049
132.00	-18.38	-2.33	0.00	-99.84	0.00	99.84	3169.61	1584.80	4656.37	2331.65	4.43	-0.37	0.049
134.00	-18.04	-2.33	0.00	-95.18	0.00	95.18	3118.82	1559.41	4507.59	2257.15	4.59	-0.38	0.048
136.00	-17.71	-2.33	0.00	-90.53	0.00	90.53	3068.04	1534.02	4361.23	2183.86	4.75	-0.38	0.047
138.00	-17.38	-2.33	0.00	-85.87	0.00	85.87	3017.25	1508.63	4217.28	2111.78	4.91	-0.39	0.046
140.00	-17.05	-2.33	0.00	-81.21	0.00	81.21	2966.47	1483.23	4075.75	2040.91	5.08	-0.40	0.046
142.00	-16.73	-2.33	0.00	-76.55	0.00	76.55	2915.68	1457.84	3936.64	1971.24	5.25	-0.41	0.045
143.75	-16.45	-2.33	0.00	-72.47	0.00	72.47	2871.25	1435.62	3816.89	1911.28	5.40	-0.42	0.044
144.00	-16.39	-2.33	0.00	-71.89	0.00	71.89	2864.90	1432.45	3799.94	1902.79	5.42	-0.42	0.044
144.50	-15.64	-2.32	0.00	-70.72	0.00	70.72	2852.20	1426.10	3766.14	1885.87	5.46	-0.42	0.043
145.75	-15.37	-2.32	0.00	-67.82	0.00	67.82	2820.46	1410.23	3682.30	1843.89	5.57	-0.42	0.028
146.00	-15.31	-2.32	0.00	-67.24	0.00	67.24	2814.11	1407.06	3665.65	1835.55	5.59	-0.42	0.028
148.00	-14.89	-2.32	0.00	-62.59	0.00	62.59	2763.33	1381.66	3533.78	1769.52	5.77	-0.43	0.027
148.08	-14.87	-2.32	0.00	-62.40	0.00	62.40	1152.50	576.25	1508.33	755.29	5.78	-0.43	0.033
149.50	-14.10	-2.30	0.00	-59.12	0.00	59.12	1145.31	572.66	1479.63	740.91	5.91	-0.43	0.045
150.00	-14.05	-2.30	0.00	-57.97	0.00	57.97	1142.73	571.37	1469.50	735.84	5.95	-0.43	0.045
151.75	-13.89	-2.29	0.00	-53.95	0.00	53.95	1133.50	566.75	1434.03	718.08	6.11	-0.44	0.043
151.75	-13.89	-2.29	0.00	-53.95	0.00	53.95	1133.50	566.75	1434.03	718.08	6.11	-0.44	0.043
152.00	-13.86	-2.29	0.00	-53.38	0.00	53.38	1132.15	566.08	1428.97	715.55	6.14	-0.44	0.087
154.00	-13.67	-2.29	0.00	-48.79	0.00	48.79	1121.19	560.59	1388.46	695.26	6.32	-0.45	0.082
154.50	-13.03	-2.25	0.00	-47.64	0.00	47.64	1118.38	559.19	1378.34	690.19	6.37	-0.46	0.081
155.00	-10.47	-2.10	0.00	-46.52	0.00	46.52	1115.56	557.78	1368.22	685.13	6.42	-0.46	0.077
156.00	-10.39	-2.10	0.00	-44.41	0.00	44.41	1109.83	554.91	1348.00	675.00	6.52	-0.47	0.075
158.00	-10.23	-2.09	0.00	-40.21	0.00	40.21	1098.08	549.04	1307.61	654.78	6.72	-0.48	0.071
159.50	-9.51	-2.04	0.00	-37.07	0.00	37.07	1089.01	544.51	1277.39	639.64	6.87	-0.49	0.067
160.00	-9.48	-2.03	0.00	-36.05	0.00	36.05	1085.94	542.97	1267.33	634.61	6.92	-0.49	0.066
162.00	-9.32	-2.02	0.00	-31.98	0.00	31.98	1073.41	536.70	1227.17	614.50	7.13	-0.50	0.061
164.00	-9.16	-2.01	0.00	-27.93	0.00	27.93	1060.49	530.24	1187.18	594.47	7.34	-0.51	0.056
164.50	-8.62	-1.95	0.00	-26.93	0.00	26.93	1057.19	528.60	1177.21	589.48	7.40	-0.52	0.054
165.00	-6.83	-1.71	0.00	-25.95	0.00	25.95	1053.88	526.94	1167.25	584.49	7.45	-0.52	0.051
166.00	-6.77	-1.71	0.00	-24.24	0.00	24.24	1047.17	523.59	1147.37	574.54	7.56	-0.52	0.049
168.00	-6.64	-1.69	0.00	-20.82	0.00	20.82	1033.47	516.74	1107.78	554.71	7.78	-0.53	0.044
169.50	-6.05	-1.60	0.00	-18.28	0.00	18.28	1022.94	511.47	1078.24	539.92	7.95	-0.54	0.040
170.00	-6.02	-1.59	0.00	-17.48	0.00	17.48	1019.38	509.69	1068.43	535.01	8.01	-0.54	0.039
172.00	-5.90	-1.58	0.00	-14.30	0.00	14.30	1004.89	502.45	1029.34	515.44	8.24	-0.55	0.034
174.00	-5.78	-1.56	0.00	-11.14	0.00	11.14	990.02	495.01	990.56	496.02	8.47	-0.55	0.028

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 67	

174.50	-5.34	-1.47	0.00	-10.36	0.00	10.36	986.24	493.12	980.92	491.19	8.52	-0.56	0.027
175.00	-3.43	-1.05	0.00	-9.63	0.00	9.63	982.43	491.22	971.29	486.37	8.58	-0.56	0.023
176.00	-3.37	-1.04	0.00	-8.58	0.00	8.58	974.75	487.37	952.10	476.76	8.70	-0.56	0.021
178.00	-3.27	-1.02	0.00	-6.51	0.00	6.51	959.09	479.55	914.00	457.68	8.94	-0.56	0.018
179.50	-2.92	-0.93	0.00	-4.98	0.00	4.98	947.09	473.55	885.67	443.49	9.11	-0.57	0.014
180.00	-2.89	-0.92	0.00	-4.52	0.00	4.52	943.04	471.52	876.28	438.79	9.17	-0.57	0.013
182.00	-2.79	-0.90	0.00	-2.67	0.00	2.67	926.61	463.30	838.97	420.11	9.41	-0.57	0.009
184.00	-2.69	-0.87	0.00	-0.87	0.00	0.87	909.78	454.89	802.09	401.64	9.65	-0.57	0.005
185.00	0.00	-0.85	0.00	0.00	0.00	0.00	901.22	450.61	783.83	392.50	9.77	-0.57	0.000

Wind Loading - Shaft

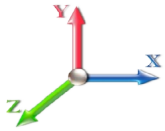
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 68	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	307.97	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	6.129	6.74	305.53	0.650	0.000	2.00	12.221	7.94	53.6	0.0	678.3
4.00		1.00	0.70	6.129	6.74	303.09	0.650	0.000	2.00	12.124	7.88	53.1	0.0	672.9
6.00		1.00	0.70	6.129	6.74	300.65	0.650	0.000	2.00	12.027	7.82	52.7	0.0	667.4
8.00		1.00	0.70	6.129	6.74	298.21	0.650	0.000	2.00	11.930	7.75	52.3	0.0	662.0
10.00		1.00	0.70	6.129	6.74	295.77	0.650	0.000	2.00	11.832	7.69	51.8	0.0	656.6
12.00		1.00	0.70	6.129	6.74	293.33	0.650	0.000	2.00	11.735	7.63	51.4	0.0	651.1
14.00		1.00	0.70	6.129	6.74	290.89	0.650	0.000	2.00	11.638	7.56	51.0	0.0	645.7
16.00		1.00	0.70	6.129	6.74	288.45	0.650	0.000	2.00	11.541	7.50	50.6	0.0	640.3
18.00		1.00	0.70	6.129	6.74	286.01	0.650	0.000	2.00	11.444	7.44	50.1	0.0	634.9
20.00		1.00	0.70	6.129	6.74	283.57	0.650	0.000	2.00	11.346	7.38	49.7	0.0	629.4
22.00		1.00	0.70	6.129	6.74	281.13	0.650	0.000	2.00	11.249	7.31	49.3	0.0	624.0
24.00		1.00	0.70	6.129	6.74	278.69	0.650	0.000	2.00	11.152	7.25	48.9	0.0	618.6
26.00		1.00	0.70	6.129	6.74	276.25	0.650	0.000	2.00	11.055	7.19	48.4	0.0	613.2
28.00		1.00	0.70	6.129	6.74	273.81	0.650	0.000	2.00	10.958	7.12	48.0	0.0	607.7
30.00		1.00	0.70	6.134	6.75	271.49	0.650	0.000	2.00	10.860	7.06	47.6	0.0	602.3
32.00		1.00	0.71	6.248	6.87	271.54	0.650	0.000	2.00	10.763	7.00	48.1	0.0	596.9
34.00		1.00	0.73	6.357	6.99	271.42	0.650	0.000	2.00	10.666	6.93	48.5	0.0	591.4
36.00		1.00	0.74	6.462	7.11	271.14	0.650	0.000	2.00	10.569	6.87	48.8	0.0	586.0
38.00		1.00	0.75	6.562	7.22	270.71	0.650	0.000	2.00	10.472	6.81	49.1	0.0	580.6
40.00		1.00	0.76	6.659	7.33	270.16	0.650	0.000	2.00	10.374	6.74	49.4	0.0	575.2
42.00		1.00	0.77	6.753	7.43	269.49	0.650	0.000	2.00	10.277	6.68	49.6	0.0	569.7
44.00		1.00	0.78	6.843	7.53	268.71	0.650	0.000	2.00	10.180	6.62	49.8	0.0	564.3
46.00		1.00	0.79	6.931	7.62	267.83	0.650	0.000	2.00	10.083	6.55	50.0	0.0	558.9
46.17	Bot - Section 2	1.00	0.79	6.938	7.63	267.75	0.650	0.000	0.17	0.836	0.54	4.1	0.0	46.3
48.00		1.00	0.80	7.015	7.72	266.85	0.650	0.000	1.83	9.285	6.04	46.6	0.0	1021.8
50.00		1.00	0.81	7.098	7.81	265.79	0.650	0.000	2.00	10.036	6.52	50.9	0.0	1104.3
52.00		1.00	0.82	7.178	7.90	264.64	0.650	0.000	2.00	9.939	6.46	51.0	0.0	1093.5
54.00	Top - Section 1	1.00	0.83	7.255	7.98	263.42	0.650	0.000	2.00	9.842	6.40	51.1	0.0	1082.6
56.00		1.00	0.84	7.331	8.06	266.18	0.650	0.000	2.00	9.745	6.33	51.1	0.0	540.0
58.00		1.00	0.85	7.405	8.15	264.84	0.650	0.000	2.00	9.648	6.27	51.1	0.0	534.6
60.00		1.00	0.85	7.477	8.22	263.43	0.650	0.000	2.00	9.550	6.21	51.1	0.0	529.2
62.00		1.00	0.86	7.548	8.30	261.96	0.650	0.000	2.00	9.453	6.14	51.0	0.0	523.7
64.00		1.00	0.87	7.616	8.38	260.43	0.650	0.000	2.00	9.356	6.08	51.0	0.0	518.3
66.00		1.00	0.88	7.684	8.45	258.85	0.650	0.000	2.00	9.259	6.02	50.9	0.0	512.9
68.00		1.00	0.89	7.749	8.52	257.21	0.650	0.000	2.00	9.162	5.96	50.8	0.0	507.4
70.00		1.00	0.89	7.814	8.60	255.52	0.650	0.000	2.00	9.065	5.89	50.6	0.0	502.0
72.00		1.00	0.90	7.877	8.66	253.79	0.650	0.000	2.00	8.967	5.83	50.5	0.0	496.6
74.00		1.00	0.91	7.939	8.73	252.01	0.650	0.000	2.00	8.870	5.77	50.3	0.0	491.2
76.00		1.00	0.91	8.000	8.80	250.18	0.650	0.000	2.00	8.773	5.70	50.2	0.0	485.7
78.00		1.00	0.92	8.059	8.87	248.31	0.650	0.000	2.00	8.676	5.64	50.0	0.0	480.3
80.00		1.00	0.93	8.118	8.93	246.41	0.650	0.000	2.00	8.579	5.58	49.8	0.0	474.9
82.00		1.00	0.93	8.175	8.99	244.46	0.650	0.000	2.00	8.481	5.51	49.6	0.0	469.5
84.00		1.00	0.94	8.232	9.05	242.47	0.650	0.000	2.00	8.384	5.45	49.3	0.0	464.0
86.00		1.00	0.95	8.287	9.12	240.45	0.650	0.000	2.00	8.287	5.39	49.1	0.0	458.6
88.00		1.00	0.95	8.342	9.18	238.40	0.650	0.000	2.00	8.190	5.32	48.8	0.0	453.2
90.00		1.00	0.96	8.396	9.24	236.31	0.650	0.000	2.00	8.093	5.26	48.6	0.0	447.7

Wind Loading - Shaft

Structure: CT00707-S-SBA | **Code:** EIA/TIA-222-G | 10/30/2019
Site Name: North Easton | **Exposure:** B
Height: 185.00 (ft) | **Crest Height:** 0.00
Base Elev: 0.000 (ft) | **Site Class:** D - Stiff Soil
Gh: 1.1 | **Topography:** 1 | **Struct Class:** II | Page: 69

92.00	1.00	0.96	8.448	9.29	234.19	0.650	0.000	2.00	7.995	5.20	48.3	0.0	442.3
94.00	1.00	0.97	8.501	9.35	232.04	0.650	0.000	2.00	7.898	5.13	48.0	0.0	436.9
94.08 Bot - Section 3	1.00	0.97	8.503	9.35	231.95	0.650	0.000	0.08	0.327	0.21	2.0	0.0	18.1
96.00	1.00	0.98	8.552	9.41	229.85	0.650	0.000	1.92	7.596	4.94	46.4	0.0	774.0
98.00	1.00	0.98	8.602	9.46	227.64	0.650	0.000	2.00	7.831	5.09	48.2	0.0	797.8
100.00	1.00	0.99	8.652	9.52	225.40	0.650	0.000	2.00	7.733	5.03	47.8	0.0	787.7
100.17 Top - Section 2	1.00	0.99	8.656	9.52	225.21	0.650	0.000	0.17	0.640	0.42	4.0	0.0	65.2
102.00	1.00	0.99	8.701	9.57	226.93	0.650	0.000	1.83	6.996	4.55	43.5	0.0	332.1
104.00	1.00	1.00	8.750	9.62	224.64	0.650	0.000	2.00	7.539	4.90	47.2	0.0	357.8
106.00	1.00	1.00	8.797	9.68	222.33	0.650	0.000	2.00	7.442	4.84	46.8	0.0	353.1
108.00	1.00	1.01	8.845	9.73	220.00	0.650	0.000	2.00	7.345	4.77	46.4	0.0	348.5
110.00	1.00	1.02	8.891	9.78	217.64	0.650	0.000	2.00	7.247	4.71	46.1	0.0	343.8
112.00	1.00	1.02	8.937	9.83	215.25	0.650	0.000	2.00	7.150	4.65	45.7	0.0	339.2
114.00	1.00	1.03	8.982	9.88	212.84	0.650	0.000	2.00	7.053	4.58	45.3	0.0	334.5
116.00	1.00	1.03	9.027	9.93	210.41	0.650	0.000	2.00	6.956	4.52	44.9	0.0	329.9
118.00	1.00	1.04	9.071	9.98	207.96	0.650	0.000	2.00	6.859	4.46	44.5	0.0	325.2
120.00	1.00	1.04	9.115	10.03	205.48	0.650	0.000	2.00	6.762	4.39	44.1	0.0	320.6
122.00	1.00	1.05	9.158	10.07	202.99	0.650	0.000	2.00	6.664	4.33	43.6	0.0	315.9
124.00	1.00	1.05	9.201	10.12	200.47	0.652 *	0.000	2.00	6.567	4.28	43.3	0.0	311.3
126.00	1.00	1.06	9.243	10.17	197.93	0.655 *	0.000	2.00	6.470	4.24	43.1	0.0	306.6
128.00	1.00	1.06	9.284	10.21	195.37	0.658 *	0.000	2.00	6.373	4.19	42.8	0.0	302.0
130.00	1.00	1.07	9.326	10.26	192.80	0.661 *	0.000	2.00	6.276	4.15	42.6	0.0	297.3
132.00	1.00	1.07	9.366	10.30	190.20	0.664 *	0.000	2.00	6.178	4.10	42.3	0.0	292.7
134.00	1.00	1.07	9.407	10.35	187.59	0.668 *	0.000	2.00	6.081	4.06	42.0	0.0	288.0
136.00	1.00	1.08	9.447	10.39	184.96	0.671 *	0.000	2.00	5.984	4.02	41.7	0.0	283.4
138.00	1.00	1.08	9.486	10.43	182.31	0.675 *	0.000	2.00	5.887	3.97	41.4	0.0	278.7
140.00	1.00	1.09	9.525	10.48	179.64	0.678 *	0.000	2.00	5.790	3.93	41.2	0.0	274.1
142.00	1.00	1.09	9.564	10.52	176.96	0.682 *	0.000	2.00	5.692	3.88	40.9	0.0	269.4
143.75 Bot - Section 4	1.00	1.10	9.597	10.56	174.60	0.686 *	0.000	1.75	4.901	3.36	35.5	0.0	231.9
144.00	1.00	1.10	9.602	10.56	174.26	0.746 *	0.000	0.25	0.702	0.52	5.5	0.0	49.5
144.50 Appurtenance(s)	1.00	1.10	9.612	10.57	173.58	0.747 *	0.000	0.50	1.399	1.05	11.1	0.0	98.8
145.75 RB1	1.00	1.10	9.635	10.60	171.88	0.750 *	0.000	1.25	3.472	2.60	27.6	0.0	245.0
146.00	1.00	1.10	9.640	10.60	171.54	0.752 *	0.000	0.25	0.690	0.52	5.5	0.0	48.7
148.00	1.00	1.11	9.678	10.65	168.81	0.755 *	0.000	2.00	5.464	4.12	43.9	0.0	385.5
148.08 Top - Section 3	1.00	1.11	9.679	10.65	168.70	0.758 *	0.000	0.08	0.226	0.17	1.8	0.0	15.9
149.50 Appurtenance(s)	1.00	1.11	9.706	10.68	168.76	0.756 *	0.000	1.42	3.809	2.88	30.7	0.0	90.6
150.00	1.00	1.11	9.715	10.69	168.07	0.759 *	0.000	0.50	1.333	1.01	10.8	0.0	31.7
151.75 RT1	1.00	1.11	9.747	10.72	165.66	0.762 *	0.000	1.75	4.616	3.52	37.7	0.0	109.8
152.00	1.00	1.11	9.752	10.73	165.31	0.765 *	0.000	0.25	0.653	0.50	5.4	0.0	15.5
154.00	1.00	1.12	9.788	10.77	162.54	0.760 *	0.000	2.00	5.173	3.93	42.3	0.0	123.0
154.50 Appurtenance(s)	1.00	1.12	9.797	10.78	161.84	0.708 *	0.000	0.50	1.278	0.90	9.8	0.0	30.4
155.00 Appurtenance(s)	1.00	1.12	9.806	10.79	161.14	0.709 *	0.000	0.50	1.272	0.90	9.7	0.0	30.2
156.00	1.00	1.12	9.824	10.81	159.75	0.711 *	0.000	1.00	2.526	1.80	19.4	0.0	60.1
158.00	1.00	1.13	9.860	10.85	156.94	0.715 *	0.000	2.00	4.978	3.56	38.6	0.0	118.4
159.50 Appurtenance(s)	1.00	1.13	9.887	10.88	154.83	0.719 *	0.000	1.50	3.670	2.64	28.7	0.0	87.3
160.00	1.00	1.13	9.896	10.89	154.13	0.722 *	0.000	0.50	1.211	0.87	9.5	0.0	28.8
162.00	1.00	1.13	9.931	10.92	151.29	0.725 *	0.000	2.00	4.784	3.47	37.9	0.0	113.7
164.00	1.00	1.14	9.966	10.96	148.45	0.731 *	0.000	2.00	4.687	3.43	37.6	0.0	111.4
164.50 Appurtenance(s)	1.00	1.14	9.974	10.97	147.74	0.735 *	0.000	0.50	1.156	0.85	9.3	0.0	27.5
165.00 Appurtenance(s)	1.00	1.14	9.983	10.98	147.02	0.736 *	0.000	0.50	1.150	0.85	9.3	0.0	27.3
166.00	1.00	1.14	10.000	11.00	145.59	0.650	0.000	1.00	2.283	1.48	16.3	0.0	54.2
168.00	1.00	1.15	10.035	11.04	142.72	0.650	0.000	2.00	4.492	2.92	32.2	0.0	106.7
169.50 Appurtenance(s)	1.00	1.15	10.060	11.07	140.55	0.650	0.000	1.50	3.305	2.15	23.8	0.0	78.5
170.00	1.00	1.15	10.069	11.08	139.83	0.650	0.000	0.50	1.090	0.71	7.8	0.0	25.9
172.00	1.00	1.15	10.102	11.11	136.93	0.650	0.000	2.00	4.298	2.79	31.0	0.0	102.1
174.00	1.00	1.16	10.136	11.15	134.02	0.650	0.000	2.00	4.201	2.73	30.4	0.0	99.8
174.50 Appurtenance(s)	1.00	1.16	10.144	11.16	133.29	0.650	0.000	0.50	1.035	0.67	7.5	0.0	24.6

Wind Loading - Shaft

Structure: CT00707-S-SBA
Site Name: North Easton
Height: 185.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

10/30/2019

Tower Engineering Solutions

175.00 Appurtenance(s)	1.00	1.16	10.152	11.17	132.56	0.650	0.000	0.50	1.029	0.67	7.5	0.0	24.4
176.00	1.00	1.16	10.169	11.19	131.10	0.650	0.000	1.00	2.040	1.33	14.8	0.0	48.4
178.00	1.00	1.17	10.202	11.22	128.16	0.650	0.000	2.00	4.006	2.60	29.2	0.0	95.1
179.50 Appurtenance(s)	1.00	1.17	10.226	11.25	125.95	0.650	0.000	1.50	2.941	1.91	21.5	0.0	69.8
180.00	1.00	1.17	10.234	11.26	125.21	0.650	0.000	0.50	0.968	0.63	7.1	0.0	23.0
182.00	1.00	1.17	10.267	11.29	122.26	0.650	0.000	2.00	3.812	2.48	28.0	0.0	90.5
184.00	1.00	1.18	10.299	11.33	119.28	0.650	0.000	2.00	3.715	2.41	27.4	0.0	88.1
185.00 Appurtenance(s)	1.00	1.18	10.315	11.35	117.79	0.650	0.000	1.00	1.821	1.18	13.4	0.0	43.2
							Totals:	**185.00**			**4,189.1**		**40,447.1**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

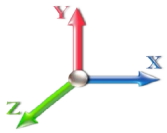
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 71	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	185.00	APX16DWV-16DWV-S-E-	3	10.315	11.346	0.62	1.00	12.02	122.10	0.000	0.000	136.33	0.00	0.00
2	185.00	Kathrein 782 11056	3	10.347	11.381	0.67	1.00	0.26	8.70	0.000	2.000	2.97	0.00	5.95
3	185.00	Allen Telecom	6	10.347	11.381	0.75	1.00	2.48	105.00	0.000	2.000	28.17	0.00	56.34
4	185.00	Cobra Arms	3	10.315	11.346	0.75	1.00	14.63	1050.00	0.000	0.000	165.94	0.00	0.00
5	185.00	6' Pole Branch	1	10.315	11.346	1.00	1.00	16.06	300.00	0.000	0.000	182.22	0.00	0.00
6	185.00	RRUS 4415 B25	3	10.315	11.346	0.67	1.00	3.30	138.00	0.000	0.000	37.40	0.00	0.00
7	185.00	(3) Sitepro SV197-36	1	10.315	11.346	1.00	1.00	16.50	500.00	0.000	0.000	187.21	0.00	0.00
8	185.00	Ring mount (Sitepro	1	10.315	11.346	1.00	1.00	1.50	65.60	0.000	0.000	17.02	0.00	0.00
9	185.00	Radio 4449 B71+B12	3	10.315	11.346	0.67	1.00	3.96	213.00	0.000	0.000	44.93	0.00	0.00
10	185.00	Radio 4415 B66A	3	10.315	11.346	0.67	1.00	3.30	138.00	0.000	0.000	37.40	0.00	0.00
11	185.00	APXVAA24_43-U-A20	3	10.315	11.346	0.73	1.00	44.33	297.00	0.000	0.000	502.93	0.00	0.00
12	179.50	6' Pole Branch	1	10.226	11.249	1.00	1.00	46.00	300.00	0.000	0.000	517.45	0.00	0.00
13	175.00	Alcatel Lucent 800 MHz	3	10.152	11.168	0.60	0.80	4.48	159.00	0.000	0.000	50.05	0.00	0.00
14	175.00	Cobra Arms	3	10.152	11.168	0.56	0.75	22.78	1200.00	0.000	0.000	254.41	0.00	0.00
15	175.00	RFS APXVTM14-C-120	3	10.152	11.168	0.63	0.80	12.02	168.00	0.000	0.000	134.24	0.00	0.00
16	175.00	RFS APXVSPP18-C-A20	3	10.152	11.168	0.66	0.80	15.98	171.00	0.000	0.000	178.41	0.00	0.00
17	175.00	Alcatel Lucent 800 MHz	3	10.152	11.168	0.60	0.80	5.24	52.50	0.000	0.000	58.50	0.00	0.00
18	175.00	Alcatel Lucent	3	10.152	11.168	0.60	0.80	7.29	210.00	0.000	0.000	81.41	0.00	0.00
19	175.00	Alcatel Lucent 1900 MHz	3	10.152	11.168	0.60	0.80	6.84	132.00	0.000	0.000	76.39	0.00	0.00
20	175.00	RFS ACU-A20-N RETs	4	10.152	11.168	0.54	0.80	0.30	4.00	0.000	0.000	3.35	0.00	0.00
21	174.50	7' Pole Branch	1	10.144	11.158	1.00	1.00	15.00	460.00	0.000	0.000	167.38	0.00	0.00
22	169.50	8' Pole Branch	1	10.060	11.066	1.00	1.00	35.00	560.00	0.000	0.000	387.31	0.00	0.00
23	165.00	DB-B1-6C-12AB-0Z	2	9.983	10.981	0.73	0.80	5.97	42.80	0.000	0.000	65.55	0.00	0.00
24	165.00	RRH4X45-AWS	3	9.983	10.981	0.64	0.80	4.99	192.00	0.000	0.000	54.82	0.00	0.00
25	165.00	RRH2X60-700	3	9.983	10.981	0.61	0.80	6.38	165.00	0.000	0.000	70.10	0.00	0.00
26	165.00	SBNHH-1D65B	6	9.983	10.981	0.66	0.80	32.51	240.00	0.000	0.000	357.00	0.00	0.00
27	165.00	Antel LPA 80063/6CF	2	9.983	10.981	0.75	0.80	14.44	54.00	0.000	0.000	158.55	0.00	0.00
28	165.00	Swedcom SC-E 6014 Rev	4	9.983	10.981	0.78	0.80	10.34	60.00	0.000	0.000	113.51	0.00	0.00
29	165.00	Cobra Arms	3	9.983	10.981	0.56	0.75	22.78	1200.00	0.000	0.000	250.17	0.00	0.00
30	164.50	8' Pole Branch	1	9.974	10.972	1.00	1.00	24.24	560.00	0.000	0.000	265.96	0.00	0.00
31	159.50	9' Pole Branch	1	9.887	10.875	1.00	1.00	45.00	660.00	0.000	0.000	489.40	0.00	0.00
32	155.00	Powerwave LGP21901	6	9.806	10.787	0.67	0.80	1.09	33.00	0.000	0.000	11.74	0.00	0.00
33	155.00	Powerwave LGP 21401	6	9.806	10.787	0.54	0.80	3.06	105.00	0.000	0.000	32.96	0.00	0.00
34	155.00	Raycap DC6-48-60-18-8F	1	9.806	10.787	0.80	0.80	1.18	31.80	0.000	0.000	12.69	0.00	0.00
35	155.00	Powerwave 7770.00	3	9.806	10.787	0.58	0.80	9.64	105.00	0.000	0.000	103.94	0.00	0.00
36	155.00	Cobra Arms	3	9.806	10.787	0.56	0.75	22.78	1200.00	0.000	0.000	245.74	0.00	0.00
37	155.00	Horizontal Pipe	3	9.806	10.787	1.00	1.00	10.78	217.50	0.000	0.000	116.30	0.00	0.00
38	155.00	DMP65R-BU6DA	6	9.806	10.787	0.58	0.80	44.54	379.80	0.000	0.000	480.40	0.00	0.00
39	155.00	4449 B5/B12	3	9.806	10.787	0.54	0.80	3.17	213.00	0.000	0.000	34.17	0.00	0.00
40	155.00	RRUS 8843 B2 B66A	3	9.806	10.787	0.54	0.80	2.64	216.00	0.000	0.000	28.45	0.00	0.00
41	155.00	pipe brace	3	9.806	10.787	1.00	1.00	12.93	261.00	0.000	0.000	139.47	0.00	0.00
42	155.00	DC6-48-60-18-8C-EV	1	9.806	10.787	0.80	0.80	1.03	33.00	0.000	0.000	11.13	0.00	0.00
43	154.50	9' Pole Branch	1	9.797	10.777	1.00	1.00	33.48	660.00	0.000	0.000	360.81	0.00	0.00
44	149.50	10' Pole Branch	1	9.706	10.676	1.00	1.00	50.00	700.00	0.000	0.000	533.81	0.00	0.00
45	144.50	11' Pole Branch	1	9.612	10.573	1.00	1.00	42.72	720.00	0.000	0.000	451.67	0.00	0.00
							Totals:		**14,402.80**			**7,639.77**		

Total Applied Force Summary

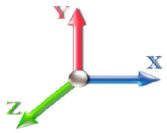
Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 72

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		53.55	682.68	0.00	0.00
4.00		53.13	719.05	0.00	0.00
6.00		52.70	755.42	0.00	0.00
8.00		52.28	750.00	0.00	0.00
10.00		51.85	744.57	0.00	0.00
12.00		51.42	739.14	0.00	0.00
14.00		51.00	733.71	0.00	0.00
16.00		50.57	728.29	0.00	0.00
18.00		50.15	722.86	0.00	0.00
20.00		49.72	717.43	0.00	0.00
22.00		49.29	712.00	0.00	0.00
24.00		48.87	706.58	0.00	0.00
26.00		48.44	701.15	0.00	0.00
28.00		48.02	695.72	0.00	0.00
30.00		47.63	690.30	0.00	0.00
32.00		48.08	684.87	0.00	0.00
34.00		48.48	679.44	0.00	0.00
36.00		48.83	674.01	0.00	0.00
38.00		49.13	668.59	0.00	0.00
40.00		49.40	663.16	0.00	0.00
42.00		49.62	657.73	0.00	0.00
44.00		49.81	652.30	0.00	0.00
46.00		49.96	646.88	0.00	0.00
46.17		4.15	53.66	0.00	0.00
48.00		46.58	1102.49	0.00	0.00
50.00		50.93	1192.31	0.00	0.00
52.00		51.01	1181.46	0.00	0.00
54.00		51.06	1170.60	0.00	0.00
56.00		51.08	628.01	0.00	0.00
58.00		51.08	622.58	0.00	0.00
60.00		51.06	617.15	0.00	0.00
62.00		51.01	611.73	0.00	0.00
64.00		50.95	606.30	0.00	0.00
66.00		50.87	600.87	0.00	0.00
68.00		50.76	595.44	0.00	0.00
70.00		50.64	590.02	0.00	0.00
72.00		50.50	584.59	0.00	0.00
74.00		50.35	579.16	0.00	0.00
76.00		50.18	573.73	0.00	0.00
78.00		49.99	568.31	0.00	0.00
80.00		49.79	562.88	0.00	0.00
82.00		49.58	557.45	0.00	0.00
84.00		49.35	552.02	0.00	0.00
86.00		49.10	546.60	0.00	0.00
88.00		48.85	541.17	0.00	0.00
90.00		48.58	535.74	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 73

Tower Engineering Solutions

92.00		48.30	530.32	0.00	0.00
94.00		48.00	524.89	0.00	0.00
94.08		1.99	21.75	0.00	0.00
96.00		46.44	858.34	0.00	0.00
98.00		48.16	885.79	0.00	0.00
100.00		47.84	875.71	0.00	0.00
100.17		3.96	72.52	0.00	0.00
102.00		43.53	412.73	0.00	0.00
104.00		47.16	445.80	0.00	0.00
106.00		46.81	441.14	0.00	0.00
108.00		46.45	436.49	0.00	0.00
110.00		46.07	431.84	0.00	0.00
112.00		45.69	427.19	0.00	0.00
114.00		45.30	422.54	0.00	0.00
116.00		44.90	417.88	0.00	0.00
118.00		44.48	413.23	0.00	0.00
120.00		44.07	408.58	0.00	0.00
122.00		43.64	403.93	0.00	0.00
124.00		43.33	399.28	0.00	0.00
126.00		43.08	394.62	0.00	0.00
128.00		42.82	389.97	0.00	0.00
130.00		42.56	385.32	0.00	0.00
132.00		42.29	380.67	0.00	0.00
134.00		42.01	376.02	0.00	0.00
136.00		41.73	371.36	0.00	0.00
138.00		41.45	366.71	0.00	0.00
140.00		41.15	362.06	0.00	0.00
142.00		40.86	357.41	0.00	0.00
143.75		35.49	308.92	0.00	0.00
144.00		5.54	60.54	0.00	0.00
144.50	(1) attachments	462.73	840.76	0.00	0.00
145.75		27.59	300.00	0.00	0.00
146.00		5.50	59.67	0.00	0.00
148.00		43.90	473.46	0.00	0.00
148.08		1.82	19.58	0.00	0.00
149.50	(1) attachments	564.55	852.94	0.00	0.00
150.00		10.80	53.70	0.00	0.00
151.75		37.70	186.81	0.00	0.00
152.00		5.36	26.54	0.00	0.00
154.00		42.33	211.03	0.00	0.00
154.50	(1) attachments	370.56	712.39	0.00	0.00
155.00	(38) attachments	1226.73	2847.35	0.00	0.00
156.00		19.41	89.86	0.00	0.00
158.00		38.60	177.97	0.00	0.00
159.50	(1) attachments	518.11	791.95	0.00	0.00
160.00		9.52	43.69	0.00	0.00
162.00		37.91	173.32	0.00	0.00
164.00		37.56	171.00	0.00	0.00
164.50	(1) attachments	275.28	602.39	0.00	0.00
165.00	(23) attachments	1079.00	1996.04	0.00	0.00
166.00		16.32	69.36	0.00	0.00
168.00		32.23	136.98	0.00	0.00
169.50	(1) attachments	411.09	661.21	0.00	0.00
170.00		7.84	33.45	0.00	0.00
172.00		31.04	132.33	0.00	0.00
174.00		30.44	130.01	0.00	0.00
174.50	(1) attachments	174.88	492.14	0.00	0.00

Total Applied Force Summary

Structure:	CT00707-S-SBA		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 74

Tower Engineering Solutions

175.00	(25) attachments	844.23	2128.49	0.00	0.00
176.00		14.83	60.91	0.00	0.00
178.00		29.22	120.07	0.00	0.00
179.50	(1) attachments	538.95	388.53	0.00	0.00
180.00		7.08	29.22	0.00	0.00
182.00		27.98	115.42	0.00	0.00
184.00		27.35	113.10	0.00	0.00
185.00	(30) attachments	1355.96	2993.08	0.00	62.28
	Totals:	**11,828.89**	**62,118.46**	**0.00**	**62.28**

Linear Appurtenance Segment Forces (Factored)

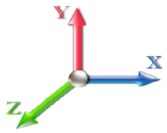
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 75	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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)
2.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.027	0.000	6.129	0.00	4.40
4.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.041	0.000	6.129	0.00	9.36
4.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.041	0.000	6.129	0.00	4.40
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	6.129	0.00	18.72
6.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.055	0.000	6.129	0.00	4.40
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	6.129	0.00	18.72
8.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	6.129	0.00	4.40
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	6.129	0.00	18.72
10.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.056	0.000	6.129	0.00	4.40
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	6.129	0.00	18.72
12.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	6.129	0.00	4.40
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	6.129	0.00	18.72
14.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	6.129	0.00	4.40
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	6.129	0.00	18.72
16.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.057	0.000	6.129	0.00	4.40
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	6.129	0.00	18.72
18.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	6.129	0.00	4.40
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	6.129	0.00	18.72
20.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.058	0.000	6.129	0.00	4.40
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	6.129	0.00	18.72
22.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	6.129	0.00	4.40
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	6.129	0.00	18.72
24.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.059	0.000	6.129	0.00	4.40
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	6.129	0.00	18.72
26.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.060	0.000	6.129	0.00	4.40
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	6.129	0.00	18.72
28.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	6.129	0.00	4.40
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	6.134	0.00	18.72
30.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.061	0.000	6.134	0.00	4.40
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	6.248	0.00	18.72
32.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	6.248	0.00	4.40
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	6.357	0.00	18.72
34.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.062	0.000	6.357	0.00	4.40
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	6.462	0.00	18.72
36.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	6.462	0.00	4.40
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	6.562	0.00	18.72
38.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.063	0.000	6.562	0.00	4.40
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.064	0.000	6.659	0.00	18.72
40.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.064	0.000	6.659	0.00	4.40
42.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	6.753	0.00	18.72
42.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	6.753	0.00	4.40
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	6.843	0.00	18.72
44.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	6.843	0.00	4.40
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	6.931	0.00	18.72
46.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	6.931	0.00	4.40
46.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.066	0.000	6.938	0.00	1.56
46.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.066	0.000	6.938	0.00	0.37

Linear Appurtenance Segment Forces (Factored)

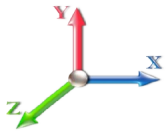
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 76	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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)
48.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.066	0.000	7.015	0.00	17.16
48.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.066	0.000	7.015	0.00	4.03
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	7.098	0.00	18.72
50.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.067	0.000	7.098	0.00	4.40
52.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	7.178	0.00	18.72
52.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	7.178	0.00	4.40
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	7.255	0.00	18.72
54.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	7.255	0.00	4.40
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	7.331	0.00	18.72
56.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	7.331	0.00	4.40
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	7.405	0.00	18.72
58.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	7.405	0.00	4.40
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	7.477	0.00	18.72
60.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	7.477	0.00	4.40
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	7.548	0.00	18.72
62.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	7.548	0.00	4.40
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	7.616	0.00	18.72
64.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	7.616	0.00	4.40
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	7.684	0.00	18.72
66.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	7.684	0.00	4.40
68.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	7.749	0.00	18.72
68.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	7.749	0.00	4.40
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	7.814	0.00	18.72
70.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	7.814	0.00	4.40
72.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	7.877	0.00	18.72
72.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	7.877	0.00	4.40
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	7.939	0.00	18.72
74.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	7.939	0.00	4.40
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	8.000	0.00	18.72
76.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	8.000	0.00	4.40
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.076	0.000	8.059	0.00	18.72
78.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	8.059	0.00	4.40
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	8.118	0.00	18.72
80.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	8.118	0.00	4.40
82.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.078	0.000	8.175	0.00	18.72
82.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	8.175	0.00	4.40
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	8.232	0.00	18.72
84.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	8.232	0.00	4.40
86.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.080	0.000	8.287	0.00	18.72
86.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	8.287	0.00	4.40
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	8.342	0.00	18.72
88.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	8.342	0.00	4.40
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	8.396	0.00	18.72
90.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.082	0.000	8.396	0.00	4.40
92.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.083	0.000	8.448	0.00	18.72
92.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	8.448	0.00	4.40
94.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.084	0.000	8.501	0.00	18.72

Linear Appurtenance Segment Forces (Factored)

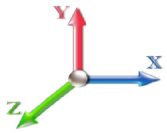
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 77	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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)
94.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	8.501	0.00	4.40
94.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.085	0.000	8.503	0.00	0.78
94.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.085	0.000	8.503	0.00	0.18
96.00	1 5/8" Coax	Yes	1.92	0.000	1.98	0.32	0.00	0.085	0.000	8.552	0.00	17.94
96.00	1 5/8" Hybrid	Yes	1.92	0.000	2.00	0.32	0.00	0.085	0.000	8.552	0.00	4.22
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.086	0.000	8.602	0.00	18.72
98.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	8.602	0.00	4.40
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	8.652	0.00	18.72
100.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	8.652	0.00	4.40
100.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.088	0.000	8.656	0.00	1.56
100.17	1 5/8" Hybrid	Yes	0.17	0.000	2.00	0.03	0.00	0.088	0.000	8.656	0.00	0.37
102.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.087	0.000	8.701	0.00	17.16
102.00	1 5/8" Hybrid	Yes	1.83	0.000	2.00	0.31	0.00	0.087	0.000	8.701	0.00	4.03
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.088	0.000	8.750	0.00	18.72
104.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.088	0.000	8.750	0.00	4.40
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	8.797	0.00	18.72
106.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	8.797	0.00	4.40
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.090	0.000	8.845	0.00	18.72
108.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	8.845	0.00	4.40
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.092	0.000	8.891	0.00	18.72
110.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	8.891	0.00	4.40
112.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.093	0.000	8.937	0.00	18.72
112.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	8.937	0.00	4.40
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.094	0.000	8.982	0.00	18.72
114.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	8.982	0.00	4.40
116.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.095	0.000	9.027	0.00	18.72
116.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	9.027	0.00	4.40
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.097	0.000	9.071	0.00	18.72
118.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.097	0.000	9.071	0.00	4.40
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.098	0.000	9.115	0.00	18.72
120.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.098	0.000	9.115	0.00	4.40
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.100	0.000	9.158	0.00	18.72
122.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.100	0.000	9.158	0.00	4.40
124.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.003	9.201	0.00	18.72
124.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.101	1.003	9.201	0.00	4.40
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.008	9.243	0.00	18.72
126.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.103	1.008	9.243	0.00	4.40
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.012	9.284	0.00	18.72
128.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.104	1.012	9.284	0.00	4.40
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	9.326	0.00	18.72
130.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.106	1.017	9.326	0.00	4.40
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.107	1.022	9.366	0.00	18.72
132.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.107	1.022	9.366	0.00	4.40
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.109	1.027	9.407	0.00	18.72
134.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.109	1.027	9.407	0.00	4.40
136.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.111	1.033	9.447	0.00	18.72
136.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	9.447	0.00	4.40

Linear Appurtenance Segment Forces (Factored)

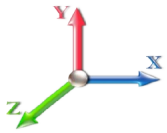
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 78	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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)
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.113	1.038	9.486	0.00	18.72
138.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.113	1.038	9.486	0.00	4.40
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.115	1.044	9.525	0.00	18.72
140.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.115	1.044	9.525	0.00	4.40
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.117	1.050	9.564	0.00	18.72
142.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.117	1.050	9.564	0.00	4.40
143.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.118	1.055	9.597	0.00	16.38
143.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.118	1.055	9.597	0.00	3.85
144.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.149	1.148	9.602	0.00	2.34
144.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.149	1.148	9.602	0.00	0.55
144.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.149	1.148	9.602	0.00	0.00
144.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.150	1.150	9.612	0.00	4.68
144.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.150	1.150	9.612	0.00	1.10
144.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.150	1.150	9.612	0.00	0.00
145.75	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.151	1.153	9.635	0.00	11.70
145.75	1 5/8" Hybrid	Yes	1.25	0.000	2.00	0.21	0.00	0.151	1.153	9.635	0.00	2.75
145.75	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.151	1.153	9.635	0.00	0.00
146.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.152	1.156	9.640	0.00	2.34
146.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.152	1.156	9.640	0.00	0.55
146.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.152	1.156	9.640	0.00	0.00
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.154	1.161	9.678	0.00	18.72
148.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.154	1.161	9.678	0.00	4.40
148.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.154	1.161	9.678	0.00	0.00
148.08	1 5/8" Coax	Yes	0.08	0.000	1.98	0.01	0.00	0.155	1.165	9.679	0.00	0.78
148.08	1 5/8" Hybrid	Yes	0.08	0.000	2.00	0.01	0.00	0.155	1.165	9.679	0.00	0.18
148.08	1" Reinforcing plate	Yes	0.08	0.000	1.00	0.01	0.00	0.155	1.165	9.679	0.00	0.00
149.50	1 5/8" Coax	Yes	1.42	0.000	1.98	0.23	0.00	0.154	1.163	9.706	0.00	13.26
149.50	1 5/8" Hybrid	Yes	1.42	0.000	2.00	0.24	0.00	0.154	1.163	9.706	0.00	3.12
149.50	1" Reinforcing plate	Yes	1.42	0.000	1.00	0.12	0.00	0.154	1.163	9.706	0.00	0.00
150.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.156	1.167	9.715	0.00	4.68
150.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.156	1.167	9.715	0.00	1.10
150.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.156	1.167	9.715	0.00	0.00
151.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.157	1.172	9.747	0.00	16.38
151.75	1 5/8" Hybrid	Yes	1.75	0.000	2.00	0.29	0.00	0.157	1.172	9.747	0.00	3.85
151.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.157	1.172	9.747	0.00	0.00
152.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.159	1.176	9.752	0.00	2.34
152.00	1 5/8" Hybrid	Yes	0.25	0.000	2.00	0.04	0.00	0.159	1.176	9.752	0.00	0.55
152.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.159	1.176	9.752	0.00	0.00
154.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.156	1.169	9.788	0.00	18.72
154.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.156	1.169	9.788	0.00	4.40
154.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.156	1.169	9.788	0.00	0.00
154.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.089	9.797	0.00	4.68
154.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.089	9.797	0.00	1.10
155.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.130	1.091	9.806	0.00	4.68
155.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.130	1.091	9.806	0.00	1.10
156.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.094	9.824	0.00	9.36
156.00	1 5/8" Hybrid	Yes	1.00	0.000	2.00	0.17	0.00	0.131	1.094	9.824	0.00	2.20

Linear Appurtenance Segment Forces (Factored)

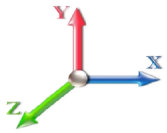
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 79	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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)
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.100	9.860	0.00	18.72
158.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.133	1.100	9.860	0.00	4.40
159.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.136	1.107	9.887	0.00	14.04
159.50	1 5/8" Hybrid	Yes	1.50	0.000	2.00	0.25	0.00	0.136	1.107	9.887	0.00	3.30
160.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.137	1.111	9.896	0.00	4.68
160.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.137	1.111	9.896	0.00	1.10
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.139	1.116	9.931	0.00	18.72
162.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.139	1.116	9.931	0.00	4.40
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.142	1.125	9.966	0.00	18.72
164.00	1 5/8" Hybrid	Yes	2.00	0.000	2.00	0.33	0.00	0.142	1.125	9.966	0.00	4.40
164.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.143	1.130	9.974	0.00	4.68
164.50	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.143	1.130	9.974	0.00	1.10
165.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.144	1.132	9.983	0.00	4.68
165.00	1 5/8" Hybrid	Yes	0.50	0.000	2.00	0.08	0.00	0.144	1.132	9.983	0.00	1.10
166.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.072	0.000	10.000	0.00	9.36
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	10.035	0.00	18.72
169.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.075	0.000	10.060	0.00	14.04
170.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.076	0.000	10.069	0.00	4.68
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.077	0.000	10.102	0.00	18.72
174.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	10.136	0.00	18.72
174.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	10.144	0.00	4.68
175.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.080	0.000	10.152	0.00	4.68
176.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.081	0.000	10.169	0.00	9.36
178.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.082	0.000	10.202	0.00	18.72
179.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.084	0.000	10.226	0.00	14.04
180.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.085	0.000	10.234	0.00	4.68
182.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.087	0.000	10.267	0.00	18.72
184.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.089	0.000	10.299	0.00	18.72
185.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.091	0.000	10.315	0.00	9.36
										Totals:	**0.0**	**2,066.5**

Calculated Forces

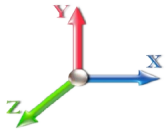
Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 80	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-62.12	-11.83	0.00	-1692.5	0.00	1692.52	6186.26	3093.13	18350.4	9188.88	0.00	0.000	0.000	0.194
2.00	-61.43	-11.80	0.00	-1668.8	0.00	1668.85	6161.28	3080.64	18129.8	9078.39	0.00	-0.015	0.000	0.194
4.00	-60.71	-11.76	0.00	-1645.2	0.00	1645.26	6135.91	3067.96	17909.2	8967.93	0.01	-0.029	0.000	0.193
6.00	-59.95	-11.72	0.00	-1621.7	0.00	1621.74	6110.15	3055.07	17688.7	8857.51	0.03	-0.044	0.000	0.193
8.00	-59.20	-11.68	0.00	-1598.3	0.00	1598.30	6084.00	3042.00	17468.3	8747.14	0.05	-0.059	0.000	0.192
10.00	-58.45	-11.65	0.00	-1574.9	0.00	1574.93	6057.45	3028.73	17248.0	8636.84	0.08	-0.074	0.000	0.192
12.00	-57.71	-11.61	0.00	-1551.6	0.00	1551.64	6030.52	3015.26	17027.9	8526.61	0.11	-0.090	0.000	0.192
14.00	-56.97	-11.57	0.00	-1528.4	0.00	1528.42	6003.19	3001.60	16807.9	8416.48	0.15	-0.105	0.000	0.191
16.00	-56.24	-11.54	0.00	-1505.2	0.00	1505.28	5975.47	2987.74	16588.2	8306.46	0.20	-0.121	0.000	0.191
18.00	-55.51	-11.50	0.00	-1482.2	0.00	1482.20	5947.37	2973.68	16368.7	8196.55	0.26	-0.136	0.000	0.190
20.00	-54.79	-11.46	0.00	-1459.2	0.00	1459.21	5918.87	2959.43	16149.5	8086.79	0.32	-0.152	0.000	0.190
22.00	-54.08	-11.43	0.00	-1436.2	0.00	1436.28	5889.98	2944.99	15930.6	7977.17	0.38	-0.168	0.000	0.189
24.00	-53.37	-11.39	0.00	-1413.4	0.00	1413.42	5860.70	2930.35	15712.0	7867.72	0.46	-0.185	0.000	0.189
26.00	-52.66	-11.36	0.00	-1390.6	0.00	1390.64	5831.03	2915.51	15493.8	7758.44	0.54	-0.201	0.000	0.188
28.00	-51.97	-11.32	0.00	-1367.9	0.00	1367.93	5800.97	2900.48	15276.0	7649.36	0.63	-0.218	0.000	0.188
30.00	-51.27	-11.29	0.00	-1345.2	0.00	1345.29	5770.52	2885.26	15058.5	7540.48	0.72	-0.235	0.000	0.187
32.00	-50.58	-11.25	0.00	-1322.7	0.00	1322.72	5739.67	2869.84	14841.5	7431.82	0.82	-0.251	0.000	0.187
34.00	-49.90	-11.21	0.00	-1300.2	0.00	1300.22	5708.44	2854.22	14625.0	7323.39	0.93	-0.269	0.000	0.186
36.00	-49.22	-11.18	0.00	-1277.7	0.00	1277.79	5676.81	2838.41	14409.0	7215.22	1.05	-0.286	0.000	0.186
38.00	-48.55	-11.14	0.00	-1255.4	0.00	1255.44	5644.80	2822.40	14193.5	7107.30	1.17	-0.303	0.000	0.185
40.00	-47.89	-11.10	0.00	-1233.1	0.00	1233.17	5612.39	2806.20	13978.5	6999.66	1.30	-0.321	0.000	0.185
42.00	-47.23	-11.06	0.00	-1210.9	0.00	1210.97	5579.60	2789.80	13764.1	6892.30	1.44	-0.339	0.000	0.184
44.00	-46.57	-11.02	0.00	-1188.8	0.00	1188.85	5546.41	2773.20	13550.3	6785.25	1.59	-0.357	0.000	0.184
46.00	-45.92	-10.98	0.00	-1166.8	0.00	1166.80	5512.83	2756.41	13337.2	6678.52	1.74	-0.375	0.000	0.183
46.17	-45.87	-10.98	0.00	-1164.9	0.00	1164.97	5510.01	2755.01	13319.4	6669.64	1.75	-0.377	0.000	0.183
48.00	-44.76	-10.94	0.00	-1144.8	0.00	1144.85	5478.86	2739.43	13124.7	6572.12	1.90	-0.393	0.000	0.182
50.00	-43.57	-10.89	0.00	-1122.9	0.00	1122.97	5444.50	2722.25	12912.9	6466.06	2.07	-0.412	0.000	0.182
52.00	-42.38	-10.85	0.00	-1101.1	0.00	1101.18	5409.75	2704.87	12701.8	6360.36	2.25	-0.431	0.000	0.181
54.00	-41.21	-10.80	0.00	-1079.4	0.00	1079.49	5427.99	2713.99	12812.2	6415.65	2.43	-0.450	0.000	0.176
56.00	-40.58	-10.76	0.00	-1057.8	0.00	1057.88	5393.05	2696.53	12601.5	6310.13	2.63	-0.469	0.000	0.175
58.00	-39.95	-10.72	0.00	-1036.3	0.00	1036.37	5357.72	2678.86	12391.5	6204.99	2.83	-0.487	0.000	0.174
60.00	-39.33	-10.67	0.00	-1014.9	0.00	1014.94	5322.01	2661.00	12182.3	6100.24	3.03	-0.506	0.000	0.174
62.00	-38.71	-10.63	0.00	-993.59	0.00	993.59	5285.90	2642.95	11974.0	5995.90	3.25	-0.525	0.000	0.173
64.00	-38.11	-10.58	0.00	-972.34	0.00	972.34	5249.40	2624.70	11766.4	5891.98	3.47	-0.544	0.000	0.172
66.00	-37.50	-10.54	0.00	-951.17	0.00	951.17	5212.50	2606.25	11559.8	5788.50	3.71	-0.563	0.000	0.172
68.00	-36.90	-10.50	0.00	-930.09	0.00	930.09	5175.22	2587.61	11354.0	5685.46	3.95	-0.583	0.000	0.171
70.00	-36.31	-10.45	0.00	-909.10	0.00	909.10	5137.55	2568.77	11149.2	5582.89	4.20	-0.602	0.000	0.170
72.00	-35.72	-10.41	0.00	-888.19	0.00	888.19	5099.49	2549.74	10945.3	5480.80	4.45	-0.622	0.000	0.169
74.00	-35.14	-10.36	0.00	-867.38	0.00	867.38	5061.03	2530.52	10742.4	5379.19	4.72	-0.642	0.000	0.168
76.00	-34.56	-10.32	0.00	-846.65	0.00	846.65	5022.19	2511.09	10540.5	5278.10	4.99	-0.662	0.000	0.167
78.00	-33.99	-10.27	0.00	-826.02	0.00	826.02	4982.95	2491.47	10339.6	5177.52	5.27	-0.682	0.000	0.166
80.00	-33.43	-10.23	0.00	-805.47	0.00	805.47	4943.32	2471.66	10139.8	5077.48	5.56	-0.703	0.000	0.165
82.00	-32.87	-10.18	0.00	-785.01	0.00	785.01	4903.30	2451.65	9941.18	4977.98	5.86	-0.723	0.000	0.164
84.00	-32.31	-10.14	0.00	-764.64	0.00	764.64	4862.90	2431.45	9743.60	4879.04	6.17	-0.744	0.000	0.163
86.00	-31.76	-10.10	0.00	-744.36	0.00	744.36	4822.10	2411.05	9547.17	4780.68	6.49	-0.765	0.000	0.162
88.00	-31.22	-10.05	0.00	-724.17	0.00	724.17	4780.91	2390.45	9351.91	4682.91	6.81	-0.787	0.000	0.161
90.00	-30.68	-10.01	0.00	-704.07	0.00	704.07	4739.33	2369.66	9157.86	4585.74	7.15	-0.808	0.000	0.160
92.00	-30.14	-9.96	0.00	-684.05	0.00	684.05	4697.35	2348.68	8965.05	4489.19	7.49	-0.830	0.000	0.159

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 81	

Tower Engineering Solutions

94.00	-29.62	-9.91	0.00	-664.13	0.00	664.13	4654.99	2327.50	8773.49	4393.27	7.84	-0.851	0.000	0.158
94.08	-29.60	-9.92	0.00	-663.30	0.00	663.30	4653.22	2326.61	8765.54	4389.28	7.86	-0.852	0.000	0.157
96.00	-28.73	-9.87	0.00	-644.30	0.00	644.30	4612.24	2306.12	8583.22	4297.99	8.20	-0.873	0.000	0.156
98.00	-27.85	-9.82	0.00	-624.57	0.00	624.57	4569.09	2284.55	8394.27	4203.37	8.57	-0.895	0.000	0.155
100.00	-26.97	-9.76	0.00	-604.93	0.00	604.93	4525.56	2262.78	8206.66	4109.43	8.95	-0.917	0.000	0.153
100.17	-26.89	-9.76	0.00	-603.31	0.00	603.31	3757.39	1878.70	6942.18	3476.25	8.98	-0.919	0.000	0.181
102.00	-26.48	-9.72	0.00	-585.41	0.00	585.41	3727.29	1863.64	6805.30	3407.71	9.34	-0.940	0.000	0.179
104.00	-26.03	-9.68	0.00	-565.97	0.00	565.97	3694.07	1847.03	6656.80	3333.35	9.74	-0.965	0.000	0.177
106.00	-25.58	-9.63	0.00	-546.62	0.00	546.62	3660.46	1830.23	6509.18	3259.43	10.15	-0.989	0.000	0.175
108.00	-25.14	-9.59	0.00	-527.35	0.00	527.35	3626.46	1813.23	6362.47	3185.96	10.57	-1.014	0.000	0.172
110.00	-24.71	-9.55	0.00	-508.17	0.00	508.17	3592.07	1796.03	6216.70	3112.97	11.00	-1.040	0.000	0.170
112.00	-24.28	-9.51	0.00	-489.07	0.00	489.07	3557.29	1778.64	6071.91	3040.47	11.44	-1.065	0.000	0.168
114.00	-23.85	-9.46	0.00	-470.06	0.00	470.06	3522.12	1761.06	5928.11	2968.46	11.89	-1.090	0.000	0.165
116.00	-23.43	-9.42	0.00	-451.14	0.00	451.14	3486.55	1743.28	5785.33	2896.97	12.36	-1.115	0.000	0.162
118.00	-23.02	-9.38	0.00	-432.30	0.00	432.30	3450.60	1725.30	5643.61	2826.00	12.83	-1.140	0.000	0.160
120.00	-22.60	-9.34	0.00	-413.54	0.00	413.54	3414.26	1707.13	5502.97	2755.57	13.31	-1.166	0.000	0.157
122.00	-22.20	-9.29	0.00	-394.87	0.00	394.87	3377.52	1688.76	5363.43	2685.70	13.81	-1.191	0.000	0.154
124.00	-21.79	-9.25	0.00	-376.29	0.00	376.29	3340.40	1670.20	5225.04	2616.40	14.31	-1.216	0.000	0.150
126.00	-21.40	-9.21	0.00	-357.79	0.00	357.79	3302.88	1651.44	5087.80	2547.68	14.83	-1.241	0.000	0.147
128.00	-21.00	-9.17	0.00	-339.37	0.00	339.37	3264.97	1632.49	4951.76	2479.56	15.35	-1.266	0.000	0.143
130.00	-20.62	-9.12	0.00	-321.04	0.00	321.04	3220.40	1610.20	4807.57	2407.36	15.89	-1.291	0.000	0.140
132.00	-20.23	-9.08	0.00	-302.79	0.00	302.79	3169.61	1584.80	4656.37	2331.65	16.43	-1.315	0.000	0.136
134.00	-19.85	-9.04	0.00	-284.63	0.00	284.63	3118.82	1559.41	4507.59	2257.15	16.99	-1.339	0.000	0.132
136.00	-19.48	-9.00	0.00	-266.55	0.00	266.55	3068.04	1534.02	4361.23	2183.86	17.56	-1.363	0.000	0.128
138.00	-19.11	-8.95	0.00	-248.55	0.00	248.55	3017.25	1508.63	4217.28	2111.78	18.13	-1.386	0.000	0.124
140.00	-18.75	-8.91	0.00	-230.64	0.00	230.64	2966.47	1483.23	4075.75	2040.91	18.72	-1.409	0.000	0.119
142.00	-18.39	-8.87	0.00	-212.82	0.00	212.82	2915.68	1457.84	3936.64	1971.24	19.31	-1.431	0.000	0.114
143.75	-18.08	-8.83	0.00	-197.30	0.00	197.30	2871.25	1435.62	3816.89	1911.28	19.84	-1.450	0.000	0.110
144.00	-18.02	-8.82	0.00	-195.09	0.00	195.09	2864.90	1432.45	3799.94	1902.79	19.92	-1.453	0.000	0.109
144.50	-17.19	-8.34	0.00	-190.68	0.00	190.68	2852.20	1426.10	3766.14	1885.87	20.07	-1.458	0.000	0.107
145.75	-16.89	-8.31	0.00	-180.25	0.00	180.25	2820.46	1410.23	3682.30	1843.89	20.45	-1.471	0.000	0.068
146.00	-16.83	-8.30	0.00	-178.18	0.00	178.18	2814.11	1407.06	3665.65	1835.55	20.53	-1.473	0.000	0.068
148.00	-16.35	-8.25	0.00	-161.57	0.00	161.57	2763.33	1381.66	3533.78	1769.52	21.15	-1.486	0.000	0.063
148.08	-16.33	-8.25	0.00	-160.88	0.00	160.88	1152.50	576.25	1508.33	755.29	21.18	-1.487	0.000	0.078
149.50	-15.49	-7.66	0.00	-149.19	0.00	149.19	1145.31	572.66	1479.63	740.91	21.62	-1.496	0.000	0.106
150.00	-15.44	-7.66	0.00	-145.36	0.00	145.36	1142.73	571.37	1469.50	735.84	21.78	-1.500	0.000	0.104
151.75	-15.25	-7.61	0.00	-131.97	0.00	131.97	1133.50	566.75	1434.03	718.08	22.33	-1.515	0.000	0.096
151.75	-15.25	-7.61	0.00	-131.97	0.00	131.97	1133.50	566.75	1434.03	718.08	22.33	-1.515	0.000	0.096
152.00	-15.22	-7.61	0.00	-130.06	0.00	130.06	1132.15	566.08	1428.97	715.55	22.41	-1.517	0.000	0.195
154.00	-15.01	-7.57	0.00	-114.84	0.00	114.84	1121.19	560.59	1388.46	695.26	23.05	-1.549	0.000	0.179
154.50	-14.31	-7.18	0.00	-111.05	0.00	111.05	1118.38	559.19	1378.34	690.19	23.21	-1.557	0.000	0.174
155.00	-11.49	-5.88	0.00	-107.46	0.00	107.46	1115.56	557.78	1368.22	685.13	23.38	-1.565	0.000	0.167
156.00	-11.40	-5.86	0.00	-101.58	0.00	101.58	1109.83	554.91	1348.00	675.00	23.71	-1.579	0.000	0.161
158.00	-11.22	-5.83	0.00	-89.85	0.00	89.85	1098.08	549.04	1307.61	654.78	24.37	-1.608	0.000	0.148
159.50	-10.44	-5.29	0.00	-81.11	0.00	81.11	1089.01	544.51	1277.39	639.64	24.88	-1.628	0.000	0.136
160.00	-10.40	-5.28	0.00	-78.47	0.00	78.47	1085.94	542.97	1267.33	634.61	25.05	-1.634	0.000	0.133
162.00	-10.23	-5.24	0.00	-67.91	0.00	67.91	1073.41	536.70	1227.17	614.50	25.74	-1.658	0.000	0.120
164.00	-10.05	-5.20	0.00	-57.43	0.00	57.43	1060.49	530.24	1187.18	594.47	26.44	-1.681	0.000	0.106
164.50	-9.46	-4.91	0.00	-54.83	0.00	54.83	1057.19	528.60	1177.21	589.48	26.62	-1.686	0.000	0.102
165.00	-7.50	-3.77	0.00	-52.38	0.00	52.38	1053.88	526.94	1167.25	584.49	26.80	-1.691	0.000	0.097
166.00	-7.43	-3.76	0.00	-48.60	0.00	48.60	1047.17	523.59	1147.37	574.54	27.15	-1.701	0.000	0.092
168.00	-7.29	-3.72	0.00	-41.09	0.00	41.09	1033.47	516.74	1107.78	554.71	27.87	-1.719	0.000	0.081
169.50	-6.64	-3.29	0.00	-35.51	0.00	35.51	1022.94	511.47	1078.24	539.92	28.41	-1.731	0.000	0.072
170.00	-6.61	-3.28	0.00	-33.86	0.00	33.86	1019.38	509.69	1068.43	535.01	28.59	-1.735	0.000	0.070
172.00	-6.47	-3.25	0.00	-27.30	0.00	27.30	1004.89	502.45	1029.34	515.44	29.32	-1.749	0.000	0.059
174.00	-6.35	-3.22	0.00	-20.80	0.00	20.80	990.02	495.01	990.56	496.02	30.06	-1.761	0.000	0.048
174.50	-5.86	-3.03	0.00	-19.19	0.00	19.19	986.24	493.12	980.92	491.19	30.24	-1.763	0.000	0.045

Calculated Forces

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 82	

175.00	-3.76	-2.12	0.00	-17.68	0.00	17.68	982.43	491.22	971.29	486.37	30.43	-1.766	0.000	0.040
176.00	-3.70	-2.10	0.00	-15.56	0.00	15.56	974.75	487.37	952.10	476.76	30.80	-1.770	0.000	0.036
178.00	-3.58	-2.07	0.00	-11.35	0.00	11.35	959.09	479.55	914.00	457.68	31.54	-1.778	0.000	0.029
179.50	-3.21	-1.52	0.00	-8.25	0.00	8.25	947.09	473.55	885.67	443.49	32.10	-1.782	0.000	0.022
180.00	-3.18	-1.51	0.00	-7.49	0.00	7.49	943.04	471.52	876.28	438.79	32.29	-1.783	0.000	0.020
182.00	-3.06	-1.48	0.00	-4.47	0.00	4.47	926.61	463.30	838.97	420.11	33.04	-1.787	0.000	0.014
184.00	-2.95	-1.45	0.00	-1.51	0.00	1.51	909.78	454.89	802.09	401.64	33.78	-1.789	0.000	0.007
185.00	0.00	-1.36	0.00	-0.06	0.00	0.06	901.22	450.61	783.83	392.50	34.16	-1.790	0.000	0.000

Final Analysis Summary

Structure:	CT00707-S-SBA	**Code:**	EIA/TIA-222-G	10/30/2019	
Site Name:	North Easton	**Exposure:**	B		
Height:	185.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 83	

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 101 mph Wind	53.7	0.00	74.51	0.00	0.00	7713.40
0.9D + 1.6W 101 mph Wind	53.7	0.00	55.87	0.00	0.00	7628.81
1.2D + 1.0Di + 1.0Wi 50 mph Wind	14.3	0.00	121.59	0.00	0.00	2091.54
1.2D + 1.0E	3.3	0.00	74.54	0.00	0.00	455.14
0.9D + 1.0E	3.3	0.00	55.91	0.00	0.00	449.93
1.0D + 1.0W 60 mph Wind	11.8	0.00	62.12	0.00	0.00	1692.52

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 101 mph Wind	-74.51	-53.67	0.00	-7713.4	0.00	-7713.4	6186.26	3093.1	18350.4	9188.88	0.00	0.852
0.9D + 1.6W 101 mph Wind	-55.87	-53.66	0.00	-7628.8	0.00	-7628.8	6186.26	3093.1	18350.4	9188.88	0.00	0.840
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-40.82	-9.39	0.00	-159.01	0.00	-159.01	1132.15	566.08	1428.97	715.55	152.00	0.259
1.2D + 1.0E	-18.49	-2.33	0.00	-54.10	0.00	-54.10	1132.15	566.08	1428.97	715.55	152.00	0.092
0.9D + 1.0E	-13.86	-2.29	0.00	-53.38	0.00	-53.38	1132.15	566.08	1428.97	715.55	152.00	0.087
1.0D + 1.0W 60 mph Wind	-15.22	-7.61	0.00	-130.06	0.00	-130.06	1132.15	566.08	1428.97	715.55	152.00	0.195

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
145.8	151.8	(3) LNP-LP6X100-G-10CT	737.5	17.70	33.7	133.3	33.7	4	8	153.3	33.7	5	8	168.07	297.8	292.50	0.575

Base Plate Summary

Structure:	CT00707-S-SB		**Code:**	EIA/TIA-222-G	10/30/2019
Site Name:	North Easton		**Exposure:**	B	
Height:	185.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 84

Tower Engineering Solutions

Reactions		Base Plate		Anchor Bolts	
Original Design		**Yield (ksi):**	50.00	**Bolt Circle:**	79.87
Moment (kip-ft):	7275.00	**Width (in):**	79.62	**Number Bolts:**	24.00
Axial (kip):	52.00	**Style:**	Square	**Bolt Type:**	2.25" 18J
Shear (kip):	52.50	**Polygon Sides:**	0.00	**Bolt Diameter (in):**	2.25
Analysis		**Clip Length (in):**	0.00	**Yield (ksi):**	75.00
Moment (kip-ft):	7713.40	**Effective Len (in):**	8.46	**Ultimate (ksi):**	100.00
Axial (kip):	121.59	**Moment (kip-in):**	730.42	**Arrangement:**	Clustered
Shear (kip):	53.67	**Allow Stress (ksi):**	67.50	**Cluster Dist (in):**	6.00
		Applied Stress (ksi):	0.00	**Start Angle (deg):**	45.00
Moment Design %:	106.03	**Stress Ratio:**	0.63	Compression	
				Force (kip):	198.22
				Allowable (kip):	260.00
				Ratio:	0.78
				Tension	
				Force (kip):	188.08
				Allowable (kip):	260.00
				Ratio:	0.74

Monopole Mat Foundation Design

			Date: 10/30/2019
Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	185
Site Nmber:	CT00707-S-SBA	**Engineer Name:**	H. You
Engr. Number:	88437	**Manager Login Req'd:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

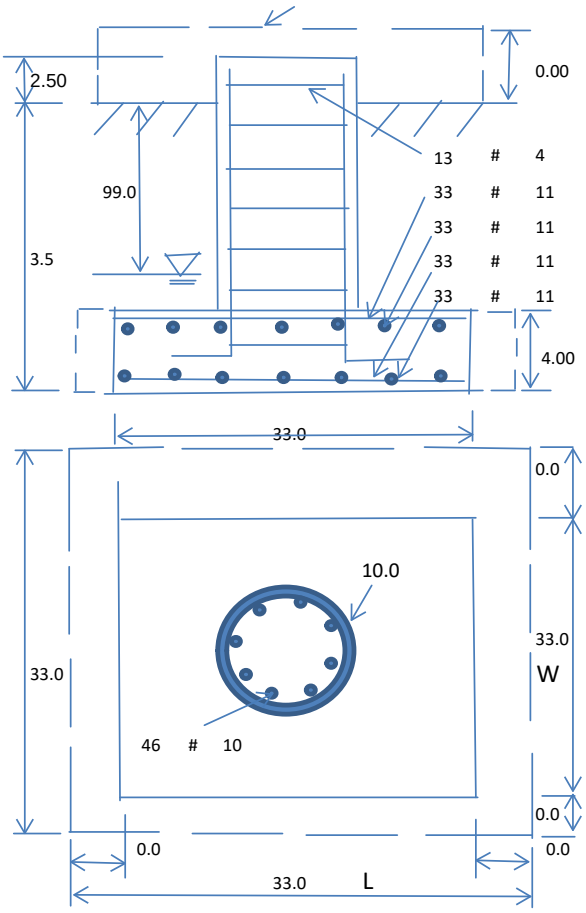
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	121.6	Shear Force (Kips):	53.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	7713.4
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	10.0	Depth of Base BG (ft.):	3.5
Pier Height A. G. (ft.):	2.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	33	Width of Pad (ft.):	33
Final Length of pad (ft)	33.0	Final width of pad (ft):	33.0
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	46	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	11	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	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):	110.0	Soil Buoyant Weight:	58.6	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	80000	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 hori. force for O.T.M.:	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.):	2.02	Total Dry Soil Weight (Kips):	0.22
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.22	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4552.51	Total Dry Concrete Weight (Kips):	682.88
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	682.88	Total Vertical Load on Base (Kips):	804.70

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2617	<	Allowable Factored Soil Bearing (psf): 60000	0.04	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	12150.4	>	Design Factored Momont (kips-ft): 8063	0.66	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.51	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):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	14498.0 >	Design Factored Moment (Mu, Kips-Ft	7847.8	0.54	OK!
Calculated Shear Capacity (Kips):	1313.2 >	Design Factored Shear (Kips):	53.7	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3154.7 >	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	14919.2 >	Design Factored Axial Load (Pu Kips):	121.6	0.01	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.55 OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is too small			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	1441.7 >	One-Way Factored Shear (L-D. Kips):	382.6	0.27	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1441.7 >	One-Way Factored Shear (W-D., Kips)	382.6	0.27	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1602.0 >	One-Way Factored Shear (C-C, Kips):	655.1	0.41	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0029 OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0029		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	9911.1 >	Moment at Bottom (L-Direct. K-Ft):	1493.5	0.15	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	9911.1 >	Moment at Bottom (W-Direct. K-Ft):	1493.5	0.15	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	13879.8 >	Moment at Bottom (C-C Dir. K-Ft):	2112.2	0.15	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0029 OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0029		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	9911.1 >	Moment at the top (L-Dir Kips-Ft):	57.1	0.01	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	9911.1 >	Moment at the top (W-Dir Kips-Ft):	57.1	0.01	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	13879.8 >	Moment at the top (C-C Direc. K-Ft):	818.2	0.06	OK!

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

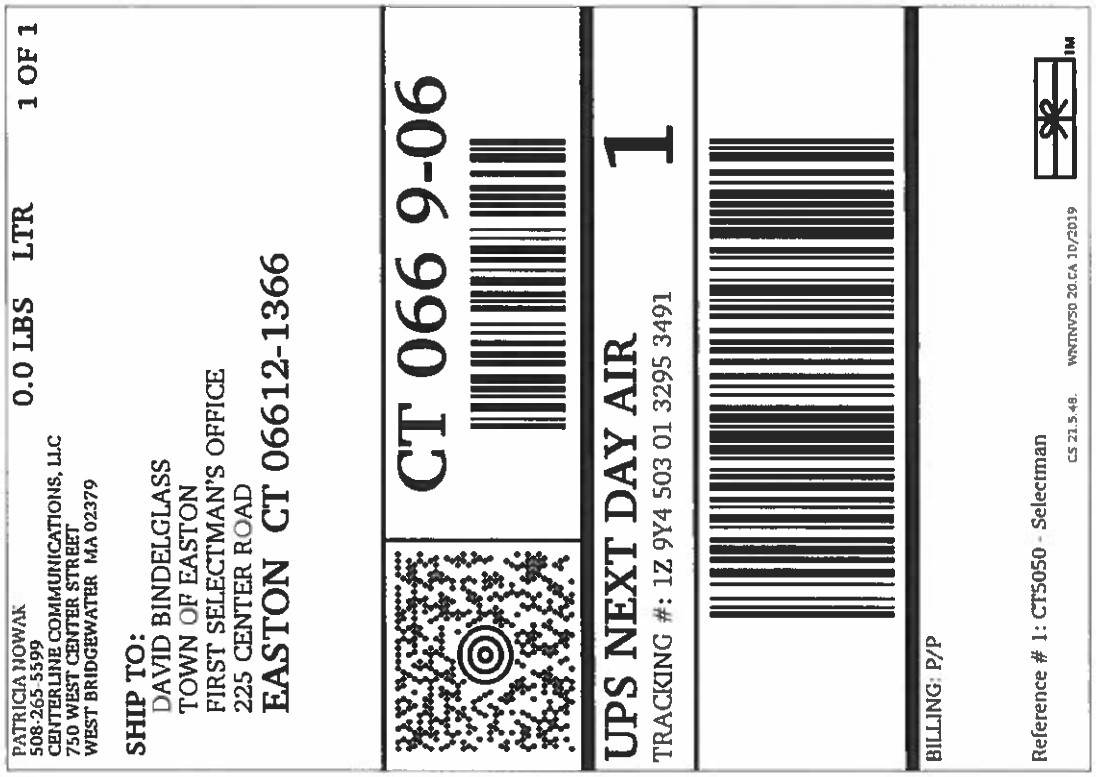
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

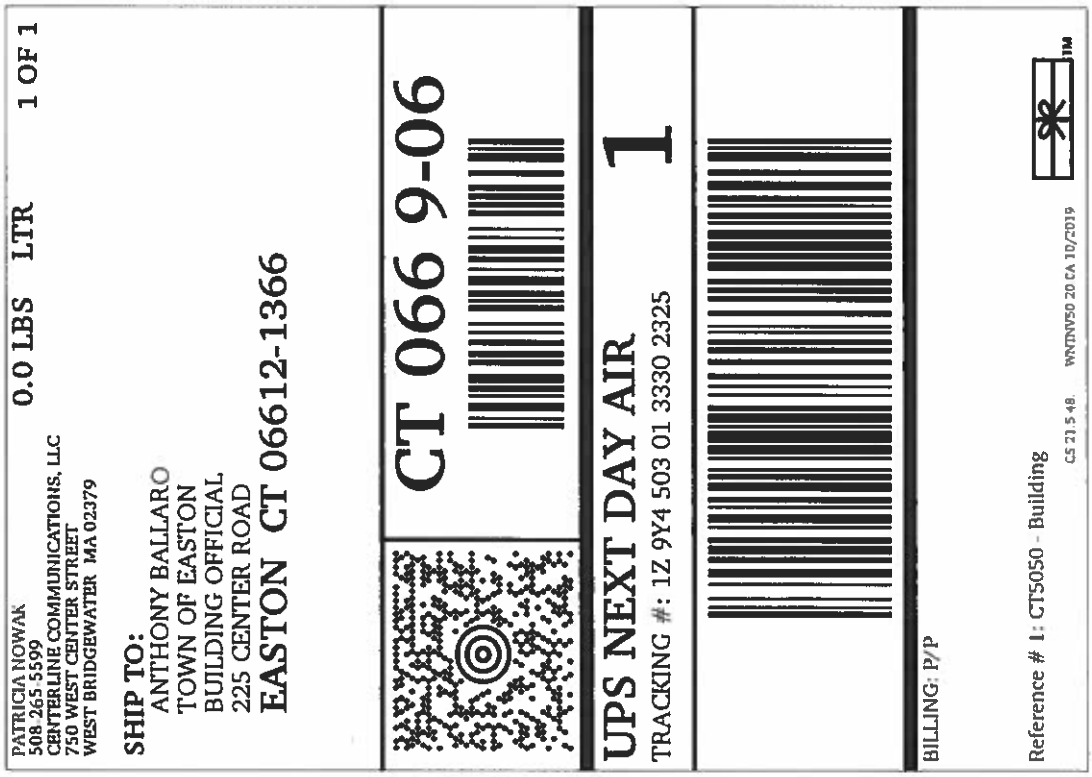
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

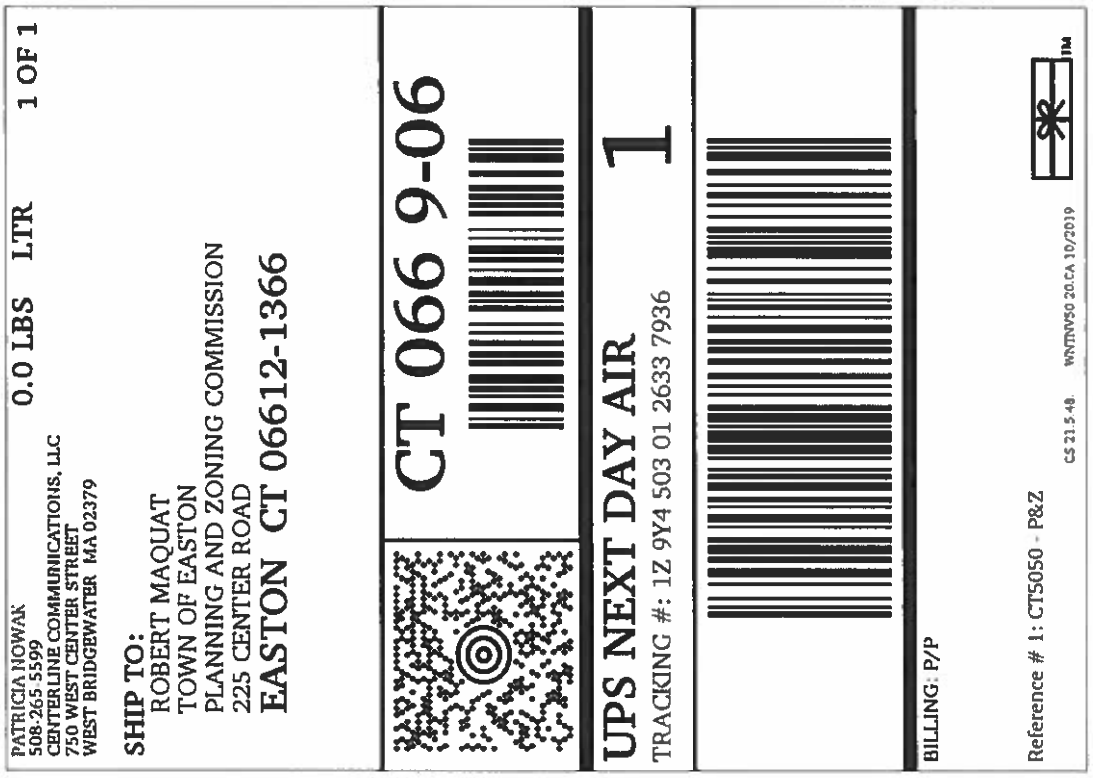
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE