NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
denise@northeastsitesolutions.com

May 25, 2017

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

RE: Notice of Exempt Modification
1294 Pleasant Valley Road, Groton CT 06340
Latitude: 41.399972
Longitude: -72.079222
T-Mobile Site#: CT11311G_L1900

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 149-foot monopole located at 1294 Pleasant Valley Road, Groton CT 06340. T-Mobile currently maintains six (6) antennas at the 140-foot level of the existing 149-foot tower. The monopole is owned by SBA. The property is owned by JFM Enterprises LLC. T-Mobile now intends to replace three (3) existing antenna with three (3) new 1900/2100 MHz antenna. The new antennas would be installed at the 140-foot and level of the tower.

Planned Modifications:

Remove:
NONE

Remove and Replace:
(3) AIR21 Antenna **(Remove) –** (3) AIR32DB B66Aa B2a Antenna **(Replace)**

Install New:
(1) Hybrid Line

Existing to Remain:
(12) 1-5/8" Coax
(1) Hybrid line
(3) AIR21 Antenna
(3) TMA

This facility was approved by the CT Siting Council. Per the attached Petition No. 835 – Dated December 6, 2007. Approval for a 10-foot extension to the existing 140-foot tower. Please see attached.

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Honorable Bruce Flax, Mayor, as Elected Official for the Town of Groton and Kevin Quinn, Manager of Inspections as well as the property owner and the tower owner.

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

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

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

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

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

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

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

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

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 199 Brickyard Rd, Farmington, CT 06032
Email: denise@northeastsitesolutions.com

Attachments
cc: Bruce Flax – Mayor - as elected official
Kevin Quinn- Manager of Inspections
SBA - Tower owner
JFM Enterprises LLC - Property owner

Exhibit A

DOCKET NO. 330 – Optasite Towers, LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 1294 Pleasant Valley Road North in Groton, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		June 7, 2007

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Pubic Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers, LLC for the construction, maintenance and operation of a wireless telecommunications facility to be located at 1294 Pleasant Valley Road North in Groton, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be designed as a steel monopole and shall be constructed no taller than 140 feet above ground level to provide telecommunications services to both public and private entities.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Groton and all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

   a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antenna mountings, equipment building, access road, utility line, and landscaping; and

   b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Groton public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Groton. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the New London Day and the Norwich Bulletin.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors in this proceeding are:

Status Granted	**Status Holder (name, address & phone number)**	**Representative (name, address & phone number)**
Applicant	Optasite Towers, LLC One Research Drive, Suite 200C Westborough, MA 01581 Omnipoint Communications, Inc. 100 Filley Street Bloomfield, CT 06002	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com clarson@cohenandwolf.com

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a telecommunications facility at 1294 Pleasant Valley Road North, Groton, Connecticut; and voted as follows to approve the proposed facility located at 1294 Pleasant Valley Road North, Groton, Connecticut:

Council Members	Vote Cast
Daniel F. Caruso, Chairman	Yes
Colin C. Tait, Vice Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Gina McCarthy Designee: Brian J. Emerick	Abstain
Philip T. Ashton	Yes
Daniel P. Lynch, Jr.	Abstain
James J. Murphy, Jr.	Yes
Dr. Barbara Currier Bell	Yes
Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, June 7, 2007.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 330 has been forwarded by Certified First Class Return Receipt Requested mail on June 12, 2007, to all parties and intervenors of record as listed on the attached service list, dated February 26, 2007.

ATTEST:

Lisa A. Fontaine
Administrative Assistant
Connecticut Siting Council

Date: February 26, 2007

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Deborah S. Erickson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com clarson@cohenandwolf.com derickson@cohenandwolf.com

Exhibit B

1294 PLEASANT VALLEY RD NORTH

Property Information

PIN: 178010470143
PROPERTY TYPE: COMMERCIAL
DISTRICT: POQUONNOCK BRIDGE FIRE DISTRICT
OWNER: JFM ENTERPRISES LLC
ACREAGE: 3.66AC.
ZONING: RU-20
USE CODE: SMALL RETAIL AND SERVICE STORES UNDER 10
CT GRAND LIST CODE: COMMERCIAL
LIVING UNITS: N/A
NEIGHBORHOOD: 3100
DEED BOOK/PAGE: 774/624
LAND VALUE: $197,900
BUILDING VALUE: $75,100
TOTAL VALUE: $273,000
GROSS ASSESSED VALUE: $191,100

Structure Information

CARD: 1 OF 1
BUILDING #: 1
IMPROVED NAME: PAWS PLACE
YEAR BUILT: 1975
OF UNITS: 1
IDENTICAL UNITS: 1
STRUCTURE TYPE: RETAIL-SINGLEOCCUPANCY
BUILDING AREA: 2388 SQFT
STRUCTURE GRADE: D+

Sales Information

SALE DATE: 6/20/2002
SALE PRICE: $150,000
DEED BOOK/PAGE: 774/624

SALE DATE: 10/23/2000
SALE PRICE: $140,000
DEED BOOK/PAGE: 721/770

SALE DATE: 10/1/1997
SALE PRICE: $123,380

DEED BOOK/PAGE: 651/124

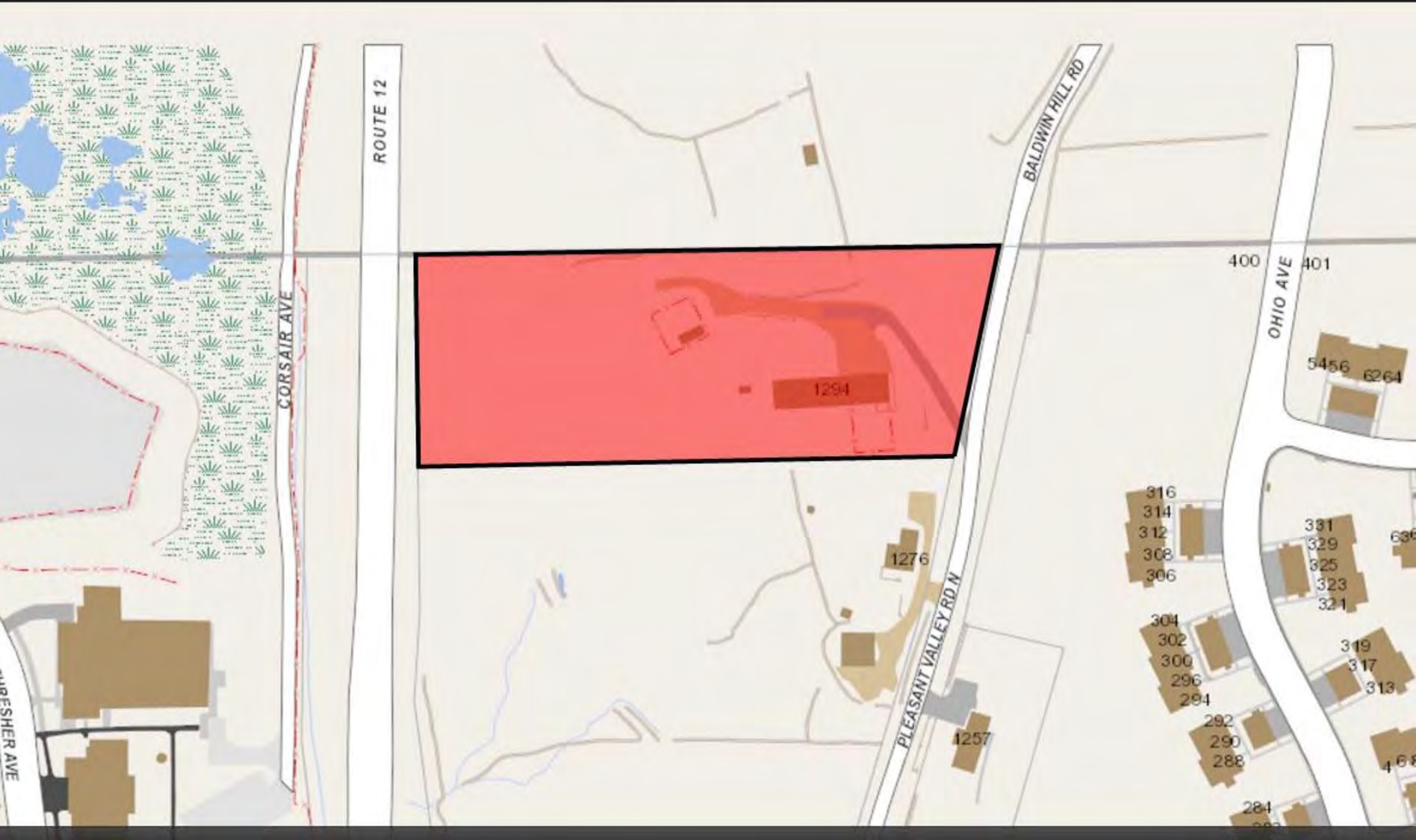

ROUTE 12
BALDWIN HILL RD
OHIO AVE
CORSAIR AVE
PLEASANT VALLEY RD N
1294
1276
1257
400
401
5456
6264
316
314
312
308
306
331
329
325
323
321
304
302
300
296
294
319
317
313
292
290
288
284

Exhibit C

ANTENNA UPGRADES
BY

T··Mobile·

T-MOBILE NORTHEAST LLC

SITE NUMBER: CT11311G
SITE NAME: CT311/Opta Paws Place
SITE ADDRESS: 1294 Pleasant Valley Road North
Groton, CT 06340
(92DB CONFIGURATION)

PROJECT SCOPE:

T-MOBILE, A WIRELESS TELECOMMUNICATIONS PROVIDER PROPOSES TO UPGRADE THEIR EXISTING FACILITY AS FOLLOWS:
ADD: (3) NEW ANTENNAS AND (1) HYBRID CABLE.
REMOVE: (3) ANTENNAS .

PROJECT NOTES:

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION: HANDICAPPED ACCESS IS NOT REQUIRED. POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.

APPLICABLE STATE ADOPTION CODES:

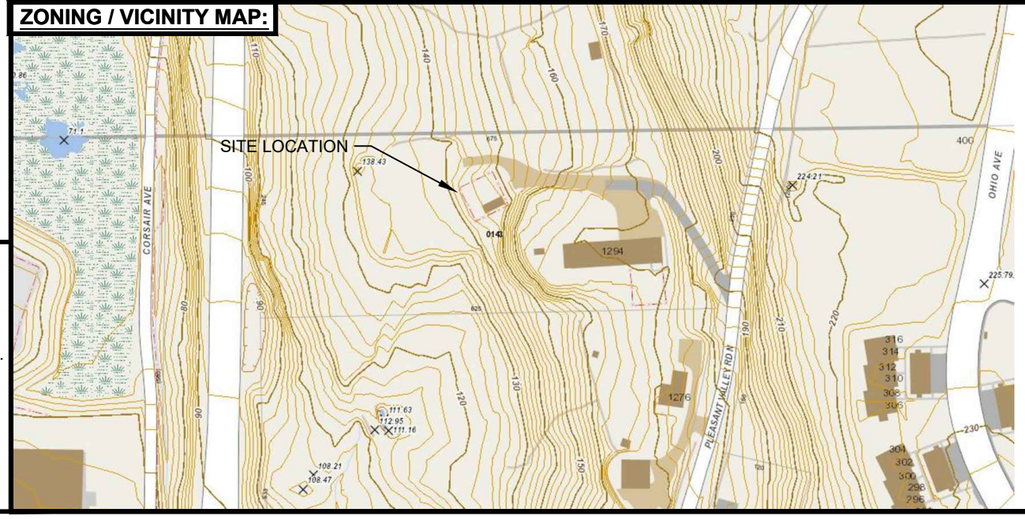
2016 CONNECTICUT STATE BUILDING CODE (CSBC).

ANSI/TIA-222-G-2005 STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

2014 NATIONAL ELECTRICAL CODE (NFPA 70) FOR POWER AND GROUNDING REQUIREMENTS.

SITE IMAGE:

ZONING / VICINITY MAP:



PROJECT INFORMATION:

ADDRESS:	1294 Pleasant Valley Road North Groton, CT 06340
STRUCTURE TYPE:	Monopole
ZONING DISTRICT:	RU-20
PARCEL ID:	178010470143
COORDINATES:	N 41.39983133 & W 72.07844740
ANTENNA HEIGHT:	140' AGL

PROJECT TEAM:

APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 860-692-7100
LANDLORD:	JFM ENTERPRISES LLC C/O JENNIFER MACIEROWSKI 920 PLEASANT VALLEY RD N GROTON CT 06340
PROJECT MANGER:	NORTHEAST SITE SOLUTIONS 420 MAIN STREET, BLDG 4 STURBRIDGE, MA 01566 SHELDON FREINCLE SHELDON@NORTHEASTSITE SOLUTIONS.COM 201-776-8521
CONSULTANTS:	FORESITE LLC 462 WALNUT ST NEWTON, MA 02460 SAEED MOSSAVAT SMOSSAVAT@FORESITELLC.COM 617-212-3123

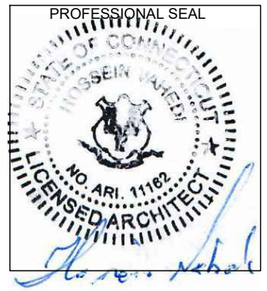
SHEET INDEX:

APPLICANT:
T··Mobile·
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 Main Street, Bldg 4
Sturbridge, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 Walnut street
Newton, MA 02460
617-212-3123

PROFESSIONAL SEAL



REV	DESCRIPTION	DATE
A	PRELIMINARY	04/03/17
0	ISSUED FOR PERMITTING	05/05/17

SITE NUMBER: CT11311G
SITE NAME: CT311/Opta Paws Place
SITE ADDRESS: 1294 Pleasant Valley Road North
GROTON, CT 06340

SHEET TITLE:
T-1: TITLE SHEET

NOTES AND DISCLAIMERS:

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CLIENT'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

7. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJEC

9. THE CONTRACTOR SHALL NOTIFY THE CLIENT'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CLIENT'S REPRESENTATIVE.

10. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

A. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS BUILDING CODES" OR LATEST EDITION.

B. AWS: AMERICAN WELDING SOCIETY INC. AS PUBLISHED IN "STANDARD D1.1-08, STRUCTURAL WELDING CODE" OR LATEST EDITION.

C. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).

11. BOLTING:

A. BOLTS SHALL BE CONFORMING TO ASTM A325 HIGH STRENGTH, HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.

B. BOLTS SHALL BE 3/4"ø MINIMUM (UNLESS OTHERWISE NOTED)

C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.

12. FABRICATION:

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES (LATEST EDITION).

B. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 (LATEST EDITION), UNLESS OTHERWISE NOTED.

13. ERECTION OF STEEL:

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.

14. ANTENNA INSTALLATION:

A. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.

B. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

C. INSTALL COAXIAL / FIBER CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.

15. ANTENNA AND COAXIAL / FIBER CABLE GROUNDING:

A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE #221213 OR EQUAL.

B. ALL COAXIAL / FIBER CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL / FIBER CABLE (NOT WITHIN BENDS).

16. RELATED WORK, FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

A. FLASHING OF OPENING INTO OUTSIDE WALLS

B. SEALING AND CAULKING ALL OPENINGS

C. PAINTING

D. CUTTING AND PATCHING

17. REQUIREMENTS OF REGULATORY AGENCIES:

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

C. TIA-EIA - 222 (LATEST EDITION). STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

D. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.

E. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.

F. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS (LATEST EDITION).

G. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.

H. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.

I. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.

J. 2009 LIFE SAFETY CODE NFPA - 101.

APPLICANT:

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANGER

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CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors
462 Walnut street
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PROFESSIONAL SEAL

REV	DESCRIPTION	DATE
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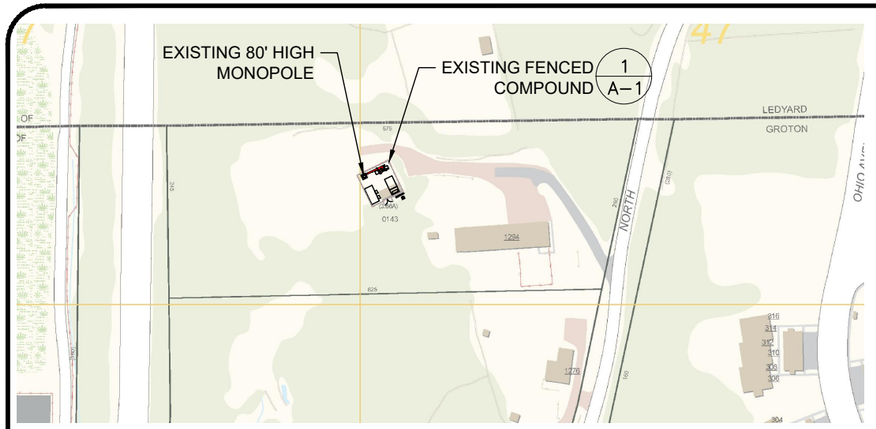
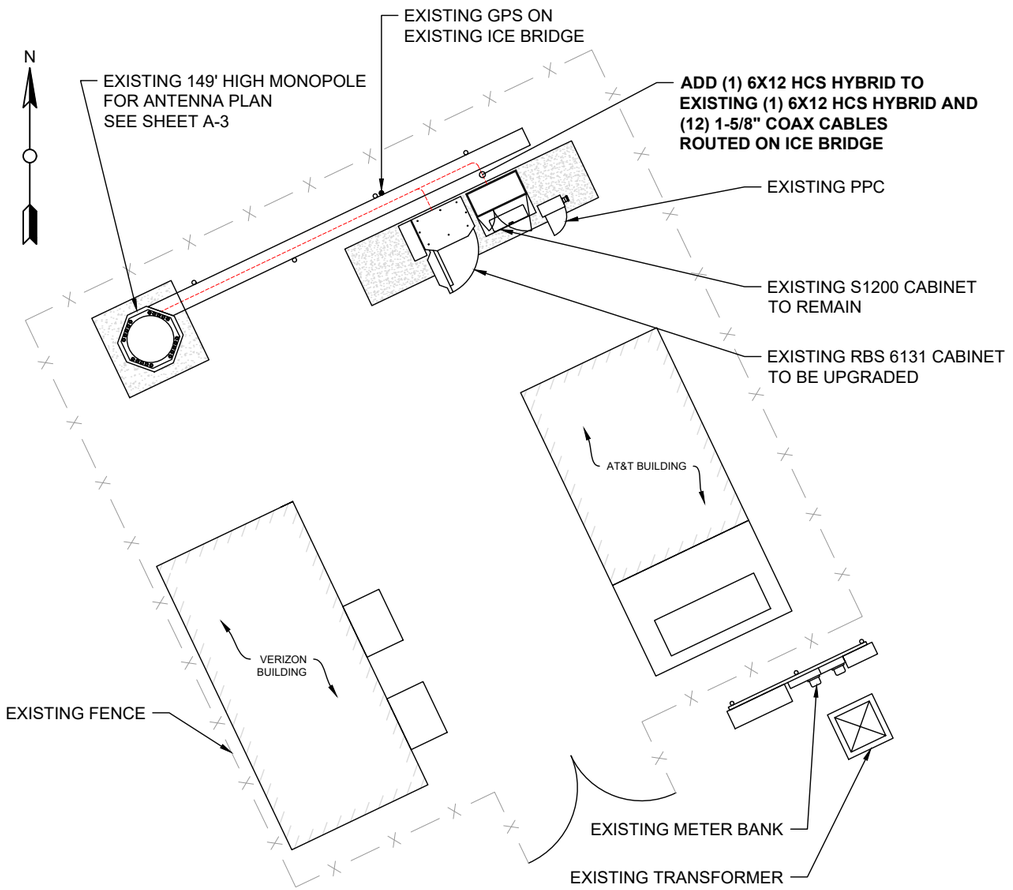
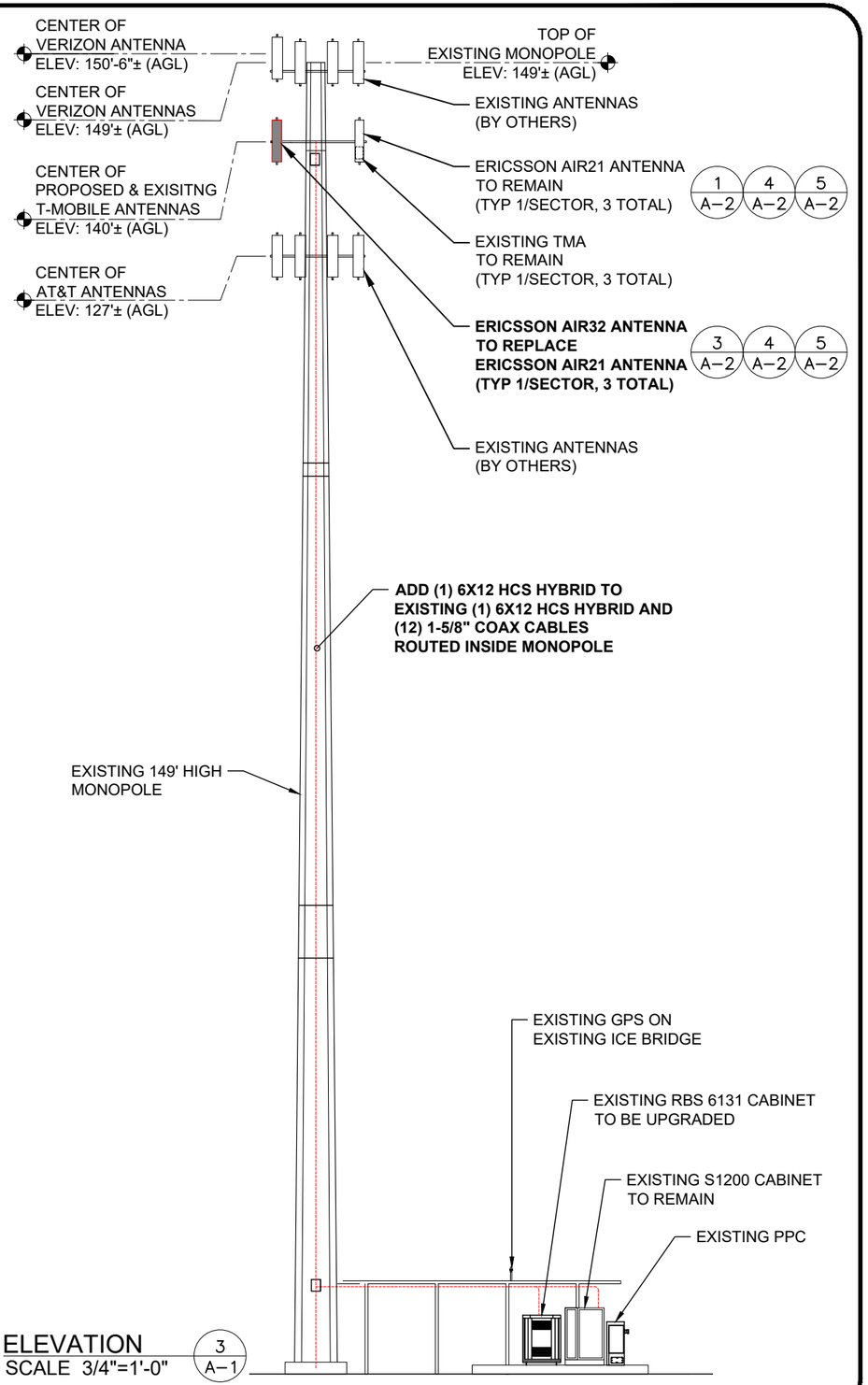


SITE PLAN
N.T.S
2
A–1



COMPOUND PLAN
SCALE 1"=1'-0"
1
A–1



ELEVATION
SCALE 3/4"=1'-0"
3
A–1

APPLICANT:
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

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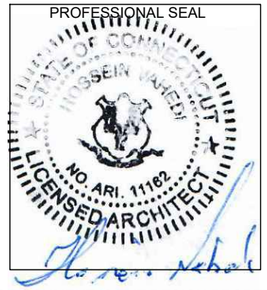
PROFESSIONAL SEAL



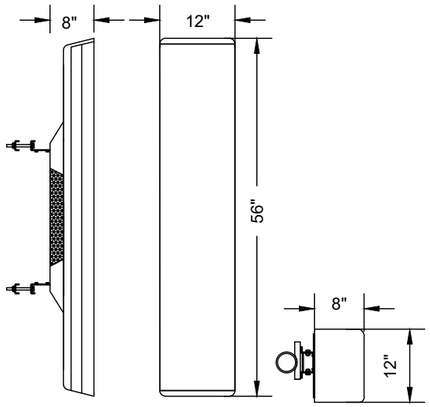
REV	DESCRIPTION	DATE
A	PRELIMINARY	04/03/17
0	ISSUED FOR PERMITTING	05/05/17

SITE NUMBER: CT11311G
SITE NAME: CT311/Opta Paws Place
SITE ADDRESS: 1294 Pleasant Valley Road North
GROTON, CT 06340

SHEET TITLE:
A-1: PLAN AND ELEVATION

REMAIN (3) REMOVE (3)

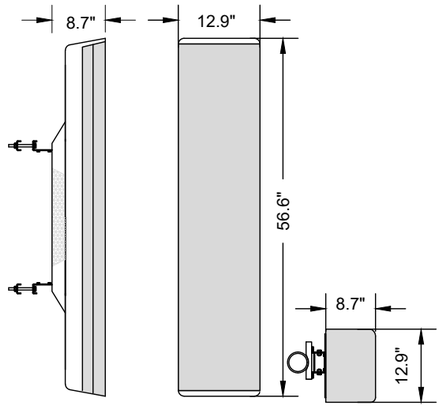
MANUFACTURER: ERICSSON
MODEL AIR-21 B2P/B4A
FOOTPRINT: 56.0"HX12.0"WX8.0"D
WEIGHT: 70 LBS



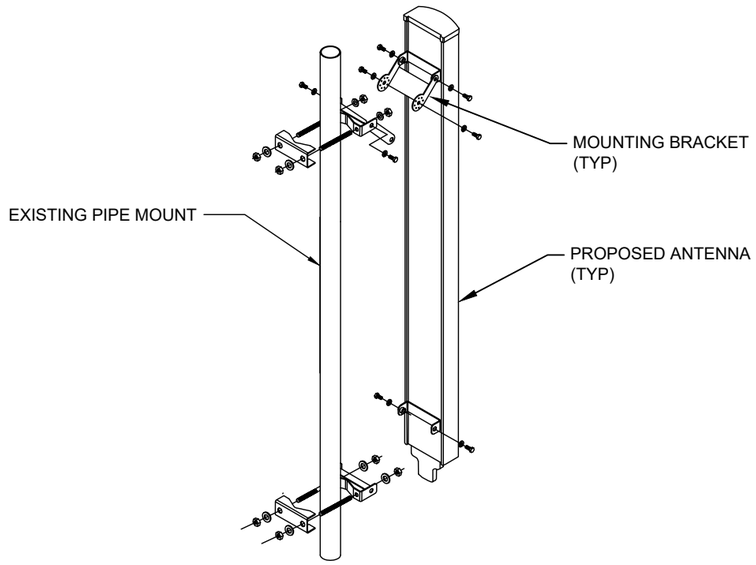
ANTENNAS TO REMAIN (1 / A–2)
N.T.S

ADD:
(3) ANTENNAS

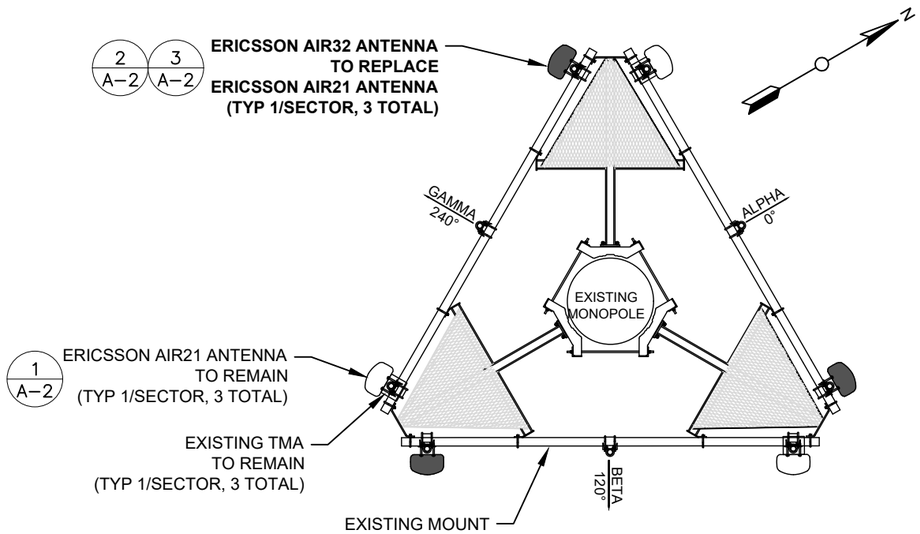
MANUFACTURER: ERICSSON
MODEL AIR-32 B66P/B2A
FOOTPRINT: 56.6"HX12.9"WX8.7"D
WEIGHT: 132.2 LBS



ERICSSON ANTENNAS (2 / A–2)
N.T.S



ANTENNA MOUNTING DETAIL (3 / A–2)
N.T.S



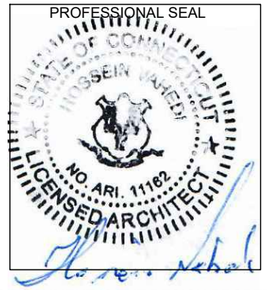
ANTENNA PLAN (4 / A–2)
N.T.S

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 Main Street, Bldg 4
Sturbridge, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 Walnut street
Newton, MA 02460
617-212-3123

PROFESSIONAL SEAL



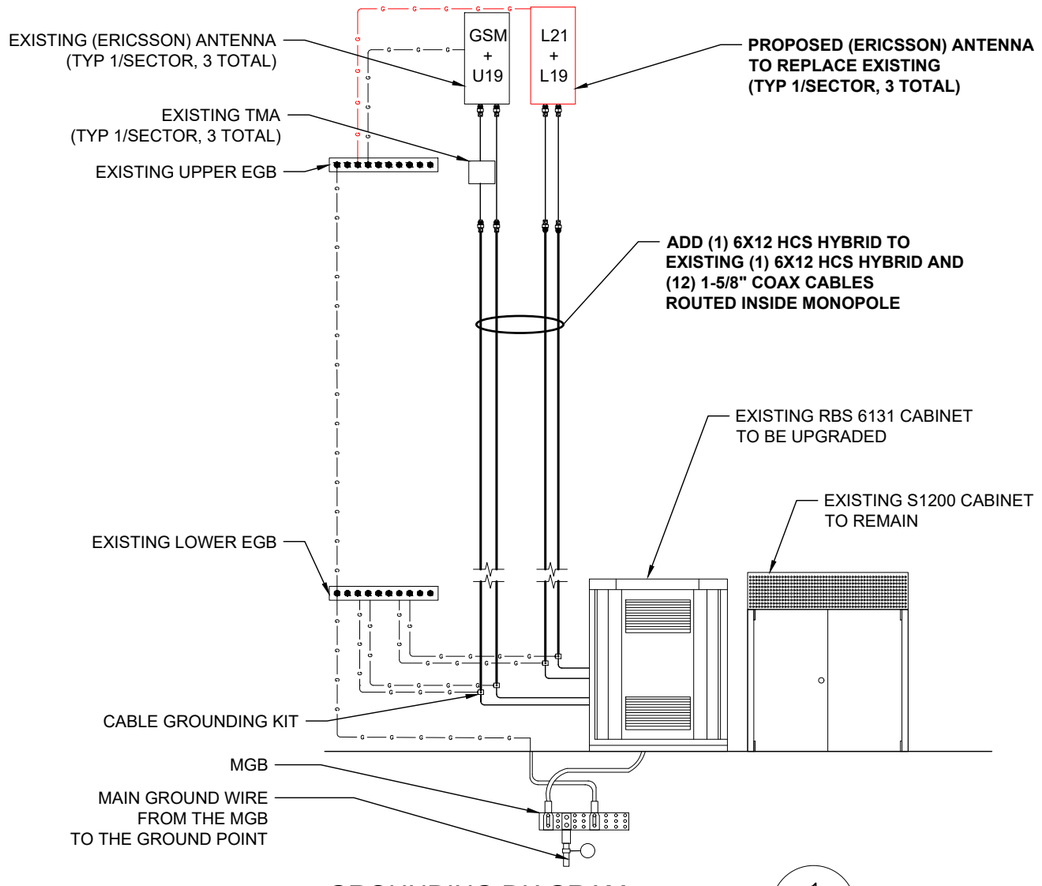
REV	DESCRIPTION	DATE
A	PRELIMINARY	04/03/17
0	ISSUED FOR PERMITTING	05/05/17

SITE NUMBER: CT11311G
SITE NAME: CT311/Opta Paws Place
SITE ADDRESS: 1294 Pleasant Valley Road North
GROTON, CT 06340

SHEET TITLE:
A-2: ANTENNA DETAILS

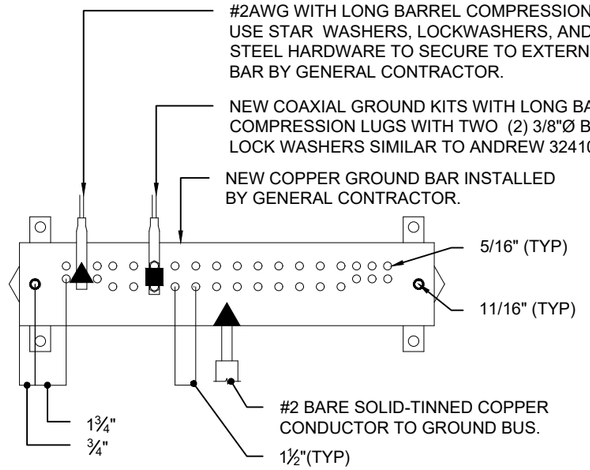
NOTES TO CONTRACTOR

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T-MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT . NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLAT ION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH NOMINAL
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.



GROUNDING DIAGRAM
SCALE: N.T.S

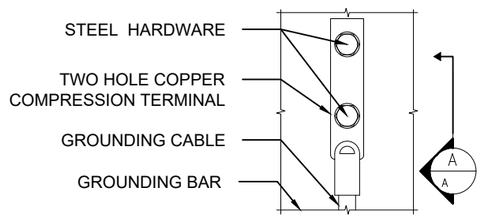
1
E–1



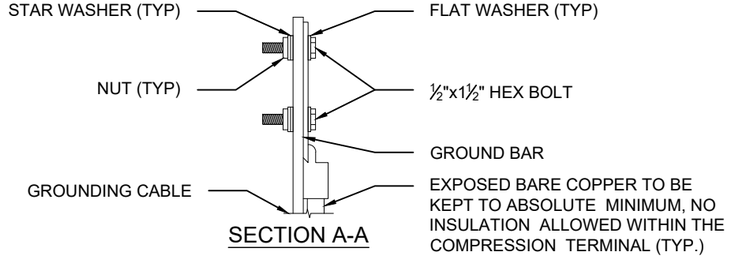
NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

GROUND BAR DETAILS
SCALE: N.T.S

2
E–1



ELEVATION



SECTION A-A

NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR CONNECTIOS DETAIL
SCALE: N.T.S

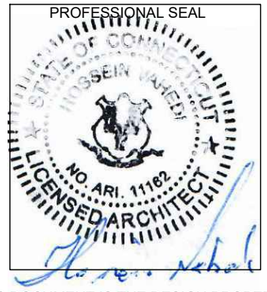
3
E–1

APPLICANT:
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 Main Street, Bldg 4
Sturbridge, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 Walnut street
Newton, MA 02460
617-212-3123

PROFESSIONAL SEAL



REV	DESCRIPTION	DATE
A	PRELIMINARY	04/03/17
0	ISSUED FOR PERMITTING	05/05/17

SITE NUMBER: CT11311G
SITE NAME: CT311/Opta Paws Place
SITE ADDRESS: 1294 Pleasant Valley Road North
GROTON, CT 06340

SHEET TITLE:
E-1: GROUNDING DETAILS

Exhibit D

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 149 ft. SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13075-A-01

Customer Site Name: New London

Carrier Name: T-Mobile

Carrier Site ID / Name: CT11311G / CT311/Opta Paws Place

Site Location: 1294 Pleasant Valley Road North

Groton, Connecticut

New London County

Latitude: 41.399972

Longitude: -72.079222

Analysis Result:

Max Structural Usage: 72.3% [Pass]

Max Foundation Usage: 82.0% [Pass]

Report Prepared By : Delu Zhou

5/1/17

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

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Longitude: -72.079222

Analysis Result:

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Max Foundation Usage: 82.0% [Pass]

Report Prepared By : Delu Zhou

Introduction

The purpose of this report is to summarize the analysis results on the 149 ft. SABRE 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	Tower Design prepared by Sabre, job # 08-07173, dated 08/09/2007
Foundation Drawing	Foundation Design prepared by Sabre, job # 08-07173-E, dated 08/09/2007
Geotechnical Report	Geotechnical Report prepared by Gemini Geotechnical Associates, job # 07079CT, dated 07/20/2007
Modification Drawings	N/A

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} = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 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 / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	S_S = 0.163, S_1 = 0.059

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	150.5	3	Commscope - SBNHH-1D65B - Panel	Low Profile Platform	(12) 1 5/8" (2) 1 5/8" Hybriflex Fiber	Verizon
2	149.0	3	Commscope - LNX-6514DS-VTM - Panel			
3		3	Antel - BXA-80063/4CF - Panel			
4		3	Commscope - SBNHH-1D65B - Panel			
5		3	Alcatel - RRH 2x60 700 - RRH			
6		3	Alcatel - RRH 4X45 AWS - RRH			
7		3	Alcatel - RRH 2x60W-1900MHz - RRH			
8		1	RFS - DB-TI-6Z-8AB-0Z - Distribution Box			
9		1	RFS - DB-T1-6Z-8AB-0Z - Distribution Box			
-	140.0	3	Ericsson - AIR B2A B4P - Panel	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		3	Ericsson - AIR B4A B2P - Panel			
-		3	Ericsson - KRY 112 144 T - TMA			
13	127.0	12	CCI - HPA-65R-BUU-8H - Panel	MTC3607 Platform + HR & Kicker	(2) 1/2" Fiber (8) 3/4" DC (3) 3/8" RET	New Cingular
14		9	Ericsson - RRUS 11 - RRU			
15		6	Ericsson - RRUS 12 - RRU			
16		3	Ericsson - RRUS 32 - RRU			
17		3	Ericsson - RRUS E2 - RRU			
18		6	Ericsson - RRUS A2 - RRU			
19		4	Raycap - DC6-48-60-18-8F			

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
10	140.0	3	Ericsson - AIR 21 B2A/B4P - Panel	Low Profile Platform	(12) 1 5/8" (2) 1 5/8" Fiber	T-Mobile
11		3	Ericsson - AIR 32 - Panel			
12	138.0	3	Ericsson - KRY 112 144/1 - TMA			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flange Plate
Max. Usage:	**72.3%**	**67.3%**	**62.1%**	**54.3%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4523.5	40.6	72.9

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 1.1531 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.

Antenna Mount Note:

The existing mount contributes no additional stress to the tower since it is existing on the tower.

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

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. 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.

7. 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.

8. 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.

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

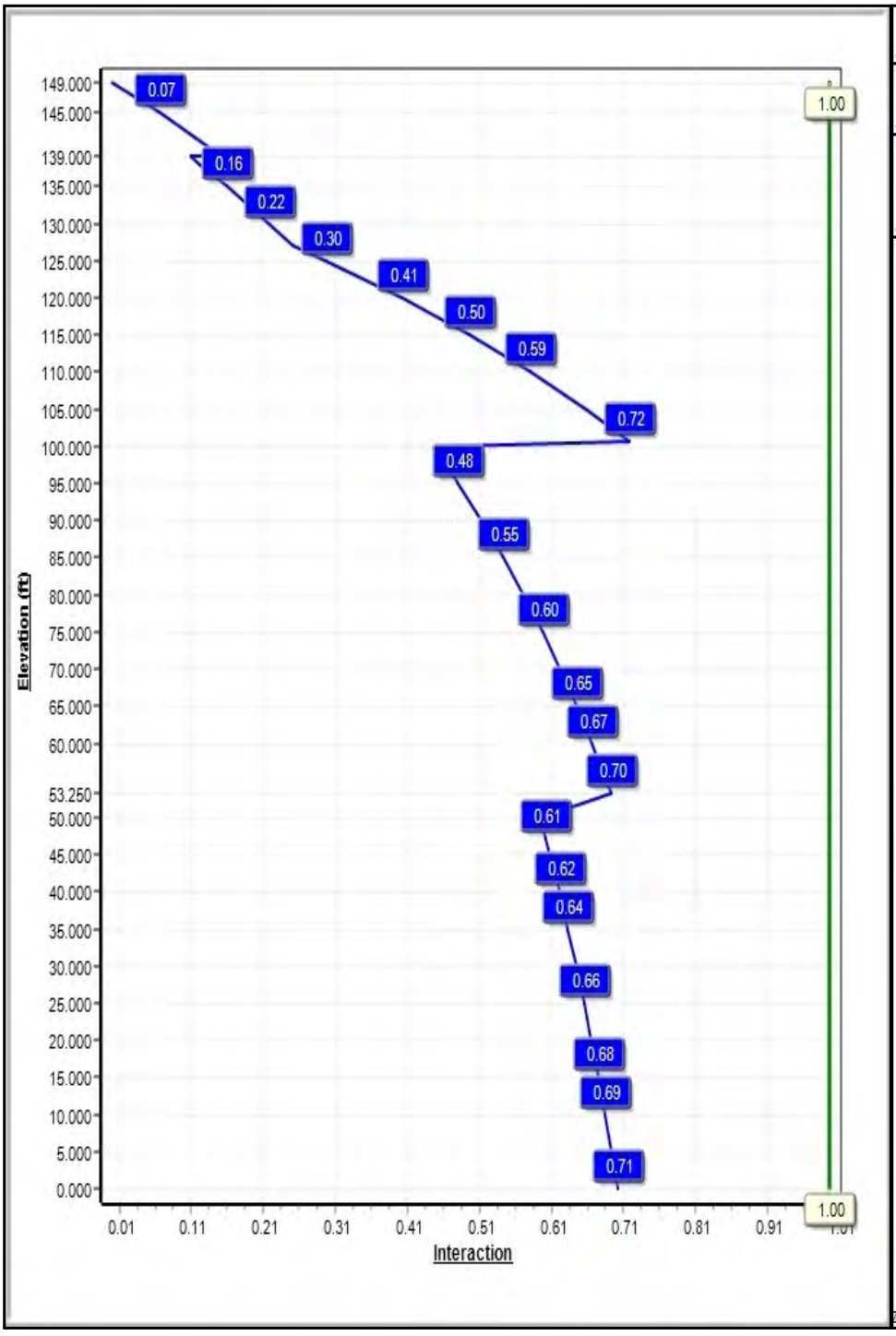
Usage Diagram - Max Ratio 72.33% at 100.8ft

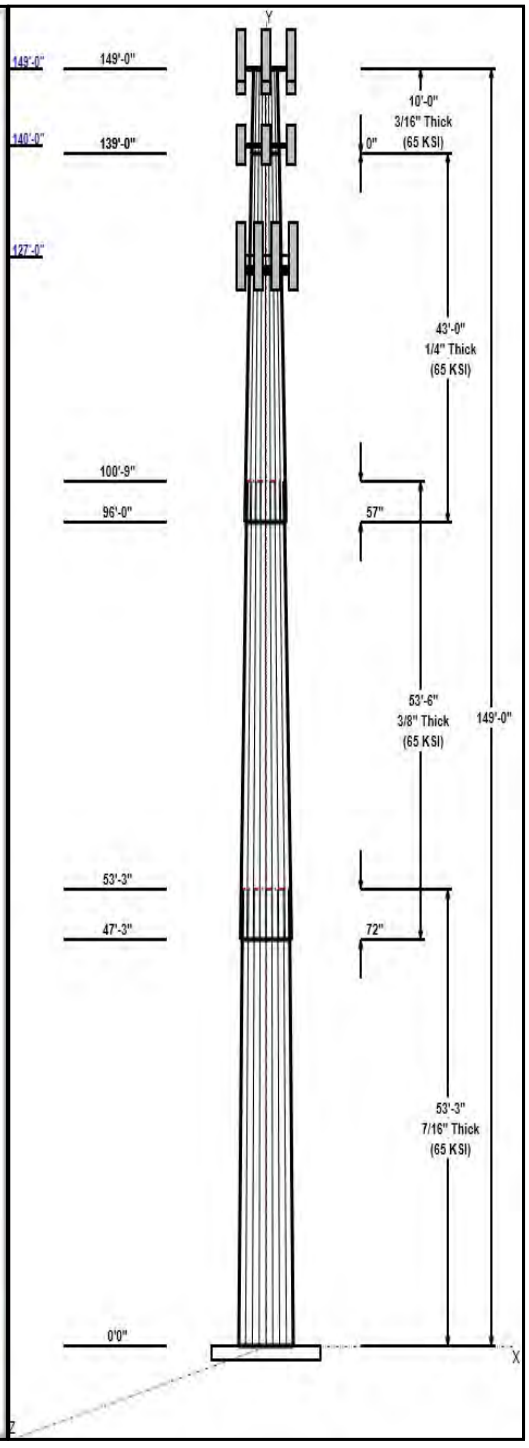
Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London	**Exposure:**	C	
Height:	149.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

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

Load Case : 1.2D + 1.6W 105 mph Wind





Structure: CT13075-A-SBA

Type: Tapered
Site Name: New London
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23597

5/1/2017

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	45.69	58.26	0.438		0.23597	65
2	53.50	35.24	47.86	0.375	Slip	0.23597	65
3	43.00	26.71	36.86	0.250	Slip	0.23597	65
4	10.00	24.35	26.71	0.188	Butt	0.23597	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.00	149.00	3	LNX-6514DS-VTM	Verizon
149.00	149.00	3	BXA-80063/4CF	Verizon
149.00	149.00	3	SBNHH-1D65B	Verizon
149.00	150.50	3	SBNHH-1D65B	Verizon
149.00	149.00	3	RRH2x60 700	Verizon
149.00	149.00	3	RRH 4X45 AWS	Verizon
149.00	149.00	3	RRH 2X60W-1900MHz	Verizon
149.00	149.00	1	DB-T1-6Z-8AB-0Z	Verizon
149.00	149.00	1	DB-T1-6Z-8AB-0Z	Verizon
149.00	149.00	1	Low Profile	Verizon
140.00	140.00	3	AIR 21 B2A/B4P	T-Mobile
140.00	140.00	3	AIR 32	T-Mobile
140.00	140.00	1	Low Profile Platform	T-Mobile
138.00	138.00	3	KRY 112 144/1	T-Mobile
127.00	127.00	9	RRUS 11	New Cingular
127.00	127.00	6	RRUS 12	New Cingular
127.00	127.00	3	RRUS 32	New Cingular
127.00	127.00	3	RRUS E2	New Cingular
127.00	127.00	6	RRUS A2	New Cingular
127.00	127.00	4	DC6-48-60-18-8F	New Cingular
127.00	127.00	1	MTC3607 Platform + HR &	New Cingular
127.00	127.00	12	HPA-65R-BUU-8H	New Cingular

Linear Appurtenances

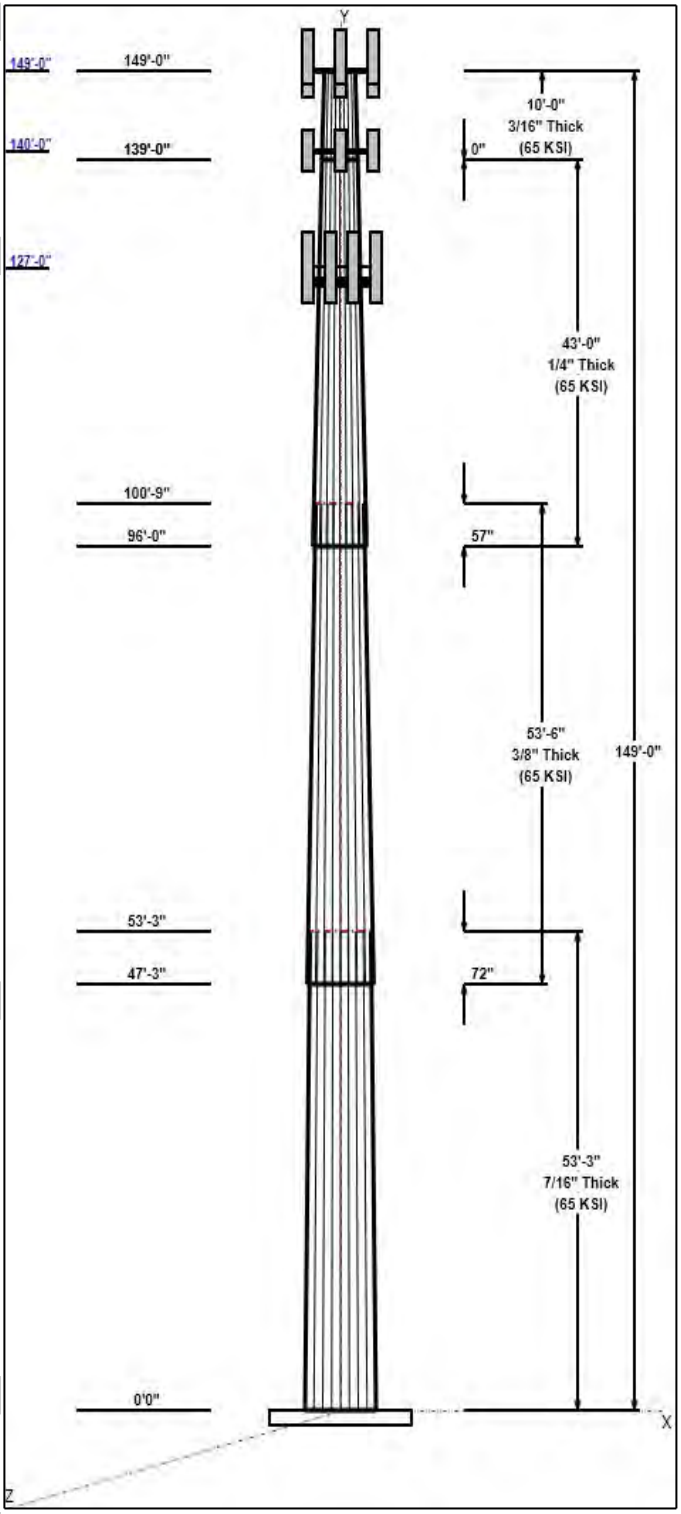
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	149.00	Inside	1 5/8" Coax	Verizon
0.00	149.00	Inside	1 5/8" Coax	Verizon
0.00	149.00	Inside	1 5/8" Coax	Verizon
0.00	149.00	Inside	1 5/8" Coax	Verizon
0.00	149.00	Inside	1 5/8" Hybriflex Fiber	Verizon
0.00	140.00	Inside	1 5/8" Coax	T-Mobile
0.00	140.00	Inside	1 5/8" Fiber	T-Mobile
0.00	127.00	Inside	1/2" Fiber	New Cingular
0.00	127.00	Inside	3/4" DC	New Cingular
0.00	127.00	Inside	3/8" RET	New Cingular

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry



2.7500	65.4	60.0	Clipped

Reactions

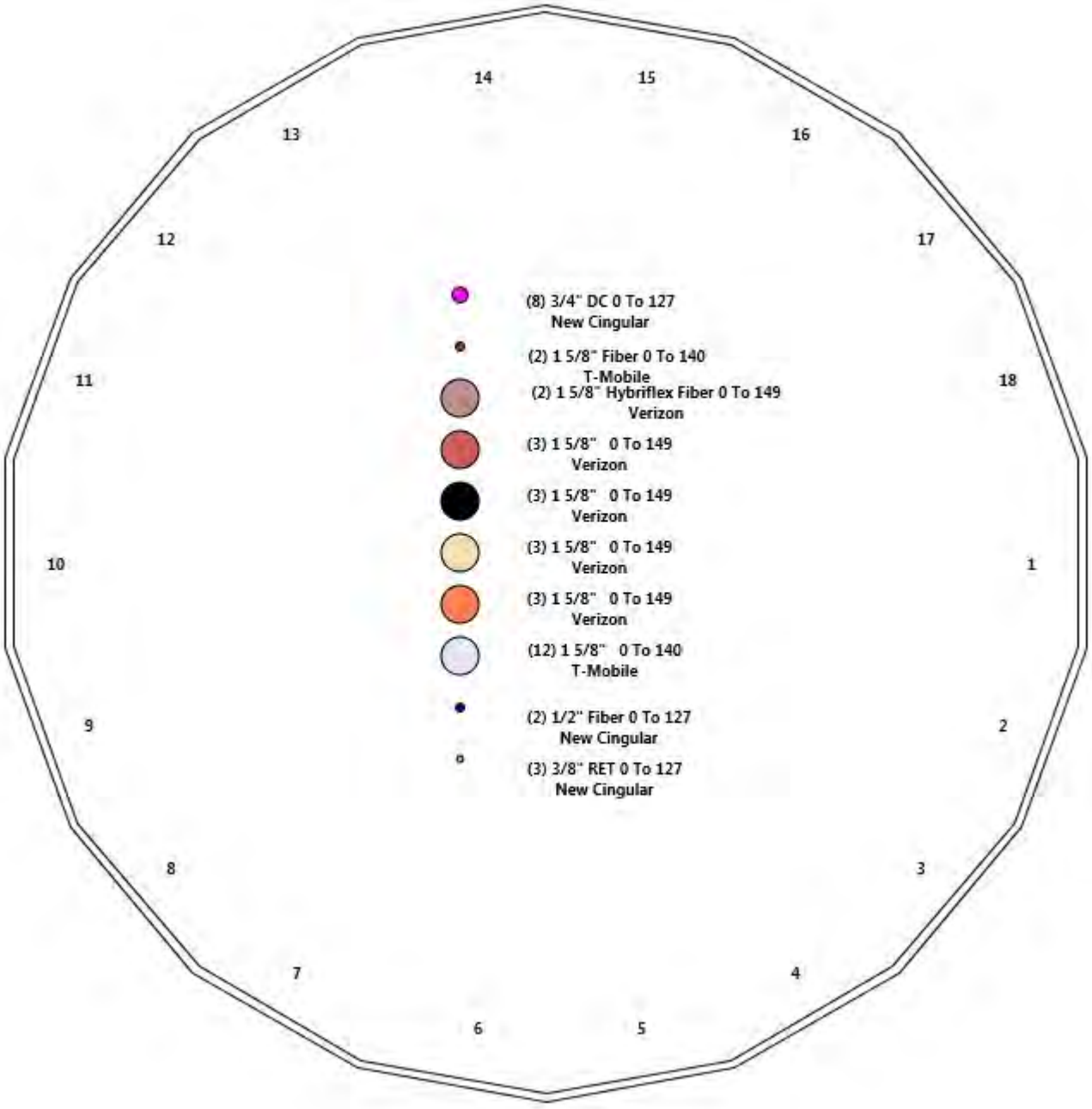
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	4523.5	40.6	47.3
0.9D + 1.6W 105 mph Wind	4487.3	40.6	35.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1022.2	9.4	72.9
1.2D + 1.0E	205.4	1.7	47.4
0.9D + 1.0E	203.6	1.7	35.6
1.0D + 1.0W 60 mph Wind	919.5	8.3	39.5

Structure: CT13075-A-SBA - Coax Line Placement

Type: Monopole
Site Name: New London
Height: 149.00 (ft)

5/1/2017

Tower Engineering Solutions



Shaft Properties

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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	53.250	0.4375	65		0.00	12,968
2	18	53.500	0.3750	65	Slip	72.00	8,921
3	18	43.000	0.2500	65	Slip	57.00	3,661
4	18	10.000	0.1875	65	Flange	0.00	513
					Total Shaft Weight:		**26,063**

	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	58.26	0.00	80.29	33916.66	22.07	133.17	45.69	53.25	62.84	16262.1	17.01	104.4	0.235973
2	47.86	47.25	56.52	16100.98	21.09	127.63	35.24	100.75	41.49	6370.66	15.16	93.96	0.235973
3	36.86	96.00	29.05	4917.70	24.58	147.43	26.71	139.00	21.00	1857.12	17.43	106.8	0.235973
4	26.71	139.0	15.78	1402.74	23.71	142.45	24.35	149.00	14.38	1060.65	21.49	129.8	0.235973

Load Summary

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 6

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	149.00	LNX-6514DS-VTM	3	38.80	8.17	0.83	214.98	10.991	0.83	0.00	0.00
2	149.00	BXA-80063/4CF	3	9.90	4.72	0.72	110.33	6.567	0.72	0.00	0.00
3	149.00	SBNHH-1D65B	3	40.60	8.08	0.83	242.97	9.459	0.83	0.00	0.00
4	149.00	SBNHH-1D65B	3	40.00	8.16	0.83	242.97	9.459	0.83	0.00	1.50
5	149.00	RRH2x60 700	3	51.00	1.51	1.50	151.17	1.934	1.47	0.00	0.00
6	149.00	RRH 4X45 AWS	3	64.00	2.60	0.80	147.52	3.304	0.80	0.00	0.00
7	149.00	RRH 2X60W-1900MHz	3	46.00	1.88	0.84	115.05	2.466	0.84	0.00	0.00
8	149.00	DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.67	162.51	5.673	0.67	0.00	0.00
9	149.00	DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.67	162.51	5.673	0.67	0.00	0.00
10	149.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2808.04	39.650	1.00	0.00	0.00
11	140.00	AIR 21 B2A/B4P	3	83.00	6.09	0.86	250.55	7.135	0.86	0.00	0.00
12	140.00	AIR 32	3	108.50	6.51	0.87	275.46	6.859	0.87	0.00	0.00
13	140.00	Low Profile Platform	1	1500.00	22.00	1.00	2799.91	39.540	1.00	0.00	0.00
14	138.00	KRY 112 144/1	3	11.02	0.41	0.70	21.73	0.881	0.70	0.00	0.00
15	127.00	RRUS 11	9	50.70	2.52	0.71	138.10	3.160	0.71	0.00	0.00
16	127.00	RRUS 12	6	60.00	2.70	0.75	125.91	3.349	0.75	0.00	0.00
17	127.00	RRUS 32	3	77.00	1.65	0.70	124.43	2.219	0.70	0.00	0.00
18	127.00	RRUS E2	3	60.00	2.70	0.75	133.08	3.759	0.75	0.00	0.00
19	127.00	RRUS A2	6	21.20	1.86	0.62	56.71	2.818	0.62	0.00	0.00
20	127.00	DC6-48-60-18-8F	4	31.80	0.92	1.00	92.60	1.351	1.00	0.00	0.00
21	127.00	MTC3607 Platform + HR & Kicker	1	2246.00	51.70	1.00	5330.04	89.325	1.00	0.00	0.00
22	127.00	HPA-65R-BUU-8H	12	68.00	12.98	0.79	353.46	14.567	0.79	0.00	0.00
		Totals:	**78**	**9,059.96**			**24,304.30**				

Linear Appurtenances

Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Exposed Width**	**Exposed**
0.00	149.00	(3) 1 5/8" Coax	0.00	Inside
0.00	149.00	(3) 1 5/8" Coax	0.00	Inside
0.00	149.00	(3) 1 5/8" Coax	0.00	Inside
0.00	149.00	(3) 1 5/8" Coax	0.00	Inside
0.00	149.00	(2) 1 5/8" Hybriflex Fiber	0.00	Inside
0.00	140.00	(12) 1 5/8" Coax	0.00	Inside
0.00	140.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	127.00	(2) 1/2" Fiber	0.00	Inside
0.00	127.00	(8) 3/4" DC	0.00	Inside
0.00	127.00	(3) 3/8" RET	0.00	Inside

Shaft Section Properties

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	58.260	80.291	33916.7	22.07	133.17	75.4	1146.	0.0
5.00		0.4375	57.080	78.653	31882.5	21.59	130.47	76.0	1100.	1352.1
10.00		0.4375	55.900	77.014	29931.4	21.12	127.77	76.6	1054.	1324.2
15.00		0.4375	54.720	75.376	28061.5	20.64	125.08	77.1	1010.	1296.4
20.00		0.4375	53.541	73.738	26271.2	20.17	122.38	77.7	966.4	1268.5
25.00		0.4375	52.361	72.099	24558.7	19.69	119.68	78.2	923.8	1240.6
30.00		0.4375	51.181	70.461	22922.3	19.22	116.98	78.8	882.1	1212.8
35.00		0.4375	50.001	68.823	21360.3	18.74	114.29	79.4	841.4	1184.9
40.00		0.4375	48.821	67.184	19870.8	18.27	111.59	79.9	801.7	1157.0
45.00		0.4375	47.641	65.546	18452.3	17.79	108.89	80.5	762.9	1129.1
47.25	Bot - Section 2	0.4375	47.110	64.809	17836.6	17.58	107.68	80.7	745.7	499.0
50.00		0.4375	46.461	63.908	17103.0	17.31	106.20	81.0	725.0	1127.5
53.25	Top - Section 1	0.3750	46.444	54.832	14703.3	20.43	123.85	0.0	0.0	1312.3
55.00		0.3750	46.031	54.341	14311.4	20.23	122.75	77.6	612.4	325.1
60.00		0.3750	44.852	52.936	13230.3	19.68	119.60	78.3	581.0	912.6
65.00		0.3750	43.672	51.532	12205.1	19.12	116.46	78.9	550.5	888.7
70.00		0.3750	42.492	50.128	11234.3	18.57	113.31	79.6	520.7	864.8
75.00		0.3750	41.312	48.724	10316.3	18.01	110.17	80.2	491.8	840.9
80.00		0.3750	40.132	47.319	9449.8	17.46	107.02	80.9	463.8	817.0
85.00		0.3750	38.952	45.915	8633.2	16.90	103.87	81.5	436.5	793.1
90.00		0.3750	37.772	44.511	7865.0	16.35	100.73	82.2	410.1	769.2
95.00		0.3750	36.593	43.106	7143.9	15.80	97.58	82.5	384.5	745.4
96.00	Bot - Section 3	0.3750	36.357	42.826	7005.1	15.68	96.95	82.5	379.5	146.2
100.00		0.3750	35.413	41.702	6468.2	15.24	94.43	82.5	359.8	965.5
100.75	Top - Section 2	0.2500	35.736	28.157	4479.7	23.79	142.94	0.0	0.0	178.2
105.00		0.2500	34.733	27.361	4110.5	23.09	138.93	74.2	233.1	401.4
110.00		0.2500	33.553	26.425	3702.8	22.25	134.21	75.2	217.4	457.6
115.00		0.2500	32.373	25.489	3323.0	21.42	129.49	76.2	202.2	441.6
120.00		0.2500	31.193	24.553	2970.2	20.59	124.77	77.2	187.5	425.7
125.00		0.2500	30.013	23.616	2643.2	19.76	120.05	78.2	173.5	409.8
127.00		0.2500	29.541	23.242	2519.4	19.43	118.17	78.6	168.0	159.4
130.00		0.2500	28.833	22.680	2341.2	18.93	115.33	79.1	159.9	234.4
135.00		0.2500	27.654	21.744	2063.0	18.09	110.61	80.1	146.9	377.9
138.00		0.2500	26.946	21.182	1907.3	17.59	107.78	80.7	139.4	219.1
139.00	Top - Section 3	0.2500	26.710	20.995	1857.1	17.43	106.84	80.9	136.9	71.8
139.00	Bot - Section 4	0.1875	26.710	15.783	1402.7	23.24	142.45	73.5	103.4	
140.00		0.1875	26.474	15.643	1365.6	23.49	141.19	73.8	101.6	53.5
145.00		0.1875	25.294	14.941	1189.9	22.38	134.90	75.1	92.7	260.2
149.00		0.1875	24.350	14.379	1060.6	21.49	129.87	76.1	85.8	199.5
										26063.1

Wind Loading - Shaft

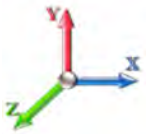
Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	477.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	467.57	0.650	0.000	5.00	24.400	15.86	636.2	0.0	1622.5
10.00		1.00	0.85	22.791	25.07	457.91	0.650	0.000	5.00	23.901	15.54	623.2	0.0	1589.1
15.00		1.00	0.85	22.791	25.07	448.24	0.650	0.000	5.00	23.401	15.21	610.1	0.0	1555.6
20.00		1.00	0.90	24.182	26.60	451.77	0.650	0.000	5.00	22.902	14.89	633.6	0.0	1522.2
25.00		1.00	0.95	25.345	27.88	452.31	0.650	0.000	5.00	22.403	14.56	649.6	0.0	1488.8
30.00		1.00	0.98	26.337	28.97	450.69	0.650	0.000	5.00	21.904	14.24	660.0	0.0	1455.3
35.00		1.00	1.01	27.206	29.93	447.50	0.650	0.000	5.00	21.405	13.91	666.2	0.0	1421.9
40.00		1.00	1.04	27.981	30.78	443.13	0.650	0.000	5.00	20.906	13.59	669.2	0.0	1388.4
45.00		1.00	1.07	28.684	31.55	437.81	0.650	0.000	5.00	20.406	13.26	669.6	0.0	1355.0
47.25	Bot - Section 2	1.00	1.08	28.980	31.88	435.16	0.650	0.000	2.25	9.020	5.86	299.0	0.0	598.8
50.00		1.00	1.09	29.327	32.26	431.73	0.650	0.000	2.75	11.062	7.19	371.1	0.0	1353.0
53.25	Top - Section 1	1.00	1.11	29.719	32.69	427.43	0.650	0.000	3.25	12.878	8.37	437.8	0.0	1574.8
55.00		1.00	1.12	29.922	32.91	432.05	0.650	0.000	1.75	6.847	4.45	234.4	0.0	390.1
60.00		1.00	1.14	30.475	33.52	424.85	0.650	0.000	5.00	19.226	12.50	670.3	0.0	1095.1
65.00		1.00	1.16	30.993	34.09	417.17	0.650	0.000	5.00	18.727	12.17	664.0	0.0	1066.4
70.00		1.00	1.17	31.480	34.63	409.08	0.650	0.000	5.00	18.228	11.85	656.4	0.0	1037.8
75.00		1.00	1.19	31.941	35.13	400.62	0.650	0.000	5.00	17.728	11.52	647.8	0.0	1009.1
80.00		1.00	1.21	32.377	35.62	391.83	0.650	0.000	5.00	17.229	11.20	638.2	0.0	980.4
85.00		1.00	1.22	32.793	36.07	382.75	0.650	0.000	5.00	16.730	10.87	627.6	0.0	951.8
90.00		1.00	1.24	33.190	36.51	373.39	0.650	0.000	5.00	16.231	10.55	616.3	0.0	923.1
95.00		1.00	1.25	33.570	36.93	363.79	0.650	0.000	5.00	15.732	10.23	604.2	0.0	894.4
96.00	Bot - Section 3	1.00	1.25	33.644	37.01	361.85	0.650	0.000	1.00	3.086	2.01	118.8	0.0	175.4
100.00		1.00	1.27	33.935	37.33	353.97	0.650	0.000	4.00	12.315	8.00	478.1	0.0	1158.6
100.75	Top - Section 2	1.00	1.27	33.988	37.39	352.48	0.650	0.000	0.75	2.274	1.48	88.4	0.0	213.8
105.00		1.00	1.28	34.285	37.71	348.96	0.650	0.000	4.25	12.671	8.24	497.0	0.0	481.7
110.00		1.00	1.29	34.623	38.08	338.76	0.650	0.000	5.00	14.446	9.39	572.2	0.0	549.1
115.00		1.00	1.30	34.948	38.44	328.38	0.650	0.000	5.00	13.946	9.07	557.6	0.0	530.0
120.00		1.00	1.32	35.263	38.79	317.84	0.650	0.000	5.00	13.447	8.74	542.5	0.0	510.8
125.00		1.00	1.33	35.567	39.12	307.13	0.650	0.000	5.00	12.948	8.42	526.8	0.0	491.7
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	302.81	0.650	0.000	2.00	5.039	3.28	205.7	0.0	191.3
130.00		1.00	1.34	35.862	39.45	296.28	0.650	0.000	3.00	7.409	4.82	304.0	0.0	281.3
135.00		1.00	1.35	36.148	39.76	285.29	0.650	0.000	5.00	11.950	7.77	494.2	0.0	453.5
138.00	Appurtenance(s)	1.00	1.35	36.316	39.95	278.63	0.650	0.000	3.00	6.930	4.50	287.9	0.0	262.9
139.00	Top - Section 3	1.00	1.36	36.371	40.01	276.40	0.650	0.000	1.00	2.270	1.48	94.5	0.0	86.1
140.00	Appurtenance(s)	1.00	1.36	36.426	40.07	274.16	0.650	0.000	1.00	2.250	1.46	93.8	0.0	64.2
145.00		1.00	1.37	36.696	40.37	262.91	0.650	0.000	5.00	10.951	7.12	459.7	0.0	312.2
149.00	Appurtenance(s)	1.00	1.38	36.907	40.60	253.83	0.650	0.000	4.00	8.402	5.46	354.7	0.0	239.4
								Totals:	**149.00**			**17,960.5**		**31,275.7**

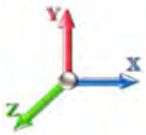
Discrete Appurtenance Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	RRH2x60 700	3	36.907	40.597	1.50	1.00	6.79	183.60	0.000	0.000	441.37	0.00	0.00
2	149.00	LNX-6514DS-VTM	3	36.907	40.597	0.83	1.00	20.34	139.68	0.000	0.000	1321.42	0.00	0.00
3	149.00	BXA-80063/4CF	3	36.907	40.597	0.72	1.00	10.20	35.64	0.000	0.000	662.24	0.00	0.00
4	149.00	SBNHH-1D65B	3	36.907	40.597	0.83	1.00	20.12	146.16	0.000	0.000	1306.86	0.00	0.00
5	149.00	SBNHH-1D65B	3	36.985	40.683	0.83	1.00	20.32	144.00	0.000	1.500	1322.58	0.00	1983.88
6	149.00	Low Profile	1	36.907	40.597	1.00	1.00	22.00	1800.00	0.000	0.000	1429.03	0.00	0.00
7	149.00	RRH 4X45 AWS	3	36.907	40.597	0.80	1.00	6.24	230.40	0.000	0.000	405.32	0.00	0.00
8	149.00	RRH 2X60W-1900MHz	3	36.907	40.597	0.84	1.00	4.74	165.60	0.000	0.000	307.73	0.00	0.00
9	149.00	DB-T1-6Z-8AB-0Z	1	36.907	40.597	0.67	1.00	3.22	22.68	0.000	0.000	208.90	0.00	0.00
10	149.00	DB-T1-6Z-8AB-0Z	1	36.907	40.597	0.67	1.00	3.22	22.68	0.000	0.000	208.90	0.00	0.00
11	140.00	Low Profile Platform	1	36.426	40.068	1.00	1.00	22.00	1800.00	0.000	0.000	1410.41	0.00	0.00
12	140.00	AIR 32	3	36.426	40.068	0.70	0.80	13.59	390.60	0.000	0.000	871.43	0.00	0.00
13	140.00	AIR 21 B2A/B4P	3	36.426	40.068	0.69	0.80	12.57	298.80	0.000	0.000	805.84	0.00	0.00
14	138.00	KRY 112 144/1	3	36.316	39.947	0.56	0.80	0.69	39.67	0.000	0.000	44.02	0.00	0.00
15	127.00	HPA-65R-BUU-8H	12	35.686	39.255	0.63	0.80	98.44	979.20	0.000	0.000	6182.79	0.00	0.00
16	127.00	MTC3607 Platform + HR	1	35.686	39.255	1.00	1.00	51.70	2695.20	0.000	0.000	3247.15	0.00	0.00
17	127.00	DC6-48-60-18-8F	4	35.686	39.255	0.80	0.80	2.94	152.64	0.000	0.000	184.91	0.00	0.00
18	127.00	RRUS A2	6	35.686	39.255	0.50	0.80	5.54	152.64	0.000	0.000	347.66	0.00	0.00
19	127.00	RRUS E2	3	35.686	39.255	0.60	0.80	4.86	216.00	0.000	0.000	305.24	0.00	0.00
20	127.00	RRUS 32	3	35.686	39.255	0.56	0.80	2.77	277.20	0.000	0.000	174.10	0.00	0.00
21	127.00	RRUS 12	6	35.686	39.255	0.60	0.80	9.72	432.00	0.000	0.000	610.49	0.00	0.00
22	127.00	RRUS 11	9	35.686	39.255	0.57	0.80	12.88	547.56	0.000	0.000	809.10	0.00	0.00
							Totals:		**10,871.95**			**22,607.49**		

Total Applied Force Summary

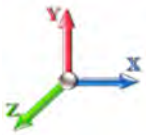
Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		636.17	1806.69	0.00	0.00
10.00		623.16	1773.24	0.00	0.00
15.00		610.14	1739.79	0.00	0.00
20.00		633.58	1706.34	0.00	0.00
25.00		649.58	1672.89	0.00	0.00
30.00		659.95	1639.44	0.00	0.00
35.00		666.19	1605.99	0.00	0.00
40.00		669.20	1572.54	0.00	0.00
45.00		669.62	1539.09	0.00	0.00
47.25		299.04	681.68	0.00	0.00
50.00		371.12	1454.27	0.00	0.00
53.25		437.83	1694.46	0.00	0.00
55.00		234.38	454.51	0.00	0.00
60.00		670.28	1279.26	0.00	0.00
65.00		663.97	1250.59	0.00	0.00
70.00		656.43	1221.92	0.00	0.00
75.00		647.80	1193.25	0.00	0.00
80.00		638.17	1164.58	0.00	0.00
85.00		627.64	1135.91	0.00	0.00
90.00		616.28	1107.23	0.00	0.00
95.00		604.17	1078.56	0.00	0.00
96.00		118.79	212.27	0.00	0.00
100.00		478.10	1305.93	0.00	0.00
100.75		88.40	241.46	0.00	0.00
105.00		497.00	638.25	0.00	0.00
110.00		572.17	733.21	0.00	0.00
115.00		557.59	714.09	0.00	0.00
120.00		542.47	694.98	0.00	0.00
125.00		526.84	675.86	0.00	0.00
127.00	(44) attachments	12067.17	5717.43	0.00	0.00
130.00		303.98	379.48	0.00	0.00
135.00		494.16	617.18	0.00	0.00
138.00	(3) attachments	331.94	400.80	0.00	0.00
139.00		94.46	118.85	0.00	0.00
140.00	(7) attachments	3181.44	2586.30	0.00	0.00
145.00		459.74	400.29	0.00	0.00
149.00	(24) attachments	7969.08	3200.35	0.00	1983.88
	Totals:	**40,568.01**	**47,408.96**	**0.00**	**1,983.88**

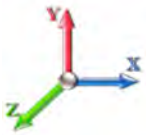
Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.34	-40.65	0.00	-4523.5	0.00	4523.52	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.706
5.00	-45.40	-40.15	0.00	-4320.2	0.00	4320.29	5379.95	2689.97	12523.2	6270.95	0.10	-0.185	0.000	0.698
10.00	-43.50	-39.67	0.00	-4119.5	0.00	4119.52	5306.65	2653.32	12093.3	6055.68	0.40	-0.374	0.000	0.689
15.00	-41.64	-39.18	0.00	-3921.1	0.00	3921.19	5231.70	2615.85	11666.9	5842.16	0.89	-0.565	0.000	0.679
20.00	-39.81	-38.67	0.00	-3725.2	0.00	3725.28	5155.10	2577.55	11244.2	5630.50	1.59	-0.759	0.000	0.670
25.00	-38.01	-38.12	0.00	-3531.9	0.00	3531.95	5076.86	2538.43	10825.5	5420.83	2.49	-0.955	0.000	0.659
30.00	-36.25	-37.56	0.00	-3341.3	0.00	3341.34	4996.96	2498.48	10411.0	5213.26	3.59	-1.154	0.000	0.648
35.00	-34.53	-36.98	0.00	-3153.5	0.00	3153.55	4915.42	2457.71	10001.0	5007.93	4.91	-1.356	0.000	0.637
40.00	-32.85	-36.39	0.00	-2968.6	0.00	2968.65	4832.22	2416.11	9595.63	4804.95	6.44	-1.560	0.000	0.625
45.00	-31.24	-35.76	0.00	-2786.7	0.00	2786.71	4747.38	2373.69	9195.21	4604.44	8.18	-1.766	0.000	0.612
47.25	-30.50	-35.49	0.00	-2706.2	0.00	2706.25	4708.66	2354.33	9016.69	4515.05	9.04	-1.861	0.000	0.606
50.00	-28.98	-35.14	0.00	-2608.6	0.00	2608.65	4660.89	2330.44	8799.96	4406.52	10.15	-1.977	0.000	0.598
53.25	-27.24	-34.69	0.00	-2494.4	0.00	2494.45	3818.32	1909.16	7226.08	3618.41	11.54	-2.115	0.000	0.697
55.00	-26.70	-34.51	0.00	-2433.7	0.00	2433.75	3795.26	1897.63	7117.54	3564.06	12.33	-2.191	0.000	0.690
60.00	-25.31	-33.89	0.00	-2261.1	0.00	2261.19	3728.27	1864.14	6809.75	3409.94	14.75	-2.424	0.000	0.670
65.00	-23.95	-33.27	0.00	-2091.7	0.00	2091.72	3659.63	1829.82	6505.57	3257.62	17.42	-2.658	0.000	0.649
70.00	-22.63	-32.65	0.00	-1925.3	0.00	1925.36	3589.34	1794.67	6205.25	3107.24	20.32	-2.892	0.000	0.626
75.00	-21.34	-32.03	0.00	-1762.1	0.00	1762.11	3517.40	1758.70	5909.03	2958.91	23.48	-3.126	0.000	0.602
80.00	-20.09	-31.41	0.00	-1601.9	0.00	1601.97	3443.81	1721.91	5617.15	2812.75	26.88	-3.358	0.000	0.576
85.00	-18.87	-30.79	0.00	-1444.9	0.00	1444.94	3368.58	1684.29	5329.85	2668.89	30.51	-3.587	0.000	0.547
90.00	-17.69	-30.17	0.00	-1291.0	0.00	1291.00	3291.69	1645.84	5047.37	2527.44	34.39	-3.812	0.000	0.517
95.00	-16.59	-29.53	0.00	-1140.1	0.00	1140.16	3202.59	1601.29	4754.28	2380.67	38.50	-4.032	0.000	0.484
96.00	-16.33	-29.43	0.00	-1110.6	0.00	1110.63	3181.72	1590.86	4692.22	2349.60	39.35	-4.077	0.000	0.478
100.00	-15.01	-28.88	0.00	-992.92	0.00	992.92	3098.26	1549.13	4448.03	2227.32	42.84	-4.248	0.000	0.451
100.75	-14.72	-28.80	0.00	-971.26	0.00	971.26	1860.42	930.21	2714.89	1359.46	43.51	-4.280	0.000	0.723
105.00	-14.02	-28.31	0.00	-848.85	0.00	848.85	1828.32	914.16	2592.13	1297.99	47.39	-4.453	0.000	0.663
110.00	-13.21	-27.74	0.00	-707.28	0.00	707.28	1789.04	894.52	2449.03	1226.33	52.20	-4.722	0.000	0.585
115.00	-12.43	-27.18	0.00	-568.56	0.00	568.56	1748.11	874.06	2307.59	1155.51	57.28	-4.967	0.000	0.500
120.00	-11.70	-26.62	0.00	-432.66	0.00	432.66	1705.53	852.77	2168.05	1085.64	62.59	-5.182	0.000	0.406
125.00	-11.02	-26.05	0.00	-299.58	0.00	299.58	1661.30	830.65	2030.66	1016.84	68.11	-5.357	0.000	0.302
127.00	-6.45	-13.51	0.00	-247.47	0.00	247.47	1643.15	821.58	1976.36	989.65	70.37	-5.416	0.000	0.254
130.00	-6.08	-13.18	0.00	-206.95	0.00	206.95	1615.43	807.71	1895.65	949.24	73.79	-5.493	0.000	0.222
135.00	-5.49	-12.64	0.00	-141.05	0.00	141.05	1567.90	783.95	1763.28	882.95	79.60	-5.599	0.000	0.164
138.00	-5.12	-12.27	0.00	-103.14	0.00	103.14	1538.59	769.30	1685.21	843.86	83.13	-5.649	0.000	0.126
139.00	-5.01	-12.16	0.00	-90.87	0.00	90.87	1528.69	764.34	1659.43	830.95	84.31	-5.664	0.000	0.113
139.00	-5.01	-12.16	0.00	-90.87	0.00	90.87	1044.31	522.16	1138.99	570.34	84.31	-5.664	0.000	0.165
140.00	-2.74	-8.75	0.00	-78.71	0.00	78.71	1038.69	519.35	1122.71	562.19	85.50	-5.677	0.000	0.143
145.00	-2.39	-8.25	0.00	-34.98	0.00	34.98	1009.62	504.81	1041.96	521.75	91.47	-5.736	0.000	0.070
149.00	0.00	-7.97	0.00	-1.98	0.00	1.98	985.17	492.59	978.22	489.84	96.28	-5.753	0.000	0.004

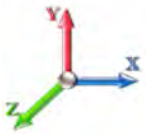
Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	477.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	467.57	0.650	0.000	5.00	24.400	15.86	636.2	0.0	1216.9
10.00		1.00	0.85	22.791	25.07	457.91	0.650	0.000	5.00	23.901	15.54	623.2	0.0	1191.8
15.00		1.00	0.85	22.791	25.07	448.24	0.650	0.000	5.00	23.401	15.21	610.1	0.0	1166.7
20.00		1.00	0.90	24.182	26.60	451.77	0.650	0.000	5.00	22.902	14.89	633.6	0.0	1141.6
25.00		1.00	0.95	25.345	27.88	452.31	0.650	0.000	5.00	22.403	14.56	649.6	0.0	1116.6
30.00		1.00	0.98	26.337	28.97	450.69	0.650	0.000	5.00	21.904	14.24	660.0	0.0	1091.5
35.00		1.00	1.01	27.206	29.93	447.50	0.650	0.000	5.00	21.405	13.91	666.2	0.0	1066.4
40.00		1.00	1.04	27.981	30.78	443.13	0.650	0.000	5.00	20.906	13.59	669.2	0.0	1041.3
45.00		1.00	1.07	28.684	31.55	437.81	0.650	0.000	5.00	20.406	13.26	669.6	0.0	1016.2
47.25	Bot - Section 2	1.00	1.08	28.980	31.88	435.16	0.650	0.000	2.25	9.020	5.86	299.0	0.0	449.1
50.00		1.00	1.09	29.327	32.26	431.73	0.650	0.000	2.75	11.062	7.19	371.1	0.0	1014.7
53.25	Top - Section 1	1.00	1.11	29.719	32.69	427.43	0.650	0.000	3.25	12.878	8.37	437.8	0.0	1181.1
55.00		1.00	1.12	29.922	32.91	432.05	0.650	0.000	1.75	6.847	4.45	234.4	0.0	292.5
60.00		1.00	1.14	30.475	33.52	424.85	0.650	0.000	5.00	19.226	12.50	670.3	0.0	821.3
65.00		1.00	1.16	30.993	34.09	417.17	0.650	0.000	5.00	18.727	12.17	664.0	0.0	799.8
70.00		1.00	1.17	31.480	34.63	409.08	0.650	0.000	5.00	18.228	11.85	656.4	0.0	778.3
75.00		1.00	1.19	31.941	35.13	400.62	0.650	0.000	5.00	17.728	11.52	647.8	0.0	756.8
80.00		1.00	1.21	32.377	35.62	391.83	0.650	0.000	5.00	17.229	11.20	638.2	0.0	735.3
85.00		1.00	1.22	32.793	36.07	382.75	0.650	0.000	5.00	16.730	10.87	627.6	0.0	713.8
90.00		1.00	1.24	33.190	36.51	373.39	0.650	0.000	5.00	16.231	10.55	616.3	0.0	692.3
95.00		1.00	1.25	33.570	36.93	363.79	0.650	0.000	5.00	15.732	10.23	604.2	0.0	670.8
96.00	Bot - Section 3	1.00	1.25	33.644	37.01	361.85	0.650	0.000	1.00	3.086	2.01	118.8	0.0	131.6
100.00		1.00	1.27	33.935	37.33	353.97	0.650	0.000	4.00	12.315	8.00	478.1	0.0	869.0
100.75	Top - Section 2	1.00	1.27	33.988	37.39	352.48	0.650	0.000	0.75	2.274	1.48	88.4	0.0	160.4
105.00		1.00	1.28	34.285	37.71	348.96	0.650	0.000	4.25	12.671	8.24	497.0	0.0	361.3
110.00		1.00	1.29	34.623	38.08	338.76	0.650	0.000	5.00	14.446	9.39	572.2	0.0	411.8
115.00		1.00	1.30	34.948	38.44	328.38	0.650	0.000	5.00	13.946	9.07	557.6	0.0	397.5
120.00		1.00	1.32	35.263	38.79	317.84	0.650	0.000	5.00	13.447	8.74	542.5	0.0	383.1
125.00		1.00	1.33	35.567	39.12	307.13	0.650	0.000	5.00	12.948	8.42	526.8	0.0	368.8
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	302.81	0.650	0.000	2.00	5.039	3.28	205.7	0.0	143.5
130.00		1.00	1.34	35.862	39.45	296.28	0.650	0.000	3.00	7.409	4.82	304.0	0.0	211.0
135.00		1.00	1.35	36.148	39.76	285.29	0.650	0.000	5.00	11.950	7.77	494.2	0.0	340.1
138.00	Appurtenance(s)	1.00	1.35	36.316	39.95	278.63	0.650	0.000	3.00	6.930	4.50	287.9	0.0	197.2
139.00	Top - Section 3	1.00	1.36	36.371	40.01	276.40	0.650	0.000	1.00	2.270	1.48	94.5	0.0	64.6
140.00	Appurtenance(s)	1.00	1.36	36.426	40.07	274.16	0.650	0.000	1.00	2.250	1.46	93.8	0.0	48.1
145.00		1.00	1.37	36.696	40.37	262.91	0.650	0.000	5.00	10.951	7.12	459.7	0.0	234.2
149.00	Appurtenance(s)	1.00	1.38	36.907	40.60	253.83	0.650	0.000	4.00	8.402	5.46	354.7	0.0	179.6
								Totals:	**149.00**			**17,960.5**		**23,456.8**

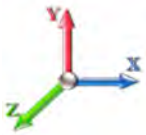
Discrete Appurtenance Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	RRH2x60 700	3	36.907	40.597	1.50	1.00	6.79	137.70	0.000	0.000	441.37	0.00	0.00
2	149.00	LNX-6514DS-VTM	3	36.907	40.597	0.83	1.00	20.34	104.76	0.000	0.000	1321.42	0.00	0.00
3	149.00	BXA-80063/4CF	3	36.907	40.597	0.72	1.00	10.20	26.73	0.000	0.000	662.24	0.00	0.00
4	149.00	SBNHH-1D65B	3	36.907	40.597	0.83	1.00	20.12	109.62	0.000	0.000	1306.86	0.00	0.00
5	149.00	SBNHH-1D65B	3	36.985	40.683	0.83	1.00	20.32	108.00	0.000	1.500	1322.58	0.00	1983.88
6	149.00	Low Profile	1	36.907	40.597	1.00	1.00	22.00	1350.00	0.000	0.000	1429.03	0.00	0.00
7	149.00	RRH 4X45 AWS	3	36.907	40.597	0.80	1.00	6.24	172.80	0.000	0.000	405.32	0.00	0.00
8	149.00	RRH 2X60W-1900MHz	3	36.907	40.597	0.84	1.00	4.74	124.20	0.000	0.000	307.73	0.00	0.00
9	149.00	DB-T1-6Z-8AB-0Z	1	36.907	40.597	0.67	1.00	3.22	17.01	0.000	0.000	208.90	0.00	0.00
10	149.00	DB-T1-6Z-8AB-0Z	1	36.907	40.597	0.67	1.00	3.22	17.01	0.000	0.000	208.90	0.00	0.00
11	140.00	Low Profile Platform	1	36.426	40.068	1.00	1.00	22.00	1350.00	0.000	0.000	1410.41	0.00	0.00
12	140.00	AIR 32	3	36.426	40.068	0.70	0.80	13.59	292.95	0.000	0.000	871.43	0.00	0.00
13	140.00	AIR 21 B2A/B4P	3	36.426	40.068	0.69	0.80	12.57	224.10	0.000	0.000	805.84	0.00	0.00
14	138.00	KRY 112 144/1	3	36.316	39.947	0.56	0.80	0.69	29.75	0.000	0.000	44.02	0.00	0.00
15	127.00	HPA-65R-BUU-8H	12	35.686	39.255	0.63	0.80	98.44	734.40	0.000	0.000	6182.79	0.00	0.00
16	127.00	MTC3607 Platform + HR	1	35.686	39.255	1.00	1.00	51.70	2021.40	0.000	0.000	3247.15	0.00	0.00
17	127.00	DC6-48-60-18-8F	4	35.686	39.255	0.80	0.80	2.94	114.48	0.000	0.000	184.91	0.00	0.00
18	127.00	RRUS A2	6	35.686	39.255	0.50	0.80	5.54	114.48	0.000	0.000	347.66	0.00	0.00
19	127.00	RRUS E2	3	35.686	39.255	0.60	0.80	4.86	162.00	0.000	0.000	305.24	0.00	0.00
20	127.00	RRUS 32	3	35.686	39.255	0.56	0.80	2.77	207.90	0.000	0.000	174.10	0.00	0.00
21	127.00	RRUS 12	6	35.686	39.255	0.60	0.80	9.72	324.00	0.000	0.000	610.49	0.00	0.00
22	127.00	RRUS 11	9	35.686	39.255	0.57	0.80	12.88	410.67	0.000	0.000	809.10	0.00	0.00
							Totals:		**8,153.96**			**22,607.49**		

Total Applied Force Summary

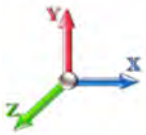
Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		636.17	1355.02	0.00	0.00
10.00		623.16	1329.93	0.00	0.00
15.00		610.14	1304.84	0.00	0.00
20.00		633.58	1279.75	0.00	0.00
25.00		649.58	1254.67	0.00	0.00
30.00		659.95	1229.58	0.00	0.00
35.00		666.19	1204.49	0.00	0.00
40.00		669.20	1179.41	0.00	0.00
45.00		669.62	1154.32	0.00	0.00
47.25		299.04	511.26	0.00	0.00
50.00		371.12	1090.70	0.00	0.00
53.25		437.83	1270.84	0.00	0.00
55.00		234.38	340.89	0.00	0.00
60.00		670.28	959.44	0.00	0.00
65.00		663.97	937.94	0.00	0.00
70.00		656.43	916.44	0.00	0.00
75.00		647.80	894.94	0.00	0.00
80.00		638.17	873.43	0.00	0.00
85.00		627.64	851.93	0.00	0.00
90.00		616.28	830.43	0.00	0.00
95.00		604.17	808.92	0.00	0.00
96.00		118.79	159.20	0.00	0.00
100.00		478.10	979.45	0.00	0.00
100.75		88.40	181.09	0.00	0.00
105.00		497.00	478.69	0.00	0.00
110.00		572.17	549.90	0.00	0.00
115.00		557.59	535.57	0.00	0.00
120.00		542.47	521.23	0.00	0.00
125.00		526.84	506.90	0.00	0.00
127.00	(44) attachments	12067.17	4288.08	0.00	0.00
130.00		303.98	284.61	0.00	0.00
135.00		494.16	462.88	0.00	0.00
138.00	(3) attachments	331.94	300.60	0.00	0.00
139.00		94.46	89.14	0.00	0.00
140.00	(7) attachments	3181.44	1939.72	0.00	0.00
145.00		459.74	300.22	0.00	0.00
149.00	(24) attachments	7969.08	2400.26	0.00	1983.88
	Totals:	**40,568.01**	**35,556.72**	**0.00**	**1,983.88**

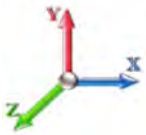
Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-35.49	-40.63	0.00	-4487.3	0.00	4487.32	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.698
5.00	-34.01	-40.10	0.00	-4284.2	0.00	4284.20	5379.95	2689.97	12523.2	6270.95	0.10	-0.184	0.000	0.690
10.00	-32.55	-39.57	0.00	-4083.7	0.00	4083.71	5306.65	2653.32	12093.3	6055.68	0.39	-0.371	0.000	0.681
15.00	-31.12	-39.06	0.00	-3885.8	0.00	3885.84	5231.70	2615.85	11666.9	5842.16	0.88	-0.560	0.000	0.671
20.00	-29.72	-38.51	0.00	-3690.5	0.00	3690.56	5155.10	2577.55	11244.2	5630.50	1.57	-0.752	0.000	0.661
25.00	-28.34	-37.94	0.00	-3498.0	0.00	3498.01	5076.86	2538.43	10825.5	5420.83	2.47	-0.947	0.000	0.651
30.00	-27.00	-37.35	0.00	-3308.3	0.00	3308.31	4996.96	2498.48	10411.0	5213.26	3.56	-1.144	0.000	0.640
35.00	-25.68	-36.75	0.00	-3121.5	0.00	3121.56	4915.42	2457.71	10001.0	5007.93	4.87	-1.343	0.000	0.629
40.00	-24.39	-36.14	0.00	-2937.8	0.00	2937.82	4832.22	2416.11	9595.63	4804.95	6.38	-1.545	0.000	0.617
45.00	-23.16	-35.49	0.00	-2757.1	0.00	2757.14	4747.38	2373.69	9195.21	4604.44	8.11	-1.749	0.000	0.604
47.25	-22.60	-35.22	0.00	-2677.2	0.00	2677.28	4708.66	2354.33	9016.69	4515.05	8.96	-1.843	0.000	0.598
50.00	-21.44	-34.86	0.00	-2580.4	0.00	2580.43	4660.89	2330.44	8799.96	4406.52	10.05	-1.958	0.000	0.590
53.25	-20.12	-34.41	0.00	-2467.1	0.00	2467.13	3818.32	1909.16	7226.08	3618.41	11.44	-2.095	0.000	0.687
55.00	-19.70	-34.22	0.00	-2406.9	0.00	2406.91	3795.26	1897.63	7117.54	3564.06	12.22	-2.170	0.000	0.681
60.00	-18.63	-33.59	0.00	-2235.8	0.00	2235.81	3728.27	1864.14	6809.75	3409.94	14.61	-2.400	0.000	0.661
65.00	-17.59	-32.96	0.00	-2067.8	0.00	2067.86	3659.63	1829.82	6505.57	3257.62	17.25	-2.632	0.000	0.640
70.00	-16.58	-32.32	0.00	-1903.0	0.00	1903.09	3589.34	1794.67	6205.25	3107.24	20.13	-2.863	0.000	0.617
75.00	-15.59	-31.69	0.00	-1741.4	0.00	1741.48	3517.40	1758.70	5909.03	2958.91	23.25	-3.094	0.000	0.593
80.00	-14.63	-31.06	0.00	-1583.0	0.00	1583.02	3443.81	1721.91	5617.15	2812.75	26.62	-3.323	0.000	0.567
85.00	-13.70	-30.44	0.00	-1427.7	0.00	1427.70	3368.58	1684.29	5329.85	2668.89	30.22	-3.550	0.000	0.539
90.00	-12.79	-29.82	0.00	-1275.4	0.00	1275.49	3291.69	1645.84	5047.37	2527.44	34.05	-3.772	0.000	0.509
95.00	-11.96	-29.19	0.00	-1126.3	0.00	1126.38	3202.59	1601.29	4754.28	2380.67	38.12	-3.990	0.000	0.477
96.00	-11.76	-29.08	0.00	-1097.1	0.00	1097.19	3181.72	1590.86	4692.22	2349.60	38.96	-4.034	0.000	0.471
100.00	-10.77	-28.56	0.00	-980.86	0.00	980.86	3098.26	1549.13	4448.03	2227.32	42.41	-4.203	0.000	0.444
100.75	-10.54	-28.47	0.00	-959.44	0.00	959.44	1860.42	930.21	2714.89	1359.46	43.07	-4.235	0.000	0.712
105.00	-9.99	-27.98	0.00	-838.43	0.00	838.43	1828.32	914.16	2592.13	1297.99	46.92	-4.405	0.000	0.652
110.00	-9.37	-27.41	0.00	-698.53	0.00	698.53	1789.04	894.52	2449.03	1226.33	51.67	-4.671	0.000	0.576
115.00	-8.77	-26.84	0.00	-561.49	0.00	561.49	1748.11	874.06	2307.59	1155.51	56.70	-4.913	0.000	0.492
120.00	-8.21	-26.28	0.00	-427.28	0.00	427.28	1705.53	852.77	2168.05	1085.64	61.95	-5.125	0.000	0.399
125.00	-7.71	-25.73	0.00	-295.85	0.00	295.85	1661.30	830.65	2030.66	1016.84	67.41	-5.298	0.000	0.297
127.00	-4.54	-13.32	0.00	-244.40	0.00	244.40	1643.15	821.58	1976.36	989.65	69.64	-5.356	0.000	0.250
130.00	-4.27	-13.00	0.00	-204.43	0.00	204.43	1615.43	807.71	1895.65	949.24	73.03	-5.432	0.000	0.218
135.00	-3.84	-12.47	0.00	-139.44	0.00	139.44	1567.90	783.95	1763.28	882.95	78.77	-5.537	0.000	0.161
138.00	-3.57	-12.11	0.00	-102.04	0.00	102.04	1538.59	769.30	1685.21	843.86	82.26	-5.587	0.000	0.123
139.00	-3.48	-12.01	0.00	-89.93	0.00	89.93	1528.69	764.34	1659.43	830.95	83.43	-5.601	0.000	0.111
139.00	-3.48	-12.01	0.00	-89.93	0.00	89.93	1044.31	522.16	1138.99	570.34	83.43	-5.601	0.000	0.162
140.00	-1.86	-8.65	0.00	-77.92	0.00	77.92	1038.69	519.35	1122.71	562.19	84.61	-5.614	0.000	0.141
145.00	-1.60	-8.17	0.00	-34.65	0.00	34.65	1009.62	504.81	1041.96	521.75	90.51	-5.672	0.000	0.068
149.00	0.00	-7.97	0.00	-1.98	0.00	1.98	985.17	492.59	978.22	489.84	95.27	-5.690	0.000	0.004

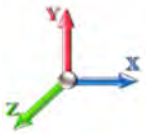
Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.435	30.52	173.5	453.8	2076.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.010	30.01	170.6	477.3	2066.4
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.557	29.47	167.5	487.2	2042.9
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.091	28.91	174.4	491.3	2013.5
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.619	28.34	179.2	491.8	1980.6
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.142	27.77	182.4	490.2	1945.5
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.662	27.19	184.5	486.8	1908.7
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	22.180	26.62	185.8	482.3	1870.7
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.696	26.03	186.3	476.7	1831.7
47.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	1.555	2.25	9.603	11.52	83.3	213.3	812.1
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.75	11.778	14.13	103.4	262.7	1615.7
53.25	Top - Section 1	1.00	1.11	6.739	7.41	0.00	1.200	1.574	3.25	13.731	16.48	122.1	307.6	1882.4
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	1.75	7.307	8.77	65.4	164.8	554.8
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	20.553	24.66	187.5	463.2	1558.3
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	20.065	24.08	186.1	455.2	1521.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	19.575	23.49	184.4	446.8	1484.5
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	19.085	22.90	182.5	437.9	1447.0
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	18.595	22.31	180.2	428.7	1409.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	18.104	21.72	177.7	419.3	1371.0
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	17.613	21.14	175.0	409.5	1332.6
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	17.121	20.55	172.0	399.5	1293.9
96.00	Bot - Section 3	1.00	1.25	7.629	8.39	0.00	1.200	1.669	1.00	3.365	4.04	33.9	79.5	254.9
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	4.00	13.433	16.12	136.4	315.6	1474.2
100.75	Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	1.677	0.75	2.483	2.98	25.3	58.9	272.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	4.25	13.864	16.64	142.3	326.4	808.2
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	15.856	19.03	164.3	373.4	922.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	15.363	18.44	160.7	362.6	892.5
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	14.870	17.84	156.9	351.6	862.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	14.376	17.25	153.0	340.4	832.2
127.00	Appurtenance(s)	1.00	1.33	8.092	8.90	0.00	1.200	1.716	2.00	5.612	6.73	59.9	134.4	325.7
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	3.00	8.270	9.92	88.8	197.5	478.7
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.389	16.07	144.9	317.7	771.2
138.00	Appurtenance(s)	1.00	1.35	8.235	9.06	0.00	1.200	1.731	3.00	7.796	9.35	84.7	186.4	449.4
139.00	Top - Section 3	1.00	1.36	8.247	9.07	0.00	1.200	1.732	1.00	2.559	3.07	27.9	61.7	147.8
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	1.733	1.00	2.539	3.05	27.7	61.2	125.4
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.401	14.88	136.2	294.4	606.6
149.00	Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	4.00	9.564	11.48	105.7	227.9	467.4
								Totals:	**149.00**			**5,072.5**		**43,711.3**

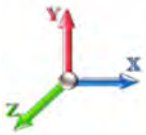
Discrete Appurtenance Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	RRH2x60 700	3	8.369	9.206	1.47	1.00	8.54	484.10	0.000	0.000	78.61	0.00	0.00
2	149.00	LNX-6514DS-VTM	3	8.369	9.206	0.83	1.00	27.37	516.73	0.000	0.000	251.95	0.00	0.00
3	149.00	BXA-80063/4CF	3	8.369	9.206	0.72	1.00	14.19	250.84	0.000	0.000	130.59	0.00	0.00
4	149.00	SBNHH-1D65B	3	8.369	9.206	0.83	1.00	23.33	750.50	0.000	0.000	214.81	0.00	0.00
5	149.00	SBNHH-1D65B	3	8.387	9.225	0.83	1.00	23.55	752.91	0.000	1.500	217.28	0.00	325.92
6	149.00	Low Profile	1	8.369	9.206	1.00	1.00	39.65	2808.04	0.000	0.000	365.01	0.00	0.00
7	149.00	RRH 4X45 AWS	3	8.369	9.206	0.80	1.00	7.93	480.95	0.000	0.000	72.99	0.00	0.00
8	149.00	RRH 2X60W-1900MHz	3	8.369	9.206	0.84	1.00	6.21	372.75	0.000	0.000	57.20	0.00	0.00
9	149.00	DB-T1-6Z-8AB-0Z	1	8.369	9.206	0.67	1.00	3.80	166.29	0.000	0.000	34.99	0.00	0.00
10	149.00	DB-T1-6Z-8AB-0Z	1	8.369	9.206	0.67	1.00	3.80	166.29	0.000	0.000	34.99	0.00	0.00
11	140.00	Low Profile Platform	1	8.260	9.086	1.00	1.00	39.54	2799.91	0.000	0.000	359.25	0.00	0.00
12	140.00	AIR 32	3	8.260	9.086	0.70	0.80	14.32	891.47	0.000	0.000	130.12	0.00	0.00
13	140.00	AIR 21 B2A/B4P	3	8.260	9.086	0.69	0.80	14.73	801.44	0.000	0.000	133.80	0.00	0.00
14	138.00	KRY 112 144/1	3	8.235	9.058	0.56	0.80	1.48	62.57	0.000	0.000	13.41	0.00	0.00
15	127.00	HPA-65R-BUU-8H	12	8.092	8.901	0.63	0.80	110.48	4404.75	0.000	0.000	983.38	0.00	0.00
16	127.00	MTC3607 Platform + HR	1	8.092	8.901	1.00	1.00	89.33	4775.24	0.000	0.000	795.11	0.00	0.00
17	127.00	DC6-48-60-18-8F	4	8.092	8.901	0.80	0.80	4.32	325.06	0.000	0.000	38.48	0.00	0.00
18	127.00	RRUS A2	6	8.092	8.901	0.50	0.80	8.39	304.53	0.000	0.000	74.64	0.00	0.00
19	127.00	RRUS E2	3	8.092	8.901	0.60	0.80	6.77	371.63	0.000	0.000	60.22	0.00	0.00
20	127.00	RRUS 32	3	8.092	8.901	0.56	0.80	3.73	419.49	0.000	0.000	33.19	0.00	0.00
21	127.00	RRUS 12	6	8.092	8.901	0.60	0.80	12.06	733.26	0.000	0.000	107.31	0.00	0.00
22	127.00	RRUS 11	9	8.092	8.901	0.57	0.80	16.15	1334.12	0.000	0.000	143.78	0.00	0.00
							Totals:		**23,972.88**			**4,331.08**		

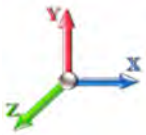
Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		173.51	2260.49	0.00	0.00
10.00		170.61	2250.50	0.00	0.00
15.00		167.52	2227.02	0.00	0.00
20.00		174.38	2197.60	0.00	0.00
25.00		179.18	2164.74	0.00	0.00
30.00		182.43	2129.60	0.00	0.00
35.00		184.54	2092.82	0.00	0.00
40.00		185.76	2054.80	0.00	0.00
45.00		186.27	2015.80	0.00	0.00
47.25		83.30	894.95	0.00	0.00
50.00		103.39	1717.01	0.00	0.00
53.25		122.14	2002.07	0.00	0.00
55.00		65.45	619.28	0.00	0.00
60.00		187.48	1742.49	0.00	0.00
65.00		186.13	1705.80	0.00	0.00
70.00		184.45	1668.67	0.00	0.00
75.00		182.46	1631.17	0.00	0.00
80.00		180.21	1593.32	0.00	0.00
85.00		177.70	1555.17	0.00	0.00
90.00		174.98	1516.74	0.00	0.00
95.00		172.04	1478.05	0.00	0.00
96.00		33.88	291.76	0.00	0.00
100.00		136.44	1621.52	0.00	0.00
100.75		25.26	300.40	0.00	0.00
105.00		142.28	964.70	0.00	0.00
110.00		164.32	1106.62	0.00	0.00
115.00		160.70	1076.69	0.00	0.00
120.00		156.94	1046.58	0.00	0.00
125.00		153.05	1016.30	0.00	0.00
127.00	(44) attachments	2296.03	13067.44	0.00	0.00
130.00		88.77	576.96	0.00	0.00
135.00		144.86	934.85	0.00	0.00
138.00	(3) attachments	98.15	610.14	0.00	0.00
139.00		27.86	180.53	0.00	0.00
140.00	(7) attachments	650.85	4650.95	0.00	0.00
145.00		136.21	694.66	0.00	0.00
149.00	(24) attachments	1564.06	7287.24	0.00	325.92
	Totals:	**9,403.60**	**72,945.42**	**0.00**	**325.92**

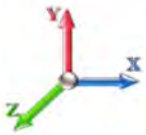
Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

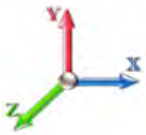
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-72.94	-9.43	0.00	-1022.2	0.00	1022.24	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.171
5.00	-70.67	-9.31	0.00	-975.09	0.00	975.09	5379.95	2689.97	12523.2	6270.95	0.02	-0.042	0.000	0.169
10.00	-68.42	-9.19	0.00	-928.56	0.00	928.56	5306.65	2653.32	12093.3	6055.68	0.09	-0.084	0.000	0.166
15.00	-66.18	-9.06	0.00	-882.63	0.00	882.63	5231.70	2615.85	11666.9	5842.16	0.20	-0.127	0.000	0.164
20.00	-63.98	-8.93	0.00	-837.31	0.00	837.31	5155.10	2577.55	11244.2	5630.50	0.36	-0.171	0.000	0.161
25.00	-61.81	-8.79	0.00	-792.65	0.00	792.65	5076.86	2538.43	10825.5	5420.83	0.56	-0.215	0.000	0.158
30.00	-59.67	-8.65	0.00	-748.68	0.00	748.68	4996.96	2498.48	10411.0	5213.26	0.81	-0.260	0.000	0.156
35.00	-57.57	-8.50	0.00	-705.43	0.00	705.43	4915.42	2457.71	10001.0	5007.93	1.11	-0.305	0.000	0.153
40.00	-55.51	-8.35	0.00	-662.93	0.00	662.93	4832.22	2416.11	9595.63	4804.95	1.45	-0.350	0.000	0.149
45.00	-53.50	-8.18	0.00	-621.20	0.00	621.20	4747.38	2373.69	9195.21	4604.44	1.84	-0.396	0.000	0.146
47.25	-52.60	-8.11	0.00	-602.79	0.00	602.79	4708.66	2354.33	9016.69	4515.05	2.03	-0.418	0.000	0.145
50.00	-50.88	-8.02	0.00	-580.49	0.00	580.49	4660.89	2330.44	8799.96	4406.52	2.28	-0.444	0.000	0.143
53.25	-48.87	-7.90	0.00	-554.43	0.00	554.43	3818.32	1909.16	7226.08	3618.41	2.60	-0.474	0.000	0.166
55.00	-48.25	-7.86	0.00	-540.60	0.00	540.60	3795.26	1897.63	7117.54	3564.06	2.77	-0.491	0.000	0.164
60.00	-46.50	-7.70	0.00	-501.30	0.00	501.30	3728.27	1864.14	6809.75	3409.94	3.31	-0.543	0.000	0.160
65.00	-44.79	-7.54	0.00	-462.80	0.00	462.80	3659.63	1829.82	6505.57	3257.62	3.91	-0.595	0.000	0.154
70.00	-43.12	-7.37	0.00	-425.12	0.00	425.12	3589.34	1794.67	6205.25	3107.24	4.56	-0.646	0.000	0.149
75.00	-41.48	-7.21	0.00	-388.26	0.00	388.26	3517.40	1758.70	5909.03	2958.91	5.27	-0.698	0.000	0.143
80.00	-39.89	-7.04	0.00	-352.21	0.00	352.21	3443.81	1721.91	5617.15	2812.75	6.03	-0.749	0.000	0.137
85.00	-38.33	-6.88	0.00	-317.00	0.00	317.00	3368.58	1684.29	5329.85	2668.89	6.84	-0.799	0.000	0.130
90.00	-36.81	-6.71	0.00	-282.61	0.00	282.61	3291.69	1645.84	5047.37	2527.44	7.70	-0.849	0.000	0.123
95.00	-35.33	-6.54	0.00	-249.04	0.00	249.04	3202.59	1601.29	4754.28	2380.67	8.62	-0.897	0.000	0.116
96.00	-35.03	-6.51	0.00	-242.51	0.00	242.51	3181.72	1590.86	4692.22	2349.60	8.80	-0.907	0.000	0.114
100.00	-33.41	-6.36	0.00	-216.46	0.00	216.46	3098.26	1549.13	4448.03	2227.32	9.58	-0.944	0.000	0.108
100.75	-33.11	-6.35	0.00	-211.69	0.00	211.69	1860.42	930.21	2714.89	1359.46	9.73	-0.951	0.000	0.174
105.00	-32.14	-6.21	0.00	-184.72	0.00	184.72	1828.32	914.16	2592.13	1297.99	10.59	-0.989	0.000	0.160
110.00	-31.03	-6.06	0.00	-153.65	0.00	153.65	1789.04	894.52	2449.03	1226.33	11.66	-1.047	0.000	0.143
115.00	-29.96	-5.91	0.00	-123.35	0.00	123.35	1748.11	874.06	2307.59	1155.51	12.79	-1.100	0.000	0.124
120.00	-28.91	-5.75	0.00	-93.83	0.00	93.83	1705.53	852.77	2168.05	1085.64	13.97	-1.147	0.000	0.103
125.00	-27.89	-5.59	0.00	-65.08	0.00	65.08	1661.30	830.65	2030.66	1016.84	15.19	-1.185	0.000	0.081
127.00	-14.87	-3.02	0.00	-53.90	0.00	53.90	1643.15	821.58	1976.36	989.65	15.69	-1.198	0.000	0.064
130.00	-14.30	-2.93	0.00	-44.83	0.00	44.83	1615.43	807.71	1895.65	949.24	16.45	-1.214	0.000	0.056
135.00	-13.37	-2.77	0.00	-30.19	0.00	30.19	1567.90	783.95	1763.28	882.95	17.73	-1.237	0.000	0.043
138.00	-12.76	-2.66	0.00	-21.89	0.00	21.89	1538.59	769.30	1685.21	843.86	18.51	-1.248	0.000	0.034
139.00	-12.58	-2.63	0.00	-19.23	0.00	19.23	1528.69	764.34	1659.43	830.95	18.77	-1.251	0.000	0.031
139.00	-12.58	-2.63	0.00	-19.23	0.00	19.23	1044.31	522.16	1138.99	570.34	18.77	-1.251	0.000	0.046
140.00	-7.94	-1.88	0.00	-16.60	0.00	16.60	1038.69	519.35	1122.71	562.19	19.04	-1.254	0.000	0.037
145.00	-7.25	-1.72	0.00	-7.23	0.00	7.23	1009.62	504.81	1041.96	521.75	20.36	-1.266	0.000	0.021
149.00	0.00	-1.56	0.00	-0.33	0.00	0.33	985.17	492.59	978.22	489.84	21.42	-1.270	0.000	0.001

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.17	**Iterations**	20
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency**	0.41	**SA**	0.04	**S1**	0.06
						Seismic Importance Factor	1.00

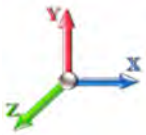
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1352.1	0.00	0.03	0.02	19.70	
10.00		1324.2	0.01	0.05	0.03	28.66	
15.00		1296.3	0.02	0.06	0.04	32.74	
20.00		1268.5	0.03	0.07	0.04	34.46	
25.00		1240.6	0.05	0.07	0.04	35.11	
30.00		1212.7	0.08	0.07	0.04	35.34	
35.00		1184.8	0.10	0.07	0.04	35.44	
40.00		1157.0	0.14	0.07	0.03	35.42	
45.00		1129.1	0.17	0.07	0.03	35.12	
47.25	Bot - Section 2	499.01	0.19	0.06	0.02	15.56	
50.00		1127.4	0.21	0.06	0.02	35.03	
53.25	Top - Section 1	1312.3	0.24	0.06	0.02	40.10	
55.00		325.05	0.26	0.05	0.02	9.77	
60.00		912.60	0.31	0.04	0.01	25.17	
65.00		888.71	0.36	0.03	0.01	20.54	
70.00		864.82	0.42	0.01	0.01	14.17	
75.00		840.92	0.48	-0.01	0.01	6.36	
80.00		817.03	0.54	-0.03	0.01	-2.05	
85.00		793.14	0.62	-0.06	0.02	-9.81	
90.00		769.25	0.69	-0.08	0.03	-15.66	
95.00		745.35	0.77	-0.11	0.05	-18.68	
96.00	Bot - Section 3	146.20	0.78	-0.11	0.05	-3.73	
100.00		965.51	0.85	-0.12	0.07	-24.74	
100.75	Top - Section 2	178.20	0.86	-0.12	0.07	-4.51	
105.00		401.45	0.94	-0.12	0.10	-8.68	
110.00		457.56	1.03	-0.10	0.15	-5.91	
115.00		441.63	1.13	-0.05	0.20	0.23	
120.00		425.70	1.23	0.03	0.27	7.97	
125.00		409.77	1.33	0.16	0.36	17.08	
127.00	Appurtenance(s)	4703.1	1.37	0.23	0.40	245.55	
130.00		234.39	1.44	0.36	0.47	16.28	
135.00		377.91	1.55	0.64	0.61	38.60	
138.00	Appurtenance(s)	252.16	1.62	0.85	0.70	31.30	
139.00	Top - Section 3	71.76	1.64	0.92	0.73	9.46	
140.00	Appurtenance(s)	2127.9	1.67	1.01	0.77	297.48	
145.00		260.18	1.79	1.49	0.96	47.49	
149.00	Appurtenance(s)	2608.2	1.89	1.98	1.14	574.98	
	Totals:	**35,123.1**				**1,651.4**	**Total Wind:** **40,568.0**

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

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.2D + 1.0E



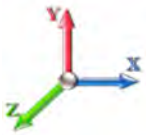
Gust Response Factor	1.10			**Sds**	0.17			**Iterations**	20
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency**	0.41	**SA**	0.04			**S1**	0.06
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.41	-1.75	0.00	-205.38	0.00	205.38	5451.60	2725.80	12956.4	6487.84		0.00	0.00	0.040
5.00	-45.60	-1.73	0.00	-196.64	0.00	196.64	5379.95	2689.97	12523.2	6270.95		0.00	-0.01	0.040
10.00	-43.83	-1.71	0.00	-187.96	0.00	187.96	5306.65	2653.32	12093.3	6055.68		0.02	-0.02	0.039
15.00	-42.09	-1.69	0.00	-179.40	0.00	179.40	5231.70	2615.85	11666.9	5842.16		0.04	-0.03	0.039
20.00	-40.38	-1.66	0.00	-170.97	0.00	170.97	5155.10	2577.55	11244.2	5630.50		0.07	-0.03	0.038
25.00	-38.71	-1.63	0.00	-162.69	0.00	162.69	5076.86	2538.43	10825.5	5420.83		0.11	-0.04	0.038
30.00	-37.07	-1.60	0.00	-154.56	0.00	154.56	4996.96	2498.48	10411.0	5213.26		0.16	-0.05	0.037
35.00	-35.46	-1.56	0.00	-146.58	0.00	146.58	4915.42	2457.71	10001.0	5007.93		0.22	-0.06	0.036
40.00	-33.89	-1.53	0.00	-138.76	0.00	138.76	4832.22	2416.11	9595.63	4804.95		0.29	-0.07	0.036
45.00	-32.35	-1.50	0.00	-131.09	0.00	131.09	4747.38	2373.69	9195.21	4604.44		0.37	-0.08	0.035
47.25	-31.67	-1.49	0.00	-127.72	0.00	127.72	4708.66	2354.33	9016.69	4515.05		0.41	-0.09	0.035
50.00	-30.21	-1.45	0.00	-123.63	0.00	123.63	4660.89	2330.44	8799.96	4406.52		0.47	-0.09	0.035
53.25	-28.52	-1.41	0.00	-118.92	0.00	118.92	3818.32	1909.16	7226.08	3618.41		0.53	-0.10	0.040
55.00	-28.07	-1.40	0.00	-116.45	0.00	116.45	3795.26	1897.63	7117.54	3564.06		0.57	-0.10	0.040
60.00	-26.79	-1.38	0.00	-109.42	0.00	109.42	3728.27	1864.14	6809.75	3409.94		0.68	-0.11	0.039
65.00	-25.54	-1.36	0.00	-102.51	0.00	102.51	3659.63	1829.82	6505.57	3257.62		0.80	-0.12	0.038
70.00	-24.31	-1.35	0.00	-95.69	0.00	95.69	3589.34	1794.67	6205.25	3107.24		0.94	-0.14	0.038
75.00	-23.12	-1.35	0.00	-88.93	0.00	88.93	3517.40	1758.70	5909.03	2958.91		1.09	-0.15	0.037
80.00	-21.95	-1.35	0.00	-82.19	0.00	82.19	3443.81	1721.91	5617.15	2812.75		1.25	-0.16	0.036
85.00	-20.82	-1.35	0.00	-75.45	0.00	75.45	3368.58	1684.29	5329.85	2668.89		1.42	-0.17	0.034
90.00	-19.71	-1.35	0.00	-68.70	0.00	68.70	3291.69	1645.84	5047.37	2527.44		1.61	-0.18	0.033
95.00	-18.63	-1.35	0.00	-61.94	0.00	61.94	3202.59	1601.29	4754.28	2380.67		1.80	-0.19	0.032
96.00	-18.42	-1.35	0.00	-60.59	0.00	60.59	3181.72	1590.86	4692.22	2349.60		1.85	-0.20	0.032
100.00	-17.11	-1.35	0.00	-55.19	0.00	55.19	3098.26	1549.13	4448.03	2227.32		2.02	-0.21	0.030
100.75	-16.87	-1.35	0.00	-54.18	0.00	54.18	1860.42	930.21	2714.89	1359.46		2.05	-0.21	0.049
105.00	-16.23	-1.35	0.00	-48.45	0.00	48.45	1828.32	914.16	2592.13	1297.99		2.24	-0.22	0.046
110.00	-15.50	-1.35	0.00	-41.69	0.00	41.69	1789.04	894.52	2449.03	1226.33		2.47	-0.23	0.043
115.00	-14.79	-1.35	0.00	-34.94	0.00	34.94	1748.11	874.06	2307.59	1155.51		2.73	-0.25	0.039
120.00	-14.09	-1.34	0.00	-28.18	0.00	28.18	1705.53	852.77	2168.05	1085.64		3.00	-0.26	0.034
125.00	-13.41	-1.33	0.00	-21.46	0.00	21.46	1661.30	830.65	2030.66	1016.84		3.28	-0.27	0.029
127.00	-7.70	-1.05	0.00	-18.81	0.00	18.81	1643.15	821.58	1976.36	989.65		3.39	-0.28	0.024
130.00	-7.32	-1.04	0.00	-15.65	0.00	15.65	1615.43	807.71	1895.65	949.24		3.57	-0.28	0.021
135.00	-6.70	-0.99	0.00	-10.47	0.00	10.47	1567.90	783.95	1763.28	882.95		3.87	-0.29	0.016
138.00	-6.30	-0.96	0.00	-7.49	0.00	7.49	1538.59	769.30	1685.21	843.86		4.06	-0.30	0.013
139.00	-6.18	-0.95	0.00	-6.53	0.00	6.53	1528.69	764.34	1659.43	830.95		4.12	-0.30	0.012
139.00	-6.18	-0.95	0.00	-6.53	0.00	6.53	1044.31	522.16	1138.99	570.34		4.12	-0.30	0.017
140.00	-3.60	-0.64	0.00	-5.57	0.00	5.57	1038.69	519.35	1122.71	562.19		4.18	-0.30	0.013
145.00	-3.20	-0.59	0.00	-2.37	0.00	2.37	1009.62	504.81	1041.96	521.75		4.49	-0.30	0.008
149.00	0.00	-0.57	0.00	0.00	0.00	0.00	985.17	492.59	978.22	489.84		4.75	-0.30	0.000

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.17	**Iterations**	20
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency**	0.41	**SA**	0.04	**S1**	0.06
						Seismic Importance Factor	1.00

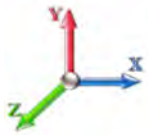
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1352.1	0.00	0.03	0.02	19.70	
10.00		1324.2	0.01	0.05	0.03	28.66	
15.00		1296.3	0.02	0.06	0.04	32.74	
20.00		1268.5	0.03	0.07	0.04	34.46	
25.00		1240.6	0.05	0.07	0.04	35.11	
30.00		1212.7	0.08	0.07	0.04	35.34	
35.00		1184.8	0.10	0.07	0.04	35.44	
40.00		1157.0	0.14	0.07	0.03	35.42	
45.00		1129.1	0.17	0.07	0.03	35.12	
47.25	Bot - Section 2	499.01	0.19	0.06	0.02	15.56	
50.00		1127.4	0.21	0.06	0.02	35.03	
53.25	Top - Section 1	1312.3	0.24	0.06	0.02	40.10	
55.00		325.05	0.26	0.05	0.02	9.77	
60.00		912.60	0.31	0.04	0.01	25.17	
65.00		888.71	0.36	0.03	0.01	20.54	
70.00		864.82	0.42	0.01	0.01	14.17	
75.00		840.92	0.48	-0.01	0.01	6.36	
80.00		817.03	0.54	-0.03	0.01	-2.05	
85.00		793.14	0.62	-0.06	0.02	-9.81	
90.00		769.25	0.69	-0.08	0.03	-15.66	
95.00		745.35	0.77	-0.11	0.05	-18.68	
96.00	Bot - Section 3	146.20	0.78	-0.11	0.05	-3.73	
100.00		965.51	0.85	-0.12	0.07	-24.74	
100.75	Top - Section 2	178.20	0.86	-0.12	0.07	-4.51	
105.00		401.45	0.94	-0.12	0.10	-8.68	
110.00		457.56	1.03	-0.10	0.15	-5.91	
115.00		441.63	1.13	-0.05	0.20	0.23	
120.00		425.70	1.23	0.03	0.27	7.97	
125.00		409.77	1.33	0.16	0.36	17.08	
127.00	Appurtenance(s)	4703.1	1.37	0.23	0.40	245.55	
130.00		234.39	1.44	0.36	0.47	16.28	
135.00		377.91	1.55	0.64	0.61	38.60	
138.00	Appurtenance(s)	252.16	1.62	0.85	0.70	31.30	
139.00	Top - Section 3	71.76	1.64	0.92	0.73	9.46	
140.00	Appurtenance(s)	2127.9	1.67	1.01	0.77	297.48	
145.00		260.18	1.79	1.49	0.96	47.49	
149.00	Appurtenance(s)	2608.2	1.89	1.98	1.14	574.98	
	Totals:	**35,123.1**				**1,651.4**	**Total Wind:** **40,568.0**

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

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.17			**Iterations**	20
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency**	0.41	**SA**	0.04			**S1**	0.06
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-35.56	-1.75	0.00	-203.63	0.00	203.63	5451.60	2725.80	12956.4	6487.84		0.00	0.00	0.038
5.00	-34.20	-1.73	0.00	-194.90	0.00	194.90	5379.95	2689.97	12523.2	6270.95		0.00	-0.01	0.037
10.00	-32.87	-1.71	0.00	-186.24	0.00	186.24	5306.65	2653.32	12093.3	6055.68		0.02	-0.02	0.037
15.00	-31.57	-1.68	0.00	-177.69	0.00	177.69	5231.70	2615.85	11666.9	5842.16		0.04	-0.03	0.036
20.00	-30.29	-1.65	0.00	-169.30	0.00	169.30	5155.10	2577.55	11244.2	5630.50		0.07	-0.03	0.036
25.00	-29.03	-1.62	0.00	-161.05	0.00	161.05	5076.86	2538.43	10825.5	5420.83		0.11	-0.04	0.035
30.00	-27.80	-1.59	0.00	-152.96	0.00	152.96	4996.96	2498.48	10411.0	5213.26		0.16	-0.05	0.035
35.00	-26.60	-1.55	0.00	-145.03	0.00	145.03	4915.42	2457.71	10001.0	5007.93		0.22	-0.06	0.034
40.00	-25.42	-1.52	0.00	-137.26	0.00	137.26	4832.22	2416.11	9595.63	4804.95		0.29	-0.07	0.034
45.00	-24.26	-1.49	0.00	-129.65	0.00	129.65	4747.38	2373.69	9195.21	4604.44		0.37	-0.08	0.033
47.25	-23.75	-1.47	0.00	-126.31	0.00	126.31	4708.66	2354.33	9016.69	4515.05		0.41	-0.08	0.033
50.00	-22.66	-1.44	0.00	-122.26	0.00	122.26	4660.89	2330.44	8799.96	4406.52		0.46	-0.09	0.033
53.25	-21.39	-1.40	0.00	-117.58	0.00	117.58	3818.32	1909.16	7226.08	3618.41		0.52	-0.10	0.038
55.00	-21.05	-1.39	0.00	-115.13	0.00	115.13	3795.26	1897.63	7117.54	3564.06		0.56	-0.10	0.038
60.00	-20.09	-1.37	0.00	-108.18	0.00	108.18	3728.27	1864.14	6809.75	3409.94		0.67	-0.11	0.037
65.00	-19.15	-1.35	0.00	-101.34	0.00	101.34	3659.63	1829.82	6505.57	3257.62		0.80	-0.12	0.036
70.00	-18.23	-1.34	0.00	-94.59	0.00	94.59	3589.34	1794.67	6205.25	3107.24		0.93	-0.13	0.036
75.00	-17.34	-1.33	0.00	-87.91	0.00	87.91	3517.40	1758.70	5909.03	2958.91		1.08	-0.15	0.035
80.00	-16.47	-1.33	0.00	-81.25	0.00	81.25	3443.81	1721.91	5617.15	2812.75		1.24	-0.16	0.034
85.00	-15.61	-1.33	0.00	-74.58	0.00	74.58	3368.58	1684.29	5329.85	2668.89		1.41	-0.17	0.033
90.00	-14.78	-1.33	0.00	-67.92	0.00	67.92	3291.69	1645.84	5047.37	2527.44		1.59	-0.18	0.031
95.00	-13.97	-1.33	0.00	-61.25	0.00	61.25	3202.59	1601.29	4754.28	2380.67		1.79	-0.19	0.030
96.00	-13.81	-1.33	0.00	-59.91	0.00	59.91	3181.72	1590.86	4692.22	2349.60		1.83	-0.20	0.030
100.00	-12.83	-1.33	0.00	-54.58	0.00	54.58	3098.26	1549.13	4448.03	2227.32		1.99	-0.20	0.029
100.75	-12.65	-1.33	0.00	-53.58	0.00	53.58	1860.42	930.21	2714.89	1359.46		2.03	-0.21	0.046
105.00	-12.17	-1.33	0.00	-47.91	0.00	47.91	1828.32	914.16	2592.13	1297.99		2.21	-0.22	0.044
110.00	-11.62	-1.33	0.00	-41.25	0.00	41.25	1789.04	894.52	2449.03	1226.33		2.45	-0.23	0.040
115.00	-11.09	-1.33	0.00	-34.57	0.00	34.57	1748.11	874.06	2307.59	1155.51		2.70	-0.25	0.036
120.00	-10.57	-1.33	0.00	-27.90	0.00	27.90	1705.53	852.77	2168.05	1085.64		2.96	-0.26	0.032
125.00	-10.06	-1.31	0.00	-21.27	0.00	21.27	1661.30	830.65	2030.66	1016.84		3.24	-0.27	0.027
127.00	-5.77	-1.04	0.00	-18.65	0.00	18.65	1643.15	821.58	1976.36	989.65		3.36	-0.28	0.022
130.00	-5.49	-1.03	0.00	-15.52	0.00	15.52	1615.43	807.71	1895.65	949.24		3.53	-0.28	0.020
135.00	-5.02	-0.99	0.00	-10.39	0.00	10.39	1567.90	783.95	1763.28	882.95		3.83	-0.29	0.015
138.00	-4.72	-0.95	0.00	-7.43	0.00	7.43	1538.59	769.30	1685.21	843.86		4.01	-0.29	0.012
139.00	-4.64	-0.94	0.00	-6.48	0.00	6.48	1528.69	764.34	1659.43	830.95		4.07	-0.29	0.011
139.00	-4.64	-0.94	0.00	-6.48	0.00	6.48	1044.31	522.16	1138.99	570.34		4.07	-0.29	0.016
140.00	-2.70	-0.64	0.00	-5.53	0.00	5.53	1038.69	519.35	1122.71	562.19		4.14	-0.29	0.012
145.00	-2.40	-0.59	0.00	-2.35	0.00	2.35	1009.62	504.81	1041.96	521.75		4.45	-0.30	0.007
149.00	0.00	-0.57	0.00	0.00	0.00	0.00	985.17	492.59	978.22	489.84		4.70	-0.30	0.000

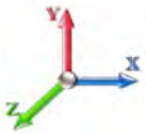
Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	272.71	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	267.19	0.650	0.000	5.00	24.400	15.86	129.8	0.0	1352.1
10.00		1.00	0.85	7.442	8.19	261.66	0.650	0.000	5.00	23.901	15.54	127.2	0.0	1324.2
15.00		1.00	0.85	7.442	8.19	256.14	0.650	0.000	5.00	23.401	15.21	124.5	0.0	1296.4
20.00		1.00	0.90	7.896	8.69	258.15	0.650	0.000	5.00	22.902	14.89	129.3	0.0	1268.5
25.00		1.00	0.95	8.276	9.10	258.46	0.650	0.000	5.00	22.403	14.56	132.6	0.0	1240.6
30.00		1.00	0.98	8.600	9.46	257.54	0.650	0.000	5.00	21.904	14.24	134.7	0.0	1212.8
35.00		1.00	1.01	8.883	9.77	255.71	0.650	0.000	5.00	21.405	13.91	136.0	0.0	1184.9
40.00		1.00	1.04	9.137	10.05	253.21	0.650	0.000	5.00	20.906	13.59	136.6	0.0	1157.0
45.00		1.00	1.07	9.366	10.30	250.18	0.650	0.000	5.00	20.406	13.26	136.7	0.0	1129.1
47.25	Bot - Section 2	1.00	1.08	9.463	10.41	248.66	0.650	0.000	2.25	9.020	5.86	61.0	0.0	499.0
50.00		1.00	1.09	9.576	10.53	246.70	0.650	0.000	2.75	11.062	7.19	75.7	0.0	1127.5
53.25	Top - Section 1	1.00	1.11	9.704	10.67	244.24	0.650	0.000	3.25	12.878	8.37	89.4	0.0	1312.3
55.00		1.00	1.12	9.770	10.75	246.88	0.650	0.000	1.75	6.847	4.45	47.8	0.0	325.1
60.00		1.00	1.14	9.951	10.95	242.77	0.650	0.000	5.00	19.226	12.50	136.8	0.0	912.6
65.00		1.00	1.16	10.120	11.13	238.38	0.650	0.000	5.00	18.727	12.17	135.5	0.0	888.7
70.00		1.00	1.17	10.279	11.31	233.76	0.650	0.000	5.00	18.228	11.85	134.0	0.0	864.8
75.00		1.00	1.19	10.430	11.47	228.93	0.650	0.000	5.00	17.728	11.52	132.2	0.0	840.9
80.00		1.00	1.21	10.572	11.63	223.90	0.650	0.000	5.00	17.229	11.20	130.2	0.0	817.0
85.00		1.00	1.22	10.708	11.78	218.71	0.650	0.000	5.00	16.730	10.87	128.1	0.0	793.1
90.00		1.00	1.24	10.838	11.92	213.37	0.650	0.000	5.00	16.231	10.55	125.8	0.0	769.2
95.00		1.00	1.25	10.962	12.06	207.88	0.650	0.000	5.00	15.732	10.23	123.3	0.0	745.4
96.00	Bot - Section 3	1.00	1.25	10.986	12.08	206.77	0.650	0.000	1.00	3.086	2.01	24.2	0.0	146.2
100.00		1.00	1.27	11.081	12.19	202.27	0.650	0.000	4.00	12.315	8.00	97.6	0.0	965.5
100.75	Top - Section 2	1.00	1.27	11.098	12.21	201.42	0.650	0.000	0.75	2.274	1.48	18.0	0.0	178.2
105.00		1.00	1.28	11.195	12.31	199.41	0.650	0.000	4.25	12.671	8.24	101.4	0.0	401.4
110.00		1.00	1.29	11.305	12.44	193.58	0.650	0.000	5.00	14.446	9.39	116.8	0.0	457.6
115.00		1.00	1.30	11.412	12.55	187.65	0.650	0.000	5.00	13.946	9.07	113.8	0.0	441.6
120.00		1.00	1.32	11.514	12.67	181.62	0.650	0.000	5.00	13.447	8.74	110.7	0.0	425.7
125.00		1.00	1.33	11.614	12.78	175.50	0.650	0.000	5.00	12.948	8.42	107.5	0.0	409.8
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	173.03	0.650	0.000	2.00	5.039	3.28	42.0	0.0	159.4
130.00		1.00	1.34	11.710	12.88	169.30	0.650	0.000	3.00	7.409	4.82	62.0	0.0	234.4
135.00		1.00	1.35	11.803	12.98	163.02	0.650	0.000	5.00	11.950	7.77	100.8	0.0	377.9
138.00	Appurtenance(s)	1.00	1.35	11.858	13.04	159.21	0.650	0.000	3.00	6.930	4.50	58.8	0.0	219.1
139.00	Top - Section 3	1.00	1.36	11.876	13.06	157.94	0.650	0.000	1.00	2.270	1.48	19.3	0.0	71.8
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	156.66	0.650	0.000	1.00	2.250	1.46	19.1	0.0	53.5
145.00		1.00	1.37	11.982	13.18	150.24	0.650	0.000	5.00	10.951	7.12	93.8	0.0	260.2
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	145.04	0.650	0.000	4.00	8.402	5.46	72.4	0.0	199.5
								Totals:	**149.00**			**3,665.4**		**26,063.1**

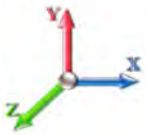
Discrete Appurtenance Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	RRH2x60 700	3	12.051	13.256	1.50	1.00	6.79	153.00	0.000	0.000	90.08	0.00	0.00
2	149.00	LNX-6514DS-VTM	3	12.051	13.256	0.83	1.00	20.34	116.40	0.000	0.000	269.68	0.00	0.00
3	149.00	BXA-80063/4CF	3	12.051	13.256	0.72	1.00	10.20	29.70	0.000	0.000	135.15	0.00	0.00
4	149.00	SBNHH-1D65B	3	12.051	13.256	0.83	1.00	20.12	121.80	0.000	0.000	266.71	0.00	0.00
5	149.00	SBNHH-1D65B	3	12.077	13.284	0.83	1.00	20.32	120.00	0.000	1.500	269.92	0.00	404.87
6	149.00	Low Profile	1	12.051	13.256	1.00	1.00	22.00	1500.00	0.000	0.000	291.64	0.00	0.00
7	149.00	RRH 4X45 AWS	3	12.051	13.256	0.80	1.00	6.24	192.00	0.000	0.000	82.72	0.00	0.00
8	149.00	RRH 2X60W-1900MHz	3	12.051	13.256	0.84	1.00	4.74	138.00	0.000	0.000	62.80	0.00	0.00
9	149.00	DB-T1-6Z-8AB-0Z	1	12.051	13.256	0.67	1.00	3.22	18.90	0.000	0.000	42.63	0.00	0.00
10	149.00	DB-T1-6Z-8AB-0Z	1	12.051	13.256	0.67	1.00	3.22	18.90	0.000	0.000	42.63	0.00	0.00
11	140.00	Low Profile Platform	1	11.894	13.084	1.00	1.00	22.00	1500.00	0.000	0.000	287.84	0.00	0.00
12	140.00	AIR 32	3	11.894	13.084	0.70	0.80	13.59	325.50	0.000	0.000	177.84	0.00	0.00
13	140.00	AIR 21 B2A/B4P	3	11.894	13.084	0.69	0.80	12.57	249.00	0.000	0.000	164.46	0.00	0.00
14	138.00	KRY 112 144/1	3	11.858	13.044	0.56	0.80	0.69	33.06	0.000	0.000	8.98	0.00	0.00
15	127.00	HPA-65R-BUU-8H	12	11.653	12.818	0.63	0.80	98.44	816.00	0.000	0.000	1261.79	0.00	0.00
16	127.00	MTC3607 Platform + HR	1	11.653	12.818	1.00	1.00	51.70	2246.00	0.000	0.000	662.68	0.00	0.00
17	127.00	DC6-48-60-18-8F	4	11.653	12.818	0.80	0.80	2.94	127.20	0.000	0.000	37.74	0.00	0.00
18	127.00	RRUS A2	6	11.653	12.818	0.50	0.80	5.54	127.20	0.000	0.000	70.95	0.00	0.00
19	127.00	RRUS E2	3	11.653	12.818	0.60	0.80	4.86	180.00	0.000	0.000	62.29	0.00	0.00
20	127.00	RRUS 32	3	11.653	12.818	0.56	0.80	2.77	231.00	0.000	0.000	35.53	0.00	0.00
21	127.00	RRUS 12	6	11.653	12.818	0.60	0.80	9.72	360.00	0.000	0.000	124.59	0.00	0.00
22	127.00	RRUS 11	9	11.653	12.818	0.57	0.80	12.88	456.30	0.000	0.000	165.12	0.00	0.00
							Totals:		**9,059.96**			**4,613.77**		

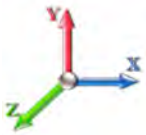
Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		129.83	1505.57	0.00	0.00
10.00		127.17	1477.70	0.00	0.00
15.00		124.52	1449.82	0.00	0.00
20.00		129.30	1421.95	0.00	0.00
25.00		132.57	1394.08	0.00	0.00
30.00		134.68	1366.20	0.00	0.00
35.00		135.96	1338.33	0.00	0.00
40.00		136.57	1310.45	0.00	0.00
45.00		136.66	1282.58	0.00	0.00
47.25		61.03	568.07	0.00	0.00
50.00		75.74	1211.89	0.00	0.00
53.25		89.35	1412.05	0.00	0.00
55.00		47.83	378.76	0.00	0.00
60.00		136.79	1066.05	0.00	0.00
65.00		135.50	1042.16	0.00	0.00
70.00		133.97	1018.27	0.00	0.00
75.00		132.20	994.37	0.00	0.00
80.00		130.24	970.48	0.00	0.00
85.00		128.09	946.59	0.00	0.00
90.00		125.77	922.70	0.00	0.00
95.00		123.30	898.80	0.00	0.00
96.00		24.24	176.89	0.00	0.00
100.00		97.57	1088.27	0.00	0.00
100.75		18.04	201.21	0.00	0.00
105.00		101.43	531.88	0.00	0.00
110.00		116.77	611.01	0.00	0.00
115.00		113.79	595.08	0.00	0.00
120.00		110.71	579.15	0.00	0.00
125.00		107.52	563.22	0.00	0.00
127.00	(44) attachments	2462.69	4764.53	0.00	0.00
130.00		62.04	316.23	0.00	0.00
135.00		100.85	514.31	0.00	0.00
138.00	(3) attachments	67.74	334.00	0.00	0.00
139.00		19.28	99.04	0.00	0.00
140.00	(7) attachments	649.27	2155.25	0.00	0.00
145.00		93.82	333.58	0.00	0.00
149.00	(24) attachments	1626.34	2666.96	0.00	404.87
	Totals:	**8,279.19**	**39,507.47**	**0.00**	**404.87**

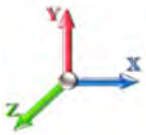
Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	5/1/2017	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.50	-8.29	0.00	-919.45	0.00	919.45	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.149
5.00	-37.99	-8.19	0.00	-878.00	0.00	878.00	5379.95	2689.97	12523.2	6270.95	0.02	-0.038	0.000	0.147
10.00	-36.51	-8.08	0.00	-837.06	0.00	837.06	5306.65	2653.32	12093.3	6055.68	0.08	-0.076	0.000	0.145
15.00	-35.06	-7.98	0.00	-796.65	0.00	796.65	5231.70	2615.85	11666.9	5842.16	0.18	-0.115	0.000	0.143
20.00	-33.63	-7.87	0.00	-756.76	0.00	756.76	5155.10	2577.55	11244.2	5630.50	0.32	-0.154	0.000	0.141
25.00	-32.23	-7.76	0.00	-717.41	0.00	717.41	5076.86	2538.43	10825.5	5420.83	0.51	-0.194	0.000	0.139
30.00	-30.86	-7.64	0.00	-678.63	0.00	678.63	4996.96	2498.48	10411.0	5213.26	0.73	-0.234	0.000	0.136
35.00	-29.52	-7.52	0.00	-640.44	0.00	640.44	4915.42	2457.71	10001.0	5007.93	1.00	-0.275	0.000	0.134
40.00	-28.20	-7.39	0.00	-602.85	0.00	602.85	4832.22	2416.11	9595.63	4804.95	1.31	-0.317	0.000	0.131
45.00	-26.91	-7.26	0.00	-565.88	0.00	565.88	4747.38	2373.69	9195.21	4604.44	1.66	-0.359	0.000	0.129
47.25	-26.34	-7.21	0.00	-549.54	0.00	549.54	4708.66	2354.33	9016.69	4515.05	1.84	-0.378	0.000	0.127
50.00	-25.13	-7.14	0.00	-529.71	0.00	529.71	4660.89	2330.44	8799.96	4406.52	2.06	-0.402	0.000	0.126
53.25	-23.72	-7.05	0.00	-506.51	0.00	506.51	3818.32	1909.16	7226.08	3618.41	2.34	-0.430	0.000	0.146
55.00	-23.33	-7.01	0.00	-494.18	0.00	494.18	3795.26	1897.63	7117.54	3564.06	2.51	-0.445	0.000	0.145
60.00	-22.26	-6.88	0.00	-459.14	0.00	459.14	3728.27	1864.14	6809.75	3409.94	3.00	-0.492	0.000	0.141
65.00	-21.22	-6.75	0.00	-424.73	0.00	424.73	3659.63	1829.82	6505.57	3257.62	3.54	-0.540	0.000	0.136
70.00	-20.19	-6.63	0.00	-390.96	0.00	390.96	3589.34	1794.67	6205.25	3107.24	4.13	-0.587	0.000	0.131
75.00	-19.20	-6.50	0.00	-357.83	0.00	357.83	3517.40	1758.70	5909.03	2958.91	4.77	-0.635	0.000	0.126
80.00	-18.22	-6.37	0.00	-325.33	0.00	325.33	3443.81	1721.91	5617.15	2812.75	5.46	-0.682	0.000	0.121
85.00	-17.27	-6.25	0.00	-293.46	0.00	293.46	3368.58	1684.29	5329.85	2668.89	6.20	-0.729	0.000	0.115
90.00	-16.35	-6.12	0.00	-262.22	0.00	262.22	3291.69	1645.84	5047.37	2527.44	6.99	-0.774	0.000	0.109
95.00	-15.45	-5.99	0.00	-231.61	0.00	231.61	3202.59	1601.29	4754.28	2380.67	7.82	-0.819	0.000	0.102
96.00	-15.27	-5.97	0.00	-225.61	0.00	225.61	3181.72	1590.86	4692.22	2349.60	8.00	-0.828	0.000	0.101
100.00	-14.18	-5.86	0.00	-201.72	0.00	201.72	3098.26	1549.13	4448.03	2227.32	8.70	-0.863	0.000	0.095
100.75	-13.98	-5.85	0.00	-197.32	0.00	197.32	1860.42	930.21	2714.89	1359.46	8.84	-0.869	0.000	0.153
105.00	-13.44	-5.75	0.00	-172.46	0.00	172.46	1828.32	914.16	2592.13	1297.99	9.63	-0.904	0.000	0.140
110.00	-12.83	-5.64	0.00	-143.71	0.00	143.71	1789.04	894.52	2449.03	1226.33	10.61	-0.959	0.000	0.124
115.00	-12.23	-5.52	0.00	-115.54	0.00	115.54	1748.11	874.06	2307.59	1155.51	11.64	-1.009	0.000	0.107
120.00	-11.65	-5.41	0.00	-87.93	0.00	87.93	1705.53	852.77	2168.05	1085.64	12.72	-1.053	0.000	0.088
125.00	-11.08	-5.29	0.00	-60.90	0.00	60.90	1661.30	830.65	2030.66	1016.84	13.84	-1.088	0.000	0.067
127.00	-6.37	-2.74	0.00	-50.31	0.00	50.31	1643.15	821.58	1976.36	989.65	14.30	-1.100	0.000	0.055
130.00	-6.05	-2.68	0.00	-42.08	0.00	42.08	1615.43	807.71	1895.65	949.24	15.00	-1.116	0.000	0.048
135.00	-5.54	-2.57	0.00	-28.70	0.00	28.70	1567.90	783.95	1763.28	882.95	16.18	-1.137	0.000	0.036
138.00	-5.21	-2.49	0.00	-20.99	0.00	20.99	1538.59	769.30	1685.21	843.86	16.90	-1.148	0.000	0.028
139.00	-5.11	-2.47	0.00	-18.50	0.00	18.50	1528.69	764.34	1659.43	830.95	17.14	-1.150	0.000	0.026
139.00	-5.11	-2.47	0.00	-18.50	0.00	18.50	1044.31	522.16	1138.99	570.34	17.14	-1.150	0.000	0.037
140.00	-2.97	-1.78	0.00	-16.03	0.00	16.03	1038.69	519.35	1122.71	562.19	17.38	-1.153	0.000	0.031
145.00	-2.63	-1.68	0.00	-7.13	0.00	7.13	1009.62	504.81	1041.96	521.75	18.60	-1.165	0.000	0.016
149.00	0.00	-1.63	0.00	-0.40	0.00	0.40	985.17	492.59	978.22	489.84	19.57	-1.169	0.000	0.001

Final Analysis Summary

Structure:	CT13075-A-SBA		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	40.6	0.00	47.34	0.00	0.00	4523.52
0.9D + 1.6W 105 mph Wind	40.6	0.00	35.49	0.00	0.00	4487.32
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.4	0.00	72.94	0.00	0.00	1022.24
1.2D + 1.0E	1.7	0.00	47.41	0.00	0.00	205.38
0.9D + 1.0E	1.7	0.00	35.56	0.00	0.00	203.63
1.0D + 1.0W 60 mph Wind	8.3	0.00	39.50	0.00	0.00	919.45

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 105 mph Wind	-14.72	-28.80	0.00	-971.26	0.00	-971.26	1860.42	930.21	2714.89	1359.46	100.75	0.723
0.9D + 1.6W 105 mph Wind	-10.54	-28.47	0.00	-959.44	0.00	-959.44	1860.42	930.21	2714.89	1359.46	100.75	0.712
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-33.11	-6.35	0.00	-211.69	0.00	-211.69	1860.42	930.21	2714.89	1359.46	100.75	0.174
1.2D + 1.0E	-16.87	-1.35	0.00	-54.18	0.00	-54.18	1860.42	930.21	2714.89	1359.46	100.75	0.049
0.9D + 1.0E	-12.65	-1.33	0.00	-53.58	0.00	-53.58	1860.42	930.21	2714.89	1359.46	100.75	0.046
1.0D + 1.0W 60 mph Wind	-13.98	-5.85	0.00	-197.32	0.00	-197.32	1860.42	930.21	2714.89	1359.46	100.75	0.153

Base Plate Summary

Structure:	CT13075-A-SB		**Code:**	EIA/TIA-222-G	5/1/2017
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions		Base Plate		Anchor Bolts	
Original Design		**Yield (ksi):**	60.00	**Bolt Circle:**	64.88
Moment (kip-ft):	5442.50	**Width (in):**	65.37	**Number Bolts:**	20.00
Axial (kip):	53.57	**Style:**	Clipped	**Bolt Type:**	2.25" 18J
Shear (kip):	49.90	**Polygon Sides:**	8.00	**Bolt Diameter (in):**	2.25
Analysis		**Clip Length (in):**	14.00	**Yield (ksi):**	75.00
Moment (kip-ft):	4523.52	**Effective Len (in):**	8.93	**Ultimate (ksi):**	100.00
Axial (kip):	72.94	**Moment (kip-in):**	565.94	**Arrangement:**	Clustered
Shear (kip):	40.65	**Allow Stress (ksi):**	81.00	**Cluster Dist (in):**	6.00
		Applied Stress (ksi):	0.00	**Start Angle (deg):**	45.00
Moment Design %:	83.11	**Stress Ratio:**	0.62	Compression	
				Force (kip):	170.98
				Allowable (kip):	260.00
				Ratio:	0.67
				Tension	
				Force (kip):	163.68
				Allowable (kip):	260.00
				Ratio:	0.65

Monopole Mat Foundation Design

			Date: 5/1/2017
Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	149
Site Number:	CT13075-A-SBA	**Engineer Name:**	D. Zhou
Engr. Number:	33655	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

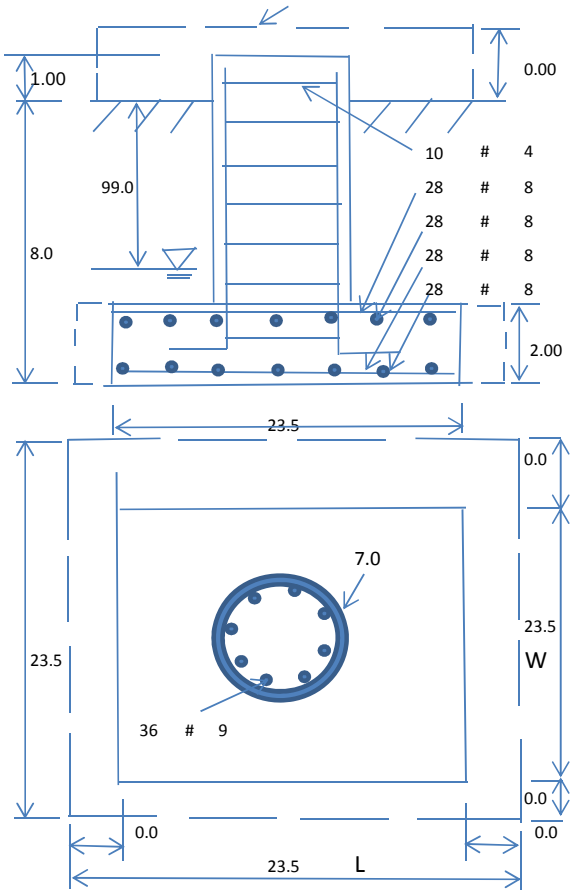
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	47.3	Shear Force (Kips):	40.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4523.5
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5
Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	28	Qty. of Rebar in Pad (W):	28	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	28	Qty. of Rebar in Pad (W):	28	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	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):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

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

Total Dry Soil Volume (cu. Ft.):	3082.59	Total Dry Soil Weight (Kips):	308.26
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	308.26	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1373.89	Total Dry Concrete Weight (Kips):	206.08
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	206.08	Total Vertical Load on Base (Kips):	561.64

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	4486	<	Allowable Factored Soil Bearing (psf): 6000	0.75	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5995.0	>	Design Factored Momont (kips-ft): 4889	0.82	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.23	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		

(1) Concrete Pier:

				Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each): 0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	>	Design Factored Moment (Mu, Kips-Ft 4807.7	0.80	OK!
Calculated Shear Capacity (Kips):	660.1	>	Design Factored Shear (Kips): 40.6	0.06	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	>	Design Factored Tension (Tu Kips): 0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9734.2	>	Design Factored Axial Load (Pu Kips): 47.3	0.00	OK!
Moment & Axial Strength Combination:	0.80	OK!	Check Tie Spacing (Design/Required):	1	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	548.4	>	One-Way Factored Shear (L-D. Kips): 322.6	0.59	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	548.4	>	One-Way Factored Shear (W-D., Kips) 322.6	0.59	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	612.2	>	One-Way Factored Shear (C-C, Kips): 345.3	0.56	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0038	OK!	Lower Steel Pad Reinf. Ratio (W-Direc 0.0038		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	1971.7	>	Moment at Bottom (L-Direct. K-Ft): 1055.3	0.54	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	1971.7	>	Moment at Bottom (W-Direct. K-Ft): 1055.3	0.54	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	2762.4	>	Moment at Bottom (C-C Dir. K-Ft): 1492.4	0.54	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0038	OK!	Upper Steel Reinf. Ratio (W-Direct.): 0.0038		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	1971.7	>	Moment at the top (L-Dir Kips-Ft): 538.1	0.27	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	1971.7	>	Moment at the top (W-Dir Kips-Ft): 538.1	0.27	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2762.4	>	Moment at the top (C-C Direc. K-Ft): 552.1	0.20	OK!

Exhibit E

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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11311G

CT311/Opta Paws Place 1294
Pleasant Valley Road North
Groton, CT 06340

May 25, 2017

EBI Project Number: 6217001371

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	7.00 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

May 25, 2017

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11311G – CT311/Opta Paws Place**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1294 Pleasant Valley Road North, Groton, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general public 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 public 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.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1294 Pleasant Valley Road North, Groton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **Ericsson AIR32 B66Aa/B2A** & **Ericsson AIR21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B66Aa/B2A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. 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.

8) The antenna mounting height centerline of the proposed antennas is **140 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

10) All calculations were done with respect to uncontrolled / general public threshold limits.

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	140	Height (AGL):	140	Height (AGL):	140
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	1.87	Antenna B1 MPE%	1.87	Antenna C1 MPE%	1.87
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	140	Height (AGL):	140	Height (AGL):	140
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.93	Antenna B2 MPE%	0.93	Antenna C2 MPE%	0.93

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.80 %**
Verizon Wireless	3.15 %
AT&T	1.05 %
Site Total MPE %:	**7.00 %**

T-Mobile Sector A Total:	2.80 %
T-Mobile Sector B Total:	2.80 %
T-Mobile Sector C Total:	2.80 %
Site Total:	7.00 %

T-Mobile _Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	137	9.78	AWS - 2100 MHz	1000	0.93%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	137	9.78	PCS - 1900 MHz	1000	0.93%
T-Mobile PCS - 1900 MHz UMTS	2	1,167.14	137	4.89	PCS - 1950 MHz	1000	0.47%
T-Mobile PCS - 1900 MHz GSM	2	1,167.14	137	4.89	PCS - 1950 MHz	1000	0.47%
						Total:	**2.80%**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	2.80 %
Sector B:	2.80 %
Sector C:	2.80 %
T-Mobile Per Sector Maximum:	2.80 %
Site Total:	7.00 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.00%** of the allowable FCC established general public 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.