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

January 28, 2021

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

RE: Notice of Exempt Modification
225 Grist Mill Rd.
Latitude: 41.866708
Longitude: -72.815772
T-Mobile Site #: CTHA531A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 131-foot level of the existing 150-foot Monopine Tower at 225 Grist Mill Rd., Simsbury, CT. The 150-foot tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Ensign-Bickford Realty Corporation. T-Mobile now intends to remove six (6) 1900/2100 MHz antennas and replace with six (6) new 1900/2100/2500 MHz antennas and install (3) new 600/700/1900/2100 MHz .

The new antennas would support 5G services and would be installed at the 131-foot level of the tower.

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

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) Comscope LNX-6515DS L700 MHz antenna (remove) – (3) Ericsson AIR32 KRD901146-1 L1900/2100 MHz antenna (replace)
- (3) RFS APX16DWV-16DWVS-C-A20 2100 MHz antenna (remove) – (3) Ericsson AIR6449 B41 2500 MHz antenna (replace)
- (3) T-Arms (SitePro P/N UDS-NPL) – (remove) – Low Profile Platform w/HRK Site Pro RMQ-4096-HK – (Replace)

Install New:

- (3) RFS APXVAALL24-43-U-NA20 600/700/1900/2100 MHz antenna
- (3) Commscope SDX1926Q-43 Diplexer
- (3) Ericsson Radio 4449 B71+B85 – RRU
- (3) Ericsson 4415 B25 – RRU
- (3) 1-5/8" Fiber

Existing Equipment to Remain:

- (3) Ericsson KRY 112 144/1 – TMAs
- (3) RFS ATM1412D-1A20 – TMA
- (3) Kathrein 782-11056 – Bias-T
- (6) 1-5/8" Coax

Entitlements:

- (18) 7/8" coax

GROUND

Install New:

- (1) Ericsson 6160 Equip. Cabinet
- Ericsson B160 Battery Cabinet
- 2' x 3' concrete pad extension

Remove:

- Existing RBS6201 Equip. Cabinet

Existing Equipment to Remain:

- (1) ½" Coax for GPS antenna
- RBS 6201 Equip. Cabinet

This facility was originally approved by the CSC under Docket 203 on November 7/2001. The Tower shall be constructed as a monopole, no taller than is necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Town of Simsbury, but such Tower shall not exceed the a height of 130 feet AGL. On May 21, 2002, the Council approved a petition to allow New England Site Management to build a 150-foot tall tower. On the same date, the Council also approved a D&M Plan for the facility. The Simsbury Building Department issues an approval under Permit No. 108897 on December 31, 2002 for the construction and occupancy

of an 150-foot monopole tower. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide and requesting rent with specific legal, technical, environmental, or economic reasons precluding such tower sharing. Upon the establishment of any new State or Federal RF standards applicable to the facility, it was to be brought into compliance with same. Public or private entities were to be able to share space on the tower for fair consideration, or provided reasons precluding same. Obsolete antennas were to be removed within 60 days. There were no further post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Simsbury's First Selectman, Eric Wellman, and Director of Planning, Michael Gidden, as well as to the property owner Ensign-Bickford Realty Corporation. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

G. Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3804 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

Attachments

cc: Eric Wellman, First Selectman / with attachments
Town of Simsbury, 933 Hopmeadow St., Simsbury, CT. 06070
Michael Gidden, Director of Planning / with attachments
Town of Simsbury, 933 Hopmeadow St., Simsbury, CT 06070
Ensign-Bickford Realty Corporation / with attachments
P.O. Box 30666 Hartford, CT 06150 (SBA address on file)

Exhibit List

Exhibit 1	Check Copy	Invoiced at a later date per Covid 19 Guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	CSC Docket 203
Exhibit 6	Construction Drawings	Chappell Engineering 1/4/21
Exhibit 7	Structural Analysis	TES 11/5/20
Exhibit 8	Mount Analysis	TES 11/4/20
Exhibit 9	EME Report	EBI Consulting 11/19/20

EXHIBIT 1

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

EXHIBIT 2

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

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

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EXHIBIT 3

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.

SIMSBURY
CONNECTICUT

Information on the Property Records for the Municipality of Simsbury was last updated on 1/27/2021.

Parcel Information

Location:	225 GRIST MILL ROAD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	30569027	Map Block Lot:	F11 103 005	Acres:	0.23
490 Acres:	0.00	Zone:	I-2	Volume / Page:	0294/0600
Developers Map / Lot:		Census:			

Value Information

	Appraised Value	Assessed Value
Land	490,188	343,130
Buildings	0	0
Detached Outbuildings	120,000	84,000
Total	610,188	427,130

Owner's Information

Owner's Data
ENSIGN-BICKFORD REALTY CORPORATION P O BOX 711 SIMSBURY, CT 06070

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Cell Tower	0000			1

Owner History - Sales

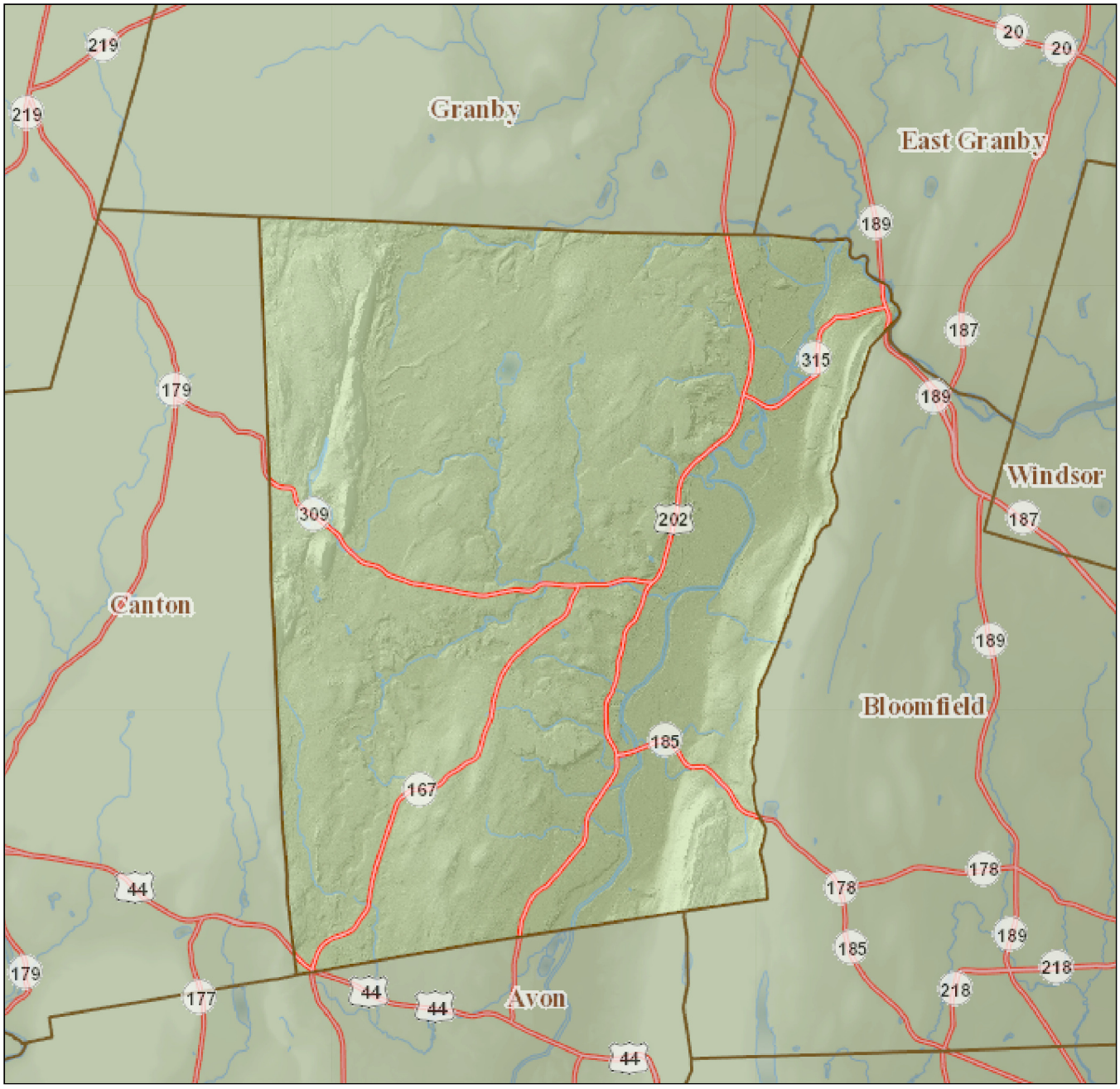
Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
ENSIGN-BICKFORD REALTY CORPORATION	0294	0600	11/25/1985		No	$0

EXHIBIT 4

Town of Simsbury

Geographic Information System (GIS)

Date Printed: 1/27/2021



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Simsbury and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 8000 feet

0 8,000 Feet

N W E S

EXHIBIT 5

CSC Search:

GO

Advanced Search

» COUNCIL MEMBERSHIP

» DIRECTIONS

» AUDIO LINK

» PUBLIC PARTICIPATION

» APPLICATION GUIDES

» PROCEEDINGS PROCESS

» TELECOMMUNICATION DATABASE

» GENERATION FACILITY STATUS

» PENDING PROCEEDINGS

» ELECTRIC TRANSMISSION UPGRADE PROJECTS

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Daniel F. Caruso,
Chairman

S. Derek Phelps,
Executive Director

Phone: (860) 827-2935
Fax: (860) 827-2950

E-mail Address:
siting.council
@ct.gov

DOCKET NO. 203 - New England Site Management application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on Grist Mill Road, known as the Powder Forest, Simsbury, Connecticut.	} } }	Connectic Siting Council Novembe 7, 2001

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Sitin Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed site in Simsbury, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, an recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effec 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 Public Need, as provided by General Statutes § 16-50k, be issued to New England Site Management for the construction, maintenance and operation o cellular telecommunications facility at the proposed site located on Grist Mill Road, known as the Powder Forest, Simsbury, 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 constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodat the antennas of the Town of Simsbury, Cingular, Nextel, AT&T and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level unless sufficient carriers commit to placement o antennas on the tower and no space on the tower exists below 130 feet, whi if approved by the Council through a petition pursuant to Sections 16-50j-38 through 16-50j-40 of the Regulations of Connecticut State Agencies, shall authorize the construction or extension of the tower to a maximum height of 150 feet above ground level (AGL).

2. The Certificate Holder shall prepare a 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 submitted to and approved by the Council prior to the commencement of facility construction and shall include: final site plan(s) for site development to include the location and specificatio for the tower foundation, placement of carrier antennas, tower height,

provisions for tower extension, equipment buildings, security fence, access road, and utility line; construction plans for site clearing, tree trimming, wate drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping and provisions to protect the existing vegetative buffer that wou extend around the facility compound; a tower finish that may include paintin and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

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 Communicatic Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when 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 the proposed tower for fair consideration, or shall provide any requesting ent with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Orde shall be void, and the Certificate Holder shall dismantle the tower and remov all associated equipment or reapply for any continued or new use to the Cou before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be remov within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall b void if all construction authorized herein is not completed within three years the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

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 Hartford Coura

By this Decision and Order, the Council disposes of the legal rights, duties, a 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 to this proceeding are:

New England Site Management, LLC (NESM)

Wayne Kemp
New England Site Management LLP

	1050 Buckley Highway Union, CT 06076
	Andrew Lord Murtha Cullina, LLP City Place 1, 185 Asylum Stree Hartford, CT 06103-3469
	Douglas Roberts, AIA URS Corporation AES 795 Brook Street, Building 5 Rocky Hill, CT 06067
Town of Simsbury	Robert M. DeCrescenzo, Esq. Updike, Kelly & Spellacy, P.C. P.O. Box 231277 One State Street Hartford, CT 06123-1277
Crown Atlantic Company	Kenneth C. Baldwin Robinson & Cole 280 Trumbull Street Hartford, CT 06103-3597
SNET Mobility, LLC, d/b/a Cingular Wireless (Cingular)	Peter W. van Wilgen SNET Mobility, LLC 500 Enterprise Drive Rocky Hill, CT 06067-3900
AT&T Wireless Services, LLC	Christopher B. Fisher, Esq. Cuddy & Feder & Worby LLP 90 Maple Avenue White Plains, NY 10601-5196
Nextel Communications of the Mid-Atlantic, Inc. d/b/a Nextel Communications	Christopher B. Fisher, Esq. Cuddy & Feder & Worby LLP 90 Maple Avenue White Plains, NY 10601-5196

Content Last Modified on 8/12/2002 9:34:01 AM

Town of Simsbury

932 HOPMEADOW STREET P.O. BOX 495 SIMSBURY, CONNECTICUT 06070

Office of Community Planning and Development

August 13, 2002

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New England Site Management, LLC;
Development and Management Plan

Dear Mr. Phelps:

I write on behalf of the Town of Simsbury in support of New England Site Management LLC's ("NESM") request for revisions to the Development and Management Plan ("D&M Plan") for an approved telecommunications tower and ancillary facilities in the Powder Forest Business Park.

I have reviewed NESM's plans to move a portion of the access road for the facility approximately 100 feet north of the original alignment. This configuration is necessary to accommodate future plans for a large parcel of the Powder Forest Business Park. I also reviewed a soil report prepared by Mr. Henry Moeller which indicated that there are no wetlands within 75 feet of the revised road alignment. Based on my review of these documents, the Town of Simsbury has no objection to NESM's request to revise the D&M Plan.

Thank you for considering these comments. If you have any questions or require additional information, please contact me.

Sincerely,

William S. Voelker, AICP
Director of Community Planning and Development

cc: Mr. Wayne Kemp
Mr. Ken Lindeland
Mr. Robert Stevens
Andrew W. Lord, Esq.
Mr. Thomas E. Vincent, First Selectman

Telephone (860) 658-3245
Facsimile (860) 658-3217
www.state.ct.us/music/simsbury

An Equal Opportunity Employer
8:30 - 7:00 Monday
8:30 - 4:30 Tuesday through Friday

MURTHA CULLINA LLP

ATTORNEYS AT LAW

CITYPLACE I
185 ASYLUM STREET
HARTFORD, CONNECTICUT 06103-3469

TELEPHONE (860) 240-6000
FACSIMILE (860) 240-6150
www.murthalaw.com

ANDREW W. LORD
(860) 240-6180
ALORD@MURTHALAW.COM

August 6, 2002

HAND DELIVERED

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051

Re: Docket 203; New England Site Management, LLC

Dear Mr. Phelps:

I write on behalf of New England Site Management, LLC ("NESM") to provide you with an original and 25 copies of a request for a revision to the Development and Management Plan ("D&M Plan") for the telecommunication facility in the Powder Forest Business Park in Simsbury, Connecticut.

By way of background, the Connecticut Siting Council (the "Council") issued a Certificate of Environmental Compatibility and Public Need for a 130-foot tall telecommunications tower on November 7, 2001. On May 21, 2002, the Council approved a petition to allow NESM to build a 150-foot tall tower. On the same date, the Council also approved a D&M Plan for the facility. Since then, there has been a change at the property necessitating revisions to the access road. Pursuant to the Council's letter approving the D&M Plan dated May 23, 2002, NESM is now requesting that the Council approve a revision to the D&M Plan.

As you may recall, the telecommunication compound is located approximately 1,100 feet west-southwest of Grist Mill Road, which ends in a cul-de-sac. The Council approved an access road off of the south end of the cul-de-sac and running roughly westerly to the compound. After the Council approved the D&M Plan, Ensign-Bickford Realty Corp., the property owner, entered into negotiations to convey a large parcel of its land in the Powder Forest Business Park. The approved access road crosses part of the parcel to be conveyed. The new owner of the property intends to fence the perimeter of its land and for security

purposes and cannot allow gated access to the telecommunication facility. Therefore, it is necessary to move the access road so that it is outside of the fence line.

The new access road has been designed to connect to the western side of the cul-de-sac, as shown on the attached site plans. The road will then run roughly parallel to, and approximately 100 feet north of, the original road, for a distance of about 250 feet. The new road will then turn to the southwest for approximately 160 feet to join the path of the approved road for its remaining length.

You may recall that the original plan for the facility indicated the presence of inland wetlands approximately 100 feet west of the cul-de-sac and approximately 125 feet north of the original access road. Due to the shift in the location of the road to the north, Ensign-Bickford Realty Corporation engaged Mr. Henry Moeller, a certified soil scientist, to evaluate the potential impacts of the relocated access road on inland wetlands. (See attached letter from Ensign-Bickford Realty Corp., dated July 18, 2002). Mr. Moeller visited the site on June 10, 2002 and reviewed the site service road plans. Mr. Moeller's report, which is attached for your review, indicates that there are no inland wetlands or watercourses within 75 feet or more of the location of the new access road.

I have discussed these plans for the new road layout with Mr. William Voelker, the Director of Community Planning and Development for the Town of Simsbury. Mr. Voelker has reviewed the new plans and has no objection to the new configuration.

Thank you for considering this request. If you have any questions or require additional information, please contact me.

Sincerely,

Andrew W. Lord

Enclosures

cc: Mr. Wayne Kemp
Service List

No. 203183

225 GRIST MILL ROAD

CERTIFICATE OF OCCUPANCY

Simsbury Building Department
Simsbury, Connecticut 06070

DATE: 12/31/2002
FEE:$ 5.00
ZONE:

This is to certify that building at 225 GRIST MILL ROAD as described under Permit No. 108897 conforms substantially to the requirements of the State Building Code per 118.4 of the CBBC and the Zoning Regulations of the Town of Simsbury, and is hereby approved for occupancy as indicated below.

OCCUPANCY CLASSIFICATION:
MONOPOLE TOWER (150'); FDN FOR TOWER; 300 LF FENCE
Construction Type: ____ Code Edition: 1999 SBC
Sprinkler Required: Y / N Fire Alarm Required: Y / N
Special Conditions / Modifications: Y / N (See Attached if Yes)

Building Official

OWNER'S COPY

Town of Simsbury

933 HOPMEADOW STREET P.O. BOX 495 SIMSBURY, CONNECTICUT 06070

Building Department

REQUEST FOR CERTIFICATE OF OCCUPANCY

DATE: 12-17-02
TIME 2:30PM

I Wayne Kemp DO HERBY REQUEST THAT A CERTIFICATE OF OCCPANCY BE ISSUED FOR THE WORK THAT HAS BEEN PERFORMED AT 225 Grist Mill Road

GEN PERMIT NUMBER 108857
OCCUPANCY CLASSIFICATION Cell tower

DATE C.O. MUST BE RECEIVED BY _____
DATE OF FINAL INSPECTION _____

RECEIVED BY D. Sweeney.
DATE 12-17-02

Telephone (860) 658-3234
Facsimile (860) 658-3217

www.state.ct.us/munic/simsbury

STRUCTURAL ENGINEERS COALITION
CONNECTICUT ENGINEERS IN PRIVATE PRACTICE

Final Report of Special Inspections

TOWN OF SIMSBURY
BUILDING DEPT.
DEC 17 2002

Location: 225 Gristmill Road, Simsbury, CT

Owner: New England Site Management

Owner's Address: 1050 Buckley Highway
Union, CT 06076

Architect of Record: Russo Engineering, East Windsor, CT

Structural Engineer of Record: Rohn Industries, Inc.

To the best of my information, knowledge and belief, the special inspections required for this project, and itemized in the Statement of Special Inspections submitted for permit, are being performed and all discovered discrepancies have been reported and resolved, other than the following.

Comments: None

(Attach continuation sheets if required to complete the description of corrections.)

Interim reports submitted prior to this final report form a basis for, and are to be considered an integral part of this final report.

Respectfully Submitted,
Special Inspector

Esmat Ali, P.E. — 11-19-02
Type or Print Name — Date

11-19-02
Signature — Date

STATE OF CONNECTICUT
ESMAT MEKAEL ALI
NO. 21959
LICENSED PROFESSIONAL ENGINEER
Design Professional Seal

EXHIBIT 6

SPECIAL CONSTRUCTION NOTE (SBA-PROVIDED ANTENNA MOUNT STRUCTURAL MOD SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE T-MOBILE RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

SBA SIMSBURY MONOPOLE

225 GRIST MILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY

SITE NO.: CTHA531A

RF DESIGN GUIDELINE: 67D5A997DB 0DE+6160

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

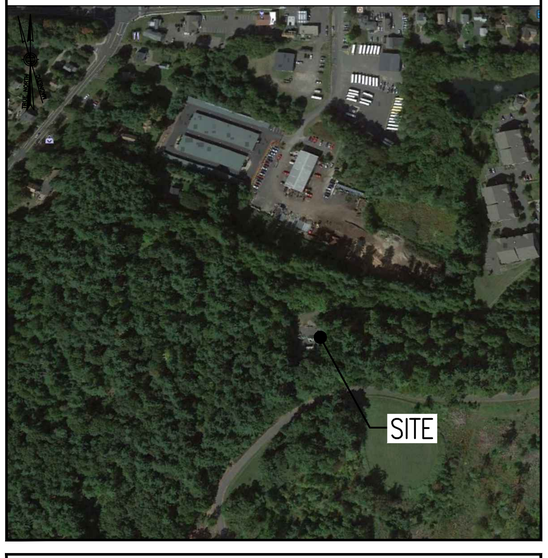
GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: N.T.S.



DIRECTIONS

MERGE ONTO I-90 W VIA THE RAMP ON THE LEFT TOWARD ALBANY/SPRINGFIELD (PORTIONS TOLL). MERGE ONTO I-84 W VIA EXIT 9 TOWARD NEW YORK CITY/HARTFORD/US-20 (PORTIONS TOLL) (CROSSING INTO CONNECTICUT). MERGE ONTO I-291 W VIA EXIT 61 TOWARD WINDSOR. TAKE THE CT-218 EXIT, EXIT 1, TOWARD BLOOMFIELD. TURN LEFT ONTO CT-218. TURN RIGHT ONTO TYLER ST. TURN LEFT ONTO PARK AVE/CT-178. CONTINUE TO FOLLOW CT-178. TURN RIGHT ONTO SIMSBURY RD/CT-185. CONTINUE TO FOLLOW CT-185. TURN RIGHT ONTO HOPMEADOW ST/US-202 E/CT-10. TURN LEFT ONTO WEST ST/CT-167. TURN LEFT ONTO GRIST MILL RD. SITE WILL BE ON THE LEFT.

SHEET INDEX

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DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT SUMMARY

SITE NUMBER:	CTHA531A
SBA SITE NUMBER:	CT10022-A
SBA SITE NAME:	SIMSBURY 2, CT
SITE ADDRESS:	225 GRIST MILL ROAD SIMSBURY, CT 06070
PROPERTY OWNER:	ENSIGN-BICKFORD REALTY CORP PO BOX 711 SIMSBURY, CT 06070
TOWER OWNER:	SBA TOWERS II, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	HARTFORD
ZONING DISTRICT:	COMMERCIAL (I-2)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	150'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.86671° N41°52'0.16" LONGITUDE W.-72.81577° W72°48'56.77"

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

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
11/4/2020

CHECKED BY: CMC

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/30/20	FINAL CONSTRUCTION	TRB
0	11/19/20	ISSUED FOR REVIEW	TRB

SITE NUMBER:
CTHA531A

SITE ADDRESS:
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.168

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER

1/4/2021

CHECKED BY: CMC

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/30/20	FINAL CONSTRUCTION	TRB
0	11/19/20	ISSUED FOR REVIEW	TRB

SITE NUMBER:
CTHA531A

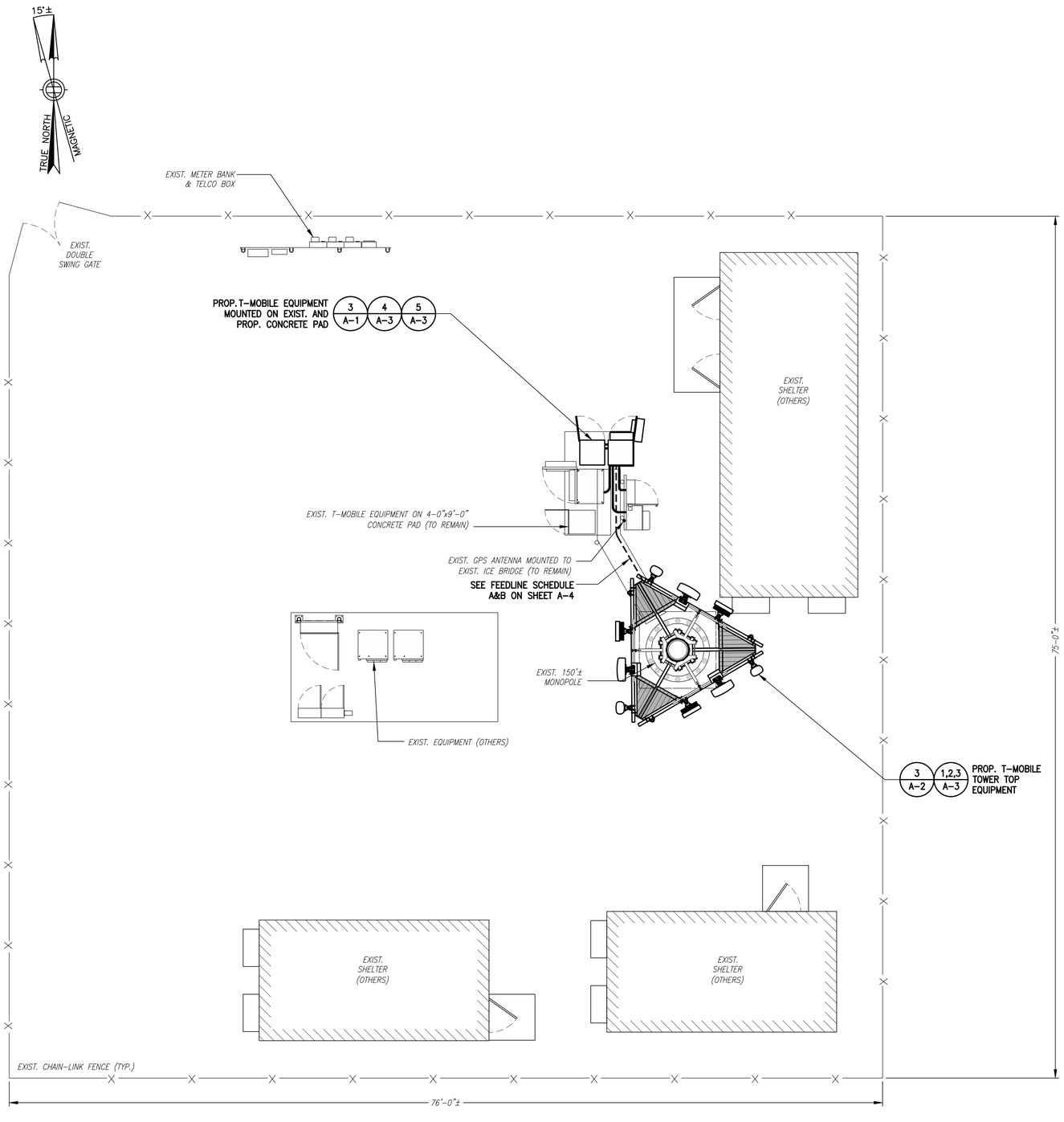
SITE ADDRESS:
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
GENERAL NOTES

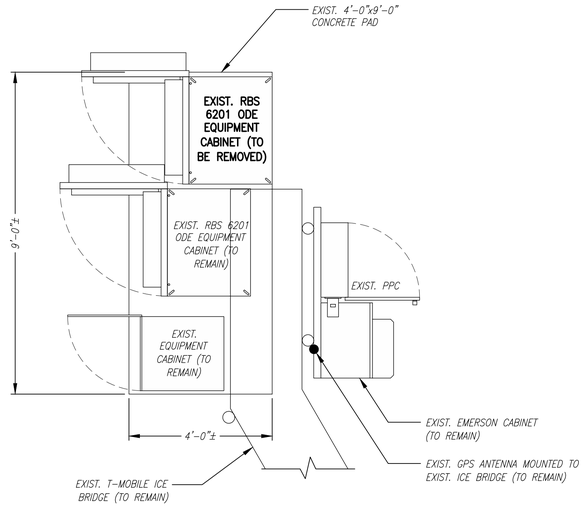
SHEET NUMBER
GN-1

1815.168

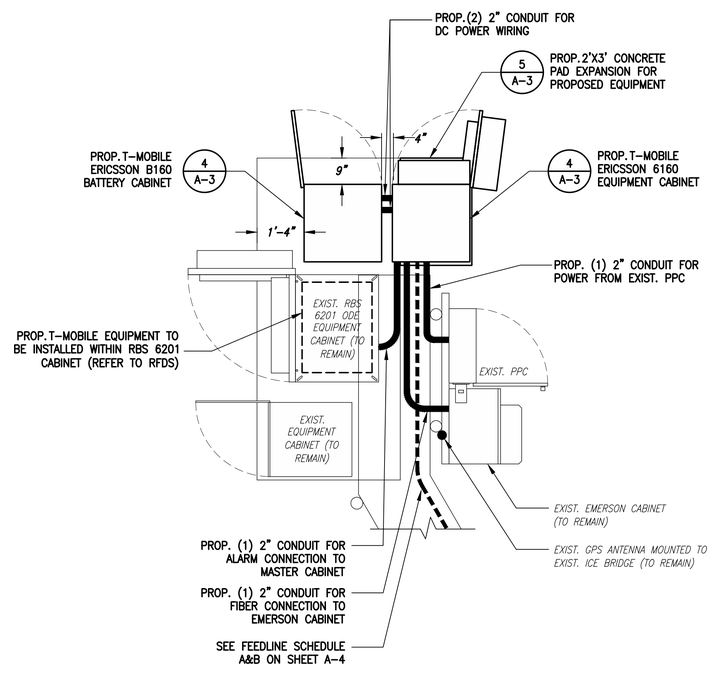
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



COMPOUND PLAN
1 / A-1
SCALE: 1" = 5'-0"
0 2'-6" 5'-0" 10'-0" 15'-0"



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



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

MOUNT NOTE:
REFER TO MOUNT ANALYSIS DONE BY TOWER ENGINEERING SOLUTIONS DATED 11/06/2020 FOR ADDITIONAL MOUNTING DETAILS

T-MOBILE NORTHEAST LLC
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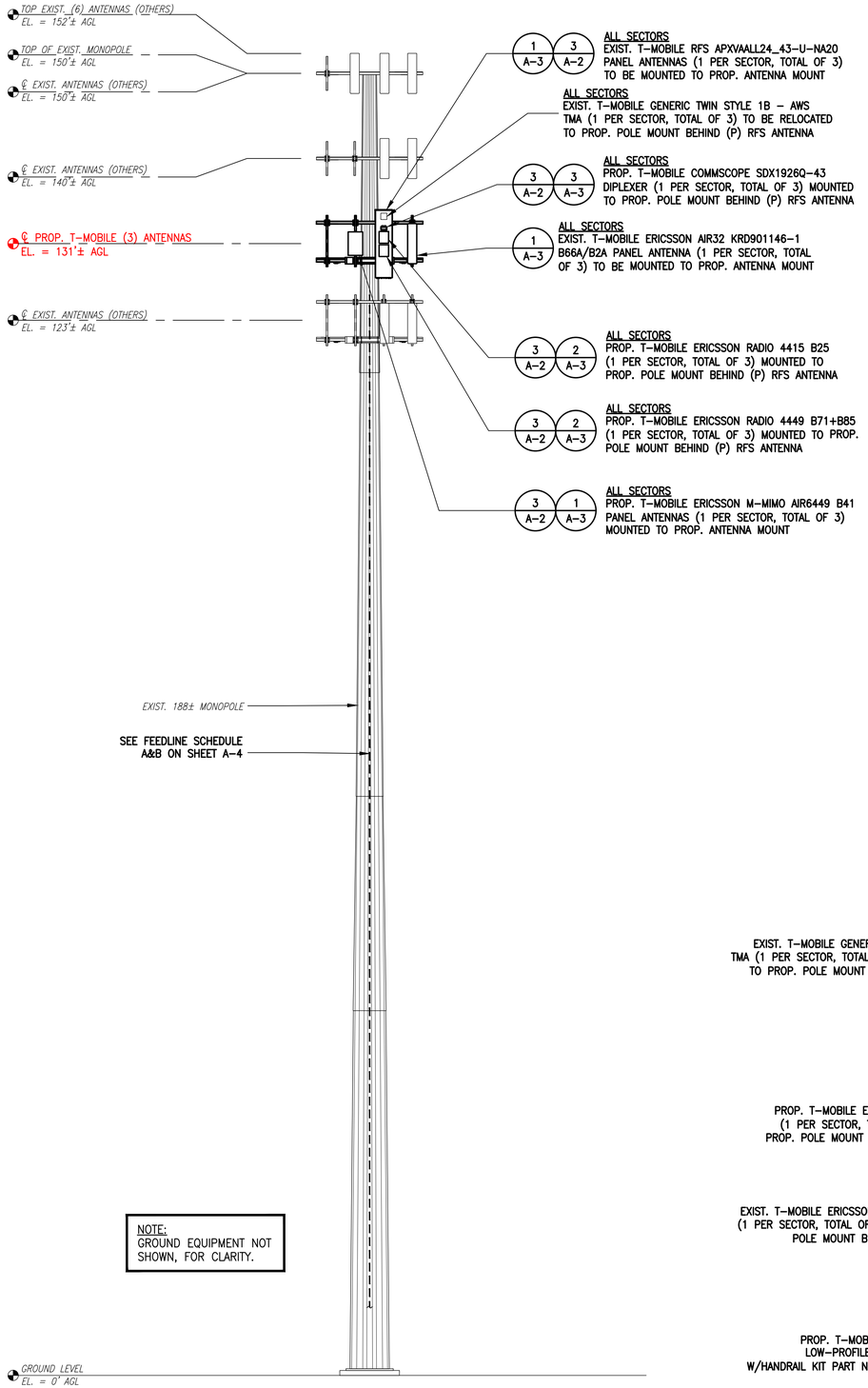
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.168



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

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

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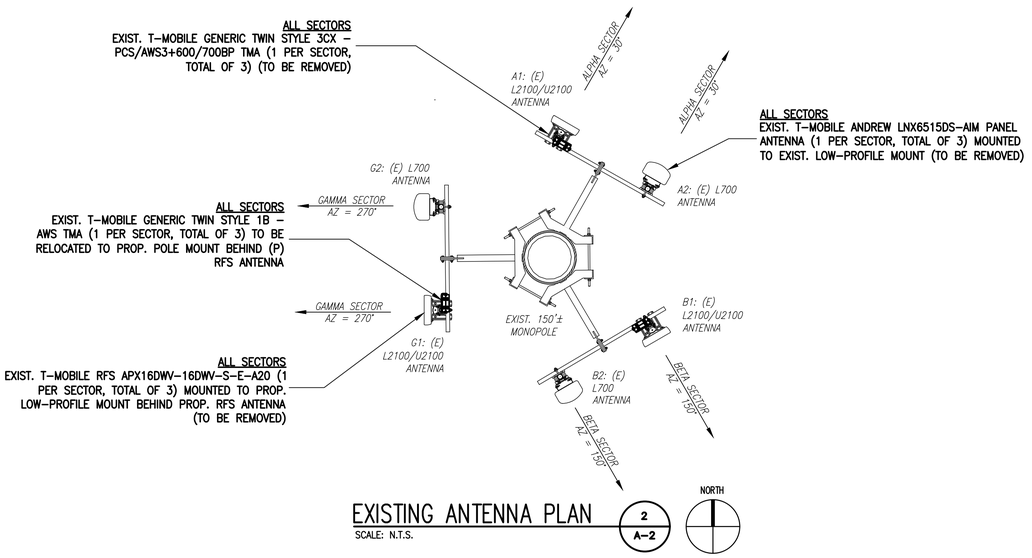
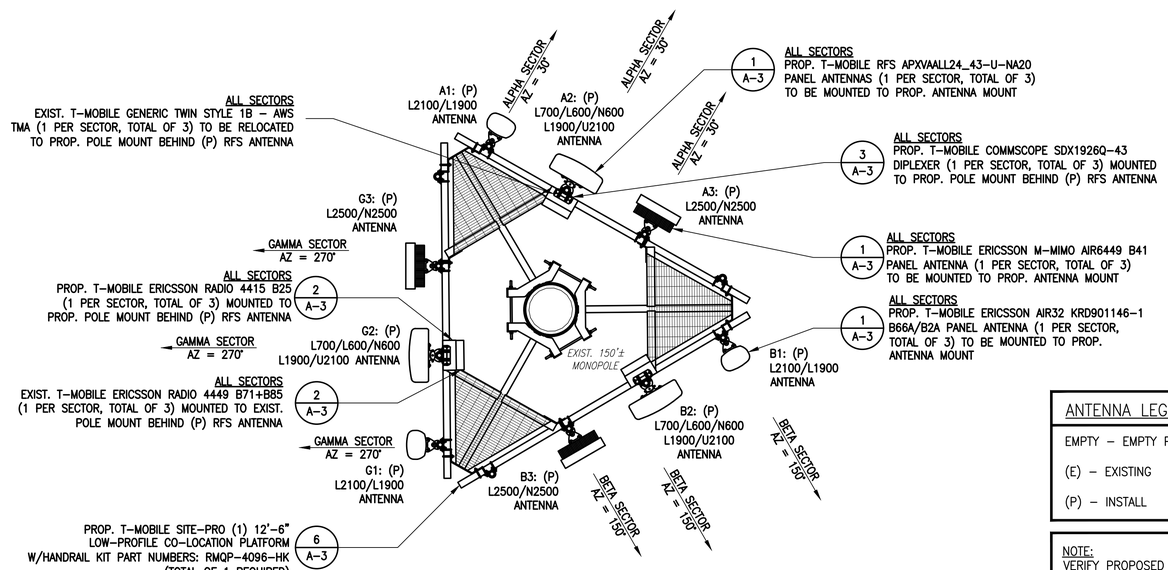
SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
GENERAL CONTRACTOR SHALL ORIENT PROPOSED PLATFORM REINFORCEMENT KIT RING-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING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

RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.



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



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

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

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

MOUNT NOTE:
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15 COMMERCE WAY, SUITE B
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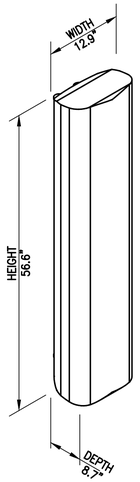
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

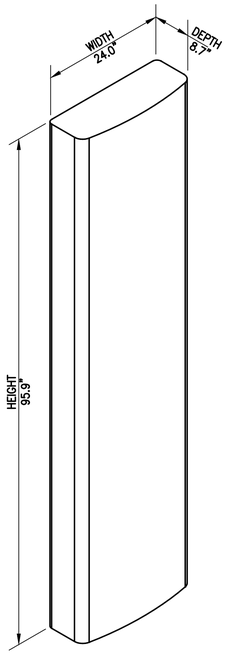
SHEET NUMBER
A-2

1815.168



ERICSSON AIR32 KRD901146-1 B66A/B2A ANTENNA

DIMENSIONS: 56.6"H x 12.9"W x 8.7"D
WEIGHT: 132.2 LBS
1 PER SECTOR, TOTAL OF 3



RFS APXVAALL24_43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

ERICSSON M-MIMO AIR6449 B41 ANTENNA

DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4415 B25

DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4449 B71+B85

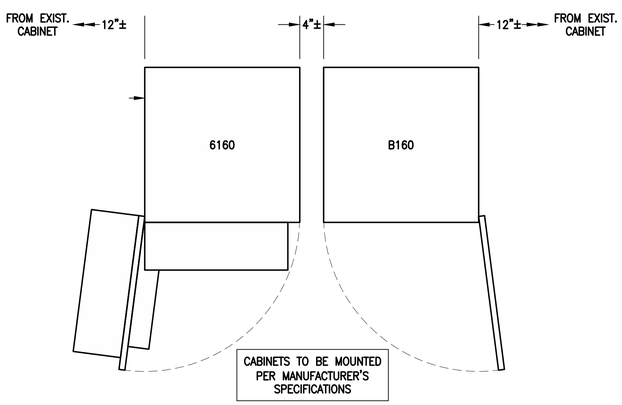
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 LBS
1 PER SECTOR, TOTAL OF 3

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

COMMSCOPE 1926Q-43 DIPLEXER

DIMENSIONS: 4.2"H x 6.9"W x 2.9"D
WEIGHT: 6.2 LBS
1 PER SECTOR, TOTAL OF 3

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



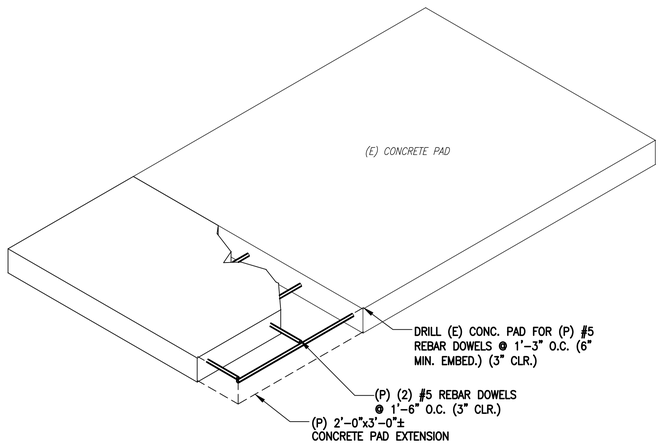
ERICSSON 6160 SITE SUPPORT CABINET

DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
WEIGHT: 680.0 lbs
QUANTITY: TOTAL OF 1

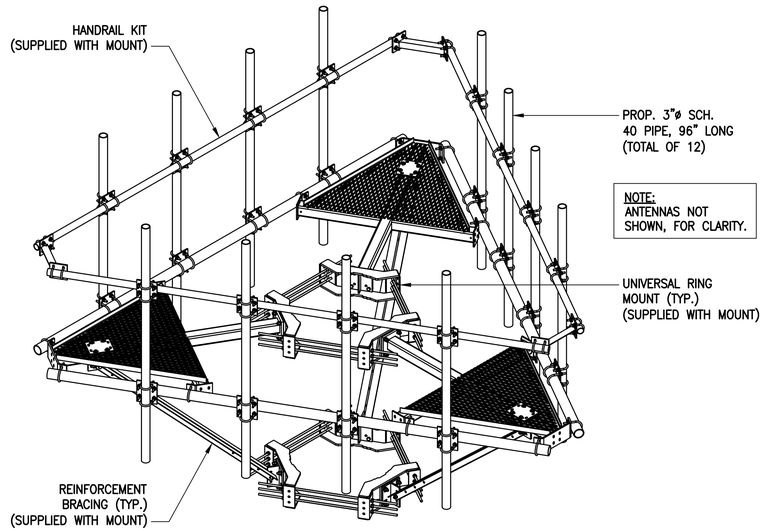
ERICSSON B160 BATTERY CABINET

DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL (4 / A-3)
SCALE: N.T.S.



CONCRETE PAD EXTENSION (5 / A-3)
SCALE: N.T.S.



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

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

MOUNT NOTE:
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CTHA531A

SITE ADDRESS:
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.168

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 ERICSSON AIR32 KRD901146-1 B66A/B2A	131'-0"± AGL	30°	0°	2	L1900/L2100	-	(6) 1-5/8" COAX CABLES (3) 1-1/4" (6X12) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	131'-0"± AGL	30°	0°	2	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2	L1900	COMMSCOPE SDX1926Q-43	
							ERICSSON RADIO 4415 B25	
					2	L1900/U2100	*GENERIC TWIN STYLE 1B - AWS*	
	A3 ERICSSON M-MIMO AIR6449 B41	131'-0"± AGL	30°	0°	2	L2500/N2500	-	
BETA	B1 ERICSSON AIR32 KRD901146-1 B66A/B2A	131'-0"± AGL	150°	0°	2	L1900/L2100	-	
	B2 RFS APXVAALL24_43-U-NA20	131'-0"± AGL	150°	0°	2	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2	L1900	COMMSCOPE SDX1926Q-43	
							ERICSSON RADIO 4415 B25	
					2	L1900/U2100	*GENERIC TWIN STYLE 1B - AWS*	
	B3 ERICSSON M-MIMO AIR6449 B41	131'-0"± AGL	150°	0°	2	L2500/N2500	-	
GAMMA	C1 ERICSSON AIR32 KRD901146-1 B66A/B2A	131'-0"± AGL	270°	0°	2	L1900/L2100	-	
	C2 RFS APXVAALL24_43-U-NA20	131'-0"± AGL	270°	0°	2	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2	L1900	COMMSCOPE SDX1926Q-43	
							ERICSSON RADIO 4415 B25	
					2	L1900/U2100	*GENERIC TWIN STYLE 1B - AWS*	
	C3 ERICSSON M-MIMO AIR6449 B41	131'-0"± AGL	270°	0°	2	L2500/N2500	-	

CABLE NOTE: (E) (12) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV4 - 09/26/20

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) 1/2" COAX CABLE FOR GPS ANTENNA* *(6) 1-5/8" COAX CABLES*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(12) 1-5/8" COAX CABLES*	
B	PROPOSED:	(3) 1-1/4" (6X12) HCS FIBER CABLES	

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

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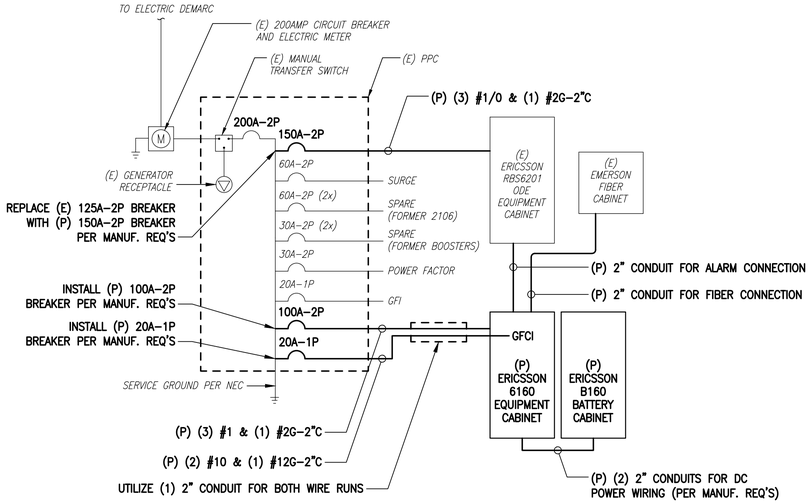
SIMSBURY, CT 06070

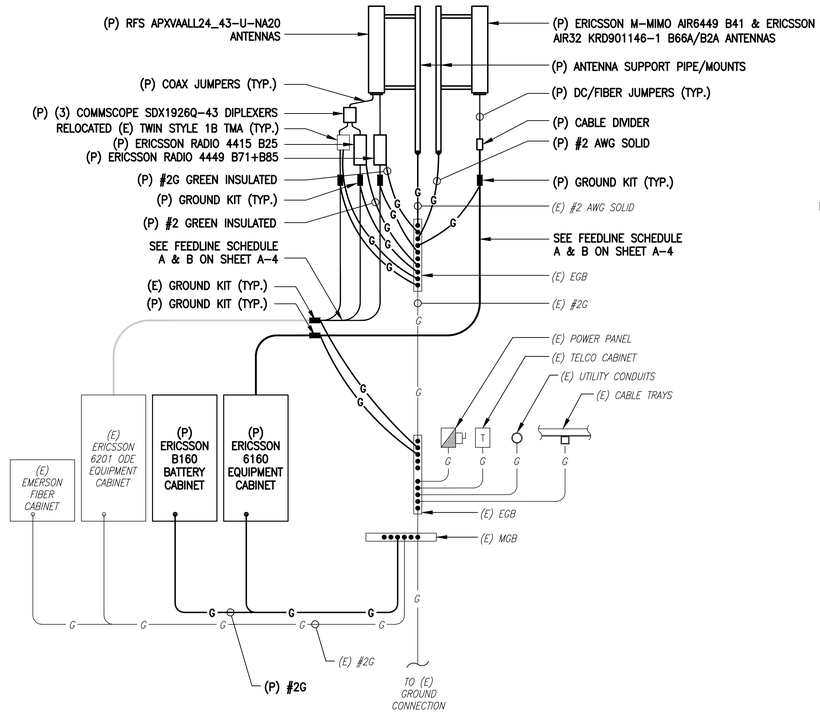
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

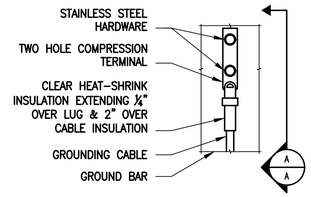
1815.168



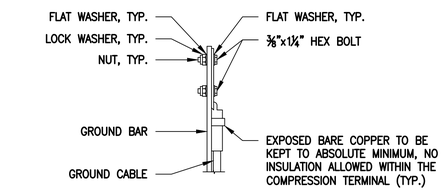
ONE LINE DIAGRAM (1)
SCALE: NOT TO SCALE — E-1



GROUNDING RISER DIAGRAM (2)
SCALE: NOT TO SCALE — E-1



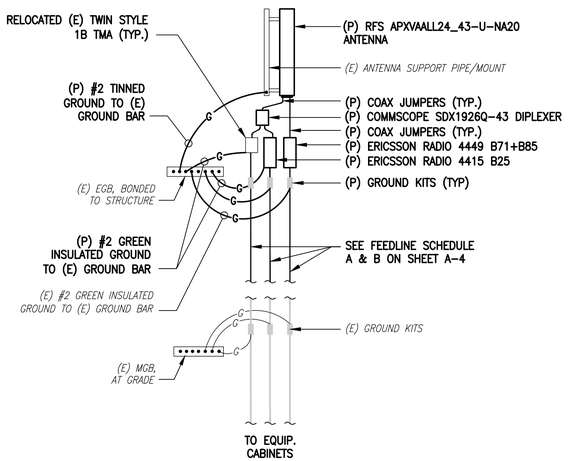
ELEVATION



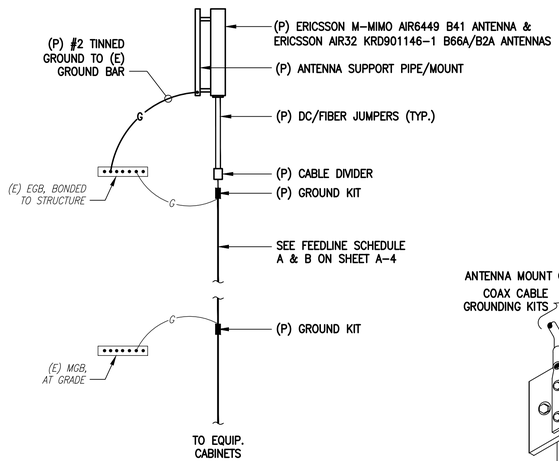
SECTION A-A

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

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

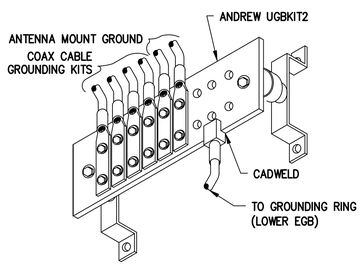


L700/L600/N600/L1900/U2100 ANTENNA



L2500/N2500 & L2100/L1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (4)
SCALE: NOT TO SCALE — E-1



GROUND BAR (EGB) (5)
SCALE: NOT TO SCALE — E-1

ELECTRICAL AND GROUNDING NOTES

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

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STATE OF CONNECTICUT · JAMES M. FITZGERALD · No. 25997 · LICENSED PROFESSIONAL CIVIL ENGINEER

1/4/2021

CHECKED BY: CMC

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/30/20	FINAL CONSTRUCTION	TRB
0	11/19/20	ISSUED FOR REVIEW	TRB

SITE NUMBER:
CTHA531A

SITE ADDRESS:
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

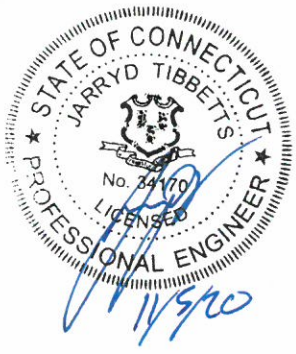
1815.168

EXHIBIT 7

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

Structural Analysis Report

Existing 150 ft. Rohn Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT10022-A
Customer Site Name: Simsbury 2, CT
Carrier Name: T-Mobile (App#: 141459, V1)
Carrier Site ID / Name: CTHA531A / Simsbury
Site Location: 225 Grist Mill Road
Simsbury, Connecticut
Hartford County
Latitude: 41.866708
Longitude: -72.815772



Analysis Result:

Max Structural Usage: 94.7% [Pass]
Max Foundation Usage: 76.0% [Pass]
Additional Usage Caused by New Mount: +4.4%

Report Prepared By : Delu Zhou

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft. Rohn 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	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020293, dated February 13, 2002
Foundation Drawing	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020294 1-3, dated February 13, 2002
Geotechnical Report	FDH Engineering, Inc., Project No. 15BGSH1600, dated March 19, 2015
Modification Drawings	N/A
Mount Analysis	TES MA Job # 99371, dated 11/04/2020

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **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} = 120.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	S_S = 0.179, S_1 = 0.064

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	150.7	3	Kathrein 800 10121 - Panel	Low Profile Platform	(6) 1 5/8" (1) 3" Conduit (2) 1/2" DC (4) 3/8" Fiber	AT&T
2	150.0	1	Cci HPA-65R-BUU-H6 - Panel			
3		2	Cci TPA-65R-LCUUUU-H8 - Panel			
4		1	Quintel QS66512-2 - Panel			
5		2	Cci HPA-65R-BUU-H8 - Panel			
6		6	Cci DTMABP7819VG12A TMA			
7		6	CCI TPX-070821			
8		3	Ericsson RRUS 11			
9		3	Ericsson RRUS 32 B2			
10		3	Ericsson RRUS32			
11		3	Ericsson 4426 B66			
12		3	CSS DBC-750			
13		2	Raycap DC6-48-60-18-8F			
14		3	Commscope ABT-DRDM-ADBH			
15		1	LMU Antenna - Panel			
16	140.0	6	SBNHH-1D65B w/126 Mount Pipe	Modified Low Profile Platform w/ (1) handrail (HRK-14) and (3) Commscope BSAMNT-SBS-2-2	(6) 1 5/8" (2) 1 5/8" Hybrid (1) 1/2"	Verizon
17		3	Antel BXA-70080/4CF			
18		3	Samsung XXDWMM-12.5-65-8T-CBRS integrated with RRH- Panel			
19		3	Samsung B2/B66A RRHBR049			
20		3	Samsung B5/B13 RRHBR04C			
21		3	Samsung CBRS RRH-RT4401-48A			
22		1	Raycap RVZDC-6627-PF-48			
23		1	GPS Receiver			
-	131.0	3	Commscope LNX-6515DS - Panel	(3) T-Arms (Site Pro P/N UDS-NPL)	(18) 7/8"	T-Mobile
-		3	Ericsson KRY 144/1			
-		3	Kathrein 782 11056			
-		3	RFS APX16DWV-16DWVS-C - Panel			
-		3	RFS ATM1412D-1A20			
29	123.0	2	RFS - APXVSPP18-C-A20 - Panel	Platform w/ Handrail Kit [SitePro1 HRK14]	(4) 1-1/4" Fiber	Sprint Nextel
30		1	RFS - APXVSPP18-C-A20 (50 lb) - Panel			
31		3	RFS - APXVTM14-C-I20 - Panel			
32		4	RFS - ACU-A20-N - RET			
33		3	ALU - TD-RRH8x20-25 - RRU			
34		3	ALU - 1900 MHz RRH - RRU			
35		3	ALU - 800 MHz RRH - RRU			
36		3	ALU - 800 MHz Filter			

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
24	131.0	3	RFS APXVAALL24-43-U-NA20 Panel	LP platform w/HRK Sitepro RMQP-4096-HK	(12) 7/8" (3) 1 5/8" Hybrid	T-Mobile
25		3	Ericsson AIR6449 B41 Panel			
26		3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo) Panel			
27		3	Ericsson KRY 112 144-1 Double TMAs			
28		3	RFS ATMAA1412D-1A20 TMA			
29		3	Commscope SDX1926Q-43 Diplexers			
30		3	Ericsson Radio 4449 B71+B85 RRUs			
31		3	Ericsson 4415 B25 RRUs			
32		3	Kathrein 782 11056			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**94.7%**	**82.5%**	**88.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4000.7	35.0	92.7

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2872 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 TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

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

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

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

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

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

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

Usage Diagram - Max Ratio 94.74% at 0.0ft

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

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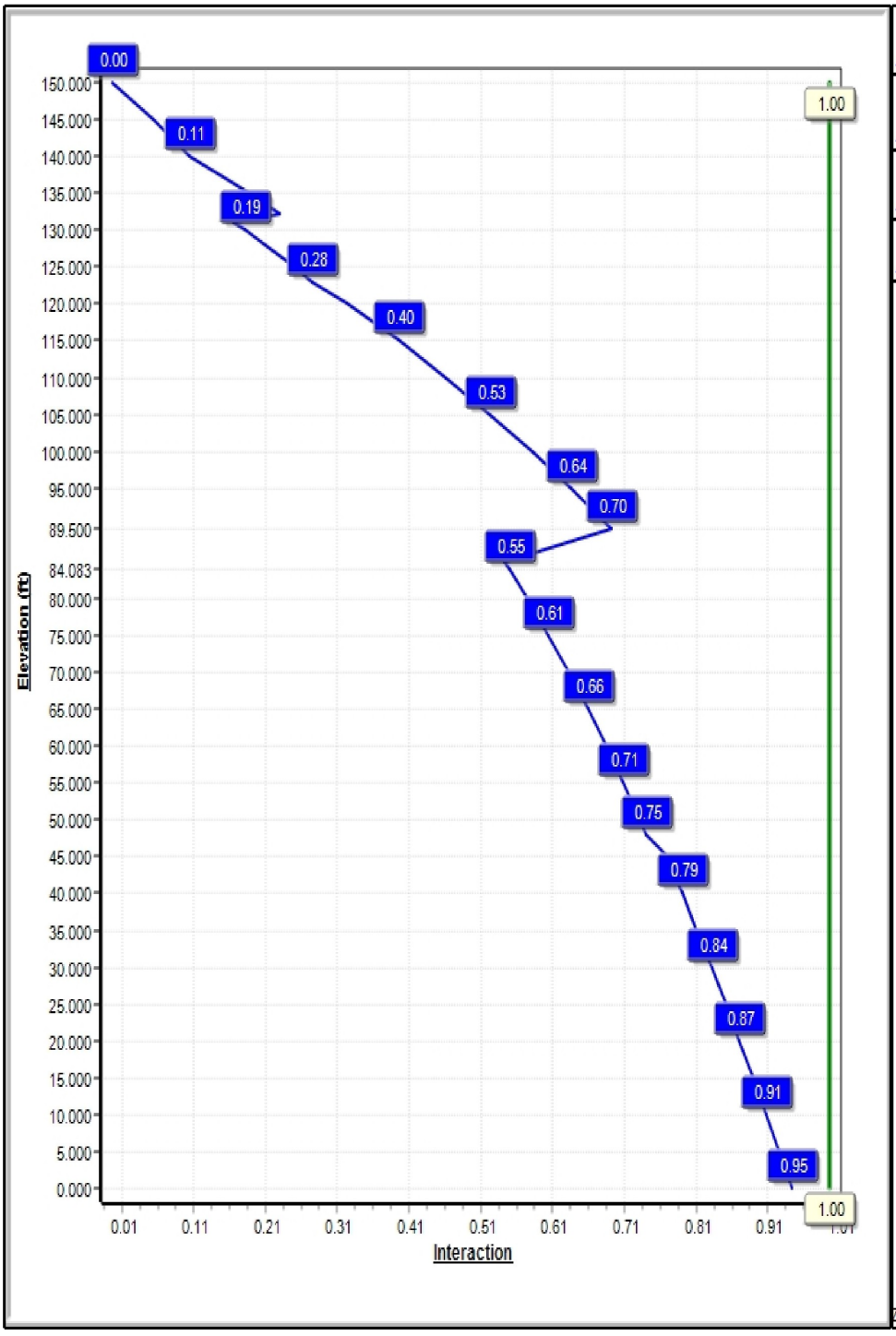
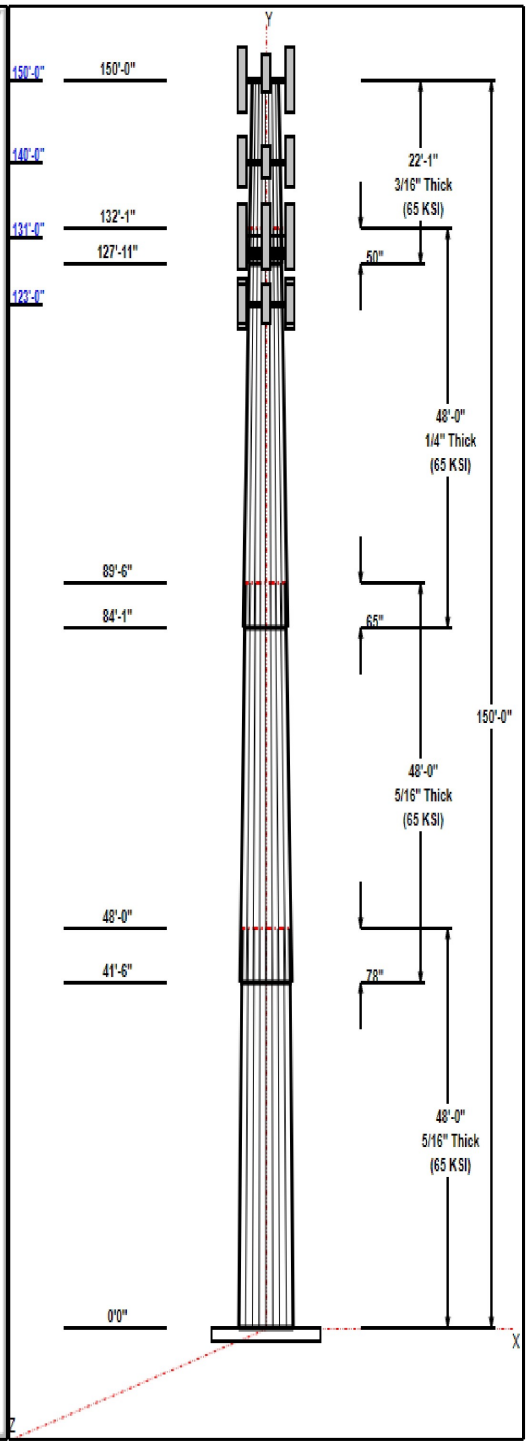
Dead Load Factor:	1.20	**Iterations:**	23
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 93 mph Wind





Structure: CT10022-A-SBA

Type: Tapered
Site Name: Simsbury 2, CT
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23136

11/5/2020

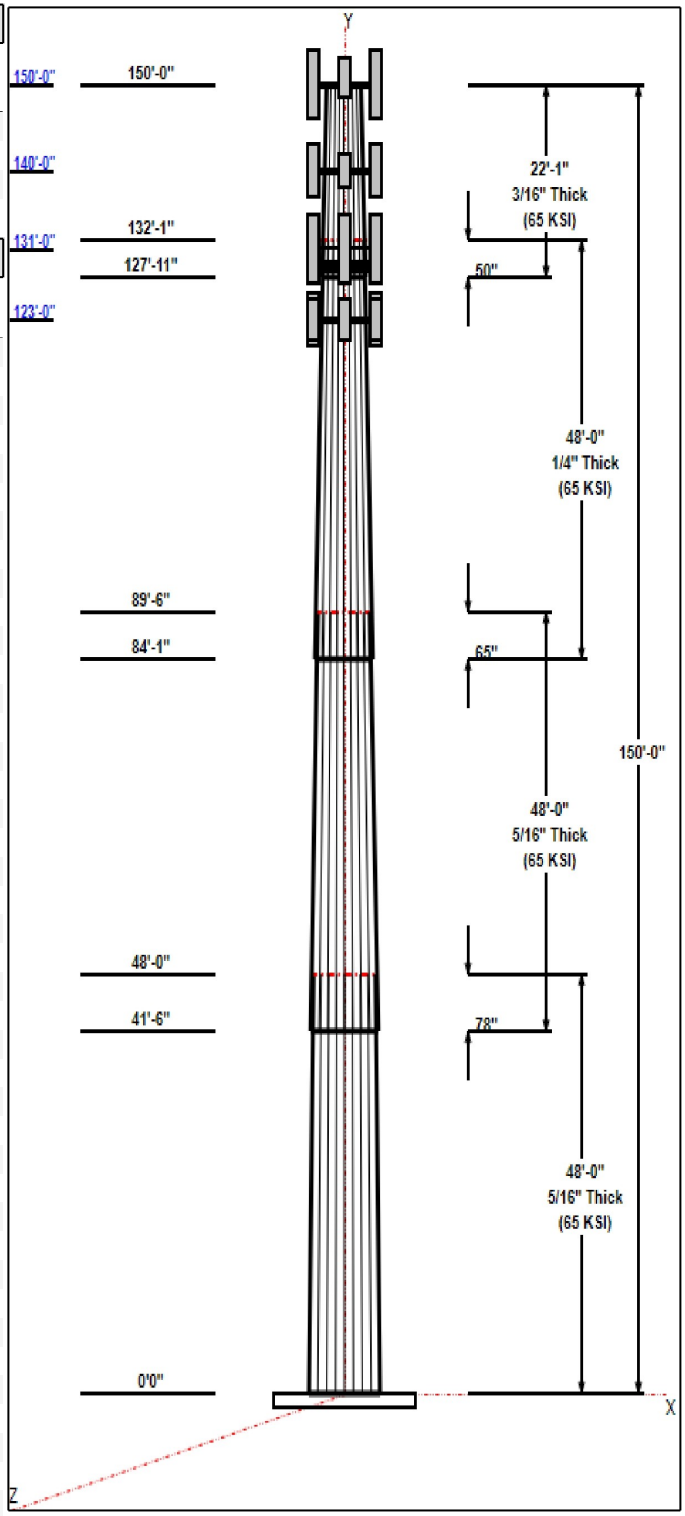
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	50.39	61.50	0.313		0.23136	65
2	48.00	41.42	52.52	0.313	Slip	0.23136	65
3	48.00	32.07	43.17	0.250	Slip	0.23136	65
4	22.08	28.30	33.41	0.188	Slip	0.23136	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.73	3	800 10121	AT&T
150.00	150.00	1	HPA-65R-BUU-H6	AT&T
150.00	150.00	2	TPA-65R-LCUUUU-H8	AT&T
150.00	150.00	1	QS66512-2	AT&T
150.00	150.00	2	HPA-65R-BUU-H8	AT&T
150.00	150.00	1	Low Profile	AT&T
150.00	150.00	6	DTMABP7819VG12A	AT&T
150.00	150.00	6	TPX-070821	AT&T
150.00	150.00	3	RRUS-11	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	4426 B66	AT&T
150.00	150.00	3	DBC-750	AT&T
150.00	150.00	2	DC6-48-60-18-8F	AT&T
150.00	150.00	3	ABT-DFDM-ADB	AT&T
150.00	150.00	1	LMU Antenna	AT&T
140.00	140.00	3	Antel	Verizon
140.00	140.00	6	Commscope	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
140.00	140.00	3	XXDWMM-12.5-65-8T-CB	Verizon
140.00	140.00	3	BSAMNT-SBS-2-2	Verizon
140.00	140.00	3	B2/B66A RRHBR049	Verizon
140.00	140.00	3	B5/B13 RRHBR04C	Verizon
140.00	140.00	1	RVZDC-6627-PF48	Verizon
140.00	140.00	3	CBRS RRH-RT4401	Verizon
140.00	140.00	1	HRK12 (Handrail Kit)	Verizon
131.00	131.00	3	APXVAALL24-43-U-NA20	T-Mobile
131.00	131.00	3	AIR6449 B41	T-Mobile
131.00	131.00	3	AIR32	T-Mobile
131.00	131.00	1	Platform w/ HRK	T-Mobile
131.00	131.00	3	KRY 112 144-1 Double	T-Mobile
131.00	131.00	3	ATMAA1412D-1A20 TMA	T-Mobile
131.00	131.00	3	SDX1926Q-43 Diplexer	T-Mobile
131.00	131.00	3	Radio 4449 B71+B85	T-Mobile
131.00	131.00	3	Ericsson 4415 B25	T-Mobile
131.00	131.00	3	Bias-T 782 11056	T-Mobile
123.00	123.00	3	APXVTM14-C-I20	Sprint Nextel
123.00	123.00	2	APXVSPP18-C-A20	Sprint Nextel
123.00	123.00	3	ALU - TD-RRH8x20-25 -	Sprint Nextel
123.00	123.00	3	ALU - 1900 MHz RRH -	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz RRH -	Sprint Nextel
123.00	123.00	4	RFS - ACU-A20-N - RET	Sprint Nextel
123.00	123.00	1	Platform w/ HRK Handrail	Sprint Nextel
123.00	123.00	1	APXVSPP18-C-A20 (50 lb)	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz Filter	Sprint Nextel



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1 5/8" Coax	AT&T
0.00	150.00	Inside	1/2" DC Power	AT&T
0.00	150.00	Inside	3" Conduit	AT&T
0.00	150.00	Inside	3/8" Fiber	AT&T
0.00	141.00	Inside	1 5/8" Coax	Verizon
0.00	141.00	Inside	1 5/8" Hybrid	Verizon
0.00	141.00	Inside	1/2" Coax	Verizon
0.00	131.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	131.00	Inside	7/8" Coax	T-Mobile
0.00	123.00	Inside	1-1/4" Fiber	Sprint Nextel

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
14	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	73.5	50.0	Round

Reactions

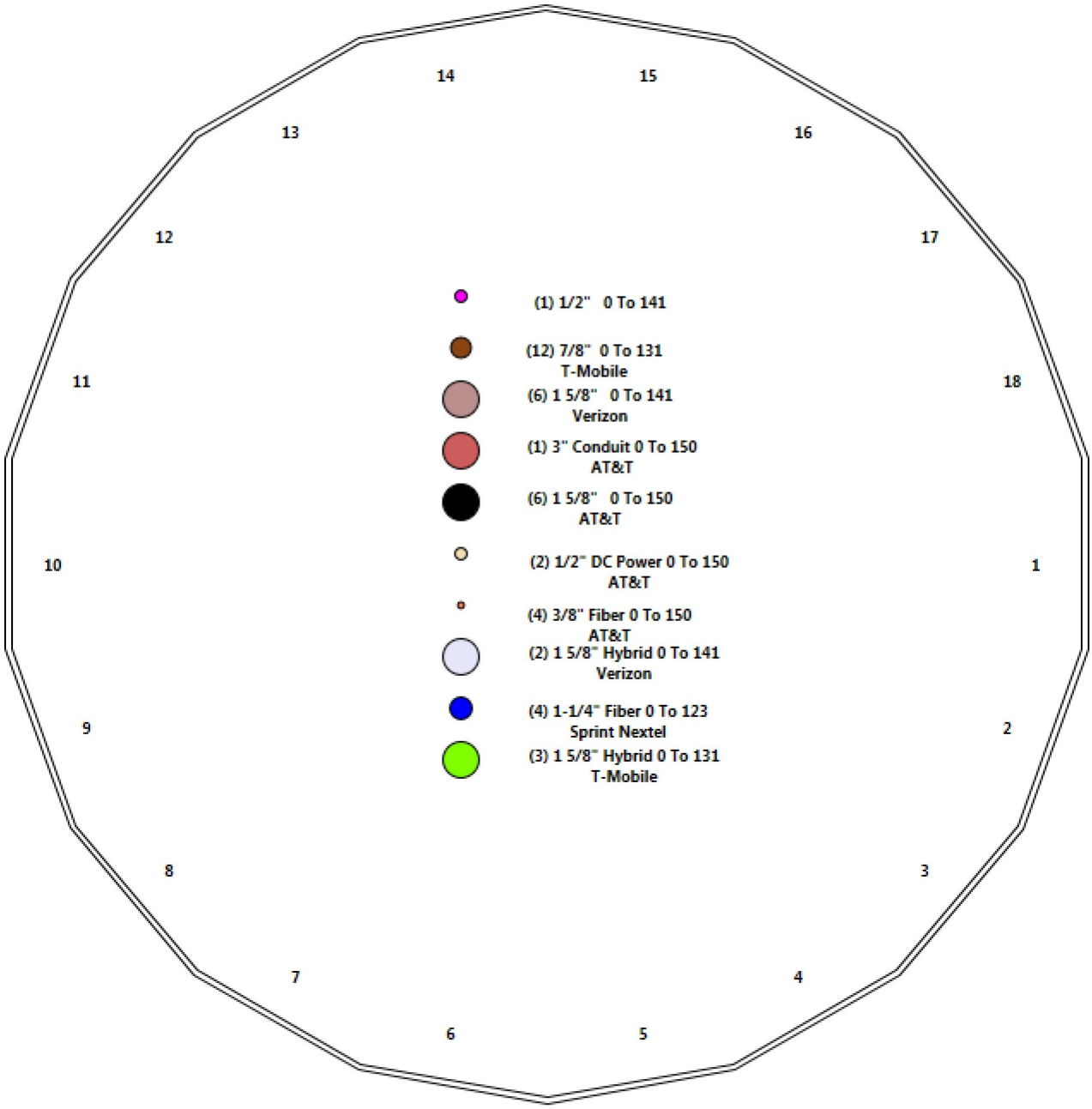
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	4000.7	35.0	50.4
0.9D + 1.6W 93 mph Wind	3952.3	35.0	37.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1324.0	11.3	92.7
1.2D + 1.0E	370.6	2.8	50.4
0.9D + 1.0E	365.7	2.8	37.8
1.0D + 1.0W 60 mph Wind	1033.6	9.1	42.0

Structure: CT10022-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Simsbury 2, CT
Height: 150.00 (ft)

11/5/2020

Tower Engineering Solutions



Shaft Properties

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	9,013
2	18	48.000	0.3125	65	Slip	78.00	7,559
3	18	48.000	0.2500	65	Slip	65.00	4,843
4	18	22.083	0.1875	65	Slip	50.00	1,371
					Total Shaft Weight:		**22,786**

	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	61.50	0.00	60.69	28706.65	33.29	196.80	50.39	48.00	49.67	15741.4	27.02	161.2	0.231360
2	52.52	41.50	51.78	17835.36	28.23	168.08	41.42	89.50	40.77	8703.68	21.96	132.5	0.231360
3	43.17	84.08	34.06	7926.99	29.04	172.69	32.07	132.08	25.25	3228.71	21.21	128.2	0.231360
4	33.41	127.9	19.77	2755.84	30.00	178.16	28.30	150.00	16.73	1669.78	25.20	150.9	0.231360

Load Summary

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	150.00	800 10121	3	46.30	5.15	0.79	199.46	7.959	0.79	0.00	0.73
2	150.00	HPA-65R-BUU-H6	1	51.00	9.66	1.00	400.05	11.517	1.00	0.00	0.00
3	150.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.83	513.48	15.540	0.83	0.00	0.00
4	150.00	QS66512-2	1	111.00	8.13	1.00	431.90	9.900	1.00	0.00	0.00
5	150.00	HPA-65R-BUU-H8	2	68.00	12.98	0.79	477.60	15.177	0.79	0.00	0.00
6	150.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3245.22	45.549	1.00	0.00	0.00
7	150.00	DTMABP7819VG12A	6	19.20	1.14	0.50	53.23	2.166	0.50	0.00	0.00
8	150.00	TPX-070821	6	7.50	0.47	0.50	24.35	0.927	0.50	0.00	0.00
9	150.00	RRUS-11	3	50.00	2.79	0.57	147.03	3.725	0.57	0.00	0.00
10	150.00	RRUS-32	3	53.00	3.01	0.57	838.47	1.264	0.57	0.00	0.00
11	150.00	RRUS-32	3	777.00	0.66	0.57	838.47	1.264	0.57	0.00	0.00
12	150.00	4426 B66	3	48.40	1.64	0.57	533.59	9.028	0.57	0.00	0.00
13	150.00	DBC-750	3	4.80	0.51	0.57	17.69	1.216	0.57	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	31.80	0.92	0.67	114.23	1.504	0.67	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	1.10	0.05	0.67	4.07	0.307	0.67	0.00	0.00
16	150.00	LMU Antenna	1	8.50	1.67	1.00	8.51	1.672	1.00	0.00	0.00
17	140.00	Antel BXA-70080-4CF-EDIN-0	3	30.30	3.56	0.88	325.74	6.005	0.88	0.00	0.00
18	140.00	Commscope SBNHH-1D65B	6	72.70	8.08	0.78	355.83	9.800	0.78	0.00	0.00
19	140.00	Low Profile Platform	1	1500.00	22.00	1.00	3233.22	45.387	1.00	0.00	0.00
20	140.00	XXDWMM-12.5-65-8T-CBRS	3	23.10	1.18	0.67	107.36	2.213	0.67	0.00	0.00
21	140.00	BSAMNT-SBS-2-2	3	67.00	3.50	0.67	190.87	8.353	0.67	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	132.20	6.51	0.67	391.04	8.087	0.67	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	70.40	1.88	0.67	139.51	2.610	0.67	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	32.00	3.79	1.00	209.98	4.887	1.00	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	15.20	0.85	0.57	41.25	1.762	0.57	0.00	0.00
26	140.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	673.00	15.485	1.00	0.00	0.00
27	131.00	APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	707.75	22.769	0.70	0.00	0.00
28	131.00	AIR6449 B41	3	103.00	5.65	0.71	283.37	6.900	0.71	0.00	0.00
29	131.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	388.92	8.076	0.87	0.00	0.00
30	131.00	Platform w/ HRK RMQP-496-HK	1	2645.00	46.00	1.00	6288.20	88.240	1.00	0.00	0.00
31	131.00	KRY 112 144-1 Double	3	11.00	0.41	0.67	25.18	1.035	0.67	0.00	0.00
32	131.00	ATMAA1412D-1A20 TMA	3	13.00	1.17	0.57	47.96	2.199	0.57	0.00	0.00
33	131.00	SDX1926Q-43 Diplexer	3	6.00	0.29	0.57	18.89	0.842	0.57	0.00	0.00
34	131.00	Radio 4449 B71+B85	3	73.20	1.97	0.57	149.15	2.719	0.57	0.00	0.00
35	131.00	Ericsson 4415 B25	3	46.00	1.64	0.57	100.07	2.318	0.57	0.00	0.00
36	131.00	Bias-T 782 11056	3	1.50	0.13	0.57	7.35	0.520	0.57	0.00	0.00
37	123.00	APXVTM14-C-I20	3	55.00	6.34	0.79	277.88	7.824	0.79	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	57.00	8.02	0.83	282.94	11.672	0.83	0.00	0.00
39	123.00	ALU - TD-RRH8x20-25 - RRU	3	70.00	4.05	0.67	223.81	5.138	0.67	0.00	0.00
40	123.00	ALU - 1900 MHz RRH - RRU	3	60.00	2.71	0.67	165.56	4.362	0.67	0.00	0.00
41	123.00	ALU - 800 MHz RRH - RRU	3	53.00	2.49	0.92	149.68	3.985	0.67	0.00	0.00
42	123.00	RFS - ACU-A20-N - RET	4	1.00	0.14	0.79	6.62	0.528	0.82	0.00	0.00
43	123.00	Platform w/ HRK Handrail Kit	1	1600.00	32.00	1.00	3424.98	65.580	1.00	0.00	0.00
44	123.00	APXVSPP18-C-A20 (50 lb)	1	50.00	8.02	0.83	248.19	11.672	0.83	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	8.80	0.78	1.00	31.86	1.626	1.00	0.00	0.00
		Totals:	**121**	**15,046.12**			**42,622.63**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	150.00	(6) 1 5/8" Coax	0.00	Inside
0.00	150.00	(2) 1/2" DC Power	0.00	Inside
0.00	150.00	(1) 3" Conduit	0.00	Inside
0.00	150.00	(4) 3/8" Fiber	0.00	Inside
0.00	141.00	(6) 1 5/8" Coax	0.00	Inside
0.00	141.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	141.00	(1) 1/2" Coax	0.00	Inside
0.00	131.00	(3) 1 5/8" Hybrid	0.00	Inside
0.00	131.00	(12) 7/8" Coax	0.00	Inside
0.00	123.00	(4) 1-1/4" Fiber	0.00	Inside

Shaft Section Properties

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

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		0.3125	61.500	60.688	28706.7	33.29	196.80	62.2	919.4	0.0
5.00		0.3125	60.343	59.541	27109.1	32.64	193.10	63.0	884.8	1022.8
10.00		0.3125	59.186	58.393	25571.9	31.99	189.40	63.8	851.0	1003.3
15.00		0.3125	58.030	57.246	24093.9	31.33	185.69	64.5	817.8	983.7
20.00		0.3125	56.873	56.099	22674.1	30.68	181.99	65.3	785.2	964.2
25.00		0.3125	55.716	54.951	21311.1	30.03	178.29	66.1	753.4	944.7
30.00		0.3125	54.559	53.804	20003.9	29.37	174.59	66.9	722.2	925.2
35.00		0.3125	53.402	52.657	18751.2	28.72	170.89	67.6	691.6	905.7
40.00		0.3125	52.246	51.509	17552.0	28.07	167.19	68.4	661.7	886.1
41.50	Bot - Section 2	0.3125	51.899	51.165	17202.5	27.87	166.08	68.6	652.9	262.0
45.00		0.3125	51.089	50.362	16405.0	27.42	163.48	69.2	632.5	1216.5
48.00	Top - Section 1	0.3125	51.020	50.293	16338.2	27.38	163.26	0.0	0.0	1027.5
50.00		0.3125	50.557	49.834	15895.0	27.12	161.78	69.5	619.2	340.7
55.00		0.3125	49.400	48.687	14822.2	26.46	158.08	70.3	591.0	838.1
60.00		0.3125	48.243	47.540	13798.8	25.81	154.38	71.0	563.4	818.6
65.00		0.3125	47.087	46.392	12823.6	25.16	150.68	71.8	536.4	799.1
70.00		0.3125	45.930	45.245	11895.5	24.51	146.98	72.6	510.1	779.6
75.00		0.3125	44.773	44.098	11013.3	23.85	143.27	73.3	484.5	760.0
80.00		0.3125	43.616	42.950	10175.8	23.20	139.57	74.1	459.5	740.5
84.08	Bot - Section 3	0.3125	42.671	42.013	9524.3	22.67	136.55	74.7	439.6	590.3
85.00		0.3125	42.459	41.803	9381.9	22.55	135.87	74.9	435.2	236.7
89.50	Top - Section 2	0.2500	41.918	33.063	7252.7	28.15	167.67	0.0	0.0	1144.8
90.00		0.2500	41.803	32.971	7192.5	28.07	167.21	68.4	338.9	56.2
95.00		0.2500	40.646	32.053	6608.3	27.26	162.58	69.3	320.2	553.2
100.00		0.2500	39.489	31.135	6056.7	26.44	157.96	70.3	302.1	537.5
105.00		0.2500	38.332	30.217	5536.7	25.63	153.33	71.3	284.5	521.9
110.00		0.2500	37.175	29.299	5047.3	24.81	148.70	72.2	267.4	506.3
115.00		0.2500	36.019	28.381	4587.6	23.99	144.07	73.2	250.9	490.7
120.00		0.2500	34.862	27.463	4156.8	23.18	139.45	74.1	234.8	475.1
123.00		0.2500	34.168	26.913	3911.7	22.69	136.67	74.7	225.5	277.5
125.00		0.2500	33.705	26.546	3753.8	22.36	134.82	75.1	219.4	181.9
127.92	Bot - Section 4	0.2500	33.030	26.010	3531.2	21.89	132.12	75.7	210.6	260.8
130.00		0.2500	32.548	25.628	3377.7	21.55	130.19	76.1	204.4	322.2
131.00		0.2500	32.317	25.444	3305.6	21.38	129.27	76.3	201.5	152.9
132.08	Top - Section 3	0.1875	32.441	19.194	2522.8	29.10	173.02	0.0	0.0	164.5
135.00		0.1875	31.766	18.793	2367.8	28.46	169.42	67.9	146.8	188.5
140.00		0.1875	30.610	18.104	2117.0	27.37	163.25	69.2	136.2	313.9
145.00		0.1875	29.453	17.416	1884.5	26.29	157.08	70.5	126.0	302.2
150.00		0.1875	28.296	16.727	1669.8	25.20	150.91	71.8	116.2	290.5
										22785.8

Wind Loading - Shaft

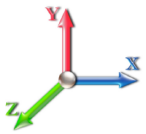
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	1227.3
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	1203.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	1180.5
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	1157.1
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	1133.6
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	1110.2
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	1086.8
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	1063.4
41.50	Bot - Section 2	1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	314.4
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1459.8
48.00	Top - Section 1	1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	1233.0
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	408.9
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	1005.7
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	982.3
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	958.9
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	935.5
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	912.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	888.6
84.08	Bot - Section 3	1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	708.3
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	284.0
89.50	Top - Section 2	1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1373.8
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	67.4
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	663.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	645.0
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	626.3
110.00		1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	607.6
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	588.8
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	570.1
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	333.1
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	218.3
127.92	Bot - Section 4	1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	313.0
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	386.6
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	183.5
132.08	Top - Section 3	1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	197.4
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	226.2
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	376.7
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	5.00	12.706	8.26	418.4	0.0	362.6
150.00	Appurtenance(s)	1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	348.5
								Totals:	**150.00**			**15,452.0**		**27,342.9**

Discrete Appurtenance Forces

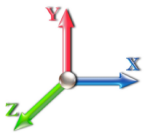
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	28.994	31.893	0.50	1.00	1.41	54.00	0.000	0.000	71.95	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.79	1.00	12.21	166.68	0.000	0.730	623.47	0.00	455.13
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	1.00	1.00	9.66	61.20	0.000	0.000	492.94	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.83	1.00	22.08	180.00	0.000	0.000	1126.62	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	1.00	1.00	8.13	133.20	0.000	0.000	414.87	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.79	1.00	20.51	163.20	0.000	0.000	1046.52	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1800.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.50	1.00	3.42	138.24	0.000	0.000	174.52	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	1.00	1.00	1.67	10.20	0.000	0.000	85.22	0.00	0.00
10	150.00	DBC-750	3	28.994	31.893	0.57	1.00	0.87	17.28	0.000	0.000	44.50	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.67	1.00	0.10	3.96	0.000	0.000	5.13	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	28.994	31.893	0.67	1.00	1.23	76.32	0.000	0.000	62.91	0.00	0.00
13	150.00	RRUS-11	3	28.994	31.893	0.57	1.00	4.77	180.00	0.000	0.000	243.45	0.00	0.00
14	150.00	4426 B66	3	28.994	31.893	0.57	1.00	2.80	174.24	0.000	0.000	143.11	0.00	0.00
15	150.00	RRUS-32	3	28.994	31.893	0.57	1.00	1.13	2797.20	0.000	0.000	57.59	0.00	0.00
16	150.00	RRUS-32	3	28.994	31.893	0.57	1.00	5.15	190.80	0.000	0.000	262.65	0.00	0.00
17	140.00	Low Profile Platform	1	28.576	31.433	1.00	1.00	22.00	1800.00	0.000	0.000	1106.45	0.00	0.00
18	140.00	Commscope	6	28.576	31.433	0.58	0.75	28.36	523.44	0.000	0.000	1426.35	0.00	0.00
19	140.00	Antel	3	28.576	31.433	0.66	0.75	7.05	109.08	0.000	0.000	354.51	0.00	0.00
20	140.00	RVZDC-6627-PF48	1	28.576	31.433	1.00	1.00	3.79	38.40	0.000	0.000	190.61	0.00	0.00
21	140.00	B5/B13 RRHBR04C	3	28.576	31.433	0.50	0.75	2.83	253.44	0.000	0.000	142.54	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	28.576	31.433	0.50	0.75	9.81	475.92	0.000	0.000	493.57	0.00	0.00
23	140.00	BSAMNT-SBS-2-2	3	28.576	31.433	0.67	1.00	7.04	241.20	0.000	0.000	353.81	0.00	0.00
24	140.00	HRK12 (Handrail Kit)	1	28.576	31.433	0.75	0.75	5.06	314.06	0.000	0.000	254.61	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	28.576	31.433	0.43	0.75	1.09	54.72	0.000	0.000	54.83	0.00	0.00
26	140.00	XXDWMM-12.5-65-8T-CB	3	28.576	31.433	0.50	0.75	1.78	83.16	0.000	0.000	89.46	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	28.179	30.997	0.50	0.75	0.62	39.60	0.000	0.000	30.65	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	28.179	30.997	0.52	0.75	31.88	442.08	0.000	0.000	1580.97	0.00	0.00
29	131.00	AIR6449 B41	3	28.179	30.997	0.53	0.75	9.03	370.80	0.000	0.000	447.63	0.00	0.00
30	131.00	Platform w/ HRK	1	28.179	30.997	1.00	1.00	46.00	3174.00	0.000	0.000	2281.35	0.00	0.00
31	131.00	AIR32	3	28.179	30.997	0.65	0.75	12.74	475.92	0.000	0.000	632.00	0.00	0.00
32	131.00	SDX1926Q-43 Diplexer	3	28.179	30.997	0.43	0.75	0.37	21.60	0.000	0.000	18.45	0.00	0.00
33	131.00	Radio 4449 B71+B85	3	28.179	30.997	0.43	0.75	2.53	263.52	0.000	0.000	125.30	0.00	0.00
34	131.00	Ericsson 4415 B25	3	28.179	30.997	0.43	0.75	2.10	165.60	0.000	0.000	104.31	0.00	0.00
35	131.00	Bias-T 782 11056	3	28.179	30.997	0.43	0.75	0.17	5.40	0.000	0.000	8.27	0.00	0.00
36	131.00	ATMAA1412D-1A20 TMA	3	28.179	30.997	0.43	0.75	1.50	46.80	0.000	0.000	74.42	0.00	0.00
37	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	198.00	0.000	0.000	551.53	0.00	0.00
38	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.69	0.75	5.15	190.80	0.000	0.000	252.26	0.00	0.00
39	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.59	0.75	0.33	4.80	0.000	0.000	16.24	0.00	0.00
40	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1920.00	0.000	0.000	1566.11	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.62	0.75	4.99	60.00	0.000	0.000	244.34	0.00	0.00
42	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	136.80	0.000	0.000	488.67	0.00	0.00
43	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.50	0.75	6.11	252.00	0.000	0.000	298.80	0.00	0.00
44	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.50	0.75	4.09	216.00	0.000	0.000	199.94	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.75	0.75	1.75	31.68	0.000	0.000	85.89	0.00	0.00
							Totals:		**18,055.34**			**19,451.95**		

Total Applied Force Summary

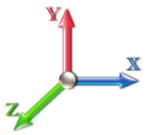
Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		527.21	1409.53	0.00	0.00
10.00		517.20	1386.11	0.00	0.00
15.00		507.19	1362.68	0.00	0.00
20.00		527.53	1339.26	0.00	0.00
25.00		541.77	1315.83	0.00	0.00
30.00		551.40	1292.41	0.00	0.00
35.00		557.63	1268.98	0.00	0.00
40.00		561.24	1245.56	0.00	0.00
41.50		167.27	369.10	0.00	0.00
45.00		397.36	1587.39	0.00	0.00
48.00		340.27	1342.35	0.00	0.00
50.00		226.23	481.73	0.00	0.00
55.00		567.83	1187.94	0.00	0.00
60.00		564.94	1164.51	0.00	0.00
65.00		560.93	1141.09	0.00	0.00
70.00		555.92	1117.66	0.00	0.00
75.00		550.03	1094.24	0.00	0.00
80.00		543.33	1070.81	0.00	0.00
84.08		437.73	857.12	0.00	0.00
85.00		98.31	317.43	0.00	0.00
89.50		480.79	1537.73	0.00	0.00
90.00		52.76	85.63	0.00	0.00
95.00		525.48	845.98	0.00	0.00
100.00		516.28	827.24	0.00	0.00
105.00		506.55	808.50	0.00	0.00
110.00		496.33	789.76	0.00	0.00
115.00		485.65	771.02	0.00	0.00
120.00		474.53	752.28	0.00	0.00
123.00	(23) attachments	3982.51	3452.45	0.00	0.00
125.00		183.33	282.01	0.00	0.00
127.92		264.15	405.89	0.00	0.00
130.00		188.17	452.96	0.00	0.00
131.00	(28) attachments	5392.85	5220.72	0.00	0.00
132.08		96.41	219.47	0.00	0.00
135.00		257.04	285.74	0.00	0.00
140.00	(27) attachments	4898.10	4372.14	0.00	0.00
145.00		418.45	423.38	0.00	0.00
150.00	(43) attachments	6383.30	6545.53	0.00	455.13
	Totals:	**34,903.96**	**50,430.14**	**0.00**	**455.13**

Calculated Forces

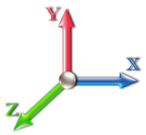
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-50.37	-34.99	0.00	-4000.7	0.00	4000.72	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.947
5.00	-48.84	-34.63	0.00	-3825.7	0.00	3825.77	3376.67	1688.33	8351.12	4181.77	0.10	-0.194	0.000	0.930
10.00	-47.34	-34.27	0.00	-3652.6	0.00	3652.63	3351.94	1675.97	8129.40	4070.74	0.41	-0.390	0.000	0.912
15.00	-45.87	-33.91	0.00	-3481.3	0.00	3481.30	3325.63	1662.82	7906.28	3959.02	0.93	-0.589	0.000	0.894
20.00	-44.42	-33.52	0.00	-3311.7	0.00	3311.76	3297.74	1648.87	7681.99	3846.70	1.65	-0.789	0.000	0.875
25.00	-42.99	-33.11	0.00	-3144.1	0.00	3144.16	3268.26	1634.13	7456.75	3733.92	2.59	-0.992	0.000	0.856
30.00	-41.59	-32.68	0.00	-2978.6	0.00	2978.61	3237.20	1618.60	7230.79	3620.77	3.74	-1.196	0.000	0.836
35.00	-40.22	-32.24	0.00	-2815.1	0.00	2815.19	3204.54	1602.27	7004.35	3507.38	5.10	-1.402	0.000	0.816
40.00	-38.92	-31.74	0.00	-2653.9	0.00	2653.97	3170.31	1585.15	6777.64	3393.86	6.68	-1.609	0.000	0.795
41.50	-38.49	-31.64	0.00	-2606.3	0.00	2606.36	3159.73	1579.86	6709.61	3359.79	7.20	-1.673	0.000	0.788
45.00	-36.84	-31.28	0.00	-2495.6	0.00	2495.64	3134.49	1567.24	6550.90	3280.32	8.48	-1.821	0.000	0.773
48.00	-35.46	-30.96	0.00	-2401.8	0.00	2401.81	3132.30	1566.15	6537.37	3273.54	9.67	-1.948	0.000	0.745
50.00	-34.90	-30.81	0.00	-2339.8	0.00	2339.89	3117.49	1558.74	6446.72	3228.15	10.50	-2.034	0.000	0.736
55.00	-33.63	-30.31	0.00	-2185.8	0.00	2185.87	3079.35	1539.68	6220.34	3114.79	12.74	-2.237	0.000	0.713
60.00	-32.39	-29.82	0.00	-2034.3	0.00	2034.31	3039.63	1519.81	5994.49	3001.70	15.19	-2.439	0.000	0.689
65.00	-31.17	-29.31	0.00	-1885.2	0.00	1885.23	2998.32	1499.16	5769.39	2888.98	17.86	-2.641	0.000	0.663
70.00	-29.98	-28.81	0.00	-1738.6	0.00	1738.67	2955.43	1477.72	5545.28	2776.76	20.73	-2.842	0.000	0.637
75.00	-28.81	-28.30	0.00	-1594.6	0.00	1594.62	2910.95	1455.48	5322.38	2665.15	23.81	-3.041	0.000	0.609
80.00	-27.69	-27.79	0.00	-1453.1	0.00	1453.10	2864.89	1432.44	5100.92	2554.25	27.10	-3.238	0.000	0.579
84.08	-26.81	-27.35	0.00	-1339.6	0.00	1339.63	2826.09	1413.05	4921.28	2464.30	29.94	-3.398	0.000	0.553
85.00	-26.45	-27.28	0.00	-1314.5	0.00	1314.56	2817.24	1408.62	4881.12	2444.19	30.60	-3.434	0.000	0.548
89.50	-24.90	-26.75	0.00	-1191.8	0.00	1191.81	2031.94	1015.97	3485.43	1745.31	33.92	-3.605	0.000	0.696
90.00	-24.76	-26.74	0.00	-1178.4	0.00	1178.43	2029.15	1014.57	3470.92	1738.04	34.30	-3.624	0.000	0.691
95.00	-23.86	-26.25	0.00	-1044.7	0.00	1044.73	2000.34	1000.17	3325.82	1665.38	38.21	-3.844	0.000	0.640
100.00	-22.97	-25.76	0.00	-913.48	0.00	913.48	1969.95	984.97	3180.92	1592.82	42.35	-4.055	0.000	0.586
105.00	-22.12	-25.27	0.00	-784.67	0.00	784.67	1937.97	968.98	3036.44	1520.48	46.70	-4.254	0.000	0.528
110.00	-21.29	-24.78	0.00	-658.32	0.00	658.32	1904.40	952.20	2892.62	1448.46	51.25	-4.440	0.000	0.466
115.00	-20.50	-24.29	0.00	-534.40	0.00	534.40	1869.25	934.63	2749.69	1376.89	55.99	-4.608	0.000	0.400
120.00	-19.74	-23.80	0.00	-412.93	0.00	412.93	1832.52	916.26	2607.87	1305.87	60.90	-4.755	0.000	0.328
123.00	-16.61	-19.56	0.00	-341.54	0.00	341.54	1809.72	904.86	2523.40	1263.58	63.91	-4.832	0.000	0.280
125.00	-16.33	-19.37	0.00	-302.42	0.00	302.42	1794.20	897.10	2467.38	1235.52	65.94	-4.879	0.000	0.254
127.92	-15.93	-19.08	0.00	-245.93	0.00	245.93	1771.11	885.56	2386.14	1194.84	68.94	-4.940	0.000	0.215
130.00	-15.49	-18.86	0.00	-206.18	0.00	206.18	1754.29	877.15	2328.47	1165.96	71.10	-4.978	0.000	0.186
131.00	-10.75	-13.04	0.00	-187.31	0.00	187.31	1746.12	873.06	2300.89	1152.16	72.14	-4.994	0.000	0.169
132.08	-10.53	-12.93	0.00	-173.18	0.00	173.18	1160.48	580.24	1541.12	771.71	73.28	-5.011	0.000	0.234
135.00	-10.26	-12.66	0.00	-135.47	0.00	135.47	1148.82	574.41	1493.54	747.88	76.35	-5.051	0.000	0.191
140.00	-6.33	-7.40	0.00	-72.17	0.00	72.17	1127.58	563.79	1411.91	707.01	81.67	-5.113	0.000	0.108
145.00	-5.94	-6.95	0.00	-35.18	0.00	35.18	1104.76	552.38	1330.41	666.20	87.04	-5.149	0.000	0.058
150.00	0.00	-6.38	0.00	-0.46	0.00	0.46	1080.36	540.18	1249.27	625.56	92.44	-5.163	0.000	0.001

Wind Loading - Shaft

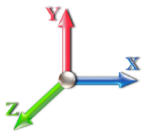
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	920.5
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	902.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	885.4
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	867.8
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	850.2
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	832.7
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	815.1
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	797.5
41.50	Bot - Section 2	1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	235.8
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1094.9
48.00	Top - Section 1	1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	924.8
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	306.6
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	754.3
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	736.7
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	719.2
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	701.6
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	684.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	666.5
84.08	Bot - Section 3	1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	531.2
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	213.0
89.50	Top - Section 2	1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1030.3
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	50.6
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	497.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	483.8
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	469.7
110.00		1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	455.7
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	441.6
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	427.6
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	249.8
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	163.7
127.92	Bot - Section 4	1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	234.7
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	289.9
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	137.7
132.08	Top - Section 3	1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	148.0
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	169.7
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	282.5
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	5.00	12.706	8.26	418.4	0.0	272.0
150.00	Appurtenance(s)	1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	261.4
								Totals:	**150.00**			**15,452.0**		**20,507.2**

Discrete Appurtenance Forces

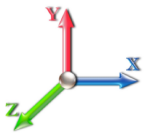
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	28.994	31.893	0.50	1.00	1.41	40.50	0.000	0.000	71.95	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.79	1.00	12.21	125.01	0.000	0.730	623.47	0.00	455.13
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	1.00	1.00	9.66	45.90	0.000	0.000	492.94	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.83	1.00	22.08	135.00	0.000	0.000	1126.62	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	1.00	1.00	8.13	99.90	0.000	0.000	414.87	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.79	1.00	20.51	122.40	0.000	0.000	1046.52	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1350.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.50	1.00	3.42	103.68	0.000	0.000	174.52	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	1.00	1.00	1.67	7.65	0.000	0.000	85.22	0.00	0.00
10	150.00	DBC-750	3	28.994	31.893	0.57	1.00	0.87	12.96	0.000	0.000	44.50	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.67	1.00	0.10	2.97	0.000	0.000	5.13	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	28.994	31.893	0.67	1.00	1.23	57.24	0.000	0.000	62.91	0.00	0.00
13	150.00	RRUS-11	3	28.994	31.893	0.57	1.00	4.77	135.00	0.000	0.000	243.45	0.00	0.00
14	150.00	4426 B66	3	28.994	31.893	0.57	1.00	2.80	130.68	0.000	0.000	143.11	0.00	0.00
15	150.00	RRUS-32	3	28.994	31.893	0.57	1.00	1.13	2097.90	0.000	0.000	57.59	0.00	0.00
16	150.00	RRUS-32	3	28.994	31.893	0.57	1.00	5.15	143.10	0.000	0.000	262.65	0.00	0.00
17	140.00	Low Profile Platform	1	28.576	31.433	1.00	1.00	22.00	1350.00	0.000	0.000	1106.45	0.00	0.00
18	140.00	Commscope	6	28.576	31.433	0.58	0.75	28.36	392.58	0.000	0.000	1426.35	0.00	0.00
19	140.00	Antel	3	28.576	31.433	0.66	0.75	7.05	81.81	0.000	0.000	354.51	0.00	0.00
20	140.00	RVZDC-6627-PF48	1	28.576	31.433	1.00	1.00	3.79	28.80	0.000	0.000	190.61	0.00	0.00
21	140.00	B5/B13 RRHBR04C	3	28.576	31.433	0.50	0.75	2.83	190.08	0.000	0.000	142.54	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	28.576	31.433	0.50	0.75	9.81	356.94	0.000	0.000	493.57	0.00	0.00
23	140.00	BSAMNT-SBS-2-2	3	28.576	31.433	0.67	1.00	7.04	180.90	0.000	0.000	353.81	0.00	0.00
24	140.00	HRK12 (Handrail Kit)	1	28.576	31.433	0.75	0.75	5.06	235.55	0.000	0.000	254.61	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	28.576	31.433	0.43	0.75	1.09	41.04	0.000	0.000	54.83	0.00	0.00
26	140.00	XXDWMM-12.5-65-8T-CB	3	28.576	31.433	0.50	0.75	1.78	62.37	0.000	0.000	89.46	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	28.179	30.997	0.50	0.75	0.62	29.70	0.000	0.000	30.65	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	28.179	30.997	0.52	0.75	31.88	331.56	0.000	0.000	1580.97	0.00	0.00
29	131.00	AIR6449 B41	3	28.179	30.997	0.53	0.75	9.03	278.10	0.000	0.000	447.63	0.00	0.00
30	131.00	Platform w/ HRK	1	28.179	30.997	1.00	1.00	46.00	2380.50	0.000	0.000	2281.35	0.00	0.00
31	131.00	AIR32	3	28.179	30.997	0.65	0.75	12.74	356.94	0.000	0.000	632.00	0.00	0.00
32	131.00	SDX1926Q-43 Diplexer	3	28.179	30.997	0.43	0.75	0.37	16.20	0.000	0.000	18.45	0.00	0.00
33	131.00	Radio 4449 B71+B85	3	28.179	30.997	0.43	0.75	2.53	197.64	0.000	0.000	125.30	0.00	0.00
34	131.00	Ericsson 4415 B25	3	28.179	30.997	0.43	0.75	2.10	124.20	0.000	0.000	104.31	0.00	0.00
35	131.00	Bias-T 782 11056	3	28.179	30.997	0.43	0.75	0.17	4.05	0.000	0.000	8.27	0.00	0.00
36	131.00	ATMAA1412D-1A20 TMA	3	28.179	30.997	0.43	0.75	1.50	35.10	0.000	0.000	74.42	0.00	0.00
37	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	148.50	0.000	0.000	551.53	0.00	0.00
38	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.69	0.75	5.15	143.10	0.000	0.000	252.26	0.00	0.00
39	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.59	0.75	0.33	3.60	0.000	0.000	16.24	0.00	0.00
40	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1440.00	0.000	0.000	1566.11	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.62	0.75	4.99	45.00	0.000	0.000	244.34	0.00	0.00
42	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	102.60	0.000	0.000	488.67	0.00	0.00
43	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.50	0.75	6.11	189.00	0.000	0.000	298.80	0.00	0.00
44	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.50	0.75	4.09	162.00	0.000	0.000	199.94	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.75	0.75	1.75	23.76	0.000	0.000	85.89	0.00	0.00
							Totals:		**13,541.51**			**19,451.95**		

Total Applied Force Summary

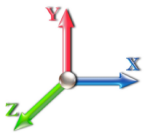
Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		527.21	1057.15	0.00	0.00
10.00		517.20	1039.58	0.00	0.00
15.00		507.19	1022.01	0.00	0.00
20.00		527.53	1004.44	0.00	0.00
25.00		541.77	986.87	0.00	0.00
30.00		551.40	969.31	0.00	0.00
35.00		557.63	951.74	0.00	0.00
40.00		561.24	934.17	0.00	0.00
41.50		167.27	276.82	0.00	0.00
45.00		397.36	1190.54	0.00	0.00
48.00		340.27	1006.76	0.00	0.00
50.00		226.23	361.30	0.00	0.00
55.00		567.83	890.95	0.00	0.00
60.00		564.94	873.38	0.00	0.00
65.00		560.93	855.81	0.00	0.00
70.00		555.92	838.25	0.00	0.00
75.00		550.03	820.68	0.00	0.00
80.00		543.33	803.11	0.00	0.00
84.08		437.73	642.84	0.00	0.00
85.00		98.31	238.07	0.00	0.00
89.50		480.79	1153.30	0.00	0.00
90.00		52.76	64.22	0.00	0.00
95.00		525.48	634.48	0.00	0.00
100.00		516.28	620.43	0.00	0.00
105.00		506.55	606.37	0.00	0.00
110.00		496.33	592.32	0.00	0.00
115.00		485.65	578.26	0.00	0.00
120.00		474.53	564.21	0.00	0.00
123.00	(23) attachments	3982.51	2589.34	0.00	0.00
125.00		183.33	211.51	0.00	0.00
127.92		264.15	304.42	0.00	0.00
130.00		188.17	339.72	0.00	0.00
131.00	(28) attachments	5392.85	3915.54	0.00	0.00
132.08		96.41	164.60	0.00	0.00
135.00		257.04	214.31	0.00	0.00
140.00	(27) attachments	4898.10	3279.11	0.00	0.00
145.00		418.45	317.54	0.00	0.00
150.00	(43) attachments	6383.30	4909.15	0.00	455.13
	Totals:	**34,903.96**	**37,822.60**	**0.00**	**455.13**

Calculated Forces

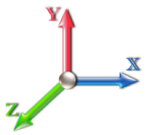
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-37.76	-34.97	0.00	-3952.2	0.00	3952.25	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.932
5.00	-36.59	-34.56	0.00	-3777.4	0.00	3777.41	3376.67	1688.33	8351.12	4181.77	0.10	-0.192	0.000	0.915
10.00	-35.44	-34.16	0.00	-3604.6	0.00	3604.60	3351.94	1675.97	8129.40	4070.74	0.41	-0.385	0.000	0.896
15.00	-34.30	-33.76	0.00	-3433.8	0.00	3433.80	3325.63	1662.82	7906.28	3959.02	0.92	-0.581	0.000	0.878
20.00	-33.19	-33.34	0.00	-3264.9	0.00	3264.99	3297.74	1648.87	7681.99	3846.70	1.63	-0.779	0.000	0.859
25.00	-32.10	-32.89	0.00	-3098.3	0.00	3098.30	3268.26	1634.13	7456.75	3733.92	2.56	-0.978	0.000	0.840
30.00	-31.02	-32.43	0.00	-2933.8	0.00	2933.83	3237.20	1618.60	7230.79	3620.77	3.69	-1.180	0.000	0.820
35.00	-29.97	-31.96	0.00	-2771.6	0.00	2771.66	3204.54	1602.27	7004.35	3507.38	5.03	-1.383	0.000	0.800
40.00	-28.98	-31.44	0.00	-2611.8	0.00	2611.85	3170.31	1585.15	6777.64	3393.86	6.59	-1.587	0.000	0.779
41.50	-28.65	-31.32	0.00	-2564.6	0.00	2564.68	3159.73	1579.86	6709.61	3359.79	7.10	-1.650	0.000	0.773
45.00	-27.40	-30.95	0.00	-2455.0	0.00	2455.06	3134.49	1567.24	6550.90	3280.32	8.37	-1.795	0.000	0.758
48.00	-26.35	-30.63	0.00	-2362.2	0.00	2362.20	3132.30	1566.15	6537.37	3273.54	9.53	-1.920	0.000	0.730
50.00	-25.92	-30.46	0.00	-2300.9	0.00	2300.94	3117.49	1558.74	6446.72	3228.15	10.36	-2.005	0.000	0.721
55.00	-24.95	-29.94	0.00	-2148.6	0.00	2148.67	3079.35	1539.68	6220.34	3114.79	12.56	-2.204	0.000	0.698
60.00	-23.99	-29.43	0.00	-1998.9	0.00	1998.96	3039.63	1519.81	5994.49	3001.70	14.98	-2.403	0.000	0.674
65.00	-23.06	-28.91	0.00	-1851.8	0.00	1851.83	2998.32	1499.16	5769.39	2888.98	17.60	-2.601	0.000	0.649
70.00	-22.16	-28.39	0.00	-1707.3	0.00	1707.30	2955.43	1477.72	5545.28	2776.76	20.43	-2.799	0.000	0.623
75.00	-21.27	-27.87	0.00	-1565.3	0.00	1565.36	2910.95	1455.48	5322.38	2665.15	23.47	-2.994	0.000	0.595
80.00	-20.41	-27.35	0.00	-1426.0	0.00	1426.01	2864.89	1432.44	5100.92	2554.25	26.71	-3.187	0.000	0.566
84.08	-19.75	-26.91	0.00	-1314.3	0.00	1314.34	2826.09	1413.05	4921.28	2464.30	29.50	-3.344	0.000	0.541
85.00	-19.47	-26.83	0.00	-1289.6	0.00	1289.68	2817.24	1408.62	4881.12	2444.19	30.15	-3.379	0.000	0.535
89.50	-18.31	-26.31	0.00	-1168.9	0.00	1168.95	2031.94	1015.97	3485.43	1745.31	33.41	-3.547	0.000	0.679
90.00	-18.19	-26.29	0.00	-1155.7	0.00	1155.79	2029.15	1014.57	3470.92	1738.04	33.79	-3.566	0.000	0.675
95.00	-17.50	-25.79	0.00	-1024.3	0.00	1024.34	2000.34	1000.17	3325.82	1665.38	37.64	-3.782	0.000	0.624
100.00	-16.82	-25.29	0.00	-895.40	0.00	895.40	1969.95	984.97	3180.92	1592.82	41.71	-3.988	0.000	0.571
105.00	-16.17	-24.80	0.00	-768.94	0.00	768.94	1937.97	968.98	3036.44	1520.48	45.99	-4.184	0.000	0.515
110.00	-15.55	-24.30	0.00	-644.96	0.00	644.96	1904.40	952.20	2892.62	1448.46	50.47	-4.366	0.000	0.454
115.00	-14.94	-23.82	0.00	-523.43	0.00	523.43	1869.25	934.63	2749.69	1376.89	55.13	-4.530	0.000	0.389
120.00	-14.38	-23.33	0.00	-404.35	0.00	404.35	1832.52	916.26	2607.87	1305.87	59.95	-4.674	0.000	0.318
123.00	-12.10	-19.16	0.00	-334.38	0.00	334.38	1809.72	904.86	2523.40	1263.58	62.91	-4.750	0.000	0.272
125.00	-11.89	-18.97	0.00	-296.07	0.00	296.07	1794.20	897.10	2467.38	1235.52	64.90	-4.796	0.000	0.247
127.92	-11.59	-18.69	0.00	-240.75	0.00	240.75	1771.11	885.56	2386.14	1194.84	67.85	-4.855	0.000	0.208
130.00	-11.26	-18.48	0.00	-201.82	0.00	201.82	1754.29	877.15	2328.47	1165.96	69.98	-4.892	0.000	0.180
131.00	-7.82	-12.77	0.00	-183.34	0.00	183.34	1746.12	873.06	2300.89	1152.16	71.00	-4.908	0.000	0.164
132.08	-7.66	-12.66	0.00	-169.51	0.00	169.51	1160.48	580.24	1541.12	771.71	72.12	-4.925	0.000	0.227
135.00	-7.45	-12.40	0.00	-132.57	0.00	132.57	1148.82	574.41	1493.54	747.88	75.14	-4.964	0.000	0.184
140.00	-4.61	-7.24	0.00	-70.59	0.00	70.59	1127.58	563.79	1411.91	707.01	80.36	-5.025	0.000	0.104
145.00	-4.33	-6.79	0.00	-34.42	0.00	34.42	1104.76	552.38	1330.41	666.20	85.64	-5.060	0.000	0.056
150.00	0.00	-6.38	0.00	-0.46	0.00	0.46	1080.36	540.18	1249.27	625.56	90.94	-5.073	0.000	0.001

Wind Loading - Shaft

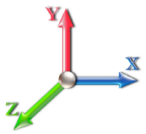
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	27.156	32.59	185.2	643.2	1870.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	26.765	32.12	182.6	677.8	1881.7
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	26.337	31.60	179.7	693.2	1873.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	25.893	31.07	187.4	700.3	1857.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	25.439	30.53	193.0	702.5	1836.2
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	24.979	29.98	196.9	701.5	1811.8
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	24.515	29.42	199.6	698.2	1785.0
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	5.00	24.049	28.86	201.4	693.2	1756.5
41.50	Bot - Section 2	1.00	1.05	6.394	7.03	0.00	1.200	2.046	1.50	7.121	8.55	60.1	207.4	521.9
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	3.50	16.639	19.97	142.9	486.4	1946.2
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	2.076	3.00	14.078	16.89	122.5	414.3	1647.3
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	2.00	9.290	11.15	81.6	274.9	683.8
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	22.900	27.48	205.1	678.9	1684.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	22.426	26.91	204.6	669.7	1652.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	21.950	26.34	203.6	659.8	1618.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	21.474	25.77	202.3	649.3	1584.8
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	20.997	25.20	200.7	638.3	1550.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	20.519	24.62	198.9	626.7	1515.4
84.08	Bot - Section 3	1.00	1.22	7.419	8.16	0.00	1.200	2.196	4.08	16.402	19.68	160.6	503.9	1212.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	0.92	3.676	4.41	36.1	114.0	398.0
89.50	Top - Section 2	1.00	1.24	7.517	8.27	0.00	1.200	2.210	4.50	17.817	21.38	176.8	549.6	1923.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	0.50	1.955	2.35	19.4	60.9	128.3
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	19.294	23.15	193.9	596.7	1260.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	18.814	22.58	191.1	583.8	1228.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	18.334	22.00	188.1	570.5	1196.8
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	17.853	21.42	185.0	557.0	1164.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	17.372	20.85	181.7	543.1	1132.0
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	16.891	20.27	178.3	529.1	1099.2
123.00	Appurtenance(s)	1.00	1.32	8.038	8.84	0.00	1.200	2.281	3.00	9.902	11.88	105.1	312.3	645.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	2.00	6.505	7.81	69.3	205.9	424.2
127.92	Bot - Section 4	1.00	1.33	8.104	8.91	0.00	1.200	2.290	2.92	9.349	11.22	100.0	295.4	608.4
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	2.08	6.643	7.97	71.3	210.7	597.3
131.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	2.296	1.00	3.159	3.79	34.0	100.6	284.1
132.08	Top - Section 3	1.00	1.34	8.159	8.98	0.00	1.200	2.298	1.08	3.400	4.08	36.6	108.3	305.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	2.92	9.043	10.85	97.8	286.5	512.7
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	2.311	5.00	15.121	18.15	164.9	476.2	852.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	5.00	14.639	17.57	160.8	461.2	823.8
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	14.156	16.99	156.6	446.0	794.6
								Totals:	**150.00**			**5,655.5**		**45,670.5**

Discrete Appurtenance Forces

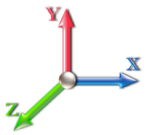
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	8.381	9.219	0.50	1.00	2.78	200.11	0.000	0.000	25.64	0.00	0.00
2	150.00	800 10121	3	8.389	9.228	0.79	1.00	18.86	527.46	0.000	0.730	174.07	0.00	127.07
3	150.00	HPA-65R-BUU-H6	1	8.381	9.219	1.00	1.00	11.52	410.25	0.000	0.000	106.17	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	8.381	9.219	0.83	1.00	25.80	1056.97	0.000	0.000	237.81	0.00	0.00
5	150.00	QS66512-2	1	8.381	9.219	1.00	1.00	9.90	454.10	0.000	0.000	91.27	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	8.381	9.219	0.79	1.00	23.98	982.40	0.000	0.000	221.06	0.00	0.00
7	150.00	Low Profile	1	8.381	9.219	1.00	1.00	45.55	3245.22	0.000	0.000	419.90	0.00	0.00
8	150.00	DTMABP7819VG12A	6	8.381	9.219	0.50	1.00	6.50	298.60	0.000	0.000	59.91	0.00	0.00
9	150.00	LMU Antenna	1	8.381	9.219	1.00	1.00	1.67	10.20	0.000	0.000	15.41	0.00	0.00
10	150.00	DBC-750	3	8.381	9.219	0.57	1.00	2.08	47.25	0.000	0.000	19.17	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	8.381	9.219	0.67	1.00	0.62	10.78	0.000	0.000	5.68	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	8.381	9.219	0.67	1.00	2.02	205.79	0.000	0.000	18.58	0.00	0.00
13	150.00	RRUS-11	3	8.381	9.219	0.57	1.00	6.37	420.10	0.000	0.000	58.72	0.00	0.00
14	150.00	4426 B66	3	8.381	9.219	0.57	1.00	15.44	1609.10	0.000	0.000	142.32	0.00	0.00
15	150.00	RRUS-32	3	8.381	9.219	0.57	1.00	2.16	5002.12	0.000	0.000	19.93	0.00	0.00
16	150.00	RRUS-32	3	8.381	9.219	0.57	1.00	6.89	400.26	0.000	0.000	63.53	0.00	0.00
17	140.00	Low Profile Platform	1	8.260	9.086	1.00	1.00	45.39	3233.22	0.000	0.000	412.38	0.00	0.00
18	140.00	Commscope	6	8.260	9.086	0.58	0.75	34.40	2222.22	0.000	0.000	312.54	0.00	0.00
19	140.00	Antel	3	8.260	9.086	0.66	0.75	11.89	900.29	0.000	0.000	108.03	0.00	0.00
20	140.00	RVZDC-6627-PF48	1	8.260	9.086	1.00	1.00	4.89	216.38	0.000	0.000	44.40	0.00	0.00
21	140.00	B5/B13 RRHBR04C	3	8.260	9.086	0.50	0.75	3.93	421.47	0.000	0.000	35.75	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	8.260	9.086	0.50	0.75	12.19	1252.43	0.000	0.000	110.76	0.00	0.00
23	140.00	BSAMNT-SBS-2-2	3	8.260	9.086	0.67	1.00	16.79	-659.20	0.000	0.000	152.55	0.00	0.00
24	140.00	HRK12 (Handrail Kit)	1	8.260	9.086	0.75	0.75	11.61	987.06	0.000	0.000	105.52	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	8.260	9.086	0.43	0.75	2.26	116.07	0.000	0.000	20.53	0.00	0.00
26	140.00	XXDWMM-12.5-65-8T-CB	3	8.260	9.086	0.50	0.75	3.34	358.14	0.000	0.000	30.31	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	8.145	8.960	0.50	0.75	1.56	72.84	0.000	0.000	13.98	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	8.145	8.960	0.52	0.75	35.86	2196.94	0.000	0.000	321.30	0.00	0.00
29	131.00	AIR6449 B41	3	8.145	8.960	0.53	0.75	11.02	816.80	0.000	0.000	98.76	0.00	0.00
30	131.00	Platform w/ HRK	1	8.145	8.960	1.00	1.00	88.24	6223.20	0.000	0.000	790.59	0.00	0.00
31	131.00	AIR32	3	8.145	8.960	0.65	0.75	15.81	1246.09	0.000	0.000	141.64	0.00	0.00
32	131.00	SDX1926Q-43 Diplexer	3	8.145	8.960	0.43	0.75	1.08	51.86	0.000	0.000	9.68	0.00	0.00
33	131.00	Radio 4449 B71+B85	3	8.145	8.960	0.43	0.75	3.49	316.18	0.000	0.000	31.24	0.00	0.00
34	131.00	Ericsson 4415 B25	3	8.145	8.960	0.43	0.75	2.97	299.60	0.000	0.000	26.63	0.00	0.00
35	131.00	Bias-T 782 11056	3	8.145	8.960	0.43	0.75	0.67	19.36	0.000	0.000	5.97	0.00	0.00
36	131.00	ATMAA1412D-1A20 TMA	3	8.145	8.960	0.43	0.75	2.82	128.89	0.000	0.000	25.27	0.00	0.00
37	123.00	APXVTM14-C-I20	3	8.038	8.842	0.59	0.75	13.91	866.62	0.000	0.000	122.96	0.00	0.00
38	123.00	ALU - 800 MHz RRH -	3	8.038	8.842	0.50	0.75	6.01	417.53	0.000	0.000	53.11	0.00	0.00
39	123.00	RFS - ACU-A20-N - RET	4	8.038	8.842	0.61	0.75	1.30	22.06	0.000	0.000	11.48	0.00	0.00
40	123.00	Platform w/ HRK Handrail	1	8.038	8.842	1.00	1.00	65.58	3544.98	0.000	0.000	579.82	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	8.038	8.842	0.62	0.75	7.27	172.99	0.000	0.000	64.24	0.00	0.00
42	123.00	APXVSPP18-C-A20	2	8.038	8.842	0.62	0.75	14.53	432.28	0.000	0.000	128.48	0.00	0.00
43	123.00	ALU - TD-RRH8x20-25 -	3	8.038	8.842	0.50	0.75	7.75	713.44	0.000	0.000	68.48	0.00	0.00
44	123.00	ALU - 1900 MHz RRH -	3	8.038	8.842	0.50	0.75	6.58	463.37	0.000	0.000	58.14	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	8.038	8.842	0.75	0.75	3.66	85.87	0.000	0.000	32.34	0.00	0.00
							Totals:		**42,019.70**			**5,596.06**		

Total Applied Force Summary

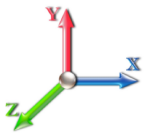
Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		185.25	2052.70	0.00	0.00
10.00		182.59	2063.87	0.00	0.00
15.00		179.66	2055.93	0.00	0.00
20.00		187.41	2039.58	0.00	0.00
25.00		192.99	2018.37	0.00	0.00
30.00		196.92	1993.95	0.00	0.00
35.00		199.63	1967.22	0.00	0.00
40.00		201.42	1938.74	0.00	0.00
41.50		60.11	576.51	0.00	0.00
45.00		142.86	2073.77	0.00	0.00
48.00		122.52	1756.63	0.00	0.00
50.00		81.55	756.68	0.00	0.00
55.00		205.09	1866.88	0.00	0.00
60.00		204.56	1834.23	0.00	0.00
65.00		203.63	1800.90	0.00	0.00
70.00		202.34	1766.96	0.00	0.00
75.00		200.74	1732.49	0.00	0.00
80.00		198.86	1697.55	0.00	0.00
84.08		160.63	1361.01	0.00	0.00
85.00		36.09	431.40	0.00	0.00
89.50		176.80	2087.30	0.00	0.00
90.00		19.43	146.57	0.00	0.00
95.00		193.87	1442.72	0.00	0.00
100.00		191.10	1411.01	0.00	0.00
105.00		188.15	1379.00	0.00	0.00
110.00		185.02	1346.71	0.00	0.00
115.00		181.73	1314.16	0.00	0.00
120.00		178.28	1281.38	0.00	0.00
123.00	(23) attachments	1224.12	7473.86	0.00	0.00
125.00		69.25	487.94	0.00	0.00
127.92		100.01	701.29	0.00	0.00
130.00		71.31	663.69	0.00	0.00
131.00	(28) attachments	1499.02	11687.74	0.00	0.00
132.08		36.62	327.73	0.00	0.00
135.00		97.84	572.21	0.00	0.00
140.00	(27) attachments	1497.64	10003.05	0.00	0.00
145.00		160.79	884.61	0.00	0.00
150.00	(43) attachments	1835.77	15725.73	0.00	127.07
	Totals:	**11,251.58**	**92,722.06**	**0.00**	**127.07**

Calculated Forces

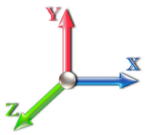
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-92.72	-11.30	0.00	-1324.0	0.00	1324.04	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.336
5.00	-90.65	-11.22	0.00	-1267.5	0.00	1267.52	3376.67	1688.33	8351.12	4181.77	0.03	-0.064	0.000	0.330
10.00	-88.57	-11.14	0.00	-1211.4	0.00	1211.42	3351.94	1675.97	8129.40	4070.74	0.14	-0.129	0.000	0.324
15.00	-86.51	-11.05	0.00	-1155.7	0.00	1155.74	3325.63	1662.82	7906.28	3959.02	0.31	-0.195	0.000	0.318
20.00	-84.45	-10.95	0.00	-1100.4	0.00	1100.49	3297.74	1648.87	7681.99	3846.70	0.55	-0.262	0.000	0.312
25.00	-82.42	-10.85	0.00	-1045.7	0.00	1045.73	3268.26	1634.13	7456.75	3733.92	0.86	-0.329	0.000	0.305
30.00	-80.42	-10.73	0.00	-991.50	0.00	991.50	3237.20	1618.60	7230.79	3620.77	1.24	-0.397	0.000	0.299
35.00	-78.44	-10.61	0.00	-937.83	0.00	937.83	3204.54	1602.27	7004.35	3507.38	1.69	-0.466	0.000	0.292
40.00	-76.50	-10.46	0.00	-884.76	0.00	884.76	3170.31	1585.15	6777.64	3393.86	2.22	-0.535	0.000	0.285
41.50	-75.91	-10.44	0.00	-869.08	0.00	869.08	3159.73	1579.86	6709.61	3359.79	2.39	-0.556	0.000	0.283
45.00	-73.83	-10.33	0.00	-832.56	0.00	832.56	3134.49	1567.24	6550.90	3280.32	2.82	-0.605	0.000	0.277
48.00	-72.07	-10.23	0.00	-801.56	0.00	801.56	3132.30	1566.15	6537.37	3273.54	3.21	-0.648	0.000	0.268
50.00	-71.31	-10.20	0.00	-781.09	0.00	781.09	3117.49	1558.74	6446.72	3228.15	3.49	-0.676	0.000	0.265
55.00	-69.43	-10.06	0.00	-730.07	0.00	730.07	3079.35	1539.68	6220.34	3114.79	4.23	-0.744	0.000	0.257
60.00	-67.59	-9.91	0.00	-679.78	0.00	679.78	3039.63	1519.81	5994.49	3001.70	5.05	-0.812	0.000	0.249
65.00	-65.78	-9.76	0.00	-630.24	0.00	630.24	2998.32	1499.16	5769.39	2888.98	5.93	-0.879	0.000	0.240
70.00	-64.00	-9.60	0.00	-581.47	0.00	581.47	2955.43	1477.72	5545.28	2776.76	6.89	-0.946	0.000	0.231
75.00	-62.26	-9.44	0.00	-533.47	0.00	533.47	2910.95	1455.48	5322.38	2665.15	7.92	-1.013	0.000	0.222
80.00	-60.56	-9.27	0.00	-486.26	0.00	486.26	2864.89	1432.44	5100.92	2554.25	9.02	-1.079	0.000	0.212
84.08	-59.20	-9.12	0.00	-448.39	0.00	448.39	2826.09	1413.05	4921.28	2464.30	9.96	-1.132	0.000	0.203
85.00	-58.76	-9.11	0.00	-440.03	0.00	440.03	2817.24	1408.62	4881.12	2444.19	10.18	-1.144	0.000	0.201
89.50	-56.67	-8.92	0.00	-399.02	0.00	399.02	2031.94	1015.97	3485.43	1745.31	11.29	-1.202	0.000	0.257
90.00	-56.52	-8.94	0.00	-394.56	0.00	394.56	2029.15	1014.57	3470.92	1738.04	11.41	-1.208	0.000	0.255
95.00	-55.07	-8.79	0.00	-349.85	0.00	349.85	2000.34	1000.17	3325.82	1665.38	12.72	-1.282	0.000	0.238
100.00	-53.66	-8.63	0.00	-305.92	0.00	305.92	1969.95	984.97	3180.92	1592.82	14.10	-1.352	0.000	0.219
105.00	-52.27	-8.46	0.00	-262.79	0.00	262.79	1937.97	968.98	3036.44	1520.48	15.55	-1.419	0.000	0.200
110.00	-50.92	-8.30	0.00	-220.47	0.00	220.47	1904.40	952.20	2892.62	1448.46	17.07	-1.481	0.000	0.179
115.00	-49.61	-8.13	0.00	-178.98	0.00	178.98	1869.25	934.63	2749.69	1376.89	18.66	-1.538	0.000	0.157
120.00	-48.32	-7.95	0.00	-138.34	0.00	138.34	1832.52	916.26	2607.87	1305.87	20.29	-1.587	0.000	0.132
123.00	-40.89	-6.53	0.00	-114.51	0.00	114.51	1809.72	904.86	2523.40	1263.58	21.30	-1.613	0.000	0.113
125.00	-40.40	-6.46	0.00	-101.45	0.00	101.45	1794.20	897.10	2467.38	1235.52	21.98	-1.628	0.000	0.105
127.92	-39.70	-6.35	0.00	-82.62	0.00	82.62	1771.11	885.56	2386.14	1194.84	22.98	-1.649	0.000	0.092
130.00	-39.04	-6.26	0.00	-69.39	0.00	69.39	1754.29	877.15	2328.47	1165.96	23.70	-1.662	0.000	0.082
131.00	-27.40	-4.43	0.00	-63.13	0.00	63.13	1746.12	873.06	2300.89	1152.16	24.05	-1.667	0.000	0.071
132.08	-27.07	-4.39	0.00	-58.33	0.00	58.33	1160.48	580.24	1541.12	771.71	24.43	-1.673	0.000	0.099
135.00	-26.50	-4.28	0.00	-45.53	0.00	45.53	1148.82	574.41	1493.54	747.88	25.46	-1.686	0.000	0.084
140.00	-16.54	-2.49	0.00	-24.13	0.00	24.13	1127.58	563.79	1411.91	707.01	27.24	-1.707	0.000	0.049
145.00	-15.66	-2.31	0.00	-11.66	0.00	11.66	1104.76	552.38	1330.41	666.20	29.03	-1.719	0.000	0.032
150.00	0.00	-1.84	0.00	-0.13	0.00	0.13	1080.36	540.18	1249.27	625.56	30.83	-1.724	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	19.19	
10.00		1003.2	0.01	0.05	0.03	27.16	
15.00		983.74	0.02	0.06	0.04	30.63	
20.00		964.22	0.03	0.07	0.04	32.02	
25.00		944.70	0.05	0.07	0.04	32.51	
30.00		925.18	0.08	0.07	0.04	32.68	
35.00		905.65	0.10	0.07	0.04	32.77	
40.00		886.13	0.13	0.07	0.03	32.81	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.76	
45.00		1216.5	0.17	0.07	0.03	45.78	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	38.77	
50.00		340.71	0.21	0.06	0.02	12.82	
55.00		838.12	0.25	0.05	0.02	30.51	
60.00		818.60	0.30	0.04	0.01	27.18	
65.00		799.08	0.35	0.03	0.01	21.75	
70.00		779.55	0.41	0.01	0.01	13.97	
75.00		760.03	0.47	-0.01	0.01	4.22	
80.00		740.51	0.54	-0.03	0.01	-6.25	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-11.45	
85.00		236.69	0.61	-0.06	0.02	-5.12	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-35.38	
90.00		56.17	0.68	-0.08	0.03	-1.78	
95.00		553.15	0.76	-0.10	0.04	-20.59	
100.00		537.54	0.84	-0.12	0.07	-20.20	
105.00		521.92	0.93	-0.12	0.10	-17.08	
110.00		506.30	1.02	-0.11	0.14	-11.53	
115.00		490.69	1.11	-0.06	0.19	-3.84	
120.00		475.07	1.21	0.01	0.26	5.75	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	73.71	
125.00		181.91	1.31	0.14	0.35	6.74	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	14.06	
130.00		322.15	1.42	0.32	0.45	21.59	
131.00	Appurtenance(s)	4324.0	1.44	0.37	0.48	318.39	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.33	
135.00		188.51	1.53	0.58	0.58	19.26	
140.00	Appurtenance(s)	3558.4	1.65	0.93	0.73	507.44	
145.00		302.17	1.77	1.39	0.92	56.94	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1297.93	
	Totals:	**37,831.9**				**2,646.5**	**Total Wind:** **34,904.0**

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

Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 21

Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-50.43	-2.79	0.00	-370.61	0.00	370.61	3399.80	1699.90	8571.22	4291.98		0.00	0.00	0.101
5.00	-49.02	-2.78	0.00	-356.68	0.00	356.68	3376.67	1688.33	8351.12	4181.77		0.01	-0.02	0.100
10.00	-47.63	-2.77	0.00	-342.76	0.00	342.76	3351.94	1675.97	8129.40	4070.74		0.04	-0.04	0.098
15.00	-46.27	-2.75	0.00	-328.91	0.00	328.91	3325.63	1662.82	7906.28	3959.02		0.09	-0.06	0.097
20.00	-44.93	-2.74	0.00	-315.14	0.00	315.14	3297.74	1648.87	7681.99	3846.70		0.15	-0.07	0.096
25.00	-43.61	-2.72	0.00	-301.46	0.00	301.46	3268.26	1634.13	7456.75	3733.92		0.24	-0.09	0.094
30.00	-42.32	-2.70	0.00	-287.88	0.00	287.88	3237.20	1618.60	7230.79	3620.77		0.35	-0.11	0.093
35.00	-41.05	-2.67	0.00	-274.40	0.00	274.40	3204.54	1602.27	7004.35	3507.38		0.48	-0.13	0.091
40.00	-39.80	-2.65	0.00	-261.03	0.00	261.03	3170.31	1585.15	6777.64	3393.86		0.63	-0.15	0.089
41.50	-39.43	-2.64	0.00	-257.05	0.00	257.05	3159.73	1579.86	6709.61	3359.79		0.68	-0.16	0.089
45.00	-37.85	-2.60	0.00	-247.80	0.00	247.80	3134.49	1567.24	6550.90	3280.32		0.80	-0.17	0.088
48.00	-36.50	-2.57	0.00	-239.99	0.00	239.99	3132.30	1566.15	6537.37	3273.54		0.92	-0.19	0.085
50.00	-36.02	-2.56	0.00	-234.86	0.00	234.86	3117.49	1558.74	6446.72	3228.15		1.00	-0.20	0.084
55.00	-34.83	-2.54	0.00	-222.05	0.00	222.05	3079.35	1539.68	6220.34	3114.79		1.21	-0.22	0.083
60.00	-33.67	-2.52	0.00	-209.35	0.00	209.35	3039.63	1519.81	5994.49	3001.70		1.45	-0.24	0.081
65.00	-32.52	-2.51	0.00	-196.75	0.00	196.75	2998.32	1499.16	5769.39	2888.98		1.71	-0.26	0.079
70.00	-31.41	-2.50	0.00	-184.23	0.00	184.23	2955.43	1477.72	5545.28	2776.76		1.99	-0.28	0.077
75.00	-30.31	-2.50	0.00	-171.74	0.00	171.74	2910.95	1455.48	5322.38	2665.15		2.29	-0.30	0.075
80.00	-29.24	-2.50	0.00	-159.24	0.00	159.24	2864.89	1432.44	5100.92	2554.25		2.62	-0.32	0.073
84.08	-28.38	-2.50	0.00	-149.02	0.00	149.02	2826.09	1413.05	4921.28	2464.30		2.90	-0.34	0.071
85.00	-28.06	-2.51	0.00	-146.73	0.00	146.73	2817.24	1408.62	4881.12	2444.19		2.97	-0.34	0.070
89.50	-26.53	-2.50	0.00	-135.44	0.00	135.44	2031.94	1015.97	3485.43	1745.31		3.30	-0.36	0.091
90.00	-26.44	-2.51	0.00	-134.19	0.00	134.19	2029.15	1014.57	3470.92	1738.04		3.34	-0.36	0.090
95.00	-25.59	-2.51	0.00	-121.65	0.00	121.65	2000.34	1000.17	3325.82	1665.38		3.73	-0.39	0.086
100.00	-24.76	-2.52	0.00	-109.08	0.00	109.08	1969.95	984.97	3180.92	1592.82		4.15	-0.41	0.081
105.00	-23.95	-2.52	0.00	-96.48	0.00	96.48	1937.97	968.98	3036.44	1520.48		4.60	-0.44	0.076
110.00	-23.16	-2.53	0.00	-83.86	0.00	83.86	1904.40	952.20	2892.62	1448.46		5.07	-0.46	0.070
115.00	-22.39	-2.53	0.00	-71.23	0.00	71.23	1869.25	934.63	2749.69	1376.89		5.57	-0.48	0.064
120.00	-21.64	-2.52	0.00	-58.59	0.00	58.59	1832.52	916.26	2607.87	1305.87		6.09	-0.50	0.057
123.00	-18.19	-2.42	0.00	-51.03	0.00	51.03	1809.72	904.86	2523.40	1263.58		6.41	-0.52	0.050
125.00	-17.90	-2.41	0.00	-46.19	0.00	46.19	1794.20	897.10	2467.38	1235.52		6.63	-0.52	0.047
127.92	-17.50	-2.40	0.00	-39.15	0.00	39.15	1771.11	885.56	2386.14	1194.84		6.95	-0.53	0.043
130.00	-17.05	-2.37	0.00	-34.15	0.00	34.15	1754.29	877.15	2328.47	1165.96		7.18	-0.54	0.039
131.00	-11.83	-2.01	0.00	-31.78	0.00	31.78	1746.12	873.06	2300.89	1152.16		7.30	-0.54	0.034
132.08	-11.61	-1.99	0.00	-29.60	0.00	29.60	1160.48	580.24	1541.12	771.71		7.42	-0.54	0.048
135.00	-11.32	-1.97	0.00	-23.79	0.00	23.79	1148.82	574.41	1493.54	747.88		7.75	-0.55	0.042
140.00	-6.96	-1.42	0.00	-13.93	0.00	13.93	1127.58	563.79	1411.91	707.01		8.34	-0.56	0.026
145.00	-6.53	-1.36	0.00	-6.81	0.00	6.81	1104.76	552.38	1330.41	666.20		8.93	-0.57	0.016
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56		9.53	-0.57	0.000

Seismic Segment Forces (Factored)

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	19.19	
10.00		1003.2	0.01	0.05	0.03	27.16	
15.00		983.74	0.02	0.06	0.04	30.63	
20.00		964.22	0.03	0.07	0.04	32.02	
25.00		944.70	0.05	0.07	0.04	32.51	
30.00		925.18	0.08	0.07	0.04	32.68	
35.00		905.65	0.10	0.07	0.04	32.77	
40.00		886.13	0.13	0.07	0.03	32.81	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.76	
45.00		1216.5	0.17	0.07	0.03	45.78	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	38.77	
50.00		340.71	0.21	0.06	0.02	12.82	
55.00		838.12	0.25	0.05	0.02	30.51	
60.00		818.60	0.30	0.04	0.01	27.18	
65.00		799.08	0.35	0.03	0.01	21.75	
70.00		779.55	0.41	0.01	0.01	13.97	
75.00		760.03	0.47	-0.01	0.01	4.22	
80.00		740.51	0.54	-0.03	0.01	-6.25	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-11.45	
85.00		236.69	0.61	-0.06	0.02	-5.12	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-35.38	
90.00		56.17	0.68	-0.08	0.03	-1.78	
95.00		553.15	0.76	-0.10	0.04	-20.59	
100.00		537.54	0.84	-0.12	0.07	-20.20	
105.00		521.92	0.93	-0.12	0.10	-17.08	
110.00		506.30	1.02	-0.11	0.14	-11.53	
115.00		490.69	1.11	-0.06	0.19	-3.84	
120.00		475.07	1.21	0.01	0.26	5.75	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	73.71	
125.00		181.91	1.31	0.14	0.35	6.74	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	14.06	
130.00		322.15	1.42	0.32	0.45	21.59	
131.00	Appurtenance(s)	4324.0	1.44	0.37	0.48	318.39	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.33	
135.00		188.51	1.53	0.58	0.58	19.26	
140.00	Appurtenance(s)	3558.4	1.65	0.93	0.73	507.44	
145.00		302.17	1.77	1.39	0.92	56.94	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1297.93	
	Totals:	**37,831.9**				**2,646.5**	**Total Wind:** **34,904.0**

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

Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 21

Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-37.82	-2.79	0.00	-365.71	0.00	365.71	3399.80	1699.90	8571.22	4291.98		0.00	0.00	0.096
5.00	-36.76	-2.78	0.00	-351.79	0.00	351.79	3376.67	1688.33	8351.12	4181.77		0.01	-0.02	0.095
10.00	-35.72	-2.76	0.00	-337.90	0.00	337.90	3351.94	1675.97	8129.40	4070.74		0.04	-0.04	0.094
15.00	-34.70	-2.74	0.00	-324.10	0.00	324.10	3325.63	1662.82	7906.28	3959.02		0.09	-0.05	0.092
20.00	-33.70	-2.72	0.00	-310.39	0.00	310.39	3297.74	1648.87	7681.99	3846.70		0.15	-0.07	0.091
25.00	-32.71	-2.70	0.00	-296.80	0.00	296.80	3268.26	1634.13	7456.75	3733.92		0.24	-0.09	0.089
30.00	-31.74	-2.67	0.00	-283.32	0.00	283.32	3237.20	1618.60	7230.79	3620.77		0.35	-0.11	0.088
35.00	-30.79	-2.65	0.00	-269.96	0.00	269.96	3204.54	1602.27	7004.35	3507.38		0.47	-0.13	0.087
40.00	-29.85	-2.62	0.00	-256.72	0.00	256.72	3170.31	1585.15	6777.64	3393.86		0.62	-0.15	0.085
41.50	-29.57	-2.61	0.00	-252.79	0.00	252.79	3159.73	1579.86	6709.61	3359.79		0.67	-0.16	0.085
45.00	-28.38	-2.57	0.00	-243.64	0.00	243.64	3134.49	1567.24	6550.90	3280.32		0.79	-0.17	0.083
48.00	-27.38	-2.54	0.00	-235.93	0.00	235.93	3132.30	1566.15	6537.37	3273.54		0.90	-0.18	0.081
50.00	-27.01	-2.53	0.00	-230.86	0.00	230.86	3117.49	1558.74	6446.72	3228.15		0.98	-0.19	0.080
55.00	-26.12	-2.50	0.00	-218.22	0.00	218.22	3079.35	1539.68	6220.34	3114.79		1.19	-0.21	0.079
60.00	-25.25	-2.48	0.00	-205.70	0.00	205.70	3039.63	1519.81	5994.49	3001.70		1.43	-0.23	0.077
65.00	-24.39	-2.47	0.00	-193.29	0.00	193.29	2998.32	1499.16	5769.39	2888.98		1.68	-0.25	0.075
70.00	-23.55	-2.46	0.00	-180.97	0.00	180.97	2955.43	1477.72	5545.28	2776.76		1.96	-0.27	0.073
75.00	-22.73	-2.46	0.00	-168.69	0.00	168.69	2910.95	1455.48	5322.38	2665.15		2.26	-0.30	0.071
80.00	-21.93	-2.46	0.00	-156.41	0.00	156.41	2864.89	1432.44	5100.92	2554.25		2.58	-0.32	0.069
84.08	-21.28	-2.46	0.00	-146.36	0.00	146.36	2826.09	1413.05	4921.28	2464.30		2.86	-0.33	0.067
85.00	-21.04	-2.46	0.00	-144.11	0.00	144.11	2817.24	1408.62	4881.12	2444.19		2.92	-0.34	0.066
89.50	-19.89	-2.46	0.00	-133.03	0.00	133.03	2031.94	1015.97	3485.43	1745.31		3.25	-0.36	0.086
90.00	-19.83	-2.46	0.00	-131.80	0.00	131.80	2029.15	1014.57	3470.92	1738.04		3.29	-0.36	0.086
95.00	-19.19	-2.47	0.00	-119.49	0.00	119.49	2000.34	1000.17	3325.82	1665.38		3.67	-0.38	0.081
100.00	-18.57	-2.47	0.00	-107.15	0.00	107.15	1969.95	984.97	3180.92	1592.82		4.09	-0.41	0.077
105.00	-17.96	-2.47	0.00	-94.79	0.00	94.79	1937.97	968.98	3036.44	1520.48		4.53	-0.43	0.072
110.00	-17.37	-2.48	0.00	-82.43	0.00	82.43	1904.40	952.20	2892.62	1448.46		4.99	-0.45	0.066
115.00	-16.79	-2.48	0.00	-70.05	0.00	70.05	1869.25	934.63	2749.69	1376.89		5.48	-0.48	0.060
120.00	-16.22	-2.47	0.00	-57.66	0.00	57.66	1832.52	916.26	2607.87	1305.87		5.99	-0.50	0.053
123.00	-13.64	-2.38	0.00	-50.25	0.00	50.25	1809.72	904.86	2523.40	1263.58		6.31	-0.51	0.047
125.00	-13.42	-2.37	0.00	-45.49	0.00	45.49	1794.20	897.10	2467.38	1235.52		6.52	-0.51	0.044
127.92	-13.12	-2.36	0.00	-38.58	0.00	38.58	1771.11	885.56	2386.14	1194.84		6.84	-0.52	0.040
130.00	-12.78	-2.33	0.00	-33.67	0.00	33.67	1754.29	877.15	2328.47	1165.96		7.07	-0.53	0.036
131.00	-8.87	-1.98	0.00	-31.34	0.00	31.34	1746.12	873.06	2300.89	1152.16		7.18	-0.53	0.032
132.08	-8.70	-1.96	0.00	-29.20	0.00	29.20	1160.48	580.24	1541.12	771.71		7.30	-0.53	0.045
135.00	-8.49	-1.94	0.00	-23.47	0.00	23.47	1148.82	574.41	1493.54	747.88		7.63	-0.54	0.039
140.00	-5.21	-1.41	0.00	-13.76	0.00	13.76	1127.58	563.79	1411.91	707.01		8.20	-0.55	0.024
145.00	-4.90	-1.35	0.00	-6.73	0.00	6.73	1104.76	552.38	1330.41	666.20		8.78	-0.56	0.015
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56		9.37	-0.56	0.000

Wind Loading - Shaft

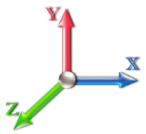
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 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	7.442	8.19	287.87	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	282.46	0.650	0.000	5.00	25.776	16.75	137.2	0.0	1022.8
10.00		1.00	0.85	7.442	8.19	277.04	0.650	0.000	5.00	25.286	16.44	134.5	0.0	1003.3
15.00		1.00	0.85	7.442	8.19	271.63	0.650	0.000	5.00	24.797	16.12	131.9	0.0	983.7
20.00		1.00	0.90	7.896	8.69	274.22	0.650	0.000	5.00	24.307	15.80	137.2	0.0	964.2
25.00		1.00	0.95	8.276	9.10	275.03	0.650	0.000	5.00	23.818	15.48	140.9	0.0	944.7
30.00		1.00	0.98	8.600	9.46	274.54	0.650	0.000	5.00	23.328	15.16	143.4	0.0	925.2
35.00		1.00	1.01	8.883	9.77	273.11	0.650	0.000	5.00	22.839	14.85	145.1	0.0	905.7
40.00		1.00	1.04	9.137	10.05	270.98	0.650	0.000	5.00	22.350	14.53	146.0	0.0	886.1
41.50	Bot - Section 2	1.00	1.05	9.208	10.13	270.22	0.650	0.000	1.50	6.609	4.30	43.5	0.0	262.0
45.00		1.00	1.07	9.366	10.30	268.28	0.650	0.000	3.50	15.436	10.03	103.4	0.0	1216.5
48.00	Top - Section 1	1.00	1.08	9.494	10.44	266.44	0.650	0.000	3.00	13.040	8.48	88.5	0.0	1027.5
50.00		1.00	1.09	9.576	10.53	268.45	0.650	0.000	2.00	8.595	5.59	58.9	0.0	340.7
55.00		1.00	1.12	9.770	10.75	264.95	0.650	0.000	5.00	21.146	13.74	147.7	0.0	838.1
60.00		1.00	1.14	9.951	10.95	261.13	0.650	0.000	5.00	20.656	13.43	147.0	0.0	818.6
65.00		1.00	1.16	10.120	11.13	257.02	0.650	0.000	5.00	20.167	13.11	145.9	0.0	799.1
70.00		1.00	1.17	10.279	11.31	252.67	0.650	0.000	5.00	19.677	12.79	144.6	0.0	779.6
75.00		1.00	1.19	10.430	11.47	248.10	0.650	0.000	5.00	19.188	12.47	143.1	0.0	760.0
80.00		1.00	1.21	10.572	11.63	243.34	0.650	0.000	5.00	18.698	12.15	141.3	0.0	740.5
84.08	Bot - Section 3	1.00	1.22	10.684	11.75	239.32	0.650	0.000	4.08	14.907	9.69	113.9	0.0	590.3
85.00		1.00	1.22	10.708	11.78	238.40	0.650	0.000	0.92	3.340	2.17	25.6	0.0	236.7
89.50	Top - Section 2	1.00	1.24	10.825	11.91	233.82	0.650	0.000	4.50	16.160	10.50	125.1	0.0	1144.8
90.00		1.00	1.24	10.838	11.92	236.13	0.650	0.000	0.50	1.771	1.15	13.7	0.0	56.2
95.00		1.00	1.25	10.962	12.06	230.91	0.650	0.000	5.00	17.442	11.34	136.7	0.0	553.2
100.00		1.00	1.27	11.081	12.19	225.55	0.650	0.000	5.00	16.952	11.02	134.3	0.0	537.5
105.00		1.00	1.28	11.195	12.31	220.07	0.650	0.000	5.00	16.463	10.70	131.8	0.0	521.9
110.00		1.00	1.29	11.305	12.44	214.48	0.650	0.000	5.00	15.973	10.38	129.1	0.0	506.3
115.00		1.00	1.30	11.412	12.55	208.78	0.650	0.000	5.00	15.484	10.06	126.3	0.0	490.7
120.00		1.00	1.32	11.514	12.67	202.98	0.650	0.000	5.00	14.995	9.75	123.4	0.0	475.1
123.00	Appurtenance(s)	1.00	1.32	11.574	12.73	199.46	0.650	0.000	3.00	8.762	5.70	72.5	0.0	277.5
125.00		1.00	1.33	11.614	12.78	197.09	0.650	0.000	2.00	5.743	3.73	47.7	0.0	181.9
127.92	Bot - Section 4	1.00	1.33	11.670	12.84	193.61	0.650	0.000	2.92	8.235	5.35	68.7	0.0	260.8
130.00		1.00	1.34	11.710	12.88	191.11	0.650	0.000	2.08	5.846	3.80	49.0	0.0	322.2
131.00	Appurtenance(s)	1.00	1.34	11.729	12.90	189.91	0.650	0.000	1.00	2.776	1.80	23.3	0.0	152.9
132.08	Top - Section 3	1.00	1.34	11.749	12.92	188.60	0.650	0.000	1.08	2.985	1.94	25.1	0.0	164.5
135.00		1.00	1.35	11.803	12.98	187.27	0.650	0.000	2.92	7.923	5.15	66.9	0.0	188.5
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	181.14	0.650	0.000	5.00	13.195	8.58	112.2	0.0	313.9
145.00		1.00	1.37	11.982	13.18	174.94	0.650	0.000	5.00	12.706	8.26	108.9	0.0	302.2
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	168.67	0.650	0.000	5.00	12.217	7.94	105.4	0.0	290.5
								Totals:	**150.00**			**4,019.8**		**22,785.8**

Discrete Appurtenance Forces

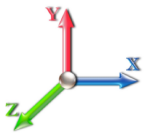
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	12.068	13.275	0.50	1.00	1.41	45.00	0.000	0.000	18.72	0.00	0.00
2	150.00	800 10121	3	12.080	13.289	0.79	1.00	12.21	138.90	0.000	0.730	162.19	0.00	118.40
3	150.00	HPA-65R-BUU-H6	1	12.068	13.275	1.00	1.00	9.66	51.00	0.000	0.000	128.24	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	12.068	13.275	0.83	1.00	22.08	150.00	0.000	0.000	293.08	0.00	0.00
5	150.00	QS66512-2	1	12.068	13.275	1.00	1.00	8.13	111.00	0.000	0.000	107.93	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	12.068	13.275	0.79	1.00	20.51	136.00	0.000	0.000	272.25	0.00	0.00
7	150.00	Low Profile	1	12.068	13.275	1.00	1.00	22.00	1500.00	0.000	0.000	292.05	0.00	0.00
8	150.00	DTMABP7819VG12A	6	12.068	13.275	0.50	1.00	3.42	115.20	0.000	0.000	45.40	0.00	0.00
9	150.00	LMU Antenna	1	12.068	13.275	1.00	1.00	1.67	8.50	0.000	0.000	22.17	0.00	0.00
10	150.00	DBC-750	3	12.068	13.275	0.57	1.00	0.87	14.40	0.000	0.000	11.58	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	12.068	13.275	0.67	1.00	0.10	3.30	0.000	0.000	1.33	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	12.068	13.275	0.67	1.00	1.23	63.60	0.000	0.000	16.37	0.00	0.00
13	150.00	RRUS-11	3	12.068	13.275	0.57	1.00	4.77	150.00	0.000	0.000	63.33	0.00	0.00
14	150.00	4426 B66	3	12.068	13.275	0.57	1.00	2.80	145.20	0.000	0.000	37.23	0.00	0.00
15	150.00	RRUS-32	3	12.068	13.275	0.57	1.00	1.13	2331.00	0.000	0.000	14.98	0.00	0.00
16	150.00	RRUS-32	3	12.068	13.275	0.57	1.00	5.15	159.00	0.000	0.000	68.33	0.00	0.00
17	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
18	140.00	Commscope	6	11.894	13.084	0.58	0.75	28.36	436.20	0.000	0.000	371.06	0.00	0.00
19	140.00	Antel	3	11.894	13.084	0.66	0.75	7.05	90.90	0.000	0.000	92.22	0.00	0.00
20	140.00	RVZDC-6627-PF48	1	11.894	13.084	1.00	1.00	3.79	32.00	0.000	0.000	49.59	0.00	0.00
21	140.00	B5/B13 RRHBR04C	3	11.894	13.084	0.50	0.75	2.83	211.20	0.000	0.000	37.08	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	11.894	13.084	0.50	0.75	9.81	396.60	0.000	0.000	128.40	0.00	0.00
23	140.00	BSAMNT-SBS-2-2	3	11.894	13.084	0.67	1.00	7.04	201.00	0.000	0.000	92.04	0.00	0.00
24	140.00	HRK12 (Handrail Kit)	1	11.894	13.084	0.75	0.75	5.06	261.72	0.000	0.000	66.24	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	11.894	13.084	0.43	0.75	1.09	45.60	0.000	0.000	14.26	0.00	0.00
26	140.00	XXDWMM-12.5-65-8T-CB	3	11.894	13.084	0.50	0.75	1.78	69.30	0.000	0.000	23.27	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	11.729	12.902	0.50	0.75	0.62	33.00	0.000	0.000	7.97	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	11.729	12.902	0.52	0.75	31.88	368.40	0.000	0.000	411.28	0.00	0.00
29	131.00	AIR6449 B41	3	11.729	12.902	0.53	0.75	9.03	309.00	0.000	0.000	116.45	0.00	0.00
30	131.00	Platform w/ HRK	1	11.729	12.902	1.00	1.00	46.00	2645.00	0.000	0.000	593.48	0.00	0.00
31	131.00	AIR32	3	11.729	12.902	0.65	0.75	12.74	396.60	0.000	0.000	164.41	0.00	0.00
32	131.00	SDX1926Q-43 Diplexer	3	11.729	12.902	0.43	0.75	0.37	18.00	0.000	0.000	4.80	0.00	0.00
33	131.00	Radio 4449 B71+B85	3	11.729	12.902	0.43	0.75	2.53	219.60	0.000	0.000	32.60	0.00	0.00
34	131.00	Ericsson 4415 B25	3	11.729	12.902	0.43	0.75	2.10	138.00	0.000	0.000	27.14	0.00	0.00
35	131.00	Bias-T 782 11056	3	11.729	12.902	0.43	0.75	0.17	4.50	0.000	0.000	2.15	0.00	0.00
36	131.00	ATMAA1412D-1A20 TMA	3	11.729	12.902	0.43	0.75	1.50	39.00	0.000	0.000	19.36	0.00	0.00
37	123.00	APXVTM14-C-I20	3	11.574	12.732	0.59	0.75	11.27	165.00	0.000	0.000	143.48	0.00	0.00
38	123.00	ALU - 800 MHz RRH -	3	11.574	12.732	0.69	0.75	5.15	159.00	0.000	0.000	65.62	0.00	0.00
39	123.00	RFS - ACU-A20-N - RET	4	11.574	12.732	0.59	0.75	0.33	4.00	0.000	0.000	4.22	0.00	0.00
40	123.00	Platform w/ HRK Handrail	1	11.574	12.732	1.00	1.00	32.00	1600.00	0.000	0.000	407.42	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	11.574	12.732	0.62	0.75	4.99	50.00	0.000	0.000	63.56	0.00	0.00
42	123.00	APXVSPP18-C-A20	2	11.574	12.732	0.62	0.75	9.98	114.00	0.000	0.000	127.13	0.00	0.00
43	123.00	ALU - TD-RRH8x20-25 -	3	11.574	12.732	0.50	0.75	6.11	210.00	0.000	0.000	77.73	0.00	0.00
44	123.00	ALU - 1900 MHz RRH -	3	11.574	12.732	0.50	0.75	4.09	180.00	0.000	0.000	52.01	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	11.574	12.732	0.75	0.75	1.75	26.40	0.000	0.000	22.34	0.00	0.00
							Totals:		**15,046.12**			**5,060.34**		

Total Applied Force Summary

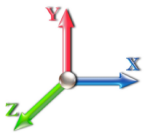
Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 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		137.15	1174.61	0.00	0.00
10.00		134.55	1155.09	0.00	0.00
15.00		131.94	1135.57	0.00	0.00
20.00		137.23	1116.05	0.00	0.00
25.00		140.94	1096.53	0.00	0.00
30.00		143.44	1077.01	0.00	0.00
35.00		145.07	1057.48	0.00	0.00
40.00		146.00	1037.96	0.00	0.00
41.50		43.51	307.58	0.00	0.00
45.00		103.37	1322.82	0.00	0.00
48.00		88.52	1118.62	0.00	0.00
50.00		58.85	401.44	0.00	0.00
55.00		147.72	989.95	0.00	0.00
60.00		146.97	970.43	0.00	0.00
65.00		145.92	950.91	0.00	0.00
70.00		144.62	931.38	0.00	0.00
75.00		143.09	911.86	0.00	0.00
80.00		141.34	892.34	0.00	0.00
84.08		113.87	714.27	0.00	0.00
85.00		25.58	264.52	0.00	0.00
89.50		125.08	1281.44	0.00	0.00
90.00		13.72	71.36	0.00	0.00
95.00		136.70	704.98	0.00	0.00
100.00		134.31	689.37	0.00	0.00
105.00		131.78	673.75	0.00	0.00
110.00		129.12	658.13	0.00	0.00
115.00		126.34	642.52	0.00	0.00
120.00		123.45	626.90	0.00	0.00
123.00	(23) attachments	1036.03	2877.04	0.00	0.00
125.00		47.69	235.01	0.00	0.00
127.92		68.72	338.24	0.00	0.00
130.00		48.95	377.47	0.00	0.00
131.00	(28) attachments	1402.93	4350.60	0.00	0.00
132.08		25.08	182.89	0.00	0.00
135.00		66.87	238.12	0.00	0.00
140.00	(27) attachments	1274.22	3643.45	0.00	0.00
145.00		108.86	352.82	0.00	0.00
150.00	(43) attachments	1660.59	5454.61	0.00	118.40
	Totals:	**9,080.11**	**42,025.11**	**0.00**	**118.40**

Calculated Forces

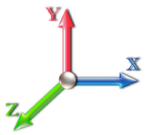
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	11/5/2020	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-42.02	-9.10	0.00	-1033.5	0.00	1033.58	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.253
5.00	-40.84	-9.00	0.00	-988.09	0.00	988.09	3376.67	1688.33	8351.12	4181.77	0.03	-0.050	0.000	0.248
10.00	-39.68	-8.90	0.00	-943.11	0.00	943.11	3351.94	1675.97	8129.40	4070.74	0.11	-0.101	0.000	0.244
15.00	-38.53	-8.80	0.00	-898.63	0.00	898.63	3325.63	1662.82	7906.28	3959.02	0.24	-0.152	0.000	0.239
20.00	-37.41	-8.69	0.00	-854.65	0.00	854.65	3297.74	1648.87	7681.99	3846.70	0.43	-0.204	0.000	0.234
25.00	-36.31	-8.58	0.00	-811.20	0.00	811.20	3268.26	1634.13	7456.75	3733.92	0.67	-0.256	0.000	0.228
30.00	-35.22	-8.46	0.00	-768.32	0.00	768.32	3237.20	1618.60	7230.79	3620.77	0.97	-0.309	0.000	0.223
35.00	-34.16	-8.34	0.00	-726.01	0.00	726.01	3204.54	1602.27	7004.35	3507.38	1.32	-0.362	0.000	0.218
40.00	-33.11	-8.21	0.00	-684.30	0.00	684.30	3170.31	1585.15	6777.64	3393.86	1.73	-0.415	0.000	0.212
41.50	-32.80	-8.18	0.00	-671.99	0.00	671.99	3159.73	1579.86	6709.61	3359.79	1.86	-0.432	0.000	0.210
45.00	-31.48	-8.08	0.00	-643.37	0.00	643.37	3134.49	1567.24	6550.90	3280.32	2.19	-0.470	0.000	0.206
48.00	-30.36	-8.00	0.00	-619.11	0.00	619.11	3132.30	1566.15	6537.37	3273.54	2.50	-0.503	0.000	0.199
50.00	-29.95	-7.96	0.00	-603.11	0.00	603.11	3117.49	1558.74	6446.72	3228.15	2.71	-0.525	0.000	0.196
55.00	-28.95	-7.83	0.00	-563.32	0.00	563.32	3079.35	1539.68	6220.34	3114.79	3.29	-0.577	0.000	0.190
60.00	-27.98	-7.70	0.00	-524.19	0.00	524.19	3039.63	1519.81	5994.49	3001.70	3.92	-0.629	0.000	0.184
65.00	-27.02	-7.56	0.00	-485.71	0.00	485.71	2998.32	1499.16	5769.39	2888.98	4.61	-0.681	0.000	0.177
70.00	-26.09	-7.43	0.00	-447.90	0.00	447.90	2955.43	1477.72	5545.28	2776.76	5.35	-0.733	0.000	0.170
75.00	-25.17	-7.30	0.00	-410.75	0.00	410.75	2910.95	1455.48	5322.38	2665.15	6.15	-0.784	0.000	0.163
80.00	-24.27	-7.16	0.00	-374.26	0.00	374.26	2864.89	1432.44	5100.92	2554.25	6.99	-0.835	0.000	0.155
84.08	-23.56	-7.05	0.00	-345.01	0.00	345.01	2826.09	1413.05	4921.28	2464.30	7.73	-0.876	0.000	0.148
85.00	-23.29	-7.03	0.00	-338.55	0.00	338.55	2817.24	1408.62	4881.12	2444.19	7.90	-0.886	0.000	0.147
89.50	-22.01	-6.89	0.00	-306.91	0.00	306.91	2031.94	1015.97	3485.43	1745.31	8.75	-0.930	0.000	0.187
90.00	-21.93	-6.89	0.00	-303.47	0.00	303.47	2029.15	1014.57	3470.92	1738.04	8.85	-0.935	0.000	0.185
95.00	-21.22	-6.76	0.00	-269.01	0.00	269.01	2000.34	1000.17	3325.82	1665.38	9.86	-0.991	0.000	0.172
100.00	-20.53	-6.64	0.00	-235.19	0.00	235.19	1969.95	984.97	3180.92	1592.82	10.93	-1.045	0.000	0.158
105.00	-19.85	-6.51	0.00	-202.02	0.00	202.02	1937.97	968.98	3036.44	1520.48	12.05	-1.097	0.000	0.143
110.00	-19.19	-6.38	0.00	-169.47	0.00	169.47	1904.40	952.20	2892.62	1448.46	13.23	-1.144	0.000	0.127
115.00	-18.55	-6.26	0.00	-137.57	0.00	137.57	1869.25	934.63	2749.69	1376.89	14.45	-1.188	0.000	0.110
120.00	-17.92	-6.13	0.00	-106.29	0.00	106.29	1832.52	916.26	2607.87	1305.87	15.71	-1.226	0.000	0.091
123.00	-15.07	-5.03	0.00	-87.90	0.00	87.90	1809.72	904.86	2523.40	1263.58	16.49	-1.245	0.000	0.078
125.00	-14.83	-4.99	0.00	-77.84	0.00	77.84	1794.20	897.10	2467.38	1235.52	17.02	-1.258	0.000	0.071
127.92	-14.49	-4.91	0.00	-63.30	0.00	63.30	1771.11	885.56	2386.14	1194.84	17.79	-1.273	0.000	0.061
130.00	-14.12	-4.86	0.00	-53.06	0.00	53.06	1754.29	877.15	2328.47	1165.96	18.35	-1.283	0.000	0.054
131.00	-9.80	-3.36	0.00	-48.21	0.00	48.21	1746.12	873.06	2300.89	1152.16	18.62	-1.287	0.000	0.047
132.08	-9.62	-3.33	0.00	-44.57	0.00	44.57	1160.48	580.24	1541.12	771.71	18.91	-1.291	0.000	0.066
135.00	-9.38	-3.26	0.00	-34.86	0.00	34.86	1148.82	574.41	1493.54	747.88	19.70	-1.302	0.000	0.055
140.00	-5.77	-1.90	0.00	-18.57	0.00	18.57	1127.58	563.79	1411.91	707.01	21.07	-1.318	0.000	0.031
145.00	-5.41	-1.79	0.00	-9.05	0.00	9.05	1104.76	552.38	1330.41	666.20	22.46	-1.327	0.000	0.018
150.00	0.00	-1.66	0.00	-0.12	0.00	0.12	1080.36	540.18	1249.27	625.56	23.85	-1.330	0.000	0.000

Final Analysis Summary

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions

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 93 mph Wind	35.0	0.00	50.37	0.00	0.00	4000.72
0.9D + 1.6W 93 mph Wind	35.0	0.00	37.76	0.00	0.00	3952.25
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.3	0.00	92.72	0.00	0.00	1324.04
1.2D + 1.0E	2.8	0.00	50.43	0.00	0.00	370.61
0.9D + 1.0E	2.8	0.00	37.82	0.00	0.00	365.71
1.0D + 1.0W 60 mph Wind	9.1	0.00	42.02	0.00	0.00	1033.58

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 93 mph Wind	-50.37	-34.99	0.00	-4000.7	0.00	-4000.7	3399.80	1699.9	8571.22	4291.98	0.00	0.947
0.9D + 1.6W 93 mph Wind	-37.76	-34.97	0.00	-3952.2	0.00	-3952.2	3399.80	1699.9	8571.22	4291.98	0.00	0.932
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-92.72	-11.30	0.00	-1324.0	0.00	-1324.0	3399.80	1699.9	8571.22	4291.98	0.00	0.336
1.2D + 1.0E	-50.43	-2.79	0.00	-370.61	0.00	-370.61	3399.80	1699.9	8571.22	4291.98	0.00	0.101
0.9D + 1.0E	-37.82	-2.79	0.00	-365.71	0.00	-365.71	3399.80	1699.9	8571.22	4291.98	0.00	0.096
1.0D + 1.0W 60 mph Wind	-42.02	-9.10	0.00	-1033.5	0.00	-1033.5	3399.80	1699.9	8571.22	4291.98	0.00	0.253

Base Plate Summary

Structure:	CT10022-A-SB		**Code:**	EIA/TIA-222-G	11/5/2020
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	3324.00
Axial (kip):	65.60
Shear (kip):	26.40
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	4000.72
Axial (kip):	50.37
Shear (kip):	34.99

Base Plate	
Yield (ksi):	50.00
Width (in):	73.50
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	16.10
Moment (kip-in):	641.94
Allow Stress (ksi):	67.50
Applied Stress (ksi):	60.08
Stress Ratio:	0.89

Anchor Bolts	
Bolt Circle:	67.63
Number Bolts:	14.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	209.44
Allowable (kip):	260.00
Ratio:	0.82
Tension	
Force (kip):	196.20
Allowable (kip):	260.00
Ratio:	0.77

Monopole Mat Foundation Design

			Date: 11/5/2020
Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	150
Site Number:	CT10022-A-SBA	**Engineer Name:**	D. Zhou
Engr. Number:	99372	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

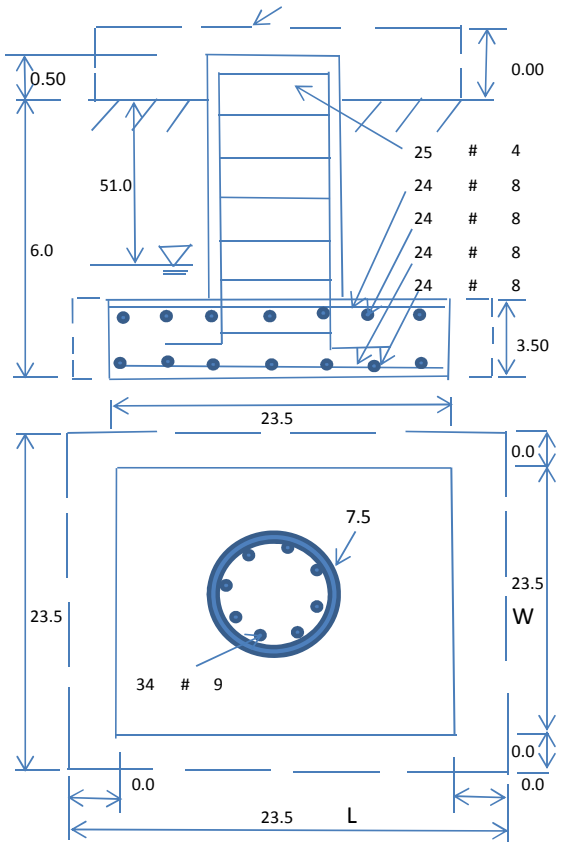
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	50.4	Shear Force (Kips):	35.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4000.7
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.50
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



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	34	Tie Spacing (in):	3.0	
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):	24	Qty. of Rebar in Pad (W):	24	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	60.0	Pcf		
Water Table B.G.S. (ft):	51.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	14000	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.):	1270.18	Total Dry Soil Weight (Kips):	158.77
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	158.77	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2065.41	Total Dry Concrete Weight (Kips):	309.81
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	309.81	Total Vertical Load on Base (Kips):	518.98

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3830	<	Allowable Factored Soil Bearing (psf): 10500	0.36	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5547.5	>	Design Factored Momont (kips-ft): 4228	0.76	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.31	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6126.5	>	Design Factored Moment (Mu, Kips-F	4105.7	0.67	OK!
Calculated Shear Capacity (Kips):	1098.7	>	Design Factored Shear (Kips):	35.0	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	1836.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	8390.6	>	Design Factored Axial Load (Pu Kips):	50.4	0.01	OK!
Moment & Axial Strength Combination:	0.67	OK!	Check Tie Spacing (Design/Required):		0.25	OK!
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	892.0	>	One-Way Factored Shear (L-D. Kips):	231.9	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	892.0	>	One-Way Factored Shear (W-D., Kips)	231.9	0.26	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	733.2	>	One-Way Factored Shear (C-C, Kips):	230.7	0.31	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0017		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3217.3	>	Moment at Bottom (L-Dir. K-Ft):	1222.2	0.38	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3217.3	>	Moment at Bottom (W-Dir. K-Ft):	1222.2	0.38	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4522.2	>	Moment at Bottom (C-C Dir. K-Ft):	1728.4	0.38	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0017		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3217.3	>	Moment at the top (L-Dir K-Ft):	576.0	0.18	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3217.3	>	Moment at the top (W-Dir K-Ft):	576.0	0.18	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4522.2	>	Moment at the top (C-C Dir. K-Ft):	543.9	0.12	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1600.3	k-ft.	Max. factored shear stress v_{u_CD}:		3.2	Psi
Max. factored shear stress v_{u_AB}:	8.2	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	8.2	Psi	Check Usage of Punching Shear Capacity:		0.05	OK!

EXHIBIT 8

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

Antenna Mount Analysis Report

Existing 150-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT10022-A-SBA / Simsbury 2, CT

Customer Site Name: Simsbury 2, CT

Carrier Name: T-Mobile (App#: 141459, V1)

Carrier Site ID / Name: CTHA531A / Simsbury

Site Location: 225 Grist Mill Road

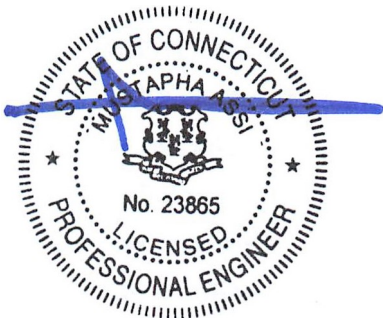
Simsbury, Connecticut

Hartford County

Latitude: 41.866708

Longitude: -72.815772

Exp.01/31/2021



11/04/2020

Analysis Result:

Max Structural Usage: 72.1% [Pass]

Report Prepared By: Anita Lama

NOTE: The proposed Sitepro for RMQP-4096-HK mounts are not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Handrail at 131.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info by Sitepro for RMQP-4096-HK
Antenna Loading	SBA Application #: 141459, v1
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 120 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 93 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G /2015 IBC/2018 CSBC
Exposure Category: C
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(1) Platform w/ Handrail (Sitepro RMQP-4096-HK) at 131.00' elevation

Final Antenna Configuration

3	RFS APXVAALL24-43-U-NA20
3	Ericsson AIR6449 B41
3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)
3	Ericsson KRY 112 144-1 Double
3	RFS ATMAA1412D-1A20
3	Commscope SDX1926Q-43
3	Ericsson 4449 B71 + B85
3	Ericsson 4415 B25
3	Kathrein 782 11056

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 72.1%, which occurs in the end connection. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

The proposed Sitepro for RMQP-4096-HK mounts are not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Attachments

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

Standard Conditions

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

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

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

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

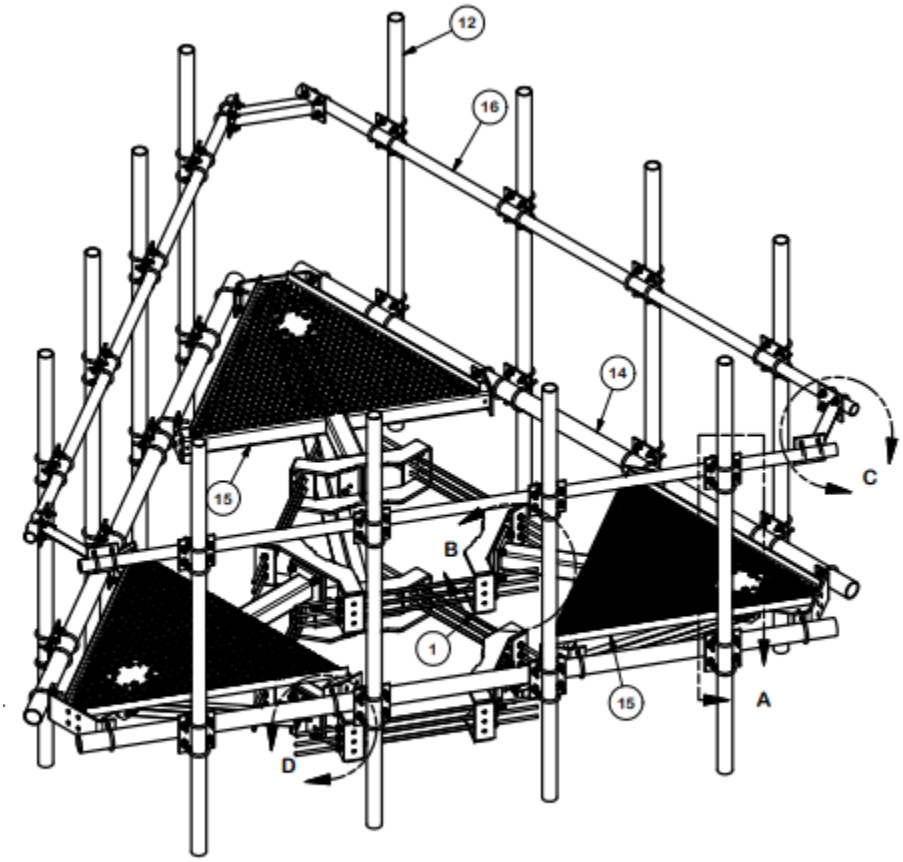
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

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

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

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

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



Sitepro RMQP-4096-HK

Structure: CT10022-A-SBA - Simsbury 2, CT

Sector: A

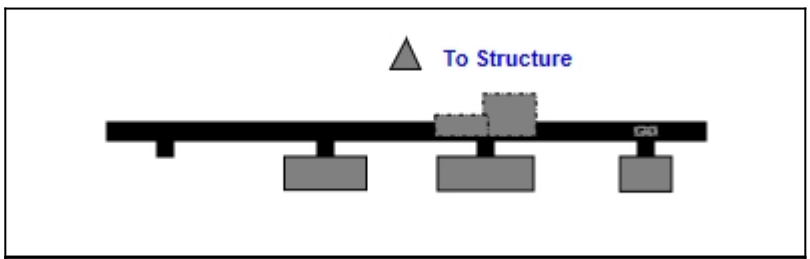
Structure Type: Monopole

Mount Elev: 131.00

11/4/2020

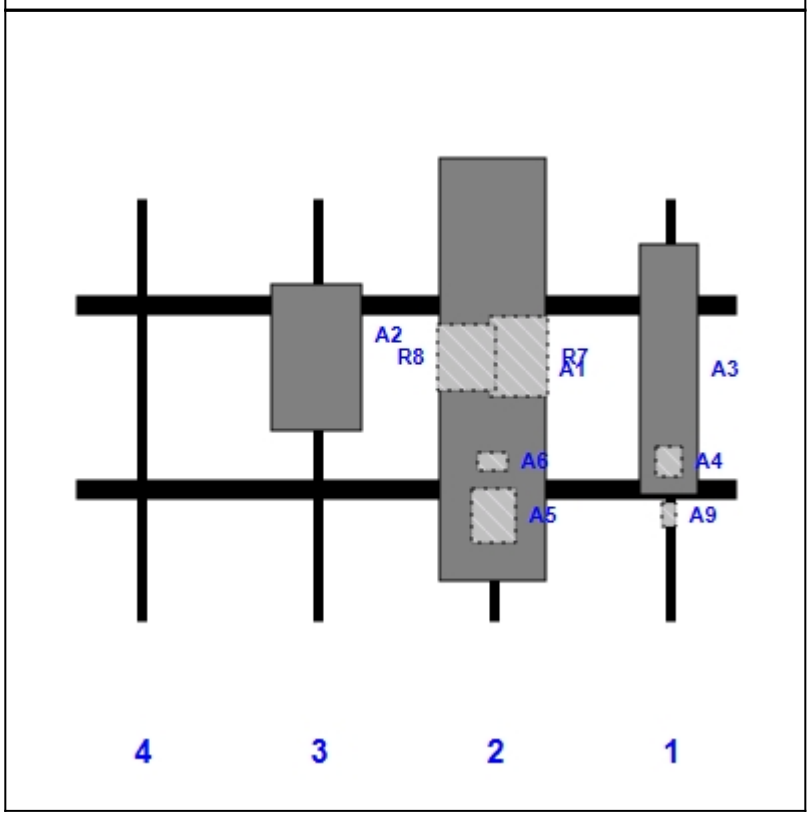
Tower Engineering Solutions

Plan View



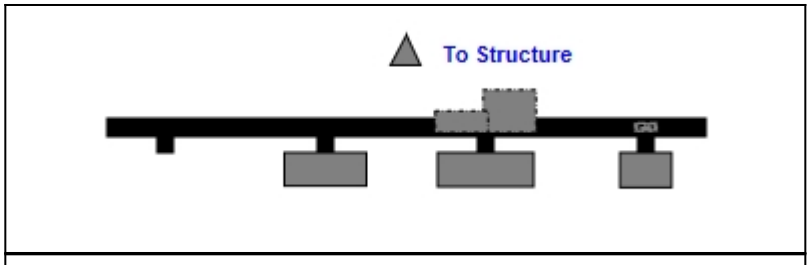
Front View

Looking Toward Structure



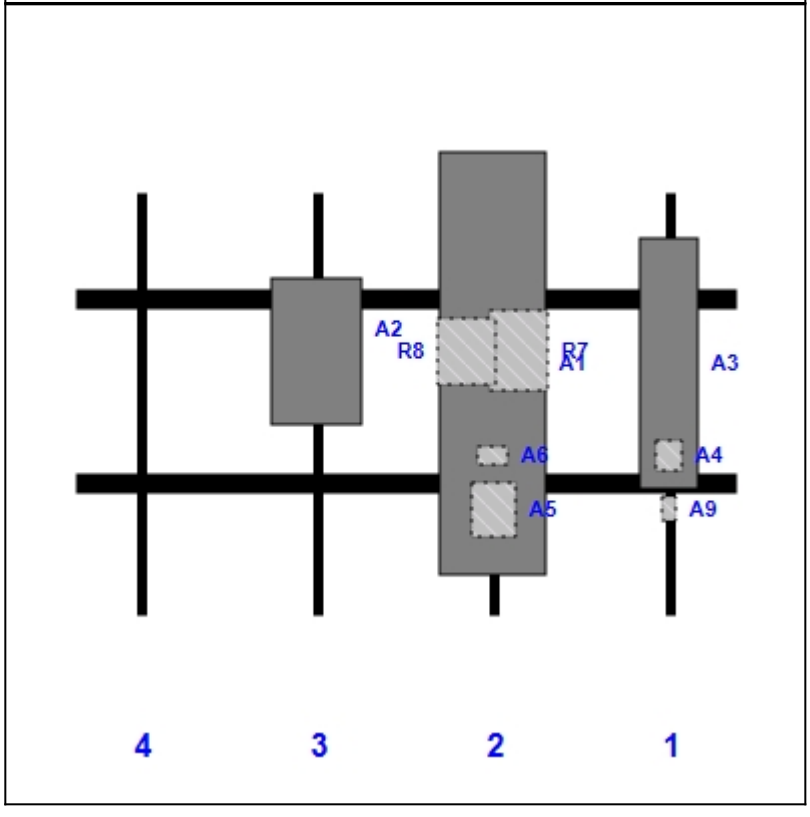
Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	AIR32 KRD901146-1_B66A_B2A (Octo)	57.00	12.90	135.00	1	a	Front	39.00			
A4	KRY 112 144-1 Double	6.90	6.10	135.00	1	a	Behind	60.00			
A9	782 11056	5.50	3.20	135.00	1	a	Behind	72.00			
A1	APXVAALL24-43-U-NA20	95.90	24.00	95.00	2	a	Front	39.00			
A5	ATMAA1412D-1A20	12.00	10.00	95.00	2	a	Behind	72.00			
A6	SDX1926Q-43	4.10	6.90	95.00	2	a	Behind	60.00			
R7	4449 B71 + B85	17.90	13.20	95.00	2	a	Behind	36.00	6.00		
R8	RRUS 4415 B25	15.00	13.20	95.00	2	a	Behind	36.00	-6.00		
A2	AIR6449 B41	33.10	20.50	55.00	3	a	Front	36.00			

Plan View



Front View

Looking Toward Structure



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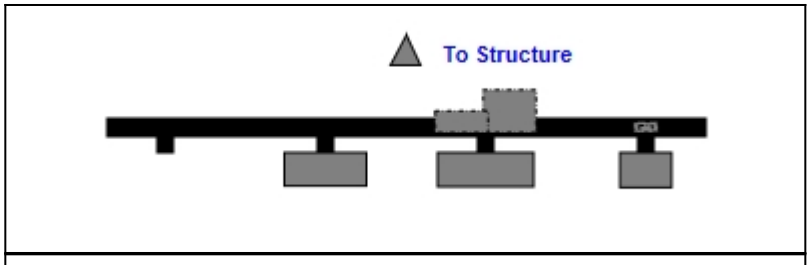
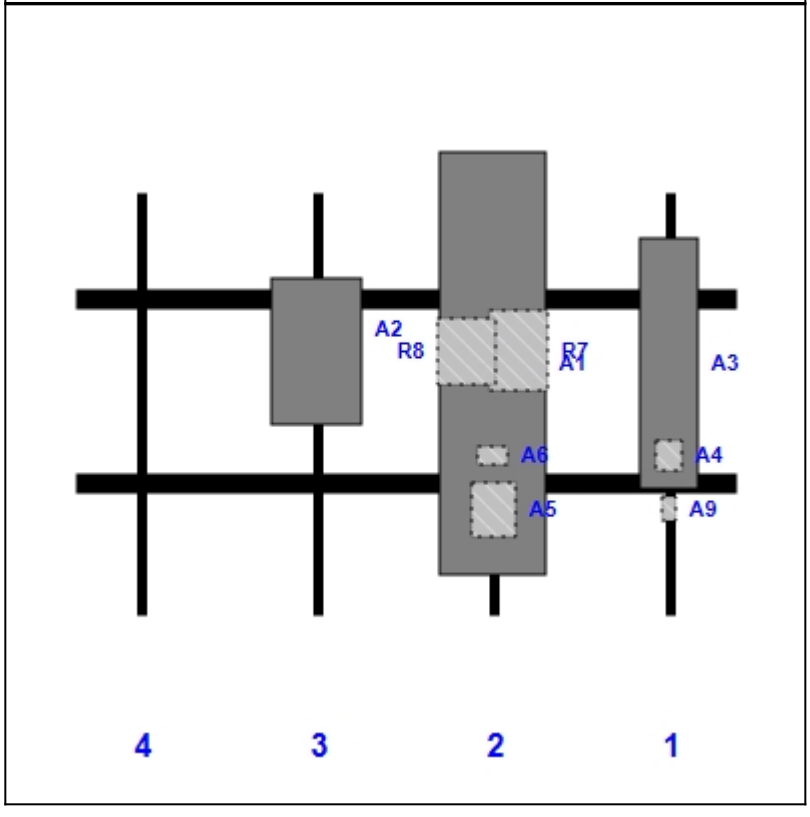
R7	4449 B71 + B85	17.90	13.20	95.00	2	a	Behind	36.00	6.00		
R8	RRUS 4415 B25	15.00	13.20	95.00	2	a	Behind	36.00	-6.00		
A2	AIR6449 B41	33.10	20.50	55.00	3	a	Front	36.00			

Plan View



Front View

Looking Toward Structure



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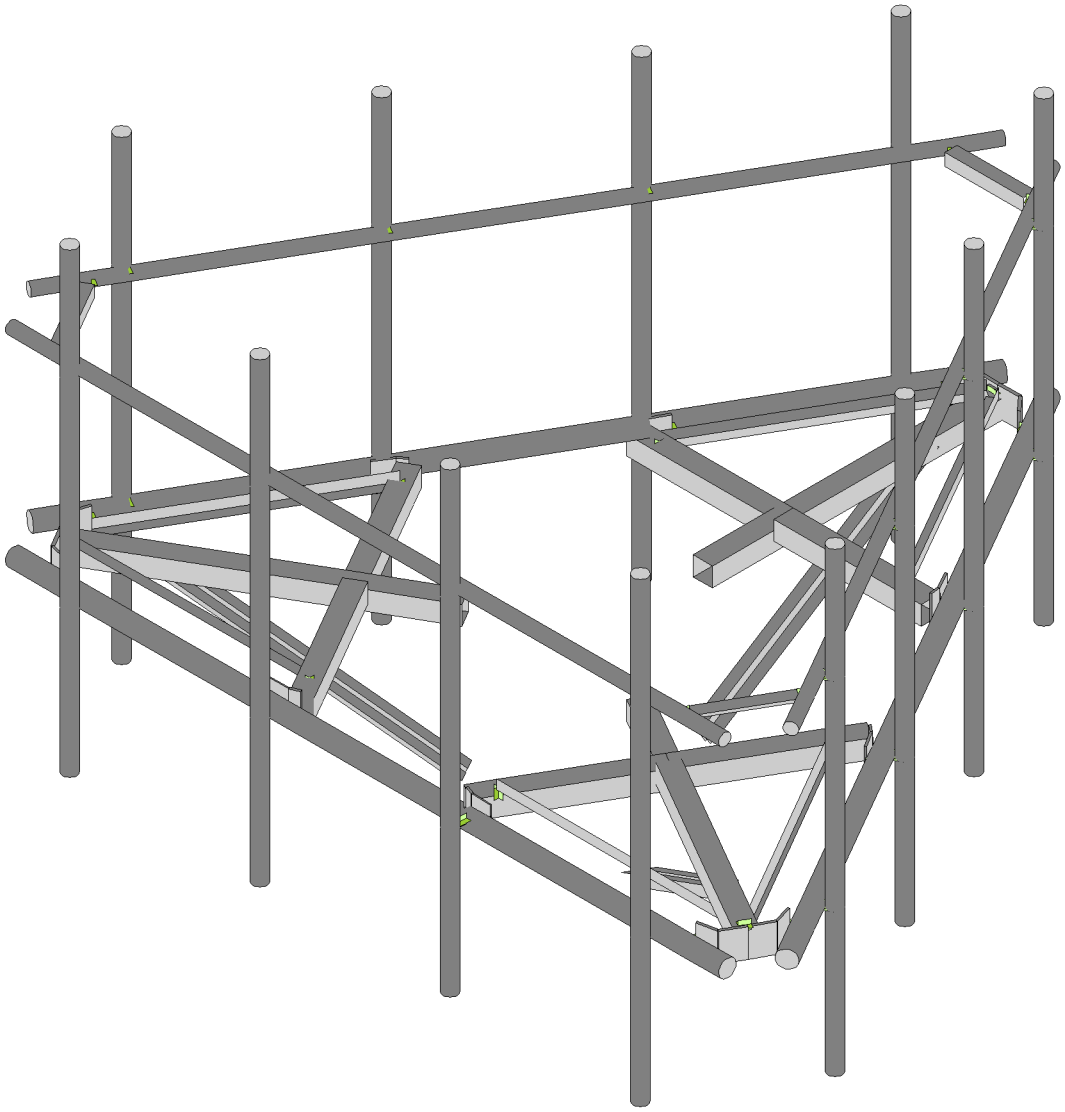
A2	AIR6449 B41	33.10	20.50	55.00	3	a	Front	36.00			



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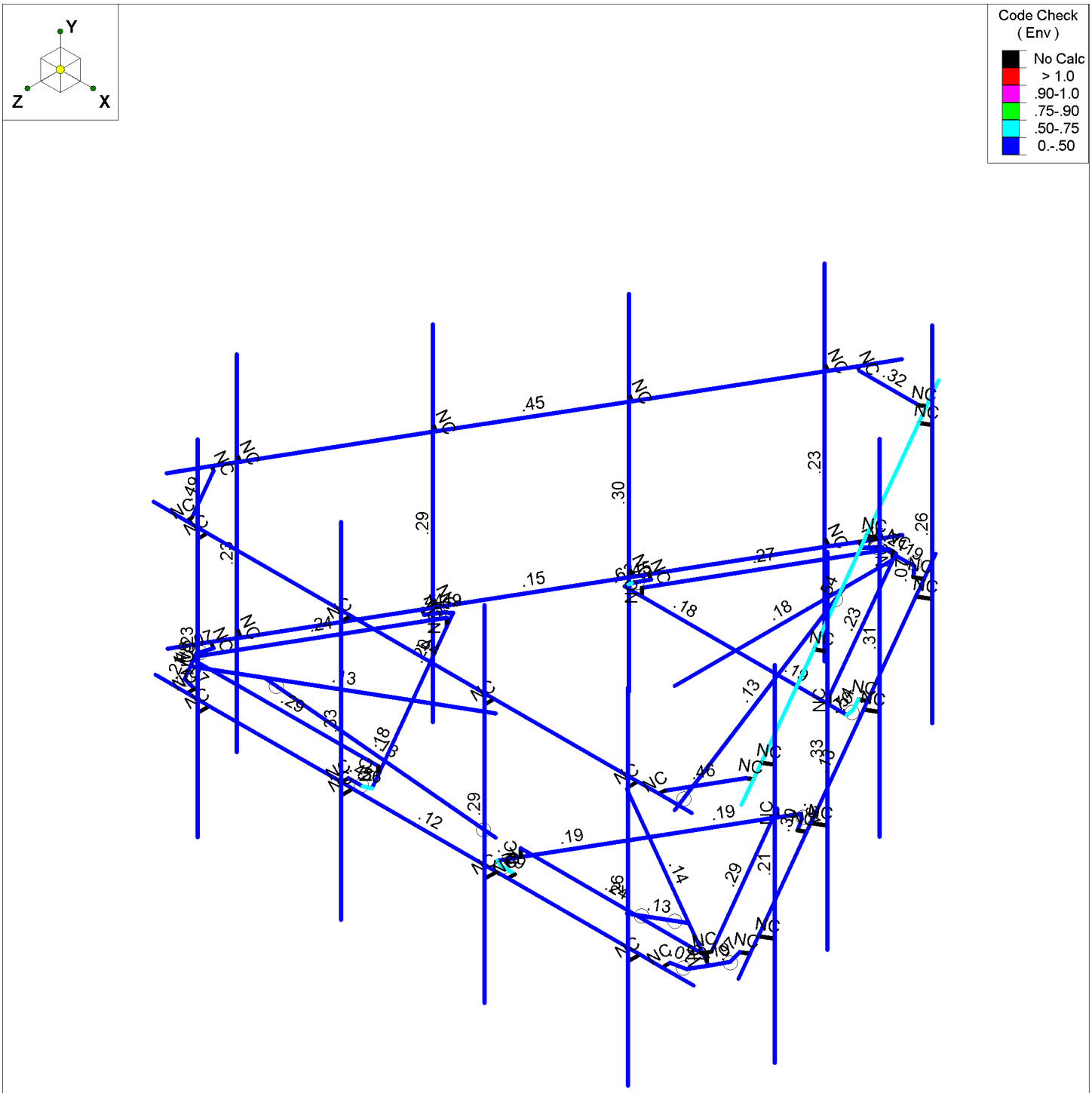
TES Project No. 99371		CT10022-A-SBA_99371_G_RISA_L...



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

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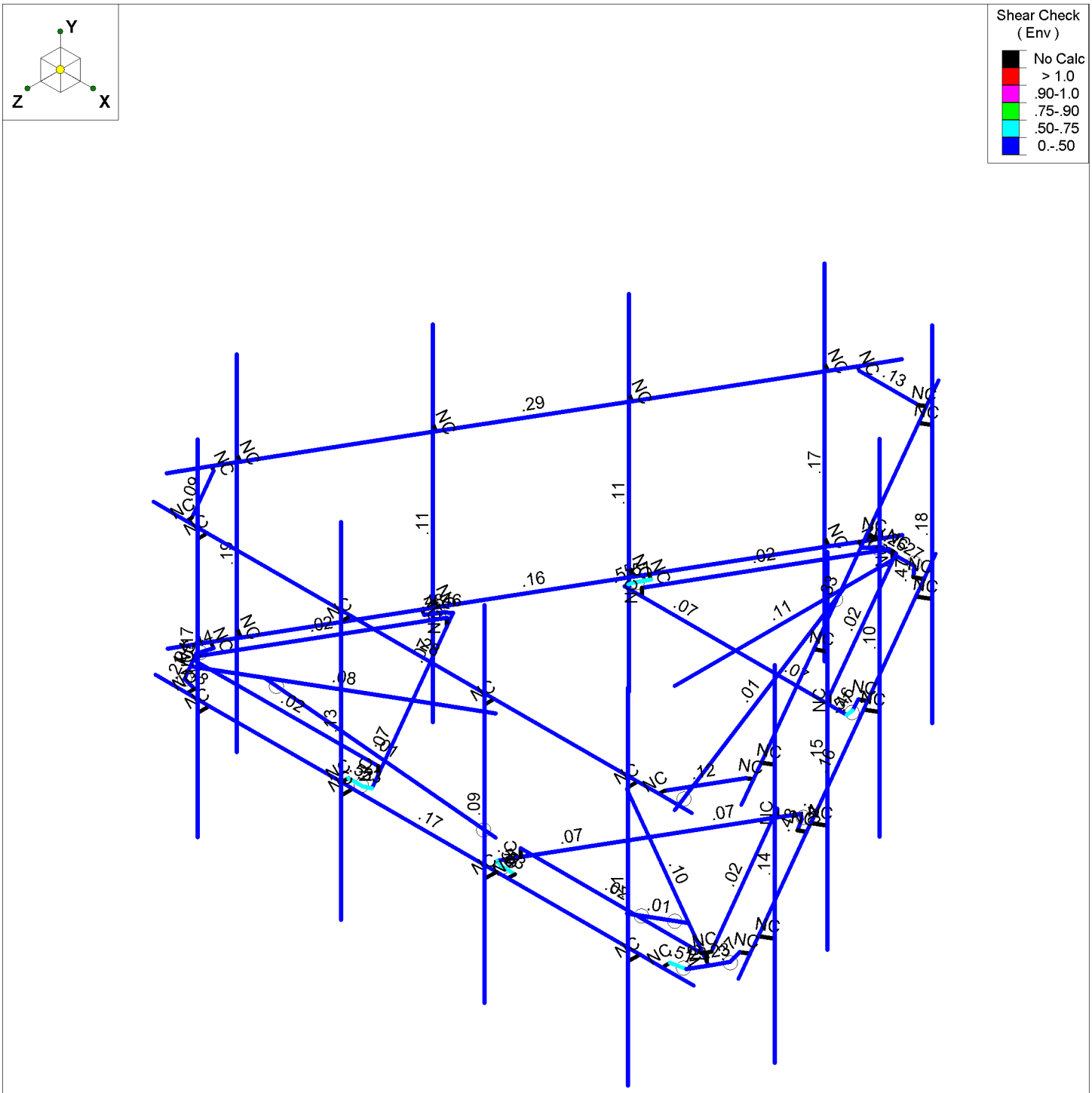

Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

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TES Project No. 99371		CT10022-A-SBA_99371_G_RISA_L...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					36			
2	Antenna Di	None					36			
3	Antenna W Front	None					36			
4	Antenna Wi Front	None					36			
5	Antenna W Side	None					36			
6	Antenna Wi Side	None					36			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					5	
10	Structure Di	None						63	3	
11	Structure W Front	None						63		
12	Structure Wi Front	None						63		
13	Structure W Side	None						63		
14	Structure Wi Side	None						63		
15	BLC 9 Transient Area Loads	None						33		
16	BLC 10 Transient Area Loads	None						33		

Load Combinations

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

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	-6.248693	0	4.052255	0	
2	N2	6.251307	0	4.052255	0	
3	N3	0	0	0	0	
4	N4	-1.525645	0	0.880833	0	
5	N5	0.001306	0	-1.760626	0	
6	N6	1.525423	0	0.879222	0	
7	N7	5.518027	0	4.052255	0	
8	N8	1.934693	0	4.052255	0	
9	N9	-1.932785	0	4.052255	0	
10	N10	-5.516118	0	4.052255	0	
11	N11	-6.267414	0	2.750973	0	
12	N12	-4.475747	0	-0.352284	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
13	N13	-2.542008	0	-3.701619	0	
14	N14	-0.750341	0	-6.804876	0	
15	N15	0.750819	0	-6.80406	0	
16	N16	2.542485	0	-3.700803	0	
17	N17	4.476224	0	-0.351469	0	
18	N18	6.267891	0	2.75179	0	
19	N19	-3e-14	0	-3.17336	0	
20	N20	2.180513	0	-3.17336	0	
21	N21	-2.178604	0	-3.17336	0	
22	N22	-3e-14	0	-6.948466	0	
23	N23	.375	0	-6.948466	0	
24	N24	-.375	0	-6.948466	0	
25	N25	2.58	0	-3.17336	0	
26	N26	-2.58	0	-3.17336	0	
27	N27	2.748854	0	1.585571	0	
28	N28	6.018192	0	3.473123	0	
29	N29	-2.74678	0	1.585856	0	
30	N30	-6.016118	0	3.473409	0	
31	N31	-1.525645	-2.5	0.880833	0	
32	N32	0.001306	-2.5	-1.760626	0	
33	N33	1.525423	-2.5	0.879222	0	
34	N34	-4.933586	0	2.848409	0	
35	N35	-2e-14	0	-5.698466	0	
36	N36	4.93566	0	2.848123	0	
37	N37	-6.248693	3.5	4.098255	0	
38	N38	6.251307	3.5	4.098255	0	
39	N39	5.491469	3.5	4.098255	0	
40	N40	-5.48956	3.5	4.098255	0	
41	N41	-4.998693	5.5	4.328256	0	
42	N42	-4.998693	-2.5	4.328256	0	
43	N43	5.001307	5.5	4.328256	0	
44	N44	5.001307	-2.5	4.328256	0	
45	N45	-1.665693	5.5	4.328256	0	
46	N46	-1.665693	-2.5	4.328256	0	
47	N47	1.668306	5.5	4.328256	0	
48	N48	1.668306	-2.5	4.328256	0	
49	N49	6.247726	5.5	2.164868	0	
50	N50	6.247726	-2.5	2.164868	0	
51	N51	1.247726	5.5	-6.495386	0	
52	N52	1.247726	-2.5	-6.495386	0	
53	N53	4.581226	5.5	-0.721595	0	
54	N54	4.581226	-2.5	-0.721595	0	
55	N55	2.914226	5.5	-3.608924	0	
56	N56	2.914226	-2.5	-3.608924	0	
57	N57	-1.249032	5.5	-6.493123	0	
58	N58	-1.249032	-2.5	-6.493123	0	
59	N59	-6.249032	5.5	2.167131	0	
60	N60	-6.249032	-2.5	2.167131	0	
61	N61	-2.915532	5.5	-3.606661	0	
62	N62	-2.915532	-2.5	-3.606661	0	
63	N63	-4.582532	5.5	-0.719332	0	
64	N64	-4.582532	-2.5	-0.719332	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
65	N65	6.009184	0	2.303696	0	
66	N66	1.009184	0	-6.356558	0	
67	N67	4.342684	0	-0.582766	0	
68	N68	2.675684	0	-3.470095	0	
69	N69	-1.010006	0	-6.355124	0	
70	N70	-6.010006	0	2.30513	0	
71	N71	-2.676506	0	-3.468661	0	
72	N72	-4.343506	0	-0.581332	0	
73	N73	-4.998693	0	4.052255	0	
74	N74	5.001307	0	4.052255	0	
75	N75	-1.665693	0	4.052255	0	
76	N76	1.668306	0	4.052255	0	
77	N77	6.633707	0	3.385402	0	
78	N78	0.383707	0	-7.439915	0	
79	N79	-0.385005	0	-7.437658	0	
80	N80	-6.635005	0	3.38766	0	
81	N81	6.673544	3.5	3.362403	0	
82	N82	0.423544	3.5	-7.462915	0	
83	N83	-0.424841	3.5	-7.460657	0	
84	N84	-6.674841	3.5	3.36466	0	
85	N85	-4.998693	3.5	4.328256	0	
86	N86	-4.998693	0	4.328256	0	
87	N87	5.001307	0	4.328256	0	
88	N88	-1.665693	0	4.328256	0	
89	N89	1.668306	0	4.328256	0	
90	N90	5.001307	3.5	4.328256	0	
91	N91	-1.665693	3.5	4.328256	0	
92	N92	1.668306	3.5	4.328256	0	
93	N93	6.247726	3.5	2.164868	0	
94	N94	6.247726	0	2.164868	0	
95	N95	1.247726	0	-6.495386	0	
96	N96	4.581226	0	-0.721595	0	
97	N97	2.914226	0	-3.608924	0	
98	N98	1.247726	3.5	-6.495386	0	
99	N99	4.581226	3.5	-0.721595	0	
100	N100	2.914226	3.5	-3.608924	0	
101	N101	-1.249032	3.5	-6.493123	0	
102	N102	-1.249032	0	-6.493123	0	
103	N103	-6.249032	0	2.167131	0	
104	N104	-2.915532	0	-3.606661	0	
105	N105	-4.582532	0	-0.719332	0	
106	N106	-6.249032	3.5	2.167131	0	
107	N107	-2.915532	3.5	-3.606661	0	
108	N108	-4.582532	3.5	-0.719332	0	
109	N109	-4.998693	3.5	4.098255	0	
110	N110	5.001307	3.5	4.098255	0	
111	N111	-1.665693	3.5	4.098255	0	
112	N112	1.668306	3.5	4.098255	0	
113	N113	6.048542	3.5	2.279867	0	
114	N114	1.048542	3.5	-6.380387	0	
115	N115	4.382042	3.5	-0.606596	0	
116	N116	2.715042	3.5	-3.493924	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
117	N117	-1.049844	3.5	-6.378122	0	
118	N118	-6.049844	3.5	2.282133	0	
119	N119	-2.716344	3.5	-3.491659	0	
120	N120	-4.383344	3.5	-0.60433	0	
121	N121	5.491469	3.5	3.968255	0	
122	N122	-5.48956	3.5	3.968255	0	
123	N123	0.80346	3.5	-6.80488	0	
124	N124	6.293975	3.5	2.70497	0	
125	N125	0.690875	3.5	-6.739879	0	
126	N126	6.181389	3.5	2.769971	0	
127	N127	-6.294925	3.5	2.706626	0	
128	N128	-0.80441	3.5	-6.803225	0	
129	N129	-6.182344	3.5	2.771625	0	
130	N130	-0.691829	3.5	-6.738226	0	
131	N131	5.518027	0	3.872255	0	
132	N132	-5.516118	0	3.872255	0	
133	N133	0.594458	0	-6.714879	0	
134	N134	6.111531	0	2.840971	0	
135	N135	-6.112485	0	2.842624	0	
136	N136	-0.595413	0	-6.713226	0	
137	N137	1.934693	0	3.892255	0	
138	N138	-1.932785	0	3.892255	0	
139	N139	2.403445	0	-3.621621	0	
140	N140	4.337184	0	-0.272287	0	
141	N141	-4.338139	0	-0.270634	0	
142	N142	-2.4044	0	-3.619968	0	
143	N143	2.561452	0	-3.327946	0	
144	N144	-2.561452	0	-3.327946	0	
145	N145	2.180513	0.1745	-3.17336	0	
146	N146	-2.178604	0.1745	-3.17336	0	
147	N147	-3e-14	0	-6.823466	0	
148	N148	-3e-14	0.1745	-6.823466	0	
149	N149	0.0835	0.1745	-6.823466	0	
150	N150	-0.0835	0.1745	-6.823466	0	
151	N151	-3.838172	0	-0.3017	0	
152	N152	-1.658612	0	3.473406	0	
153	N153	-6.205048	0	3.149473	0	
154	N154	-5.830048	0	3.798993	0	
155	N155	-4.03821	0	-0.647666	0	
156	N156	-1.45821	0	3.821026	0	
157	N157	-4.162812	0	-0.554309	0	
158	N158	-1.60136	0	3.882255	0	
159	N159	-3.838467	0.1745	-0.3017	0	
160	N160	-1.658908	0.1745	3.473406	0	
161	N161	-5.909291	0	3.411733	0	
162	N162	-5.909291	0.1745	3.411733	0	
163	N163	-5.951045	0.1745	3.33942	0	
164	N164	-5.867545	0.1745	3.484046	0	
165	N165	1.657955	0	3.475059	0	
166	N166	3.837513	0	-0.300047	0	
167	N167	5.830048	0	3.798993	0	
168	N168	6.205048	0	3.149473	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
169	N169	1.45821	0	3.821026	0	
170	N170	4.03821	0	-0.647666	0	
171	N171	1.60136	0	3.882255	0	
172	N172	4.162812	0	-0.554309	0	
173	N173	1.657954	0.1745	3.475059	0	
174	N174	3.837512	0.1745	-0.300047	0	
175	N175	5.91186	0	3.411733	0	
176	N176	5.909295	0.1745	3.411733	0	
177	N177	5.867545	0.1745	3.484046	0	
178	N178	5.951045	0.1745	3.33942	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Footrails	PIPE_3.0	Beam	Pipe	A53 Gr...	Typical	2.07	2.85	2.85	5.69
2	Grating Angles	L2x2x3	Beam	Single Angle	A36 Gr...	Typical	.722	.271	.271	.009
3	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr...	Typical	1.02	.627	.627	1.25
4	Standoff Arm	HSS4x4x4	Beam	SquareTube	A500 ...	Typical	3.37	7.8	7.8	12.8
5	Plan Bracing	HSS4x4x4	Beam	SquareTube	A500 ...	Typical	3.37	7.8	7.8	12.8
6	Kickers	LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr...	Typical	1.8	2.46	1.07	.023
7	Mount Pipes	PIPE_2.5	Beam	Pipe	A53 Gr...	Typical	1.61	1.45	1.45	2.89
8	Footrail Connection...	PL1/2X6	Beam	RECT	A36 Gr...	Typical	3	.063	9	.237
9	Plan Bracing Conn...	PL3/8x6	Beam	RECT	A36 Gr...	Typical	2.25	.026	6.75	.101
10	Handrail Corner Br...	L2.5x2.5x4	Beam	Single Angle	A36 Gr...	Typical	1.19	.692	.692	.026

Cold Formed Steel Section Sets

	Label	Shape	Type	Design Li...	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	1.5CU1.25X035	Beam	CU	A570_33	Typical	.131	.022	.052	5.4e-5

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1	AA CS14X1...	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	58	1.2
7	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2
8	J429-Gr5	29000	11154	.3	.65	.49	92	1.5	120	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570_33	29500	11346	.3	.65	.49	33	52
2	A607_C1_55	29500	11346	.3	.65	.49	55	70

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[...	Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B...	1	19	16	13	12	141
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B...	1	38	35	35	24	141
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B...	1	22	16	16	13	141
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B...	1	30	25	25	19	141
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B...	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B...	1	24	15	15	15	141

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N30	N4			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
2	M2	N28	N6			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
3	M3	N22	N24			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
4	M4	N22	N23			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
5	M5	N26	N144			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
6	M6	N144	N142			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
7	M7	N25	N143			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
8	M8	N143	N139			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
9	M9	N149	N145			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N150	N146		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N24	N136			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
12	M12	N23	N133			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
13	M13	N22	N5			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
14	M14	N26	N19			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
15	M15	N19	N25			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
16	M16	N77	N78			Footrails	Beam	Pipe	A53 Gr.B	Typical
17	M17	N79	N80			Footrails	Beam	Pipe	A53 Gr.B	Typical
18	M18	N1	N2			Footrails	Beam	Pipe	A53 Gr.B	Typical
19	M19	N31	N34			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
20	M20	N32	N35			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
21	M21	N33	N36			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
22	M22	N37	N38			Handrails	Beam	Pipe	A53 Gr.B	Typical
23	M23	N81	N82			Handrails	Beam	Pipe	A53 Gr.B	Typical
24	M24	N83	N84			Handrails	Beam	Pipe	A53 Gr.B	Typical
25	M25	N130	N125		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
26	MP4A	N41	N42			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
27	MP1A	N43	N44			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
28	MP3A	N45	N46			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
29	MP2A	N47	N48			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
30	MP4C	N49	N50			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
31	MP1C	N51	N52			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
32	MP3C	N53	N54			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
33	MP2C	N55	N56			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
34	MP4B	N57	N58			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
35	MP1B	N59	N60			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
36	MP3B	N61	N62			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
37	MP2B	N63	N64			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
38	M38	N74	N87			RIGID	None	None	RIGID	Typical
39	M39	N76	N89			RIGID	None	None	RIGID	Typical
40	M40	N75	N88			RIGID	None	None	RIGID	Typical
41	M41	N73	N86			RIGID	None	None	RIGID	Typical
42	M42	N66	N95			RIGID	None	None	RIGID	Typical
43	M43	N68	N97			RIGID	None	None	RIGID	Typical
44	M44	N67	N96			RIGID	None	None	RIGID	Typical
45	M45	N65	N94			RIGID	None	None	RIGID	Typical
46	M46	N70	N103			RIGID	None	None	RIGID	Typical
47	M47	N72	N105			RIGID	None	None	RIGID	Typical
48	M48	N71	N104			RIGID	None	None	RIGID	Typical
49	M49	N69	N102			RIGID	None	None	RIGID	Typical
50	M50	N110	N90			RIGID	None	None	RIGID	Typical
51	M51	N112	N92			RIGID	None	None	RIGID	Typical
52	M52	N111	N91			RIGID	None	None	RIGID	Typical
53	M53	N109	N85			RIGID	None	None	RIGID	Typical
54	M54	N114	N98			RIGID	None	None	RIGID	Typical
55	M55	N116	N100			RIGID	None	None	RIGID	Typical
56	M56	N115	N99			RIGID	None	None	RIGID	Typical
57	M57	N113	N93			RIGID	None	None	RIGID	Typical
58	M58	N118	N106			RIGID	None	None	RIGID	Typical
59	M59	N120	N108			RIGID	None	None	RIGID	Typical
60	M60	N119	N107			RIGID	None	None	RIGID	Typical
61	M61	N117	N101			RIGID	None	None	RIGID	Typical
62	M62	N39	N121			RIGID	None	None	RIGID	Typical
63	M63	N40	N122			RIGID	None	None	RIGID	Typical
64	M64	N123	N125			RIGID	None	None	RIGID	Typical
65	M65	N124	N126			RIGID	None	None	RIGID	Typical
66	M66	N127	N129			RIGID	None	None	RIGID	Typical
67	M67	N128	N130			RIGID	None	None	RIGID	Typical
68	M68	N122	N129		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
69	M69	N126	N121		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
70	M70	N10	N132			RIGID	None	None	RIGID	Typical
71	M71	N7	N131			RIGID	None	None	RIGID	Typical
72	M72	N18	N134			RIGID	None	None	RIGID	Typical
73	M73	N15	N133			RIGID	None	None	RIGID	Typical
74	M74	N14	N136			RIGID	None	None	RIGID	Typical
75	M75	N11	N135			RIGID	None	None	RIGID	Typical
76	M76	N8	N137			RIGID	None	None	RIGID	Typical
77	M77	N9	N138			RIGID	None	None	RIGID	Typical
78	M78	N16	N139			RIGID	None	None	RIGID	Typical
79	M79	N17	N140			RIGID	None	None	RIGID	Typical
80	M80	N12	N141			RIGID	None	None	RIGID	Typical
81	M81	N13	N142			RIGID	None	None	RIGID	Typical
82	M82	N21	N146			RIGID	None	None	RIGID	Typical
83	M83	N20	N145			RIGID	None	None	RIGID	Typical
84	M84	N147	N148			RIGID	None	None	RIGID	Typical
85	M85	N149	N150			RIGID	None	None	RIGID	Typical
86	M86	N30	N154			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
87	M87	N30	N153			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
88	M88	N156	N158			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
89	M89	N158	N138			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
90	M90	N155	N157			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
91	M91	N157	N141			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
92	M92	N163	N159			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
93	M93	N164	N160		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
94	M94	N154	N132			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
95	M95	N153	N135			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
96	M96	N156	N29			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
97	M97	N29	N155			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
98	M98	N152	N160			RIGID	None	None	RIGID	Typical
99	M99	N151	N159			RIGID	None	None	RIGID	Typical
100	M100	N161	N162			RIGID	None	None	RIGID	Typical
101	M101	N163	N164			RIGID	None	None	RIGID	Typical
102	M102	N28	N168			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
103	M103	N28	N167			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
104	M104	N170	N172			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
105	M105	N172	N140			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
106	M106	N169	N171			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
107	M107	N171	N137			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
108	M108	N177	N173			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
109	M109	N178	N174		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
110	M110	N168	N134			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
111	M111	N167	N131			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
112	M112	N170	N27			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
113	M113	N27	N169			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
114	M114	N166	N174			RIGID	None	None	RIGID	Typical
115	M115	N165	N173			RIGID	None	None	RIGID	Typical
116	M116	N175	N176			RIGID	None	None	RIGID	Typical
117	M117	N177	N178			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	M1						Yes			None
2	M2						Yes			None
3	M3						Yes			None
4	M4						Yes			None
5	M5						Yes			None
6	M6		BenPIN				Yes			None
7	M7						Yes			None
8	M8		BenPIN				Yes			None
9	M9						Yes			None
10	M10						Yes			None
11	M11		BenPIN				Yes			None
12	M12		BenPIN				Yes			None
13	M13						Yes			None
14	M14						Yes			None
15	M15						Yes			None
16	M16						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
17	M17						Yes			None
18	M18						Yes			None
19	M19	BenPIN	BenPIN				Yes			None
20	M20	BenPIN	BenPIN				Yes			None
21	M21	BenPIN	BenPIN				Yes			None
22	M22						Yes			None
23	M23						Yes			None
24	M24						Yes			None
25	M25						Yes			None
26	MP4A						Yes			None
27	MP1A						Yes			None
28	MP3A						Yes			None
29	MP2A						Yes			None
30	MP4C						Yes			None
31	MP1C						Yes			None
32	MP3C						Yes			None
33	MP2C						Yes			None
34	MP4B						Yes			None
35	MP1B						Yes			None
36	MP3B						Yes			None
37	MP2B						Yes			None
38	M38						Yes			None
39	M39						Yes			None
40	M40						Yes			None
41	M41						Yes			None
42	M42						Yes			None
43	M43						Yes			None
44	M44						Yes			None
45	M45						Yes			None
46	M46						Yes			None
47	M47						Yes			None
48	M48						Yes			None
49	M49						Yes			None
50	M50						Yes			None
51	M51						Yes			None
52	M52						Yes			None
53	M53						Yes			None
54	M54						Yes			None
55	M55						Yes			None
56	M56						Yes			None
57	M57						Yes			None
58	M58						Yes			None
59	M59						Yes			None
60	M60						Yes			None
61	M61						Yes			None
62	M62						Yes			None
63	M63						Yes			None
64	M64						Yes			None
65	M65						Yes			None
66	M66						Yes			None
67	M67						Yes			None
68	M68						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
69	M69						Yes			None
70	M70						Yes			None
71	M71						Yes			None
72	M72						Yes			None
73	M73						Yes			None
74	M74						Yes			None
75	M75						Yes			None
76	M76						Yes			None
77	M77						Yes			None
78	M78						Yes			None
79	M79						Yes			None
80	M80						Yes			None
81	M81						Yes			None
82	M82						Yes			None
83	M83						Yes			None
84	M84						Yes			None
85	M85						Yes			None
86	M86						Yes			None
87	M87						Yes			None
88	M88						Yes			None
89	M89		BenPIN				Yes			None
90	M90						Yes			None
91	M91		BenPIN				Yes			None
92	M92						Yes			None
93	M93						Yes			None
94	M94		BenPIN				Yes			None
95	M95		BenPIN				Yes			None
96	M96						Yes			None
97	M97						Yes			None
98	M98						Yes			None
99	M99						Yes			None
100	M100						Yes			None
101	M101						Yes			None
102	M102						Yes			None
103	M103						Yes			None
104	M104						Yes			None
105	M105		BenPIN				Yes			None
106	M106						Yes			None
107	M107		BenPIN				Yes			None
108	M108						Yes			None
109	M109						Yes			None
110	M110		BenPIN				Yes			None
111	M111		BenPIN				Yes			None
112	M112						Yes			None
113	M113						Yes			None
114	M114						Yes			None
115	M115						Yes			None
116	M116						Yes			None
117	M117						Yes			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
1	M1	Standoff Arm	5.185			Lbyy			2.1	2.1		Lateral
2	M2	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
3	M3	Footrail Connection Pl...	.375			Lbyy			.65	.65		Lateral
4	M4	Footrail Connection Pl...	.375			Lbyy			.65	.65		Lateral
5	M5	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
6	M6	Plan Bracing Connecti...	.332			Lbyy			.8	.8		Lateral
7	M7	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
8	M8	Plan Bracing Connecti...	.333			Lbyy			.8	.8		Lateral
9	M9	Grating Angles	4.21			Lbyy			.65	.65		Lateral
10	M10	Grating Angles	4.209			Lbyy			.65	.65		Lateral
11	M11	Footrail Connection Pl...	.322			Lbyy			.8	.8		Lateral
12	M12	Footrail Connection Pl...	.321			Lbyy			.8	.8		Lateral
13	M13	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
14	M14	Plan Bracing	2.58			Lbyy			1	1		Lateral
15	M15	Plan Bracing	2.58			Lbyy			1	1		Lateral
16	M16	Footrails	12.5			Lbyy			1	1		Lateral
17	M17	Footrails	12.5			Lbyy			1	1		Lateral
18	M18	Footrails	12.5			Lbyy			1	1		Lateral
19	M19	Kickers	4.662			Lbyy			1	1		Lateral
20	M20	Kickers	4.664			Lbyy			1	1		Lateral
21	M21	Kickers	4.664			Lbyy			1	1		Lateral
22	M22	Handrails	12.5			Lbyy			1	1		Lateral
23	M23	Handrails	12.5			Lbyy			1	1		Lateral
24	M24	Handrails	12.5			Lbyy			1	1		Lateral
25	M25	Handrail Corner Braces	1.383			Lbyy			.65	.65		Lateral
26	MP4A	Mount Pipes	8			Lbyy			1	1		Lateral
27	MP1A	Mount Pipes	8			Lbyy			1	1		Lateral
28	MP3A	Mount Pipes	8			Lbyy			1	1		Lateral
29	MP2A	Mount Pipes	8			Lbyy			1	1		Lateral
30	MP4C	Mount Pipes	8			Lbyy			1	1		Lateral
31	MP1C	Mount Pipes	8			Lbyy			1	1		Lateral
32	MP3C	Mount Pipes	8			Lbyy			1	1		Lateral
33	MP2C	Mount Pipes	8			Lbyy			1	1		Lateral
34	MP4B	Mount Pipes	8			Lbyy			1	1		Lateral
35	MP1B	Mount Pipes	8			Lbyy			1	1		Lateral
36	MP3B	Mount Pipes	8			Lbyy			1	1		Lateral
37	MP2B	Mount Pipes	8			Lbyy			1	1		Lateral
38	M68	Handrail Corner Braces	1.383			Lbyy			.65	.65		Lateral
39	M69	Handrail Corner Braces	1.383			Lbyy			.65	.65		Lateral
40	M86	Footrail Connection Pl...	.375			Lbyy			.65	.65		Lateral
41	M87	Footrail Connection Pl...	.375			Lbyy			.65	.65		Lateral
42	M88	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
43	M89	Plan Bracing Connecti...	.332			Lbyy			.8	.8		Lateral
44	M90	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
45	M91	Plan Bracing Connecti...	.333			Lbyy			.8	.8		Lateral
46	M92	Grating Angles	4.21			Lbyy			.65	.65		Lateral
47	M93	Grating Angles	4.209			Lbyy			.65	.65		Lateral
48	M94	Footrail Connection Pl...	.322			Lbyy			.8	.8		Lateral
49	M95	Footrail Connection Pl...	.321			Lbyy			.8	.8		Lateral
50	M96	Plan Bracing	2.58			Lbyy			1	1		Lateral
51	M97	Plan Bracing	2.58			Lbyy			1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
52	M102	Footrail Connection Pl...	.374			Lbyy			.65	.65		Lateral
53	M103	Footrail Connection Pl...	.376			Lbyy			.65	.65		Lateral
54	M104	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
55	M105	Plan Bracing Connecti...	.332			Lbyy			.8	.8		Lateral
56	M106	Plan Bracing Connecti...	.156			Lbyy			.65	.65		Lateral
57	M107	Plan Bracing Connecti...	.333			Lbyy			.8	.8		Lateral
58	M108	Grating Angles	4.21			Lbyy			.65	.65		Lateral
59	M109	Grating Angles	4.209			Lbyy			.65	.65		Lateral
60	M110	Footrail Connection Pl...	.322			Lbyy			.8	.8		Lateral
61	M111	Footrail Connection Pl...	.321			Lbyy			.8	.8		Lateral
62	M112	Plan Bracing	2.579			Lbyy			1	1		Lateral
63	M113	Plan Bracing	2.581			Lbyy			1	1		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp to..	Lcomp b...	Kyy	Kzz	Cm-yy	Cm-zz	Cb	R	y sway	z sway
No Data to Print ...														

Aluminum Design Parameters

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

Joint Loads and Enforced Displacements

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

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N3						
2	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N29						
4	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N32	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N5	max	1912.447	4	1308.944	6	6164.515	1	1.556	6	2.397	3	.825	3
2		min	-1914.021	3	288.01	1	-3961.936	2	.349	1	-2.38	4	-.62	4
3	N6	max	3085.975	4	1318.151	8	2203.022	1	.206	1	1.404	2	1.242	5
4		min	-5090.391	3	299.356	3	-3366.253	2	-1.266	6	-1.387	1	-.052	2
5	N4	max	5442.613	4	1318.54	7	1765.232	1	.301	4	.945	1	-.145	2
6		min	-3438.285	3	241.148	9	-2924.571	2	-.609	3	-.933	2	-1.623	5

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
7	N31	max	389.732	3	3101.512	8	2394.403	8	0	4	0	3	0	3
8		min	-4132.958	8	-292.81	3	-243.575	3	0	3	0	4	0	4
9	N32	max	46.823	4	3106.215	5	705.428	2	0	1	0	4	0	3
10		min	-46.732	3	-447.221	2	-4788.113	5	0	1	0	3	0	4
11	N33	max	4126.689	7	3094.947	7	2390.896	7	0	1	0	1	0	1
12		min	-351.591	4	-264.645	4	-221.61	4	0	2	0	2	0	2
13	Totals:	max	7369.02	4	12081.805	7	7206.119	1						
14		min	-7368.97	3	3813.726	4	-7206.112	2						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M1	HSS4x4x4	.128	5.185	6	.078	5.185	z	1	84943.1...	139518	16.181	16.181	2....	H1-1b
2	M2	HSS4x4x4	.136	5.188	6	.096	5.188	z	2	84900.0...	139518	16.181	16.181	2....	H1-1b
3	M3	PL1/2X6	.208	0	1	.265	.375	y	3	95121.1...	97200	1.012	12.15	1....	H1-1b
4	M4	PL1/2X6	.191	0	3	.269	0	y	4	95121.1...	97200	1.012	12.15	1....	H1-1b
5	M5	PL3/8x6	.617	0	4	.545	0	y	3	72263.1...	72900	.57	9.113	1....	H1-1b
6	M6	PL3/8x6	.455	0	3	.509	0	y	4	69512.4...	72900	.57	9.113	1....	H1-1b
7	M7	PL3/8x6	.695	0	3	.509	0	y	4	72263.1...	72900	.57	9.113	1....	H1-1b
8	M8	PL3/8x6	.536	0	4	.463	0	y	3	69476.0...	72900	.57	9.113	1....	H1-1b
9	M9	L2x2x3	.226	0	8	.017	0	y	8	16076.33	23392.8	.558	1.239	2....	H2-1
10	M10	L2x2x3	.270	0	7	.021	0	z	7	16079.0...	23392.8	.558	1.239	2....	H2-1
11	M11	PL1/2X6	.053	0	1	.498	0	y	4	94875.8...	97200	1.012	12.15	1....	H1-1b
12	M12	PL1/2X6	.068	0	5	.470	0	y	3	94902.3...	97200	1.012	12.15	1....	H1-1b
13	M13	HSS4x4x4	.180	5.188	4	.110	5.188	z	3	84899.4...	139518	16.181	16.181	2....	H1-1b
14	M14	HSS4x4x4	.180	2.58	5	.066	2.58	y	7	135684....	139518	16.181	16.181	1....	H1-1b
15	M15	HSS4x4x4	.189	0	5	.073	0	y	8	135684....	139518	16.181	16.181	1....	H1-1b
16	M16	PIPE_3.0	.126	7.812	2	.159	4.427		3	28250.5...	65205	5.749	5.749	3....	H1-1b
17	M17	PIPE_3.0	.148	7.812	3	.162	8.073		4	28250.5...	65205	5.749	5.749	3....	H1-1b
18	M18	PIPE_3.0	.118	7.812	4	.167	8.073		1	28250.5...	65205	5.749	5.749	3....	H1-1b
19	M19	LL2.5x2.5x3...	.130	0	8	.006	4.662	y	8	43654.3...	58320	3.954	2.55	1....	H1-1b*
20	M20	LL2.5x2.5x3...	.131	0	5	.006	0	z	3	43642.7...	58320	3.954	2.55	1	H1-1b*
21	M21	LL2.5x2.5x3...	.130	0	7	.006	4.664	z	2	43642.9...	58320	3.954	2.55	1....	H1-1b*
22	M22	PIPE_2.0	.438	7.943	2	.283	11.719		1	6295.422	32130	1.872	1.872	3....	H1-1b
23	M23	PIPE_2.0	.537	1.172	1	.332	11.719		4	6295.422	32130	1.872	1.872	3....	H3-6
24	M24	PIPE_2.0	.454	1.172	4	.291	1.172		4	6295.422	32130	1.872	1.872	4....	H3-6
25	M25	L2.5x2.5x4	.316	0	1	.126	0	y	4	37553.0...	38556	1.114	2.537	1....	H2-1
26	MP4A	PIPE_2.5	.233	5.5	4	.165	2		2	30038.4...	50715	3.596	3.596	2....	H1-1b
27	MP1A	PIPE_2.5	.257	5.5	3	.214	5.5		2	30038.4...	50715	3.596	3.596	2....	H1-1b
28	MP3A	PIPE_2.5	.331	5.5	4	.134	5.5		2	30038.4...	50715	3.596	3.596	2....	H1-1b
29	MP2A	PIPE_2.5	.294	5.5	3	.095	5.5		2	30038.4...	50715	3.596	3.596	2....	H1-1b
30	MP4C	PIPE_2.5	.209	5.5	3	.136	2		3	30038.4...	50715	3.596	3.596	2....	H1-1b
31	MP1C	PIPE_2.5	.257	5.5	1	.182	5.5		3	30038.4...	50715	3.596	3.596	2....	H1-1b
32	MP3C	PIPE_2.5	.330	5.5	2	.147	5.5		3	30038.4...	50715	3.596	3.596	1....	H1-1b
33	MP2C	PIPE_2.5	.307	5.5	4	.097	5.5		1	30038.4...	50715	3.596	3.596	1....	H1-1b
34	MP4B	PIPE_2.5	.229	5.5	1	.169	5.5		4	30038.4...	50715	3.596	3.596	2....	H1-1b
35	MP1B	PIPE_2.5	.227	5.5	4	.193	2		4	30038.4...	50715	3.596	3.596	2....	H1-1b
36	MP3B	PIPE_2.5	.299	5.5	3	.113	5.5		1	30038.4...	50715	3.596	3.596	2....	H1-1b
37	MP2B	PIPE_2.5	.294	5.5	3	.113	5.5		4	30038.4...	50715	3.596	3.596	1....	H1-1b
38	M68	L2.5x2.5x4	.490	0	4	.090	0	y	2	37553.0...	38556	1.114	2.537	1....	H2-1
39	M69	L2.5x2.5x4	.456	0	2	.117	0	y	1	37553.0...	38556	1.114	2.537	2....	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
40	M86	PL1/2X6	.208	0	4	.207	.375	y	1	95121.1...	97200	1.012	12.15	1....	H1-1b
41	M87	PL1/2X6	.192	0	1	.238	0	y	6	95121.08	97200	1.012	12.15	1....	H1-1b
42	M88	PL3/8x6	.558	0	2	.533	0	y	1	72263.1...	72900	.57	9.113	1....	H1-1b
43	M89	PL3/8x6	.445	0	1	.534	0	y	2	69512.4...	72900	.57	9.113	1....	H1-1b
44	M90	PL3/8x6	.494	0	4	.456	0	y	3	72263.1...	72900	.57	9.113	1....	H1-1b
45	M91	PL3/8x6	.440	0	3	.477	0	y	4	69476.0...	72900	.57	9.113	1....	H1-1b
46	M92	L2x2x3	.241	0	6	.019	0	y	6	16076.33	23392.8	.558	1.239	2....	H2-1
47	M93	L2x2x3	.286	0	8	.022	0	z	5	16079.0...	23392.8	.558	1.239	2....	H2-1
48	M94	PL1/2X6	.066	0	2	.478	0	y	2	94875.8...	97200	1.012	12.15	1....	H1-1b
49	M95	PL1/2X6	.067	0	6	.441	0	y	4	94902.3...	97200	1.012	12.15	1....	H1-1b
50	M96	HSS4x4x4	.178	2.58	6	.067	2.58	y	8	135684....	139518	16.181	16.181	1....	H1-1b
51	M97	HSS4x4x4	.196	0	8	.073	0	y	6	135684....	139518	16.181	16.181	1....	H1-1b
52	M102	PL1/2X6	.187	0	1	.227	0	y	2	95135.1...	97200	1.012	12.15	1....	H1-1b
53	M103	PL1/2X6	.193	0	3	.231	0	y	5	95107.0...	97200	1.012	12.15	1....	H1-1b
54	M104	PL3/8x6	.337	0	3	.403	0	y	4	72263.1...	72900	.57	9.113	1....	H1-1b
55	M105	PL3/8x6	.300	0	4	.434	0	y	3	69512.4...	72900	.57	9.113	1....	H1-1b
56	M106	PL3/8x6	.721	0	2	.540	0	y	1	72263.1...	72900	.57	9.113	1....	H1-1b
57	M107	PL3/8x6	.591	0	1	.530	0	y	2	69476.0...	72900	.57	9.113	1....	H1-1b
58	M108	L2x2x3	.239	0	5	.019	0	y	5	16076.33	23392.8	.558	1.239	2....	H2-1
59	M109	L2x2x3	.292	0	6	.023	0	z	6	16079.0...	23392.8	.558	1.239	2....	H2-1
60	M110	PL1/2X6	.069	0	3	.371	0	y	3	94875.8...	97200	1.012	12.15	1....	H1-1b
61	M111	PL1/2X6	.071	0	7	.507	0	y	2	94902.3...	97200	1.012	12.15	1....	H1-1b
62	M112	HSS4x4x4	.186	2.579	7	.067	2.579	y	6	135688....	139518	16.181	16.181	1....	H1-1b
63	M113	HSS4x4x4	.186	0	6	.073	0	y	5	135681....	139518	16.181	16.181	1....	H1-1b

Envelope None Cold Formed Steel Code Checks

Member	Shape	Code...	Loc[ft]	LC	Shea...	Loc[ft]	Dir	LC	Pn[lb]	Tn[lb]	Mnyy[...	Mnzz[...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																

Envelope AA ADM1-15: ASD - Building Aluminum Code Checks

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

EXHIBIT 9

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA531A

SBA Simsbury Monopole
225 Grist Mill Road
Simsbury, Connecticut 06070

November 19, 2020

EBI Project Number: 6220005947

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**27.60%**

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

November 19, 2020

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

Emissions Analysis for Site: CTHA531A - SBA Simsbury Monopole

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **225 Grist Mill Road** in **Simsbury, Connecticut** 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 ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 225 Grist Mill Road in Simsbury, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 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.

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 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.

7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

9) 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.

10) 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

11) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

12) The antenna mounting height centerline of the proposed antennas is 131 feet above ground level (AGL).

13) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	131 feet	Height (AGL):	131 feet	Height (AGL):	131 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	**1.83%**	Antenna B1 MPE %:	**1.83%**	Antenna C1 MPE %:	**1.83%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	131 feet	Height (AGL):	131 feet	Height (AGL):	131 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,010.27	ERP (W):	11,010.27	ERP (W):	11,010.27
Antenna A2 MPE %:	**3.51%**	Antenna B2 MPE %:	**3.51%**	Antenna C2 MPE %:	**3.51%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	131 feet	Height (AGL):	131 feet	Height (AGL):	131 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	38,477.89	ERP (W):	38,477.89	ERP (W):	38,477.89
Antenna A3 MPE %:	**8.06%**	Antenna B3 MPE %:	**8.06%**	Antenna C3 MPE %:	**8.06%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	13.40%
AT&T	3.79%
Verizon	6.01%
Nextel	0.52%
Sprint	3.88%
Site Total MPE % :	27.60%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	13.40%
T-Mobile Sector B Total:	13.40%
T-Mobile Sector C Total:	13.40%
Site Total MPE % :	27.60%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz LTE	2	2056.61	131.0	8.62	1900 MHz LTE	1000	0.86%
T-Mobile 2100 MHz LTE	2	2307.55	131.0	9.67	2100 MHz LTE	1000	0.97%
T-Mobile 600 MHz LTE	2	591.73	131.0	2.48	600 MHz LTE	400	0.62%
T-Mobile 600 MHz NR	1	1577.94	131.0	3.31	600 MHz NR	400	0.83%
T-Mobile 700 MHz LTE	2	695.22	131.0	2.91	700 MHz LTE	467	0.62%
T-Mobile 1900 MHz LTE	2	2104.51	131.0	8.82	1900 MHz LTE	1000	0.88%
T-Mobile 2100 MHz UMTS	2	1324.71	131.0	5.55	2100 MHz UMTS	1000	0.56%
T-Mobile 2500 MHz LTE	1	19238.94	131.0	40.30	2500 MHz LTE	1000	4.03%
T-Mobile 2500 MHz NR	1	19238.94	131.0	40.30	2500 MHz NR	1000	4.03%
						Total:	**13.40%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	13.40%
Sector B:	13.40%
Sector C:	13.40%
T-Mobile Maximum MPE % (Sector A):	13.40%
Site Total:	27.60%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **27.60%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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