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

May 5, 2021

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

RE: Notice of Exempt Modification
3114 Albany Avenue, West Hartford, CT 06117
Latitude: 41.796802
Longitude: -72.796830
T-Mobile Site #: CT11765A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains Two (2) antennas at the 160-foot level of the existing 310-foot Guyed Tower at 3114 Albany Avenue, West Hartford, CT. The 310-foot tower is owned by SBA GC Towers, LLC. The property is owned by Educational Media Foundation. T-Mobile now intends to install seven (7) new 600/700/1900/2100/2500MHz antennas.

The new antennas would support 5G services and would be installed at the 160-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:

- (6) 1-5/8" Fiber (remove) – (6) 1.9" Fiber (replace)

Install New:

- (3) RFS APXVAALL24_43-U-NA20 700/600/1900/2100MHz antenna
- (3) Ericsson AIR6449 B41 2500MHz antennas
- (1) RFS APX16DWV-S-E-A20 2100MHz antennas
- (1) Ericsson KRY 112 144/1 TMAs
- (3) Commscope SDX1926Q-43 Diplexers
- (3) Ericsson 4424 B25 RRUs
- (3) Ericsson 4449 B71 + B85 RRUs
- (3) Ericsson 4415 B66A RRUs
- Mount Kit: (2) V-Bracing Kit (MS-C2B-350P, (3) Stabilizer Kit (MS-STZ-2PST), (3) Stabilizer adaptor kit (MS-STZ-350P), (1) Support Rail Kit (MS-HR35-18) – Per sector (3)

Existing Equipment to Remain:

- (2) RFS APX16DWV-S-E-A20
- (2) Ericsson KRY 112 144/1 TMAs
- (1) ½" coax for GPS antenna
- (3) T-Frames (Arms)
- (6) 1-5/8" coax

Entitlements:

- (3) Ericsson AIR32 KRD901146-1 B66A_B2
- (1) Commscope SDX1926Q-43 Diplexers
- (1) Commscope TMAT1921B78-21A TMAs
- (2) 1-5/8" coax cables

GROUND

Install New:

- (3) 2" RGS conduit
- Ericsson B160 battery cabinet on existing pad
- Ericsson 6160 equipment cabinet on existing pad

Remain:

- 11" x 4'-6" concrete generator pad
- 10'x6'x11' concrete pad
- PTS 8003 Battery cabinet
- Generator transfer switch
- Stub Ups
- Ice Bridge
- 15 KW Diesel generator
- Fiber box
- 200A PPC
- RBS6201 Equipment cabinet

Remove:

- (4) AWS/PCS Diplexers

This facility was approved by the Town of West Hartford's Planning Office on July 28, 2000. Special Use Permit #903 was given for a 347' tower. There were no 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 West Hartford's Mayor, Shari Cantor, and Town Planner, Todd Dumais, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

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

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

Sincerely,

Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

Attachments

cc: The Honorable Shari Cantor / with attachments
The Town of West Hartford, 50 South Main Street, West Hartford, CT 06107
Todd Dumais, Town Planner / with attachments
The Town of West Hartford, 50 South Main Street, West Hartford, CT 06107
Educational Media Foundation / with attachments
5700 West Oak Blvd, Rocklin CA 95765

EXHIBIT LIST

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of West Hartford's Planning Office 7/28/00
Exhibit 6	Construction Drawings	Chappell Engineering 3/5/21
Exhibit 7	Modification Drawings	TES 11/23/20 (Job #99804)
Exhibit 8	Structural Analysis	TES 4/9/21
Exhibit 9	Post-Mod Mount Analysis	TES 5/4/21
Exhibit 10	EME Report	EBI Consulting 4/27/21

EXHIBIT 1

Normally, Exhibit 1 would contain a copy of the check for the filing fee.

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

3114 ALBANY AVENUE

Location	3114 ALBANY AVENUE	**Mblu**	A2/ 0031/ 3114/ /
Parcel ID	0031 2 3114 0001	**Owner**	EDUCATIONAL MEDIA FOUNDATION
Assessment	$392,490	**Appraisal**	$560,700
Vision Id #	402	**Building Count**	6

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$217,700	$343,000	$560,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$152,390	$240,100	$392,490

Owner of Record

Owner	EDUCATIONAL MEDIA FOUNDATION	**Sale Price**	$600,000
Co-Owner		**Certificate**	
Address	5700 WEST OAKS BOULEVARD ROCKLIN, CA 95765	**Book & Page**	4884/ 163
		Sale Date	11/04/2014
		Instrument	Q

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
EDUCATIONAL MEDIA FOUNDATION	$600,000		4884/ 163	Q	11/04/2014
MARLIN TOWER LLC	$0	1	2810/ 50	U	12/19/2001
MARLIN BROADCASTING LLC	$107,500	1	2580/ 300	U	08/03/2000
MARLIN BROADCASTING INC	$130,000	1	2309/ 253	U	05/26/1998
GREATER HARTFORD	$0	1	472/ 900	U	

Building Information

Building 1 : Section 1

Year Built:	1960
Living Area:	208
Replacement Cost:	$28,140

Building Percent Good: 61

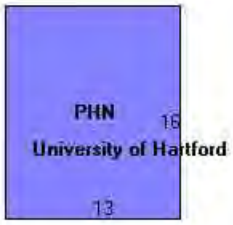
Replacement Cost Less Depreciation: $17,200

Building Attributes	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Concrete Block
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Comp - Shingle
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	None
Heating Fuel	Typical
Heating Type	None
AC Type	None
As Built Use	PHON
Bldg Use	Commercial
# of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class D
Frame Type	Conc Reinf
Plumbing	LIGHT
Ceiling	Not Applicable
Group	IND
Wall Height	8
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//\00\00\0

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	208	208
		208	208

Building 2 : Section 1

Year Built: 2002

Living Area: 800

Replacement Cost: $108,272

Building Percent Good: 86

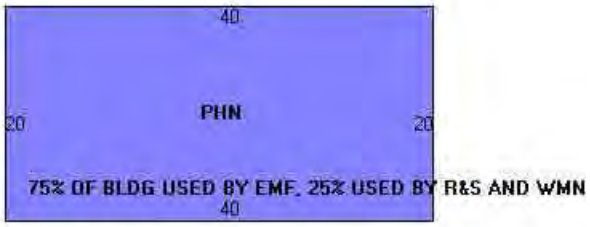
Replacement Cost Less Depreciation: $93,100

Building Attributes : Bldg 2 of 6	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	1
Exterior Wall 1	Concrete Block
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Commercial
# of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	
Plumbing	
Ceiling	
Group	
Wall Height	
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//default.j

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	800	800
		800	800

Building 3 : Section 1

Year Built: 2002

Living Area: 240

Replacement Cost: $32,428

Building Percent Good: 86

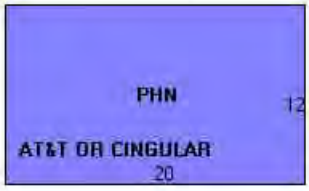
Replacement Cost Less Depreciation: $27,900

Building Attributes : Bldg 3 of 6	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	1
Exterior Wall 1	Concrete Block
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Commercial
# of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	
Plumbing	
Ceiling	
Group	
Wall Height	
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//default.j

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	240	240
		240	240

Building 4 : Section 1

Year Built: 2002

Living Area: 360

Replacement Cost: $48,776

Building Percent Good: 86

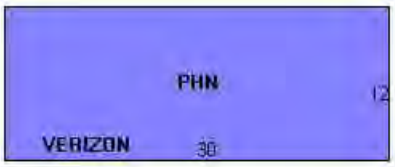
Replacement Cost Less Depreciation: $41,900

Building Attributes : Bldg 4 of 6	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	1
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Commercial
# of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	
Plumbing	
Ceiling	
Group	
Wall Height	
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//default.j

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	360	360
		360	360

Building 5 : Section 1

Year Built: 2002

Living Area: 165

Replacement Cost: $22,378

Building Percent Good: 86

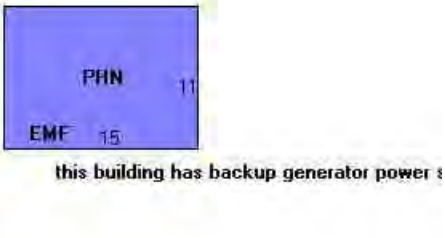
Replacement Cost Less Depreciation: $19,200

Building Attributes : Bldg 5 of 6	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	1
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Commercial
# of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	
Plumbing	
Ceiling	
Group	
Wall Height	
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//default.j

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	165	165
		165	165

Building 6 : Section 1

Year Built: 1980

Living Area: 192

Replacement Cost: $25,996

Building Percent Good: 68

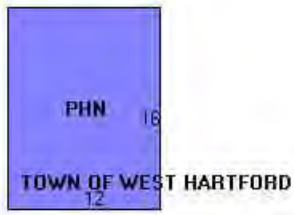
Replacement Cost Less Depreciation: $17,700

Building Attributes : Bldg 6 of 6	
Field	**Description**
STYLE	Telephone Exchange
MODEL	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Concrete Block
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Exempt Commercial
# of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	
Plumbing	
Ceiling	
Group	
Wall Height	
Adjustment	

Building Photo

(http://images.vgsi.com/photos/WestHartfordCTPhotos//default.j

Building Layout



(http://images.vgsi.com/photos/WestHartfordCTPhotos//Sketches

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
PHN	TELEPHONE EXCHANGE	192	192
		192	192

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	902
Description	Exempt Commercial
Zone	R-20
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	11.7
Frontage	
Depth	
Assessed Value	$240,100
Appraised Value	$343,000

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CP16	Chn Link Fence 6' hght			100 LF	$700	1

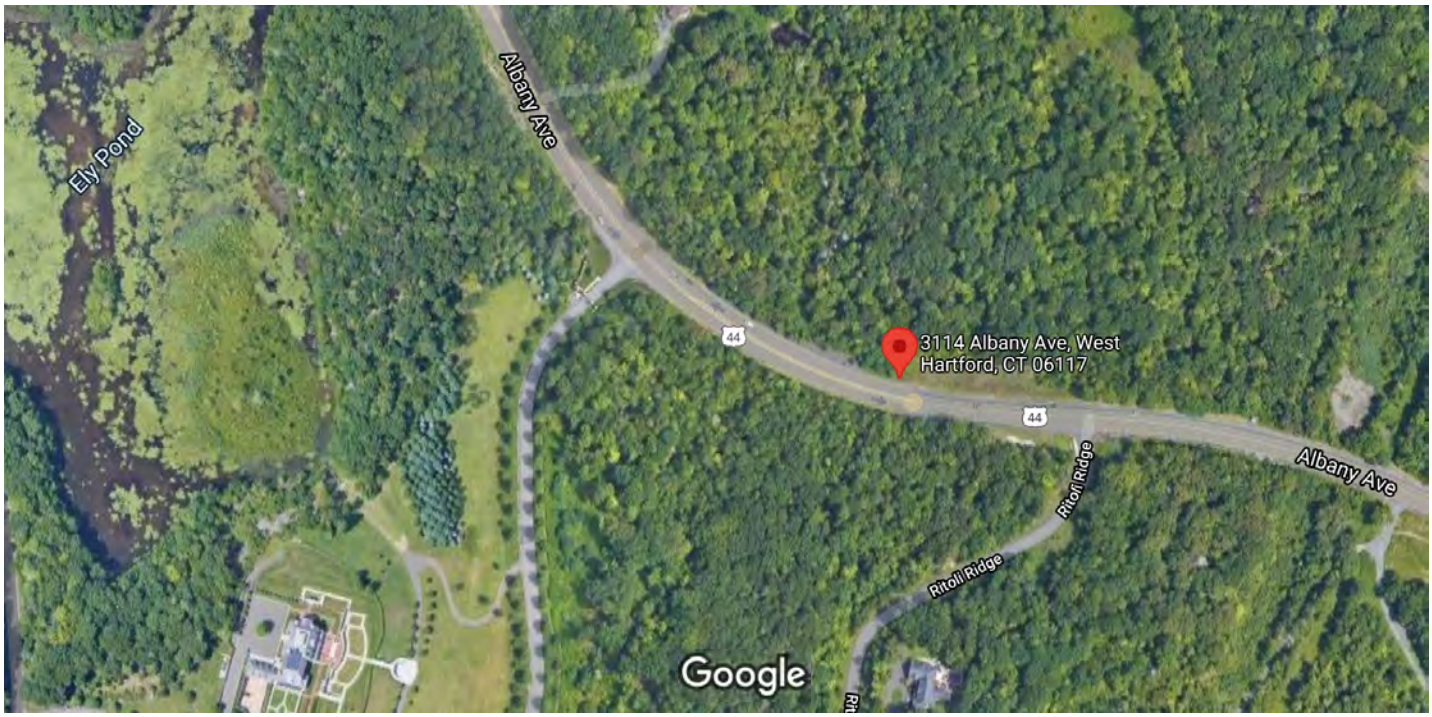
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$217,700	$343,000	$560,700
2017	$217,700	$343,000	$560,700
2016	$217,700	$343,000	$560,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$152,390	$240,100	$392,490
2017	$152,390	$240,100	$392,490
2016	$152,390	$240,100	$392,490

EXHIBIT 4

Google Maps 3114 Albany Ave



Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

3114 Albany Ave

Directions Save Nearby Send to your phone Share

3114 Albany Ave, West Hartford, CT 06117

Q6V4+89 West Hartford, Connecticut

Photos

At this place

WRDM

No reviews

Television station

EXHIBIT 5

West Hartford

F16
SUP - 3114 Albany Ave

DEPARTMENT OF
COMMUNITY SERVICES

VOL. 2576 PAGE 145

01/01-CT-0007

Filing Information Required by P.A. 75-317

AUG 9

TOWN OF WEST HARTFORD - PLANNING OFFICE

SPECIAL USE PERMIT: #903

NAME OF RECORD OWNER: Marlin Broadcasting, Inc.

STREET ADDRESS OF PROPERTY: 3114 Albany Avenue

DEED REFERENCE - VOLUME: 2309 **PAGE:** 253 **ZONE:** R-10

ORDINANCE: 177 **SECTION:** 42 (A-E)

DESCRIPTION OF ACTION:

3114 Albany Avenue – Application (SUP #903) of Marlin Broadcasting, Inc. (Paul J. Aparo, Attorney) requesting Special Use Permit approval to authorize a new 360' FM broadcasting tower, construct a new 70' fiber glass AM broadcasting tower and a new 20' x 40' equipment building and demolish the existing equipment building. (Submitted for TPZ receipt on June 5, 2000. Suggest required public hearing be scheduled for Wednesday, July 5, 2000.)
R-10 ZONE

DATE APPROVED: 7/5/00 **EFFECTIVE DATE:** 7/28/00

LEGAL NOTICE OF ACTION PUBLISHED - DATE: 7/13/00

CONDITIONS - IF ANY:

The proposed Special Use Permit will comply with the finding requirements of Section 177-42A(5a & 5b) of the West Hartford Code of Ordinances with the following conditions:

1. **At the request of the applicant the new tower is reduced to 347 feet, and the 70 foot FM antenna is withdrawn.**
2. **The applicant shall protect the existing tree screen along Route 44 all the way to the ridge line between the Tower and Route 44. This area shall not be materially altered without first receiving a TPZ approval.**

DESCRIPTION OF PROPERTY: (MAY BE ATTACHED)

SEE DEED REFERENCE

TOWN PLAN AND ZONING COMMISSION

Donald R. Foster

SECRETARY, DONALD R. FOSTER

14 July 2000

DATE

Norma W. Cronin

REC'D JUL 26 2000 @ 1:08 P.M.

Norma W. Cronin, Town Clerk

TOWN OF WEST HARTFORD

TOWN OF WEST HARTFORD 50 SOUTH MAIN STREET
WEST HARTFORD, CONNECTICUT 06107-2431
(860) 523-3123 FAX: (860) 523-3200

West Hartford Code.

0101-CT-009

Town of West Hartford, CT.
Permit Structure for PCS Equipment
[Added 1-13-1998]

Zone	New Supporting Structure	New Antenna on Existing Building		Disguised Supporting Structure/Antenna		Collocation on Existing Tower
Historic district/ property	Not permitted	Not permitted		Permitted		Not permitted
		More than 15 feet	Less than 15 feet	With supporting structure	Without supporting structure	
R-80	SUP	SUP		SUP	Site plan	Site plan
R-40	SUP	SUP		SUP	Site plan	Site plan
R-20	SUP	SUP		SUP	Site plan	Site plan
R-13	SUP	SUP		SUP	Site plan	Site plan
R-10	SUP	SUP		SUP	Site plan	Site plan
R-6	SUP	SUP		SUP	Site plan	Site plan
RM-4	SUP	SUP		SUP	Site plan	Site plan
RM-3	SUP	SUP		SUP	Site plan	Site plan
RM-3R	SUP	SUP		SUP	Site plan	Site plan
RM-2	SUP	SUP		SUP	Site plan	Site plan
RM-1	SUP	SUP		SUP	Site plan	Site plan
RO	SUP	SUP		SUP	Site plan	Site plan
RM-MS	SUP	SUP		SUP	Site plan	Site plan
RM/O	SUP	SUP		SUP	Site plan	Site plan
RP	SUP	SUP		SUP	Site plan	Site plan
BOL	SUP	SUP	Site plan	Site plan		Site plan
BO	SUP	SUP	Site plan	Site plan		Site plan
BI	SUP	SUP	Site plan	Site plan		Site plan
BN	SUP	SUP	Site plan	Site plan		Site plan
BND	SUP	SUP	Site plan	Site plan		Site plan
BS	SUP	SUP	Site plan	Site plan		Site plan
BC/CBDH	SUP	SUP	Site plan	Site plan		Site plan
BG	Site plan	Site plan	Site plan	Site plan		Site plan
IP	Site plan	Site plan	Site plan	Site plan		Site plan
IE	Site plan	Site plan	Site plan	Site plan		Site plan
IR	Site plan	Site plan	Site plan	Site plan		Site plan
IG	Site plan	Site plan	Site plan	Site plan		Site plan

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).

CT765/MARLIN GUYED TOWER

3114 ALBANY AVENUE
WEST HARTFORD, CT 06117
HARTFORD COUNTY

SITE NO.: CT11765A

SITE TYPE: 310'± GUYED TOWER

RF DESIGN GUIDELINE: 67D5A997DB OUTDOOR

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

SITE NOTES

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

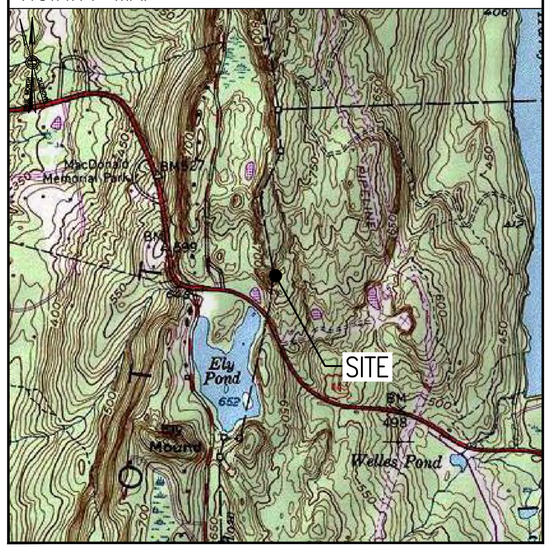
GENERAL NOTES

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

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DO NOT SCALE DRAWINGS

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

SHEET INDEX

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GN-1	GENERAL NOTES	2
A-1	COMPOUND & EQUIPMENT PLAN	2
A-2	TOWER ELEVATIONS & ANTENNA PLAN	2
A-3	SITE DETAILS	2
A-4	ANTENNA & FEEDLINE CHARTS	2
E-1	ELECTRIC & GROUNDING DETAILS	2

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

PROJECT SUMMARY

SITE NUMBER:	CT11765A
SBA SITE NUMBER:	CT15879-A
SBA SITE NAME:	WEST HARTFORD
SITE ADDRESS:	3114 ALBANY AVENUE WEST HARTFORD, CT 06117
PROPERTY OWNER:	EDUCATIONAL MEDIA FOUNDATION 5700 WEST OAK BLVD ROCKLIN, CA 95765
TOWER OWNER:	SBA GC TOWERS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	HARTFORD
ZONING DISTRICT:	R-20 (RESIDENTIAL)
STRUCTURE TYPE:	GUYED TOWER
STRUCTURE HEIGHT:	310'±
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.41.796802° (41° 47' 48.4866") LONGITUDE W.72.796830° (72° 47' 48.5874")

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
3/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/04/21	CONSTRUCTION REVISED	CMC
1	02/09/21	ISSUED FOR CONSTRUCTION	CMC
0	11/10/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11765A

SITE ADDRESS:
3114 ALBANY AVENUE
WEST HARTFORD, CT 06117

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.095

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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No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/5/2021

CHECKED BY: JMT

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SITE NUMBER:
CT11765A

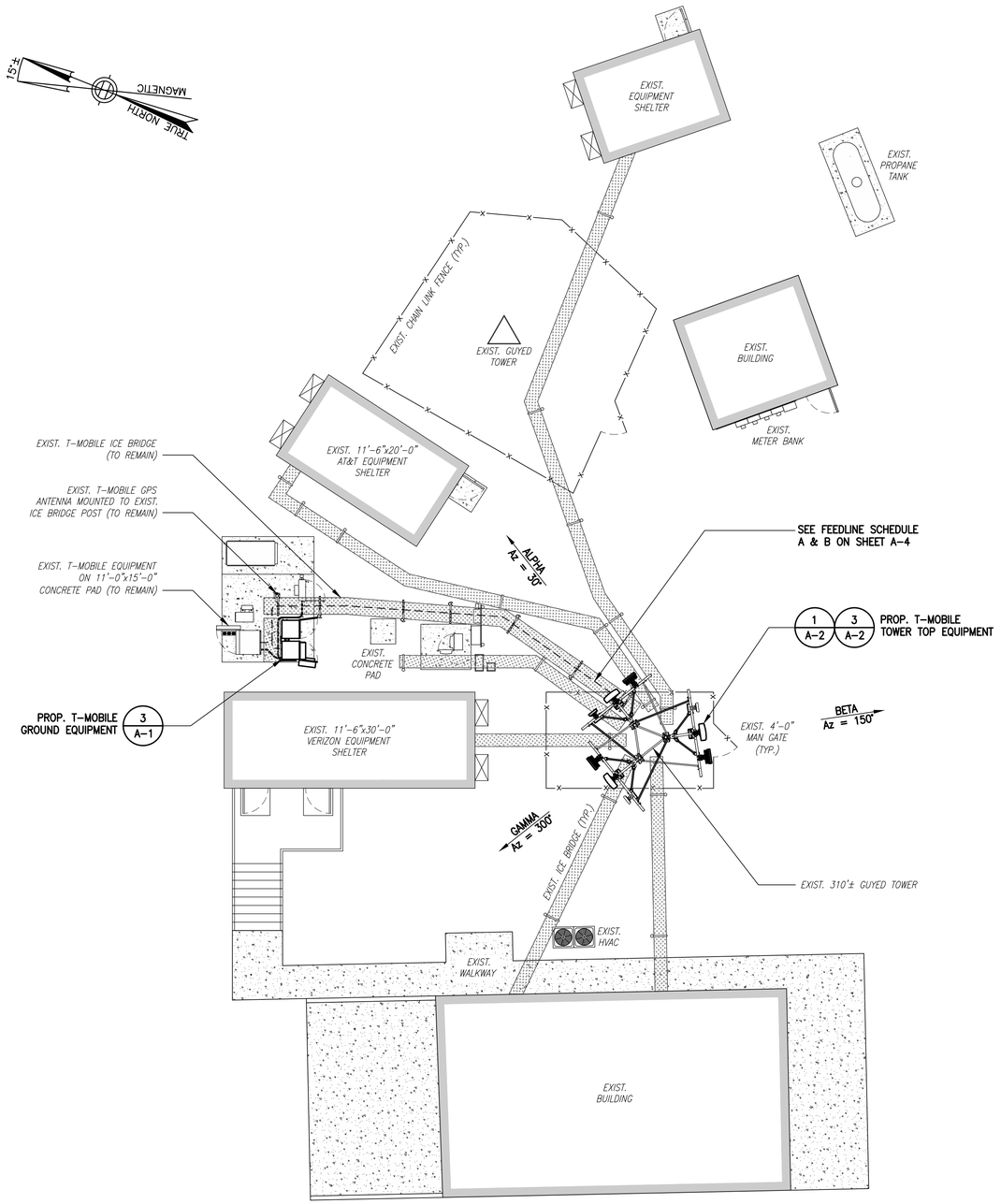
SITE ADDRESS:
3114 ALBANY AVENUE
WEST HARTFORD, CT 06117

SHEET TITLE
GENERAL NOTES

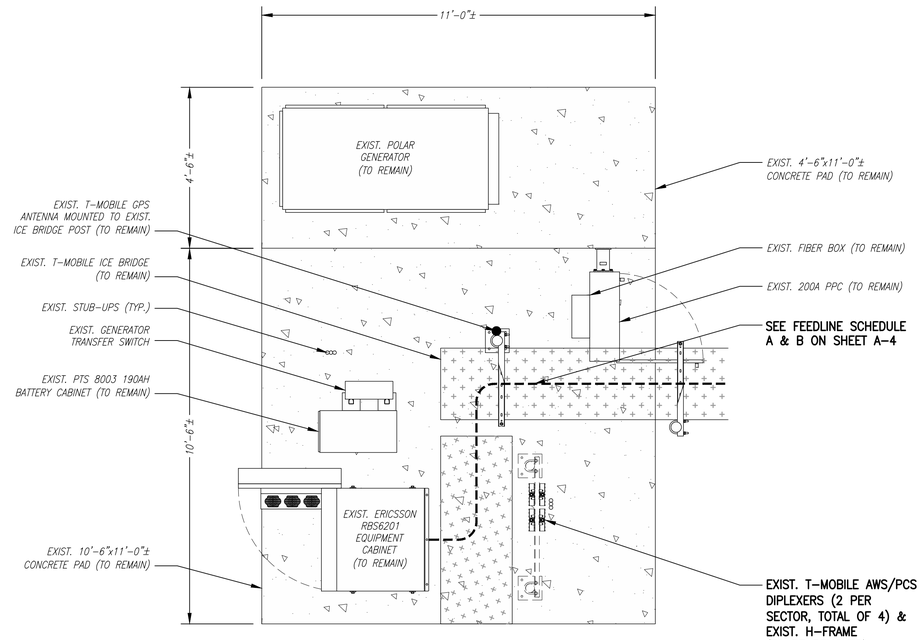
SHEET NUMBER
GN-1

1815.095

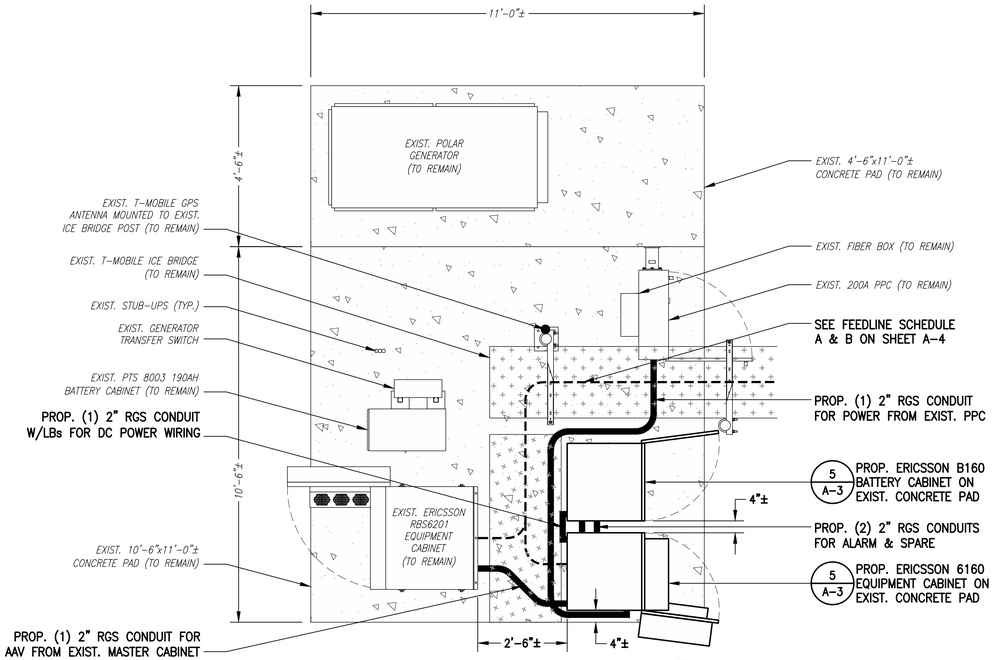
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



COMPOUND PLAN 1 A-1
SCALE: 1/8" = 1'-0"
0 8' 16' 24'



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



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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
9/5/2021

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WEST HARTFORD, CT 06117

SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

1815.095

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
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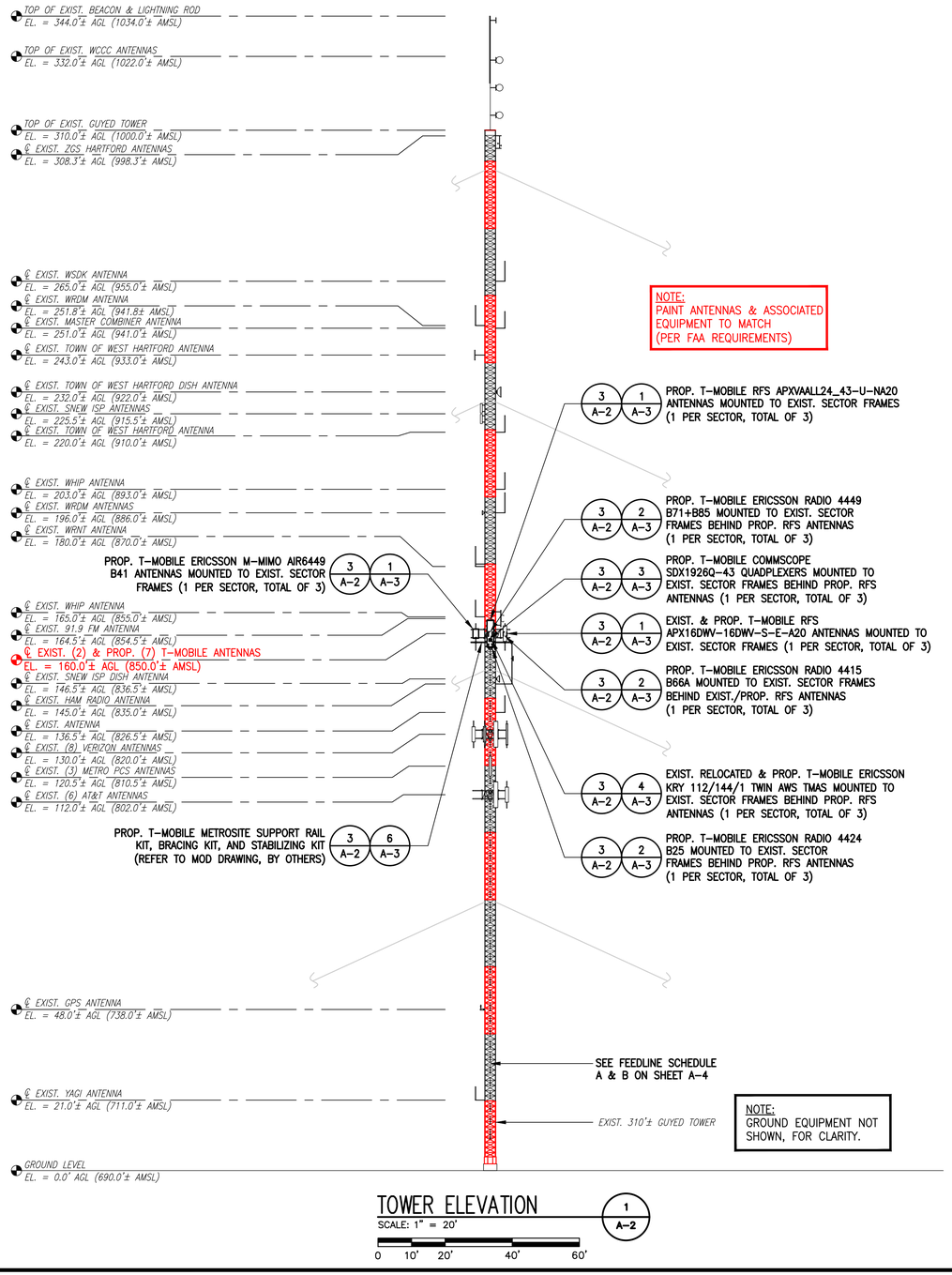
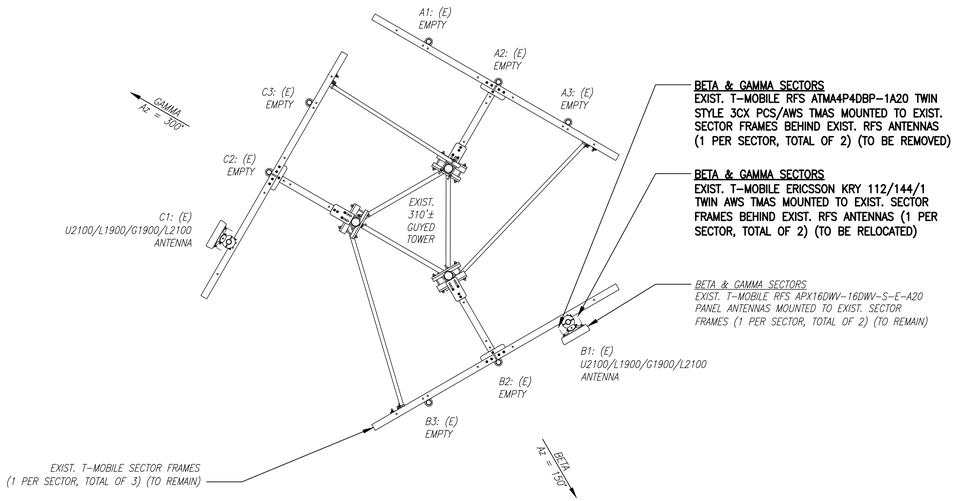
SPECIAL CONSTRUCTION WORK NOTE (PAINT-TO-MATCH REQUIRED):
PAINT-TO-MATCH ########################## (PANTONE REFERENCE COLOR #######, OR EQUIVALENT) ALL PROPOSED AND EXPOSED EQUIPMENT <AS REQUIRED, "INCLUDING EXISTING UN-PAINTED LEGACY EQUIPMENT"> CONSISTING OF ANTENNA RADOMES, ANTENNA BACKPLANES, RRU SOLAR SHIELD, COMBINERS, TMA, DIPLEXERS, BIAS-T AND ASSOCIATED MOUNTING HARDWARE (PIPES, BRACKETS, HANGERS), VERTICAL CABLE TRAYS, AND EXPOSED HYBRID CABLES, COAX JUMPERS, FIBER JUMPERS, AND DC CABLES. ANTENNA RADOME PAINT SHALL CONTAIN <5% METALLIC PIGMENTS/EMULSIONS AND EQUIVALENT TO SHERMAN-WILLIAMS COROTHANE II (AND/OR OTHERWISE APPROVED BY ANTENNA MANUFACTURER/RF ENGINEER).

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.

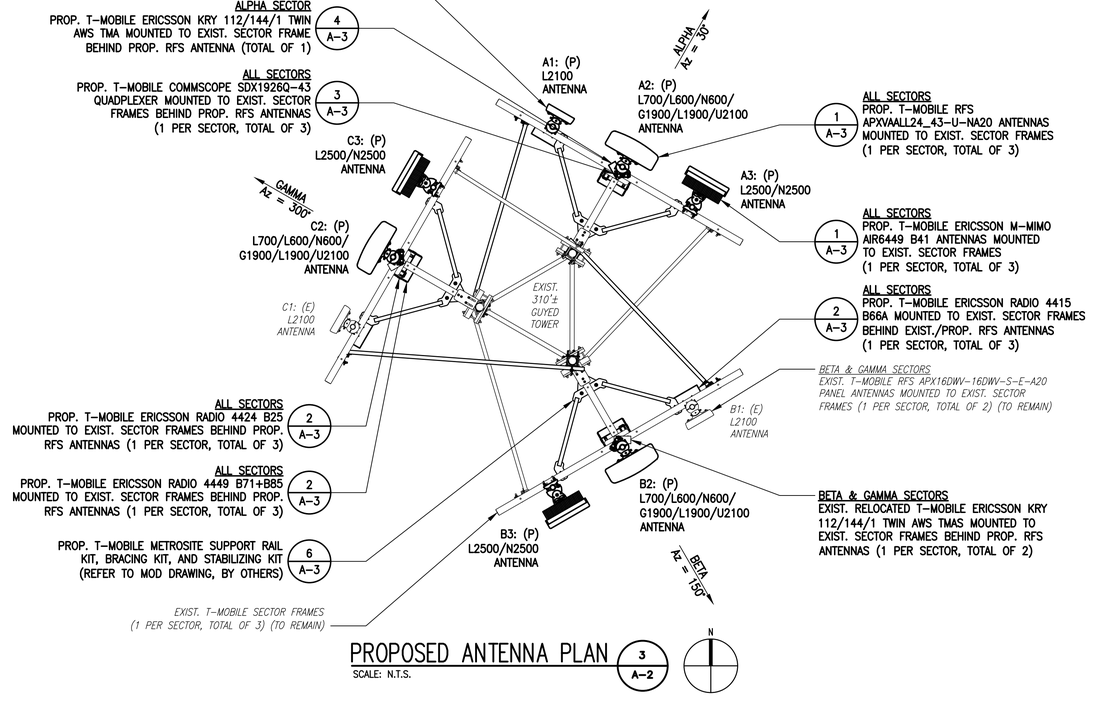
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.



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



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



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

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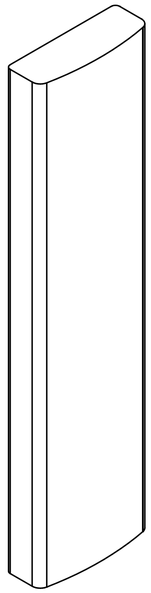
SITE ADDRESS:
3114 ALBANY AVENUE
WEST HARTFORD, CT 06117

SHEET TITLE
TOWER ELEVATION & ANTENNA PLANS

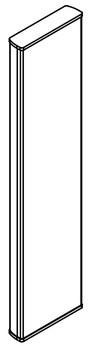
SHEET NUMBER
A-2

1815.095



RFS APXVAALL24_43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.5"D
WEIGHT: 122.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3



RFS APX16DWV-16DWV-S-E-A20 ANTENNA

DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
WEIGHT: 40.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON M-MIMO AIR6449 B42 ANTENNA

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

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

COMMSCOPE SDX1926Q-43 QUADPLEXER

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

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

ERICSSON KRY 112 144/1 TWIN AWS TMA

DIMENSIONS: 3.1"H x 8.6"W x 6.6"D
WEIGHT: 9.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

ERICSSON RADIO 4415 B66A

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

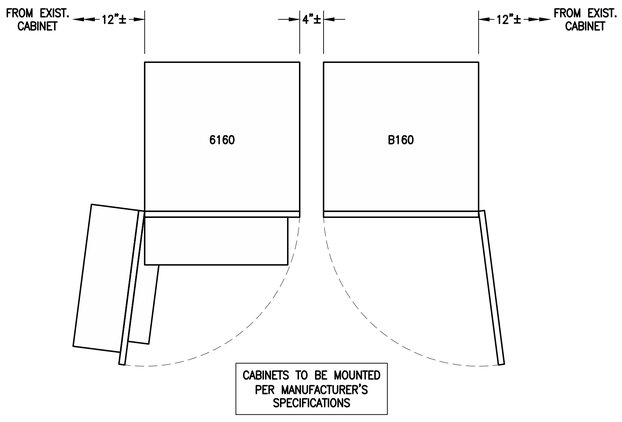
ERICSSON RADIO 4424 B25

DIMENSIONS: 16.5"H x 13.5"W x 9.6"D
WEIGHT: 88.0 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
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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



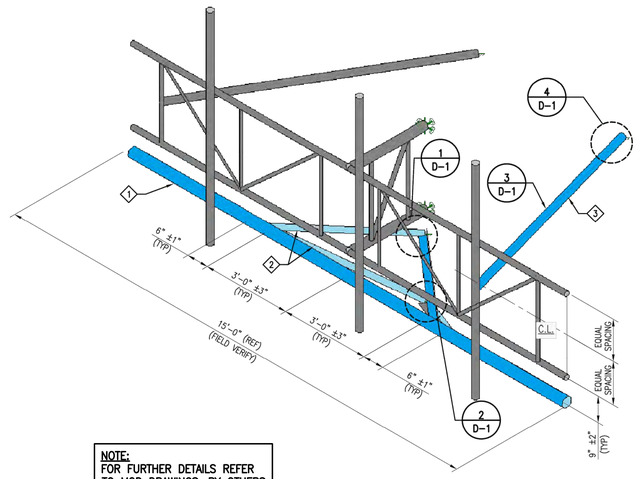
ERICSSON 6160 SITE SUPPORT CABINET

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

ERICSSON B160 BATTERY CABINET

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

EQUIPMENT DETAILS (5 / A-3)
SCALE: N.T.S.



NOTE:
FOR FURTHER DETAILS REFER TO MOD DRAWINGS, BY OTHERS

ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 160' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)

MOUNT MODIFICATION DETAIL (6 / A-3)
SCALE: N.T.S.

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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.095

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	RFS APX16DWV-16DWV-S-E-A20	160'± AGL	30°	0°	2°	L2100	ERICSSON RADIO 4415 B66A	EXIST. (6) 1-5/8" COAX CABLES PROP. (6) 1-5/8" (6x24) HCS FIBER CABLES
	RFS APXVAALL24_43-U-NA20	160'± AGL	30°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2°	G1900/L1900/U2100	ERICSSON RADIO 4424 B25	
							COMMSCOPE SDX1926Q-43 QUADPLEXER	
							ERICSSON KRY 112/144/1 TWIN AWS TMA	
	ERICSSON M-MIMO AIR6449 B41	160'± AGL	30°	0°	2°	L2500/N2500	-	
BETA	*RFS APX16DWV-16DWV-S-E-A20*	*160'± AGL*	*150°*	*0°*	*2°*	*L2100*	ERICSSON RADIO 4415 B66A	
	RFS APXVAALL24_43-U-NA20	160'± AGL	150°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2°	G1900/L1900/U2100	ERICSSON RADIO 4424 B25	
							COMMSCOPE SDX1926Q-43 QUADPLEXER	
							ERICSSON KRY 112/144/1 TWIN AWS TMA	
	ERICSSON M-MIMO AIR6449 B41	160'± AGL	150°	0°	2°	L2500/N2500	-	
GAMMA	*RFS APX16DWV-16DWV-S-E-A20*	*160'± AGL*	*300°*	*0°*	*2°*	*L2100*	ERICSSON RADIO 4415 B66A	
	RFS APXVAALL24_43-U-NA20	160'± AGL	300°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
					2°	G1900/L1900/U2100	ERICSSON RADIO 4424 B25	
							COMMSCOPE SDX1926Q-43 QUADPLEXER	
							ERICSSON KRY 112/144/1 TWIN AWS TMA	
	ERICSSON M-MIMO AIR6449 B41	160'± AGL	300°	0°	2°	L2500/N2500	-	

CABLE NOTE: EXISTING (2) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV6 - 11/18/20

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) 1/2" COAX FOR GPS ANTENNA* *(6) 1-5/8" COAX CABLES*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(2) 1-5/8" COAX CABLES*	
B	PROPOSED:	(6) 1-5/8" (6x24) 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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LICENSED
PROFESSIONAL CIVIL ENGINEER
3/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/04/21	CONSTRUCTION REVISED	CMC
1	02/09/21	ISSUED FOR CONSTRUCTION	CMC
0	11/10/20	ISSUED FOR REVIEW	CMC

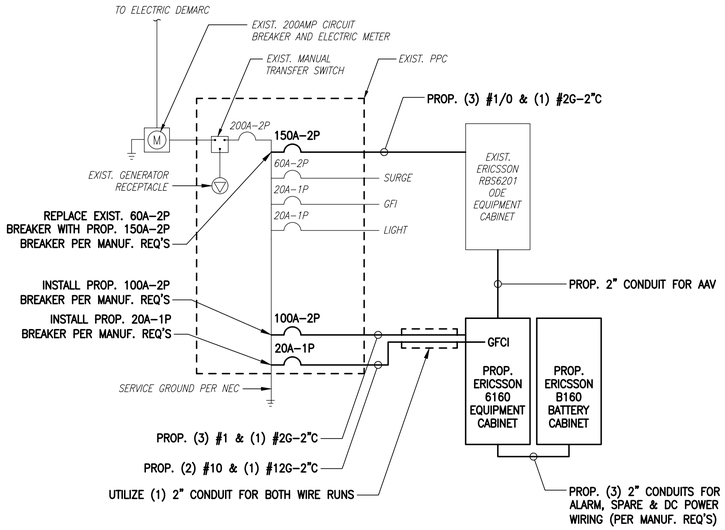
SITE NUMBER:
CT11765A

SITE ADDRESS:
3114 ALBANY AVENUE
WEST HARTFORD, CT 06117

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

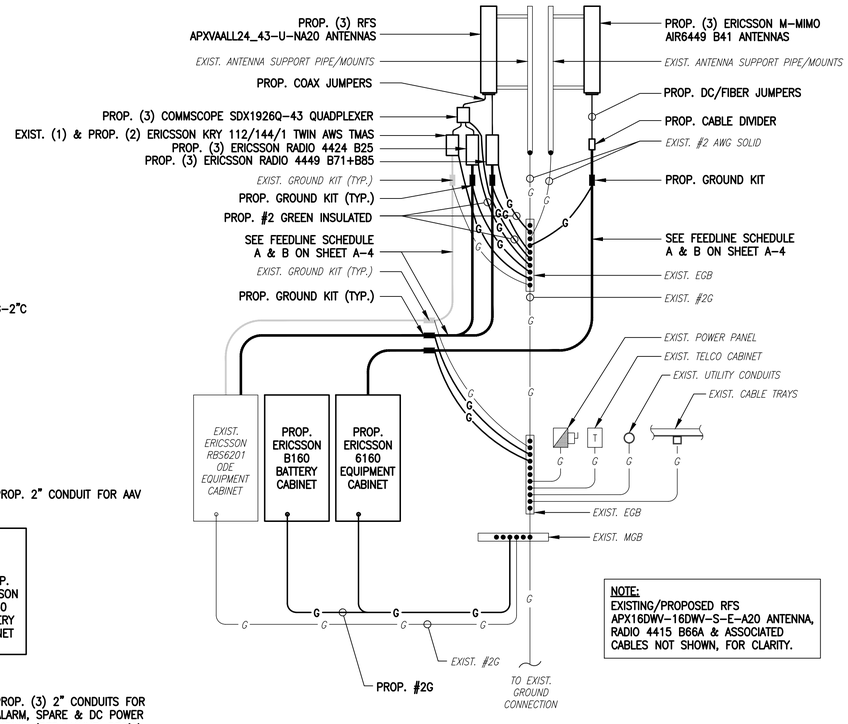
SHEET NUMBER
A-4

1815.095



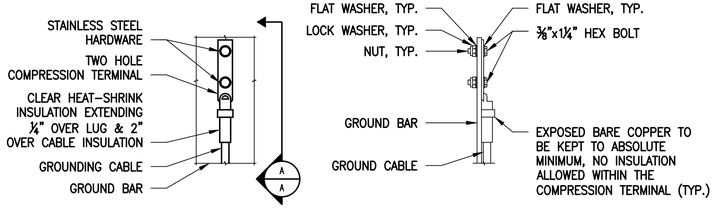
ONE LINE DIAGRAM (1 / E-1)

SCALE: NOT TO SCALE



GROUNDING RISER DIAGRAM (2 / E-1)

SCALE: NOT TO SCALE



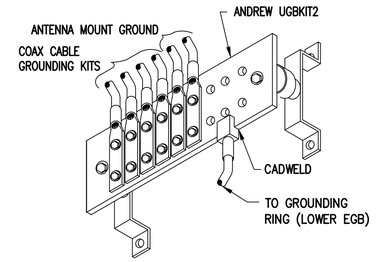
ELEVATION

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.

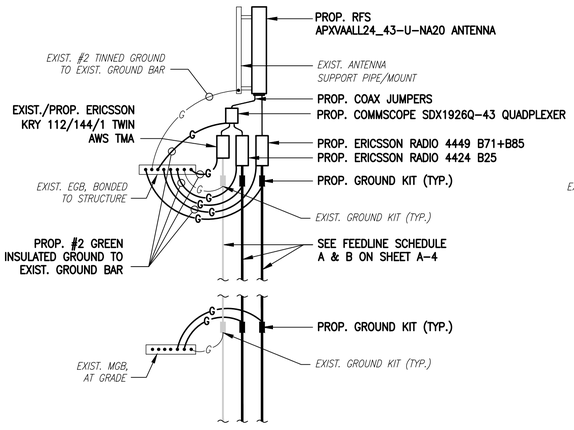
TYPICAL GROUND BAR CONNECTIONS DETAIL (3 / E-1)

SCALE: NOT TO SCALE

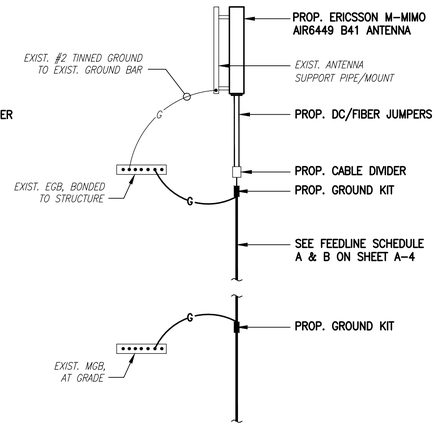


GROUND BAR (EGB) (5 / E-1)

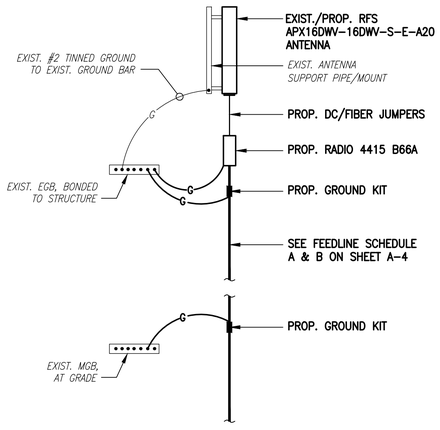
SCALE: NOT TO SCALE



L700/L600/N600/G1900/L1900/U2100 ANTENNA



L2500/N2500 ANTENNA



L2100 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (4 / E-1)

SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

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

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
3/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/04/21	CONSTRUCTION REVISED	CMC
1	02/09/21	ISSUED FOR CONSTRUCTION	CMC
0	11/10/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11765A

SITE ADDRESS:
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WEST HARTFORD, CT 06117

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.095

EXHIBIT 7

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING GUYED TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT15879-A

CARRIER SITE #/NAME: CT11765A / MARTIN GUYED TOWER

COORDINATES (LATITUDE: 41.796802°, LONGITUDE: -72.796830°)

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

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
MS-STZ-350P	METROSITE STABILIZER ADAPTER KIT	
MS-STZ-2PST	METROSITE STABILIZER KIT	
MS-C2B-350P	METROSITE V-BRACING KIT	
MS-HR35-18	METROSITE SUPPORT RAIL KIT	

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE TES PROJECT NO. 99244, DATED 11/09/2020.

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

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

TES JOB NO:
99804

CUSTOMER SITE NO:
CT15879-A-SBA

CUSTOMER SITE NAME:
WEST HARTFORD
3114 ALBANY AVENUE
WEST HARTFORD, CT 6117

Exp.01/31/2021

STATE OF CONNECTICUT
MATTHEW A. BASI
No. 23865
LICENSED PROFESSIONAL ENGINEER

11/23/2020

DRAWN BY: SP | CHECKED BY: SD/BT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
TITLE SHEET

SHEET NUMBER: T-1

REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
1	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT	A-1, MS-HR35-18	523.0	523.0	Galvanized
2	2	MS-C2B-350P	METROSITE V-BRACING KIT	A-1, MS-C2B-350P	338.0	676.0	Galvanized
3	3	MS-STZ-2PST	METROSITE STABILIZER KIT	A-1, MS-STZ-2PST	79.3	237.9	Galvanized
3	3	MS-STZ-350P	METROSITE STABILIZER ADAPTER KIT	A-1, MS-STZ-350P	4.4	13.2	Galvanized
			FOLLOWING ITEMS ARE "CUSTOM" PARTS				
			ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC. **180 IND PARK BLVD COMMERCE, GA 30529** **OFFICE: (706) 335-7045** **FAX: (706) 335-7056**				
			NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.				
				TOTAL WEIGHT (LBS) =		**1450.1**	

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(800)-487-SITE

TES JOB NO:
99804

CUSTOMER SITE NO:
CT15879-A-SBA
CUSTOMER SITE NAME:
WEST HARTFORD
3114 ALBANY AVENUE
WEST HARTFORD, CT 6117

DRAWN BY: SP | CHECKED BY: SD/BT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

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

FABRICATION

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

WELDING

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

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

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

VERIFICATION AND INSPECTION

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

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

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

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

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

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

[d] BEVELED WASHER NOT USED.

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

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

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

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

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

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
GENERAL NOTES

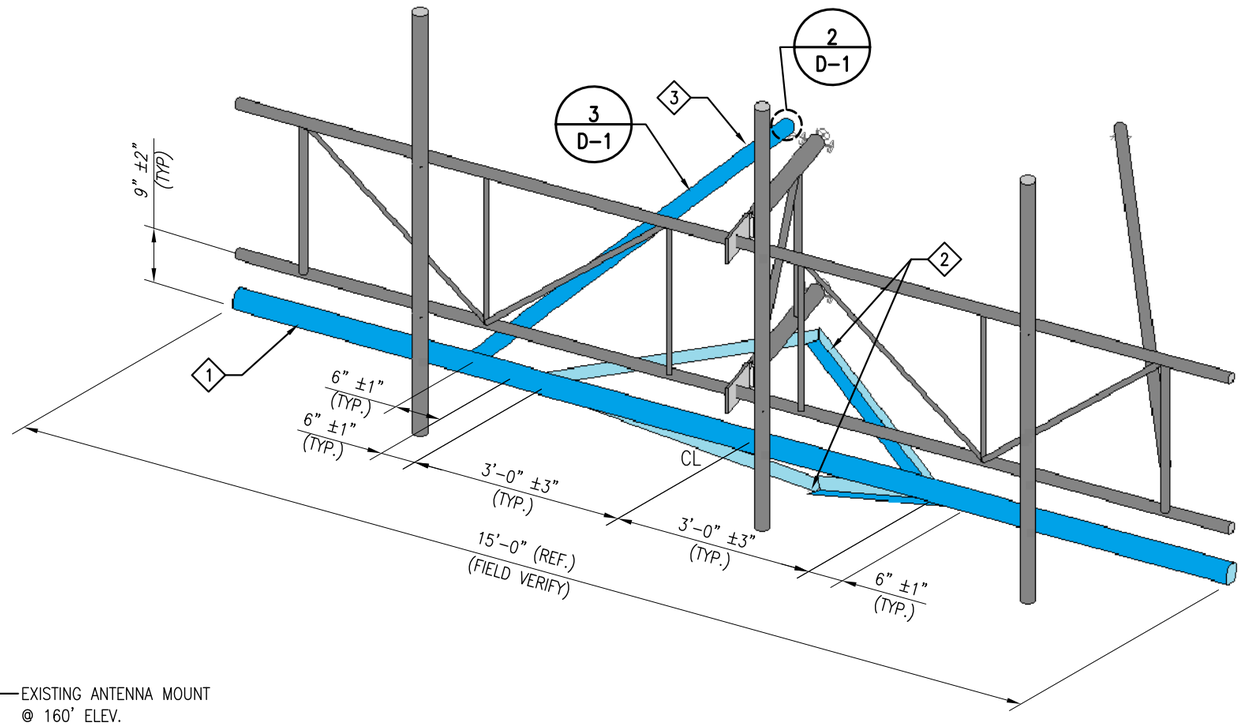
SHEET NUMBER: GN-1
REV #: 0

SCOPE OF WORK

1. INSTALL NEW SUPPORT RAIL KIT. SEE SHEET MS-HR35-18 FOR DETAILS.
2. INSTALL NEW V-BRACING KITS ON NEW SUPPORT RAIL PIPE, (2) PER SECTOR. SEE SHEETS D-1 AND MS-C2B-350P FOR DETAILS.
3. INSTALL NEW STABILIZER AND STABILIZER ADAPTER KITS ON NEW SUPPORT RAIL PIPE, (1) PER SECTOR. SEE SHEETS D-1, MS-STZ-2PST AND MS-STZ-350P FOR DETAILS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

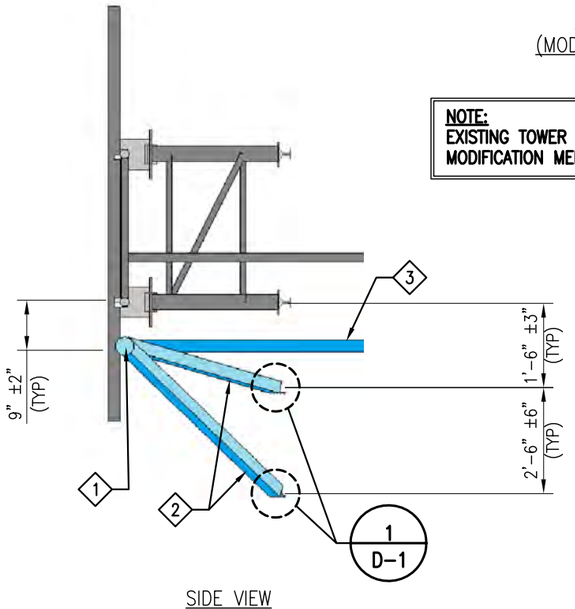
EXISTING ANTENNA MOUNT
@ 160' ELEV.

PHOTO 1



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 160' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)

NOTE:
EXISTING TOWER IS PAINTED. CONTRACTOR TO VERIFY WITH TOWER OWNER IF NEW MODIFICATION MEMBERS ARE TO BE PAINTED TO MATCH EXISTING TOWER COLOR.



SIDE VIEW

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

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT
2	2	MS-C2B-350P	METROSITE V-BRACING KIT
3	3	MS-STZ-2PST	METROSITE STABILIZER KIT
4	3	MS-STZ-350P	METROSITE STABILIZER ADAPTER KIT

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TES JOB NO:
99804

CUSTOMER SITE NO:
CT15879-A-SBA
CUSTOMER SITE NAME:
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3114 ALBANY AVENUE
WEST HARTFORD, CT 6117

DRAWN BY: SP | CHECKED BY: SD/BT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
ANTENNA MOUNT MODIFICATION DETAILS

SHEET NUMBER: A-1
REV #: 0

PHOTO 1

PHOTO 2

PHOTO 3

NOTE:
EXISTING RRUS/EQUIPMENT MAY BE RELOCATED ALONG THE MEMBER TO ACCOMMODATE THE INSTALLATION OF NEW MOUNT MODIFICATION

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

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

TES JOB NO:
99804

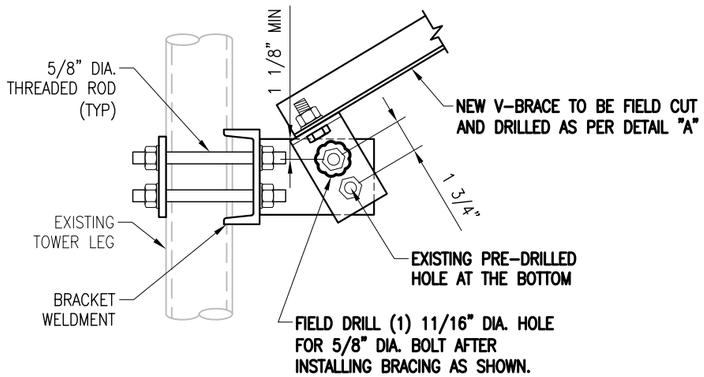
CUSTOMER SITE NO:
CT15879-A-SBA
CUSTOMER SITE NAME:
WEST HARTFORD
3114 ALBANY AVENUE
WEST HARTFORD, CT 6117

DRAWN BY: SP | CHECKED BY: SD/BT

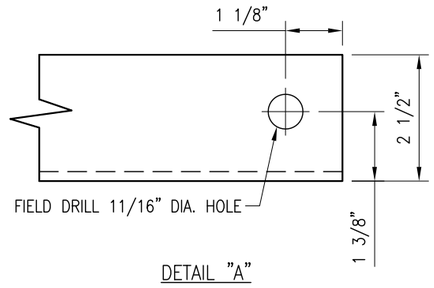
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
ANTENNA MOUNT PHOTOS

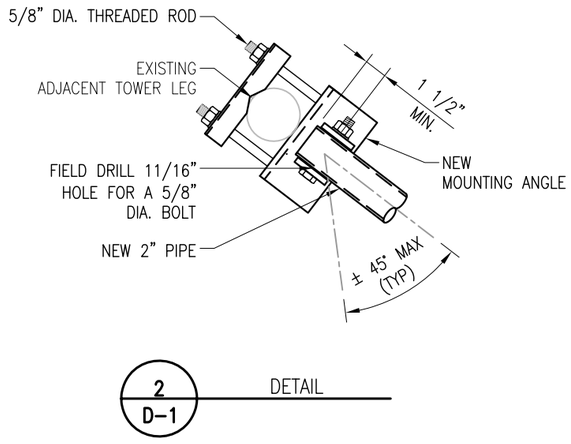
SHEET NUMBER: A-2
REV #: 0



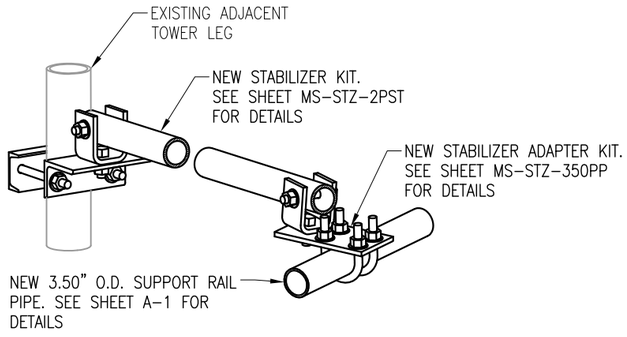
1 / D-1 DETAIL



DETAIL "A"



2 / D-1 DETAIL



3 / D-1 STABILIZER DETAIL

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

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

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

TES JOB NO:
99804

CUSTOMER SITE NO:
CT15879-A-SBA
CUSTOMER SITE NAME:
WEST HARTFORD
3114 ALBANY AVENUE
WEST HARTFORD, CT 6117

DRAWN BY: SP | CHECKED BY: SD/BT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	SP	11/23/20

SHEET TITLE:
STANDARD DETAILS

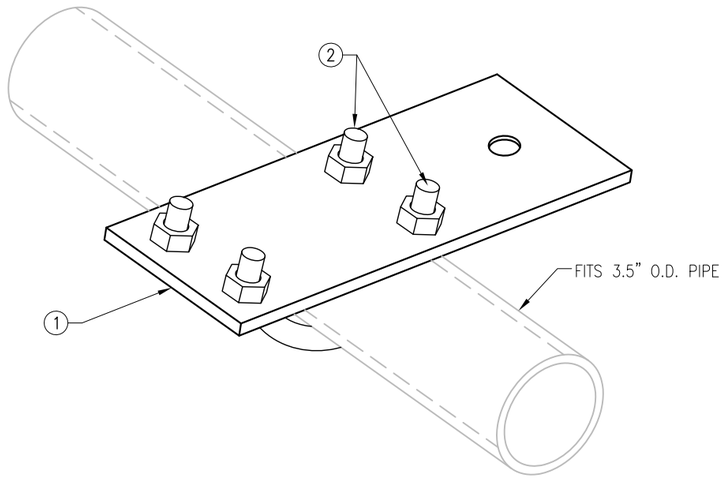
SHEET NUMBER: D-1
REV #: 0

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

NOTES:
1) FIELD ASSEMBLY ALL PARTS.
2) FITS 3.5" O.D. HORIZONTAL PIPE.

MS-STZ-350P

ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	1	PL375-42595	PL 3/8" X 4 1/4" X 9 1/2"	A36	BK-1	4.4
2	2	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	---	RBC-1	--
					GALVANIZED WT	4.4



THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

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

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

TITLE
MS-STZ-350P
STABILIZER ADAPTER KIT

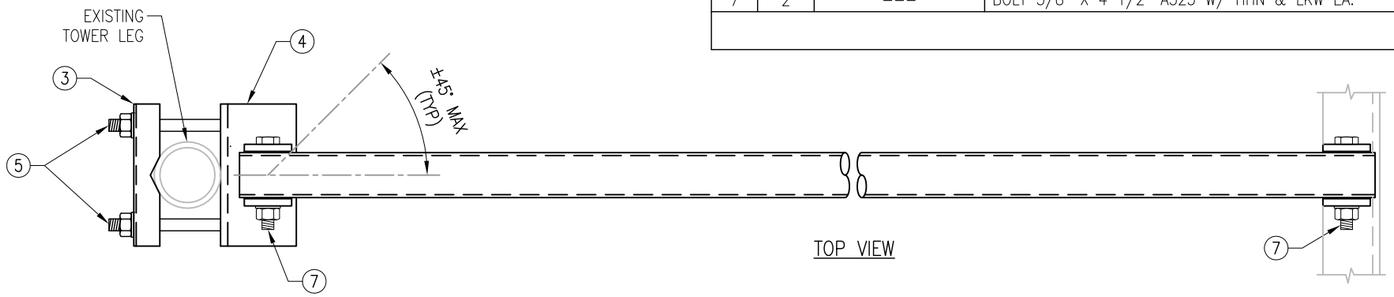
SIZE	DWG NO	REV
B	MS-STZ-350P	0

SCALE - SHEET 1 OF 1

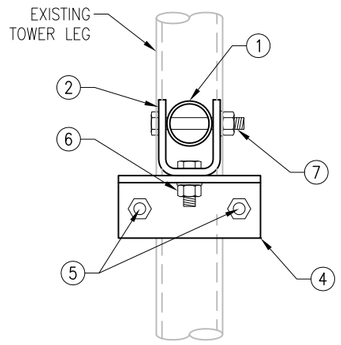
NOTES:
1) FITS 1 1/4" DIA. TO 4 1/2" DIA. LEG.
2) FIELD ASSEMBLY ALL PARTS.
3) THREADED ROD MAY BE CUT TO LENGTH AS REQUIRED.

MS-STZ-2PST

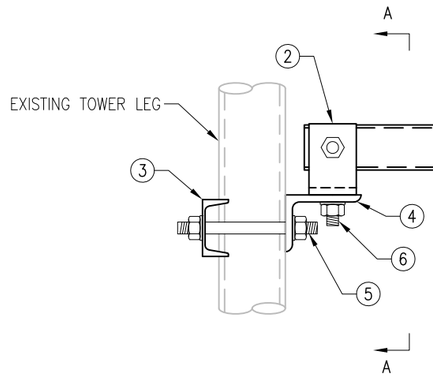
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	1	PP2375-15	2" PST PIPE (2.375" O.D. X 0.154" THICKNESS) X 15'-0"	1 A53 GR. B OR A500 GR. B/C	STZ-1	56.8
2	2	UP-2375P	PL 3/8" X 2 1/2" X 9 3/4" BENT PLATE	A36	STZ-1	19.0
3	1	C-3750	C3X6 X 0'-7 1/2"	A36	STZ-1	1.2
4	1	AL-4375	L 4" X 3" X 3/8" X 7 1/2"	A36	STZ-1	2.3
5	2	---	THREADED ROD 5/8" X 8" W/ (2) HHN & LKW EA.	A36	--	--
6	2	---	BOLT 5/8" X 2" A325 W/ HHN & LKW EA.	---	--	--
7	2	---	BOLT 5/8" X 4 1/2" A325 W/ HHN & LKW EA.	---	---	--
					GALVANIZED WT	79.3



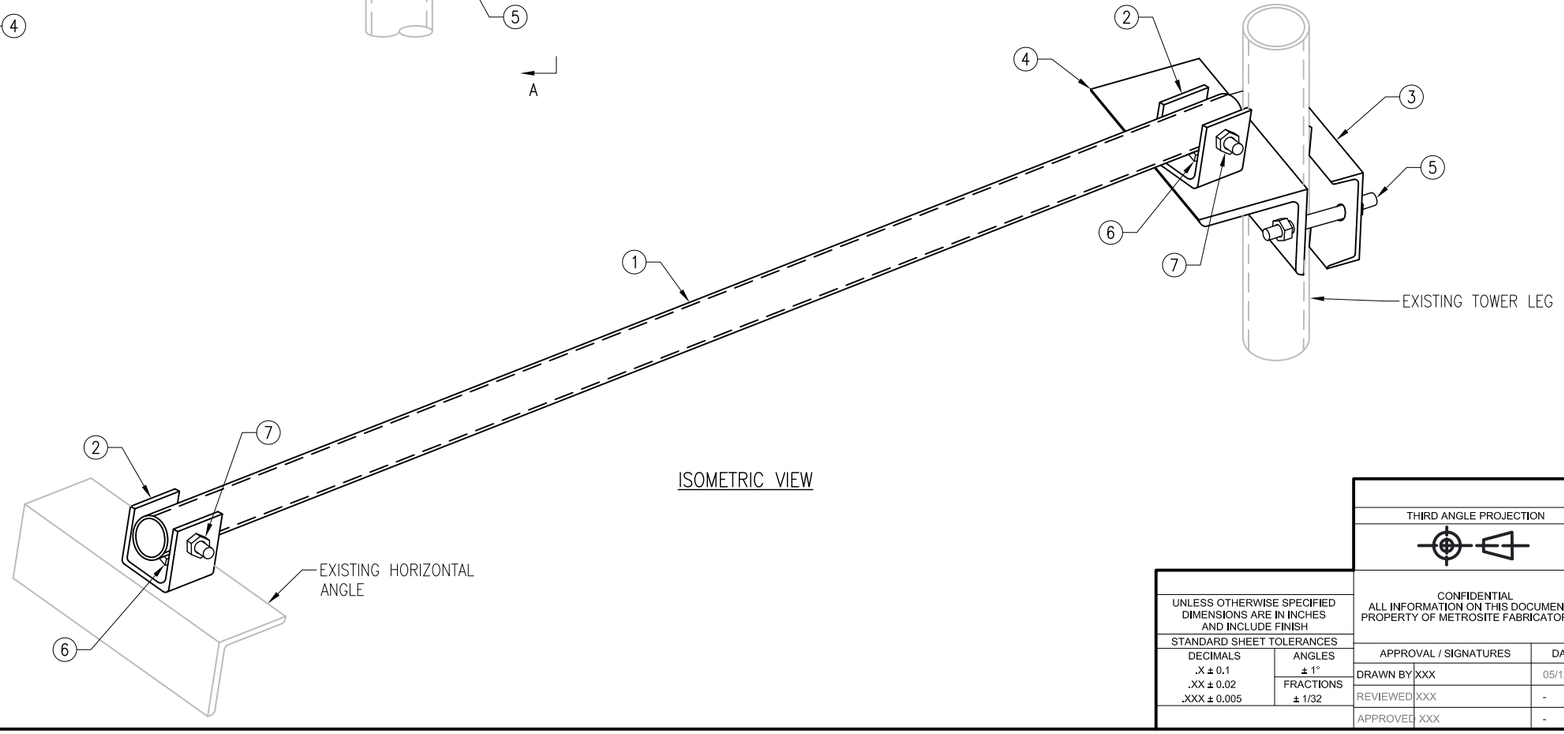
TOP VIEW



SECTION "A-A"



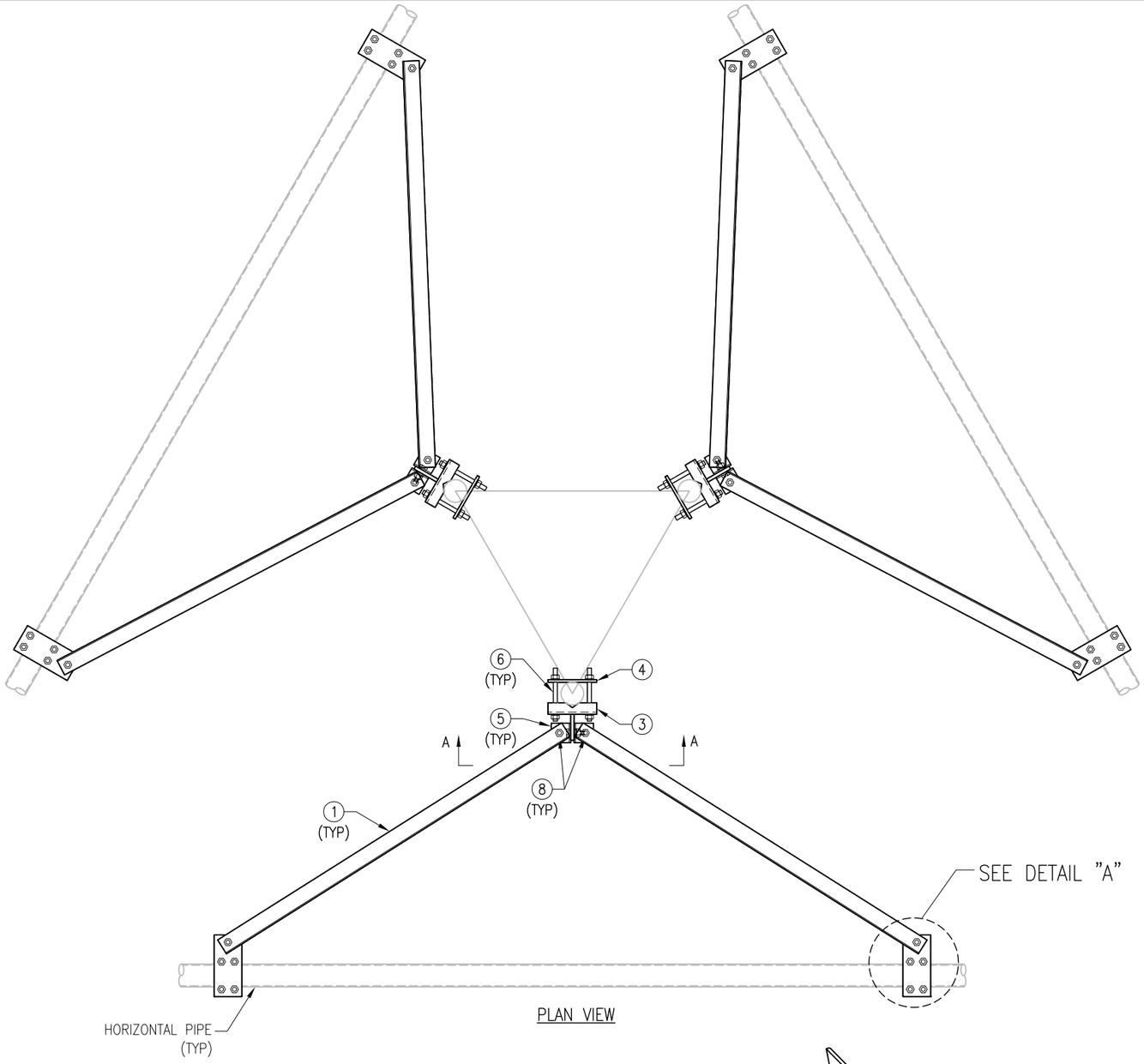
FRONT VIEW



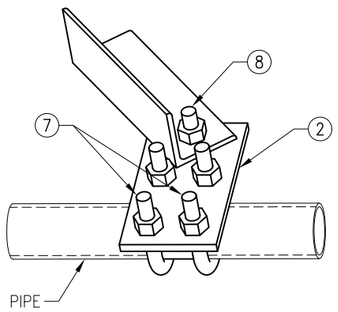
ISOMETRIC VIEW

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH		THIRD ANGLE PROJECTION	METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529
STANDARD SHEET TOLERANCES		CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC	TITLE: MS-STZ-2PST STABILIZER KIT
DECIMALS .X ± 0.1, .XX ± 0.02, .XXX ± 0.005	ANGLES ± 1°, FRACTIONS ± 1/32	APPROVAL / SIGNATURES	DATE
		DRAWN BY XXX	05/12/17
		REVIEWED XXX	-
		APPROVED XXX	-
		SIZE B	DWG NO MS-STZ-2PST, REV 1
		SCALE -	SHEET 1 OF 1

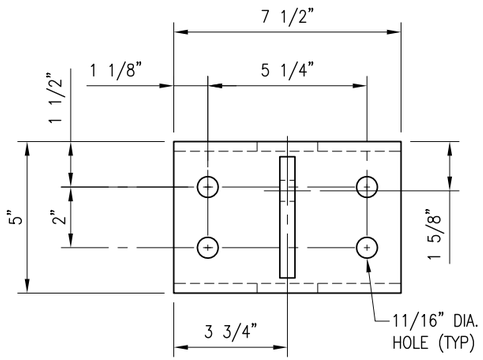
MS-C2B-350P						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	6	VB-25-10	L 2 1/2" X 2 1/2" X 1/4" X 10'-0"	A36	BK-1	258
2	6	PL375-42595	PL 3/8" X 4 1/4" X 9 1/2"	A36	BK-1	26.4
3	3	C2BW-275-450	BRACKET WELDMENT	A36	C2BW-275-450	28.5
4	3	PL5-42575	PL 1/2" X 4 1/4" X 7 1/2"	A572-50	BK-2	14.4
5	6	AL-533	L 5" X 3" X 1/4" X 3"	A36	BK-1	10.2
6	12	---	THREADED ROD 5/8" X 10" W/ (2) HHN & LKW EA.	A36	--	--
7	12	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	---	RBC-1	--
8	12	---	BOLT 5/8" X 1 3/4" A325 W/ HHN & LKW EA.	---	--	--
9	6	---	BOLT 5/8" X 2 1/4" A325 W/ HHN & LKW EA.	---	---	--
					GALVANIZED WT	338



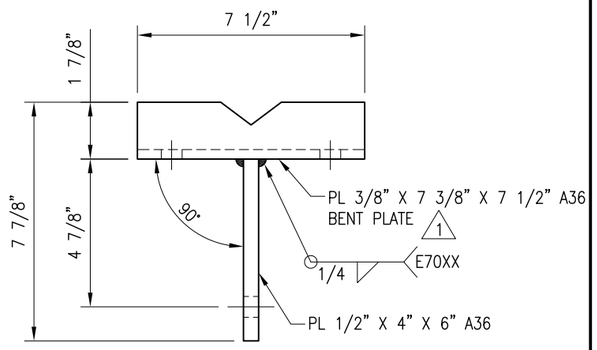
PLAN VIEW



DETAIL "A"

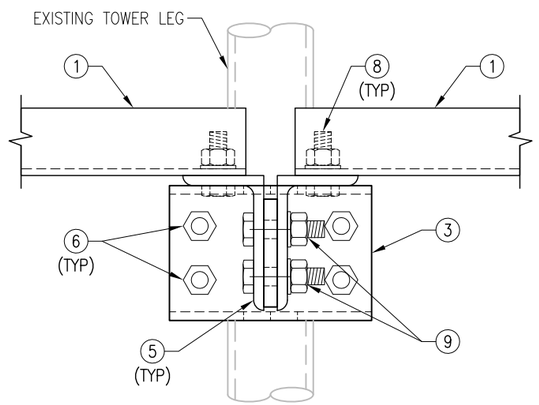


FRONT VIEW



TOP VIEW

C2BW-275-450 WELDMENT



SECTION "A-A"

NOTE:
1) FITS 2 7/8" DIA. TO 4 1/2" DIA. LEG.
2) THREADED ROD MAY BE CUT TO LENGTH AS REQUIRED.
3) FITS 2 7/8" DIA TO 3 1/2" O.D HORIZONTAL PIPE.

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

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

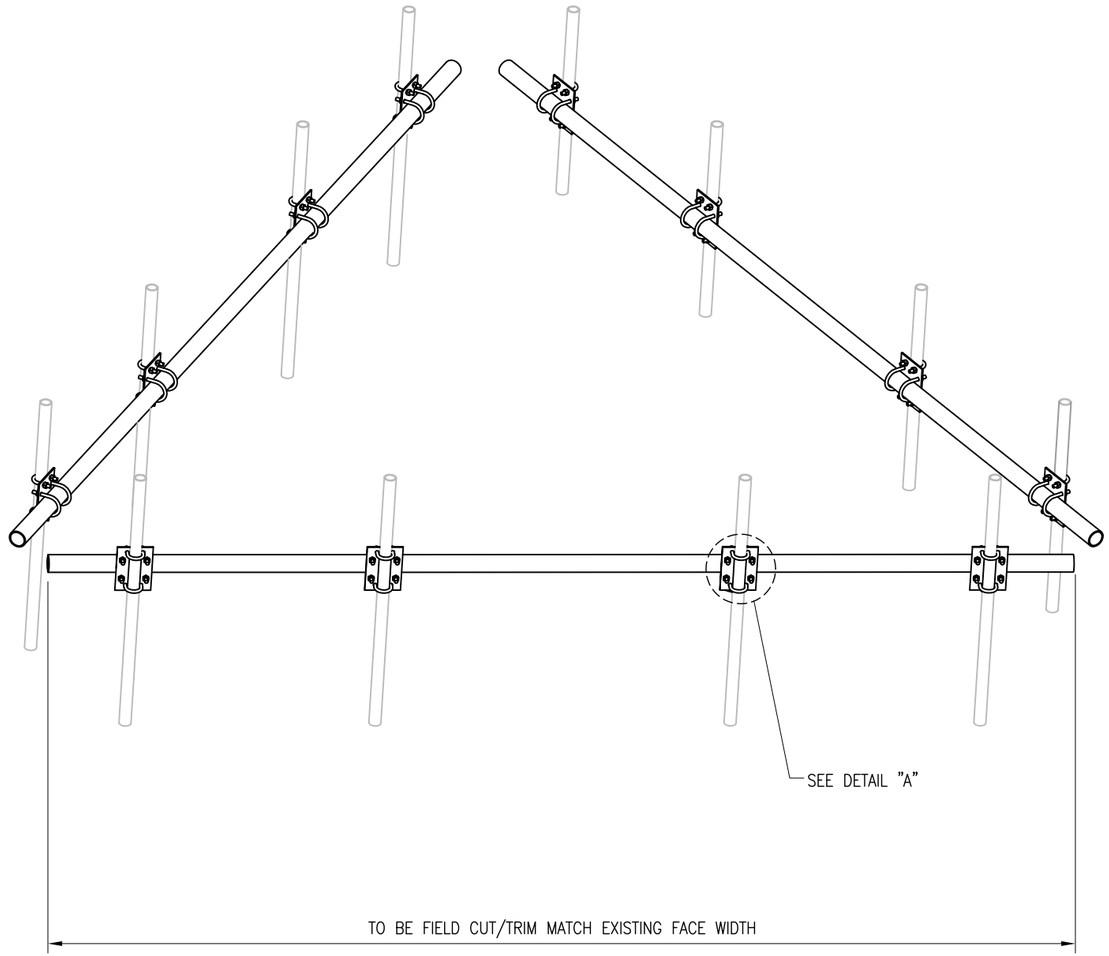
APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE
MS-C2B-350P V-BRACING KIT

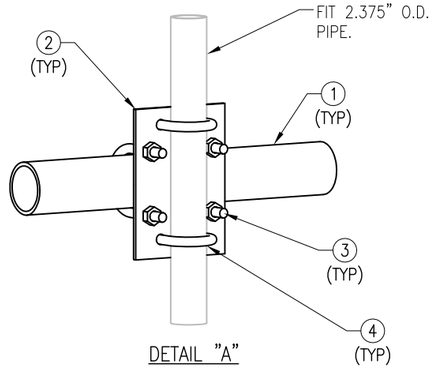
SIZE	DWG NO	REV
B	MS-C2B-350P	1

SCALE - SHEET 1 OF 1

MS-HR35-18						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	3PST-216	3" PST (3.50" O.D X .216" THICK) X 18'-0"	A53 GR-B	HR35-18	430.2
2	12	PL375-10	PL 3/8" X 7 1/8" X 10"	A36	TAF-1	92.4
3	24	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
4	24	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
					GALVANIZED WT	523



ELEVATION VIEW



DETAIL "A"

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

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

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

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

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

TITLE

MS-HR35-18 SUPPORT RAIL KIT

SIZE	DWG NO	REV
B	MS-HR35-18	0

SCALE -

SHEET 1 OF 1

EXHIBIT 8

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

Structural Analysis Report

Existing 309 ft Eastpointe Guyed Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT15879-A

Customer Site Name: West Hartford

Carrier Name: T-Mobile (App#: 149254, V1)

Carrier Site ID / Name: CT11765A / Martin Guyed Tower

Site Location: 3114 Albany Avenue

West Hartford, Connecticut

County

Latitude: 41.796802

Longitude: -72.796830

Analysis Result:

Max Structural Usage: 72.9% [Pass]

Max Foundation Usage: 78.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Sital Shrestha

Introduction

The purpose of this report is to summarize the analysis results on the 309 ft Eastpointe Guyed Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Engineering Professional Tower Mapping, Project #112343 dated July 12, 2011 FDH, Inc. Tower Mapping, Job #14629H1500 dated May 9, 2014
Foundation Drawing	FDH Engineering, Inc. Mapping, Project #14620E1500 dated May 22, 2014
Geotechnical Report	Clarence Welti Associates, Inc., Site Location: West Hartford, CT dated May 22, 2000
Modification Drawings	N/A
Mount Analysis	MA by TES, Project No. 99804, dated 11/23/2020.

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 **TESTowers,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} =125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 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

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	Mount Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	332.0	1	ERI 3 Bay FM w/ Radome	Direct	(1) 3"	WCCC
2	308.3	1	Scala SCA 4DR-8S	(1) Pipe Mount	(1) 3"	ZGS Hartford
3	265.0	1	SCA CA-2-FM-CP	(1) Pipe Mount	(1) 1/2"	WSDK
4	251.8	1	Antenna Concepts ACB16A	(1) Pipe Mount	(1) 1 5/8" (1) 3/8"	WRDM
5	251.0	1	Decibel DB420-B - Whip	(1) Standoff	(1) 7/8"	Master Combiner
6	243.0	1	Antel WPA-800120/6CF	Pipe Mount (SitePro R5)	(1) 7/8"	Town of West Hartford
7		2	Combilent CP00732 - TMA			
8	235.0	1	Scala 6 ft x 3 ft Grid Dish	Direct	(1) 7/8"	WCCC
9	232.0	2	Site Pro CIS04 - Ice Shield	Pipe Mount	(2) 1/2"	Town of West Hartford
10		2	RFS SC3-W100AC - Dish			
11	225.5	2	34" x 7" x 2" Panel	(2) Pipe Mount	(2) 3/8"	SNEW ISP
12	220.0	1	Antel WPA-800120/6CF	Pipe Mount	(1) 1 5/8"	Town of West Hartford
13	203.0	1	Decibel DB420-B - Whip	(1) Standoff	(1) 1/2"	Master Combiner
14	196.0	1	Cablewave PA6-112 - Dish	(1) Standoff	(1) EW71	WRDM
15		1	T.S. 3"x 3" x 6.5'			
16	180.0	1	Micronetixx LP-1900-B-12	(1) Pipe Mount	(1) 1 5/8"	WRNT (R&C) Tyche Media
17	165.0	1	Antel BCD-80010 - Whip	Pipe Mount	(1) 1 5/8"	Town of West Hartford
18	164.5	1	6810 1 Bay FM	(1) Pipe Mount	(1) 1/2"	91.9 FM
-	160.0	3	Ericsson Air32 KRD901146-1_B66A_B2A	(3) T-Frames ((2)V-Bracing Kit (MS-C2B-350P) (3) Stabilizer Kit (MS-STZ-2PST) (3) Stabilizer adapter kit (MS-STZ-350P) (1) Support Rail Kit (MS-HR35-18)) per sector	(6) 1 5/8" Coax (6) 1 5/8" Fiber	T-Mobile
-		3	RFS APXVAALL24-43-U-NA20			
-		3	Ericsson AIR6449 B41			
-		3	Ericsson KRY 112 144/1			
-		1	Commscope TMAT1921B78-21A			
-		4	Commscope SDX1926Q-43			
-		3	Ericsson 4449 B71 + B85			
-		3	Ericsson 4415 B25			
28	146.5	1	2 ft Dish	(1) Pipe Mount	(1) 3/8"	SNEW ISP
29		1	12" x 4.5" x 6.25" TMA			
30	145.0	1	12' x 1" - Omni	(1) Standoff	(1) 1 5/8"	Ham Radio
31	142.5	-	-	-	(1) 1 5/8"	-
32	140.5	-	-	-	(1) 1 5/8"	-
33	136.5	1	5'x10" Detuner	Direct	(1) ¼"	Ham Radio

34	130.0	2	Andrew HBX-6517DS - Panel	(3) T-Frame	(8) 1 5/8" (1) 1 5/8" Fiber	Verizon
35		2	Andrew LNX-6514DS - Panel			
36		2	Swedcom SLCP 2x6015 - Panel			
37		2	Swedcom SACP 2x5516 - Panel			
38		4	RFS FD9R6004/2C			
39		2	Alcatel Lucent RRH2x40-AWS			
40		1	RFS DB-T1-6Z-8AB-0Z			
~~41~~	~~120.5~~	~~3~~	~~RFS APXV18-206517S - Panel~~	~~(1) Pipe Mount~~	~~(6) 1 5/8"~~	~~Metro PCS~~
42	112.0	3	Kathrein - 800 10121 - Panel	(3) Modified T-Frame with (3) Reinforcement Kit (Site Pro 1 P/N SFR-K-L, and (3) Addition of Horizontal Pipe 2.0 Std. And (3) Addition of Crossover Plate Kit (Site-Pro 1 P/N SCX1-K)	(12) 1 5/8" (6) 3/4" DC (2) 3/8" Fiber	AT&T
43		2	Kathrein - 800-10966 - Panel			
44		1	Kathrein - 800-10965 - Panel			
45		2	CCI - HPA65R-BU8A - Panel			
46		1	CCI - HPA65R-BU6A - Panel			
47		3	Ericsson RRUS 11			
48		3	Ericsson RRUS 12			
49		3	Ericsson RRUS A2			
50		3	Ericsson RRUS 4478 B14			
51		3	Ericsson RRUS 4478 B5			
52		3	Ericsson RRUS 4478 B66			
53		6	Kaelus DBCT108F1V92-1			
54		6	Cci DTMABP7819VG12A TMA			
55		12	Kathrein 860 10025 -			
56		2	Raycap DC6-48-60-18-8F ("Squid")			
57		1	Raycap DC6-48-60-18-8F			
58		3	Ericsson RRUS 32			
~~59~~	~~48.0~~	~~1~~	~~GPS~~	~~Direct~~	~~(1) 3/8"~~	~~Metro PCS~~
60	21.0	1	14-Element 4.5 ft Yagi	(1) Standoff	(1) 1/2"	Ham Radio

*Metro Pcs removed

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
19	160.0	3	RFS APX16DWV-16DWVS-E-A20	(3) T-Frames ((2)V-Bracing Kit (MS-C2B-350P) (3) Stabilizer Kit (MS-STZ-2PST) (3) Stabilizer adapter kit (MS-STZ-350P) (1) Support Rail Kit (MS-HR35-18)) per sector	(6) 1 5/8" Coax (6) 1.9" Fiber	T-Mobile
20		3	RFS APXVAALL24-43-U-NA20			
21		3	Ericsson AIR6449 B41			
22		3	Ericsson KRY 112 144/1			
23		1	Commscope TMAT1921B78-21A			
24		4	Commscope SDX1926Q-43			
25		3	Ericsson 4449 B71 + B85			
26		3	Ericsson 4415 B66A			
27		3	Ericsson 4424 B25			

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:

Tower Component	Legs	Diagonals	Horizontals	Guy Wires
Max. Usage:	**50.4%**	**57.3%**	**23.8%**	**72.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Base Reactions		Inner Anchors	
Reactions (kips)	Axial	Shear	Uplift	Shear
Analysis Reactions	376.1	8.9	66.7	79.7

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 0.5599 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 ANSI/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.

Structure: CT15879-A-SBA

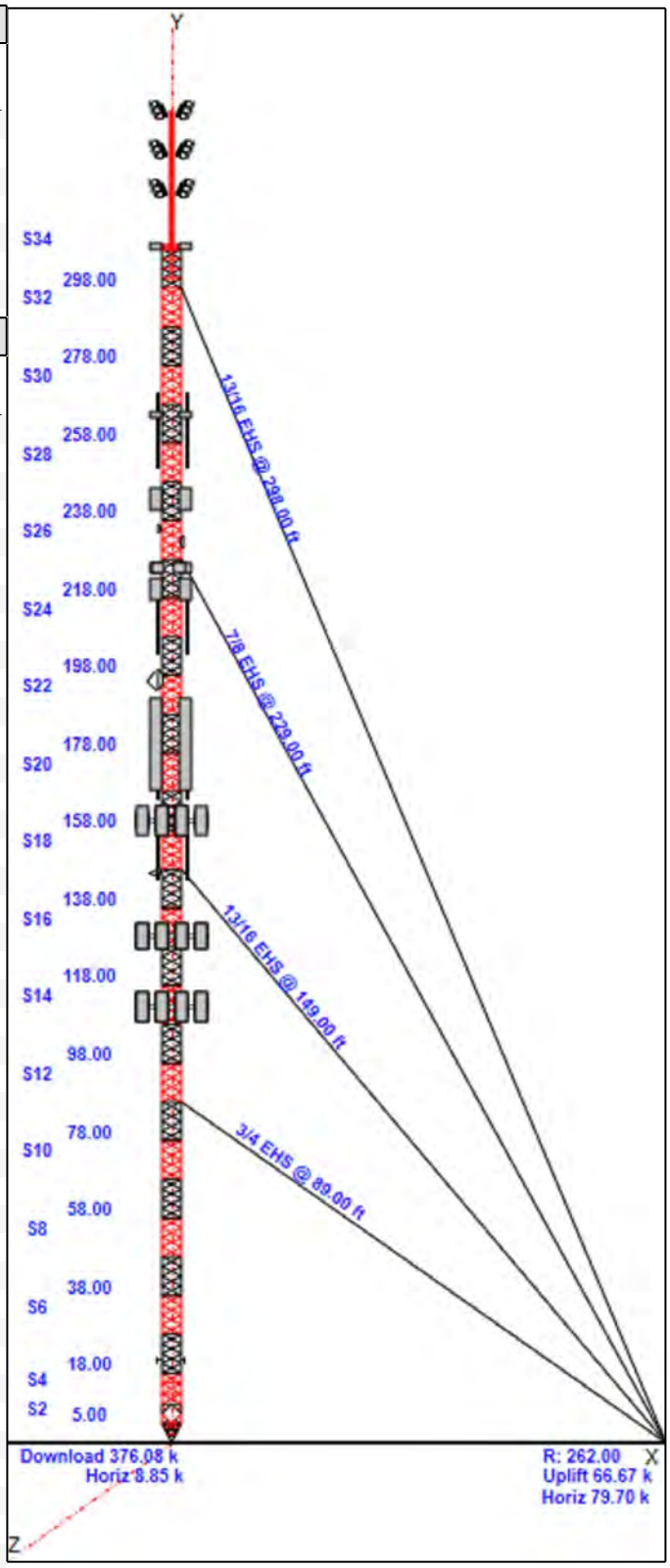
Site Name:	West Hartford			**Code:**	EIA/TIA-222-G	4/9/2021
Type:	Guyed	**Base Shape:**	Triangle	**Basic WS:**	97.00	
Height:	309.00 (ft)	**Base Width:**	0.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	5.00	**Operational WS:**	60.00	Page: 1

Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-3	SOL 3" SOLID	SOL 1 1/4" SOLID	PLT 6" x 3/4"
4	SOL 3" SOLID	SOL 1" SOLID	SOL 7/8" SOLID
5-16	SOL 3" SOLID	SOL 7/8" SOLID	SOL 1" SOLID
17-18	SOL 3" SOLID	SOL 1" SOLID	SOL 1 1/4" SOLID
19-32	SOL 2 7/8" SOLID	SOL 7/8" SOLID	SOL 1" SOLID
33	SOL 2 7/8" SOLID	SOL 7/8" SOLID	SOL 1 1/4" SOLID
34	SOL 2 7/8" SOLID		PLT 6"X1"

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
344.00	344.00	1	Beacon
344.00	344.00	1	Lightning Rod
342.00	342.00	1	ERI 3 Bay FM w/ Radome
332.00	332.00	1	ERI 3 Bay FM w/ Radome
332.00	332.00	1	2.4" x 18" Pipe
322.00	322.00	1	ERI 3 Bay FM w/ Radome
309.50	309.50	1	10' Mount
308.30	308.30	1	Scala SCA 4DR-8S
265.00	265.00	1	Pipe Mount
265.00	265.00	1	SCA CA-2-FM-CP
251.80	258.50	1	ACB16A
251.80	251.80	1	2.4" x 25' Mount Pipe
251.00	260.71	1	DB420-B
251.00	251.00	1	Side Arm Mount
243.00	243.00	1	SitePro R5 Pipe Mount
243.00	243.00	2	Combilent CP00732
243.00	243.00	1	WPA-800120/6CF
235.00	235.00	1	6 ft x 3 ft Grid Dish
232.00	232.00	2	SC3-W100AC
232.00	232.00	2	SitePro CIS04
232.00	232.00	2	SitePro R5 Pipe Mount
225.50	225.50	2	Pipe Mount
225.50	225.50	2	34" x 7" x 2" Panel
220.00	220.00	1	WPA-800120/6CF
220.00	220.00	1	SitePro R5 Pipe Mount
203.00	203.00	1	Side Arm Mount
203.00	212.71	1	DB420-B
196.00	196.00	1	2.4" x 6.5' Mount Pipe
196.00	196.00	1	PA6-112 w/ Radome
196.00	196.00	1	T.S. 3"x 3" x 6.5'
180.00	180.00	1	LP-1900-B-12
180.00	180.00	1	2.5" x 25' Mount Pipe
165.00	165.00	1	SitePro R5 Pipe Mount
165.00	170.67	1	BCD-80010
164.50	164.50	1	6810 1 Bay FM
164.50	164.50	1	2.4"x 10' Mount Pipe
160.00	160.00	3	T-Frame
160.00	160.00	1	(3) Stabilizer Kit
160.00	160.00	3	APXVAALL24-43-U-NA20
160.00	160.00	3	Ericsson KRY 112 144/1
160.00	160.00	1	Commscope TMAT1921B78-21A
160.00	160.00	1	(3) HR w/ Double V-Brace Kits



160.00	160.00	3	APX16DWV-16DWV-S-E-A20
160.00	160.00	3	Radio 4415 B66A
160.00	160.00	3	AIR6449 B41
160.00	160.00	4	SDX1926Q-43
160.00	160.00	3	4449 B71 + B85
160.00	160.00	3	4424 B25
146.50	146.50	1	2 ft Dish w/Radome
146.50	146.50	1	12" x 4.5" x 6.25" TMA
146.50	146.50	1	2.4"x 4' Mount Pipe
145.00	145.00	1	30" Sidearm
145.00	151.00	1	12' Omni
136.50	136.50	1	5' x 10" Detuner
130.00	130.00	2	HBX-6517DS
130.00	130.00	2	LNX-6514DS
130.00	130.00	2	SLCP 2x6015
130.00	130.00	2	SACP 2x5516
130.00	130.00	4	FD9R6004/2C
130.00	130.00	2	RRH2x40-AWS
130.00	130.00	1	DB-T1-6Z-8AB-0Z
130.00	130.00	3	T-Frame
112.00	112.00	3	T-Frame
112.00	112.00	2	800-10966
112.00	112.00	1	800-10965
112.00	112.00	2	HPA65R-BU8A
112.00	112.00	1	HPA65R-BU6A
112.00	112.00	3	Ericsson RRUS 4478 B14
112.00	112.00	3	Ericsson RRUS 4478 B5
112.00	112.00	3	Ericsson RRUS 4478 B66
112.00	112.00	3	Ericsson RRUS 32
112.00	112.00	6	Kaelus DBCT108F1V92-1
112.00	112.00	1	Raycap DC6-48-60-18-8F
112.00	112.00	1	REINFORCING KIT
112.00	112.00	3	800 10121
112.00	112.00	3	Ericsson RRUS 11
112.00	112.00	3	Ericsson RRUS 12
112.00	112.00	3	Ericsson RRUS A2
112.00	112.00	6	Cci DTMABP7819VG12A TMA
112.00	112.00	12	Kathrein 860 10025
112.00	112.00	2	Raycap DC6-48-60-18-8F ("Squid")
21.00	21.00	1	14-Element 4.5 ft Yagi
21.00	21.00	1	1-ft Side Arm

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	344.00	1	1" Light Conduit
0.00	332.00	1	3" Coax
0.00	308.30	1	3" Coax
0.00	308.00	1	Safety Cable
0.00	290.00	3	Detuner
0.00	265.00	1	1/2" Coax
0.00	251.80	1	1 5/8" Coax
0.00	251.80	1	3/8" Coax
0.00	251.00	1	7/8" Coax
0.00	243.00	1	7/8" Coax
0.00	235.00	1	7/8" Coax
0.00	232.00	2	1/2" Coax

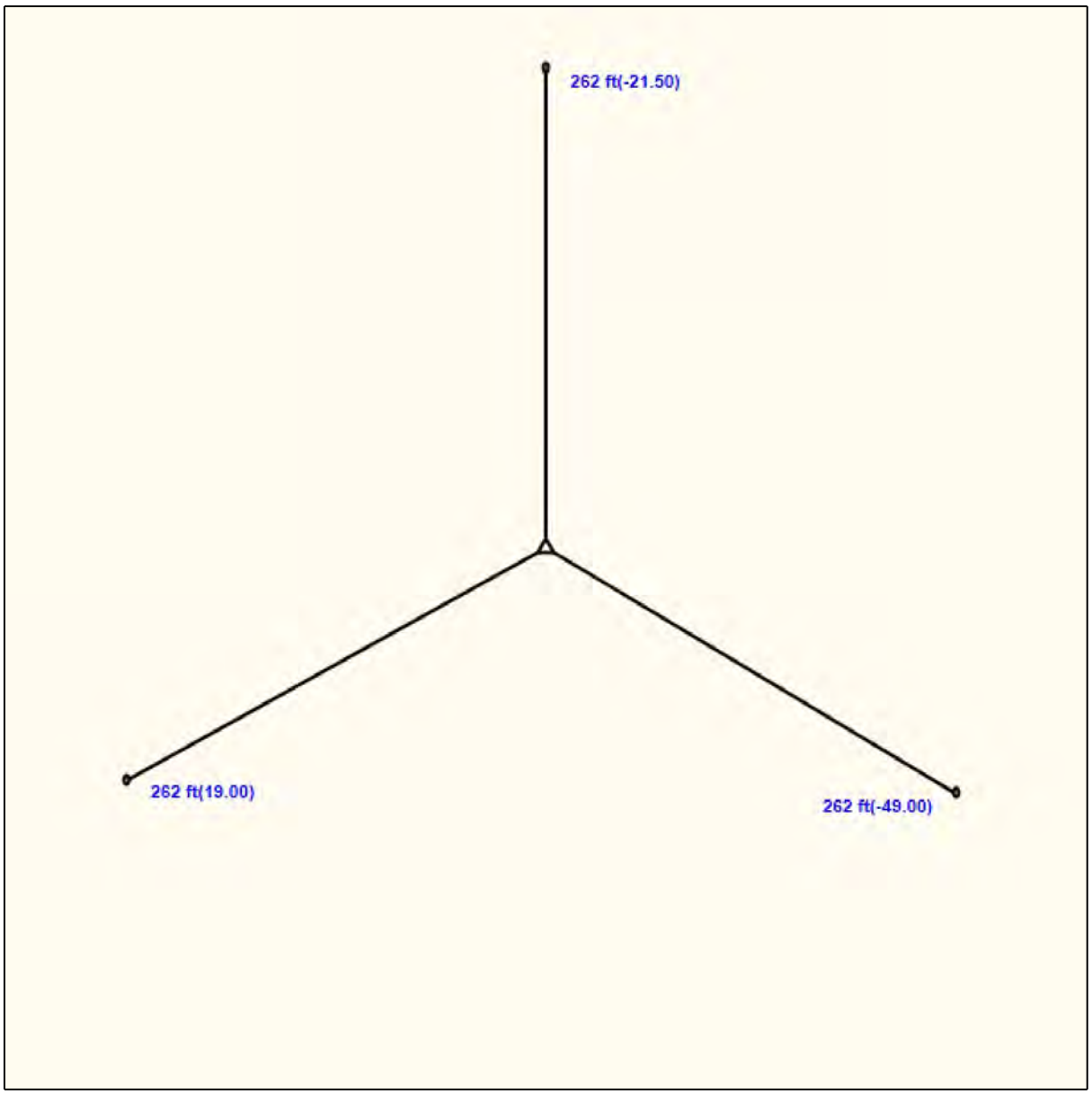
0.00	225.50	2	3/8" Coax
0.00	220.00	1	1 5/8" Coax
0.00	203.00	1	1/2" Coax
0.00	196.00	1	EW71
0.00	180.00	1	1 5/8" Coax
0.00	165.00	1	1 5/8" Coax
0.00	164.50	1	1/2" Coax
0.00	160.00	6	1 5/8" Coax
0.00	160.00	6	1.9" Fiber
0.00	146.50	1	3/8" Coax
0.00	145.00	1	1 5/8" Coax
0.00	142.50	1	1 5/8" Coax
0.00	140.50	1	1 5/8" Coax
0.00	136.50	1	1/4" Coax
0.00	130.00	8	1 5/8" Coax
0.00	130.00	1	1 5/8" Fiber
0.00	112.00	12	1 5/8" Coax
0.00	112.00	6	3/4" DC
0.00	112.00	2	3/8" Fiber
0.00	21.00	1	1/2" Coax

Max Guy Wire

72.93% @ 88 ft - 3/4 EHS

Anchor Drops with Guy Radius - Structure: CT15879-A-SBA

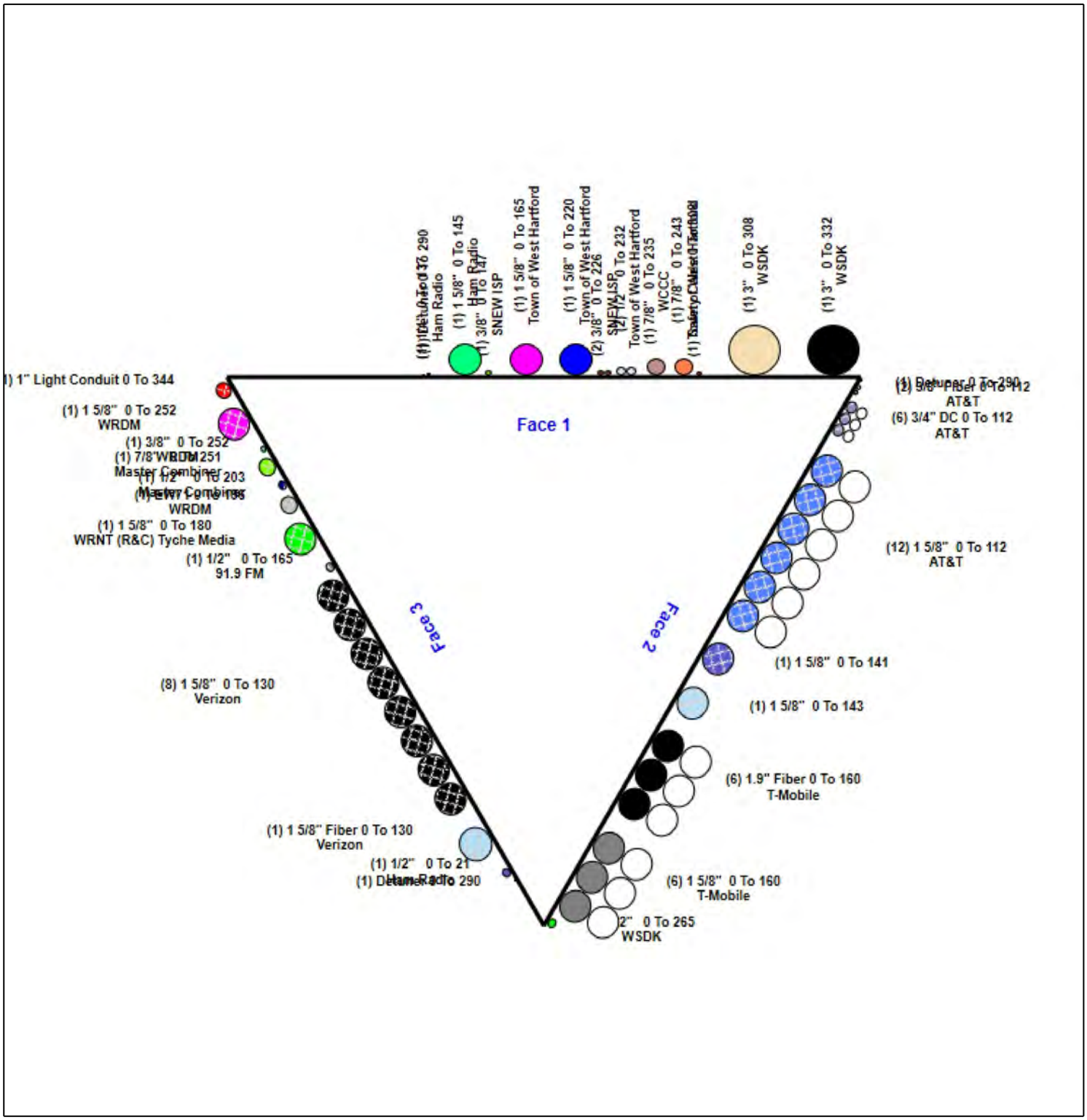
Site Name:	West Hartford			**Code:**	EIA/TIA-222-G	4/9/2021
Type:	Guyed	**Base Shape:**	Triangle	**Basic WS:**	97.00	
Height:	309.00 (ft)	**Base Width:**	0.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	5.00	**Operational WS:**	60.00	Page: 5



Structure: CT15879-A-SBA - Coax Line Placement

Type: Guyed
Site Name: West Hartford
Height: 309.00 (ft)

4/9/2021



Loading Summary

Structure:	CT15879-A-SBA		**Code:**	EIA/TIA-222-G	4/9/2021
Site Name:	West Hartford		**Exposure:**	C	
Height:	309.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 7

Tower Engineering Solutions

Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	Ice Weight (lb)	Ice CaAa (sf)	Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
344.00	Beacon	1	36.00	2.720	228.96	4.095	28.000	17.500	17.500	1.00	1.00	0.000
344.00	Lightning Rod	1	5.00	0.500	35.34	3.028	72.000	1.000	1.000	1.00	1.00	0.000
342.00	ERI 3 Bay FM w/ Radome	1	157.00	8.980	427.88	21.133	36.000	0.000	0.000	1.00	1.00	0.000
332.00	ERI 3 Bay FM w/ Radome	1	157.00	8.980	427.08	21.097	36.000	0.000	0.000	1.00	1.00	0.000
332.00	2.4" x 18" Pipe	1	10.00	0.240	20.08	0.482	0.000	0.000	0.000	1.00	1.00	0.000
322.00	ERI 3 Bay FM w/ Radome	1	157.00	8.980	426.25	21.060	36.000	0.000	0.000	1.00	1.00	0.000
309.50	10' Mount	1	40.00	4.170	80.02	8.342	0.000	0.000	0.000	1.00	1.00	0.000
308.30	Scala SCA 4DR-8S	1	50.00	16.980	870.58	189.67	24.000	19.500	13.000	1.00	1.00	0.000
265.00	Pipe Mount	1	20.00	1.200	39.69	2.381	0.000	0.000	0.000	1.00	1.00	0.000
265.00	SCA CA-2-FM-CP	1	10.00	2.020	171.81	22.276	24.000	19.500	13.000	1.00	1.00	0.000
251.80	ACB16A	1	80.00	19.230	639.96	75.695	160.800	18.000	2.500	1.00	1.00	6.700
251.80	2.4" x 25' Mount Pipe	1	90.00	5.950	178.27	11.785	0.000	0.000	0.000	1.00	1.00	0.000
251.00	DB420-B	1	34.50	4.480	226.75	19.493	233.000	0.000	0.000	1.00	1.00	9.708
251.00	Side Arm Mount	1	30.00	1.410	59.42	2.793	0.000	0.000	0.000	1.00	1.00	0.000
243.00	SitePro R5 Pipe Mount	1	136.90	2.700	270.62	5.337	0.000	0.000	0.000	1.00	0.67	0.000
243.00	Combilent CP00732	2	12.00	1.270	23.72	2.510	0.000	0.000	0.000	1.00	1.00	0.000
243.00	WPA-800120/6CF	1	11.00	4.380	154.80	7.606	70.900	5.600	5.600	1.00	1.00	0.000
235.00	6 ft x 3 ft Grid Dish	1	198.00	16.790	1160.96	48.370	0.000	0.000	0.000	1.00	1.00	0.000
232.00	SC3-W100AC	2	40.00	10.740	273.45	13.561	39.500	39.500	15.000	1.00	1.00	0.000
232.00	SitePro CIS04	2	290.10	2.920	955.19	6.706	14.000	75.000	48.000	1.00	0.67	0.000
232.00	SitePro R5 Pipe Mount	2	136.90	2.700	270.06	5.326	0.000	0.000	0.000	1.00	1.00	0.000
225.50	Pipe Mount	2	40.00	2.600	78.74	5.118	0.000	0.000	0.000	1.00	1.00	0.000
225.50	34" x 7" x 2" Panel	2	20.00	1.900	77.74	3.749	34.000	6.000	3.000	1.00	1.00	0.000
220.00	WPA-800120/6CF	1	11.00	4.380	153.57	7.578	70.900	5.600	5.600	1.00	1.00	0.000
220.00	SitePro R5 Pipe Mount	1	136.90	2.700	269.48	5.315	0.000	0.000	0.000	1.00	0.67	0.000
203.00	Side Arm Mount	1	30.00	1.410	58.78	2.763	0.000	0.000	0.000	1.00	1.00	0.000
203.00	DB420-B	1	34.50	4.480	222.57	19.166	233.000	0.000	0.000	1.00	1.00	9.708
196.00	2.4" x 6.5' Mount Pipe	1	20.00	1.540	39.09	3.010	0.000	0.000	0.000	1.00	1.00	0.000
196.00	PA6-112 w/ Radome	1	308.00	24.410	1279.37	27.649	72.000	72.000	0.000	1.00	1.00	0.000
196.00	T.S. 3"x 3" x 6.5'	1	60.00	3.250	117.27	6.352	0.000	0.000	0.000	1.00	1.00	0.000
180.00	LP-1900-B-12	1	50.00	7.300	184.68	17.357	282.000	3.500	3.500	1.00	1.00	0.000
180.00	2.5" x 25' Mount Pipe	1	90.00	5.950	175.45	11.599	0.000	0.000	0.000	1.00	1.00	0.000
165.00	SitePro R5 Pipe Mount	1	136.90	2.700	265.39	5.234	0.000	0.000	0.000	1.00	1.00	0.000
165.00	BCD-80010	1	26.50	2.950	239.20	7.646	136.000	2.600	2.600	1.00	1.00	5.667
164.50	6810 1 Bay FM	1	12.00	0.560	19.41	1.270	7.900	7.900	0.000	1.00	1.00	0.000
164.50	2.4"x 10' Mount Pipe	1	40.00	2.380	77.54	4.614	0.000	0.000	0.000	1.00	1.00	0.000
160.00	T-Frame	3	339.80	11.700	696.99	19.606	0.000	0.000	0.000	0.75	0.75	0.000
160.00	(3) Stabilizer Kit	1	180.00	6.100	484.09	14.688	0.000	0.000	0.000	0.75	0.75	0.000
160.00	APXVAALL24-43-U-NA20	3	122.80	20.240	709.54	22.828	95.900	24.000	7.800	0.80	0.70	0.000
160.00	Ericsson KRY 112 144/1	3	11.02	0.410	25.54	1.049	6.900	6.100	2.700	0.80	0.67	0.000
160.00	Commscope TMAT1921B78-21A	1	17.60	0.660	41.11	1.121	9.100	4.100	8.100	0.80	0.67	0.000
160.00	(3) HR w/ Double V-Brace Kits	1	650.00	15.500	1748.10	37.321	0.000	0.000	0.000	0.75	0.75	0.000
160.00	APX16DWV-16DWV-S-E-A20	3	41.80	6.460	0.00	0.000	55.900	13.000	3.200	0.80	0.62	0.000
160.00	Radio 4415 B66A	3	46.20	1.860	0.00	0.000	16.500	13.500	6.300	0.80	0.67	0.000
160.00	AIR6449 B41	3	103.00	5.650	287.35	6.928	33.100	20.500	8.300	0.80	0.71	0.000
160.00	SDX1926Q-43	4	6.10	0.230	17.57	0.725	4.000	6.000	3.000	0.80	0.67	0.000
160.00	4449 B71 + B85	3	75.00	1.970	154.54	2.736	17.900	13.200	10.600	0.80	0.67	0.000
160.00	4424 B25	3	88.00	2.050	0.00	0.000	17.100	14.400	11.300	0.80	0.67	0.000

Loading Summary

Structure:	CT15879-A-SBA		**Code:**	EIA/TIA-222-G	4/9/2021
Site Name:	West Hartford		**Exposure:**	C	
Height:	309.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 8

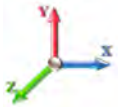
146.50	2 ft Dish w/Radome	1	17.00	2.710	313.43	3.775	0.000	0.000	0.000	1.00	1.00	0.000
146.50	12" x 4.5" x 6.25" TMA	1	20.00	0.450	52.77	0.869	12.000	4.500	6.250	1.00	1.00	0.000
146.50	2.4"x 4' Mount Pipe	1	10.00	0.870	19.26	1.676	0.000	0.000	0.000	1.00	1.00	0.000
145.00	30" Sidearm	1	20.00	0.350	38.53	0.674	0.000	0.000	0.000	1.00	1.00	0.000
145.00	12' Omni	1	40.00	1.200	160.72	3.104	l44.000	3.000	3.000	1.00	1.00	6.000
136.50	5' x 10" Detuner	1	30.00	1.250	57.59	2.400	0.000	0.000	0.000	1.00	1.00	0.000
130.00	HBX-6517DS	2	12.10	5.240	137.45	8.469	74.900	6.500	3.300	0.80	0.75	0.000
130.00	LNX-6514DS	2	33.10	8.090	263.26	11.773	72.000	11.900	7.100	0.80	0.80	0.000
130.00	SLCP 2x6015	2	30.00	9.960	355.14	13.871	77.000	14.000	11.000	0.80	0.89	0.000
130.00	SACP 2x5516	2	16.00	5.090	171.49	7.964	56.000	9.700	6.500	0.80	0.84	0.000
130.00	FD9R6004/2C	4	3.10	0.370	13.67	0.970	5.800	6.500	1.500	0.80	0.62	0.000
130.00	RRH2x40-AWS	2	44.00	2.160	124.00	3.541	24.400	10.600	6.700	0.80	0.67	0.000
130.00	DB-T1-6Z-8AB-0Z	1	18.90	4.800	219.16	5.976	24.000	24.000	10.000	0.80	0.71	0.000
130.00	T-Frame	3	356.40	10.900	723.50	18.117	0.000	0.000	0.000	0.75	0.75	0.000
112.00	T-Frame	3	344.92	17.500	694.45	28.900	0.000	0.000	0.000	0.75	0.75	0.000
112.00	800-10966	2	125.70	17.360	609.05	19.733	96.000	20.000	6.900	0.80	0.72	0.000
112.00	800-10965	1	108.60	13.810	512.25	15.885	78.700	20.000	6.900	0.80	1.00	0.000
112.00	HPA65R-BU8A	2	54.00	11.230	418.15	13.399	96.000	11.700	7.600	0.80	0.93	0.000
112.00	HPA65R-BU6A	1	51.00	7.840	327.83	9.524	71.000	11.700	7.600	0.80	1.00	0.000
112.00	Ericsson RRUS 4478 B14	3	59.40	1.650	113.14	2.322	15.000	13.200	7.300	0.80	0.67	0.000
112.00	Ericsson RRUS 4478 B5	3	59.90	1.840	123.26	2.551	16.500	13.400	7.700	0.80	0.67	0.000
112.00	Ericsson RRUS 4478 B66	3	48.50	1.150	104.71	1.786	14.900	9.300	4.000	0.80	0.67	0.000
112.00	Ericsson RRUS 32	3	53.00	2.740	175.29	3.706	27.200	12.100	7.000	0.80	0.67	0.000
112.00	Kaelus DBCT108F1V92-1	6	6.60	0.410	24.34	0.826	8.000	6.200	3.700	0.80	0.80	0.000
112.00	Raycap DC6-48-60-18-8F	1	31.80	0.920	111.93	1.488	24.000	11.000	11.000	0.80	1.00	0.000
112.00	REINFORCING KIT	1	650.00	18.000	1708.60	42.429	0.000	0.000	0.000	1.00	1.00	0.000
112.00	800 10121	3	46.30	5.150	195.18	7.881	54.500	10.300	5.900	0.80	0.67	0.000
112.00	Ericsson RRUS 11	3	51.00	2.520	144.67	3.341	17.000	17.800	7.200	0.80	0.67	0.000
112.00	Ericsson RRUS 12	3	60.00	2.700	146.86	3.555	18.200	17.800	8.000	0.80	0.67	0.000
112.00	Ericsson RRUS A2	3	21.20	1.860	68.00	3.122	12.800	15.000	3.400	0.80	0.62	0.000
112.00	Cci DTMABP7819VG12A TMA	6	19.20	1.140	52.28	2.137	10.600	11.000	3.800	0.80	0.67	0.000
112.00	Kathrein 860 10025	12	1.20	0.180	8.97	0.671	7.600	2.400	2.000	0.80	0.92	0.000
112.00	Raycap DC6-48-60-18-8F ("Squid")	2	31.80	0.920	111.93	1.488	24.000	11.000	11.000	0.80	0.75	0.000
21.00	14-Element 4.5 ft Yagi	1	6.50	1.500	65.76	4.734	16.500	44.000	0.000	1.00	1.00	0.000
21.00	1-ft Side Arm	1	30.00	0.350	53.15	0.620	0.000	0.000	0.000	1.00	1.00	0.000
	Totals:	**160**	**11,821.72**		**35,954.67**				**Number of Appurtenances :**			**83**

Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	344.00	1" Light Conduit	1	1.00	1.00	100.00	3	Individual NR		N	1.00	1.00	
0.00	332.00	3" Coax	1	3.02	1.78	100.00	1	Individual NR		N	1.00	1.00	
0.00	308.30	3" Coax	1	3.02	1.78	100.00	1	Individual NR		N	1.00	1.00	
0.00	308.00	Safety Cable	1	0.38	0.27	100.00	1	Individual NR		N	1.00	1.00	
0.00	290.00	Detuner	3	0.19	0.02	100.00	1,2,3	Individual NR		Y	1.00	1.00	
0.00	265.00	1/2" Coax	1	0.65	0.16	100.00	2	Individual NR		N	1.00	1.00	
0.00	251.80	1 5/8" Coax	1	1.98	1.04	100.00	3	Individual NR		N	1.00	1.00	
0.00	251.80	3/8" Coax	1	0.44	0.08	100.00	3	Individual NR		N	1.00	1.00	
0.00	251.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	243.00	7/8" Coax	1	1.11	0.52	100.00	1	Individual NR		N	1.00	1.00	
0.00	235.00	7/8" Coax	1	1.11	0.52	100.00	1	Individual NR		N	1.00	1.00	
0.00	232.00	1/2" Coax	2	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	
0.00	225.50	3/8" Coax	2	0.44	0.08	100.00	1	Individual NR		N	1.00	1.00	
0.00	220.00	1 5/8" Coax	1	1.98	1.04	100.00	1	Individual NR		N	1.00	1.00	
0.00	203.00	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	
0.00	196.00	EW71	1	1.11	0.29	100.00	3	Individual NR		N	1.00	1.00	
0.00	180.00	1 5/8" Coax	1	1.98	1.04	100.00	3	Individual NR		N	1.00	1.00	
0.00	165.00	1 5/8" Coax	1	1.98	1.04	100.00	1	Individual NR		N	1.00	1.00	
0.00	164.50	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	
0.00	160.00	1 5/8" Coax	6	1.98	1.04	50.00	2	Block		N	1.00	1.00	
0.00	160.00	1.9" Fiber	6	1.98	1.04	50.00	2	Block		N	1.00	1.00	
0.00	146.50	3/8" Coax	1	0.44	0.08	100.00	1	Individual NR		N	1.00	1.00	
0.00	145.00	1 5/8" Coax	1	1.98	1.04	100.00	1	Individual NR		N	1.00	1.00	
0.00	142.50	1 5/8" Coax	1	1.98	1.04	100.00	2	Individual NR		N	1.00	1.00	
0.00	140.50	1 5/8" Coax	1	1.98	1.04	100.00	2	Individual NR		N	1.00	1.00	
0.00	136.50	1/4" Coax	1	0.25	0.04	100.00	1	Individual NR		N	1.00	1.00	
0.00	130.00	1 5/8" Coax	8	1.98	1.04	100.00	3	Individual NR		N	1.00	1.00	
0.00	130.00	1 5/8" Fiber	1	2.00	1.10	100.00	3	Individual NR		N	1.00	1.00	
0.00	112.00	1 5/8" Coax	12	1.98	1.04	50.00	2	Block		N	1.00	1.00	
0.00	112.00	3/4" DC	6	0.75	0.40	50.00	2	Block		N	1.00	1.00	
0.00	112.00	3/8" Fiber	2	0.38	0.06	100.00	2	Individual NR		N	1.00	1.00	
0.00	21.00	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 10



Tower Engineering Solutions

Load Case: 1.2D + 1.6W Normal Wind — 1.2D + 1.6W 97 mph Wind at Normal To Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

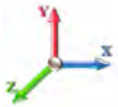
Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	1.00	1.00	0.00	3.64	36.69	0.00	1,625.4	0.0	179.92	686.07	683.41
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	1.00	1.00	0.00	1.60	18.34	0.00	780.9	0.0	99.18	343.04	442.22
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	1.00	1.00	0.00	1.52	18.34	0.00	768.6	0.0	95.23	343.04	438.26
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	1.00	1.00	0.00	4.53	58.70	0.00	1,631.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	73.00	0.00	1,917.1	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	61.77	0.00	1,760.4	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	54.39	0.00	1,736.5	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	42.46	0.00	1,597.9	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	1.00	1.00	0.00	5.58	36.62	0.00	1,757.8	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	1.00	1.00	0.00	5.27	34.00	0.00	1,664.4	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	1.00	1.00	0.00	5.06	22.72	0.00	1,390.1	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	18.57	0.00	1,302.0	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	17.25	0.00	1,340.2	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	16.74	0.00	1,288.9	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	15.72	0.00	1,333.2	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	15.45	0.00	1,284.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	13.95	0.00	1,321.8	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	12.14	0.00	1,265.6	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	10.60	0.00	1,304.7	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	8.24	0.00	1,240.7	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	7.03	0.00	1,281.3	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.65	0.00	1,231.8	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	6.65	0.00	1,279.9	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.27	0.00	1,231.3	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	1.00	1.00	0.00	4.88	6.18	0.00	1,258.2	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	1.00	1.00	0.00	1.07	0.41	0.00	818.7	0.0	117.86	13.20	131.06
														50,552.6	**0.0**			**46,647.74**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 11	



Tower Engineering Solutions

Load Case: 1.2D + 1.6W 60° Wind — 1.2D + 1.6W 97 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

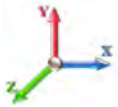
Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	0.80	1.00	0.00	3.52	36.69	0.00	1,625.4	0.0	174.20	686.07	860.27
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	0.80	1.00	0.00	1.54	18.34	0.00	780.9	0.0	95.58	343.04	438.62
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	0.80	1.00	0.00	1.46	18.34	0.00	768.6	0.0	91.58	343.04	434.61
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	0.80	1.00	0.00	4.53	58.70	0.00	1,631.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	73.00	0.00	1,917.1	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	61.77	0.00	1,760.4	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	54.39	0.00	1,736.5	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	42.46	0.00	1,597.9	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	0.80	1.00	0.00	5.58	36.62	0.00	1,757.8	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	0.80	1.00	0.00	5.27	34.00	0.00	1,664.4	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	0.80	1.00	0.00	5.06	22.72	0.00	1,390.1	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	18.57	0.00	1,302.0	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	17.25	0.00	1,340.2	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	16.74	0.00	1,288.9	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	15.72	0.00	1,333.2	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	15.45	0.00	1,284.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	13.95	0.00	1,321.8	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	12.14	0.00	1,265.6	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	10.60	0.00	1,304.7	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	8.24	0.00	1,240.7	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	7.03	0.00	1,281.3	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.65	0.00	1,231.8	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	6.65	0.00	1,279.9	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.27	0.00	1,231.3	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	0.80	1.00	0.00	4.88	6.18	0.00	1,258.2	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	0.80	1.00	0.00	0.91	0.41	0.00	818.7	0.0	100.43	13.20	113.63
														50,552.6	**0.0**			**46,799.93**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 12



Tower Engineering Solutions

Load Case: 1.2D + 1.6W 90° Wind — 1.2D + 1.6W 97 mph Wind at 90° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

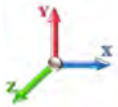
Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	0.85	1.00	0.00	3.55	36.69	0.00	1,625.4	0.0	175.63	686.07	861.70
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	0.85	1.00	0.00	1.56	18.34	0.00	780.9	0.0	96.48	343.04	439.52
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	0.85	1.00	0.00	1.47	18.34	0.00	768.6	0.0	92.49	343.04	435.53
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	0.85	1.00	0.00	4.53	58.70	0.00	1,631.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	73.00	0.00	1,917.1	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,868.4	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,916.5	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	61.77	0.00	1,760.4	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	54.39	0.00	1,736.5	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	42.46	0.00	1,597.9	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	0.85	1.00	0.00	5.58	36.62	0.00	1,757.8	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	0.85	1.00	0.00	5.27	34.00	0.00	1,664.4	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	0.85	1.00	0.00	5.06	22.72	0.00	1,390.1	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	18.57	0.00	1,302.0	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	17.25	0.00	1,340.2	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	16.74	0.00	1,288.9	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	15.72	0.00	1,333.2	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	15.45	0.00	1,284.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	13.95	0.00	1,321.8	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	12.14	0.00	1,265.6	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	10.60	0.00	1,304.7	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	8.24	0.00	1,240.7	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	7.03	0.00	1,281.3	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.65	0.00	1,231.8	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	6.65	0.00	1,279.9	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.27	0.00	1,231.3	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	0.85	1.00	0.00	4.88	6.18	0.00	1,258.2	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	0.85	1.00	0.00	0.95	0.41	0.00	818.7	0.0	104.79	13.20	117.99
														50,552.6	**0.0**			**46,807.53**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 13



Tower Engineering Solutions

Load Case: 0.9D + 1.6W Normal Wind — 0.9D + 1.6W 97 mph Wind at Normal To Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

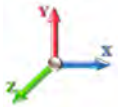
Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	1.00	1.00	0.00	3.64	36.69	0.00	1,219.0	0.0	179.92	686.07	865.99
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	1.00	1.00	0.00	1.60	18.34	0.00	585.7	0.0	99.18	343.04	442.22
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	1.00	1.00	0.00	1.52	18.34	0.00	576.5	0.0	95.23	343.04	438.26
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	1.00	1.00	0.00	4.53	58.70	0.00	1,223.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	73.00	0.00	1,437.8	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	61.77	0.00	1,320.3	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	54.39	0.00	1,302.4	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	42.46	0.00	1,198.4	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	1.00	1.00	0.00	5.58	36.62	0.00	1,318.4	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	1.00	1.00	0.00	5.27	34.00	0.00	1,248.3	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	1.00	1.00	0.00	5.06	22.72	0.00	1,042.6	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	18.57	0.00	976.5	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	17.25	0.00	1,005.1	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	16.74	0.00	966.6	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	15.72	0.00	999.9	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	15.45	0.00	963.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	13.95	0.00	991.3	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	12.14	0.00	949.2	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	10.60	0.00	978.5	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	8.24	0.00	930.5	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	7.03	0.00	961.0	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.65	0.00	923.9	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	6.65	0.00	960.0	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.27	0.00	923.4	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	1.00	1.00	0.00	4.88	6.18	0.00	943.6	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	1.00	1.00	0.00	1.07	0.41	0.00	614.0	0.0	117.86	13.20	131.06
														37,914.5	**0.0**			**46,830.32**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 14



Tower Engineering Solutions

Load Case: 0.9D + 1.6W 60° Wind — 0.9D + 1.6W 97 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	0.80	1.00	0.00	3.52	36.69	0.00	1,219.0	0.0	174.20	686.07	860.27
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	0.80	1.00	0.00	1.54	18.34	0.00	585.7	0.0	95.58	343.04	438.62
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	0.80	1.00	0.00	1.46	18.34	0.00	576.5	0.0	91.58	343.04	434.61
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	0.80	1.00	0.00	4.53	58.70	0.00	1,223.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	73.00	0.00	1,437.8	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	61.77	0.00	1,320.3	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	54.39	0.00	1,302.4	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	42.46	0.00	1,198.4	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	0.80	1.00	0.00	5.58	36.62	0.00	1,318.4	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	0.80	1.00	0.00	5.27	34.00	0.00	1,248.3	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	0.80	1.00	0.00	5.06	22.72	0.00	1,042.6	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	18.57	0.00	976.5	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	17.25	0.00	1,005.1	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	16.74	0.00	966.6	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	15.72	0.00	999.9	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	15.45	0.00	963.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	13.95	0.00	991.3	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	12.14	0.00	949.2	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	10.60	0.00	978.5	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	8.24	0.00	930.5	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	7.03	0.00	961.0	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.65	0.00	923.9	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	6.65	0.00	960.0	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.27	0.00	923.4	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	0.80	1.00	0.00	4.88	6.18	0.00	943.6	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	0.80	1.00	0.00	0.91	0.41	0.00	614.0	0.0	100.43	13.20	113.63
														37,914.5	**0.0**			**46,799.93**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.6W 90° Wind — 0.9D + 1.6W 97 mph Wind at 90° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

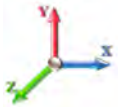
Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	17.40	0.578	4.75	0.00	0.39	2.09	0.85	1.00	0.00	3.55	36.69	0.00	1,219.0	0.0	175.63	686.07	861.70
2	6.3	17.40	0.290	2.25	0.00	0.19	2.62	0.85	1.00	0.00	1.56	18.34	0.00	585.7	0.0	96.48	343.04	439.52
3	8.8	17.40	0.290	2.11	0.00	0.18	2.66	0.85	1.00	0.00	1.47	18.34	0.00	576.5	0.0	92.49	343.04	435.53
4	14.0	17.40	0.000	7.75	0.00	0.18	2.65	0.85	1.00	0.00	4.53	58.70	0.00	1,223.9	0.0	284.22	1097.72	1,381.94
5	23.0	19.02	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	73.00	0.00	1,437.8	0.0	361.93	1492.32	1,854.25
6	33.0	20.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	375.71	1606.90	1,982.61
7	43.0	21.69	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	412.89	1698.98	2,111.87
8	53.0	22.67	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	415.12	1775.44	2,190.56
9	63.0	23.51	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	447.46	1841.24	2,288.70
10	73.0	24.25	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	444.06	1899.24	2,343.30
11	83.0	24.92	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	474.20	1951.27	2,425.47
12	93.0	25.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,401.3	0.0	467.29	1998.57	2,465.85
13	103.0	26.07	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,437.4	0.0	496.25	2042.00	2,538.25
14	113.0	26.59	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	61.77	0.00	1,320.3	0.0	486.85	1739.09	2,225.94
15	123.0	27.07	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	54.39	0.00	1,302.4	0.0	515.14	1537.54	2,052.68
16	133.0	27.52	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	42.46	0.00	1,198.4	0.0	503.84	1241.76	1,745.60
17	143.0	27.94	0.000	9.55	0.00	0.18	2.66	0.85	1.00	0.00	5.58	36.62	0.00	1,318.4	0.0	563.78	1100.94	1,664.72
18	153.0	28.34	0.000	9.05	0.00	0.17	2.69	0.85	1.00	0.00	5.27	34.00	0.00	1,248.3	0.0	546.79	1043.97	1,590.76
19	163.0	28.72	0.000	8.70	0.00	0.17	2.71	0.85	1.00	0.00	5.06	22.72	0.00	1,042.6	0.0	536.13	666.58	1,202.71
20	173.0	29.08	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	18.57	0.00	976.5	0.0	521.78	537.86	1,059.63
21	183.0	29.43	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	17.25	0.00	1,005.1	0.0	549.34	506.22	1,055.56
22	193.0	29.76	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	16.74	0.00	966.6	0.0	533.93	496.91	1,030.85
23	203.0	30.08	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	15.72	0.00	999.9	0.0	561.46	472.46	1,033.92
24	213.0	30.38	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	15.45	0.00	963.1	0.0	545.13	469.21	1,014.34
25	223.0	30.68	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	13.95	0.00	991.3	0.0	572.68	428.60	1,001.28
26	233.0	30.96	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	12.14	0.00	949.2	0.0	555.53	377.77	933.30
27	243.0	31.24	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	10.60	0.00	978.5	0.0	583.13	333.92	917.05
28	253.0	31.50	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	8.24	0.00	930.5	0.0	565.24	263.96	829.20
29	263.0	31.76	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	7.03	0.00	961.0	0.0	592.92	228.60	821.52
30	273.0	32.01	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.65	0.00	923.9	0.0	574.37	218.52	792.89
31	283.0	32.26	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	6.65	0.00	960.0	0.0	602.14	220.18	822.32
32	293.0	32.49	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.27	0.00	923.4	0.0	582.98	201.64	784.63
33	303.0	32.72	0.000	8.41	0.00	0.16	2.73	0.85	1.00	0.00	4.88	6.18	0.00	943.6	0.0	593.08	198.00	791.08
34	308.5	32.85	0.793	0.48	0.00	0.24	2.46	0.85	1.00	0.00	0.95	0.41	0.00	614.0	0.0	104.79	13.20	117.99
														37,914.5	**0.0**			**46,807.53**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 16



Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	4.62	0.578	14.19	9.44	0.98	2.06	1.00	1.00	1.55	15.36	41.74	51.51	4,004.6	2379.2	124.55	27.41	151.96
2	6.3	4.62	0.290	7.07	4.82	0.53	1.86	1.00	1.00	1.69	5.28	21.12	28.22	2,137.2	1356.3	38.66	120.35	159.00
3	8.8	4.62	0.290	7.09	4.98	0.53	1.86	1.00	1.00	1.75	5.30	21.21	29.19	2,154.4	1385.8	38.78	122.76	161.54
4	14.0	4.62	0.000	27.63	19.89	0.62	1.79	1.00	1.00	1.84	21.07	68.33	97.90	5,971.7	4339.8	148.44	334.60	483.04
5	23.0	5.05	0.000	32.93	24.02	0.59	1.81	1.00	1.00	1.93	24.45	85.65	126.3	7,551.7	5634.7	190.01	500.69	690.70
6	33.0	5.45	0.000	31.75	23.24	0.57	1.83	1.00	1.00	2.00	23.12	85.96	130.0	7,682.9	5814.5	195.72	577.59	773.31
7	43.0	5.76	0.000	34.48	25.58	0.62	1.79	1.00	1.00	2.05	26.15	86.32	133.4	8,079.1	6162.6	229.97	559.53	789.50
8	53.0	6.02	0.000	32.88	24.37	0.59	1.81	1.00	1.00	2.10	24.31	86.61	136.3	8,107.9	6239.5	225.62	633.37	858.99
9	63.0	6.25	0.000	35.48	26.57	0.63	1.79	1.00	1.00	2.13	27.28	86.85	138.6	8,442.4	6525.9	258.94	598.84	857.78
10	73.0	6.44	0.000	33.67	25.16	0.60	1.80	1.00	1.00	2.17	25.17	87.06	140.7	8,415.3	6546.9	248.69	673.05	921.74
11	83.0	6.62	0.000	36.22	27.31	0.65	1.78	1.00	1.00	2.19	28.15	87.25	142.5	8,719.8	6803.3	282.39	627.96	910.36
12	93.0	6.78	0.000	34.29	25.78	0.61	1.80	1.00	1.00	2.22	25.85	87.42	144.1	8,659.2	6790.9	267.88	704.06	971.94
13	103.0	6.93	0.000	36.82	27.91	0.65	1.78	1.00	1.00	2.24	28.85	87.57	145.6	8,946.5	7030.0	302.43	651.11	953.55
14	113.0	7.06	0.000	34.80	26.28	0.62	1.79	1.00	1.00	2.26	26.41	72.24	142.5	8,212.8	6452.4	284.52	664.24	948.75
15	123.0	7.19	0.000	37.32	28.41	0.66	1.78	1.00	1.00	2.28	29.44	61.99	140.6	8,046.4	6310.0	320.11	571.98	892.09
16	133.0	7.31	0.000	35.23	26.72	0.63	1.79	1.00	1.00	2.30	26.90	50.13	113.6	6,970.6	5372.7	299.33	527.88	827.21
17	143.0	7.42	0.000	38.39	28.84	0.68	1.78	1.00	1.00	2.32	30.80	44.34	97.46	6,915.3	5157.4	345.20	417.14	762.34
18	153.0	7.53	0.000	36.15	27.09	0.64	1.78	1.00	1.00	2.33	28.00	41.77	89.38	6,485.1	4820.7	319.75	435.73	755.48
19	163.0	7.63	0.000	37.93	29.22	0.67	1.78	1.00	1.00	2.35	30.20	24.29	87.40	5,701.1	4311.0	348.05	350.47	698.52
20	173.0	7.73	0.000	35.74	27.43	0.63	1.79	1.00	1.00	2.36	27.50	18.57	82.61	5,224.1	3922.1	322.70	352.93	675.63
21	183.0	7.82	0.000	38.27	29.56	0.68	1.78	1.00	1.00	2.37	30.62	17.25	79.91	5,345.1	4005.0	361.44	315.55	676.99
22	193.0	7.91	0.000	36.04	27.73	0.64	1.78	1.00	1.00	2.39	27.85	16.74	78.75	5,135.9	3847.0	334.06	341.75	675.81
23	203.0	7.99	0.000	38.58	29.87	0.68	1.78	1.00	1.00	2.40	31.00	15.72	73.95	5,235.6	3902.3	373.94	300.48	674.42
24	213.0	8.07	0.000	36.31	28.00	0.64	1.78	1.00	1.00	2.41	28.17	15.45	72.30	5,022.5	3738.4	344.69	323.84	668.53
25	223.0	8.15	0.000	38.86	30.15	0.69	1.78	1.00	1.00	2.42	31.35	13.95	67.39	5,094.5	3772.7	385.68	282.63	668.31
26	233.0	8.23	0.000	36.57	28.26	0.65	1.78	1.00	1.00	2.43	28.46	12.14	54.71	4,617.7	3352.1	354.69	266.28	620.97
27	243.0	8.30	0.000	39.12	30.41	0.69	1.78	1.00	1.00	2.44	31.67	10.60	46.80	4,633.6	3328.9	396.78	223.71	620.49
28	253.0	8.37	0.000	36.80	28.49	0.65	1.78	1.00	1.00	2.45	28.74	8.24	37.02	4,173.1	2932.4	364.16	205.51	569.67
29	263.0	8.44	0.000	39.36	30.65	0.70	1.78	1.00	1.00	2.46	31.97	7.03	31.59	4,244.7	2963.4	407.32	177.50	584.83
30	273.0	8.51	0.000	37.02	28.71	0.66	1.78	1.00	1.00	2.47	28.99	6.65	28.82	3,990.8	2759.0	373.16	179.09	552.25
31	283.0	8.57	0.000	39.58	30.88	0.70	1.78	1.00	1.00	2.48	32.26	6.65	28.93	4,213.7	2933.7	417.38	172.04	589.42
32	293.0	8.63	0.000	37.22	28.91	0.66	1.78	1.00	1.00	2.49	29.23	6.27	19.08	3,827.7	2596.5	381.75	91.25	473.00
33	303.0	8.69	0.000	37.42	29.01	0.66	1.78	1.00	1.00	2.50	29.48	6.18	16.64	3,831.4	2573.2	387.49	68.49	455.98
34	308.5	8.73	0.793	5.48	5.00	1.00	2.10	1.00	1.00	2.50	6.55	0.41	0.96	1,600.9	782.3	102.02	0.00	102.02
														197,395.3	**146842.7**			**22,176.11**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 1.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	4.62	0.578	14.19	9.44	0.98	2.06	0.80	1.00	1.55	15.25	41.74	51.51	4,004.6	2379.2	123.61	27.41	151.03
2	6.3	4.62	0.290	7.07	4.82	0.53	1.86	0.80	1.00	1.69	5.22	21.12	28.22	2,137.2	1356.3	38.23	120.35	158.58
3	8.8	4.62	0.290	7.09	4.98	0.53	1.86	0.80	1.00	1.75	5.24	21.21	29.19	2,154.4	1385.8	38.35	122.76	161.11
4	14.0	4.62	0.000	27.63	19.89	0.62	1.79	0.80	1.00	1.84	21.07	68.33	97.90	5,971.7	4339.8	148.44	334.60	483.04
5	23.0	5.05	0.000	32.93	24.02	0.59	1.81	0.80	1.00	1.93	24.45	85.65	126.3	7,551.7	5634.7	190.01	500.69	690.70
6	33.0	5.45	0.000	31.75	23.24	0.57	1.83	0.80	1.00	2.00	23.12	85.96	130.0	7,682.9	5814.5	195.72	577.59	773.31
7	43.0	5.76	0.000	34.48	25.58	0.62	1.79	0.80	1.00	2.05	26.15	86.32	133.4	8,079.1	6162.6	229.97	559.53	789.50
8	53.0	6.02	0.000	32.88	24.37	0.59	1.81	0.80	1.00	2.10	24.31	86.61	136.3	8,107.9	6239.5	225.62	633.37	858.99
9	63.0	6.25	0.000	35.48	26.57	0.63	1.79	0.80	1.00	2.13	27.28	86.85	138.6	8,442.4	6525.9	258.94	598.84	857.78
10	73.0	6.44	0.000	33.67	25.16	0.60	1.80	0.80	1.00	2.17	25.17	87.06	140.7	8,415.3	6546.9	248.69	673.05	921.74
11	83.0	6.62	0.000	36.22	27.31	0.65	1.78	0.80	1.00	2.19	28.15	87.25	142.5	8,719.8	6803.3	282.39	627.96	910.36
12	93.0	6.78	0.000	34.29	25.78	0.61	1.80	0.80	1.00	2.22	25.85	87.42	144.1	8,659.2	6790.9	267.88	704.06	971.94
13	103.0	6.93	0.000	36.82	27.91	0.65	1.78	0.80	1.00	2.24	28.85	87.57	145.6	8,946.5	7030.0	302.43	651.11	953.55
14	113.0	7.06	0.000	34.80	26.28	0.62	1.79	0.80	1.00	2.26	26.41	72.24	142.5	8,212.8	6452.4	284.52	664.24	948.75
15	123.0	7.19	0.000	37.32	28.41	0.66	1.78	0.80	1.00	2.28	29.44	61.99	140.6	8,046.4	6310.0	320.11	571.98	892.09
16	133.0	7.31	0.000	35.23	26.72	0.63	1.79	0.80	1.00	2.30	26.90	50.13	113.6	6,970.6	5372.7	299.33	527.88	827.21
17	143.0	7.42	0.000	38.39	28.84	0.68	1.78	0.80	1.00	2.32	30.80	44.34	97.46	6,915.3	5157.4	345.20	417.14	762.34
18	153.0	7.53	0.000	36.15	27.09	0.64	1.78	0.80	1.00	2.33	28.00	41.77	89.38	6,485.1	4820.7	319.75	435.73	755.48
19	163.0	7.63	0.000	37.93	29.22	0.67	1.78	0.80	1.00	2.35	30.20	24.29	87.40	5,701.1	4311.0	348.05	350.47	698.52
20	173.0	7.73	0.000	35.74	27.43	0.63	1.79	0.80	1.00	2.36	27.50	18.57	82.61	5,224.1	3922.1	322.70	352.93	675.63
21	183.0	7.82	0.000	38.27	29.56	0.68	1.78	0.80	1.00	2.37	30.62	17.25	79.91	5,345.1	4005.0	361.44	315.55	676.99
22	193.0	7.91	0.000	36.04	27.73	0.64	1.78	0.80	1.00	2.39	27.85	16.74	78.75	5,135.9	3847.0	334.06	341.75	675.81
23	203.0	7.99	0.000	38.58	29.87	0.68	1.78	0.80	1.00	2.40	31.00	15.72	73.95	5,235.6	3902.3	373.94	300.48	674.42
24	213.0	8.07	0.000	36.31	28.00	0.64	1.78	0.80	1.00	2.41	28.17	15.45	72.30	5,022.5	3738.4	344.69	323.84	668.53
25	223.0	8.15	0.000	38.86	30.15	0.69	1.78	0.80	1.00	2.42	31.35	13.95	67.39	5,094.5	3772.7	385.68	282.63	668.31
26	233.0	8.23	0.000	36.57	28.26	0.65	1.78	0.80	1.00	2.43	28.46	12.14	54.71	4,617.7	3352.1	354.69	266.28	620.97
27	243.0	8.30	0.000	39.12	30.41	0.69	1.78	0.80	1.00	2.44	31.67	10.60	46.80	4,633.6	3328.9	396.78	223.71	620.49
28	253.0	8.37	0.000	36.80	28.49	0.65	1.78	0.80	1.00	2.45	28.74	8.24	37.02	4,173.1	2932.4	364.16	205.51	569.67
29	263.0	8.44	0.000	39.36	30.65	0.70	1.78	0.80	1.00	2.46	31.97	7.03	31.59	4,244.7	2963.4	407.32	177.50	584.83
30	273.0	8.51	0.000	37.02	28.71	0.66	1.78	0.80	1.00	2.47	28.99	6.65	28.82	3,990.8	2759.0	373.16	179.09	552.25
31	283.0	8.57	0.000	39.58	30.88	0.70	1.78	0.80	1.00	2.48	32.26	6.65	28.93	4,213.7	2933.7	417.38	172.04	589.42
32	293.0	8.63	0.000	37.22	28.91	0.66	1.78	0.80	1.00	2.49	29.23	6.27	19.08	3,827.7	2596.5	381.75	91.25	473.00
33	303.0	8.69	0.000	37.42	29.01	0.66	1.78	0.80	1.00	2.50	29.48	6.18	16.64	3,831.4	2573.2	387.49	68.49	455.98
34	308.5	8.73	0.793	5.48	5.00	1.00	2.10	0.80	1.00	2.50	6.39	0.41	0.96	1,600.9	782.3	99.55	0.00	99.55
														197,395.3	**146842.7**			**22,171.85**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 1.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	4.62	0.578	14.19	9.44	0.98	2.06	0.85	1.00	1.55	15.27	41.74	51.51	4,004.6	2379.2	123.85	27.41	151.26
2	6.3	4.62	0.290	7.07	4.82	0.53	1.86	0.85	1.00	1.69	5.24	21.12	28.22	2,137.2	1356.3	38.34	120.35	158.68
3	8.8	4.62	0.290	7.09	4.98	0.53	1.86	0.85	1.00	1.75	5.26	21.21	29.19	2,154.4	1385.8	38.46	122.76	161.22
4	14.0	4.62	0.000	27.63	19.89	0.62	1.79	0.85	1.00	1.84	21.07	68.33	97.90	5,971.7	4339.8	148.44	334.60	483.04
5	23.0	5.05	0.000	32.93	24.02	0.59	1.81	0.85	1.00	1.93	24.45	85.65	126.3	7,551.7	5634.7	190.01	500.69	690.70
6	33.0	5.45	0.000	31.75	23.24	0.57	1.83	0.85	1.00	2.00	23.12	85.96	130.0	7,682.9	5814.5	195.72	577.59	773.31
7	43.0	5.76	0.000	34.48	25.58	0.62	1.79	0.85	1.00	2.05	26.15	86.32	133.4	8,079.1	6162.6	229.97	559.53	789.50
8	53.0	6.02	0.000	32.88	24.37	0.59	1.81	0.85	1.00	2.10	24.31	86.61	136.3	8,107.9	6239.5	225.62	633.37	858.99
9	63.0	6.25	0.000	35.48	26.57	0.63	1.79	0.85	1.00	2.13	27.28	86.85	138.6	8,442.4	6525.9	258.94	598.84	857.78
10	73.0	6.44	0.000	33.67	25.16	0.60	1.80	0.85	1.00	2.17	25.17	87.06	140.7	8,415.3	6546.9	248.69	673.05	921.74
11	83.0	6.62	0.000	36.22	27.31	0.65	1.78	0.85	1.00	2.19	28.15	87.25	142.5	8,719.8	6803.3	282.39	627.96	910.36
12	93.0	6.78	0.000	34.29	25.78	0.61	1.80	0.85	1.00	2.22	25.85	87.42	144.1	8,659.2	6790.9	267.88	704.06	971.94
13	103.0	6.93	0.000	36.82	27.91	0.65	1.78	0.85	1.00	2.24	28.85	87.57	145.6	8,946.5	7030.0	302.43	651.11	953.55
14	113.0	7.06	0.000	34.80	26.28	0.62	1.79	0.85	1.00	2.26	26.41	72.24	142.5	8,212.8	6452.4	284.52	664.24	948.75
15	123.0	7.19	0.000	37.32	28.41	0.66	1.78	0.85	1.00	2.28	29.44	61.99	140.6	8,046.4	6310.0	320.11	571.98	892.09
16	133.0	7.31	0.000	35.23	26.72	0.63	1.79	0.85	1.00	2.30	26.90	50.13	113.6	6,970.6	5372.7	299.33	527.88	827.21
17	143.0	7.42	0.000	38.39	28.84	0.68	1.78	0.85	1.00	2.32	30.80	44.34	97.46	6,915.3	5157.4	345.20	417.14	762.34
18	153.0	7.53	0.000	36.15	27.09	0.64	1.78	0.85	1.00	2.33	28.00	41.77	89.38	6,485.1	4820.7	319.75	435.73	755.48
19	163.0	7.63	0.000	37.93	29.22	0.67	1.78	0.85	1.00	2.35	30.20	24.29	87.40	5,701.1	4311.0	348.05	350.47	698.52
20	173.0	7.73	0.000	35.74	27.43	0.63	1.79	0.85	1.00	2.36	27.50	18.57	82.61	5,224.1	3922.1	322.70	352.93	675.63
21	183.0	7.82	0.000	38.27	29.56	0.68	1.78	0.85	1.00	2.37	30.62	17.25	79.91	5,345.1	4005.0	361.44	315.55	676.99
22	193.0	7.91	0.000	36.04	27.73	0.64	1.78	0.85	1.00	2.39	27.85	16.74	78.75	5,135.9	3847.0	334.06	341.75	675.81
23	203.0	7.99	0.000	38.58	29.87	0.68	1.78	0.85	1.00	2.40	31.00	15.72	73.95	5,235.6	3902.3	373.94	300.48	674.42
24	213.0	8.07	0.000	36.31	28.00	0.64	1.78	0.85	1.00	2.41	28.17	15.45	72.30	5,022.5	3738.4	344.69	323.84	668.53
25	223.0	8.15	0.000	38.86	30.15	0.69	1.78	0.85	1.00	2.42	31.35	13.95	67.39	5,094.5	3772.7	385.68	282.63	668.31
26	233.0	8.23	0.000	36.57	28.26	0.65	1.78	0.85	1.00	2.43	28.46	12.14	54.71	4,617.7	3352.1	354.69	266.28	620.97
27	243.0	8.30	0.000	39.12	30.41	0.69	1.78	0.85	1.00	2.44	31.67	10.60	46.80	4,633.6	3328.9	396.78	223.71	620.49
28	253.0	8.37	0.000	36.80	28.49	0.65	1.78	0.85	1.00	2.45	28.74	8.24	37.02	4,173.1	2932.4	364.16	205.51	569.67
29	263.0	8.44	0.000	39.36	30.65	0.70	1.78	0.85	1.00	2.46	31.97	7.03	31.59	4,244.7	2963.4	407.32	177.50	584.83
30	273.0	8.51	0.000	37.02	28.71	0.66	1.78	0.85	1.00	2.47	28.99	6.65	28.82	3,990.8	2759.0	373.16	179.09	552.25
31	283.0	8.57	0.000	39.58	30.88	0.70	1.78	0.85	1.00	2.48	32.26	6.65	28.93	4,213.7	2933.7	417.38	172.04	589.42
32	293.0	8.63	0.000	37.22	28.91	0.66	1.78	0.85	1.00	2.49	29.23	6.27	19.08	3,827.7	2596.5	381.75	91.25	473.00
33	303.0	8.69	0.000	37.42	29.01	0.66	1.78	0.85	1.00	2.50	29.48	6.18	16.64	3,831.4	2573.2	387.49	68.49	455.98
34	308.5	8.73	0.793	5.48	5.00	1.00	2.10	0.85	1.00	2.50	6.43	0.41	0.96	1,600.9	782.3	100.17	0.00	100.17
														197,395.3	**146842.7**			**22,172.91**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 19

Load Case: 1.0D + 1.0W Normal Wind — 1.0D + 1.0W 60 mph Wind at Normal To Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	6.66	0.578	4.75	0.00	0.39	2.09	1.00	1.00	0.00	3.64	36.69	0.00	1,354.5	0.0	43.02	164.06	207.09
2	6.3	6.66	0.290	2.25	0.00	0.19	2.62	1.00	1.00	0.00	1.60	18.34	0.00	650.8	0.0	23.72	82.03	105.75
3	8.8	6.66	0.290	2.11	0.00	0.18	2.66	1.00	1.00	0.00	1.52	18.34	0.00	640.5	0.0	22.77	82.03	104.80
4	14.0	6.66	0.000	7.75	0.00	0.18	2.65	1.00	1.00	0.00	4.53	58.70	0.00	1,359.9	0.0	67.97	262.50	330.47
5	23.0	7.28	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	73.00	0.00	1,597.5	0.0	86.55	356.86	443.41
6	33.0	7.85	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	89.84	384.26	474.11
7	43.0	8.30	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	98.74	406.28	505.02
8	53.0	8.67	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	99.27	424.57	523.83
9	63.0	9.00	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	107.00	440.30	547.30
10	73.0	9.28	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	106.19	454.17	560.36
11	83.0	9.53	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	113.40	466.61	580.01
12	93.0	9.76	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	111.74	477.92	589.67
13	103.0	9.98	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	118.67	488.31	606.98
14	113.0	10.17	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	61.77	0.00	1,467.0	0.0	116.42	415.87	532.29
15	123.0	10.36	0.000	8.91	0.00	0.17	2.70	1.00	1.00	0.00	5.18	54.39	0.00	1,447.1	0.0	123.19	367.68	490.86
16	133.0	10.53	0.000	8.51	0.00	0.16	2.73	1.00	1.00	0.00	4.94	42.46	0.00	1,331.5	0.0	120.48	296.95	417.43
17	143.0	10.69	0.000	9.55	0.00	0.18	2.66	1.00	1.00	0.00	5.58	36.62	0.00	1,464.9	0.0	134.82	263.27	398.09
18	153.0	10.84	0.000	9.05	0.00	0.17	2.69	1.00	1.00	0.00	5.27	34.00	0.00	1,387.0	0.0	130.76	249.65	380.40
19	163.0	10.99	0.000	8.70	0.00	0.17	2.71	1.00	1.00	0.00	5.06	22.72	0.00	1,158.4	0.0	128.21	159.40	287.61
20	173.0	11.13	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	18.57	0.00	1,085.0	0.0	124.77	128.62	253.39
21	183.0	11.26	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	17.25	0.00	1,116.8	0.0	131.36	121.05	252.42
22	193.0	11.39	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	16.74	0.00	1,074.0	0.0	127.68	118.83	246.51
23	203.0	11.51	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	15.72	0.00	1,111.0	0.0	134.26	112.98	247.24
24	213.0	11.63	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	15.45	0.00	1,070.1	0.0	130.36	112.20	242.56
25	223.0	11.74	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	13.95	0.00	1,101.5	0.0	136.95	102.49	239.44
26	233.0	11.85	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	12.14	0.00	1,054.6	0.0	132.85	90.34	223.18
27	243.0	11.95	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	10.60	0.00	1,087.2	0.0	139.45	79.85	219.30
28	253.0	12.05	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	8.24	0.00	1,033.9	0.0	135.17	63.12	198.29
29	263.0	12.15	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	7.03	0.00	1,067.7	0.0	141.79	54.67	196.45
30	273.0	12.25	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.65	0.00	1,026.5	0.0	137.35	52.25	189.61
31	283.0	12.34	0.000	8.71	0.00	0.17	2.71	1.00	1.00	0.00	5.06	6.65	0.00	1,066.6	0.0	143.99	52.65	196.64
32	293.0	12.43	0.000	8.31	0.00	0.16	2.74	1.00	1.00	0.00	4.81	6.27	0.00	1,026.0	0.0	139.41	48.22	187.63
33	303.0	12.52	0.000	8.41	0.00	0.16	2.73	1.00	1.00	0.00	4.88	6.18	0.00	1,048.5	0.0	141.83	47.35	189.17
34	308.5	12.57	0.793	0.48	0.00	0.24	2.46	1.00	1.00	0.00	1.07	0.41	0.00	682.2	0.0	28.18	3.16	31.34
														42,127.2	**0.0**			**11,198.66**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 20

Load Case: 1.0D + 1.0W 60° Wind — 1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	6.66	0.578	4.75	0.00	0.39	2.09	0.80	1.00	0.00	3.52	36.69	0.00	1,354.5	0.0	41.66	164.06	205.72
2	6.3	6.66	0.290	2.25	0.00	0.19	2.62	0.80	1.00	0.00	1.54	18.34	0.00	650.8	0.0	22.86	82.03	104.89
3	8.8	6.66	0.290	2.11	0.00	0.18	2.66	0.80	1.00	0.00	1.46	18.34	0.00	640.5	0.0	21.90	82.03	103.93
4	14.0	6.66	0.000	7.75	0.00	0.18	2.65	0.80	1.00	0.00	4.53	58.70	0.00	1,359.9	0.0	67.97	262.50	330.47
5	23.0	7.28	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	73.00	0.00	1,597.5	0.0	86.55	356.86	443.41
6	33.0	7.85	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	89.84	384.26	474.11
7	43.0	8.30	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	98.74	406.28	505.02
8	53.0	8.67	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	99.27	424.57	523.83
9	63.0	9.00	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	107.00	440.30	547.30
10	73.0	9.28	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	106.19	454.17	560.36
11	83.0	9.53	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	113.40	466.61	580.01
12	93.0	9.76	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	111.74	477.92	589.67
13	103.0	9.98	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	118.67	488.31	606.98
14	113.0	10.17	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	61.77	0.00	1,467.0	0.0	116.42	415.87	532.29
15	123.0	10.36	0.000	8.91	0.00	0.17	2.70	0.80	1.00	0.00	5.18	54.39	0.00	1,447.1	0.0	123.19	367.68	490.86
16	133.0	10.53	0.000	8.51	0.00	0.16	2.73	0.80	1.00	0.00	4.94	42.46	0.00	1,331.5	0.0	120.48	296.95	417.43
17	143.0	10.69	0.000	9.55	0.00	0.18	2.66	0.80	1.00	0.00	5.58	36.62	0.00	1,464.9	0.0	134.82	263.27	398.09
18	153.0	10.84	0.000	9.05	0.00	0.17	2.69	0.80	1.00	0.00	5.27	34.00	0.00	1,387.0	0.0	130.76	249.65	380.40
19	163.0	10.99	0.000	8.70	0.00	0.17	2.71	0.80	1.00	0.00	5.06	22.72	0.00	1,158.4	0.0	128.21	159.40	287.61
20	173.0	11.13	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	18.57	0.00	1,085.0	0.0	124.77	128.62	253.39
21	183.0	11.26	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	17.25	0.00	1,116.8	0.0	131.36	121.05	252.42
22	193.0	11.39	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	16.74	0.00	1,074.0	0.0	127.68	118.83	246.51
23	203.0	11.51	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	15.72	0.00	1,111.0	0.0	134.26	112.98	247.24
24	213.0	11.63	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	15.45	0.00	1,070.1	0.0	130.36	112.20	242.56
25	223.0	11.74	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	13.95	0.00	1,101.5	0.0	136.95	102.49	239.44
26	233.0	11.85	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	12.14	0.00	1,054.6	0.0	132.85	90.34	223.18
27	243.0	11.95	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	10.60	0.00	1,087.2	0.0	139.45	79.85	219.30
28	253.0	12.05	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	8.24	0.00	1,033.9	0.0	135.17	63.12	198.29
29	263.0	12.15	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	7.03	0.00	1,067.7	0.0	141.79	54.67	196.45
30	273.0	12.25	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.65	0.00	1,026.5	0.0	137.35	52.25	189.61
31	283.0	12.34	0.000	8.71	0.00	0.17	2.71	0.80	1.00	0.00	5.06	6.65	0.00	1,066.6	0.0	143.99	52.65	196.64
32	293.0	12.43	0.000	8.31	0.00	0.16	2.74	0.80	1.00	0.00	4.81	6.27	0.00	1,026.0	0.0	139.41	48.22	187.63
33	303.0	12.52	0.000	8.41	0.00	0.16	2.73	0.80	1.00	0.00	4.88	6.18	0.00	1,048.5	0.0	141.83	47.35	189.17
34	308.5	12.57	0.793	0.48	0.00	0.24	2.46	0.80	1.00	0.00	0.91	0.41	0.00	682.2	0.0	24.02	3.16	27.17
														42,127.2	**0.0**			**11,191.39**

Section Forces

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 21	

Load Case: 1.0D + 1.0W 90° Wind — 1.0D + 1.0W 60 mph Wind at 90° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

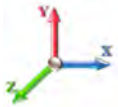
Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	2.5	6.66	0.578	4.75	0.00	0.39	2.09	0.85	1.00	0.00	3.55	36.69	0.00	1,354.5	0.0	42.00	164.06	206.06
2	6.3	6.66	0.290	2.25	0.00	0.19	2.62	0.85	1.00	0.00	1.56	18.34	0.00	650.8	0.0	23.07	82.03	105.10
3	8.8	6.66	0.290	2.11	0.00	0.18	2.66	0.85	1.00	0.00	1.47	18.34	0.00	640.5	0.0	22.12	82.03	104.15
4	14.0	6.66	0.000	7.75	0.00	0.18	2.65	0.85	1.00	0.00	4.53	58.70	0.00	1,359.9	0.0	67.97	262.50	330.47
5	23.0	7.28	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	73.00	0.00	1,597.5	0.0	86.55	356.86	443.41
6	33.0	7.85	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	89.84	384.26	474.11
7	43.0	8.30	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	98.74	406.28	505.02
8	53.0	8.67	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	99.27	424.57	523.83
9	63.0	9.00	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	107.00	440.30	547.30
10	73.0	9.28	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	106.19	454.17	560.36
11	83.0	9.53	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	113.40	466.61	580.01
12	93.0	9.76	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	72.84	0.00	1,557.0	0.0	111.74	477.92	589.67
13	103.0	9.98	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	72.84	0.00	1,597.1	0.0	118.67	488.31	606.98
14	113.0	10.17	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	61.77	0.00	1,467.0	0.0	116.42	415.87	532.29
15	123.0	10.36	0.000	8.91	0.00	0.17	2.70	0.85	1.00	0.00	5.18	54.39	0.00	1,447.1	0.0	123.19	367.68	490.86
16	133.0	10.53	0.000	8.51	0.00	0.16	2.73	0.85	1.00	0.00	4.94	42.46	0.00	1,331.5	0.0	120.48	296.95	417.43
17	143.0	10.69	0.000	9.55	0.00	0.18	2.66	0.85	1.00	0.00	5.58	36.62	0.00	1,464.9	0.0	134.82	263.27	398.09
18	153.0	10.84	0.000	9.05	0.00	0.17	2.69	0.85	1.00	0.00	5.27	34.00	0.00	1,387.0	0.0	130.76	249.65	380.40
19	163.0	10.99	0.000	8.70	0.00	0.17	2.71	0.85	1.00	0.00	5.06	22.72	0.00	1,158.4	0.0	128.21	159.40	287.61
20	173.0	11.13	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	18.57	0.00	1,085.0	0.0	124.77	128.62	253.39
21	183.0	11.26	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	17.25	0.00	1,116.8	0.0	131.36	121.05	252.42
22	193.0	11.39	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	16.74	0.00	1,074.0	0.0	127.68	118.83	246.51
23	203.0	11.51	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	15.72	0.00	1,111.0	0.0	134.26	112.98	247.24
24	213.0	11.63	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	15.45	0.00	1,070.1	0.0	130.36	112.20	242.56
25	223.0	11.74	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	13.95	0.00	1,101.5	0.0	136.95	102.49	239.44
26	233.0	11.85	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	12.14	0.00	1,054.6	0.0	132.85	90.34	223.18
27	243.0	11.95	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	10.60	0.00	1,087.2	0.0	139.45	79.85	219.30
28	253.0	12.05	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	8.24	0.00	1,033.9	0.0	135.17	63.12	198.29
29	263.0	12.15	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	7.03	0.00	1,067.7	0.0	141.79	54.67	196.45
30	273.0	12.25	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.65	0.00	1,026.5	0.0	137.35	52.25	189.61
31	283.0	12.34	0.000	8.71	0.00	0.17	2.71	0.85	1.00	0.00	5.06	6.65	0.00	1,066.6	0.0	143.99	52.65	196.64
32	293.0	12.43	0.000	8.31	0.00	0.16	2.74	0.85	1.00	0.00	4.81	6.27	0.00	1,026.0	0.0	139.41	48.22	187.63
33	303.0	12.52	0.000	8.41	0.00	0.16	2.73	0.85	1.00	0.00	4.88	6.18	0.00	1,048.5	0.0	141.83	47.35	189.17
34	308.5	12.57	0.793	0.48	0.00	0.24	2.46	0.85	1.00	0.00	0.95	0.41	0.00	682.2	0.0	25.06	3.16	28.22
														42,127.2	**0.0**			**11,193.21**

Force/Stress Compression Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 22	



Tower Engineering Solutions

LEG MEMBERS

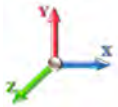
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	5	SOL - 3" SOLID	-149.56	1.2D + 1.0Di + 1.0Wi 90° Wind	1.92	50	50	50	15.40	50.00	312.64	47.8	Member X
2	7.5	SOL - 3" SOLID	-128.54	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	50	50	50	20.00	50.00	308.94	41.6	Member X
3	10	SOL - 3" SOLID	-131.75	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	50	50	50	20.00	50.00	308.94	42.6	Member X
4	18	SOL - 3" SOLID	-134.16	1.2D + 1.0Di + 1.0Wi 60° Wind	2.67	100	100	100	42.67	50.00	278.46	48.2	Member X
5	28	SOL - 3" SOLID	-139.69	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	49.4	Member X
6	38	SOL - 3" SOLID	-142.02	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	50.2	Member X
7	48	SOL - 3" SOLID	-142.55	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	50.4	Member X
8	58	SOL - 3" SOLID	-141.22	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	49.9	Member X
9	68	SOL - 3" SOLID	-137.89	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	48.7	Member X
10	78	SOL - 3" SOLID	-132.10	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	46.7	Member X
11	88	SOL - 3" SOLID	-123.66	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	43.7	Member X
12	98	SOL - 3" SOLID	-107.15	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	40.00	50.00	282.98	37.9	Member X
13	108	SOL - 3" SOLID	-108.39	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	40.00	50.00	282.98	38.3	Member X
14	118	SOL - 3" SOLID	-108.19	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	40.00	50.00	282.98	38.2	Member X
15	128	SOL - 3" SOLID	-101.12	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	40.00	50.00	282.98	35.7	Member X
16	138	SOL - 3" SOLID	-94.80	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	40.00	50.00	282.98	33.5	Member X
17	148	SOL - 3" SOLID	-84.46	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	40.00	50.00	282.98	29.8	Member X
18	158	SOL - 3" SOLID	-68.97	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	40.00	50.00	282.98	24.4	Member X
19	168	SOL - 2 7/8" SOLID	-65.99	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	25.7	Member X
20	178	SOL - 2 7/8" SOLID	-64.23	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	25.0	Member X
21	188	SOL - 2 7/8" SOLID	-64.04	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	24.9	Member X
22	198	SOL - 2 7/8" SOLID	-62.62	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	24.4	Member X
23	208	SOL - 2 7/8" SOLID	-59.56	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	23.2	Member X
24	218	SOL - 2 7/8" SOLID	-54.32	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	21.1	Member X
25	228	SOL - 2 7/8" SOLID	-49.77	1.2D + 1.0Di + 1.0Wi 90° Wind	2.50	100	100	100	41.78	50.00	257.05	19.4	Member X
26	238	SOL - 2 7/8" SOLID	-38.43	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	14.9	Member X
27	248	SOL - 2 7/8" SOLID	-30.26	1.2D + 1.0Di + 1.0Wi 60° Wind	2.50	100	100	100	41.78	50.00	257.05	11.8	Member X
28	258	SOL - 2 7/8" SOLID	-27.53	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	10.7	Member X
29	268	SOL - 2 7/8" SOLID	-26.96	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	10.5	Member X
30	278	SOL - 2 7/8" SOLID	-25.35	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	9.9	Member X
31	288	SOL - 2 7/8" SOLID	-23.08	1.2D + 1.0Di + 1.0Wi Normal	2.50	100	100	100	41.78	50.00	257.05	9.0	Member X
32	298	SOL - 2 7/8" SOLID	-25.39	1.2D + 1.6W Normal Wind	2.50	100	100	100	41.78	50.00	257.05	9.9	Member X
33	308	SOL - 2 7/8" SOLID	-22.84	1.2D + 1.6W Normal Wind	2.50	100	100	100	41.78	50.00	257.05	8.9	Member X
34	309	SOL - 2 7/8" SOLID	-0.92	1.2D + 1.0Di + 1.0Wi Normal	1.00	100	100	100	16.71	50.00	286.15	0.3	Member X

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	5										0.00	0	0				
2	7.5										0.00	0	0				
3	10	PLT - 6" x 3/4"	-2.70	0.9D + 1.6W 90° Wind	2.50	100	100	100	96.77	50.00	102.10	0	0			3	Member Y
4	18										0.00	0	0				
5	28										0.00	0	0				
6	38	SOL - 1" SOLID	0.00	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
7	48	SOL - 1" SOLID	-0.02	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
8	58	SOL - 1" SOLID	-0.02	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
9	68	SOL - 1" SOLID	-0.02	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
10	78										0.00	0	0				
11	88										0.00	0	0				
12	98										0.00	0	0				
13	108	SOL - 1" SOLID	-0.01	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X

Force/Stress Compression Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 23	



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HORIZONTAL MEMBERS

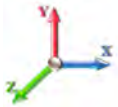
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
14	118	SOL - 1" SOLID	-0.02	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
15	128	SOL - 1" SOLID	-0.02	0.9D + 1.6W 60° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
16	138										0.00	0	0				
17	148										0.00	0	0				
18	158										0.00	0	0				
19	168										0.00	0	0				
20	178										0.00	0	0				
21	188										0.00	0	0				
22	198	SOL - 1" SOLID	-0.01	0.9D + 1.6W Normal Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
23	208	SOL - 1" SOLID	-0.01	0.9D + 1.6W Normal Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
24	218										0.00	0	0				
25	228										0.00	0	0				
26	238										0.00	0	0				
27	248										0.00	0	0				
28	258	SOL - 1" SOLID	0.00	0.9D + 1.6W 90° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
29	268	SOL - 1" SOLID	0.00	0.9D + 1.6W 90° Wind	5.00	100	100	100	168.00	50.00	6.29	0	0			0	Member X
30	278										0.00	0	0				
31	288										0.00	0	0				
32	298										0.00	0	0				
33	308	SOL - 1 1/4" SOLID	-0.12	1.2D + 1.0Di + 1.0Wi 60° Wind	5.00	100	100	100	134.40	50.00	15.35	0	0			1	Member X
34	309	PLT - 6"X1"	-2.90	1.2D + 1.6W Normal Wind	5.00	100	100	100	145.48	50.00	64.05	0	0			5	Member Y

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	5	SOL - 1 1/4" SOLID	-8.26	1.2D + 1.0Di + 1.0Wi 90° Wind	3.04	50	50	50	40.90	50.00	48.87	0	0			17	Member X
2	7.5	SOL - 1 1/4" SOLID	-4.71	1.2D + 1.6W 90° Wind	3.54	50	50	50	47.52	50.00	46.82	0	0			10	Member X
3	10	SOL - 1 1/4" SOLID	-4.87	1.2D + 1.6W 90° Wind	3.54	50	50	50	47.52	50.00	46.82	0	0			10	Member X
4	18	SOL - 1" SOLID	-4.67	1.2D + 1.6W Normal Wind	5.67	50	50	50	95.20	50.00	18.22	0	0			26	Member X
5	28	SOL - 7/8" SOLID	-3.14	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			27	Member X
6	38	SOL - 7/8" SOLID	-2.40	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			21	Member X
7	48	SOL - 7/8" SOLID	-1.59	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			14	Member X
8	58	SOL - 7/8" SOLID	-0.68	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			6	Member X
9	68	SOL - 7/8" SOLID	-1.43	1.2D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			12	Member X
10	78	SOL - 7/8" SOLID	-2.26	1.2D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			19	Member X
11	88	SOL - 7/8" SOLID	-3.13	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			27	Member X
12	98	SOL - 7/8" SOLID	-3.57	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			31	Member X
13	108	SOL - 7/8" SOLID	-2.55	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			22	Member X
14	118	SOL - 7/8" SOLID	-1.73	1.2D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			15	Member X
15	128	SOL - 7/8" SOLID	-2.08	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			18	Member X
16	138	SOL - 7/8" SOLID	-3.67	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			31	Member X
17	148	SOL - 1" SOLID	-4.51	1.2D + 1.6W 90° Wind	5.59	50	50	50	93.91	50.00	18.55	0	0			24	Member X
18	158	SOL - 1" SOLID	-3.31	1.2D + 1.6W 60° Wind	5.59	50	50	50	93.91	50.00	18.55	0	0			18	Member X
19	168	SOL - 7/8" SOLID	-2.39	1.2D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			21	Member X
20	178	SOL - 7/8" SOLID	-0.88	1.2D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			8	Member X
21	188	SOL - 7/8" SOLID	-0.81	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			7	Member X
22	198	SOL - 7/8" SOLID	-1.30	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			11	Member X
23	208	SOL - 7/8" SOLID	-1.85	1.2D + 1.6W Normal Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			16	Member X
24	218	SOL - 7/8" SOLID	-2.18	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			19	Member X
25	228	SOL - 7/8" SOLID	-2.84	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			24	Member X
26	238	SOL - 7/8" SOLID	-2.66	0.9D + 1.6W 60° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			23	Member X

Force/Stress Compression Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 24	



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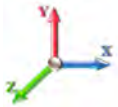
DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
27	248	SOL - 7/8" SOLID	-1.40	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			12	Member X
28	258	SOL - 7/8" SOLID	-1.11	0.9D + 1.6W Normal Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			10	Member X
29	268	SOL - 7/8" SOLID	-0.38	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			3	Member X
30	278	SOL - 7/8" SOLID	-0.62	1.2D + 1.6W Normal Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			5	Member X
31	288	SOL - 7/8" SOLID	-0.87	1.2D + 1.6W Normal Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			7	Member X
32	298	SOL - 7/8" SOLID	-1.26	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			11	Member X
33	308	SOL - 7/8" SOLID	-6.69	1.2D + 1.6W 90° Wind	5.59	50	50	50	107.31	50.00	11.66	0	0			57	Member X
34	309				0.00						0.00	0	0				

Force/Stress Tension Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 25	



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LEG MEMBERS

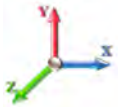
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	5				0	0.00		
2	7.5				0	0.00		
3	10				0	0.00		
4	18				0	0.00		
5	28	SOL - 3" SOLID	7.99	0.9D + 1.6W Normal Wind	50	318.11	2.5	Member
6	38	SOL - 3" SOLID	21.51	0.9D + 1.6W Normal Wind	50	318.11	6.8	Member
7	48	SOL - 3" SOLID	29.88	0.9D + 1.6W Normal Wind	50	318.11	9.4	Member
8	58	SOL - 3" SOLID	32.84	0.9D + 1.6W Normal Wind	50	318.11	10.3	Member
9	68	SOL - 3" SOLID	32.70	0.9D + 1.6W Normal Wind	50	318.11	10.3	Member
10	78	SOL - 3" SOLID	28.57	0.9D + 1.6W Normal Wind	50	318.11	9.0	Member
11	88	SOL - 3" SOLID	18.67	0.9D + 1.6W Normal Wind	50	318.11	5.9	Member
12	98	SOL - 3" SOLID	22.50	0.9D + 1.6W Normal Wind	50	318.11	7.1	Member
13	108	SOL - 3" SOLID	36.16	0.9D + 1.6W Normal Wind	50	318.11	11.4	Member
14	118	SOL - 3" SOLID	42.10	0.9D + 1.6W Normal Wind	50	318.11	13.2	Member
15	128	SOL - 3" SOLID	38.50	0.9D + 1.6W Normal Wind	50	318.11	12.1	Member
16	138	SOL - 3" SOLID	27.57	0.9D + 1.6W Normal Wind	50	318.11	8.7	Member
17	148	SOL - 3" SOLID	7.60	0.9D + 1.6W Normal Wind	50	318.11	2.4	Member
18	158	SOL - 3" SOLID	2.92	0.9D + 1.6W 90° Wind	50	318.11	0.9	Member
19	168	SOL - 2 7/8" SOLID	11.24	0.9D + 1.6W 90° Wind	50	292.05	3.8	Member
20	178	SOL - 2 7/8" SOLID	12.79	0.9D + 1.6W 90° Wind	50	292.05	4.4	Member
21	188	SOL - 2 7/8" SOLID	12.85	0.9D + 1.6W 90° Wind	50	292.05	4.4	Member
22	198	SOL - 2 7/8" SOLID	10.75	0.9D + 1.6W 90° Wind	50	292.05	3.7	Member
23	208	SOL - 2 7/8" SOLID	5.45	0.9D + 1.6W 90° Wind	50	292.05	1.9	Member
24	218				0	0.00		
25	228				0	0.00		
26	238	SOL - 2 7/8" SOLID	10.22	0.9D + 1.6W 60° Wind	50	292.05	3.5	Member
27	248				0	0.00		
28	258				0	0.00		
29	268				0	0.00		
30	278				0	0.00		
31	288				0	0.00		
32	298	SOL - 2 7/8" SOLID	1.36	0.9D + 1.6W 60° Wind	50	292.05	0.5	Member
33	308	SOL - 2 7/8" SOLID	18.93	0.9D + 1.6W 60° Wind	50	292.05	6.5	Member
34	309				0	0.00		

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	5	PLT - 6" x 3/4"	21.56	1.2D + 1.0Di + 1.0Wi 90	50	202.50	0	0				10.6	Member
2	7.5	PLT - 6" x 3/4"	22.59	1.2D + 1.0Di + 1.0Wi 90	50	202.50	0	0				11.2	Member
3	10	PLT - 6" x 3/4"	4.31	1.2D + 1.6W Normal Wi	50	202.50	0	0				2.1	Member
4	18	SOL - 7/8" SOLID	2.42	1.2D + 1.0Di + 1.0Wi No	50	27.06	0	0				8.9	Member
5	28	SOL - 1" SOLID	1.09	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				3.1	Member
6	38	SOL - 1" SOLID	0.60	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				1.7	Member
7	48	SOL - 1" SOLID	1.03	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				2.9	Member
8	58	SOL - 1" SOLID	0.59	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				1.7	Member
9	68	SOL - 1" SOLID	0.98	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				2.8	Member
10	78	SOL - 1" SOLID	0.55	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				1.6	Member
11	88	SOL - 1" SOLID	8.41	1.2D + 1.6W Normal Wi	50	35.34	0	0				23.8	Member
12	98	SOL - 1" SOLID	0.49	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				1.4	Member
13	108	SOL - 1" SOLID	0.82	1.2D + 1.0Di + 1.0Wi No	50	35.34	0	0				2.3	Member

Force/Stress Tension Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 26	



Tower Engineering Solutions

HORIZONTAL MEMBERS

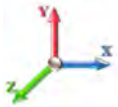
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
14	118	SOL - 1" SOLID	0.46	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				1.3	Member
15	128	SOL - 1" SOLID	0.73	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				2.1	Member
16	138	SOL - 1" SOLID	0.36	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				1.0	Member
17	148	SOL - 1 1/4" SOLID	9.80	1.2D + 1.6W Normal Wi	50	55.22	0	0				17.8	Member
18	158	SOL - 1 1/4" SOLID	0.43	1.2D + 1.0Di + 1.0Wi Nc	50	55.22	0	0				0.8	Member
19	168	SOL - 1" SOLID	0.52	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				1.5	Member
20	178	SOL - 1" SOLID	0.30	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				0.8	Member
21	188	SOL - 1" SOLID	0.50	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				1.4	Member
22	198	SOL - 1" SOLID	0.29	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				0.8	Member
23	208	SOL - 1" SOLID	0.46	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				1.3	Member
24	218	SOL - 1" SOLID	0.24	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				0.7	Member
25	228	SOL - 1" SOLID	7.18	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				20.3	Member
26	238	SOL - 1" SOLID	0.18	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				0.5	Member
27	248	SOL - 1" SOLID	0.24	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				0.7	Member
28	258	SOL - 1" SOLID	0.16	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				0.5	Member
29	268	SOL - 1" SOLID	0.21	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				0.6	Member
30	278	SOL - 1" SOLID	0.11	1.2D + 1.0Di + 1.0Wi 90	50	35.34	0	0				0.3	Member
31	288	SOL - 1" SOLID	0.19	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				0.5	Member
32	298	SOL - 1" SOLID	5.74	1.2D + 1.0Di + 1.0Wi Nc	50	35.34	0	0				16.2	Member
33	308	SOL - 1 1/4" SOLID			50	0.00	0	0					
34	309	PLT - 6"X1"	1.31	0.9D + 1.6W 60° Wind	50	270.00	0	0				0.5	Member

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	5	SOL - 1 1/4" SOLID	0.00		50	0.00	0	0					
2	7.5	SOL - 1 1/4" SOLID	4.88	1.2D + 1.6W 90° Wind	50	55.22	0	0				8.8	Member
3	10	SOL - 1 1/4" SOLID	4.69	1.2D + 1.6W 90° Wind	50	55.22	0	0				8.5	Member
4	18	SOL - 1" SOLID	3.07	1.2D + 1.6W 90° Wind	50	35.34	0	0				8.7	Member
5	28	SOL - 7/8" SOLID	2.89	1.2D + 1.6W 90° Wind	50	27.06	0	0				10.7	Member
6	38	SOL - 7/8" SOLID	2.10	1.2D + 1.6W 90° Wind	50	27.06	0	0				7.8	Member
7	48	SOL - 7/8" SOLID	1.28	1.2D + 1.6W 90° Wind	50	27.06	0	0				4.7	Member
8	58	SOL - 7/8" SOLID	0.45	0.9D + 1.6W Normal Wi	50	27.06	0	0				1.6	Member
9	68	SOL - 7/8" SOLID	1.15	1.2D + 1.6W 60° Wind	50	27.06	0	0				4.2	Member
10	78	SOL - 7/8" SOLID	1.98	1.2D + 1.6W 60° Wind	50	27.06	0	0				7.3	Member
11	88	SOL - 7/8" SOLID	3.48	1.2D + 1.6W 60° Wind	50	27.06	0	0				12.9	Member
12	98	SOL - 7/8" SOLID	3.95	0.9D + 1.6W 90° Wind	50	27.06	0	0				14.6	Member
13	108	SOL - 7/8" SOLID	2.31	0.9D + 1.6W 90° Wind	50	27.06	0	0				8.5	Member
14	118	SOL - 7/8" SOLID	1.46	1.2D + 1.6W 60° Wind	50	27.06	0	0				5.4	Member
15	128	SOL - 7/8" SOLID	1.86	1.2D + 1.6W 90° Wind	50	27.06	0	0				6.9	Member
16	138	SOL - 7/8" SOLID	3.50	1.2D + 1.6W 90° Wind	50	27.06	0	0				12.9	Member
17	148	SOL - 1" SOLID	4.78	1.2D + 1.6W 90° Wind	50	35.34	0	0				13.5	Member
18	158	SOL - 1" SOLID	3.66	0.9D + 1.6W 60° Wind	50	35.34	0	0				10.3	Member
19	168	SOL - 7/8" SOLID	2.46	0.9D + 1.6W 60° Wind	50	27.06	0	0				9.1	Member
20	178	SOL - 7/8" SOLID	0.75	1.2D + 1.6W 60° Wind	50	27.06	0	0				2.8	Member
21	188	SOL - 7/8" SOLID	0.69	1.2D + 1.6W 90° Wind	50	27.06	0	0				2.5	Member
22	198	SOL - 7/8" SOLID	1.36	1.2D + 1.6W Normal Wi	50	27.06	0	0				5.0	Member
23	208	SOL - 7/8" SOLID	1.81	1.2D + 1.6W 90° Wind	50	27.06	0	0				6.7	Member
24	218	SOL - 7/8" SOLID	2.06	1.2D + 1.6W 90° Wind	50	27.06	0	0				7.6	Member
25	228	SOL - 7/8" SOLID	3.22	1.2D + 1.6W 90° Wind	50	27.06	0	0				11.9	Member
26	238	SOL - 7/8" SOLID	3.01	0.9D + 1.6W 60° Wind	50	27.06	0	0				11.1	Member

Force/Stress Tension Summary

Structure:	CT15879-A-SBA	**Code:**	EIA/TIA-222-G	4/9/2021	
Site Name:	West Hartford	**Exposure:**	C		
Height:	309.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 27	



Tower Engineering Solutions

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
27	248	SOL - 7/8" SOLID	1.34	0.9D + 1.6W 90° Wind	50	27.06	0	0				5.0	Member
28	258	SOL - 7/8" SOLID	1.13	0.9D + 1.6W Normal Wi	50	27.06	0	0				4.2	Member
29	268	SOL - 7/8" SOLID	0.25	0.9D + 1.6W Normal Wi	50	27.06	0	0				0.9	Member
30	278	SOL - 7/8" SOLID	0.51	0.9D + 1.6W Normal Wi	50	27.06	0	0				1.9	Member
31	288	SOL - 7/8" SOLID	0.78	0.9D + 1.6W Normal Wi	50	27.06	0	0				2.9	Member
32	298	SOL - 7/8" SOLID	1.53	1.2D + 1.6W 60° Wind	50	27.06	0	0				5.6	Member
33	308	SOL - 7/8" SOLID	6.31	0.9D + 1.6W 90° Wind	50	27.06	0	0				23.3	Member
34	309	-	0.00		50	0.00	0	0					

Support Forces Summary

Structure:	CT15879-A-SBA		**Code:**	EIA/TIA-222-G	4/9/2021
Site Name:	West Hartford		**Exposure:**	C	
Height:	309.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 28

Tower Engineering Solutions

Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	-0.03	168.98	-8.52	
	A1	0.00	-2.89	2.46	
	A1b	56.52	-38.64	-34.81	
	A1a	-56.68	-55.71	-34.95	
1.2D + 1.6W 60° Wind	1	-7.05	160.54	-3.97	
	A1	-1.68	-12.56	14.42	
	A1b	11.88	-10.35	-8.74	
	A1a	-69.02	-66.67	-39.86	
1.2D + 1.6W 90° Wind	1	-8.40	172.24	0.37	
	A1	-2.25	-31.12	41.20	
	A1b	3.79	-3.85	-3.00	
	A1a	-69.07	-65.74	-38.67	
0.9D + 1.6W Normal Wind	1	-0.04	152.71	-8.85	
	A1	0.00	-2.91	2.47	
	A1b	56.40	-38.59	-34.74	
	A1a	-56.55	-55.61	-34.87	
0.9D + 1.6W 60° Wind	1	-7.17	144.45	-4.04	
	A1	-1.68	-12.61	14.47	
	A1b	11.93	-10.39	-8.77	
	A1a	-68.95	-66.64	-39.82	
0.9D + 1.6W 90° Wind	1	-8.57	155.98	0.40	
	A1	-2.25	-31.08	41.11	
	A1b	3.81	-3.87	-3.01	
	A1a	-68.92	-65.64	-38.59	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.17	372.76	-2.02	
	A1	-0.02	-17.71	29.13	
	A1b	52.86	-33.05	-32.59	
	A1a	-53.21	-48.53	-32.85	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-1.53	373.57	-0.95	
	A1	-1.79	-24.91	38.33	
	A1b	32.44	-19.31	-20.73	
	A1a	-62.37	-56.71	-36.00	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-1.79	376.08	0.04	
	A1	-2.27	-33.46	50.18	
	A1b	26.63	-14.77	-16.27	
	A1a	-60.84	-54.60	-34.06	
1.0D + 1.0W Normal Wind	1	-0.04	108.30	-2.19	
	A1	0.00	-9.01	11.51	
	A1b	23.03	-15.95	-13.75	
	A1a	-22.96	-22.72	-13.73	
1.0D + 1.0W 60° Wind	1	-1.82	109.06	-1.03	
	A1	-0.40	-12.21	15.78	
	A1b	13.52	-9.82	-8.25	
	A1a	-27.19	-26.59	-15.70	

1.0D + 1.0W 90° Wind	1	-2.16	109.43	0.06
	A1	-0.50	-15.87	20.97
	A1b	10.43	-7.61	-6.22
	A1a	-26.08	-25.38	-14.83

Max Reactions (kips)	Base	Anchor 1
Vertical	376.08	66.67
Horizontal	8.85	79.70

Cable Forces Summary

Structure:	CT15879-A-SBA		**Code:**	EIA/TIA-222-G	4/9/2021
Site Name:	West Hartford		**Exposure:**	C	
Height:	309.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 30

Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kips)	Applied Tension (kips)	Use %
1.2D + 1.6W Normal Wind	88.00	3/4 EHS	A1	37	34.98	0.78	2
			A1b	37a	34.98	19.06	55
			A1a	37b	34.98	21.15	60
	148.00	13/16	A1	61	43.20	0.17	0
			A1b	61a	43.20	23.26	54
			A1a	61b	43.20	25.86	60
	228.00	7/8 EHS	A1	93	47.82	0.97	2
			A1b	93a	47.82	20.70	43
			A1a	93b	47.82	23.68	50
	298.00	13/16	A1	121	43.20	3.03	7
			A1b	121a	43.20	16.15	37
			A1a	121b	43.20	18.34	42
1.2D + 1.6W 60° Wind	88.00	3/4 EHS	A1	37	34.98	3.19	9
			A1b	37a	34.98	3.13	9
			A1a	37b	34.98	25.22	72
	148.00	13/16	A1	61	43.20	4.11	10
			A1b	61a	43.20	3.76	9
			A1a	61b	43.20	30.52	71
	228.00	7/8 EHS	A1	93	47.82	6.04	13
			A1b	93a	47.82	5.56	12
			A1a	93b	47.82	28.42	59
	298.00	13/16	A1	121	43.20	7.21	17
			A1b	121a	43.20	6.83	16
			A1a	121b	43.20	22.13	51
1.2D + 1.6W 90° Wind	88.00	3/4 EHS	A1	37	34.98	12.02	34
			A1b	37a	34.98	1.02	3
			A1a	37b	34.98	25.51	73
	148.00	13/16	A1	61	43.20	14.91	35
			A1b	61a	43.20	1.00	2
			A1a	61b	43.20	30.83	71
	228.00	7/8 EHS	A1	93	47.82	14.34	30
			A1b	93a	47.82	1.87	4
			A1a	93b	47.82	27.89	58
	298.00	13/16	A1	121	43.20	12.26	28
			A1b	121a	43.20	3.33	8
			A1a	121b	43.20	21.03	49
0.9D + 1.6W Normal Wind	88.00	3/4 EHS	A1	37	34.98	0.78	2
			A1b	37a	34.98	18.98	54
			A1a	37b	34.98	21.05	60
	148.00	13/16	A1	61	43.20	0.17	0
			A1b	61a	43.20	23.19	54
			A1a	61b	43.20	25.77	60
	228.00	7/8 EHS	A1	93	47.82	0.97	2
			A1b	93a	47.82	20.69	43
			A1a	93b	47.82	23.66	49
	298.00	13/16	A1	121	43.20	3.04	7
			A1b	121a	43.20	16.17	37
			A1a	121b	43.20	18.35	42
0.9D + 1.6W 60° Wind	88.00	3/4 EHS	A1	37	34.98	3.20	9
			A1b	37a	34.98	3.14	9
			A1a	37b	34.98	25.15	72
	148.00	13/16	A1	61	43.20	4.12	10
			A1b	61a	43.20	3.77	9

0.9D + 1.6W 60° Wind	148.00	13/16	A1a	61b	43.20	30.48	71
	228.00	7/8 EHS	A1	93	47.82	6.06	13
			A1b	93a	47.82	5.58	12
			A1a	93b	47.82	28.43	59
	298.00	13/16	A1	121	43.20	7.24	17
			A1b	121a	43.20	6.85	16
			A1a	121b	43.20	22.16	51
0.9D + 1.6W 90° Wind	88.00	3/4 EHS	A1	37	34.98	11.95	34
			A1b	37a	34.98	1.03	3
			A1a	37b	34.98	25.40	73
	148.00	13/16	A1	61	43.20	14.85	34
			A1b	61a	43.20	1.00	2
			A1a	61b	43.20	30.75	71
	228.00	7/8 EHS	A1	93	47.82	14.34	30
			A1b	93a	47.82	1.88	4
			A1a	93b	47.82	27.88	58
	298.00	13/16	A1	121	43.20	12.29	28
			A1b	121a	43.20	3.34	8
			A1a	121b	43.20	21.05	49
1.2D + 1.0Di + 1.0Wi Normal Wind	88.00	3/4 EHS	A1	37	34.98	9.76	28
			A1b	37a	34.98	16.82	48
			A1a	37b	34.98	18.80	54
	148.00	13/16	A1	61	43.20	10.30	24
			A1b	61a	43.20	19.68	46
			A1a	61b	43.20	22.53	52
	228.00	7/8 EHS	A1	93	47.82	11.75	25
			A1b	93a	47.82	21.50	45
			A1a	93b	47.82	24.79	52
	298.00	13/16	A1	121	43.20	11.02	26
			A1b	121a	43.20	20.41	47
			A1a	121b	43.20	23.15	54
1.2D + 1.0Di + 1.0Wi 60° Wind	88.00	3/4 EHS	A1	37	34.98	11.91	34
			A1b	37a	34.98	11.18	32
			A1a	37b	34.98	21.10	60
	148.00	13/16	A1	61	43.20	13.15	30
			A1b	61a	43.20	12.05	28
			A1a	61b	43.20	25.76	60
	228.00	7/8 EHS	A1	93	47.82	14.97	31
			A1b	93a	47.82	13.77	29
			A1a	93b	47.82	28.56	60
	298.00	13/16	A1	121	43.20	14.63	34
			A1b	121a	43.20	13.65	32
			A1a	121b	43.20	26.48	61
1.2D + 1.0Di + 1.0Wi 90° Wind	88.00	3/4 EHS	A1	37	34.98	14.92	43
			A1b	37a	34.98	9.49	27
			A1a	37b	34.98	20.60	59
	148.00	13/16	A1	61	43.20	17.15	40
			A1b	61a	43.20	9.92	23
			A1a	61b	43.20	25.03	58
	228.00	7/8 EHS	A1	93	47.82	19.06	40
			A1b	93a	47.82	11.42	24
			A1a	93b	47.82	27.59	58
	298.00	13/16	A1	121	43.20	18.32	42
			A1b	121a	43.20	11.12	26
			A1a	121b	43.20	25.55	59
1.0D + 1.0W Normal Wind	88.00	3/4 EHS	A1	37	34.98	3.14	9
			A1b	37a	34.98	7.32	21
			A1a	37b	34.98	8.05	23
	148.00	13/16	A1	61	43.20	3.26	8
			A1b	61a	43.20	8.69	20
			A1a	61b	43.20	9.78	23
	228.00	7/8 EHS	A1	93	47.82	4.78	10
			A1b	93a	47.82	8.86	19
			A1a	93b	47.82	10.07	21
	298.00	13/16	A1	121	43.20	4.72	11

1.0D + 1.0W Normal Wind	298.00	13/16	A1b	121a	43.20	7.81	18
			A1a	121b	43.20	8.78	20
1.0D + 1.0W 60° Wind	88.00	3/4 EHS	A1	37	34.98	4.28	12
			A1b	37a	34.98	4.09	12
			A1a	37b	34.98	9.53	27
	148.00	13/16	A1	61	43.20	4.99	12
			A1b	61a	43.20	4.57	11
			A1a	61b	43.20	11.60	27
	228.00	7/8 EHS	A1	93	47.82	6.15	13
			A1b	93a	47.82	5.73	12
			A1a	93b	47.82	11.65	24
	298.00	13/16	A1	121	43.20	5.89	14
			A1b	121a	43.20	5.50	13
			A1a	121b	43.20	10.01	23
1.0D + 1.0W 90° Wind	88.00	3/4 EHS	A1	37	34.98	5.90	17
			A1b	37a	34.98	3.14	9
			A1a	37b	34.98	9.12	26
	148.00	13/16	A1	61	43.20	7.04	16
			A1b	61a	43.20	3.17	7
			A1a	61b	43.20	11.07	26
	228.00	7/8 EHS	A1	93	47.82	7.75	16
			A1b	93a	47.82	4.63	10
			A1a	93b	47.82	11.16	23
	298.00	13/16	A1	121	43.20	7.05	16
			A1b	121a	43.20	4.56	11
			A1a	121b	43.20	9.59	22

Max Reactions

Base:	376.08 (Vertical)	8.85 (Horizontal)
Anchor 1:	66.67 (Vertical)	79.70 (Horizontal)

Max Usages

Max Leg: 50.4% (1.2D + 1.0Di + 1.0Wi 60° Wind - Sect 7)
Max Diag: 57.3% (1.2D + 1.6W 90° Wind - Sect 33)
Max Horiz: 23.8% (1.2D + 1.6W Normal Wind - Sect 11)
Max Cable: 72.9% (1.2D + 1.6W 90° Wind) - Elev: 88 ft

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.6W 97 mph Wind at 60° From Face	20.50	0.2913	0.7380	0.7129
	113.00	1.0224	1.2875	0.2404
	130.50	1.0772	1.3924	0.1317
	135.50	1.0872	1.4225	0.1049
	145.50	1.1035	1.4826	0.0884
	160.50	1.1356	1.5609	0.1230
	165.50	1.1451	1.5910	0.1032
	180.50	1.1670	1.6811	0.0673
	195.50	1.1779	1.7715	0.0257
	203.00	1.1783	1.7346	0.0387
	220.50	1.1735	1.6490	0.0322
	225.50	1.1714	1.6245	0.0400
	233.00	1.1736	1.5880	0.0476
	235.50	1.1753	1.5758	0.0348
	243.00	1.1802	1.4806	0.0466
	250.50	1.1857	1.3855	0.0497
	253.00	1.1874	1.3536	0.0734
	265.50	1.1961	1.1924	0.0458
	308.00	1.2385	0.6957	0.2327
	309.00	1.2434	0.6966	0.2929
	326.50	1.4553	0.6914	1.1115
	344.00	1.8298	0.6914	1.2842

0.9D + 1.6W 97 mph Wind at 90° From Face	20.50	0.3870	0.9685	0.9366
	113.00	1.3892	1.5330	0.3236
	130.50	1.4639	1.6405	0.1788
	135.50	1.4775	1.6713	0.1415
	145.50	1.4986	1.7329	0.1017
	160.50	1.5308	1.8136	0.1147
	165.50	1.5384	1.8446	0.0837
	180.50	1.5501	1.9379	0.0548
	195.50	1.5442	2.0314	0.0810
	203.00	1.5337	1.9961	0.1208
	220.50	1.4990	1.9128	0.1422
	225.50	1.4874	1.8891	0.1504
	233.00	1.4746	1.8536	0.1134
	235.50	1.4712	1.8418	0.1039
	243.00	1.4602	1.7476	0.1151
	250.50	1.4492	1.6534	0.1241
	253.00	1.4451	1.6217	0.1651
	265.50	1.4249	1.4590	0.1296
	308.00	1.3669	0.9551	0.1506
	309.00	1.3694	0.9557	0.1974
	326.50	1.5224	0.9519	0.9880
	344.00	1.8572	0.9521	1.1595
0.9D + 1.6W 97 mph Wind at Normal To Face	20.50	0.3515	0.1895	0.9489
	113.00	1.3523	0.7220	0.3039
	130.50	1.4204	0.8235	0.1572
	135.50	1.4320	0.8526	0.1219
	145.50	1.4494	0.9107	0.0869
	160.50	1.4758	0.9859	0.0853
	165.50	1.4815	1.0149	0.0676
	180.50	1.4877	1.1017	0.0254
	195.50	1.4767	1.1888	0.0779
	203.00	1.4654	1.1504	0.0868
	220.50	1.4290	1.0605	0.1360
	225.50	1.4175	1.0349	0.1398
	233.00	1.4045	0.9966	0.0873
	235.50	1.3979	0.9838	0.0896
	243.00	1.3903	0.8868	0.0863
	250.50	1.3799	0.7898	0.0783
	253.00	1.3767	0.7575	0.0353
	265.50	1.3581	0.5959	0.0940
	308.00	1.3028	0.1045	0.0995
	309.00	1.3053	0.1049	0.1616
	326.50	1.5002	0.1006	0.9778
	344.00	1.8318	0.1006	1.1502
1.0D + 1.0W 60 mph Wind at 60° From Face	20.50	0.0685	0.2563	0.1547
	113.00	0.2177	0.3285	0.0416
	130.50	0.2262	0.3484	0.0168
	135.50	0.2273	0.3546	0.0110
	145.50	0.2288	0.3674	0.0079
	160.50	0.2332	0.3853	0.0176
	165.50	0.2345	0.3927	0.0129
	180.50	0.2371	0.4162	0.0061
	195.50	0.2374	0.4419	0.0051
	203.00	0.2363	0.4358	0.0124
	220.50	0.2328	0.4236	0.0157
	225.50	0.2315	0.4206	0.0190
	233.00	0.2310	0.4165	0.0048
	235.50	0.2310	0.4152	0.0019
	243.00	0.2311	0.3976	0.0022
	250.50	0.2314	0.3803	0.0034
	253.00	0.2314	0.3746	0.0143
	265.50	0.2318	0.3467	0.0027
	308.00	0.2371	0.2641	0.0587
	309.00	0.2384	0.2643	0.0793
	326.50	0.2938	0.2636	0.3128
	344.00	0.3994	0.2636	0.3622

1.0D + 1.0W 60 mph Wind at 90° From Face	20.50	0.0789	0.4107	0.1590
	113.00	0.2288	0.5004	0.0370
	130.50	0.2353	0.5219	0.0135
	135.50	0.2358	0.5283	0.0106
	145.50	0.2359	0.5417	0.0133
	160.50	0.2381	0.5599	0.0138
	165.50	0.2385	0.5672	0.0118
	180.50	0.2386	0.5902	0.0143
	195.50	0.2361	0.6148	0.0218
	203.00	0.2335	0.6080	0.0303
	220.50	0.2261	0.5934	0.0316
	225.50	0.2238	0.5896	0.0335
	233.00	0.2215	0.5841	0.0224
	235.50	0.2210	0.5824	0.0192
	243.00	0.2193	0.5632	0.0204
	250.50	0.2177	0.5444	0.0214
	253.00	0.2171	0.5381	0.0328
	265.50	0.2144	0.5072	0.0213
	308.00	0.2095	0.4133	0.0443
	309.00	0.2105	0.4135	0.0641
	326.50	0.2517	0.4129	0.2957
	344.00	0.3510	0.4129	0.3450
1.0D + 1.0W 60 mph Wind at Normal To Face	20.50	0.0559	0.0077	0.1506
	113.00	0.1909	0.0238	0.0255
	130.50	0.1937	0.0342	0.0126
	135.50	0.1930	0.0378	0.0160
	145.50	0.1910	0.0461	0.0213
	160.50	0.1895	0.0581	0.0120
	165.50	0.1887	0.0637	0.0137
	180.50	0.1847	0.0834	0.0238
	195.50	0.1783	0.1081	0.0332
	203.00	0.1742	0.1028	0.0323
	220.50	0.1631	0.0954	0.0420
	225.50	0.1599	0.0946	0.0428
	233.00	0.1560	0.0945	0.0298
	235.50	0.1547	0.0948	0.0295
	243.00	0.1517	0.0822	0.0262
	250.50	0.1486	0.0708	0.0234
	253.00	0.1477	0.0673	0.0122
	265.50	0.1426	0.0511	0.0260
	308.00	0.1291	0.0138	0.0316
	309.00	0.1298	0.0140	0.0513
	326.50	0.1851	0.0135	0.2851
	344.00	0.2798	0.0135	0.3343
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	20.50	0.1435	0.1895	0.3717
	113.00	0.5508	0.3361	0.1598
	130.50	0.5932	0.3656	0.1220
	135.50	0.6033	0.3742	0.1142
	145.50	0.6223	0.3915	0.1095
	160.50	0.6553	0.4152	0.1302
	165.50	0.6663	0.4245	0.1226
	180.50	0.6969	0.4524	0.1098
	195.50	0.7228	0.4809	0.0902
	203.00	0.7336	0.4800	0.0733
	220.50	0.7558	0.4774	0.0728
	225.50	0.7615	0.4768	0.0754
	233.00	0.7731	0.4759	0.1058
	235.50	0.7774	0.4757	0.0952
	243.00	0.7902	0.4470	0.1004
	250.50	0.8032	0.4183	0.0976
	253.00	0.8073	0.4086	0.0868
	265.50	0.8276	0.3577	0.0919
	308.00	0.8947	0.2032	0.1613
	309.00	0.8978	0.2035	0.1893
	326.50	1.0042	0.2021	0.5041
	344.00	1.1716	0.2021	0.5715

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	20.50	0.1693	0.4039	0.4111
	113.00	0.6196	0.5519	0.1688
	130.50	0.6632	0.5813	0.1223
	135.50	0.6732	0.5898	0.1119
	145.50	0.6913	0.6070	0.1024
	160.50	0.7212	0.6305	0.1176
	165.50	0.7307	0.6396	0.1067
	180.50	0.7555	0.6673	0.0910
	195.50	0.7736	0.6955	0.0699
	203.00	0.7798	0.6943	0.0518
	220.50	0.7897	0.6914	0.0607
	225.50	0.7917	0.6907	0.0658
	233.00	0.7971	0.6897	0.0822
	235.50	0.7994	0.6894	0.0664
	243.00	0.8058	0.6604	0.0735
	250.50	0.8122	0.6316	0.0694
	253.00	0.8140	0.6218	0.0587
	265.50	0.8228	0.5716	0.0688
	308.00	0.8505	0.4177	0.1192
	309.00	0.8527	0.4179	0.1444
	326.50	0.9308	0.4171	0.4479
	344.00	1.0812	0.4172	0.5146
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	20.50	0.1422	0.0584	0.3850
	113.00	0.5488	0.1728	0.1368
	130.50	0.5820	0.1984	0.0897
	135.50	0.5889	0.2060	0.0792
	145.50	0.6009	0.2215	0.0698
	160.50	0.6201	0.2431	0.0748
	165.50	0.6259	0.2518	0.0691
	180.50	0.6387	0.2786	0.0439
	195.50	0.6443	0.3067	0.0317
	203.00	0.6446	0.3059	0.0294
	220.50	0.6395	0.3047	0.0470
	225.50	0.6375	0.3047	0.0529
	233.00	0.6359	0.3049	0.0355
	235.50	0.6341	0.3050	0.0291
	243.00	0.6355	0.2775	0.0283
	250.50	0.6347	0.2501	0.0266
	253.00	0.6346	0.2410	0.0323
	265.50	0.6313	0.1951	0.0377
	308.00	0.6149	0.0580	0.0444
	309.00	0.6160	0.0582	0.0705
	326.50	0.6900	0.0570	0.3826
	344.00	0.8166	0.0569	0.4496
1.2D + 1.6W 97 mph Wind at 60° From Face	20.50	0.2929	0.7380	0.7172
	113.00	1.0269	1.2876	0.2404
	130.50	1.0817	1.3925	0.1313
	135.50	1.0916	1.4226	0.1043
	145.50	1.1078	1.4828	0.0878
	160.50	1.1398	1.5611	0.1226
	165.50	1.1492	1.5912	0.1027
	180.50	1.1709	1.6813	0.0669
	195.50	1.1817	1.7717	0.0257
	203.00	1.1820	1.7349	0.0393
	220.50	1.1770	1.6492	0.0330
	225.50	1.1749	1.6248	0.0407
	233.00	1.1770	1.5883	0.0474
	235.50	1.1787	1.5762	0.0345
	243.00	1.1835	1.4810	0.0464
	250.50	1.1890	1.3858	0.0497
	253.00	1.1907	1.3540	0.0738
	265.50	1.1993	1.1929	0.0457
	308.00	1.2415	0.6963	0.2327
	309.00	1.2464	0.6971	0.2932
	326.50	1.4585	0.6919	1.1125
	344.00	1.8333	0.6920	1.2855

1.2D + 1.6W 97 mph Wind at 90° From Face	20.50	0.3901	0.9668	0.9453
	113.00	1.3999	1.5317	0.3247
	130.50	1.4748	1.6393	0.1787
	135.50	1.4884	1.6701	0.1412
	145.50	1.5094	1.7318	0.1010
	160.50	1.5414	1.8125	0.1139
	165.50	1.5489	1.8436	0.0828
	180.50	1.5602	1.9369	0.0550
	195.50	1.5538	2.0305	0.0828
	203.00	1.5430	1.9953	0.1230
	220.50	1.5076	1.9121	0.1447
	225.50	1.4959	1.8884	0.1529
	233.00	1.4827	1.8530	0.1157
	235.50	1.4792	1.8411	0.1062
	243.00	1.4679	1.7470	0.1174
	250.50	1.4566	1.6528	0.1263
	253.00	1.4524	1.6211	0.1675
	265.50	1.4317	1.4584	0.1319
	308.00	1.3720	0.9544	0.1503
	309.00	1.3745	0.9550	0.1969
	326.50	1.5271	0.9512	0.9872
	344.00	1.8616	0.9515	1.1589
1.2D + 1.6W 97 mph Wind at Normal To Face	20.50	0.3544	0.1896	0.9570
	113.00	1.3625	0.7220	0.3051
	130.50	1.4308	0.8236	0.1573
	135.50	1.4424	0.8526	0.1218
	145.50	1.4597	0.9108	0.0865
	160.50	1.4859	0.9859	0.0846
	165.50	1.4916	1.0149	0.0669
	180.50	1.4976	1.1017	0.0258
	195.50	1.4862	1.1888	0.0792
	203.00	1.4748	1.1503	0.0881
	220.50	1.4379	1.0605	0.1376
	225.50	1.4263	1.0349	0.1413
	233.00	1.4130	0.9966	0.0888
	235.50	1.4064	0.9838	0.0911
	243.00	1.3986	0.8868	0.0877
	250.50	1.3879	0.7898	0.0797
	253.00	1.3848	0.7575	0.0364
	265.50	1.3658	0.5959	0.0955
	308.00	1.3093	0.1046	0.0982
	309.00	1.3118	0.1050	0.1605
	326.50	1.5064	0.1007	0.9773
	344.00	1.8379	0.1007	1.1500

Guyed Tower Base Design

Tower Engineering Solutions

Customer Name:	SBA Communications Corp	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	309
Site Nmber:	CT15879-A-SBA	**Engineer Name:**	K. Wyant
Engr. Number:	104954	**Engineer Login ID:**	

Date 4/9/2021

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Guyed Tower

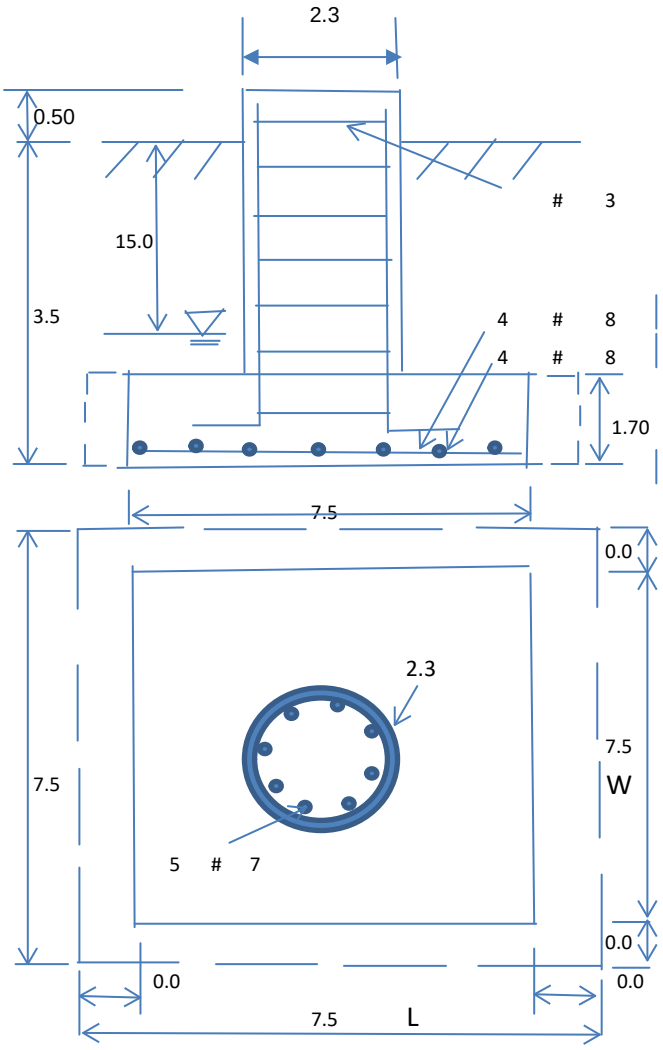
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	376.1	Shear Force (Kips):	8.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	2.3	Depth of Base BG (ft.):	3.5
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	1.70
Length of Pad (ft.):	7.5	Width of Pad (ft.):	7.5
Final Length of pad (ft)	7.5	Final width of pad (ft):	7.5



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 #:	7	Tie / Stirrup Size #:	3	
Qty. of Vertical Rebars:	5	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	4	Qty. of Rebar in Pad (W):	4	

Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	15.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	50000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	30
					Angle from Bottm of Pad:	25

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.6

Total Dry Soil Volume (cu. Ft.):	93.77	Total Dry Soil Weight (Kips):	10.78
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	10.78	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	105.18	Total Dry Concrete Weight (Kips):	15.78
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	15.78	Total Vertical Load on Base (Kips):	402.64

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	7225.5	<	Allowable Factored Soil Bearing (psf):	30000	0.24	OK!
Calculated Foundation Allowable Axail Capacity (Kips):	1687.5	>	Design Factored Axial Load (Kips):	381	0.23	OK!

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00		

(1) Concrete Pier:

					Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):	0.60		Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn,Kips-Ft):	89.5	>	Design Factored Moment (Mu, Kips-Ft	20.4	0.23	OK!
Calculated Shear Capacity (Kips):	73.4	>	Design Factored Shear (Kips):	8.9	0.12	OK!
Calculated Tension Capacity (Tn, Kips):	162.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	789.3	>	Design Factored Axial Load (Pu Kips):	376.1	0.48	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.70	OK!				
Pier Reinforcement Ratio:	0.005					

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips);	125.0	>	One-Way Factored Shear (L-Dir Kips):	60.4	0.48	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	125.0	>	One-Way Factored Shear (W-Dir Kips)	60.4	0.48	OK!
Two-Way Design Shear Capacity (Kips):	388.2	>	Two-Way Factored Shear (Kips):	304.7	0.78	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0021	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0021		OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	234.4	>	Moment at Bottom (L-Direct. K-Ft):	171.3	0.73	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	234.4	>	Moment at Bottom (W-Dir. Kips-Ft):	171.3	0.73	OK!

Last revised on 5/4/2020

TES Tower Engineering Solutions	Guy Anchor Analysis and Design		Date 4/9/2021
	Customer Name:	SBA Communications Corp	EA/TAS tandard: IA222G
	Site Name:		Structure Height (Ft.): 3
	Site Nmber:	CT15 ASBA	Engineer Name: . yant
	Engr. Number:	1454	Engineer Login D:

Foundation Info Obtained from: DraingsCalculations **Number of Anchors:** 1 Set Failure model: New

Soil Design Parameters:

Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	65.0	Pcf	Cohesion of Soils (psf):		0
Water Table B.G.S. (ft):	15.0	Unit Weight of Water:	62.4	pcf	Internal Angle of Friction (°)		30
Ultimate lateral pressure (psf):	0	Ultimate Skin Friction:	0	Psf	Coefficient of Shear Friction:		0.30
Conical Failure Angle from Top:	30	Failure Angle from Bottm	30				

Material Properties:

Concrete Strength (psi):	3000	Unit Weight of Concrete:	150.0	psf	Horizontal Rebar Yield (psi):	60000
Shear Strength Reduction Factor:	0.75				Flexure Strength Reduction Factor:	0.9

A. Inner Anchors:

Radius (ft.): 262

1. Design Reactions (Factored):

Uplift (Kips:)	66.7	Shear (Kips)	79.7	Angle of force resultant (Ø):	39.9

2. Foundation Geometries:

Block Base Depth B.G.S. (ft):	10.0	Block with/without toe?	No		Water Table below grade (ft):	15.00
Length of Anchor Block (L, ft.):	20.5	Width of Anchor Block:	4.0	ft.	Thickness of Anchor Block (ft.):	3.8
Concrete Block @ top of Anchor?	No					

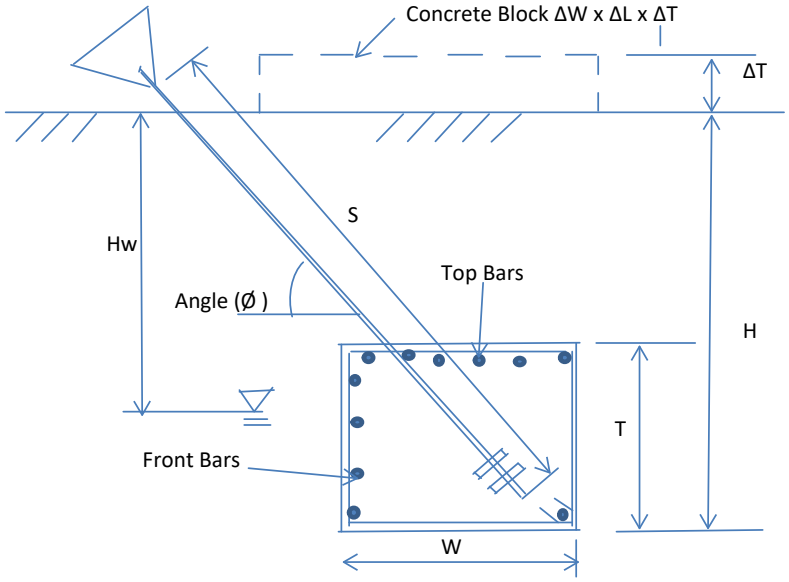
(1). Inner Anchors: *Radius (ft.):* 262

H (ft.):	10.0	*Hw(ft.):*	15.0
L (ft.):	20.5	*W (ft.):*	4.0
T (ft.):	3.8	*Angle (Ø):*	39.9
S (ft.):	16.37		

Top bars: 4 # 9

Front bars: 4 # 9

Concrete Volume (Cu. Yd.)/Each: 11.54



3. Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	1135.33	Total Dry Soil Weight (Kips):	306.72
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	153.27	Weight of the Concrete Block at Top (Kips):	0.00
Total Dry Concrete Volume (cu. Ft.):	311.60	Total Dry Concrete Weight (Kip):	46.74
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	46.74	Weight Reduction Factor:	0.9
Uplift Strength Reduction Factor on Soil:	0.75	Shear Strength Reduction Factor:	0.75

4. Check Soil and Foundation Capacities:

Nominal Factored Uplift Resistance:	157.02	Kips >	Design Uplift Force (Kips):	66.7	OK!
Ultimate Shear Friction Resistance at base:	22.70	Kips	Ultimate Resistance Pressure:	3280.5	Psf
Factored Shear Resistance:	208.69	Kips >	Design Shear Force (Kips):	79.7	OK!

5. Design Concrete Block:

Rebar Size (#):	9	Wind Load Factor on Concrete Design:		1.00	
Qty. of the Rebar at top of the block:	4	Qty. of the Rebar in the front of the block:		4	
Area of Single Rebar (sq. in.):	1.00	Factor for concrete compression zone:		0.85	
One Way Shear due to Shear Force (Kips):	39.9	One Way Shear Capacity for shear (kips):		164.8	OK!
One Way Shear due to Uplift (Kips):	33.3	One Way Shear Capacity for uplift (kips):		164.1	OK!
Moment due to Shear Load (Kips-ft):	204.2	Flexural Capacity for Shear Load (Kips-ft):		791.6	OK!
Moment due to uplift Load (Kips-ft):	170.8	Flexural Capacity for uplift Load (Kips-ft):		748.4	OK!
Ratio of Design Moment/Moment capacity:	0.26	Minimum ratio of rebar (top & front) :		0.29	OK!
Max. Ratio of Shear Force/Shear capacity:	0.24	OK!			

0.0 0.0

EXHIBIT 9

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

Post-Mod Antenna Mount Analysis Report

Existing 310-Ft Guyed Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT15879-A-SBA

Customer Site Name: West Hartford

Carrier Name: T-Mobile (App#: 117028, V#3)

Carrier Site ID / Name: CT11765A / Martin Guyed Tower

Site Location: 3114 Albany Avenue

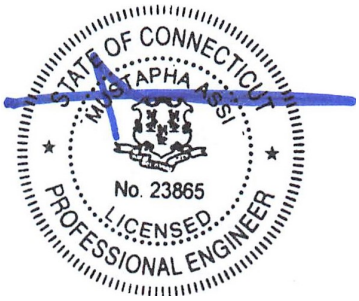
West Hartford,

Connecticut County

Latitude: 41.796802

Longitude: -72.796830

Exp.10/31/2021



05/04/2021

Analysis Result:

Max Structural Usage: 88.7% [Pass]

Report Prepared By: Saroj Dangol

Introduction

The purpose of this report is to summarize the analysis results on the (3) T-Frame at 160.00' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

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

Sources of Information

Mount Drawings	Mount mapping by Full Metal Tower Services dated 04/28/2019
Antenna Loading	SBA Application #: 117028, v3 dated 10/29/2020
Existing Modification	N/A
Proposed Modification	TES Project No. 99804

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125.0 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97.0 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut Building Code
Exposure Category: C
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(3) T-Frame at 160.00' elevation

Proposed Modifications

(1) METROSITE SUPPORT RAIL KIT: MS-HR35-18
(2) METROSITE V-BRACING KIT: MS-C2B-350P
(3) METROSITE STABILIZER KIT: MS-STZ-2PST
(3) METROSITE ADAPTER KIT: MS-STZ-350P

Final Antenna Configuration

3	Ericsson AIR6449 B41
3	Ericsson Air32 KRD901146-1_B66A_B2A
3	RFS APXVAALL24-43-U-NA20
3	Ericsson KRY 112 144/1
1	Commscope TMAT1921B78-21A
4	Commscope SDX1926Q-43
3	Ericsson 4449 B71 + B85
3	Ericsson 4415 B25

* Equipment to be flush mounted directly to the front face vertical member and aren't shown in the placement diagram.

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 88.7%, which occurs in the front face member. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

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

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

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

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

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

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

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

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

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

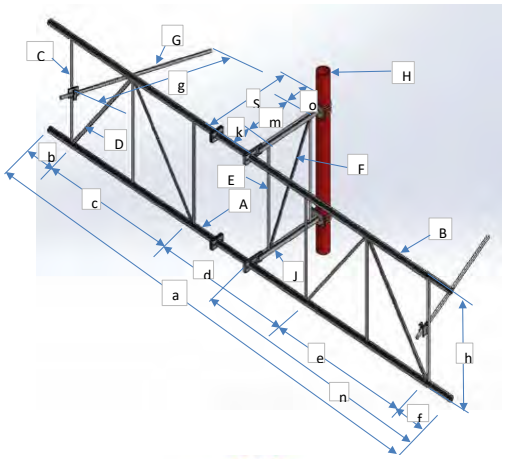

04.28.2019 05:11

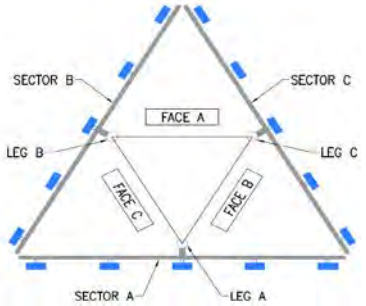

04.28.2019 05:27

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

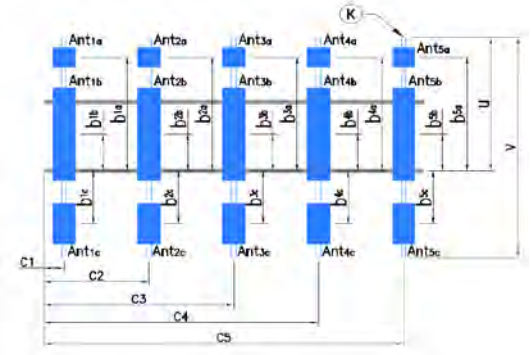
FCC # 1226764

Tower Owner:	SBA Communications	**Mapping Date:**	4/28/19
Site Name:	West Hartford	**Structure Type:**	3-Sided Guyed Tower
Site Number or ID:	CT15879-A-SBA	**Structure Height (Ft.):**	310
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	159.2





Climbing facility is Ouside Face C, at 240° Degree Azimuth



Antenna Layout

Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	320°	Deg	
Sector B:	180°	Deg	
Sector C:	N/A	Deg	
Climbing	240°	Deg	Ouside Face C
Climbing Facility	Corrosion Type:		Severe corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A

Geometries (Unit: inches)

a	180	**e**	66	**j**	N/A	**o**	7	**s**	32
b	12	**f**	12	**k**	10	**p**	N/A	**t**	N/A
c	66	**g**	120	**m**	15	**q**	N/A	**u ***	58
d	24	**h**	30	**n**	90	**r**	N/A	**v ***	84

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

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	1.66 OD x 0.140 Pipe	1.66	1.38	0.14	**F**	1.0" Solid Rod	1	1	N/A
B	1.66 OD x 0.140 Pipe	1.66	1.38	0.14	**G**	1.66 OD x 0.140 Pipe	1.66	1.38	0.14
C	1.25" Solid Rod	1.25	1.25	N/A	**H**				
D	0.625" Solid Rod	0.625	0.625	N/A	**J**	2.875 OD x 0.203 Pipe	2.875	2.469	0.203
E	1.0" Solid Rod	1	1	N/A	**K (pipe)***	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)	N/A
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)	N/A

Please enter the infomation below if members can't be found from the drop down lists

Member H: 3" Solid Rod

Tower Face Width at the mount (ft.):	5'	Tower Leg Size at the mount (in.):	3"

Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photo Numbers
	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.					Mounting Locations (Unit: inches)			Photos of antennas
Sector A									
Ant_{1a}	TMA A	8	5	12	1/2" (2)	+18"	N/A	37	
Ant_{1b}	Antenna A	13	3.5	53.5		+17"	6	37	
Ant_{1c}	TMA B	8	3	8	1/2" (2)	+14"	N/A	37	
Ant_{2a}									
Ant_{2b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	86	
Ant_{2c}									
Ant_{3a}									
Ant_{3b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	146	
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?		Yes				**Antennas on Sector B are the same as Sector A**			

Structure: CT15879-A-SBA - West Hartford

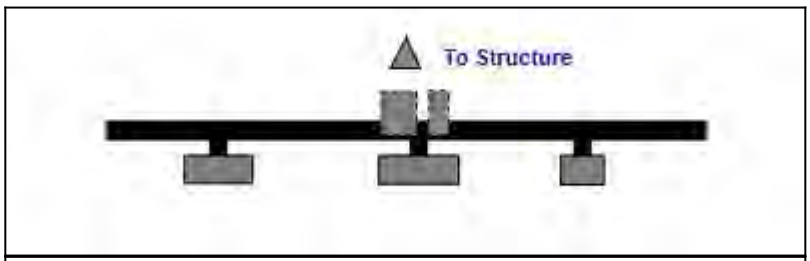
Sector: **A**

Structure Type: Guyed

Mount Elev: 160.00

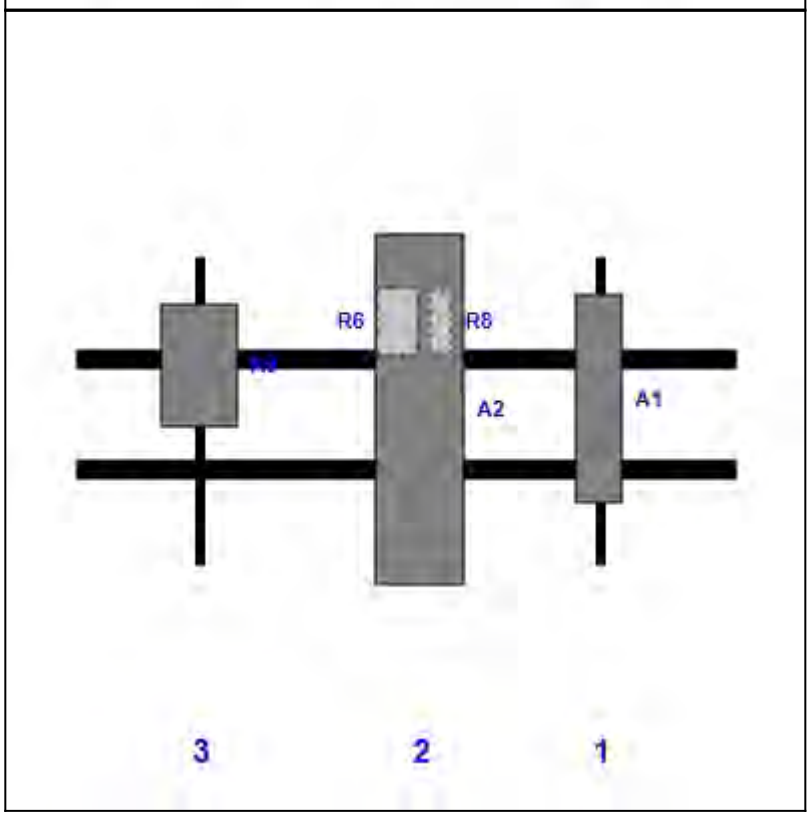
11/20/2020

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
A1	Air32 KRD901146-1_B66A_B2A	56.60	12.90	143.00	1	a	Front	39.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	94.00	2	a	Front	42.00			
R6	4449 B71 + B85	17.90	10.60	94.00	2	a	Behind	18.00	-6.00		
R8	4415 B25	16.50	5.90	94.00	2	a	Behind	18.00	6.00		
A9	AIR6449 B41	33.10	20.50	34.00	3	a	Front	30.00			

Structure: CT15879-A-SBA - West Hartford

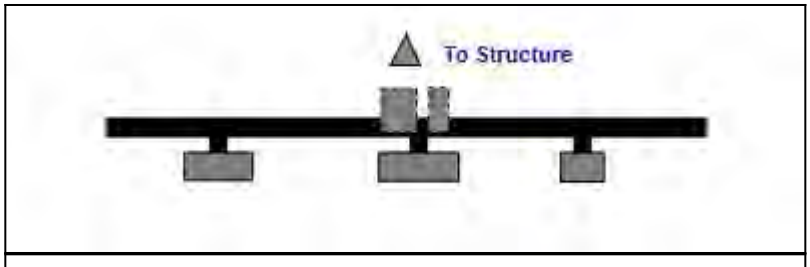
Sector: **B**

Structure Type: Guyed

Mount Elev: 160.00

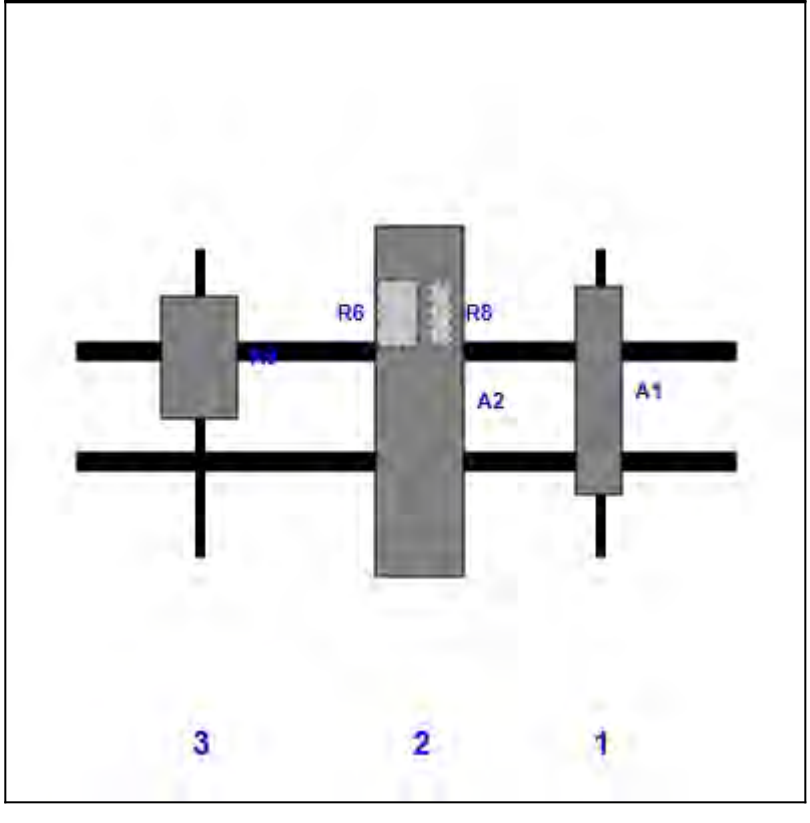
11/20/2020

Plan View



Front View

Looking Toward Structure



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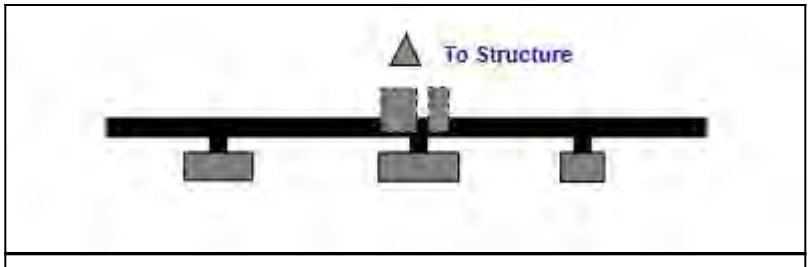
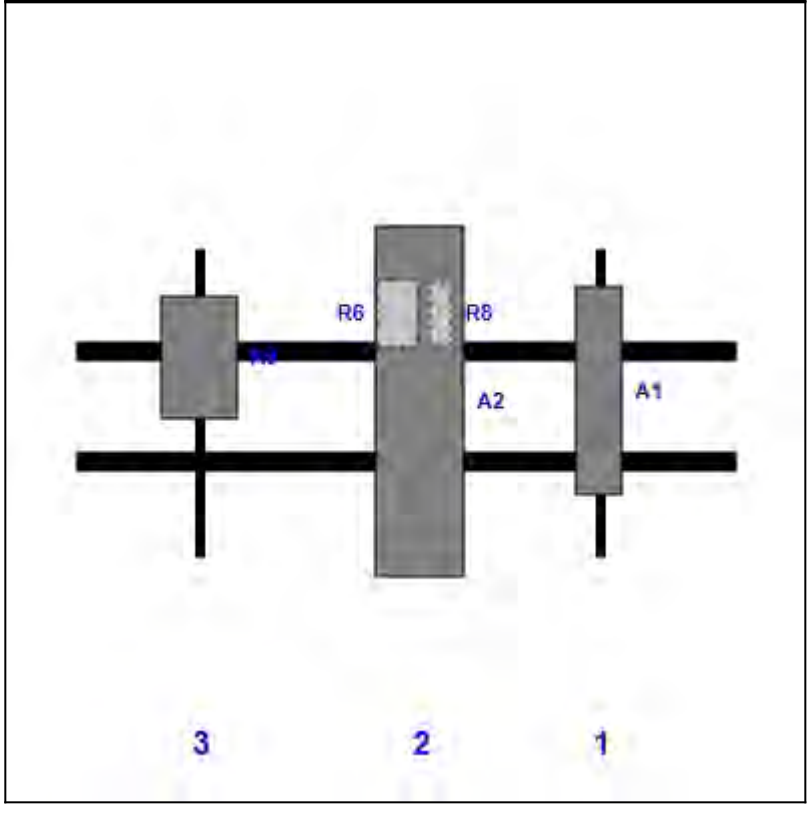
A2	APXVAALL24-43-U-NA20	95.90	24.00	94.00	2	a	Front	42.00			
R6	4449 B71 + B85	17.90	10.60	94.00	2	a	Behind	18.00	-6.00		
R8	4415 B25	16.50	5.90	94.00	2	a	Behind	18.00	6.00		
A9	AIR6449 B41	33.10	20.50	34.00	3	a	Front	30.00			

Plan View



Front View

Looking Toward Structure



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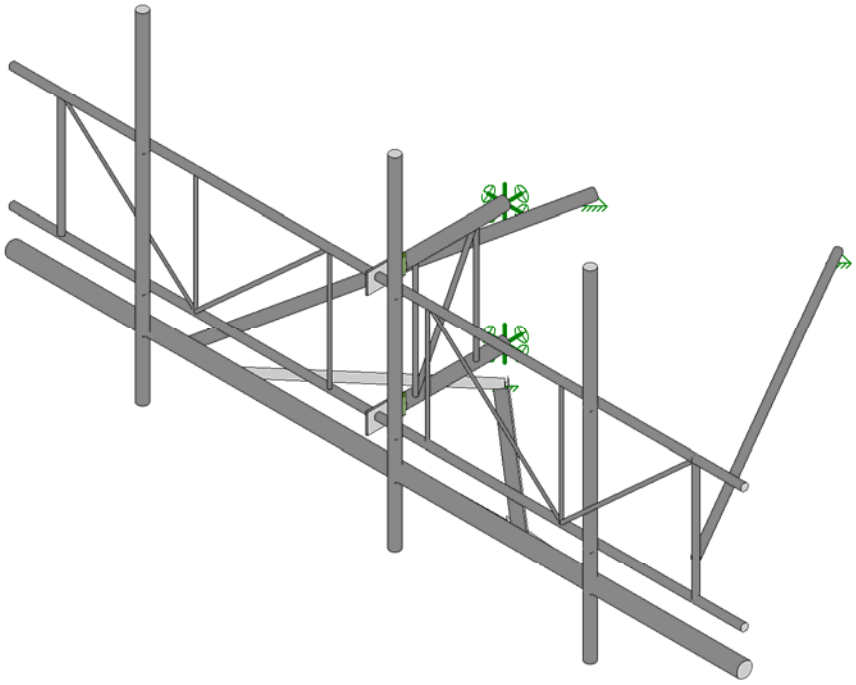
R8	4415 B25	16.50	5.90	94.00	2	a	Behind	18.00	6.00		
A9	AIR6449 B41	33.10	20.50	34.00	3	a	Front	30.00			



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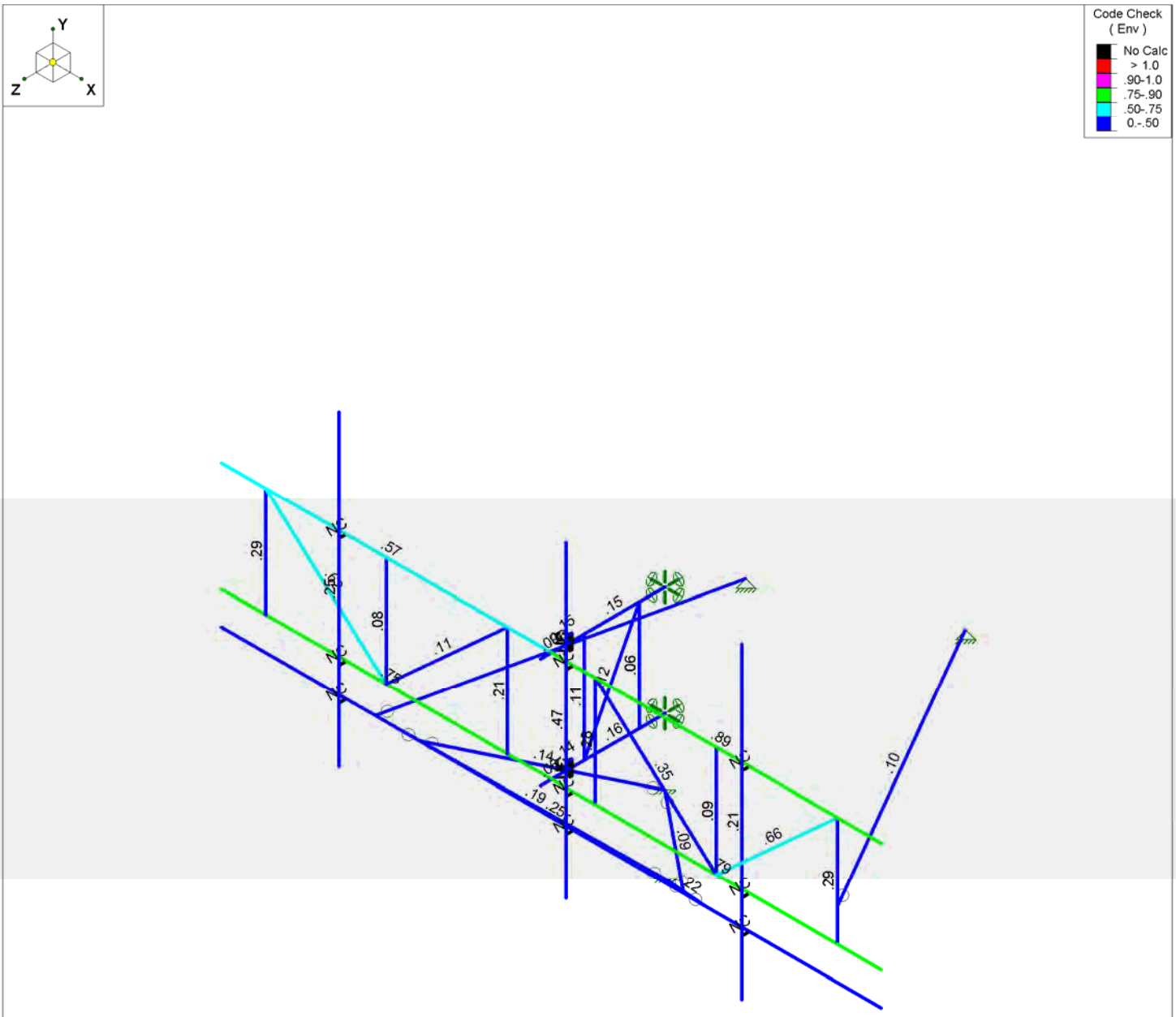
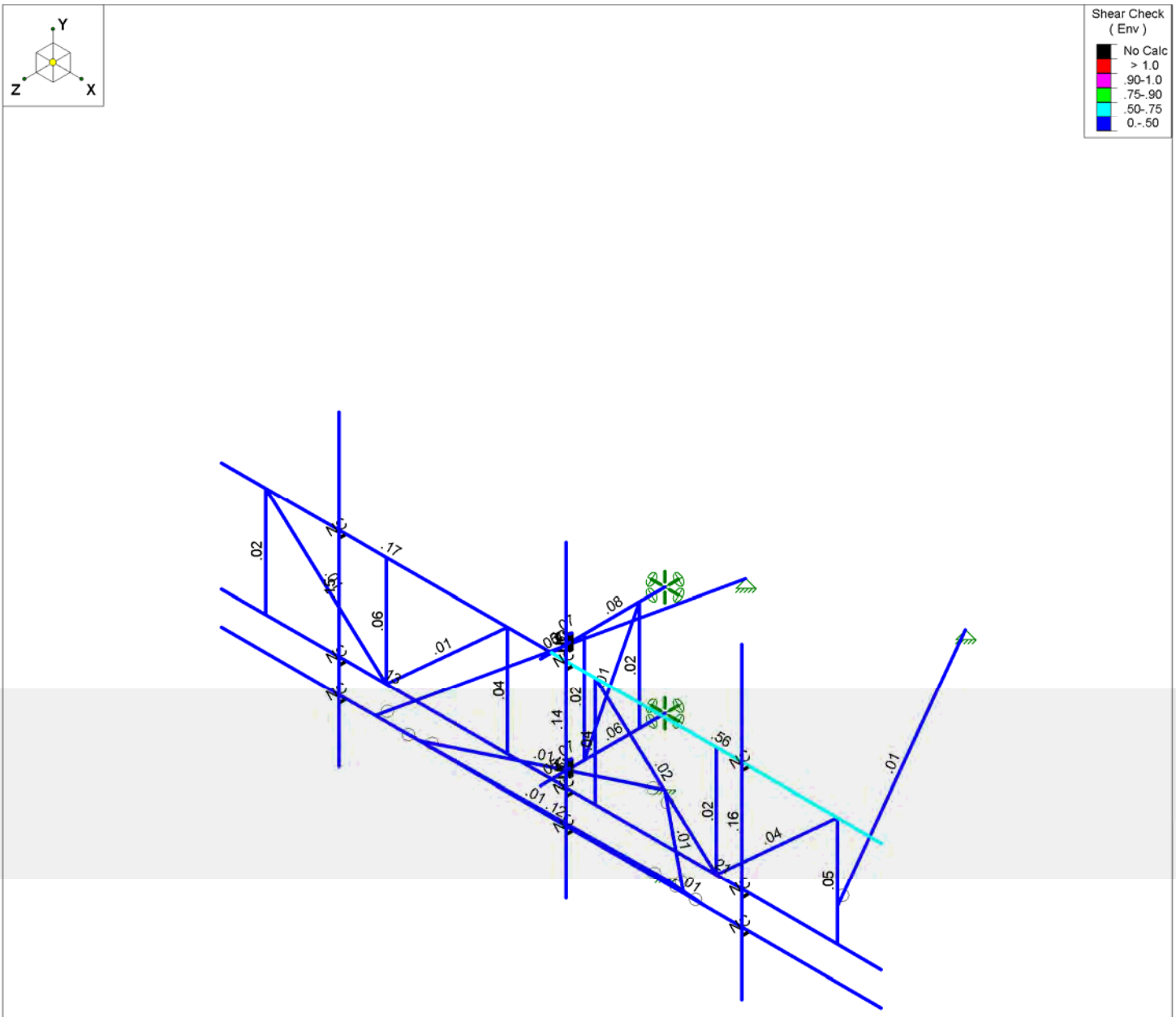
TES Project No. 99804		CT15879-A-SBA_99804_G_RISA_L...



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

Tower Engineering Solutio...	CT15879-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 1
		Nov 23, 2020 at 2:20 PM
TES Project No. 99804		CT15879-A-SBA_99804_G_RISA_L...



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

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		Nov 23, 2020 at 2:20 PM
TES Project No. 99804		CT15879-A-SBA_99804_G_RISA_L...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					12			
2	Antenna Di	None					12			
3	Antenna W Front	None					12			
4	Antenna Wi Front	None					12			
5	Antenna W Side	None					12			
6	Antenna Wi Side	None					12			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1						
10	Structure Di	None						35		
11	Structure W Front	None						35		
12	Structure Wi Front	None						35		
13	Structure W Side	None						35		
14	Structure Wi Side	None						35		

Load Combinations

	Description	S...	P...	SRSS	BLC	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 (F...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1								
6	1.2D+1.0Di+1.0Wi (B...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1								
7	1.2D+1.0Di+1.0Wi (L...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	1	14	1								
8	1.2D+1.0Di+1.0Wi (...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	-1	14	-1								
9	1.2D+1.5L1+.16W (...	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16										
10	1.2D+1.5L2+.16W (...	Yes	Y		1	1.2	9	1.2	8	1.5	3	.16	11	.16										
11	1.4D	Yes	Y		1	1.4	9	1.4																

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	2.5	0	0	
2	N2	0	0	0	0	
3	N3	0	2.5	0.58333	0	
4	N4	0	0	0.58333	0	
5	N5	0	2.5	1.8333	0	
6	N6	0	0	1.8333	0	
7	N7	0	2.5	2.58334	0	
8	N8	0	0	2.58334	0	
9	N34	6.5	2.5	2.58334	0	
10	N39	6.5	0	2.58334	0	
11	N57A	1	2.5	2.58334	0	
12	N58A	1	0	2.58334	0	
13	N61A	7.5	2.5	2.58334	0	
14	N62A	7.5	0	2.58334	0	
15	N25	-7.5	2.5	2.58334	0	
16	N26	-7.5	0	2.58334	0	
17	N27	-6.5	2.5	2.58334	0	
18	N28	-6.5	0	2.58334	0	
19	N29	-3.75	2.5	2.58334	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
20	N30	-3.75	0	2.58334	0	
21	N31	-1	2.5	2.58334	0	
22	N32	-1	0	2.58334	0	
23	N23	-4.6667	2.5	2.58334	0	
24	N24	-4.6667	0	2.58334	0	
25	N29A	4.5	2.5	2.58334	0	
26	N30A	4.5	0	2.58334	0	
27	N31A	-4.6667	2.5	2.74994	0	
28	N32A	-4.6667	0	2.74994	0	
29	N37	4.5	2.5	2.74994	0	
30	N38	4.5	0	2.74994	0	
31	N39A	-4.6667	5	2.74994	0	
32	N42	4.5	5	2.74994	0	
33	N43	-4.6667	-2	2.74994	0	
34	N46	4.5	-2	2.74994	0	
35	N43B	3.75	2.5	2.58334	0	
36	N44A	3.75	0	2.58334	0	
37	N39B	.5	2.5	2.58334	0	
38	N40	.5	0	2.58334	0	
39	N41	.5	2.5	2.74994	0	
40	N42A	.5	0	2.74994	0	
41	N43A	.5	5	2.74994	0	
42	N44	.5	-2	2.74994	0	
43	N45	2.5	.75	-4.33	0	
44	N45A	6.5	.75	2.58334	0	
45	N45B	0	2.5	2.8333	0	
46	N46A	0	0	2.8333	0	
47	N47	0	2.5	2.125	0	
48	N48	0	0	2.125	0	
49	N49	0	2.5	2.16666	0	
50	N50	0	0	2.16666	0	
51	N51	0	2.6666	2.125	0	
52	N52	0	0.1666	2.125	0	
53	N53	0	2.6666	2.16666	0	
54	N54	0	0.1666	2.16666	0	
55	N55	0	2.3334	2.125	0	
56	N56	0	-0.1666	2.125	0	
57	N57	0	2.3334	2.16666	0	
58	N58	0	-0.1666	2.16666	0	
59	N59	0	-1.5	0	0	
60	N60	7.5	-.75	2.58334	0	
61	N61	-7.5	-.75	2.58334	0	
62	N62	-4.6667	-.75	2.58334	0	
63	N63	4.5	-.75	2.58334	0	
64	N64	-4.6667	-.75	2.74994	0	
65	N65	4.5	-.75	2.74994	0	
66	N66	.5	-.75	2.58334	0	
67	N67	.5	-.75	2.74994	0	
68	N68	-3	-.75	2.58334	0	
69	N70	3	-.75	2.58334	0	
70	N70A	0	-3.25	0	0	
71	N71	-3.5	-.75	2.58334	0	
72	N72	3.5	-.75	2.58334	0	
73	N73	-4	-.75	2.58334	0	
74	N74	-2.5	-.75	-4.33	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	FF	PIPE_1.25	Beam	Pipe	A53 Gr.B	Typical	.625	.184	.184	.368
2	FF V1	SR_1.25	Beam	BAR	A36 Gr.36	Typical	1.227	.12	.12	.24
3	FF V2	SR_0.625	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
4	FF D	SR_0.625	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
5	SA	HSS2.875X0.188	Beam	HSS Pipe	A500 Gr.B RND	Typical	1.48	1.35	1.35	2.7
6	SA V D	SR_1	Beam	BAR	A36 Gr.36	Typical	.785	.049	.049	.098
7	MP	HSS2.375X0.125	Beam	HSS Pipe	A500 Gr.B RND	Typical	.823	.527	.527	1.05
8	Stabilizer	PIPE_1.25	Beam	Pipe	A53 Gr.B	Typical	.625	.184	.184	.368
9	PLT1	PL1/2x5	Beam	RECT	A36 Gr.36	Typical	2.5	.052	5.208	.195
10	PLT2	PL1/2x1	Beam	RECT	A36 Gr.36	Typical	.5	.01	.042	.029
11	N SR	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
12	N V Brace	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
13	N Tie Back	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...Density[k/ft...		Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M3	N1	N47			SA	Beam	HSS Pipe	A500 Gr.B...	Typical
2	M4	N2	N48			SA	Beam	HSS Pipe	A500 Gr.B...	Typical
3	M5	N3	N4			SA V D	Beam	BAR	A36 Gr.36	Typical
4	M6	N3	N6			SA V D	Beam	BAR	A36 Gr.36	Typical
5	M7	N5	N6			SA V D	Beam	BAR	A36 Gr.36	Typical
6	MP4A	N57A	N58A			FF V2	Beam	BAR	A36 Gr.36	Typical
7	M34A	N57A	N44A			FF D	Beam	BAR	A36 Gr.36	Typical
8	M35A	N34	N39			FF V1	Beam	BAR	A36 Gr.36	Typical
9	M36A	N7	N61A			FF	Beam	Pipe	A53 Gr.B	Typical
10	M37A	N8	N62A			FF	Beam	Pipe	A53 Gr.B	Typical
11	M18	N25	N7			FF	Beam	Pipe	A53 Gr.B	Typical
12	M19	N26	N8			FF	Beam	Pipe	A53 Gr.B	Typical
13	M21	N27	N30			FF D	Beam	BAR	A36 Gr.36	Typical
14	M22	N29	N30			FF V2	Beam	BAR	A36 Gr.36	Typical
15	M23	N31	N30			FF D	Beam	BAR	A36 Gr.36	Typical
16	MP5A	N31	N32			FF V2	Beam	BAR	A36 Gr.36	Typical
17	M18A	N23	N31A			RIGID	Beam	None	RIGID	DR1
18	M19A	N24	N32A			RIGID	Beam	None	RIGID	DR1
19	M24A	N29A	N37			RIGID	Beam	None	RIGID	DR1
20	M25	N30A	N38			RIGID	Beam	None	RIGID	DR1
21	MP3A	N39A	N43			MP	Beam	HSS Pipe	A500 Gr.B...	Typical
22	MP1A	N42	N46			MP	Beam	HSS Pipe	A500 Gr.B...	Typical
23	M28A	N43B	N44A			FF V2	Beam	BAR	A36 Gr.36	Typical
24	M29A	N34	N44A			FF D	Beam	BAR	A36 Gr.36	Typical
25	M26	N39B	N41			RIGID	Beam	None	RIGID	DR1
26	M27	N40	N42A			RIGID	Beam	None	RIGID	DR1
27	MP2A	N43A	N44			MP	Beam	HSS Pipe	A500 Gr.B...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
28	M29	N27	N28			FF V1	Beam	BAR	A36 Gr.36	Typical
29	M30A	N45A	N45			Stabilizer	Beam	Pipe	A53 Gr.B	Typical
30	M30	N49	N45B			PLT1	Beam	RECT	A36 Gr.36	Typical
31	M31	N50	N46A			PLT1	Beam	RECT	A36 Gr.36	Typical
32	M32	N53	N57			RIGID	Beam	None	RIGID	DR1
33	M33	N51	N55			RIGID	Beam	None	RIGID	DR1
34	M34	N51	N53			PLT2	Beam	RECT	A36 Gr.36	Typical
35	M35	N55	N57			PLT2	Beam	RECT	A36 Gr.36	Typical
36	M36	N52	N54			PLT2	Beam	RECT	A36 Gr.36	Typical
37	M37	N56	N58			PLT2	Beam	RECT	A36 Gr.36	Typical
38	M38	N52	N56			RIGID	Beam	None	RIGID	DR1
39	M39	N54	N58			RIGID	Beam	None	RIGID	DR1
40	M40	N62	N64			RIGID	Beam	None	RIGID	DR1
41	M41	N63	N65			RIGID	Beam	None	RIGID	DR1
42	M42	N66	N67			RIGID	Beam	None	RIGID	DR1
43	M43	N61	N60			N SR	Beam	Pipe	A53 Gr.B	Typical
44	M44	N59	N68			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
45	M45	N59	N70			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N70A	N71			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N70A	N72			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
48	M48	N73	N74			N Tie Back	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M3						Yes				None
2	M4						Yes				None
3	M5						Yes				None
4	M6						Yes				None
5	M7						Yes				None
6	MP4A						Yes				None
7	M34A						Yes				None
8	M35A						Yes				None
9	M36A						Yes				None
10	M37A						Yes				None
11	M18						Yes				None
12	M19						Yes				None
13	M21						Yes				None
14	M22						Yes				None
15	M23						Yes				None
16	MP5A						Yes				None
17	M18A						Yes				None
18	M19A						Yes				None
19	M24A						Yes				None
20	M25						Yes				None
21	MP3A						Yes				None
22	MP1A						Yes				None
23	M28A						Yes				None
24	M29A						Yes				None
25	M26						Yes				None
26	M27						Yes				None
27	MP2A						Yes				None
28	M29						Yes				None
29	M30A	BenPIN					Yes				None
30	M30						Yes				None
31	M31						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
32	M32						Yes				None
33	M33						Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44	BenPIN	BenPIN				Yes				None
45	M45	BenPIN	BenPIN				Yes				None
46	M46	BenPIN	BenPIN				Yes				None
47	M47	BenPIN	BenPIN				Yes				None
48	M48	BenPIN					Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M3	SA	2.125			Lbyy			.65	.65		Gravity
2	M4	SA	2.125			Lbyy			.65	.65		Gravity
3	M5	SA V D	2.5			Lbyy			.65	.65		Gravity
4	M6	SA V D	2.795			Lbyy			.65	.65		Gravity
5	M7	SA V D	2.5			Lbyy			.65	.65		Gravity
6	MP4A	FF V2	2.5			Lbyy			.65	.65		Gravity
7	M34A	FF D	3.717			Lbyy			.65	.65		Lateral
8	M35A	FF V1	2.5			Lbyy			.65	.65		Gravity
9	M36A	FF	7.5			Lbyy			2.1	2.1		Gravity
10	M37A	FF	7.5			Lbyy			2.1	2.1		Gravity
11	M18	FF	7.5			Lbyy			2.1	2.1		Gravity
12	M19	FF	7.5			Lbyy			2.1	2.1		Gravity
13	M21	FF D	3.717			Lbyy			.65	.65		Lateral
14	M22	FF V2	2.5			Lbyy			.65	.65		Gravity
15	M23	FF D	3.717			Lbyy			.65	.65		Lateral
16	MP5A	FF V2	2.5			Lbyy			.65	.65		Gravity
17	MP3A	MP	7	Segment	Segment	Lbyy						Lateral
18	MP1A	MP	7	Segment	Segment	Lbyy						Lateral
19	M28A	FF V2	2.5			Lbyy			.65	.65		Gravity
20	M29A	FF D	3.717			Lbyy			.65	.65		Lateral
21	MP2A	MP	7	Segment	Segment	Lbyy						Lateral
22	M29	FF V1	2.5			Lbyy			.65	.65		Gravity
23	M30A	Stabilizer	7.987			Lbyy						Lateral
24	M30	PLT1	.667			Lbyy			.65	.65		Lateral
25	M31	PLT1	.667			Lbyy			.65	.65		Lateral
26	M34	PLT2	.042			Lbyy						Lateral
27	M35	PLT2	.042			Lbyy						Lateral
28	M36	PLT2	.042			Lbyy						Lateral
29	M37	PLT2	.042			Lbyy						Lateral
30	M43	N SR	15			Lbyy						Lateral
31	M44	N V Brace	4.029			Lbyy						Lateral
32	M45	N V Brace	4.029			Lbyy						Lateral
33	M46	N V Brace	5.017			Lbyy						Lateral
34	M47	N V Brace	5.017			Lbyy						Lateral
35	M48	N Tie Back	7.074			Lbyy						Lateral

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	N1	Reaction	Reaction	Reaction	Reaction		Reaction
2	N2	Reaction	Reaction	Reaction	Reaction		Reaction
3	N7						
4	N45	Reaction	Reaction	Reaction			
5	N45B						
6	N46A						
7	N59	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N70A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N74	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	N1	max	34.104	4	1247.516	8	878.278	1	-.02	3	0	11	.044	10
2		min	-31.389	3	32.363	3	-1912.676	2	-.554	8	0	1	-.043	9
3	N2	max	32.114	4	659.249	8	1686.416	8	-.009	3	0	11	.048	3
4		min	-33.708	3	35.103	3	-114.839	3	-.302	8	0	1	-.042	9
5	N45	max	150.57	1	39.585	6	272.865	1	0	11	0	11	0	11
6		min	-186.93	2	10.092	1	-336.479	2	0	1	0	1	0	1
7	N59	max	3775.524	4	63.776	3	142.466	3	.002	1	0	2	0	2
8		min	-4074.603	3	-493.86	8	-1904.152	8	-.003	2	0	1	0	1
9	N70A	max	3150.729	10	1964.708	7	1960.61	7	.002	1	0	10	0	10
10		min	-2797.809	9	351.908	4	338.156	4	-.002	2	0	9	0	9
11	N74	max	188.971	3	46.2	6	927.277	4	0	11	0	11	0	11
12		min	-170.097	4	13.86	4	-1021.586	3	0	1	0	1	0	1
13	Totals:	max	1518.178	4	3278.796	7	2370.4	1						
14		min	-1518.182	3	1163.584	4	-2370.397	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
1	M3	1	max	878.278	1	1246.745	8	31.256	3	.044	10	0	11	.554	8
2			min	-1912.676	2	32.363	3	-29.534	4	-.043	9	0	1	.02	3
3		2	max	878.278	1	1238.011	8	25.313	3	.044	10	.015	3	.004	3
4			min	-1912.676	2	28.91	3	-23.592	4	-.043	9	-.014	4	-.106	8
5		3	max	1093.967	1	42.87	3	20.43	3	.03	3	.015	2	.109	6
6			min	-1195.564	2	-546.867	8	-20.353	4	-.028	9	-.016	1	-.018	3
7		4	max	1093.967	1	39.417	3	18.389	10	.03	3	.024	3	.401	8
8			min	-1195.564	2	-555.6	8	-20.321	9	-.028	9	-.024	4	-.04	3
9		5	max	1089.482	1	851.171	8	36.849	10	.018	1	.031	2	.339	6
10			min	-1175.79	2	-76.342	3	-34.624	9	-.009	9	-.031	1	-.116	1
11	M4	1	max	1686.416	8	659.689	8	33.403	3	.048	3	0	11	.302	8
12			min	-114.839	3	35.103	3	-35.743	4	-.042	9	0	1	.009	3
13		2	max	1686.416	8	650.956	8	27.46	3	.048	3	.016	3	.013	1
14			min	-114.839	3	31.65	3	-29.801	4	-.042	9	-.017	4	-.05	6
15		3	max	1680.627	8	104.652	1	12.18	3	.04	3	.029	3	.179	6
16			min	-115.056	3	-540.061	6	-14.637	4	-.036	9	-.032	4	-.043	1
17		4	max	1680.627	8	101.199	1	6.237	3	.04	3	.034	3	.469	6
18			min	-115.056	3	-548.795	6	-8.695	4	-.036	9	-.038	4	-.098	1
19		5	max	234.094	4	914.758	8	29.428	4	.014	6	.031	3	.384	6
20			min	-136.791	3	-55.697	1	-32.55	3	-.01	9	-.035	4	-.103	1
21	M5	1	max	1129.257	8	4.364	9	8.803	6	.005	9	0	3	.005	9
22			min	63.845	3	-5.555	10	-2.274	1	-.005	10	-.009	6	-.007	10
23		2	max	1134.957	8	4.364	9	6.98	6	.005	9	0	3	.003	4
24			min	65.848	3	-5.555	10	.158	1	-.005	10	-.004	8	-.003	10

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
25		3	max	1140.658	8	4.469	4	5.769	8	.005	9	0	2	.001	4
26			min	67.852	3	-5.555	10	.217	3	-.005	10	-.001	5	-.001	3
27		4	max	1146.358	8	6.9	4	7.242	5	.005	9	.003	8	.004	10
28			min	69.855	3	-6.94	3	-1.304	2	-.005	10	0	3	-.003	9
29		5	max	1152.059	8	9.332	4	9.065	5	.005	9	.008	5	.008	3
30			min	71.858	3	-9.372	3	-3.736	2	-.005	10	-.001	2	-.008	4
31	M6	1	max	-51.289	3	6.529	1	6.71	9	.004	4	.015	10	.002	1
32			min	-3251.93	8	-10.027	2	-8.628	10	-.004	10	-.013	9	-.012	6
33		2	max	-49.285	3	3.352	1	6.71	9	.004	4	.009	10	0	3
34			min	-3246.229	8	-10.621	6	-8.628	10	-.004	10	-.008	4	-.005	8
35		3	max	-47.282	3	.176	1	6.752	4	.004	4	.005	3	.004	2
36			min	-3240.529	8	-11.842	6	-8.628	10	-.004	10	-.004	4	-.002	1
37		4	max	-45.278	3	-1.757	3	9.47	4	.004	4	.002	9	.012	6
38			min	-3234.828	8	-14.575	8	-9.54	3	-.004	10	-.003	10	-.001	1
39		5	max	-43.275	3	-2.758	3	12.189	4	.004	4	.009	4	.022	8
40			min	-3229.128	8	-18.648	5	-12.259	3	-.004	10	-.009	10	.002	1
41	M7	1	max	1415.639	8	15.198	9	27.782	6	.005	9	0	3	.019	9
42			min	-112.307	3	-19.335	10	-4.479	1	-.006	10	-.031	6	-.024	10
43		2	max	1421.34	8	15.198	9	25.959	6	.005	9	0	3	.01	4
44			min	-110.303	3	-19.335	10	-2.047	1	-.006	10	-.015	8	-.012	10
45		3	max	1427.04	8	15.51	4	24.162	8	.005	9	.002	2	.001	4
46			min	-108.3	3	-19.335	10	-.085	3	-.006	10	-.002	1	-.001	3
47		4	max	1432.741	8	17.942	4	24.162	8	.005	9	.016	6	.012	10
48			min	-106.297	3	-19.335	10	-.085	3	-.006	10	-.001	1	-.009	9
49		5	max	1438.441	8	20.374	4	24.162	8	.005	9	.031	8	.024	10
50			min	-104.293	3	-20.457	3	-.085	3	-.006	10	0	3	-.021	4
51	MP4A	1	max	360.723	9	22.627	3	34.892	2	.002	2	.024	1	.012	3
52			min	-173.635	2	-21.081	4	-34.154	1	-.002	1	-.024	2	-.01	4
53		2	max	361.506	9	21.108	3	33.372	2	.002	2	.003	1	.003	4
54			min	-172.851	2	-19.561	4	-32.635	1	-.002	1	-.003	2	-.002	3
55		3	max	396.633	9	12.148	4	10.514	1	.002	2	.007	2	.007	4
56			min	-137.724	2	-10.601	3	-9.777	2	-.002	1	-.007	1	-.007	3
57		4	max	397.417	9	13.668	4	12.034	1	.002	2	.001	6	0	2
58			min	-136.94	2	-12.121	3	-11.297	2	-.002	1	0	3	-.002	9
59		5	max	398.2	9	15.188	4	13.554	1	.002	2	.008	1	.008	3
60			min	-136.157	2	-13.641	3	-12.816	2	-.002	1	-.007	2	-.01	4
61	M34A	1	max	621.487	3	10.599	8	5.153	1	.002	2	.004	6	.006	8
62			min	-931.434	9	.124	3	-5.541	6	-.002	1	-.002	1	0	9
63		2	max	623.395	3	5.1	8	2.893	1	.002	2	.001	1	0	1
64			min	-930.65	9	.079	9	-3.12	2	-.002	1	-.001	2	-.001	8
65		3	max	625.303	3	.883	10	.634	1	.002	2	.003	1	0	3
66			min	-929.867	9	-.783	9	-.861	2	-.002	1	-.003	2	-.004	8
67		4	max	627.211	3	.606	3	1.912	6	.002	2	.003	1	0	9
68			min	-929.083	9	-5.899	8	-2.488	5	-.002	1	-.003	2	-.002	10
69		5	max	629.119	3	.766	3	4.396	6	.002	2	.002	6	.007	8
70			min	-928.3	9	-11.399	8	-4.972	5	-.002	1	-.002	5	-.001	3
71	M35A	1	max	-9.47	2	127.203	10	86.98	1	.024	2	.038	2	.109	10
72			min	-893.055	10	-47.904	2	-105.689	2	-.02	1	-.03	1	-.022	4
73		2	max	-6.338	2	127.203	10	90.02	1	.024	2	.026	1	.029	10
74			min	-889.923	10	-47.904	2	-108.729	2	-.02	1	-.029	2	-.01	9
75		3	max	-3.206	2	127.203	10	93.059	1	.024	2	.083	1	.038	2
76			min	-886.791	10	-47.904	2	-111.768	2	-.02	1	-.098	2	-.05	10
77		4	max	10.095	2	156.327	10	195.698	2	.024	2	.111	1	.044	2
78			min	-873.556	10	-112.188	1	-150.65	1	-.02	1	-.13	2	-.134	10
79		5	max	13.227	2	156.327	10	192.659	2	.024	2	.019	10	.032	1
80			min	-870.425	10	-112.188	1	-147.61	1	-.02	1	-.009	2	-.231	10
81	M36A	1	max	-145.207	2	653.068	8	919.204	1	.276	1	.493	2	.171	7

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
82			min	-948.993	9	-223.662	3	-994.357	2	-.235	2	-.461	1	.018	2
83		2	max	105.42	4	33.872	10	86.041	1	.049	1	.02	3	.008	1
84			min	-896.673	10	-33.584	9	-93.814	2	-.04	2	-.023	4	-.023	8
85		3	max	105.42	4	228.525	4	71.72	1	.052	1	.155	1	.05	9
86			min	-902.104	10	-363.729	10	-79.536	2	-.043	2	-.172	2	-.069	10
87		4	max	26.871	2	112.079	10	88.467	2	.025	1	.082	1	.019	2
88			min	-992.142	10	-31.213	9	-70.101	1	-.032	2	-.102	2	-.019	1
89		5	max	0	11	0	11	0	11	0	11	0	11	0	11
90			min	0	1	0	1	0	1	0	1	0	1	0	1
91	M37A	1	max	721.944	10	713.867	8	221.891	4	.063	5	.077	2	.168	6
92			min	-60.168	2	-115.477	1	-125.4	3	.008	1	-.076	1	.034	1
93		2	max	775.534	9	43.884	10	25.022	1	.041	1	.019	10	.013	2
94			min	-479.151	3	-37.693	9	-42.713	2	-.032	2	-.008	2	-.028	1
95		3	max	775.534	9	248.122	4	3.115	3	.041	1	.056	1	.059	9
96			min	-479.151	3	-415.373	10	-30.567	6	-.032	2	-.079	2	-.101	10
97		4	max	152.283	10	19.369	6	181.522	2	.019	10	.097	1	.137	10
98			min	-112.213	1	-115.144	10	-134.77	1	-.009	2	-.134	2	-.026	2
99		5	max	0	11	0	11	0	11	0	11	0	11	0	11
100			min	0	1	0	1	0	1	0	1	0	1	0	1
101	M18	1	max	0	11	0	11	0	11	0	11	0	11	0	11
102			min	0	1	0	1	0	1	0	1	0	1	0	1
103		2	max	-5.432	2	35.306	10	4.519	6	.011	2	.015	1	.012	2
104			min	-957.395	9	-143.898	9	-6.397	5	-.01	1	-.017	2	-.016	1
105		3	max	121.816	3	301.059	9	120.589	2	.1	2	.08	1	.063	10
106			min	-883.1	9	-162.379	10	-111.128	1	-.101	1	-.086	2	-.072	9
107		4	max	121.816	3	55.856	10	134.78	2	.098	2	.156	2	.016	4
108			min	-877.791	9	-29.223	9	-126.282	1	-.099	1	-.145	1	-.048	10
109		5	max	-131.696	2	3.628	4	180.319	2	.076	2	.454	2	.156	7
110			min	-983.473	9	-252.017	10	-168.817	1	-.081	1	-.424	1	.023	4
111	M19	1	max	0	11	0	11	0	11	0	11	0	11	0	11
112			min	0	1	0	1	0	1	0	1	0	1	0	1
113		2	max	140.215	9	113.258	9	44.753	2	.053	2	.052	2	.14	9
114			min	-16.259	10	-8.641	3	-43.975	1	-.052	1	-.05	1	-.01	10
115		3	max	691.418	10	294.058	9	20.097	5	.066	2	.043	2	.07	10
116			min	-400.515	7	-194.839	10	-18.49	2	-.068	1	-.042	1	-.094	9
117		4	max	691.418	10	58.398	10	10.977	3	.066	2	.044	2	.008	4
118			min	-60.813	2	-38.45	9	-9.152	4	-.068	1	-.04	1	-.048	10
119		5	max	696.345	10	-26.881	4	23.177	2	.063	2	.076	2	.153	6
120			min	-60.103	2	-246.51	10	-23.151	1	-.069	1	-.069	1	.035	1
121	M21	1	max	1101.81	9	10.943	8	4.402	5	0	2	.003	6	.007	8
122			min	.551	2	-.225	3	-4.5	6	0	1	-.003	5	0	3
123		2	max	1102.594	9	5.443	8	1.918	5	0	2	0	2	0	2
124			min	1.335	2	-.095	9	-2.016	6	0	1	0	1	0	8
125		3	max	1103.377	9	.366	2	1.613	2	0	2	.001	2	0	9
126			min	2.118	2	-.957	9	-1.642	1	0	1	-.001	1	-.003	8
127		4	max	1104.161	9	.256	3	3.872	2	0	2	.004	2	.001	9
128			min	2.902	2	-5.556	8	-3.902	1	0	1	-.004	1	0	8
129		5	max	1104.944	9	.417	3	6.131	2	0	2	.008	2	.007	8
130			min	3.685	2	-11.055	8	-6.161	1	0	1	-.008	1	0	3
131	M22	1	max	223.079	10	4.773	9	3.901	6	.004	1	.002	1	.006	9
132			min	-326.737	9	-3.533	8	-2.199	5	-.004	2	-.002	6	-.002	10
133		2	max	223.862	10	4.773	9	2.23	6	.004	1	0	1	.003	9
134			min	-325.954	9	-1.862	8	-.528	5	-.004	2	-.001	2	0	10
135		3	max	224.646	10	4.773	9	1.2	1	.004	1	.001	1	0	8
136			min	-325.17	9	-1.585	10	-.58	2	-.004	2	-.001	2	0	7
137		4	max	225.429	10	4.773	9	2.814	5	.004	1	.002	1	.001	10
138			min	-324.387	9	-1.809	3	-2.099	2	-.004	2	-.002	2	-.003	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
139		5	max	226.213	10	4.773	9	4.485	5	.004	1	.005	1	.002	10
140			min	-323.603	9	-3.455	7	-3.619	2	-.004	2	-.004	2	-.006	9
141	M23	1	max	42.603	4	10.382	7	6.349	2	0	2	.003	1	.005	7
142			min	-870.04	10	-.043	4	-5.862	1	0	1	-.004	6	-.001	10
143		2	max	44.511	4	4.883	7	4.089	2	0	2	0	3	0	4
144			min	-869.257	10	-.295	10	-3.603	1	0	1	-.001	5	-.002	7
145		3	max	46.42	4	.622	9	1.83	2	0	2	.003	2	0	4
146			min	-868.473	10	-1.157	10	-1.344	1	0	1	-.003	1	-.004	7
147		4	max	48.328	4	.439	4	2.695	5	0	2	.004	2	0	10
148			min	-867.69	10	-6.116	7	-1.366	6	0	1	-.004	1	-.001	9
149		5	max	50.236	4	.599	4	5.179	5	0	2	.003	5	.008	7
150			min	-866.906	10	-11.616	7	-3.85	6	0	1	-.002	1	0	9
151	MP5A	1	max	280.92	10	4.94	3	26.819	2	.003	1	.017	1	0	3
152			min	-5.251	4	-7.858	8	-24.239	1	-.003	2	-.02	2	-.007	10
153		2	max	281.704	10	3.42	3	25.3	2	.003	1	.002	1	.001	4
154			min	-4.468	4	-6.187	8	-22.72	1	-.003	2	-.004	2	-.003	10
155		3	max	297.127	10	3.946	4	4.132	8	.003	1	.006	2	.002	4
156			min	10.956	4	-5.809	3	-1.12	2	-.003	2	-.006	1	-.002	3
157		4	max	297.911	10	5.466	4	5.761	5	.003	1	.004	2	.003	10
158			min	11.739	4	-7.329	3	-2.64	2	-.003	2	-.003	1	0	4
159		5	max	298.694	10	6.986	4	7.432	5	.003	1	.005	5	.007	3
160			min	12.523	4	-8.849	3	-4.16	2	-.003	2	0	3	-.005	4
161	M18A	1	max	103.027	1	192.962	10	124.849	3	.053	3	.17	2	.089	2
162			min	-114.197	2	-452.466	9	-130.968	4	-.064	9	-.159	1	-.091	1
163		2	max	103.027	1	192.962	10	124.849	3	.053	3	.169	2	.092	2
164			min	-114.197	2	-452.466	9	-130.968	4	-.064	9	-.159	1	-.096	1
165		3	max	103.027	1	192.962	10	124.849	3	.053	3	.168	2	.095	2
166			min	-114.197	2	-452.466	9	-130.968	4	-.064	9	-.158	1	-.1	1
167		4	max	103.027	1	192.962	10	124.849	3	.053	3	.167	2	.098	2
168			min	-114.197	2	-452.466	9	-130.968	4	-.064	9	-.158	1	-.105	1
169		5	max	103.027	1	192.962	10	124.849	3	.053	3	.166	2	.1	2
170			min	-114.197	2	-452.466	9	-130.968	4	-.064	9	-.157	1	-.11	1
171	M19A	1	max	74.631	2	224.573	10	118.207	4	.083	3	.063	3	.005	2
172			min	-74.73	1	-185.242	9	-487.586	9	-.144	9	-.058	4	-.007	1
173		2	max	74.631	2	224.573	10	118.207	4	.083	3	.047	3	.01	9
174			min	-74.73	1	-185.242	9	-487.586	9	-.144	9	-.053	4	-.013	10
175		3	max	74.631	2	224.573	10	118.207	4	.083	3	.032	3	.018	9
176			min	-74.73	1	-185.242	9	-487.586	9	-.144	9	-.05	9	-.022	10
177		4	max	74.631	2	224.573	10	118.207	4	.083	3	.025	2	.026	9
178			min	-74.73	1	-185.242	9	-487.586	9	-.144	9	-.07	9	-.032	10
179		5	max	74.631	2	224.573	10	118.207	4	.083	3	.018	2	.034	9
180			min	-74.73	1	-185.242	9	-487.586	9	-.144	9	-.091	9	-.041	10
181	M24A	1	max	130.219	1	242.266	4	139.746	3	.113	3	.051	10	.011	2
182			min	-155.762	2	-483.035	10	-135.45	4	-.119	4	-.031	2	-.041	10
183		2	max	130.219	1	242.266	4	139.746	3	.113	3	.049	1	.013	2
184			min	-155.762	2	-483.035	10	-135.45	4	-.119	4	-.031	2	-.03	1
185		3	max	130.219	1	242.266	4	139.746	3	.113	3	.049	1	.015	2
186			min	-155.762	2	-483.035	10	-135.45	4	-.119	4	-.031	2	-.034	1
187		4	max	130.219	1	242.266	4	139.746	3	.113	3	.049	1	.019	10
188			min	-155.762	2	-483.035	10	-135.45	4	-.119	4	-.031	2	-.038	4
189		5	max	130.219	1	242.266	4	139.746	3	.113	3	.049	1	.039	10
190			min	-155.762	2	-483.035	10	-135.45	4	-.119	4	-.03	2	-.049	4
191	M25	1	max	124.84	1	268.326	9	404.414	10	.202	10	.243	2	.014	2
192			min	-187.431	2	-304.435	10	-1.679	3	-.119	4	-.188	1	-.012	1
193		2	max	124.84	1	268.326	9	404.414	10	.202	10	.248	2	.017	10
194			min	-187.431	2	-304.435	10	-1.679	3	-.119	4	-.186	1	-.014	4
195		3	max	124.84	1	268.326	9	404.414	10	.202	10	.254	2	.03	10

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
196			min	-187.431	2	-304.435	10	-1.679	3	-.119	4	-.184	1	-.024	4
197		4	max	124.84	1	268.326	9	404.414	10	.202	10	.26	2	.043	10
198			min	-187.431	2	-304.435	10	-1.679	3	-.119	4	-.182	1	-.035	9
199		5	max	124.84	1	268.326	9	404.414	10	.202	10	.266	2	.055	10
200			min	-187.431	2	-304.435	10	-1.679	3	-.119	4	-.18	1	-.046	9
201	MP3A	1	max	0	11	.091	4	.606	1	0	11	0	11	0	11
202			min	0	1	-.09	3	-.633	2	0	1	0	1	0	1
203		2	max	160.672	8	63.251	4	126.686	1	0	11	.098	1	.05	3
204			min	68.125	1	-63.251	3	-126.713	2	0	1	-.098	2	-.05	4
205		3	max	526.886	9	75.239	9	39.158	1	.157	1	.12	1	.001	2
206			min	-118.514	10	-51.413	4	-30.546	2	-.166	2	-.121	2	-.011	9
207		4	max	780.273	9	130.126	4	240.696	1	.213	1	.358	1	.123	9
208			min	-274.96	10	-412.494	7	-229.863	2	-.184	2	-.356	2	-.01	10
209		5	max	0	11	.003	10	.031	6	0	11	0	11	0	11
210			min	0	1	-.008	8	-.017	1	0	1	0	1	0	1
211	MP1A	1	max	0	11	.115	4	.557	1	0	11	0	11	0	11
212			min	0	1	-.123	3	-.519	2	0	1	0	1	0	1
213		2	max	193.483	8	107.953	4	143.367	1	0	11	.078	1	.06	3
214			min	85.645	1	-107.962	3	-143.328	2	0	1	-.078	2	-.06	4
215		3	max	575.009	10	41.581	9	36.179	8	.03	2	.172	1	.019	1
216			min	-150.303	4	-91.178	10	-4.352	2	-.049	1	-.168	2	-.017	2
217		4	max	965.229	10	312.936	10	135.467	8	.131	1	.208	1	.068	4
218			min	-314.489	4	-94.992	3	-5.835	3	-.235	2	-.143	2	-.139	10
219		5	max	0	11	.012	7	.012	6	0	11	0	11	0	11
220			min	0	1	-.004	4	-.011	5	0	1	0	1	0	1
221	M28A	1	max	257.216	4	2.369	7	3.809	6	.002	2	.003	1	.003	9
222			min	-393.893	10	-4.686	10	-2.613	5	-.002	1	-.003	2	-.006	10
223		2	max	258	4	2.301	9	2.138	6	.002	2	.002	1	.001	4
224			min	-393.109	10	-4.686	10	-.942	5	-.002	1	-.002	2	-.003	10
225		3	max	258.783	4	2.309	4	1.142	1	.002	2	.002	1	0	8
226			min	-392.326	10	-4.686	10	-.704	2	-.002	1	-.002	2	0	2
227		4	max	259.567	4	3.828	4	2.662	1	.002	2	.003	1	.003	10
228			min	-391.542	10	-4.686	10	-2.224	2	-.002	1	-.003	2	-.001	9
229		5	max	260.35	4	5.348	4	4.181	1	.002	2	.005	1	.006	10
230			min	-390.759	10	-5.317	3	-3.744	2	-.002	1	-.005	2	-.004	4
231	M29A	1	max	1167.107	10	10.776	7	5.927	6	.003	1	.004	1	.007	7
232			min	15.56	3	.146	4	-4.623	1	-.003	2	-.004	6	0	10
233		2	max	1167.89	10	5.277	7	3.443	6	.003	1	0	1	0	2
234			min	15.219	3	-.279	10	-2.364	1	-.003	2	0	2	0	7
235		3	max	1168.674	10	.651	2	.959	6	.003	1	.002	6	0	10
236			min	14.878	3	-1.141	10	-.104	1	-.003	2	0	1	-.003	7
237		4	max	1169.457	10	.627	4	3.025	5	.003	1	.002	6	.002	10
238			min	14.536	3	-5.722	7	-1.612	2	-.003	2	0	3	0	9
239		5	max	1170.241	10	.788	4	5.51	5	.003	1	.005	5	.007	7
240			min	14.195	3	-11.221	7	-4.009	6	-.003	2	-.002	2	-.001	4
241	M26	1	max	781.618	1	606.977	1	424.72	3	.388	3	.134	1	.222	2
242			min	-849.331	2	-317.24	2	-353.379	4	-.483	4	-.149	2	-.252	1
243		2	max	781.618	1	606.977	1	424.72	3	.388	3	.135	1	.236	2
244			min	-849.331	2	-317.24	2	-353.379	4	-.483	4	-.147	2	-.278	1
245		3	max	781.618	1	606.977	1	424.72	3	.388	3	.136	1	.249	2
246			min	-849.331	2	-317.24	2	-353.379	4	-.483	4	-.144	2	-.303	1
247		4	max	781.618	1	606.977	1	424.72	3	.388	3	.137	1	.262	2
248			min	-849.331	2	-317.24	2	-353.379	4	-.483	4	-.142	2	-.328	1
249		5	max	781.618	1	606.977	1	424.72	3	.388	3	.138	1	.275	2
250			min	-849.331	2	-317.24	2	-353.379	4	-.483	4	-.14	2	-.354	1
251	M27	1	max	240.969	4	684.466	2	553.03	4	.061	3	.07	4	.041	1
252			min	-129.553	3	-422.88	1	-531.172	3	-.291	8	-.054	3	-.07	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
253		2	max	240.969	4	684.466	2	553.03	4	.061	3	.093	4	.059	1
254			min	-129.553	3	-422.88	1	-531.172	3	-.291	8	-.076	3	-.098	2
255		3	max	240.969	4	684.466	2	553.03	4	.061	3	.116	4	.076	1
256			min	-129.553	3	-422.88	1	-531.172	3	-.291	8	-.098	3	-.127	2
257		4	max	240.969	4	684.466	2	553.03	4	.061	3	.139	4	.094	1
258			min	-129.553	3	-422.88	1	-531.172	3	-.291	8	-.12	3	-.155	2
259		5	max	240.969	4	684.466	2	553.03	4	.061	3	.162	4	.112	1
260			min	-129.553	3	-422.88	1	-531.172	3	-.291	8	-.142	3	-.184	2
261	MP2A	1	max	0	11	.683	4	1.399	1	0	11	0	11	0	11
262			min	0	1	-.756	3	-1.448	2	0	1	0	1	0	1
263		2	max	599.26	8	334.448	4	469.269	1	0	11	.523	1	.265	3
264			min	225.205	1	-334.522	3	-469.318	2	0	1	-.523	2	-.265	4
265		3	max	544.28	2	125.662	9	364.829	2	.14	2	.222	1	.051	3
266			min	-379.243	1	-30.342	10	-297.873	1	-.138	1	-.233	2	-.027	4
267		4	max	142.573	3	565.67	4	253.659	2	.111	3	.183	2	.096	8
268			min	-245.049	8	-472.623	3	-299.98	1	-.128	4	-.178	1	.007	3
269		5	max	0	11	.035	7	.266	6	0	11	0	11	0	11
270			min	0	1	-.032	8	-.048	1	0	1	0	1	0	1
271	M29	1	max	-8.66	3	16.336	10	19.564	1	.011	1	.013	2	.021	10
272			min	-881.026	9	-141.703	9	-20.229	2	-.012	2	-.012	1	-.125	9
273		2	max	-5.528	3	16.336	10	22.603	1	.011	1	.007	9	.01	10
274			min	-877.894	9	-141.703	9	-23.269	2	-.012	2	-.002	10	-.036	9
275		3	max	-2.396	3	16.336	10	25.643	1	.011	1	.016	1	.053	9
276			min	-874.762	9	-141.703	9	-26.308	2	-.012	2	-.016	2	-.005	2
277		4	max	.735	3	16.336	10	28.682	1	.011	1	.033	1	.141	9
278			min	-871.63	9	-141.703	9	-29.348	2	-.012	2	-.034	2	-.01	10
279		5	max	3.867	3	16.336	10	31.722	1	.011	1	.052	1	.23	9
280			min	-868.498	9	-141.703	9	-32.387	2	-.012	2	-.053	2	-.02	10
281	M30A	1	max	289.227	1	39.472	8	19.323	4	0	11	0	11	0	11
282			min	-362.498	2	10.192	1	-19.323	3	0	1	0	1	0	1
283		2	max	294.817	1	19.736	8	9.662	4	0	11	.029	4	-.015	10
284			min	-368.088	2	5.096	1	-9.662	3	0	1	-.029	3	-.059	5
285		3	max	300.408	1	0	11	0	11	0	11	.039	4	-.02	10
286			min	-373.678	2	0	1	0	1	0	1	-.039	3	-.079	5
287		4	max	305.998	1	-5.096	10	9.662	3	0	11	.029	4	-.015	10
288			min	-379.268	2	-19.736	5	-9.662	4	0	1	-.029	3	-.059	5
289		5	max	311.588	1	-10.192	10	19.323	3	0	11	0	11	0	11
290			min	-384.858	2	-39.472	5	-19.323	4	0	1	0	1	0	1
291	M30	1	max	1089.482	1	849.839	8	36.809	10	.018	1	.032	2	.312	2
292			min	-1175.79	2	-76.512	3	-34.586	9	-.009	9	-.032	1	-.138	1
293		2	max	1089.482	1	845.858	8	36.809	10	.018	1	.035	2	.312	2
294			min	-1175.79	2	-78.213	3	-34.586	9	-.009	9	-.034	1	-.225	1
295		3	max	1089.482	1	841.877	8	36.809	10	.018	1	.037	2	.311	2
296			min	-1175.79	2	-79.914	3	-34.586	9	-.009	9	-.036	1	-.313	1
297		4	max	0	11	3.981	8	6.484	3	0	11	0	4	0	8
298			min	0	1	1.701	1	-6.484	4	0	1	0	3	0	1
299		5	max	0	11	0	11	0	11	0	11	0	11	0	11
300			min	0	1	0	1	0	1	0	1	0	1	0	1
301	M31	1	max	234.094	4	913.497	8	32.927	4	.014	6	.03	3	.346	6
302			min	-136.791	3	-55.875	1	-35.643	3	-.01	9	-.034	4	-.101	1
303		2	max	234.094	4	909.516	8	39.411	4	.014	6	.023	3	.195	6
304			min	-136.791	3	-57.576	1	-42.127	3	-.01	9	-.028	4	-.091	1
305		3	max	234.094	4	905.535	8	45.895	4	.014	6	.016	3	.087	2
306			min	-136.791	3	-59.277	1	-48.611	3	-.01	9	-.021	4	-.082	1
307		4	max	0	11	3.981	8	6.484	3	0	11	0	4	0	8
308			min	0	1	1.701	1	-6.484	4	0	1	0	3	0	1
309		5	max	0	11	0	11	0	11	0	11	0	11	0	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
310			min	0	1	0	1	0	1	0	1	0	1	0	1
311	M32	1	max	38.246	3	46.453	7	1506.629	2	.015	1	.003	2	0	9
312			min	-426.666	8	-44.549	9	-917.856	1	-.015	2	-.007	1	0	1
313		2	max	38.246	3	46.453	7	1506.629	2	.015	1	.129	2	.004	9
314			min	-426.666	8	-44.549	9	-917.856	1	-.015	2	-.083	1	-.004	7
315		3	max	263.244	1	46.453	7	1506.629	2	.016	2	.254	2	.01	1
316			min	-426.666	8	-17.149	2	-917.856	1	-.017	1	-.16	1	-.008	7
317		4	max	423.416	8	61.082	1	807.2	8	.016	2	.006	3	.005	1
318			min	-38.267	3	-30.66	2	-83.013	3	-.017	1	-.061	8	-.003	2
319		5	max	423.416	8	61.082	1	807.2	8	.016	2	.007	1	0	1
320			min	-38.267	3	-30.66	2	-83.013	3	-.017	1	-.003	2	0	9
321	M33	1	max	427.32	8	44.545	9	917.854	1	.016	2	.001	3	0	1
322			min	-38.161	3	-46.814	7	-1506.628	2	-.017	1	-.012	8	0	9
323		2	max	427.32	8	44.545	9	917.854	1	.016	2	.072	1	.004	7
324			min	-38.161	3	-46.814	7	-1506.628	2	-.017	1	-.129	2	-.004	9
325		3	max	427.32	8	17.146	2	917.854	1	.016	2	.149	1	.008	7
326			min	-263.329	1	-46.814	7	-1506.628	2	-.017	1	-.254	2	-.01	1
327		4	max	38.182	3	30.662	2	83.013	3	.015	1	.079	8	.003	2
328			min	-424.07	8	-61.084	1	-807.206	8	-.015	2	-.008	3	-.005	1
329		5	max	38.182	3	30.662	2	83.013	3	.015	1	.012	8	0	9
330			min	-424.07	8	-61.084	1	-807.206	8	-.015	2	-.001	3	0	1
331	M34	1	max	917.882	1	425.573	8	46.733	1	0	1	.016	2	.012	8
332			min	-1506.624	2	-38.171	3	-43.276	9	0	9	-.017	1	-.001	3
333		2	max	917.882	1	425.409	8	46.733	1	0	1	.016	2	.007	8
334			min	-1506.624	2	-38.192	3	-43.276	9	0	9	-.016	1	0	3
335		3	max	917.882	1	425.245	8	46.733	1	0	1	.016	2	.003	6
336			min	-1506.624	2	-38.213	3	-43.276	9	0	9	-.016	1	-.001	1
337		4	max	917.882	1	425.082	8	46.733	1	0	1	.016	2	.003	2
338			min	-1506.624	2	-38.235	3	-43.276	9	0	9	-.015	1	-.004	1
339		5	max	917.882	1	424.918	8	46.733	1	0	1	.015	2	.003	2
340			min	-1506.624	2	-38.256	3	-43.276	9	0	9	-.015	1	-.007	1
341	M35	1	max	807.948	8	425.573	8	30.155	2	0	1	.015	2	.012	8
342			min	-83.008	3	-38.171	3	-60.926	1	0	9	-.015	1	-.001	3
343		2	max	807.948	8	425.409	8	30.155	2	0	1	.015	2	.007	8
344			min	-83.008	3	-38.192	3	-60.926	1	0	9	-.015	1	0	3
345		3	max	807.948	8	425.245	8	30.155	2	0	1	.016	2	.003	6
346			min	-83.008	3	-38.213	3	-60.926	1	0	9	-.016	1	-.001	1
347		4	max	807.948	8	425.082	8	30.155	2	0	1	.016	2	.003	2
348			min	-83.008	3	-38.235	3	-60.926	1	0	9	-.016	1	-.004	1
349		5	max	807.948	8	424.918	8	30.155	2	0	1	.016	2	.003	2
350			min	-83.008	3	-38.256	3	-60.926	1	0	9	-.017	1	-.007	1
351	M36	1	max	345.539	1	457.406	8	46.653	8	0	6	.015	3	.013	6
352			min	-1021.363	6	-27.851	1	-21.463	9	0	9	-.018	4	-.002	1
353		2	max	345.539	1	457.242	8	46.744	8	0	6	.015	3	.008	6
354			min	-1021.363	6	-27.873	1	-21.463	9	0	9	-.017	4	-.001	1
355		3	max	345.539	1	457.078	8	46.834	8	0	6	.015	3	.004	6
356			min	-1021.363	6	-27.894	1	-21.463	9	0	9	-.017	4	-.001	1
357		4	max	345.539	1	456.915	8	46.925	8	0	6	.015	3	0	2
358			min	-1021.363	6	-27.915	1	-21.463	9	0	9	-.017	4	-.002	5
359		5	max	345.539	1	456.751	8	47.016	8	0	6	.015	3	0	1
360			min	-1021.363	6	-27.936	1	-21.463	9	0	9	-.017	4	-.006	8
361	M37	1	max	1125.768	6	457.406	8	36.982	9	0	6	.016	3	.013	6
362			min	-253.485	1	-27.851	1	-50.257	7	0	9	-.018	4	-.002	1
363		2	max	1125.768	6	457.242	8	36.982	9	0	6	.016	3	.008	6
364			min	-253.485	1	-27.873	1	-50.348	7	0	9	-.017	4	-.001	1
365		3	max	1125.768	6	457.078	8	36.982	9	0	6	.015	3	.004	6
366			min	-253.485	1	-27.894	1	-50.439	7	0	9	-.017	4	-.001	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
367		4	max	1125.768	6	456.915	8	36.982	9	0	6	.015	3	0	2
368			min	-253.485	1	-27.915	1	-50.53	7	0	9	-.017	4	-.002	5
369		5	max	1125.768	6	456.751	8	36.982	9	0	6	.014	3	0	1
370			min	-253.485	1	-27.936	1	-50.621	7	0	9	-.017	4	-.006	8
371	M38	1	max	459.156	8	22.291	9	345.532	1	.015	3	.002	1	0	6
372			min	-27.762	1	-45.494	8	-1022.257	6	-.018	4	-.013	6	0	9
373		2	max	459.156	8	22.291	9	345.532	1	.015	3	.03	1	.004	8
374			min	-27.762	1	-45.494	8	-1022.257	6	-.018	4	-.098	6	-.002	9
375		3	max	459.156	8	37.724	9	345.532	1	.01	9	.201	6	.008	8
376			min	27.917	1	-50.264	7	-1124.882	6	-.018	4	-.022	3	-.009	7
377		4	max	27.917	1	37.724	9	253.492	1	.018	4	.107	6	.003	9
378			min	-455.261	8	-50.264	7	-1124.882	6	-.016	3	-.023	1	-.004	7
379		5	max	27.917	1	37.724	9	253.492	1	.018	4	.013	6	0	9
380			min	-455.261	8	-50.264	7	-1124.882	6	-.016	3	-.002	1	0	6
381	M39	1	max	27.847	1	45.856	8	1022.267	6	.017	4	0	1	0	9
382			min	-458.503	8	-22.296	9	-345.532	1	-.015	3	-.006	8	0	6
383		2	max	27.847	1	45.856	8	1022.267	6	.017	4	.079	6	.002	9
384			min	-458.503	8	-22.296	9	-345.532	1	-.015	3	-.029	1	-.004	8
385		3	max	-28.002	1	50.626	7	1124.873	6	.01	9	.02	3	.009	7
386			min	-458.503	8	-37.721	9	-345.532	1	-.017	4	-.182	6	-.008	8
387		4	max	454.607	8	50.626	7	1124.873	6	.014	3	.022	1	.004	7
388			min	-28.002	1	-37.721	9	-253.492	1	-.017	4	-.088	6	-.003	9
389		5	max	454.607	8	50.626	7	1124.873	6	.014	3	.006	8	0	6
390			min	-28.002	1	-37.721	9	-253.492	1	-.017	4	0	1	0	9
391	M40	1	max	256.219	1	786.597	9	418.999	7	.329	9	.203	1	.483	2
392			min	-244.919	2	-268.645	10	-145.898	4	-.031	4	-.216	2	-.461	1
393		2	max	256.219	1	786.597	9	418.999	7	.329	9	.206	1	.479	2
394			min	-244.919	2	-268.645	10	-145.898	4	-.031	4	-.208	2	-.464	1
395		3	max	256.219	1	786.597	9	418.999	7	.329	9	.208	1	.474	2
396			min	-244.919	2	-268.645	10	-145.898	4	-.031	4	-.2	2	-.467	1
397		4	max	256.219	1	786.597	9	418.999	7	.329	9	.211	1	.469	2
398			min	-244.919	2	-268.645	10	-145.898	4	-.031	4	-.192	2	-.47	1
399		5	max	256.219	1	786.597	9	418.999	7	.329	9	.213	1	.465	2
400			min	-244.919	2	-268.645	10	-145.898	4	-.031	4	-.184	2	-.473	1
401	M41	1	max	135.33	8	971.509	10	109.949	3	.002	9	.139	1	.142	2
402			min	-5.825	3	-308.189	4	-314.516	10	-.295	10	-.211	2	-.195	1
403		2	max	135.33	8	971.509	10	109.949	3	.002	9	.137	1	.135	2
404			min	-5.825	3	-308.189	4	-314.516	10	-.295	10	-.217	2	-.202	1
405		3	max	135.33	8	971.509	10	109.949	3	.002	9	.135	1	.129	2
406			min	-5.825	3	-308.189	4	-314.516	10	-.295	10	-.223	2	-.21	1
407		4	max	135.33	8	971.509	10	109.949	3	.002	9	.133	1	.123	2
408			min	-5.825	3	-308.189	4	-314.516	10	-.295	10	-.229	2	-.218	1
409		5	max	135.33	8	971.509	10	109.949	3	.002	9	.131	1	.117	2
410			min	-5.825	3	-308.189	4	-314.516	10	-.295	10	-.235	2	-.227	10
411	M42	1	max	135.37	3	222.584	3	658.748	3	.183	10	.122	2	.651	1
412			min	-179.85	4	-145.626	4	-751.538	4	-.156	9	-.125	1	-.621	2
413		2	max	135.37	3	222.584	3	658.748	3	.183	10	.112	2	.646	1
414			min	-179.85	4	-145.626	4	-751.538	4	-.156	9	-.118	1	-.618	2
415		3	max	135.37	3	222.584	3	658.748	3	.183	10	.102	2	.641	1
416			min	-179.85	4	-145.626	4	-751.538	4	-.156	9	-.112	1	-.616	2
417		4	max	135.37	3	222.584	3	658.748	3	.183	10	.091	2	.635	1
418			min	-179.85	4	-145.626	4	-751.538	4	-.156	9	-.105	1	-.614	2
419		5	max	135.37	3	222.584	3	658.748	3	.183	10	.111	3	.63	1
420			min	-179.85	4	-145.626	4	-751.538	4	-.156	9	-.128	4	-.612	2
421	M43	1	max	0	11	0	11	0	11	0	11	0	11	0	11
422			min	0	1	0	1	0	1	0	1	0	1	0	1
423		2	max	652.815	3	222.301	10	922.996	4	.483	2	.466	2	.456	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
424			min	-379.884	4	-833.929	9	-1031.312	3	-.461	1	-.487	1	-.21	10
425		3	max	896.277	4	130.018	9	360.727	3	.48	2	.247	6	.053	10
426			min	-826.438	3	-75.846	10	-377.51	4	-.458	1	-.069	1	-.086	9
427		4	max	314.365	10	1004.062	10	136.796	5	.195	1	-.004	1	.494	10
428			min	-109.947	3	-276.94	4	-26.069	2	-.142	2	-.215	6	-.243	4
429		5	max	0	11	0	11	0	11	0	11	0	11	0	11
430			min	0	1	0	1	0	1	0	1	0	1	0	1
431	M44	1	max	2831.955	3	28.832	8	18.993	2	.002	2	0	11	0	11
432			min	-3575.052	4	6.543	3	-18.993	1	-.002	1	0	1	0	1
433		2	max	2822.927	3	14.416	8	9.497	2	.002	2	.019	6	.004	3
434			min	-3567.847	4	3.272	3	-9.497	1	-.002	1	-.007	1	-.018	8
435		3	max	2813.899	3	0	11	0	11	.002	2	.025	6	.005	3
436			min	-3560.641	4	0	1	0	1	-.002	1	-.009	1	-.024	8
437		4	max	2804.871	3	-3.272	3	9.497	1	.002	2	.019	6	.004	3
438			min	-3553.436	4	-14.416	8	-9.497	2	-.002	1	-.007	1	-.018	8
439		5	max	2795.844	3	-6.543	3	18.993	1	.002	2	0	11	0	11
440			min	-3546.23	4	-28.832	8	-18.993	2	-.002	1	0	1	0	1
441	M45	1	max	1466.132	4	28.832	7	18.993	1	.001	1	0	11	0	11
442			min	-3028.598	10	6.543	4	-18.993	2	-.001	2	0	1	0	1
443		2	max	1457.104	4	14.416	7	9.497	1	.001	1	.018	7	.007	1
444			min	-3030.313	10	3.272	4	-9.497	2	-.001	2	-.004	4	-.019	6
445		3	max	1448.077	4	0	11	0	11	.001	1	.024	7	.009	1
446			min	-3032.027	10	0	1	0	1	-.001	2	-.005	4	-.025	6
447		4	max	1439.049	4	-3.272	4	9.497	2	.001	1	.018	7	.007	1
448			min	-3033.742	10	-14.416	7	-9.497	1	-.001	2	-.004	4	-.019	6
449		5	max	1430.021	4	-6.543	4	18.993	2	.001	1	0	11	0	11
450			min	-3035.456	10	-28.832	7	-18.993	1	-.001	2	0	1	0	1
451	M46	1	max	3005.092	9	34.222	8	28.05	2	.002	2	0	11	0	11
452			min	-920.971	10	-1.113	3	-28.05	1	-.002	1	0	1	0	1
453		2	max	3001.157	9	17.111	8	14.025	2	.002	2	.033	2	.012	3
454			min	-924.905	10	-.556	3	-14.025	1	-.002	1	-.018	1	-.026	4
455		3	max	2997.223	9	0	11	0	11	.002	2	.043	2	.016	3
456			min	-928.84	10	0	1	0	1	-.002	1	-.025	1	-.035	4
457		4	max	2993.288	9	.556	3	14.025	1	.002	2	.033	2	.012	3
458			min	-932.774	10	-17.111	8	-14.025	2	-.002	1	-.018	1	-.026	4
459		5	max	2989.354	9	1.113	3	28.05	1	.002	2	0	11	0	11
460			min	-936.708	10	-34.222	8	-28.05	2	-.002	1	0	1	0	1
461	M47	1	max	3594.236	10	34.222	7	28.05	1	.001	1	0	11	0	11
462			min	-1212.787	4	-1.113	4	-28.05	2	0	2	0	1	0	1
463		2	max	3590.302	10	17.111	7	14.025	1	.001	1	.026	3	.018	1
464			min	-1225.987	4	-.556	4	-14.025	2	0	2	-.012	4	-.033	2
465		3	max	3586.367	10	0	11	0	11	.001	1	.035	3	.025	1
466			min	-1239.188	4	0	1	0	1	0	2	-.016	4	-.043	2
467		4	max	3582.433	10	.556	4	14.025	2	.001	1	.026	3	.018	1
468			min	-1252.388	4	-17.111	7	-14.025	1	0	2	-.012	4	-.033	2
469		5	max	3578.498	10	1.113	4	28.05	2	.001	1	0	11	0	11
470			min	-1265.588	4	-34.222	7	-28.05	1	0	2	0	1	0	1
471	M48	1	max	955.804	4	46.093	8	31.214	4	0	11	0	11	0	11
472			min	-1051.971	3	14.732	1	-31.214	3	0	1	0	1	0	1
473		2	max	952.418	4	23.046	8	15.607	4	0	11	.041	4	-.02	10
474			min	-1048.585	3	7.366	1	-15.607	3	0	1	-.041	3	-.061	5
475		3	max	949.031	4	0	11	0	11	0	11	.055	4	-.026	10
476			min	-1045.198	3	0	1	0	1	0	1	-.055	3	-.082	5
477		4	max	945.645	4	-7.366	10	15.607	3	0	11	.041	4	-.02	10
478			min	-1041.812	3	-23.046	5	-15.607	4	0	1	-.041	3	-.061	5
479		5	max	942.259	4	-14.732	10	31.214	3	0	11	0	11	0	11
480			min	-1038.426	3	-46.093	5	-31.214	4	0	1	0	1	0	1

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

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	M36A	PIPE_1.25	.887	0	1	.565	0		1	1163....	19687.5	.801	.801	...	H3-6
2	M37A	PIPE_1.25	.788	.547	9	.205	0		8	1163....	19687.5	.801	.801	...	H1-1a
3	M19	PIPE_1.25	.755	7.5	10	.127	.938		9	1163....	19687.5	.801	.801	...	H1-1a
4	M29A	SR_0.625	.665	3.717	10	.043	0		2	1881....	9946.8	.097	.097	...	H1-1a
5	M21	SR_0.625	.622	3.717	9	.009	3.717		1	1881....	9946.8	.097	.097	...	H1-1a
6	M18	PIPE_1.25	.572	7.5	2	.168	3.75		1	1163....	19687.5	.801	.801	...	H1-1b
7	MP2A	HSS2.375X0.125	.469	2.479	2	.140	5.688		4	28536...	31109.4	1.865	1.865	...	H1-1b
8	M34A	SR_0.625	.346	3.717	3	.022	0		2	1881....	9946.8	.097	.097	...	H1-1a
9	M35A	SR_1.25	.291	2.5	10	.053	1.771		2	32391...	39760...	.828	.828	...	H1-1b
10	M29	SR_1.25	.289	2.5	9	.021	2.5		2	32391...	39760...	.828	.828	...	H1-1b
11	MP4A	SR_0.625	.278	0	1	.040	0		1	4134....	9946.8	.097	.097	...	H1-1b
12	MP3A	HSS2.375X0.125	.253	5.688	2	.154	5.688		1	30868...	31109.4	1.865	1.865	...	H1-1b
13	M43	PIPE_3.0	.251	4.531	4	.120	4.375		2	19871...	65205	5.749	5.749	...	H1-1b
14	M47	L2.5x2.5x4	.224	2.456	10	.007	5.017	z	1	16957...	38556	1.114	2.3	...	H2-1
15	MP5A	SR_0.625	.214	0	2	.042	0		2	4134....	9946.8	.097	.097	...	H1-1b
16	MP1A	HSS2.375X0.125	.205	5.688	10	.164	5.031		2	30868...	31109.4	1.865	1.865	...	H1-1b
17	M46	L2.5x2.5x4	.187	2.456	9	.010	0	z	2	16957...	38556	1.114	2.3	...	H2-1
18	M4	HSS2.875X0.188	.163	1.837	6	.059	1.837		6	54918...	55944	4.001	4.001	...	H1-1b
19	M3	HSS2.875X0.188	.153	0	8	.076	0		8	54918...	55944	4.001	4.001	...	H1-1b
20	M34	PL1/2x1	.151	0	2	.067	0	y	8	16189...	16200	.169	.338	...	H1-1b
21	M37	PL1/2x1	.146	0	4	.072	0	y	8	16189...	16200	.169	.338	...	H1-1b
22	M36	PL1/2x1	.140	0	4	.072	0	y	8	16189...	16200	.169	.338	...	H1-1b
23	M44	L2.5x2.5x4	.140	1.973	3	.013	0	z	2	22699...	38556	1.114	2.398	...	H2-1
24	M35	PL1/2x1	.127	.042	1	.067	0	y	8	16189...	16200	.169	.338	...	H1-1b
25	M6	SR_1	.117	2.795	8	.014	2.795		10	17034...	25434	.423	.423	...	H1-1b
26	M7	SR_1	.113	2.5	8	.019	2.5		10	18456...	25434	.423	.423	...	H1-1b
27	M23	SR_0.625	.106	3.717	7	.013	0		1	1881....	9946.8	.097	.097	...	H1-1b
28	M30A	PIPE_1.25	.104	3.994	8	.007	0		8	4524....	19687.5	.801	.801	...	H1-1b
29	M30	PL1/2x5	.094	.417	1	.049	0	y	5	75650...	81000	.844	8.438	...	H1-1b
30	M45	L2.5x2.5x4	.088	2.015	10	.008	4.029	z	1	22699...	38556	1.114	2.398	...	H2-1
31	M28A	SR_0.625	.087	2.5	10	.025	2.5		1	4134....	9946.8	.097	.097	...	H1-1b
32	M22	SR_0.625	.083	2.5	9	.057	2.5		2	4134....	9946.8	.097	.097	...	H1-1b
33	M31	PL1/2x5	.063	0	4	.051	0	y	6	75650...	81000	.844	8.438	...	H1-1b
34	M5	SR_1	.062	2.5	8	.017	2.5		10	18456...	25434	.423	.423	...	H1-1b*
35	M48	PIPE_2.0	.060	3.537	4	.005	7.074		8	17632...	32130	1.872	1.872	...	H1-1b

EXHIBIT 10

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: CT11765A

CT765/Marlin Guyed Tower
3114 Albany Avenue
West Hartford, Connecticut 06117

April 27, 2021

EBI Project Number: 6221002011

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**25.39%**

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

April 27, 2021

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

Emissions Analysis for Site: CT11765A - CT765/Marlin Guyed Tower

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **3114 Albany Avenue** in **West Hartford, 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 3114 Albany Avenue in West Hartford, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 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.

7) 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.

8) 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.

9) 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.

10) 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.

11) 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.

12) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 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.

13) The antenna mounting height centerline of the proposed antennas is 160 feet above ground level (AGL).

14) 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.

15) 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:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE %:	**0.71%**	Antenna B1 MPE %:	**0.71%**	Antenna C1 MPE %:	**0.71%**
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 / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts
ERP (W):	15,219.30	ERP (W):	15,219.30	ERP (W):	15,219.30
Antenna A2 MPE %:	**3.18%**	Antenna B2 MPE %:	**3.18%**	Antenna C2 MPE %:	**3.18%**
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:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 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):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	**1.95%**	Antenna B3 MPE %:	**1.95%**	Antenna C3 MPE %:	**1.95%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	5.84%
VHF	0.08%
WCCC	2.41%
WMNR	0.01%
Rinkers Paging	0.03%
LPTV, Ch. 38	5.64%
WHfd Fire Dept	0.01%
Verizon	3.45%
AT&T	7.92%
Site Total MPE % :	25.39%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.84%
T-Mobile Sector B Total:	5.84%
T-Mobile Sector C Total:	5.84%
Site Total MPE % :	25.39%

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 2100 MHz LTE	2	2334.27	160.0	7.08	2100 MHz LTE	1000	0.71%
T-Mobile 600 MHz LTE	2	591.73	160.0	1.79	600 MHz LTE	400	0.45%
T-Mobile 600 MHz NR	1	1577.94	160.0	2.39	600 MHz NR	400	0.60%
T-Mobile 700 MHz LTE	2	695.22	160.0	2.11	700 MHz LTE	467	0.45%
T-Mobile 1900 MHz GSM	4	1052.26	160.0	6.38	1900 MHz GSM	1000	0.64%
T-Mobile 1900 MHz LTE	2	2104.51	160.0	6.38	1900 MHz LTE	1000	0.64%
T-Mobile 2100 MHz UMTS	2	1324.71	160.0	4.02	2100 MHz UMTS	1000	0.40%
T-Mobile 2500 MHz LTE	1	6444.38	160.0	9.77	2500 MHz LTE	1000	0.98%
T-Mobile 2500 MHz NR	1	6444.38	160.0	9.77	2500 MHz NR	1000	0.98%
						Total:	**5.84%**

• 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:	5.84%
Sector B:	5.84%
Sector C:	5.84%
T-Mobile Maximum MPE % (Sector A):	5.84%
Site Total:	25.39%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **25.39%** 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.