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

June 29, 2021

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

RE: Notice of Exempt Modification
173 South Broad Street, Pawcatuck, CT
Latitude: 41.369066
Longitude: -71.862361
T-Mobile Site #: CT11442A_L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 140-foot level of the existing 180-foot Self Support Tower located at 173 South Broad St., Pawcatuck, CT. The 180-foot tower is owned by SBA Properties, LLC. The property is owned by the Town of Stonington. T-Mobile now intends to install three (3) new L600/L700MHz antennas.

The new antennas support 5G services and would be installed at the 140-foot level of the tower.

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

Planned Modifications:

TOWER

Remove:
- N/A

Remove and Replace:
- (3) 1-5/8" coax (remove) – (3) 1.9" Fiber (replace)

Install New:

- (3) RFS APXVAALL24_43-U-NA20 600/700 MHz antennas
- (3) Ericsson 4449 B71 + B85 RRUs
- (1) MS-HR35-18 Support Rail Kit
- (3) MS-STZ-2PST Stabilizer Kit
- (3) MS-STZ-350P Stabilizer Adaptor
- (2) MS-LVPB-350 V-Bracing Kit

Existing Equipment to Remain:

- (3) AIR 21 B2/B4P 2100 MHz antennas
- (3) AIR 21 B4P/B2P 1900 MHz antennas
- (3) Sector Frames
- (1) 1-5/8" Fiber

Entitlements:

- (9) 1-5/8" coax
- (3) Ericsson KRY 112 144/1 TMAs

GROUND

Install New:

- 100A-2P Breaker within existing power panel
- Radio equipment within existing RBS6131 Equipment cabinet

Remain:

- 8' x 15' concrete Pad
- S8000 Equipment cabinet
- Existing power panel and existing H-Frame
- Existing RBS6131 Equipment cabinet

This facility was originally located at 166 South Broad Street. The Police Department built a new station across the street at 171 So. Broad St. (now #173), and the tower was relocated to that location. The original approval for the 166 South Broad location, under Special Use Application PZ8855SUP, is missing in Town files, but the PZC minutes showing 12/1/88 approval is contained herein. Per the Town, when the tower was relocated, the zoning officer issued the 2007 Zoning Permit based on the 1988 PZC approval. Approval was for a 180' radio tower for use by the Town and SBA. No post construction stipulations were 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 Stonington's First Selectman, Danielle Chesebrough, and David Rathbun, Planning and Zoning Chair. (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 x3804 + T
508.366.2610 + F
508.868.6000 + C
gshepherd@sbasite.com

Attachments

cc: Danielle Chesebrough, First Selectman / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378
David Rathbun, Planning and Zoning Chair / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378

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 Stonington P&Z 12/1/88
Exhibit 6	Construction Drawings	Chappell Engineering 4/20/21
Exhibit 7	Modification Drawings	TES 8/8/19 (job# 82308)
Exhibit 8	Structural Analysis	TES 6/1/21
Exhibit 9	Mount Analysis	TES 5/12/21
Exhibit 10	EME Report	EBI Consulting 6/18/21

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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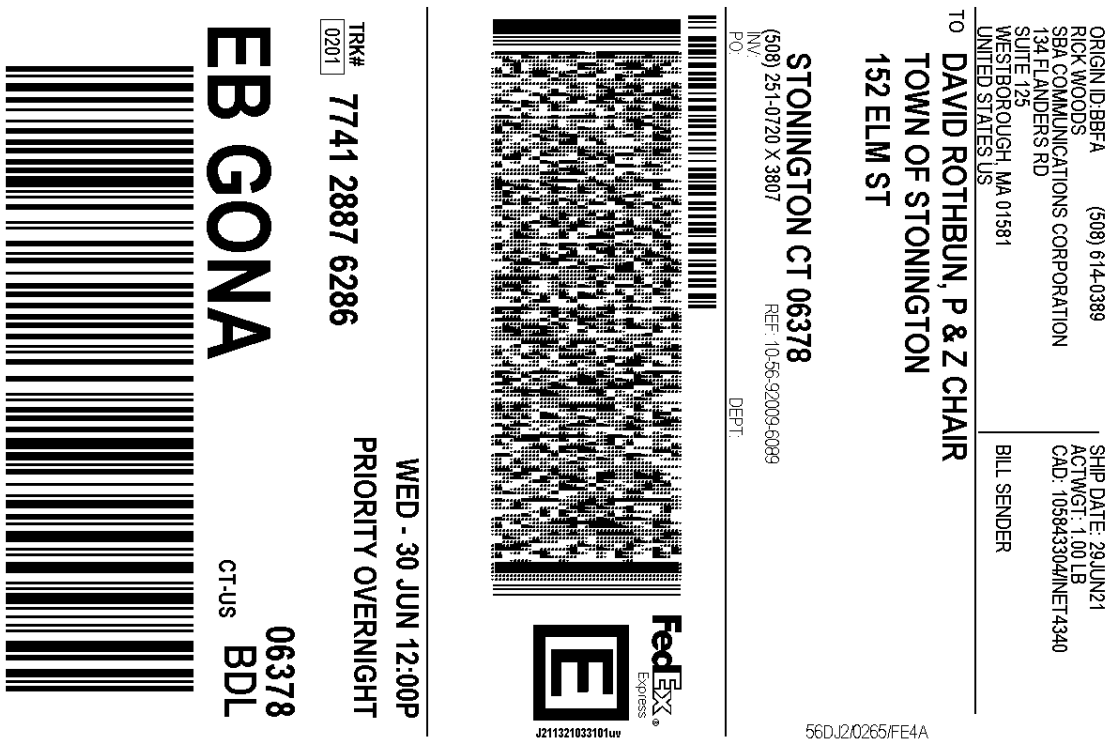

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EXHIBIT 3

Town of Stonington, CT

Property Listing Report

Map Block Lot	37-1-2	Building #	1	Section #	1	Account	00623600

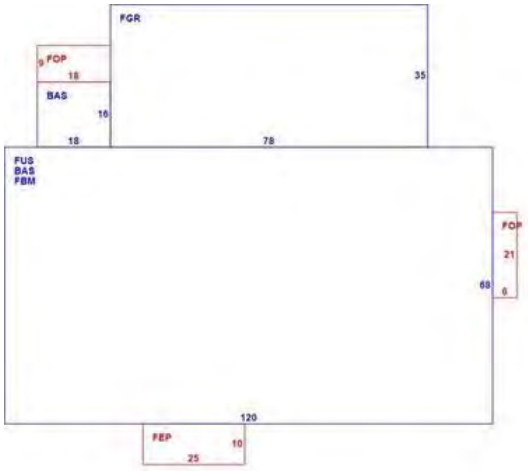
Property Information

Property Location	173 S BROAD ST
Owner	STONINGTON TOWN OF
Co-Owner	POLICE STATION
Mailing Address	152 ELM ST STONINGTON CT 06378
Land Use	9031 MUN POLICE
Land Class	E
Zoning Code	M-1
Census Tract	7051

Street Index	5000
Acreage	11.47
Utilities	
Lot Setting/Desc	Suburban Level
Survey Map #	NA
School District	
Fire District	Pawcatuck
Trash Day	T
Polling Place (District)	2

Photo

Sketch



Primary Construction Details

Year Built	2000
Stories	2
Building Style	Other Municip
Building Use	Ind/Comm
Building Condition	G
Occupancy	1
Extra Fixtures	
Bath Style	NA
Kitchen Style	NA
AC Type	Central
Heating Type	Forced Air-Duc
Heating Fuel	Gas

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Total Rooms	0
Roof Style	Flat
Roof Cover	Tar & Gravel
Interior Floors 1	Vinyl/Asphalt
Interior Floors 2	Carpet
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Interior Walls	Drywall/Sheet
Interior Walls 2	NA

(*Industrial / Commercial Details)

Building Desc.	MUN POLICE
Building Grade	Good
Heat / AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths / Plumbing	ABOVE AVERAGE
Ceiling / Wall	SUS-CEIL & WL
Rooms / Prtns	ABOVE AVERAGE
Wall Height	10
First Floor Use	9031

Report Created On 6/29/2021

Town of Stonington, CT

Property Listing Report

Map Block Lot	37-1-2	Building #	1	Section #	1	Account	00623600

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2454200	1717900
Extras	187100	131000
Improvements		
Outbuildings	277200	194100
Land	1394200	976000
Total	4312700	3019000

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	8448	8448
Basement, Finished	8160	5712
Porch, Enclosed	250	0
Garage	2730	2457
Porch, Open	288	0
Upper Story, Finished	8160	8160
Total Area	28036	24777

Outbuilding and Extra Features

Type	Description
PAVING-ASPHALT	37018.00 S.F.
SPRINKLERS-WET	11428.00 S.F.
ELV1	3.00 UNIT
CELL TOWER	1.00 UNIT
COMM MAS	1710.00 SF
GAS TANK	1.00 UNIT
GOOD QUALITY	484.00 S.F.
LIGHTS-IN W/PL	9.00 UNITS
FENCE-6' CHAIN	400.00 L.F.

Sales History

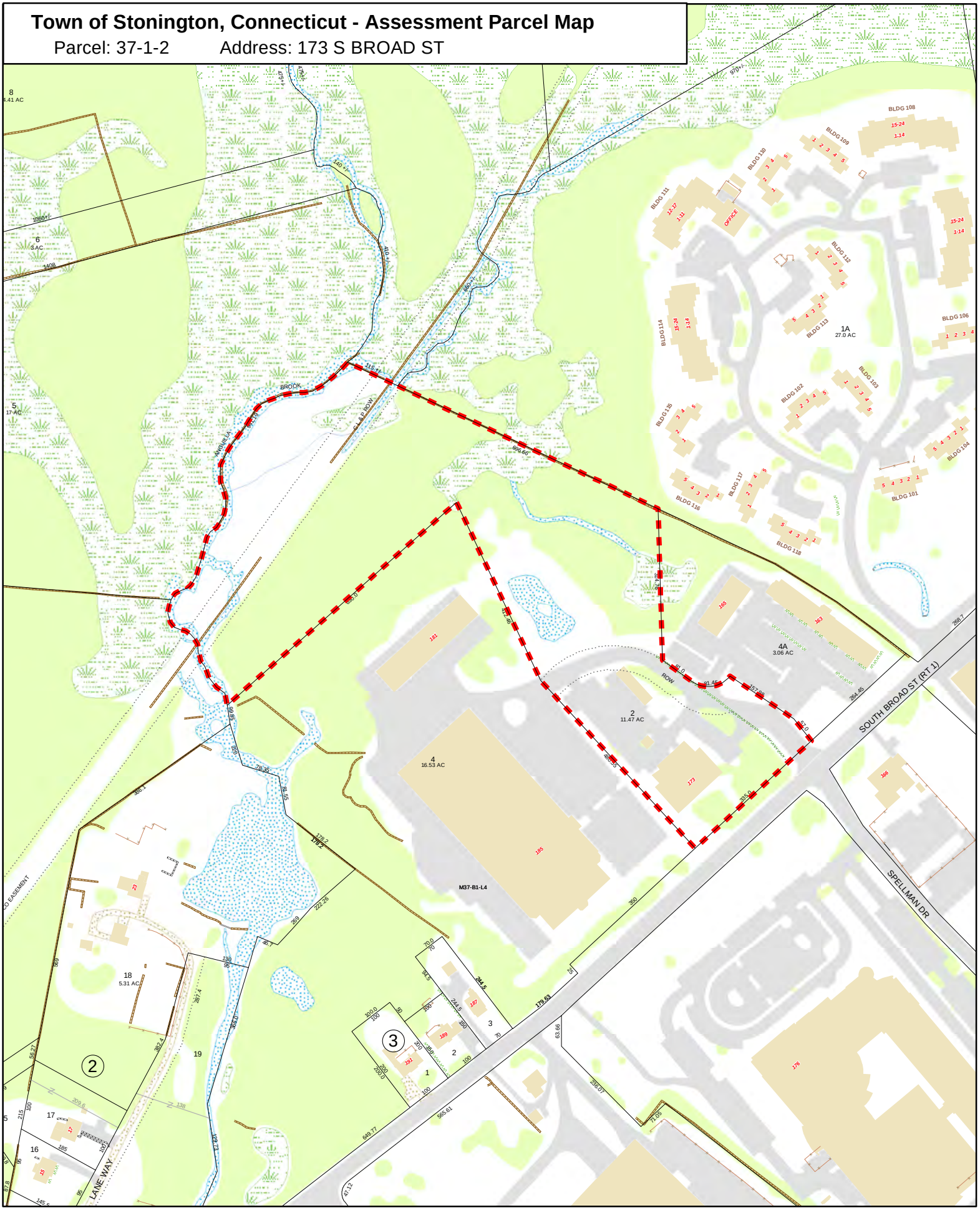
Owner of Record	Book/ Page	Sale Date	Sale Price
STONINGTON TOWN OF	0432/0629	3/1/1999	0
STONINGTON TOWN OF	0432/0627	3/1/1999	0
OLIVERIO SAMUEL F & MARIE A	0208/0086	9/16/1974	0
OLIVERIO SAMUEL F & MARIE A	0180/0588	3/30/1971	0
OLIVERIO SAMUEL F & MARIE A	0166/0143	4/24/1968	0

Report Created On 6/29/2021

EXHIBIT 4

Town of Stonington, Connecticut - Assessment Parcel Map

Parcel: 37-1-2 Address: 173 S BROAD ST



Approximate Scale:

1 inch = 250 feet

0 150 300 450 600 Feet

Revised To: October 2018 **Map Produced: April 2019**

Google Maps 173 S Broad St

Image capture: Aug 2019 © 2021 Google

Stonington, Connecticut

Google

Street View

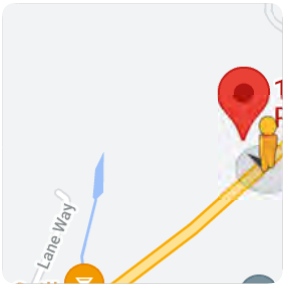


EXHIBIT 5

~~DRAFT~~

SPECIAL MEETING

The 719th meeting of the Planning and Zoning Commission of the Town of Stonington was held at the Town Hall on Thursday, 1 December 1988 at 7:00 P.M.

The meeting was called to order at 7:00 P.M. by Vice-Chairperson D. Hill.

Those present were: Town Planner, R.Birmingham, Vice-Chairman D. Hill, W. Parry, D. Stamm, S. Wohlman, M. Olssen (Alternate) seated for J. Getlein, and acting clerk, M. Patton.

Mrs. Hill introduced the Board and made the announcement that the Agenda for this meeting was Old Business.

OLD BUSINESS:

A.
Review of Subdivision Regs. Chapter VIII, Open Space Dedication Requirements Mr. Stamm's and Mrs. Hill's differing proposals concerning possible amendments to this subdivision requirement were reviewed, also Mr. Birmingham's memo. Several examples were explored re: (v) of Mr. Stamm's proposal. The waiver could be used under limited conditions and be limited to one waiver per parcel, subdivision or resubdivision; which can be noted on Mr. Birmingham's index cards "No future waiver can be allowed." It was the concensus of the Commission that the open space requirement be 15% and under certain limited conditions would waiver in the best interest of the town. Mr. Wohlman volunteered to try a draft.

Mr. Olssen made a motion to table item B. Regulation review-Discussion of Various issues. Mr. Stamm seconded the motion and it was unanimously approved.

C. PZ8847SUP Bess Eaton/Gencarelli - Application for a Special Use Permit for parking and drive in facility. Property located on South Broad Street, Pawcatuck, Stonington.

Mr. Stamm made a motion to table this item until the arrival of the Land Use Attorney. Mr. Wohlman seconded the motion and it was unanimously approved.

D. PZ8843ZC Maritime Park Associates - Application for the creation of a new "floating zone" R-CIH, Planned Congregate and Independent Housing Zone.

After much discussion about the floating zone and concern about the height of the proposed building, setbacks and buffers and intensive use, Mr. Spellman asked for a procedural extension as there were only four voting members present and they would like to have a full Board. Mr. Olssen didn't attend the original hearing and couldn't vote. Mr. Wohlman stated he didn't think anyone here could vote any differently and extending it won't change any decision.

Mr. Parry made the motion, "I move that PZ8843ZC Maritime Park Associates. application for a new floating zone be denied without prejudice for the concept of planned and independent housing because the regulation proposed is not compatible with other residential zones in the Plan of Development in that the maximum height of the building of 50' is too high considering that the other residential zones are limited to 30'; that the bulk requirements such as set backs and buffer areas are inadequate; and that the regulation as written does not provide sufficient protection to abutting land owners. Mr. Stamm seconded the motion. Mrs. Hill, Mr. Stamm, Mr. Wohlman and Mr. Parry approved the motion.

Mr. Stamm moved that "We address this issue as expeditiously as possible and direct Staff to work to bring this concept to a workable stage." Mr. Parry seconded the motion.

A discussion followed - no vote was taken.

E. PZ8853SUP Mary Elizabeth Convalescent Home - Application for Special Use Permit for expansion of previously approved convalescent home. Property located on Washington, East Main and Broadway Streets, Mystic, Stonington, CT Ls-5 zone.

Land Use Attorney T. Bates arrived at 9:38 P.M.

Mr. Parry made a motion that PZ8853SUP Mary Elizabeth Convalescent Home application for Special Use Permit be approved. Mr. Olssen seconded the motion.

Mr. Wohlman added stipulations regarding adult day care and written approval from Water Pollution Control Authority.

Mr. Wohlman made the motion. "I move that we amend the motion to stipulate 1. Written approval from Water Pollution Control Authority for this change. 2. That adult day care as shown on plan be deleted. 3. All driveways shall be marked "Fire Lane-No Parking". 4. Curbings from Broadway to the front entrance be painted yellow. 5. "No Parking" signs to be posted at entrance from East Main Street and entrance from Washington Street. 6. Area adjacent to sprinkler equipment to be kept clear. 7. That a new anti-tracking pad on entrance off Broadway as approved by Town Planner be installed during construction period. Mr. Stamm seconded the amendments which are stipulations to the original approval. Mr. Wohlman's amendment was approved by Mr. Olssen, Mr. Stamm, Mr. Parry and Mr. Wohlman. The original motion was approved by Mr. Olssen, Mr. Stamm, Mr. Parry, Mr. Wohlman and Mrs. Hill

Mr. Stamm made a motion to hold a special meeting on Tuesday, December 13th at 7:00 P.M. to add with agenda what we don't have time to take care of. Mr. Wohlman seconded the motion and it was unanimously approved.

C. PZ8847SUP Bess Eaton/Gencarelli - Mr. Bates concurred with Mr. Birmingham's memo that the addition to the present structure is an expansion of a non-conforming building location. Mr. Birmingham's memo was reviewed.

Mr. Wohlman asked if parking could be approved without approving the drive in window. Mr. Bates saw no problem with that.

Mr. Stamm made the motion, "I will move that PZ8847SUP Bess Eaton/ Gencarelli Application for a Special Use Permit for parking and drive in facility be approved with the stipulations: 1. That the drive in facility be deleted in that it is an expansion of a non-conforming use, and 2. That changes in directional arrows and signage be made in conformance with Zoning Regulations as approved by the Town Planner. Mr. Wohlman seconded the motion. Mrs. Hill opposed. Mr. Wohlman, Mr. Stamm, Mr. Parry approved. Mr. Olssen abstained as he did not attend the hearing. (Although Mr. Stamm was not present at the hearing, he reviewed the tape and file.)

F. PZ8855SUP-PZ8858SUP Town of Stonington/Department of Police Services - Applications for Special Use Permits for municipal facilities at the following locations:

1. 120-foot radio tower. Located at 166 South Broad Street
2. 40-foot radio tower. Located at Asher Ave., Pawcatuck, CT.
3. Stud Tower, Located at Elm Street, Stonington, top of Town Hall.

The deficiencies stated in Mr. Birmingham's memo were reviewed.

Mr. Wohlman made the motion "I move that PZ8855SUP Town of Stonington/ Department of Police Services antenna at Police Station be approved with the following stipulations: 1. That full legal description be provided and approved by the Town Counsel. 2. There will be no change in contours. Mr. Parry seconded. Mrs. Hill opposed. Mr. Stamm, Mr. Wohlman, Mr. Parry and Mr. Olssen approved.

Mr. Wohlman made the motion "I move that PZ8857SUP Town of Stonington/ Department of Police Services tower at Asher Avenue be accepted with the stipulations: That legal description be provided to the Land Use Counsel for approval, and the current grades adjacent to the tower be shown; and the tower shown corrected to a height of 40 feet. - The table lower right corner of plan - tower be changed to 40' height from 180' and the water tank height changed to the 24' given at the public hearing as the correct height vs the 34' height shown. And the 40' height of the tower not be higher than 40' above the elevation of the base of the tank. Mr. Parry seconded. Mrs. Hill opposed. Mr. Stamm, Mr. Wohlman, Mr. Parry and Mr. Olssen approved.

Mr. Wohlman made a motion that PZ8858SUP Town of Stonington/Department of Police Services stud tower on top of Town Hall be approved with the stipulation that legal description be provided as approved by the Land Use Counsel. Mr. Parry seconded. Mrs. Hill opposed. Mr. Parry, Mr. Wohlman, Mr. Stamm and Mr. Olssen approved.

Mr. Parry made a motion to go past 11:00 P.M. Mr. Wohlman seconded. The motion was unanimously approved.

G. PZ8865SD Jeremy Hill - Application for a 10-lot subdivision. Property located on Greenhaven Road, Stonington,CT.

Mr. Birmingham went over the information in his memo. Mr. McGuire said it had previously been denied because of three tiny technicalities. Mr. Birmingham added that the application meets the regulations. "They have done the best I have ever seen in analyzing split lot zoning density requirements."

Mr. Parry inquired about the conservation easement on trolley bed. Mr. McGuire described area, the majority of the old trolley track is in open space - the portion in question is strictly owned by the 10 lots. The pond is privately owned. All open space owned by property owners. Mr. McGuire's partner answered questions about test holes and slope.

Mr. Parry made the motion "I move that PZ8865SD Jeremy Hill application for a 10-lot subdivision be approved. Mr. Olssen seconded the motion.

Mr. Stamm moved to amend the motion with the stipulation that so much of the former trolley road bed as is included in the dedicated open space be protected with conservation easement by the Land Use Attorney. Mr. Parry seconded the motion.

The amendment was approved unanimously as was the original motion.

Mr. Stamm made the motion "I move that we find that the proposed subdivision with dedicated open space preserves the fragile resources and therefore is consistent with CAM guidelines; and because the pond is private, public access would appear to be inappropriate and the water dependent use would also appear to be inappropriate since the pond would not permit water dependent uses. Mr. Parry seconded the motion. The motion was unanimously approved.

Mr. Wohlman made a motion to adjourn. Mr. Parry seconded. Unanimously approved. The meeting adjourned at 11:52. P.M.

R. David Stamm

D. Stamm, Secretary

ZONING PERMIT

TOWN OF STONINGTON
PLANNING & ZONING COMMISSION

Date Issued: March 24, 2000 Permit No.: #00-067 ZON

NAME OF PROPERTY OWNER: TOWN OF STONINGTON; OWNER
SBA, INC., APPLICANT

LOCATION OF PROPERTY: 173 SOUTH BROAD ST., PAWCATUCK

MAP: 37 BLOCK: 1 LOT: 2 ZONE: GC-60

PERMITTED ACTIVITY: INSTALLATION OF A 180 FT. RADIO TOWER.

STIPULATIONS OR SPECIAL CONDITIONS: As per Planning and Zoning Commission approval.

BY: Joseph M. Larkin
Zoning Enforcement Officer

CONSTRUCTION MAY NOT PROCEED UNTIL A BUILDING PERMIT HAS BEEN OBTAINED

THIS PERMIT MUST BE PROMINENTLY POSTED ON THE PREMISES

TOWN OF STONINGTON
ZONING PERMIT APPLICATION

RECEIVED
MAR 21
TOWN OF STONINGTON
PLANNING & ZONING

OFFICE USE ONLY APPLICATION NUMBER 00-067 ZON

NA
Form 96-ZP

✓ APPROVED {Certified to comply with Zoning Regulations}

_____ DISAPPROVED Reasons: _____

Zoning Official Joseph M. Lahm Date 3·24·00

Comments: As per PZC approval.

YOUR APPLICATION CANNOT BE REVIEWED UNTIL ALL REQUIRED INFORMATION IS PROVIDED.

NAME OF APPLICANT: SBA, INC. TELE (860) 659-9101

MAILING ADDRESS: 80 Eastern BLVD, Glastonbury CT 06033

NAME, ADDRESS & PHONE NUMBER OF PROPERTY OWNER (if not applicant)

Town of Stonington

LOCATION OF SITE: 173 South Broad Street

ASSESSOR'S MAP 37 BLOCK 1 LOT 2 ZONE GC 60

APPLICATION IS HEREBY MADE TO PERMIT:

installation of a 180' Radio tower for use of town of Stonington and SBA Radio antennAS

TYPE OF OCCUPANCY: _____ Residential _____ Commercial _____ Industrial Municipal / municipal

TYPE OF CONSTRUCTION: X New _____ Alteration _____ Addition _____ Repair

SUBDIVISION NAME (if any) _____

LOT INFORMATION: Frontage of Lot: 949.45 Width of lot: _____ Depth of Lot: _____ Area of Lot: 10.9988 ACR

REQUIRED SETBACKS: Front: _____ Rear: _____ Sides: _____

PROPOSED SETBACKS: Front: _____ Rear: _____ Sides: _____

SIZE OF STRUCTURE: Footprint: _____ x _____ Height: 180' Radio Tower

FLOOR AREA (sq.ft.): 1st floor _____ 2nd floor _____ Attic _____ Basement 729 sf Foundation Accessory Bldgs. _____

PROPOSED ADDITIONAL: Footprint: _____ x _____ Total Floor Area _____ Floor Area Ratio _____

ESTIMATED COST OF WORK: $ 50,000 00

FLOOD HAZARD ZONE DESIGNATION: _____

OTHER APPROVALS REQUIRED:

Required		Appl.#	Approved	Date	Vol.	Page
_____	P & Z (Site Plan)					
_____	P & Z (Special Use Permit)					
_____	Inland Wetlands					
_____	CAM Review (PZC)					
_____	Variance (ZBA)					
_____	Driveway Permit (Highway Dept.)					

OTHER ITEMS REQUIRED TO BE SUBMITTED WITH THIS APPLICATION:

____ A SITE PLAN SHOWING THE DIMENSIONS OF THE PROPERTY, THE LOCATION AND DIMENSIONS OF ALLSTRUCTURES ON THE PROPERTY AND THE DISTANCES FROM STRUCTURES TO THE PROPERTY LINES.

____ AN ATTACHED COPY OF THE TAX ASSESSOR'S STREET CARD FOR THIS SITE. IF NEW CONSTRUCTION, HOUSE NUMBER MUST BE INDICATED.

____ ELEVATIONS (RENDERINGS) OF ALL PROPOSED STRUCTURES

____ PHOTOGRAPHS OF EXISTING CONDITIONS (UNLESS NEW BUILDING)

____ FEES: New Construction $2/1,000 + $10.00 for State of Connecticut
$35.00 for additions, alterations, sheds
fees waived by B.O.S. [signature] first selectman

I, the undersigned, attest that the statements made in this application are to the best of my knowledge true and accurate representations of the existing site and proposed site improvements.

Signatures:

Owner ______________________ Date ______________

Agent [signature] Date 3/21/60

Kri Pelletier

From: Gayle Phoenix <GPhoenix@stonington-ct.gov>
Sent: Tuesday, May 14, 2019 10:48 AM
To: Kri Pelletier
Subject: RE: [External] RE: 173 South Broad Street, Pawcatuck (TMO CT11442A_L600 FSA)
Attachments: SPD (old) cell tower 1988 minutes approval.pdf

Categories: CAUTION: This email originated from outside of the organization. Do NOT click or open attachments unless you recognize the sender and know the content is safe.

Hi Kri,

Fortunately, I had to research this one a few months ago for the Police Department so I'm familiar with the history. I was unable to find any zoning permit for the original (166 So. Broad St.), but have attached the PZC minutes showing their 12/1/88 approval of the Special Use Application (PZ8855SUP – a file also among the missing). When the police built the new station across the street at 171 So. Broad St. (now #173), relocating the antenna, the zoning officer issued the 2007 ZP based on the 1988 PZC approval.

Hope this helps!

Regards,
Gayle

EXHIBIT 6

STONINGTON RT 1

173 SOUTH BROAD STREET
PAWCATUCK, CT 06379
NEW LONDON COUNTY

SITE NO.: CT11442A

SITE TYPE: 180'± SELF-SUPPORT TOWER

RF DESIGN GUIDELINE: 67D02C 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.

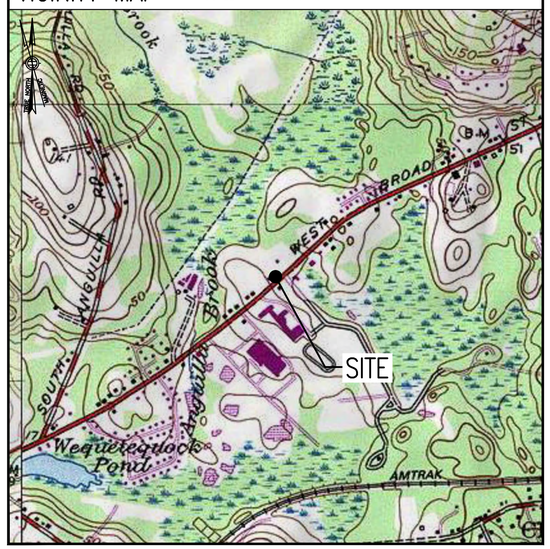
GENERAL NOTES

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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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:	CT11442A
SITE NAME:	STONINGTON RT 1
SBA SITE NUMBER:	CT03241-S
SBA SITE NAME:	STONINGTON 2, CT
SITE ADDRESS:	173 SOUTH BROAD STREET PAWCATUCK, CT 06379
PROPERTY OWNER:	TOWN OF STONINGTON 173 SOUTH BROAD STREET STONINGTON, CT 06379
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	GC-60 (GENERAL COMMERCIAL)
STRUCTURE TYPE:	SELF-SUPPORT TOWER
STRUCTURE HEIGHT:	180'±
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.41.369083° N.41°22'08.70" LONGITUDE W.71.862317° W.71°51'44.34"

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
4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	04/20/21	CONSTRUCTION REVISED	CMC
1	09/26/19	ISSUED FOR CONSTRUCTION	JRV
0	05/24/19	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11442A

SITE ADDRESS:
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.085

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER

4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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0	05/24/19	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11442A

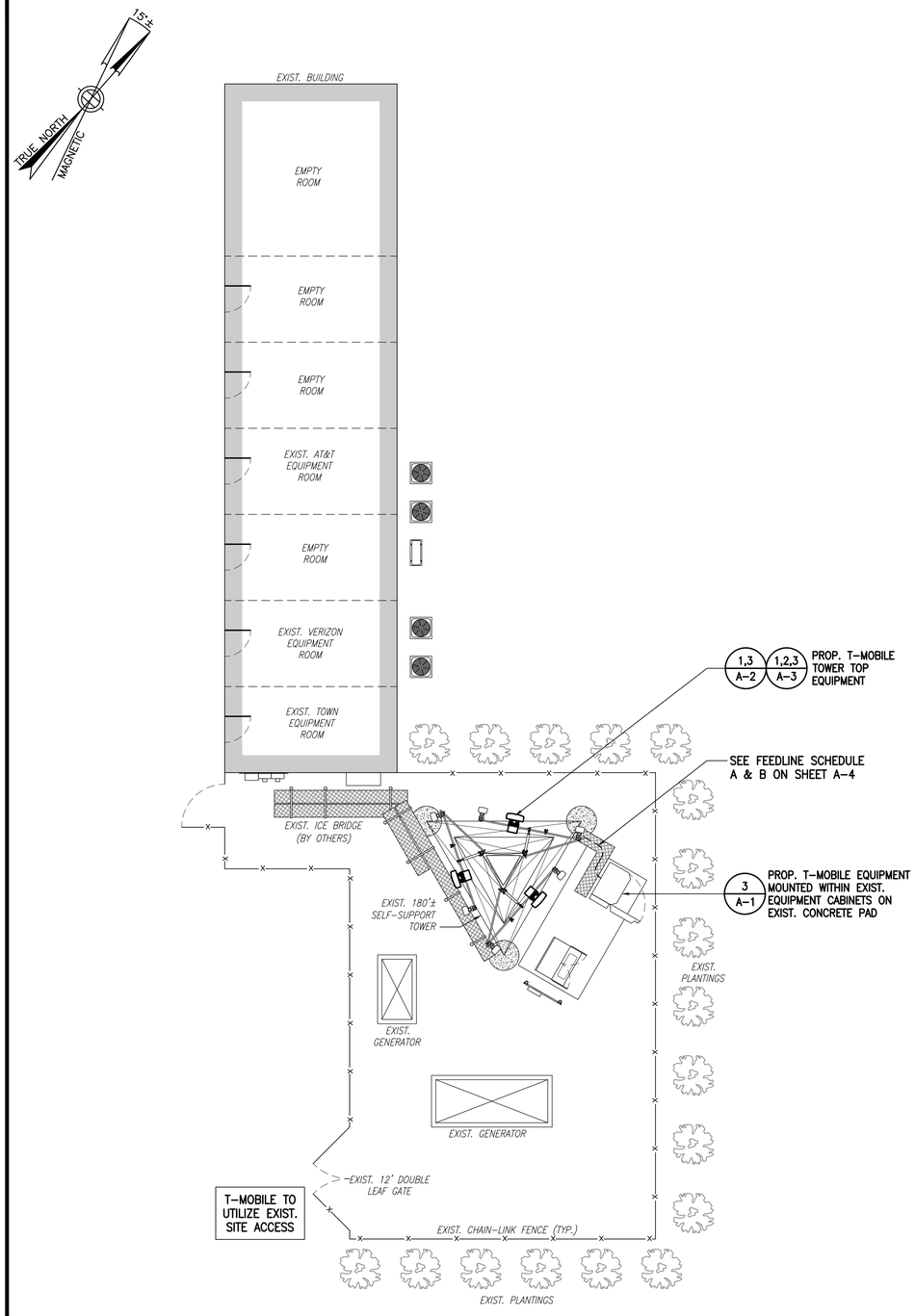
SITE ADDRESS:
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

SHEET TITLE
GENERAL NOTES

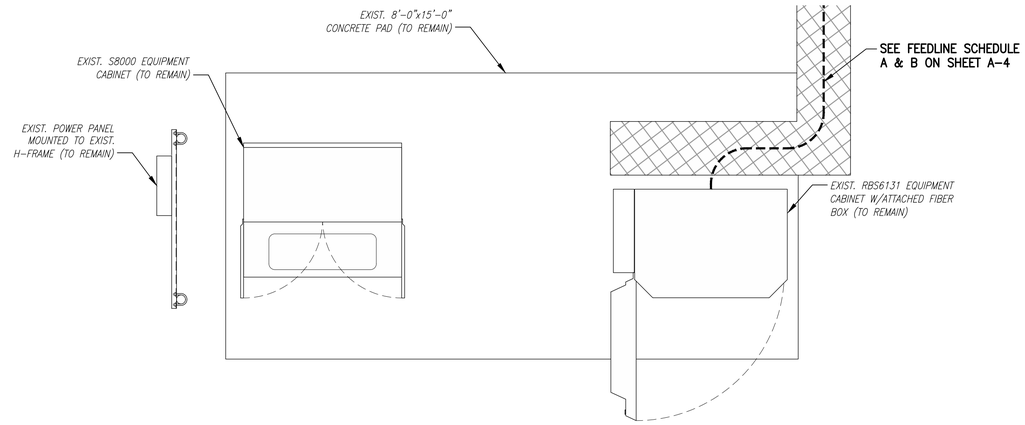
SHEET NUMBER
GN-1

1815.085

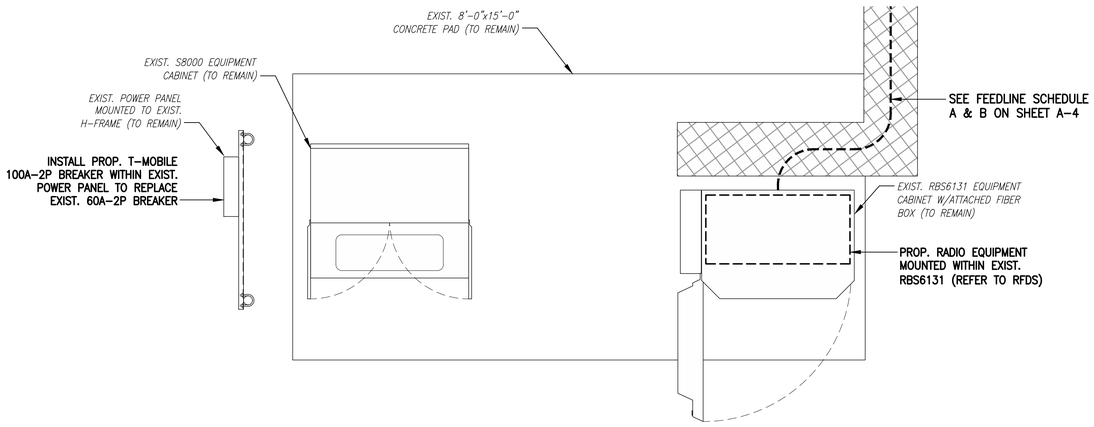
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



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



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



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

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4/30/2021

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SITE ADDRESS:
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.085

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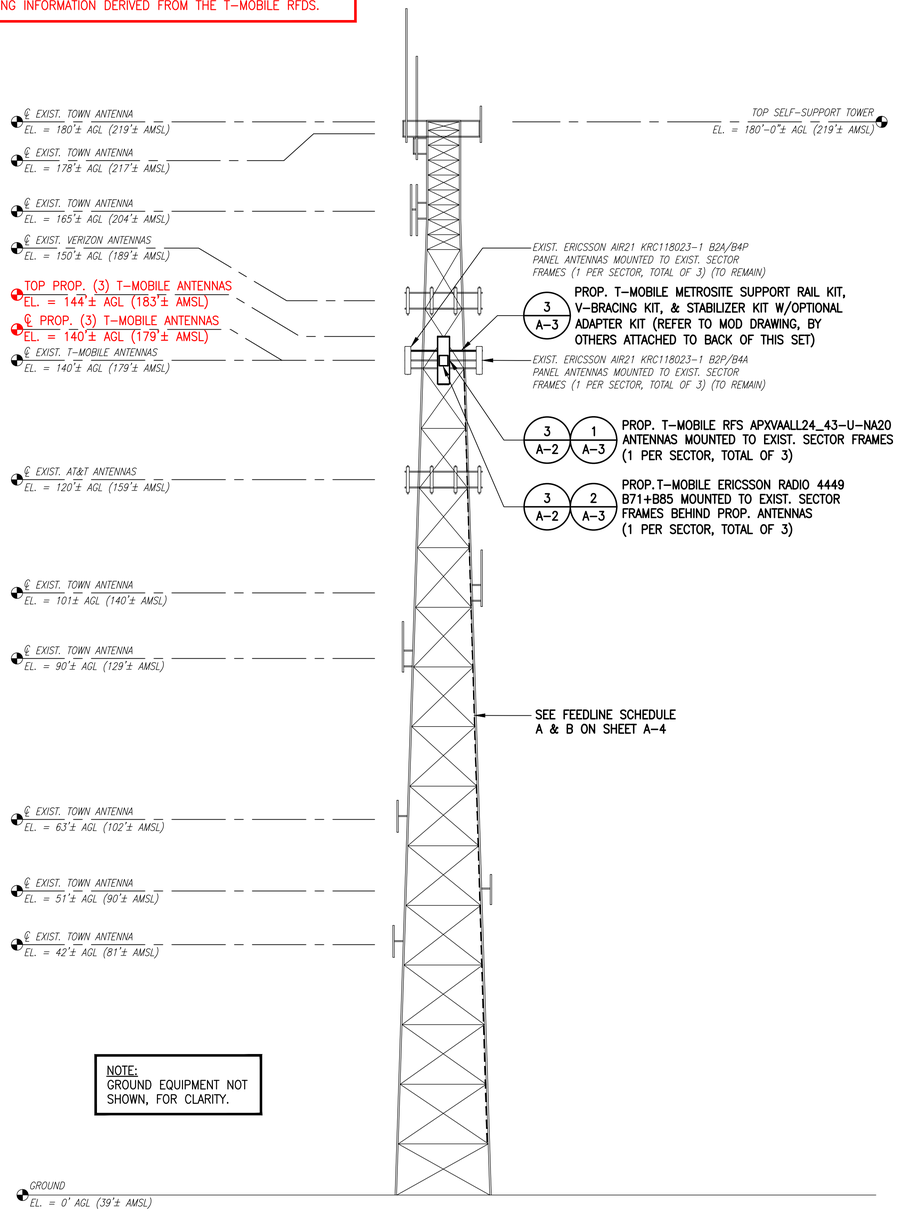
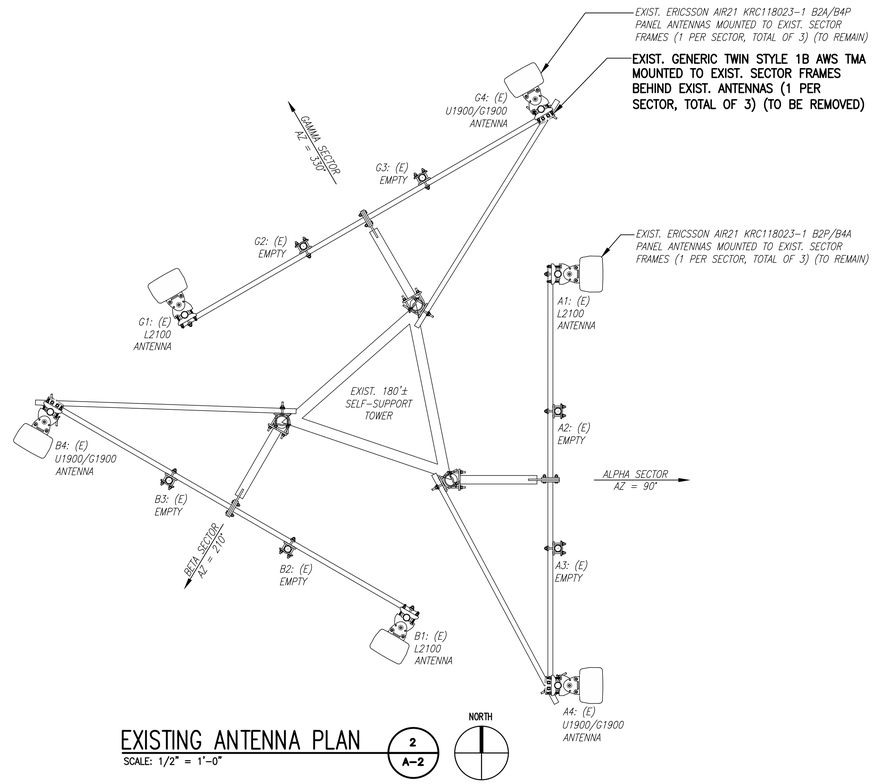
SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
GENERAL CONTRACTOR SHALL ORIENT PROPOSED PLATFORM REINFORCEMENT KIT RING-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING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

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

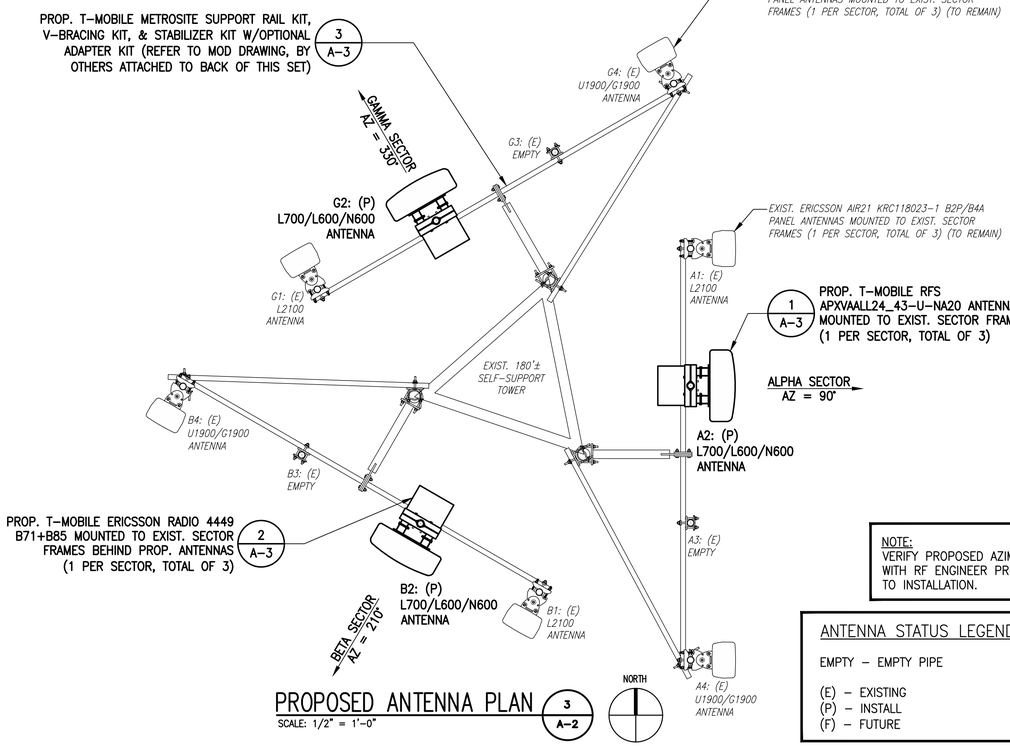


NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION
SCALE: 1" = 12'
0 6' 12' 24' 36'
1 A-2



EXISTING ANTENNA PLAN
SCALE: 1/2" = 1'-0"
2 A-2
NORTH



PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0"
3 A-2
NORTH

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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

(E) – EXISTING
(P) – INSTALL
(F) – FUTURE

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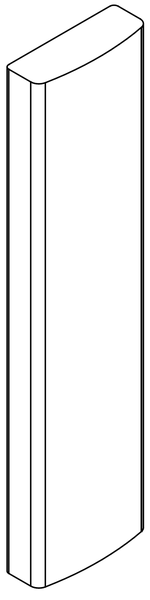
PAWCATUCK, CT 06379

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

1815.085



RFS APXVAALL24_43-U-NA20 ANTENNA

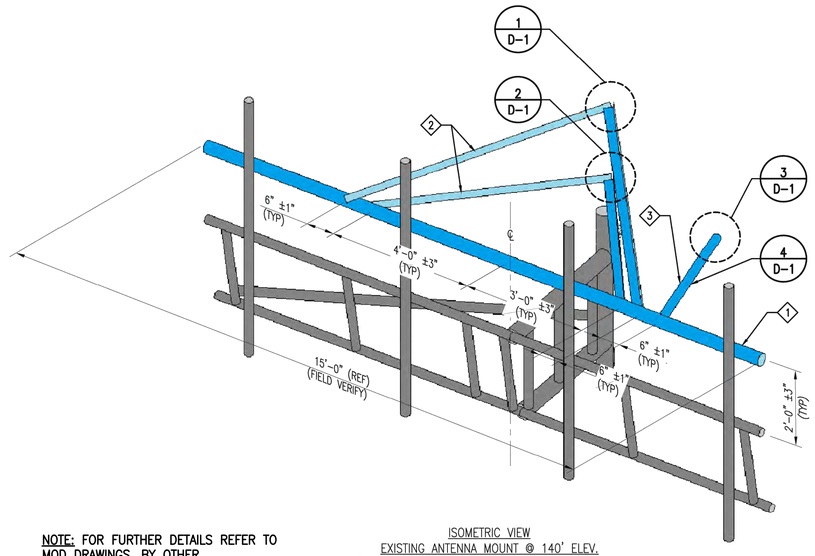
DIMENSIONS: 95.9"H x 24.0"W x 8.5"D
WEIGHT: 122.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

ERICSSON RADIO 4449 B71+B85

DIMENSIONS: 17.9"H x 13.1"W x 10.6"D
WEIGHT: 75.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

RADIO DETAIL — 2 / A-3
SCALE: N.T.S.



NOTE: FOR FURTHER DETAILS REFER TO MOD DRAWINGS, BY OTHER (ATTACHED TO BACK BACK OF THIS SET)

ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 140' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)

MOUNT MODIFICATION DETAIL — 3 / A-3
SCALE: N.T.S.

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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.085

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*140'± AGL*	*90°*	*0°*	*2°*	*L2100*	–	(1) 1-¼" (9x18) HCS FIBER CABLE PROP. (3) 2" (6x24) HCS FIBER CABLES
	A2 **RFS APXVAALL24_43-U-NA20**	**140'± AGL**	**90°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	
	A3 *EMPTY PIPE*	–	–	–	–	–	–	
	A4 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*140'± AGL*	*90°*	*0°*	*2°*	*U1900/G1900*	–	
BETA	B1 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*140'± AGL*	*210°*	*0°*	**2°**	*L2100*	–	
	B2 **RFS APXVAALL24_43-U-NA20**	**140'± AGL**	**210°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	
	B3 *EMPTY PIPE*	–	–	–	–	–	–	
	B4 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*140'± AGL*	*210°*	*0°*	**2°**	*U1900/G1900*	–	
GAMMA	G1 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*140'± AGL*	*330°*	*0°*	*2°*	*L2100*	–	
	G2 **RFS APXVAALL24_43-U-NA20**	**140'± AGL**	**330°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	
	G3 *EMPTY PIPE*	–	–	–	–	–	–	
	G4 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*140'± AGL*	*330°*	*0°*	*2°*	*U1900/G1900*	–	

CABLE NOTE: EXISTING (12) 1-⅝" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV7 – 02/09/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) ½" COAX FOR GPS ANTENNA* *(1) 1-¼" (9x18) HCS FIBER CABLE*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(12) 1-⅝" COAX CABLES*	
B	**PROPOSED:**	**(3) 2" (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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4/20/2021

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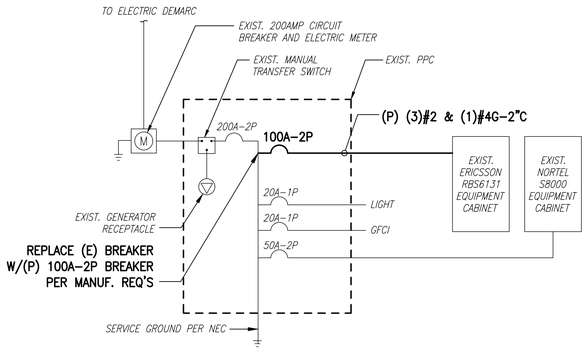
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

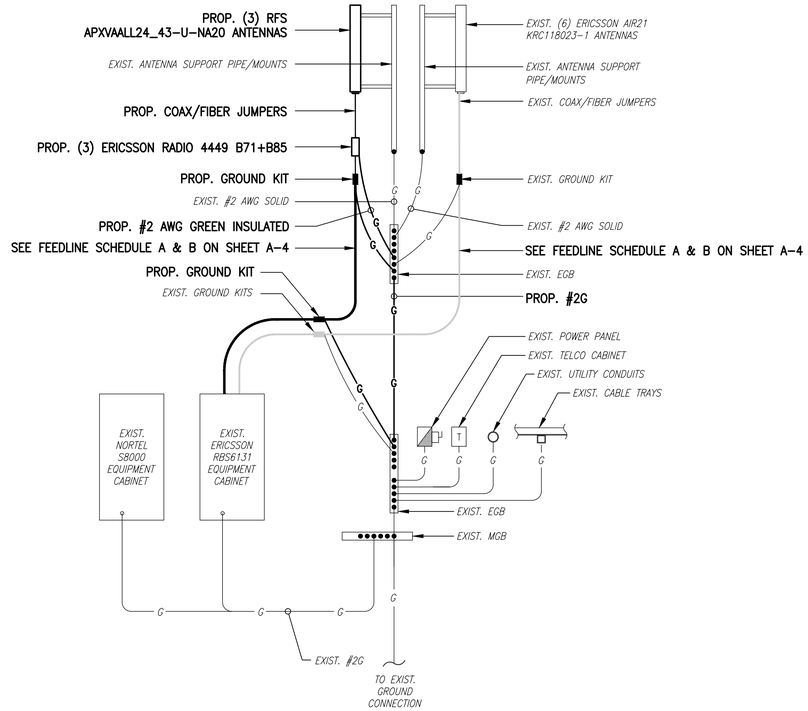
1815.085



ONE LINE DIAGRAM

SCALE: NOT TO SCALE

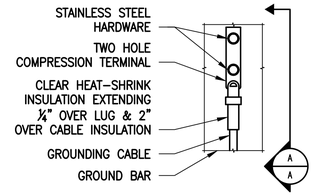
1 / E-1



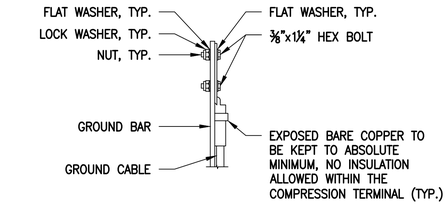
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

2 / E-1



ELEVATION



SECTION A-A

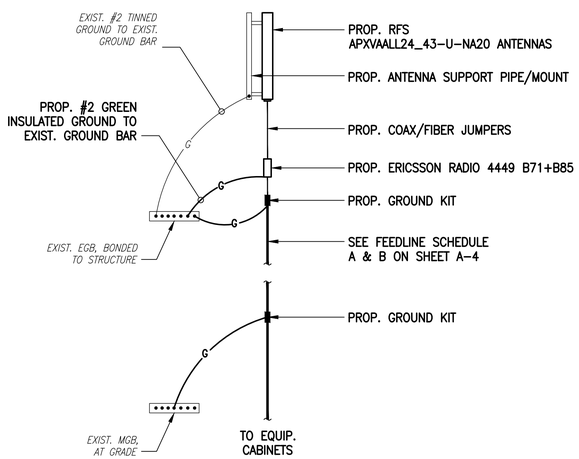
TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: NOT TO SCALE

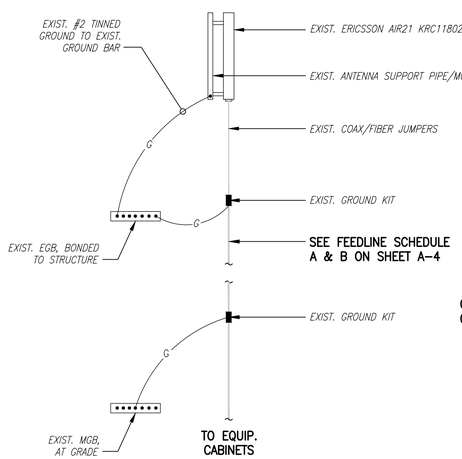
3 / E-1

NOTES:

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



L700/L600/N600 ANTENNA

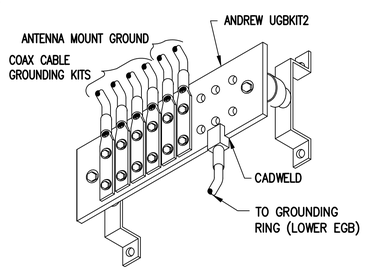


L2100 & U1900/G1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

4 / E-1



GROUND BAR (EGB)

SCALE: NOT TO SCALE

5 / E-1

ELECTRICAL AND GROUNDING NOTES

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

T-MOBILE NORTHEAST LLC
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(508) 286-2700

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
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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

4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	04/20/21	CONSTRUCTION REVISED	CMC
1	09/26/19	ISSUED FOR CONSTRUCTION	JRV
0	05/24/19	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11442A

SITE ADDRESS:
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.085

EXHIBIT 7

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS 180' PIROD SELF SUPPORTING TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT03241-S

CARRIER SITE #/NAME: CT11442A / STONINGTON

COORDINATES (LATITUDE: 41.369066°, LONGITUDE: -71.862361°)

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-HR35-18	METROSITE SUPPORT RAIL PIPE KIT	
MS-LVPB-350	METROSITE V-BRACING KIT	
MS-STZ-2PST	METROSITE STABILIZER KIT	
MS-STZ-350P	METROSITE STABILIZER ADAPTER KIT	

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. 79125, DATED 07/02/19.

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

TES JOB NO:
82308

CUSTOMER SITE NO:
CT03241-S-SBA
CUSTOMER SITE NAME:
STONINGTON 2, CT
173 SOUTH BROAD STREET
PAWCATUCK, CT 06379

STATE OF CONNECTICUT
HANMING YOU
28931
LICENSED PROFESSIONAL ENGINEER
8/8/19

DRAWN BY: MN | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	MN	08/08/19

SHEET TITLE:
TITLE SHEET

SHEET NUMBER: T-1
REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
1	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT	A-1, MS-HR35-18	523.0	523.0	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				
2	2	MS-LVPB-350	METROSITE V BRACING KIT	A-1, MS-LVPB-350	512.00	1024.0	GALVANIZED
			ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC. **180 IND PARK BLVD COMMERCE, GA 30529** **OFFICE: (706) 335-7045** **FAX: (706) 335-7056**				
			NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.				
				TOTAL WEIGHT (LBS) =		**1798.1**	

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TES JOB NO:
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CUSTOMER SITE NO:
CT03241-S-SBA
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PAWCATUCK, CT 06379

DRAWN BY: MN | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	MN	08/08/19

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

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

FABRICATION

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

WELDING

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

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

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

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2018 SECTION 1705.2 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.

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CUSTOMER SITE NAME:
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DRAWN BY: MN | CHECKED BY: SD/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	MN	08/08/19

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: GN-1

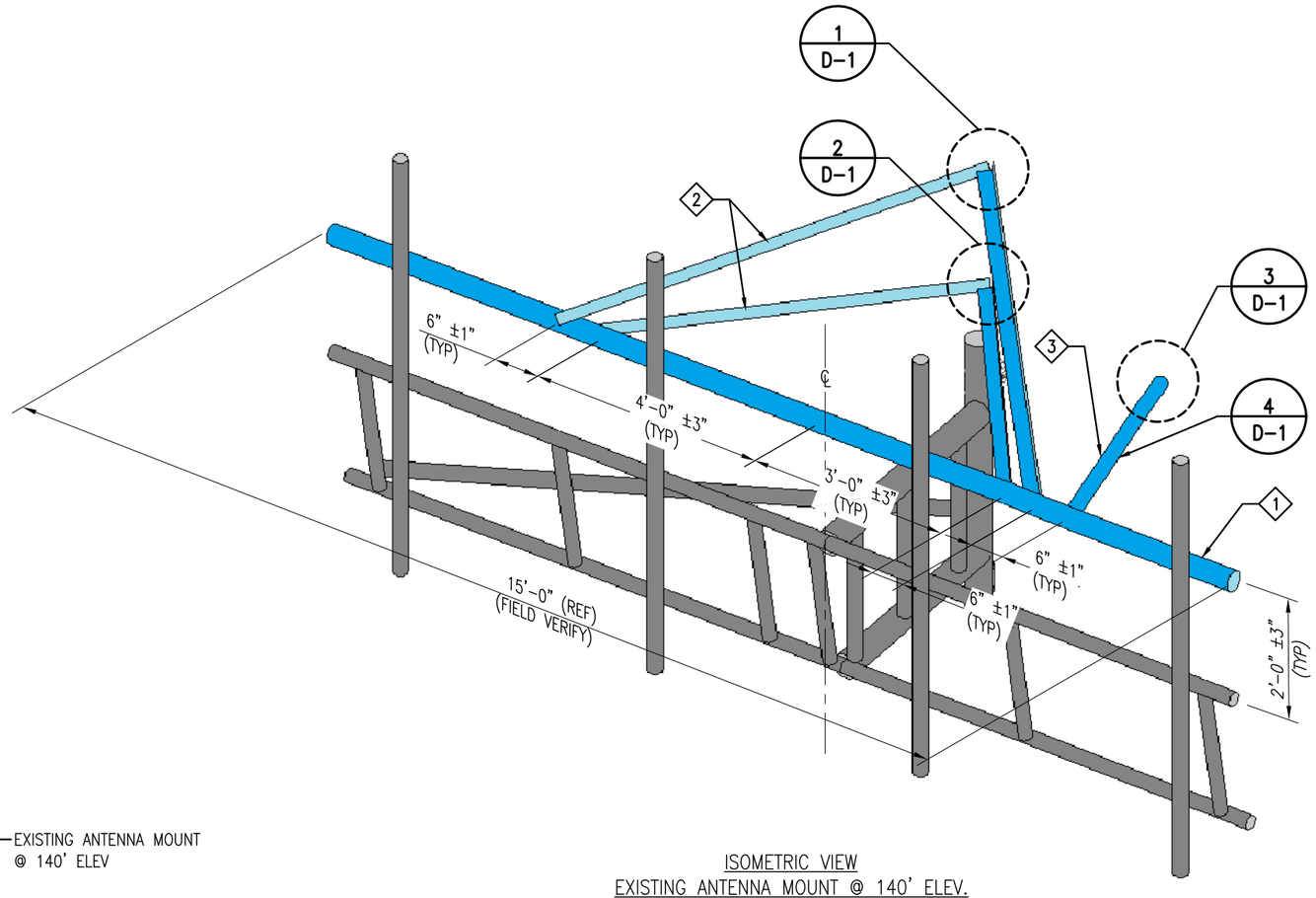
REV #: 0

SCOPE OF WORK

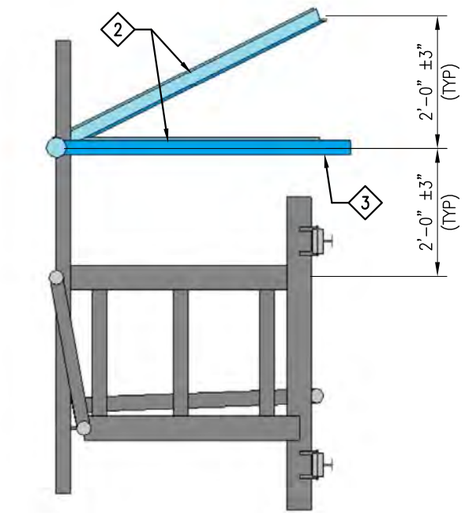
1. INSTALL NEW SUPPORT RAIL KIT. SEE SHEET MS-HR35-18 FOR DETAILS.
2. INSTALL NEW V-BRACING KITS, SEE SHEETS MS-LVPB-350 & D-1 FOR DETAILS.
3. INSTALL NEW STABILIZER KIT AND STABILIZER ADAPTER KIT. SEE SHEETS MS-STZ-2PST, MS-STZ-350P & D-1 FOR DETAILS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP,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

EXISTING ANTENNA MOUNT
@ 140' ELEV

PHOTO 1



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 140' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)



SIDE VIEW

GC NOTE:
1. **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.**
2. **PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US**

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT
2	2	MS-LVPB-350	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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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	MN	08/08/19

SHEET TITLE:
ANTENNA MOUNT MODIFICATION DETAILS

SHEET NUMBER: A-1
REV #: 0

PHOTO 1

PHOTO 2

PHOTO 3

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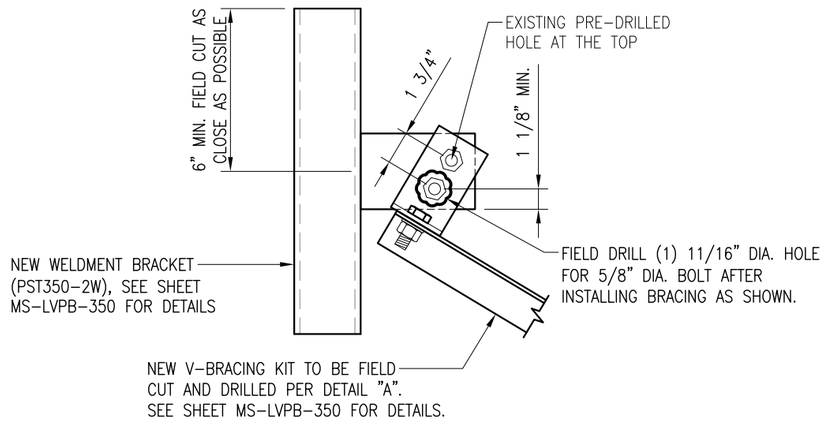
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	MN	08/08/19

SHEET TITLE:

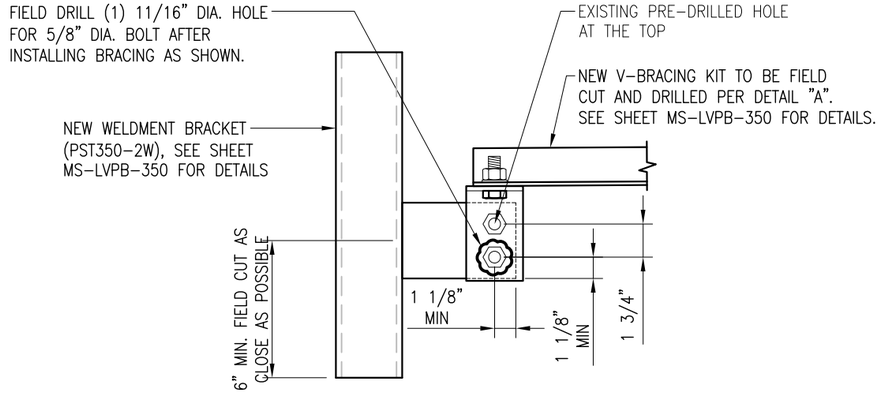
ANTENNA MOUNT PHOTOS

SHEET NUMBER: A-2

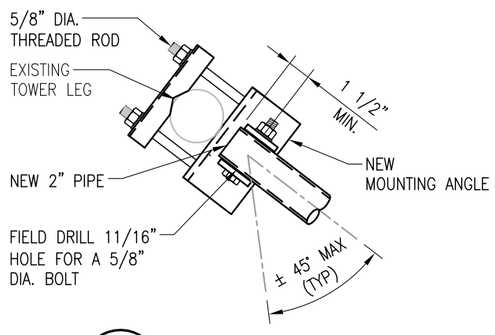
REV #: 0



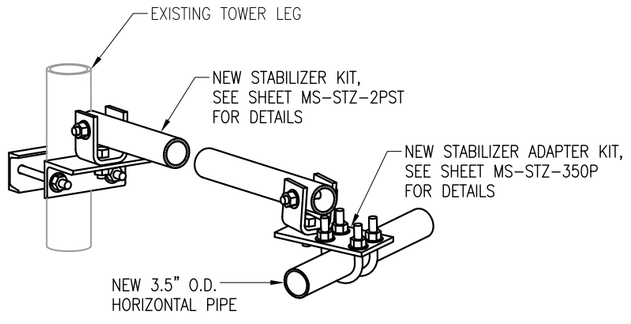
1 / D-1 DETAIL



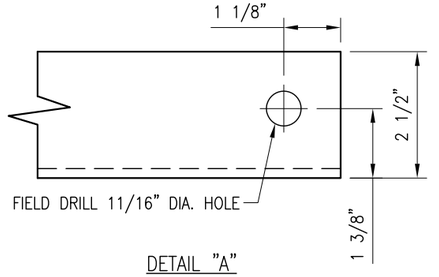
2 / D-1 DETAIL



3 / D-1 DETAIL



4 / D-1 STABILIZER DETAIL



DETAIL "A"

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

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0	FIRST ISSUE	MN	08/08/19

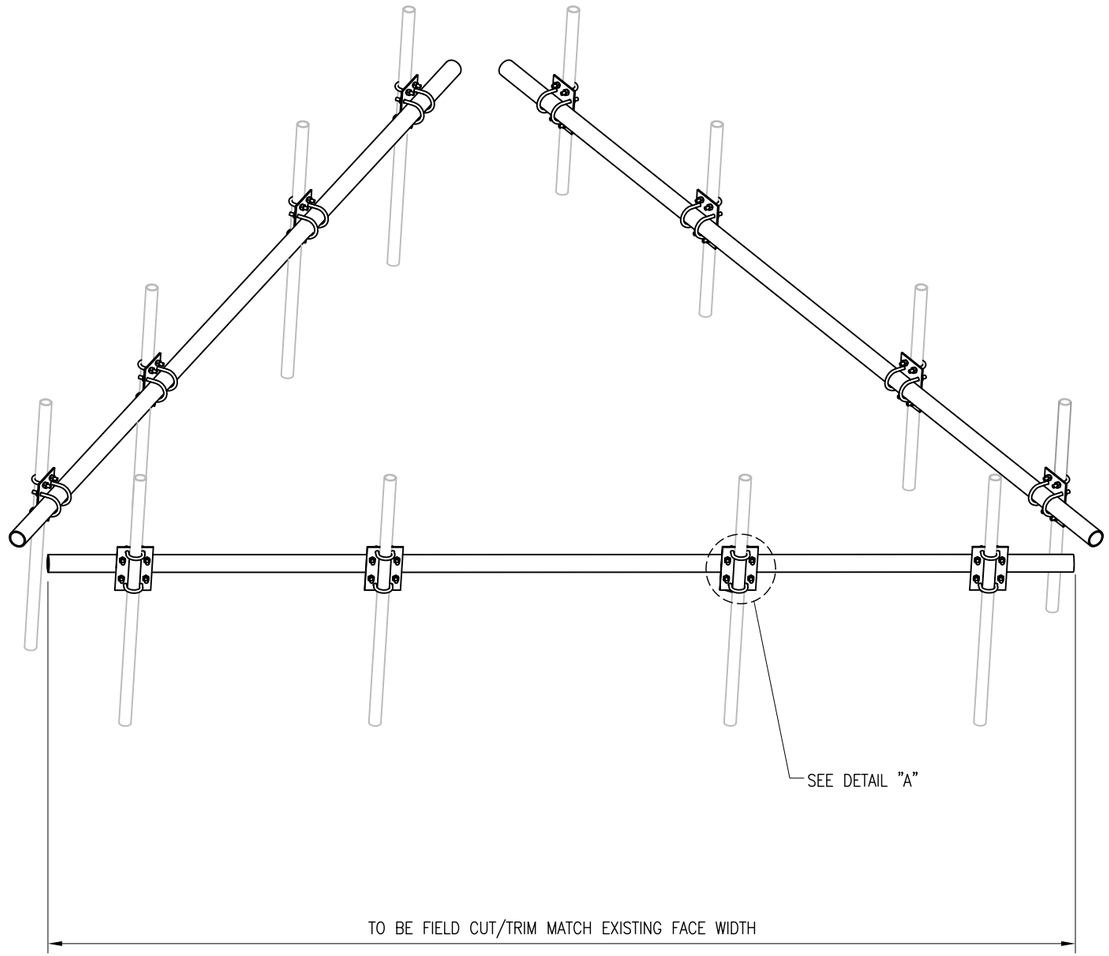
SHEET TITLE:
STANDARD DETAILS

SHEET NUMBER: D-1
REV #: 0

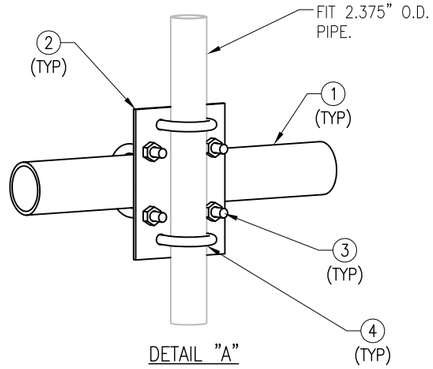
THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

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	-

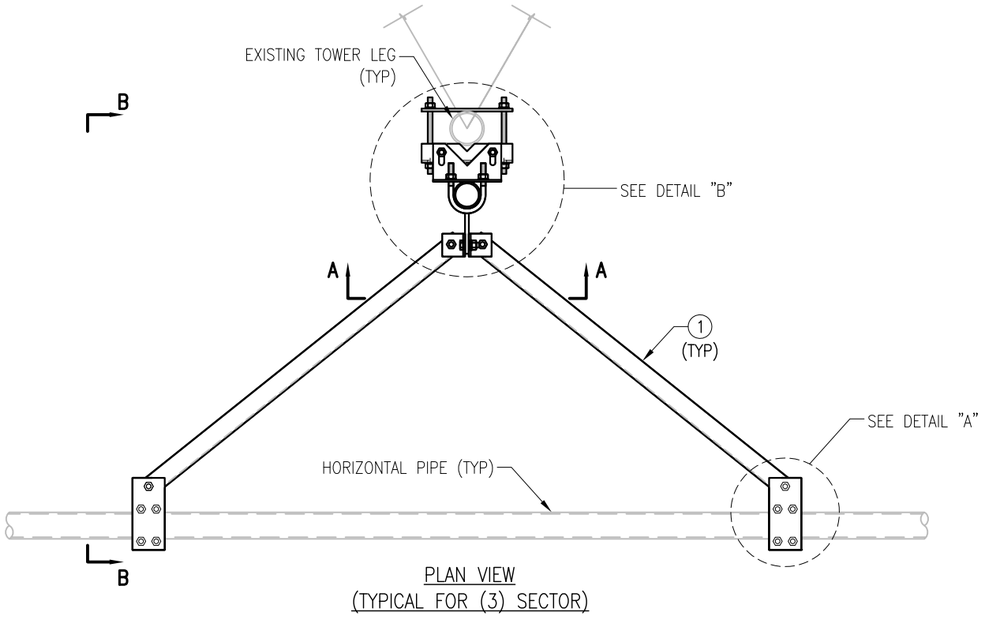
METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

TITLE
MS-HR35-18
SUPPORT RAIL KIT

SIZE	DWG NO	REV
B	MS-HR35-18	0

SCALE -

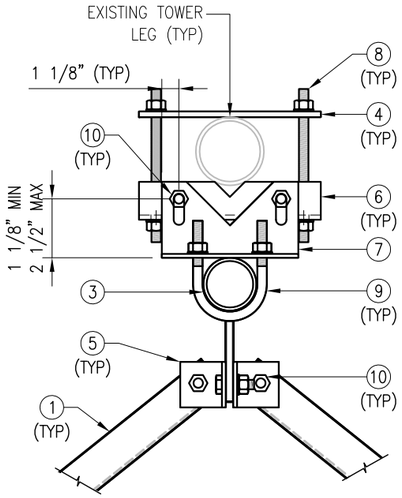
SHEET 1 OF 1



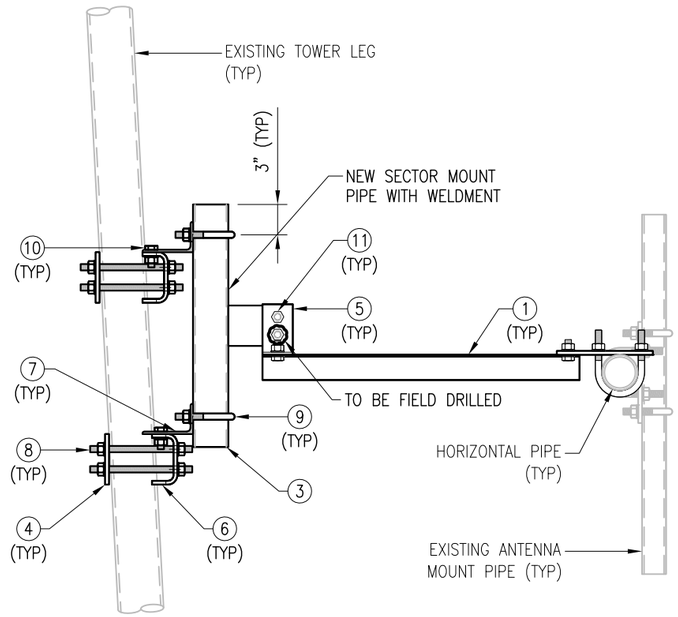
PLAN VIEW
(TYPICAL FOR (3) SECTOR)

MS-LVPB-350

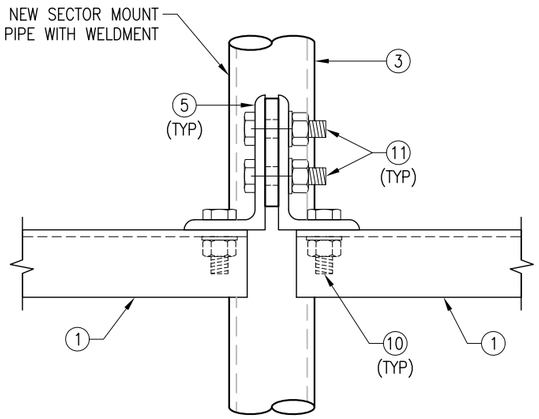
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	6	VB-25-10	L 2 1/2" X 2 1/2" X 1/4" X 10'-0"	A36	BK-1	258
2	6	PL375-42595	PL 3/8" X 4 1/4" X 9 1/2"	A36	BK-1	26.4
3	3	PST350-2W	WELDMENT PIPE	A53-GR B	PST350-2W	59.4
4	6	PL5-42512	PL 1/2" X 4 1/4" X 1'-0"	A572-50	BK-2	45.6
5	6	AL-533	L 5" X 3" X 1/4" X 3"	A36	BK-2	10.2
6	6	BPL-37512	PL 3/8" X 8 5/8" X 1'-0"	A36	BK-4	67.2
7	6	AL-5X3-9	L 5" X 3" X 3/8" X 9"	A36	BK-4	45.0
8	24	---	THREADED ROD 5/8" X 1'-0" W/ (2) HHN & LKW EA.	A36	--	--
1 9	18	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	---	RBC-1	--
10	24	---	BOLT 5/8" X 1 3/4" A325 W/ HHN & LKW EA.	---	--	--
11	6	---	BOLT 5/8" X 2 1/4" A325 W/ HHN & LKW EA.	---	---	--
					GALVANIZED WT	512



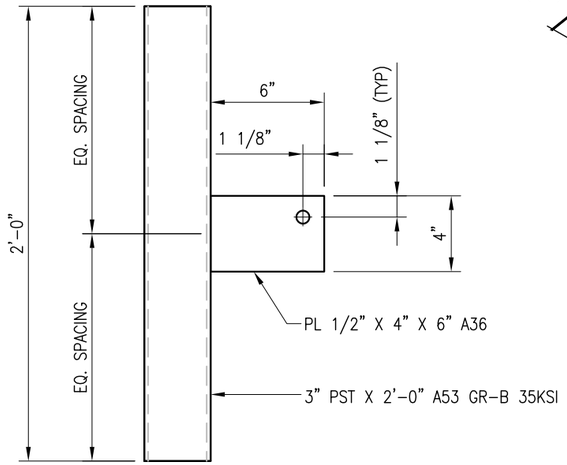
DETAIL "B"



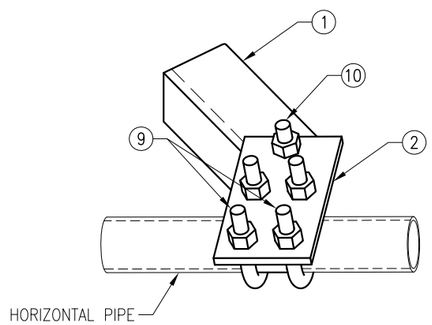
SECTION "B-B"



SECTION "A-A"



PST350-2W
WELDMENT PIPE



DETAIL "A"

NOTE:
1) FITS UP TO 6" ANGLE / 8" DIA PIPE 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	02/28/19
REVIEWED XXX	-
APPROVED XXX	-

TITLE
MS-LVPB-350
V-BRACING KIT

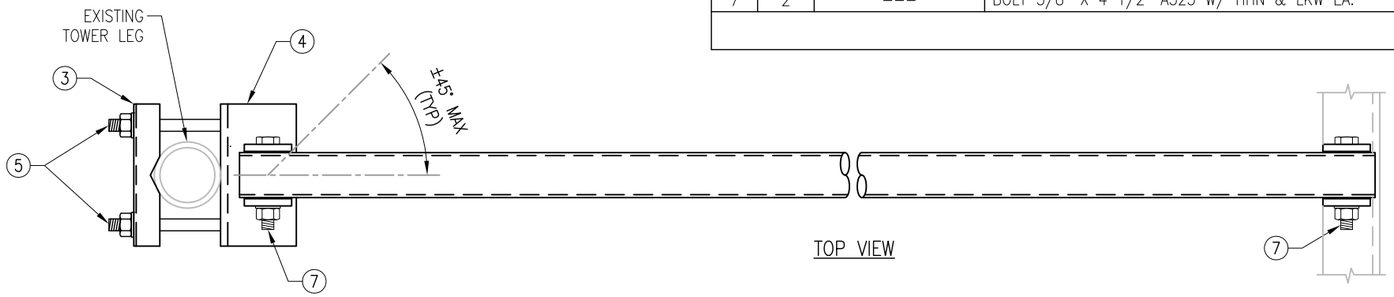
SIZE	DWG NO	REV
B	MS-LVPB-350	1

SCALE -
SHEET 1 OF 1

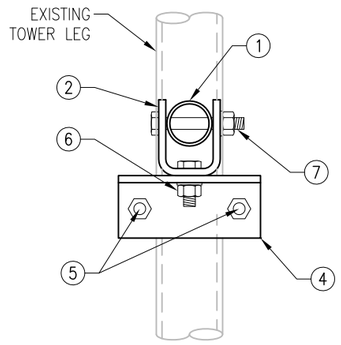
NOTES:
1) FITS 1 1/4" DIA. TO 4 1/2" DIA. LEG.
2) FIELD ASSEMBLY ALL PARTS.
3) THREADED ROD MAY BE CUT TO LENGTH AS REQUIRED.

MS-STZ-2PST

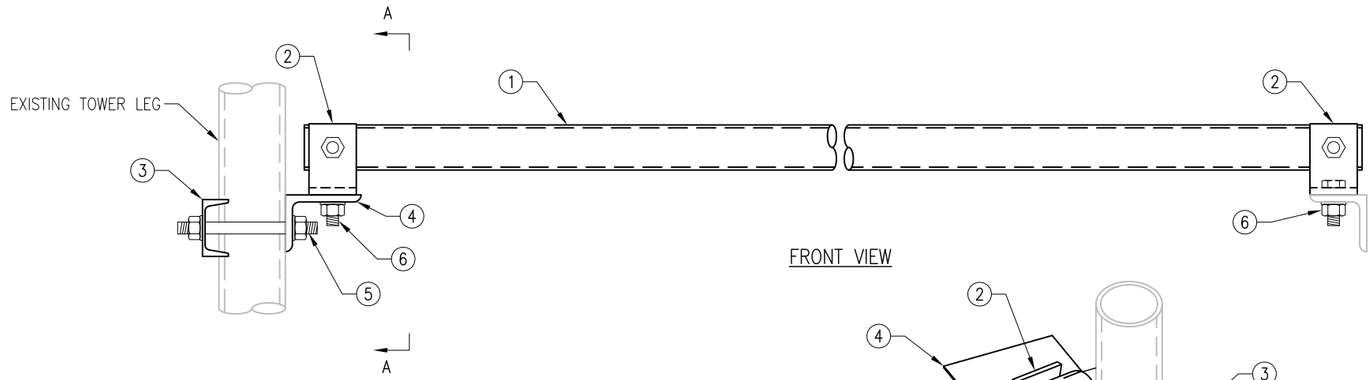
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	1	PP2375-15	2" PST PIPE (2.375" O.D. X 0.154" THICKNESS) X 15'-0"	1 A53 GR. B OR A500 GR. B/C	STZ-1	56.8
2	2	UP-2375P	PL 3/8" X 2 1/2" X 9 3/4" BENT PLATE	A36	STZ-1	19.0
3	1	C-3750	C3X6 X 0'-7 1/2"	A36	STZ-1	1.2
4	1	AL-4375	L 4" X 3" X 3/8" X 7 1/2"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



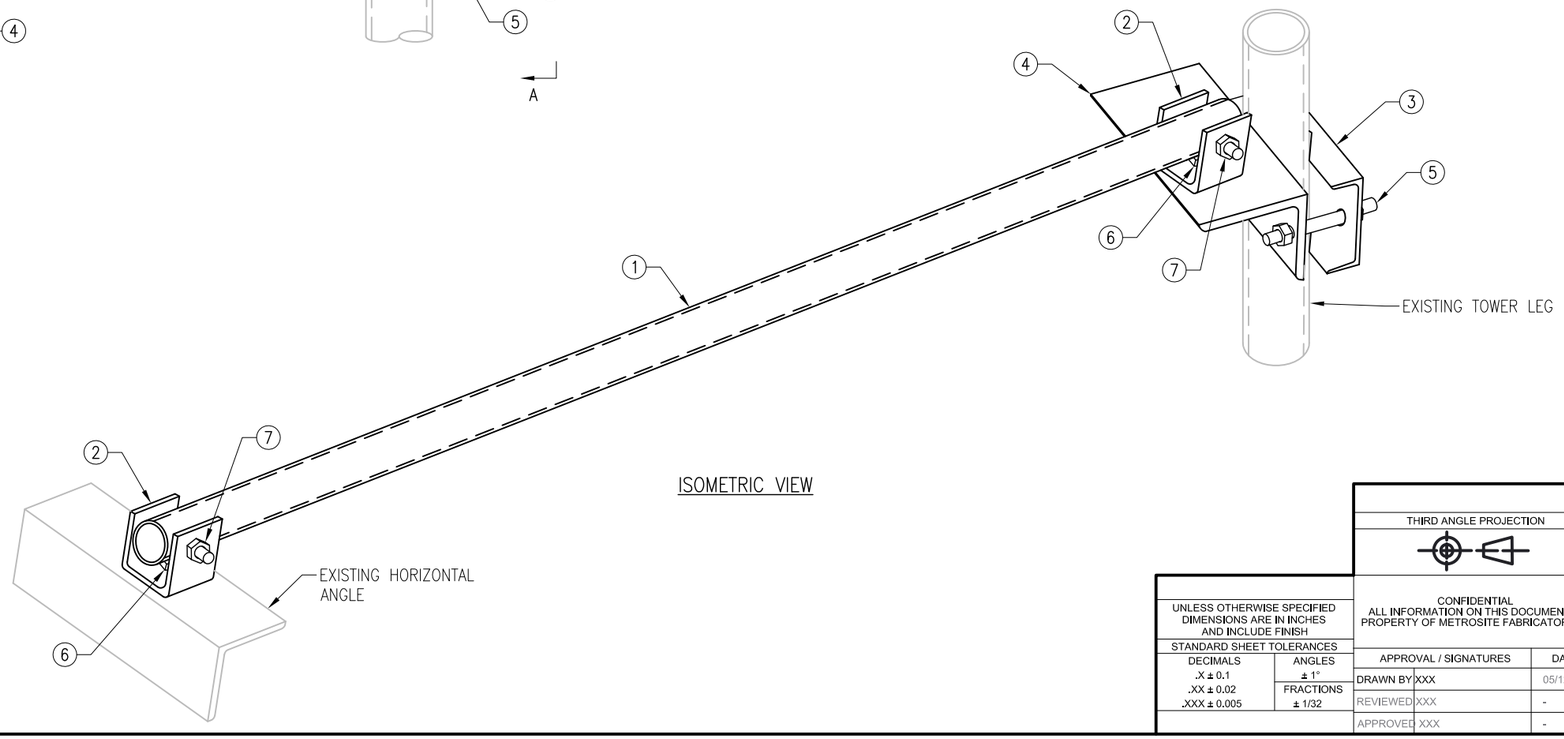
TOP VIEW



SECTION "A-A"



FRONT VIEW



ISOMETRIC VIEW

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-STZ-2PST
STABILIZER KIT

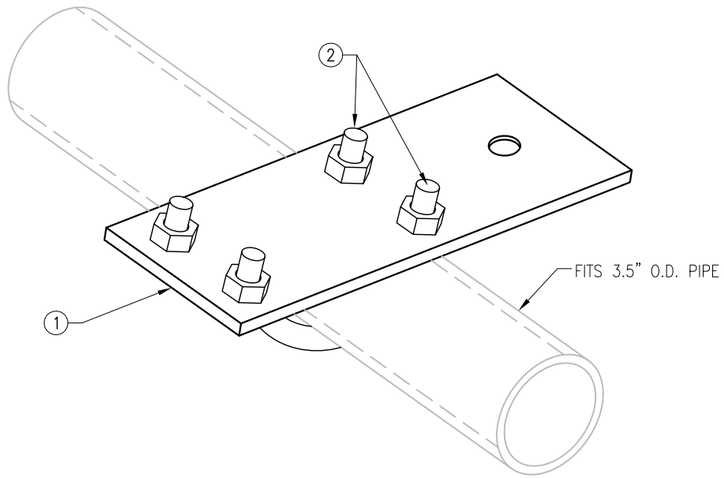
SIZE	DWG NO	REV
B	MS-STZ-2PST	1

SCALE -
SHEET 1 OF 1

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

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 180 ft PIROD Self Supporting Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT03241-S
Customer Site Name: Stonington 2, CT
Carrier Name: T-Mobile (App#: 116745, V3)
Carrier Site ID / Name: CT11442A / Stonington
Site Location: 173 South Broad Street
Pawcatuck, Connecticut
New London County
Latitude: 41.369066
Longitude: -71.862361

Analysis Result:

Max Structural Usage: 77.7% [Pass]
Max Foundation Usage: 64.0% [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 180 ft PIROD Self Supporting 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	PiROD Eng. File # A-116770-, Archive # Q-91612, dated 02/25/2000
Foundation Drawing	PiROD Eng. File # A-116770-, Archive # Q-91612, dated 02/25/2000
Geotechnical Report	Jaworski Geotech, Inc. Project # 99731G, dated 02/15/2000
Modification Drawings	N/A
Mount Analysis	MA by TES, Project No. 106781, dated 05/12/2021.

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H**.** 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:	137.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	III
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.183, S_1 = 0.052

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	190.0	2	Celwave - PD220 - Omni	(3) 10' Side Arms	(2) 7/8"	Stonington Police
2	189.3	1	Celwave - PD1142 - Omni			
3	180.0	1	Yagi		(2) 7/8"	-
4	175.0	1	10' Dipole			
5	178.0	1	2' x 1' Panel	Direct	(1) 7/8"	
6	173.0	2	Decibel - DB212 - Dipole	(2) Standoffs	(2) 7/8"	Stonington Police
7	150.0	6	Decibel DB844H90-XY	(3) T-Frames	(12) 1 5/8" Coax	Verizon
8		3	JMA Wireless MX06FRO660-03			
9		3	Commscope CBC426T-DS-43			
10		3	Commscope CBC1923T-DS-43			
-	140.0	3	Ericsson - Air 21 B2A/B4P - Panel	(3) T-Frames w/ Mods (MetroSite MS-HR35-18 Support Rail Pipe Kit; (2) MS-LVPB-350 V-Bracing Kits; (3) MS-STZ-350P Stabilizer Adapter Kits; and (3) MS-STZ-2PST Stabilizer Kits	(9) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
-		3	Ericsson - Air 21 B4A/B2P - Panel			
-		3	RFS - APXVAARR24_43-U-NA20 - Panel			
-		3	Ericsson - KRY 112 144/1 - TMA			
-		3	Ericsson - Radio 4449 B71+B12 - RRU			
16	120.0	6	Powerwave - 7770 - Panel	(3) T-Frames	(12) 1 5/8" (1) 1/2" Fiber (2) 3/4"DC (1) Y-cable	AT&T
17		3	Cci Antennas DMP65R-BU4DA - Panel			
18		3	Cci Antennas OPA65R-BU4DA - Panel			
19		6	Powerwave - TT19-08BP111-001 -TMA			
20		3	Ericsson 4449 B5/B12 - RRU			
21		3	Ericsson RRUS-4478 B14-RRU			
22		3	Ericsson RRUS 8843 B2 B66A-RRU			
23		2	Raycap DC6-48-60-18-8F-OVP			
24	106.0	1	10' Dipole	(2) Standoffs	(2) 7/8"	Stonington Police
25	106.9	1	Celwave - PD1167 - Omni			
26	99.167	1	Decibel - DS4C06F36D-N - Dipole	Direct	(1) 7/8"	
27	63.0	1	Decibel - DB437 - Yagi	Direct	(1) 7/8"	
28	60.167	1	Decibel – DB413 -B- Dipole	Direct	(1) 7/8"	
29	43.0	1	2' Omni	(1) Standoff	(2) 7/8"	
30	42.0	2	Decibel - DB437 - Yagi	Direct		
31	75.0	1	GPS Receiver	Direct	-	Verizon

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
11	140.0	3	Ericsson Air 21 B2A/B4P - Panel	(3) T-Frames w/ Mods [(1)MetroSite MS-HR35-18 Support Rail Pipe Kit; (2) MS-LVPB-350 V-Bracing Kits; (3) MS-STZ-350P Stabilizer Adapter Kits; and (3) MS-STZ-2PST Stabilizer Kits]	(9) 1-5/8" Coax (3) 1.9" Fiber	T-Mobile
12		3	Ericsson Air 21 B4A/B2P - Panel			
13		3	RFS APXVAALL24_43-U-NA20 - Panel			
14		3	Ericsson KRY 112 144/1 -TMA			
15		3	Ericsson 4449 B71 + B85 - RRU			

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
Max. Usage:	**68.2%**	**77.7%**	**32.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	360.5	318.2	36.3

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.

Service Load 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 0.2261 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: CT03241-S-SBA

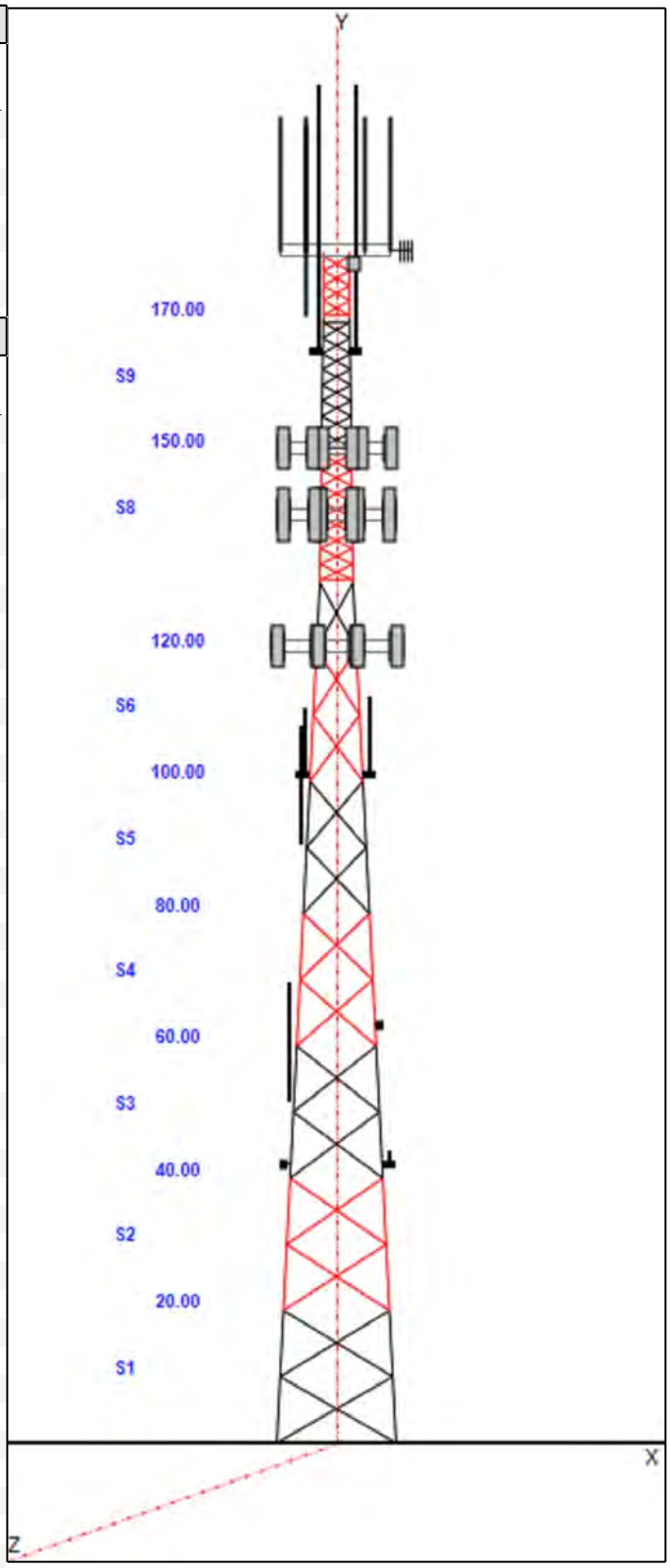
Site Name:	Stonington 2, CT			**Code:**	EIA/TIA-222-H	6/1/2021
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	137.00	
Height:	180.00 (ft)	**Base Width:**	18.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	4.00	**Operational WS:**	60.00	Page: 1

Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-2	12B 12"BD 2.25"	SAE 3.5X3.5X0.3125	
3-4	12B 12"BD 2"	SAE 3X3X0.3125	
5	12B 12"BD 1.75"	SAE 3X3X0.1875	
6	12B 12"BD 1.5"	SAE 3X3X0.1875	
7	12B 12"BD 1.25"	SAE 2.5X2.5X0.1875	
8	SOL 2" SOLID	SOL 1" SOLID	SOL 1" SOLID
9-10	SOL 1 1/2" SOLID	SOL 3/4" SOLID	SOL 3/4" SOLID

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.00	180.00	1	Lightning Rod
180.00	180.00	1	Beacon
180.00	180.00	3	10 ft face mounted side arm
180.00	190.00	2	PD220
180.00	189.40	1	PD1142-1
180.00	180.00	1	3' Yagi
180.00	175.00	1	10' Dipole
178.00	178.00	1	24" X 12" Panel
165.00	165.00	2	Side Arm (M. Heavy)
165.00	185.00	2	DB212-2
150.00	150.00	3	15' Pirod Universal T-Frame
150.00	150.00	6	DB844H80-XY
150.00	150.00	3	MX06FRO660-02
150.00	150.00	3	CBC426T-DS-43
150.00	150.00	3	CBC1923T-DS-43
140.00	140.00	3	15' Pirod Universal T-Frame
140.00	140.00	1	(3) HR w/ Double V-Brace Kits
140.00	140.00	1	(3) Stabilizer Kit (4' FW)
140.00	140.00	3	AIR 21 B2A B4P
140.00	140.00	3	AIR 21 B4A B2P
140.00	140.00	3	APXVAARR24_43-U-NA20
140.00	140.00	3	KRY 112 144/1
140.00	140.00	3	4449 B71+B85
120.00	120.00	3	15' Pirod Universal T-Frame
120.00	120.00	6	7770.00
120.00	120.00	3	DMP65R-BU4DA
120.00	120.00	6	TT19-08BP111-001
120.00	120.00	3	4449 B5/B12
120.00	120.00	2	DC6-48-60-18-8F
120.00	120.00	3	OPA65R-BU4DA
120.00	120.00	3	RRUS 4478 B14
120.00	120.00	3	B2 B66A 8843
101.00	101.00	2	Side Arm (L. Heavy)
101.00	106.00	1	10' Dipole
101.00	106.90	1	PD1167
90.00	99.17	1	DS4C06F36D-N
75.00	75.00	1	GPS
63.00	63.00	1	DB437
51.00	60.17	1	DB413-B
42.00	43.00	1	2' Omni
42.00	42.00	1	Side Arm (L. Heavy)
42.00	42.00	1	DB437



Linear Appurtenances

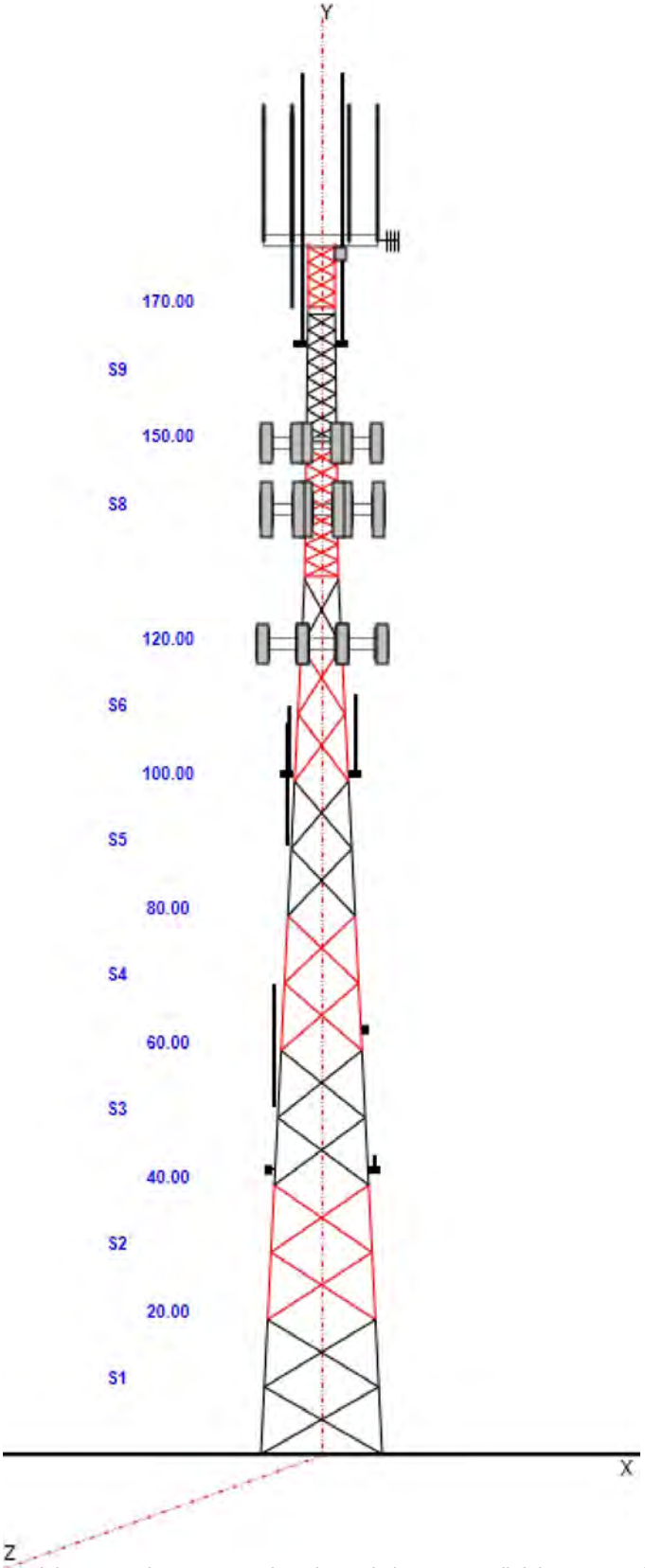
Elev From (ft)	Elev To (ft)	Qty	Description
0.00	180.00	2	7/8" Coax
0.00	180.00	2	7/8" Coax
0.00	178.00	1	7/8" Coax
0.00	165.00	2	7/8" Coax
0.00	150.00	12	1 5/8" Coax
0.00	150.00	1	W/G Ladder
0.00	140.00	9	1 5/8" Coax
0.00	140.00	3	1.9" Hybrid
0.00	140.00	1	W/G Ladder
0.00	120.00	12	1 5/8" Coax
0.00	120.00	1	1/2" Coax
0.00	120.00	2	3/4" DC
0.00	120.00	1	W/G Ladder
0.00	120.00	1	Y Cable
0.00	101.00	1	7/8" Coax
0.00	101.00	1	7/8" Coax
0.00	90.00	1	7/8" Coax
0.00	63.00	1	7/8" Coax
0.00	51.00	1	7/8" Coax
0.00	43.00	1	7/8" Coax
0.00	42.00	1	7/8" Coax

Base Reactions

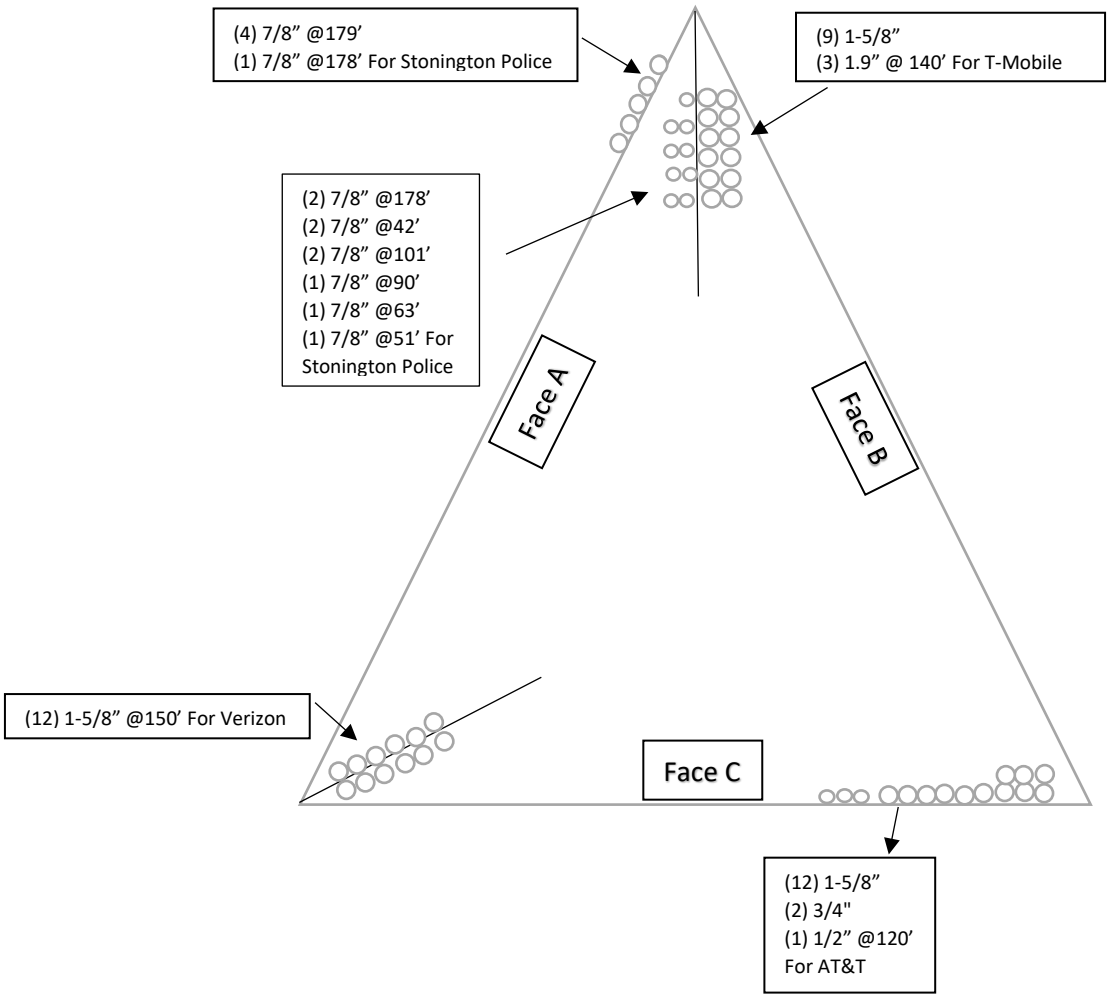
Leg			Overturning		
Max Uplift:	-318.18	(kips	Moment:	5341.90	(ft-kips)
Max Down:	360.52	(kips	Total Down:	53.51	(kips)
Max Shear:	36.32	(kips	Total Shear:	55.84	(kips)

Structure: CT03241-S-SBA

Site Name:	Stonington 2, CT			**Code:**	EIA/TIA-222-H	6/1/2021
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	137.00	
Height:	180.00 (ft)	**Base Width:**	18.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	4.00	**Operational WS:**	60.00	Page: 3



Coax Layout


(4) 7/8" @179'
(1) 7/8" @178' For Stonington Police
(9) 1-5/8"
(3) 1.9" @ 140' For T-Mobile
(2) 7/8" @178'
(2) 7/8" @42'
(2) 7/8" @101'
(1) 7/8" @90'
(1) 7/8" @63'
(1) 7/8" @51' For Stonington Police
Face A
Face B
(12) 1-5/8" @150' For Verizon
Face C
(12) 1-5/8"
(2) 3/4"
(1) 1/2" @120'
For AT&T

Loading Summary

Structure:	CT03241-S-SBA		**Code:**	EIA/TIA-222-H	6/1/2021
Site Name:	Stonington 2, CT		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	III	Page: 5

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)
180.00	Lightning Rod	1	5.00	0.500	21.31	1.859	72.000	1.000	1.000	1.00	1.00	0.000
180.00	Beacon	1	36.00	2.720	139.70	3.459	28.000	17.500	17.500	1.00	1.00	0.000
180.00	10 ft face mounted side arm	3	250.00	4.740	875.04	21.372	0.000	0.000	0.000	0.75	0.75	0.000
180.00	PD220	2	25.00	5.500	133.88	11.021	240.000	2.700	2.700	0.80	1.00	10.00
180.00	PD1142-1	1	10.00	3.120	77.90	8.289	225.600	1.600	1.600	0.80	1.00	9.400
180.00	3' Yagi	1	10.00	2.980	80.09	7.868	36.000	36.000	3.000	0.80	1.00	0.000
180.00	10' Dipole	1	30.00	3.760	116.88	8.432	120.000	3.000	3.000	0.80	1.00	-5.000
178.00	24" X 12" Panel	1	20.00	2.400	68.18	3.237	24.000	12.000	6.000	1.00	1.00	0.000
165.00	Side Arm (M. Heavy)	2	160.00	6.000	267.73	11.397	0.000	0.000	0.000	1.00	1.00	0.000
165.00	DB212-2	2	31.00	6.500	221.20	33.625	180.000	0.000	0.000	0.90	1.00	20.00
150.00	15' Pirod Universal T-Frame	3	500.00	15.000	898.64	29.883	0.000	0.000	0.000	0.75	0.75	0.000
150.00	DB844H80-XY	6	10.00	2.860	79.80	3.932	48.000	6.000	8.500	0.80	1.16	0.000
150.00	MX06FRO660-02	3	46.00	9.870	243.37	10.904	71.300	15.400	10.700	0.80	0.87	0.000
150.00	CBC426T-DS-43	3	4.90	0.420	13.38	0.636	8.000	6.300	4.900	0.80	0.67	0.000
150.00	CBC1923T-DS-43	3	11.00	0.320	19.00	0.519	8.300	4.600	3.700	0.80	0.67	0.000
140.00	15' Pirod Universal T-Frame	3	500.00	15.000	898.64	29.883	0.000	0.000	0.000	0.75	0.75	0.000
140.00	(3) HR w/ Double V-Brace Kits	1	650.00	15.500	1271.88	27.858	0.000	0.000	0.000	0.75	1.00	0.000
140.00	(3) Stabilizer Kit (4' FW)	1	140.00	3.700	273.94	6.650	0.000	0.000	0.000	0.75	1.00	0.000
140.00	AIR 21 B2A B4P	3	91.50	6.090	209.73	6.906	56.000	12.100	7.900	0.80	0.86	0.000
140.00	AIR 21 B4A B2P	3	90.30	6.090	208.42	6.906	56.000	12.100	7.900	0.80	0.86	0.000
140.00	APXVAARR24_43-U-NA20	3	122.80	20.240	451.31	21.671	95.900	24.000	7.800	0.80	0.70	0.000
140.00	KRY 112 144/1	3	11.00	0.410	19.21	0.772	6.900	6.100	2.700	0.80	0.67	0.000
140.00	4449 B71+B85	3	75.00	1.650	154.73	2.088	15.000	13.200	9.300	0.80	0.67	0.000
120.00	15' Pirod Universal T-Frame	3	500.00	15.000	889.14	29.528	0.000	0.000	0.000	0.75	0.75	0.000
120.00	7770.00	6	35.00	5.500	131.03	6.265	55.000	11.000	5.000	0.80	0.77	0.000
120.00	DMP65R-BU4DA	3	79.40	12.710	298.32	13.798	71.200	20.700	7.700	0.80	0.72	0.000
120.00	TT19-08BP111-001	6	16.00	0.640	31.04	1.081	9.900	6.700	5.400	0.80	0.50	0.000
120.00	4449 B5/B12	3	71.00	1.970	110.68	2.377	17.900	13.200	9.400	0.80	0.67	0.000
120.00	DC6-48-60-18-8F	2	31.80	0.920	77.75	1.246	24.000	11.000	11.000	0.80	0.67	0.000
120.00	OPA65R-BU4DA	3	43.00	4.960	148.57	5.670	48.000	11.700	10.100	0.80	0.94	0.000
120.00	RRUS 4478 B14	3	59.40	1.650	90.22	2.035	15.000	13.200	7.300	0.80	0.67	0.000
120.00	B2 B66A 8843	3	70.00	1.640	104.18	2.024	15.000	13.200	9.300	0.80	0.67	0.000
101.00	Side Arm (L. Heavy)	2	120.00	4.500	196.28	8.322	0.000	0.000	0.000	1.00	1.00	0.000
101.00	10' Dipole	1	30.00	3.760	111.29	8.131	120.000	3.000	3.000	0.90	1.00	5.000
101.00	PD1167	1	8.00	1.470	40.40	4.508	141.600	1.200	1.200	0.90	1.00	5.900
90.00	DS4C06F36D-N	1	70.00	5.500	170.71	10.246	220.000	3.000	3.000	1.00	1.00	9.167
75.00	GPS	1	10.00	1.000	30.83	1.506	12.000	9.000	6.000	1.00	1.00	0.000
63.00	DB437	1	15.00	0.800	36.69	2.576	14.500	35.000	0.000	1.00	1.00	0.000
51.00	DB413-B	1	32.00	4.370	125.45	12.027	220.000	0.000	0.000	1.00	1.00	9.167
42.00	2' Omni	1	5.00	0.300	12.48	0.589	24.000	2.000	2.000	1.00	1.00	1.000
42.00	Side Arm (L. Heavy)	1	120.00	4.500	188.35	7.924	0.000	0.000	0.000	1.00	1.00	0.000
42.00	DB437	1	15.00	0.800	35.61	2.487	14.500	35.000	0.000	1.00	1.00	0.000
	Totals:	**96**	**9,883.50**		**22,944.35**						**Number of Appurtenances :**	**42**

Loading Summary

Structure:	CT03241-S-SBA		**Code:**	EIA/TIA-222-H	6/1/2021
Site Name:	Stonington 2, CT		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	III	Page: 6

Tower Engineering Solutions

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	180.00	7/8" Coax	2	1.11	0.52	100.00	3	Individual IR		N	0.50	1.00	0
0.00	180.00	7/8" Coax	2	1.11	0.52	100.00	3	Individual IR		N	0.50	1.00	0
0.00	178.00	7/8" Coax	1	1.11	0.52	100.00	1	Individual NR		N	0.50	1.00	
0.00	165.00	7/8" Coax	2	1.11	0.52	100.00	1	Individual IR		N	0.50	1.00	
0.00	150.00	1 5/8" Coax	12	1.98	1.04	50.00	3	Block		N	0.50	1.00	
0.00	150.00	W/G Ladder	1	0.50	6.00	100.00	1	Individual NR		N	0.50	1.00	
0.00	140.00	1 5/8" Coax	9	1.98	1.04	50.00	1	Block		N	0.50	1.00	
0.00	140.00	1.9" Hybrid	3	1.90	1.00	50.00	1	Block		N	0.50	1.00	
0.00	140.00	W/G Ladder	1	0.50	6.00	100.00	1	Individual NR		N	0.50	1.00	
0.00	120.00	1 5/8" Coax	12	1.98	1.04	50.00	2	Block		N	0.50	1.00	
0.00	120.00	1/2" Coax	1	0.65	0.16	100.00	2	Individual NR		N	0.50	1.00	
0.00	120.00	3/4" DC	2	0.75	0.40	50.00	2	Block		N	0.50	1.00	
0.00	120.00	W/G Ladder	1	0.50	6.00	100.00	2	Individual NR		N	0.50	1.00	
0.00	120.00	Y Cable	1	0.25	0.04	100.00	2	Individual NR		N	1.00	1.00	
0.00	101.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	101.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	90.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	63.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	51.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	43.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0
0.00	42.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	0.50	1.00	0

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 7	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W Normal Wind — 1.2D + 1.0W 137 mph Wind at Normal To Face

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

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	32.33	106.08	0.00	7,538.4	0.0	2709.53	2265.51	4,975.05
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	30.14	106.08	0.00	7,362.7	0.0	2878.44	2618.01	5,496.45
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	24.96	102.01	0.00	6,257.7	0.0	2658.91	2913.40	5,572.31
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	23.63	98.96	0.00	6,102.4	0.0	2639.82	3125.77	5,765.59
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	21.47	97.76	0.00	4,735.4	0.0	2493.73	3294.98	5,788.71
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	20.05	93.32	0.00	4,184.6	0.0	2344.45	3434.78	5,779.23
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	8.53	32.79	0.00	1,567.5	0.0	1004.43	1194.55	2,198.98
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	1.00	1.00	0.00	8.25	51.67	0.00	2,430.1	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	1.00	1.00	0.00	5.88	12.03	0.00	981.6	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	1.00	1.00	0.00	2.99	4.44	0.00	488.1	0.0	422.56	28.49	451.05
														41,648.6	**0.0**			**39,951.25**

Load Case: 1.2D + 1.0W 60° Wind — 1.2D + 1.0W 137 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: 0.00 — **Ice Importance Factor:** 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	27.87	106.08	0.00	7,538.4	0.0	2335.34	2265.51	4,600.86
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	26.07	106.08	0.00	7,362.7	0.0	2489.78	2618.01	5,107.79
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	21.79	102.01	0.00	6,257.7	0.0	2321.30	2913.40	5,234.70
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	20.77	98.96	0.00	6,102.4	0.0	2319.85	3125.77	5,445.62
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	18.88	97.76	0.00	4,735.4	0.0	2192.40	3294.98	5,487.38
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	17.70	93.32	0.00	4,184.6	0.0	2069.04	3434.78	5,503.82
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	7.61	32.79	0.00	1,567.5	0.0	896.40	1194.55	2,090.96
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	0.80	1.00	0.00	8.25	51.67	0.00	2,430.1	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	0.80	1.00	0.00	5.88	12.03	0.00	981.6	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	0.80	1.00	0.00	2.99	4.44	0.00	488.1	0.0	422.56	28.49	451.05
														41,648.6	**0.0**			**37,846.05**

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 90° Wind — 1.2D + 1.0W 137 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	28.98	106.08	0.00	7,538.4	0.0	2428.89	2265.51	4,694.41
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	27.09	106.08	0.00	7,362.7	0.0	2586.94	2618.01	5,204.95
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	22.58	102.01	0.00	6,257.7	0.0	2405.71	2913.40	5,319.11
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	21.48	98.96	0.00	6,102.4	0.0	2399.85	3125.77	5,525.61
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	19.52	97.76	0.00	4,735.4	0.0	2267.73	3294.98	5,562.71
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	18.28	93.32	0.00	4,184.6	0.0	2137.89	3434.78	5,572.68
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	7.84	32.79	0.00	1,567.5	0.0	923.41	1194.55	2,117.96
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	0.85	1.00	0.00	8.25	51.67	0.00	2,430.1	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	0.85	1.00	0.00	5.88	12.03	0.00	981.6	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	0.85	1.00	0.00	2.99	4.44	0.00	488.1	0.0	422.56	28.49	451.05
														41,648.6	**0.0**			**38,372.35**

Load Case: 0.9D + 1.0W Normal Wind — 0.9D + 1.0W 137 mph Wind at Normal To Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	32.33	106.08	0.00	5,653.8	0.0	2709.53	2265.51	4,975.05
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	30.14	106.08	0.00	5,522.0	0.0	2878.44	2618.01	5,496.45
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	24.96	102.01	0.00	4,693.3	0.0	2658.91	2913.40	5,572.31
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	23.63	98.96	0.00	4,576.8	0.0	2639.82	3125.77	5,765.59
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	21.47	97.76	0.00	3,551.5	0.0	2493.73	3294.98	5,788.71
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	20.05	93.32	0.00	3,138.4	0.0	2344.45	3434.78	5,779.23
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	8.53	32.79	0.00	1,175.6	0.0	1004.43	1194.55	2,198.98
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	1.00	1.00	0.00	8.25	51.67	0.00	1,822.6	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	1.00	1.00	0.00	5.88	12.03	0.00	736.2	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	1.00	1.00	0.00	2.99	4.44	0.00	366.1	0.0	422.56	28.49	451.05
														31,236.4	**0.0**			**39,951.25**

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 9	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 60° Wind — 0.9D + 1.0W 137 mph Wind at 60° From Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	27.87	106.08	0.00	5,653.8	0.0	2335.34	2265.51	4,600.86
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	26.07	106.08	0.00	5,522.0	0.0	2489.78	2618.01	5,107.79
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	21.79	102.01	0.00	4,693.3	0.0	2321.30	2913.40	5,234.70
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	20.77	98.96	0.00	4,576.8	0.0	2319.85	3125.77	5,445.62
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	18.88	97.76	0.00	3,551.5	0.0	2192.40	3294.98	5,487.38
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	17.70	93.32	0.00	3,138.4	0.0	2069.04	3434.78	5,503.82
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	7.61	32.79	0.00	1,175.6	0.0	896.40	1194.55	2,090.96
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	0.80	1.00	0.00	8.25	51.67	0.00	1,822.6	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	0.80	1.00	0.00	5.88	12.03	0.00	736.2	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	0.80	1.00	0.00	2.99	4.44	0.00	366.1	0.0	422.56	28.49	451.05
														31,236.4	**0.0**			**37,846.05**

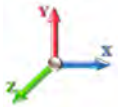
Load Case: 0.9D + 1.0W 90° Wind — 0.9D + 1.0W 137 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.15

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	10.0	34.67	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	28.98	106.08	0.00	5,653.8	0.0	2428.89	2265.51	4,694.41
2	30.0	40.06	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	27.09	106.08	0.00	5,522.0	0.0	2586.94	2618.01	5,204.95
3	50.0	44.61	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	22.58	102.01	0.00	4,693.3	0.0	2405.71	2913.40	5,319.11
4	70.0	47.88	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	21.48	98.96	0.00	4,576.8	0.0	2399.85	3125.77	5,525.61
5	90.0	50.48	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	19.52	97.76	0.00	3,551.5	0.0	2267.73	3294.98	5,562.71
6	110.0	52.66	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	18.28	93.32	0.00	3,138.4	0.0	2137.89	3434.78	5,572.68
7	125.0	54.10	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	7.84	32.79	0.00	1,175.6	0.0	923.41	1194.55	2,117.96
8	140.0	55.41	0.000	14.29	0.00	0.15	2.79	0.85	1.00	0.00	8.25	51.67	0.00	1,822.6	0.0	1082.97	1851.05	2,934.02
9	160.0	56.99	0.000	10.26	0.00	0.12	2.90	0.85	1.00	0.00	5.88	12.03	0.00	736.2	0.0	824.25	165.60	989.85
10	175.0	58.07	0.000	5.21	0.00	0.13	2.86	0.85	1.00	0.00	2.99	4.44	0.00	366.1	0.0	422.56	28.49	451.05
														31,236.4	**0.0**			**38,372.35**

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 10	



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: 1.15

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	10.0	4.62	22.326	43.88	20.24	0.19	2.64	1.00	1.00	1.02	47.43	146.00	34.02	12,201.	4663.2	491.88	471.68	963.56
2	30.0	5.34	20.349	44.94	21.30	0.21	2.57	1.00	1.00	1.14	46.22	150.35	37.97	12,485.	5122.6	539.44	565.00	1,104.44
3	50.0	5.94	15.847	43.15	21.12	0.21	2.55	1.00	1.00	1.20	40.75	148.47	31.17	11,127.	4869.3	524.47	639.68	1,164.16
4	70.0	6.38	14.323	42.61	20.57	0.24	2.46	1.00	1.00	1.24	39.17	146.92	25.42	10,899.	4797.3	522.64	692.00	1,214.64
5	90.0	6.72	12.972	38.73	19.90	0.27	2.39	1.00	1.00	1.27	35.80	146.88	23.31	9,395.0	4659.6	488.51	733.68	1,222.19
6	110.0	7.01	11.777	36.46	19.23	0.32	2.26	1.00	1.00	1.30	33.79	143.38	13.40	8,596.8	4412.2	454.50	764.62	1,219.12
7	125.0	7.21	4.586	17.20	9.39	0.36	2.16	1.00	1.00	1.31	15.22	51.56	2.19	3,231.0	1663.5	201.08	255.12	456.20
8	140.0	7.38	0.000	44.07	29.78	0.43	2.01	1.00	1.00	1.33	28.78	82.96	4.43	5,256.4	2826.3	362.76	382.34	745.11
9	160.0	7.59	0.000	38.63	28.37	0.42	2.03	1.00	1.00	1.35	25.01	26.66	4.49	2,636.7	1655.0	326.92	68.20	395.12
10	175.0	7.73	0.000	19.86	14.65	0.46	1.96	1.00	1.00	1.36	13.21	9.80	1.81	1,279.3	791.2	170.47	11.84	182.31
														77,108.8	**35460.2**			**8,666.85**

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
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.15

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	10.0	4.62	22.326	43.88	20.24	0.19	2.64	0.80	1.00	1.02	42.97	146.00	34.02	12,201.	4663.2	445.58	471.68	917.25
2	30.0	5.34	20.349	44.94	21.30	0.21	2.57	0.80	1.00	1.14	42.15	150.35	37.97	12,485.	5122.6	491.95	565.00	1,056.94
3	50.0	5.94	15.847	43.15	21.12	0.21	2.55	0.80	1.00	1.20	37.58	148.47	31.17	11,127.	4869.3	483.69	639.68	1,123.37
4	70.0	6.38	14.323	42.61	20.57	0.24	2.46	0.80	1.00	1.24	36.30	146.92	25.42	10,899.	4797.3	484.42	692.00	1,176.42
5	90.0	6.72	12.972	38.73	19.90	0.27	2.39	0.80	1.00	1.27	33.20	146.88	23.31	9,395.0	4659.6	453.11	733.68	1,186.79
6	110.0	7.01	11.777	36.46	19.23	0.32	2.26	0.80	1.00	1.30	31.44	143.38	13.40	8,596.8	4412.2	422.82	764.62	1,187.44
7	125.0	7.21	4.586	17.20	9.39	0.36	2.16	0.80	1.00	1.31	14.31	51.56	2.19	3,231.0	1663.5	188.97	255.12	444.09
8	140.0	7.38	0.000	44.07	29.78	0.43	2.01	0.80	1.00	1.33	28.78	82.96	4.43	5,256.4	2826.3	362.76	382.34	745.11
9	160.0	7.59	0.000	38.63	28.37	0.42	2.03	0.80	1.00	1.35	25.01	26.66	4.49	2,636.7	1655.0	326.92	68.20	395.12
10	175.0	7.73	0.000	19.86	14.65	0.46	1.96	0.80	1.00	1.36	13.21	9.80	1.81	1,279.3	791.2	170.47	11.84	182.31
														77,108.8	**35460.2**			**8,414.84**

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 11	

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:** 1.15

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	10.0	4.62	22.326	43.88	20.24	0.19	2.64	0.85	1.00	1.02	44.08	146.00	34.02	12,201.	4663.2	457.15	471.68	928.83
2	30.0	5.34	20.349	44.94	21.30	0.21	2.57	0.85	1.00	1.14	43.17	150.35	37.97	12,485.	5122.6	503.82	565.00	1,068.82
3	50.0	5.94	15.847	43.15	21.12	0.21	2.55	0.85	1.00	1.20	38.38	148.47	31.17	11,127.	4869.3	493.88	639.68	1,133.57
4	70.0	6.38	14.323	42.61	20.57	0.24	2.46	0.85	1.00	1.24	37.02	146.92	25.42	10,899.	4797.3	493.97	692.00	1,185.98
5	90.0	6.72	12.972	38.73	19.90	0.27	2.39	0.85	1.00	1.27	33.85	146.88	23.31	9,395.0	4659.6	461.96	733.68	1,195.64
6	110.0	7.01	11.777	36.46	19.23	0.32	2.26	0.85	1.00	1.30	32.02	143.38	13.40	8,596.8	4412.2	430.74	764.62	1,195.36
7	125.0	7.21	4.586	17.20	9.39	0.36	2.16	0.85	1.00	1.31	14.54	51.56	2.19	3,231.0	1663.5	192.00	255.12	447.11
8	140.0	7.38	0.000	44.07	29.78	0.43	2.01	0.85	1.00	1.33	28.78	82.96	4.43	5,256.4	2826.3	362.76	382.34	745.11
9	160.0	7.59	0.000	38.63	28.37	0.42	2.03	0.85	1.00	1.35	25.01	26.66	4.49	2,636.7	1655.0	326.92	68.20	395.12
10	175.0	7.73	0.000	19.86	14.65	0.46	1.96	0.85	1.00	1.36	13.21	9.80	1.81	1,279.3	791.2	170.47	11.84	182.31
														77,108.8	**35460.2**			**8,477.84**

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

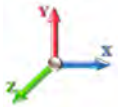
Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.15

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	10.0	6.65	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	35.70	106.08	0.00	6,282.0	0.0	573.86	434.54	1,008.40
2	30.0	7.68	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	33.75	106.08	0.00	6,135.6	0.0	618.12	502.15	1,120.27
3	50.0	8.56	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	28.33	102.01	0.00	5,214.8	0.0	578.88	558.81	1,137.69
4	70.0	9.18	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	26.85	98.96	0.00	5,085.3	0.0	575.19	599.54	1,174.73
5	90.0	9.68	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	23.70	97.76	0.00	3,946.1	0.0	527.94	632.00	1,159.94
6	110.0	10.10	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	21.66	93.32	0.00	3,487.1	0.0	485.78	658.81	1,144.59
7	125.0	10.38	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	9.09	32.79	0.00	1,306.2	0.0	205.33	229.12	434.46
8	140.0	10.63	0.000	14.29	0.00	0.15	2.79	1.00	1.00	0.00	8.25	51.67	0.00	2,025.1	0.0	207.72	355.04	562.76
9	160.0	10.93	0.000	10.26	0.00	0.12	2.90	1.00	1.00	0.00	5.88	12.03	0.00	818.0	0.0	158.10	31.76	189.86
10	175.0	11.14	0.000	5.21	0.00	0.13	2.86	1.00	1.00	0.00	2.99	4.44	0.00	406.8	0.0	81.05	5.46	86.51
														34,707.1	**0.0**			**8,019.21**

Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 12	



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:** 1.15

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	10.0	6.65	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	31.24	106.08	0.00	6,282.0	0.0	502.09	434.54	936.63
2	30.0	7.68	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	29.68	106.08	0.00	6,135.6	0.0	543.58	502.15	1,045.72
3	50.0	8.56	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	25.16	102.01	0.00	5,214.8	0.0	514.13	558.81	1,072.93
4	70.0	9.18	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	23.98	98.96	0.00	5,085.3	0.0	513.81	599.54	1,113.35
5	90.0	9.68	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	21.10	97.76	0.00	3,946.1	0.0	470.15	632.00	1,102.14
6	110.0	10.10	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	19.30	93.32	0.00	3,487.1	0.0	432.96	658.81	1,091.77
7	125.0	10.38	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	8.17	32.79	0.00	1,306.2	0.0	184.61	229.12	413.74
8	140.0	10.63	0.000	14.29	0.00	0.15	2.79	0.80	1.00	0.00	8.25	51.67	0.00	2,025.1	0.0	207.72	355.04	562.76
9	160.0	10.93	0.000	10.26	0.00	0.12	2.90	0.80	1.00	0.00	5.88	12.03	0.00	818.0	0.0	158.10	31.76	189.86
10	175.0	11.14	0.000	5.21	0.00	0.13	2.86	0.80	1.00	0.00	2.99	4.44	0.00	406.8	0.0	81.05	5.46	86.51
														34,707.1	**0.0**			**7,615.42**

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

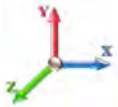
Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.15

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	10.0	6.65	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	32.35	106.08	0.00	6,282.0	0.0	520.03	434.54	954.57
2	30.0	7.68	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	30.69	106.08	0.00	6,135.6	0.0	562.21	502.15	1,064.36
3	50.0	8.56	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	25.96	102.01	0.00	5,214.8	0.0	530.32	558.81	1,089.12
4	70.0	9.18	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	24.70	98.96	0.00	5,085.3	0.0	529.16	599.54	1,128.70
5	90.0	9.68	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	21.75	97.76	0.00	3,946.1	0.0	484.60	632.00	1,116.59
6	110.0	10.10	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	19.89	93.32	0.00	3,487.1	0.0	446.16	658.81	1,104.97
7	125.0	10.38	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	8.40	32.79	0.00	1,306.2	0.0	189.79	229.12	418.92
8	140.0	10.63	0.000	14.29	0.00	0.15	2.79	0.85	1.00	0.00	8.25	51.67	0.00	2,025.1	0.0	207.72	355.04	562.76
9	160.0	10.93	0.000	10.26	0.00	0.12	2.90	0.85	1.00	0.00	5.88	12.03	0.00	818.0	0.0	158.10	31.76	189.86
10	175.0	11.14	0.000	5.21	0.00	0.13	2.86	0.85	1.00	0.00	2.99	4.44	0.00	406.8	0.0	81.05	5.46	86.51
														34,707.1	**0.0**			**7,716.37**

Force/Stress Compression Summary

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 13	



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	20	12B - 12"BD 2.25"	-350.75	1.2D + 1.0W Normal Wind	10.02	100	100	100	24.38	50.00	514.03	68.2	Member X
2	40	12B - 12"BD 2.25"	-315.26	1.2D + 1.0W Normal Wind	10.02	100	100	100	24.38	50.00	514.03	61.3	Member X
3	60	12B - 12"BD 2"	-274.38	1.2D + 1.0W Normal Wind	10.02	100	100	100	24.41	50.00	405.83	67.6	Member X
4	80	12B - 12"BD 2"	-232.45	1.2D + 1.0W Normal Wind	10.02	100	100	100	24.41	50.00	405.83	57.3	Member X
5	100	12B - 12"BD 1.75"	-187.36	1.2D + 1.0W Normal Wind	10.02	100	100	100	25.99	50.00	308.82	60.7	Member X
6	120	12B - 12"BD 1.5"	-139.05	1.2D + 1.0W Normal Wind	10.02	100	100	100	30.32	50.00	222.99	62.4	Member X
7	130	12B - 12"BD 1.25"	-84.82	1.2D + 1.0W Normal Wind	10.02	100	100	100	36.38	50.00	150.33	56.4	Member X
8	150	SOL - 2" SOLID	-74.60	1.2D + 1.0W Normal Wind	2.37	100	100	100	56.88	50.00	111.59	66.9	Member X
9	170	SOL - 1 1/2" SOLID	-25.85	1.2D + 1.0W Normal Wind	2.37	100	100	100	75.84	50.00	52.22	49.5	Member X
10	180	SOL - 1 1/2" SOLID	-6.26	1.2D + 1.0W Normal Wind	2.24	100	100	100	71.67	50.00	54.62	11.5	Member X

Splices

		Top Splice					Bottom Splice				
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	1.2D + 1.0W Normal Wind	325.10	0.00	0.0			1.2D + 1.0W Normal Wind	361.14	0.00			
2	40	1.2D + 1.0W Normal Wind	285.28	0.00	0.0			1.2D + 1.0W Normal Wind	325.10	0.00		1/4 A325	6
3	60	1.2D + 1.0W Normal Wind	243.62	0.00	0.0			1.2D + 1.0W Normal Wind	285.28	0.00		1/4 A325	6
4	80	1.2D + 1.0W Normal Wind	199.72	0.00	0.0			1.2D + 1.0W Normal Wind	243.62	0.00		1/4 A325	6
5	100	1.2D + 1.0W Normal Wind	152.76	0.00	0.0			1.2D + 1.0W Normal Wind	199.72	0.00		1 A325	6
6	120	1.2D + 1.0W Normal Wind	100.86	0.00	0.0			1.2D + 1.0W Normal Wind	152.76	0.00		1 A325	6
7	130	1.2D + 1.0W Normal Wind	79.08	0.00	0.0			1.2D + 1.0W Normal Wind	100.86	0.00		1 A325	6
8	150	1.2D + 1.0W Normal Wind	28.10	0.00	0.0			1.2D + 1.0W Normal Wind	79.08	0.00		1 A325	6
9	170	1.2D + 1.0W Normal Wind	7.16	0.00	0.0			1.2D + 1.0W Normal Wind	28.10	0.00			
10	180	1.2D + 1.0Di + 1.0Wi 90° Wind	1.06	0.00	0.0			1.2D + 1.0W Normal Wind	7.16	0.00			

HORIZONTAL MEMBERS

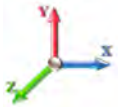
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20										0.00	0	0				
2	40										0.00	0	0				
3	60										0.00	0	0				
4	80										0.00	0	0				
5	100										0.00	0	0				
6	120										0.00	0	0				
7	130										0.00	0	0				
8	150	SOL - 1" SOLID	-1.75	1.2D + 1.0W 60° Wind	4.52	100	100	100	151.72	50.00	7.71	0	0			22.8	Member X
9	170	SOL - 3/4" SOLID	-0.81	1.2D + 1.0W 90° Wind	4.49	100	100	100	201.13	50.00	2.47	0	0			32.9	Member X
10	180	SOL - 3/4" SOLID	-1.00	1.2D + 1.0W 60° Wind	4.00	100	100	100	179.20	50.00	3.11	0	0			32.3	Member X

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	20	SAE - 3.5X3.5X0.3125	-9.65	1.2D + 1.0W Normal Wind	20.16	50	50	50	175.28	36.00	19.47	1	1	48.32	43.5	49.6	Member Z
2	40	SAE - 3.5X3.5X0.3125	-9.71	1.2D + 1.0W 90° Wind	18.45	50	50	50	160.42	36.00	23.25	1	1	48.32	43.5	41.8	Member Z
3	60	SAE - 3X3X0.3125	-9.18	1.2D + 1.0W 90° Wind	16.80	50	50	50	171.17	36.00	17.39	1	1	48.32	43.5	52.8	Member Z
4	80	SAE - 3X3X0.3125	-8.88	1.2D + 1.0W 90° Wind	15.24	50	50	50	155.27	36.00	21.13	1	1	48.32	43.5	42.0	Member Z
5	100	SAE - 3X3X0.1875	-8.63	1.2D + 1.0W 90° Wind	13.80	50	50	50	138.89	36.00	16.17	1	1	35.34	20.8	53.4	Member Z
6	120	SAE - 3X3X0.1875	-9.00	1.2D + 1.0W 90° Wind	12.50	50	50	50	125.87	36.00	19.69	1	1	35.34	20.8	45.7	Member Z

Force/Stress Compression Summary

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 14	



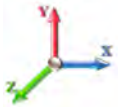
Tower Engineering Solutions

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
7	130	SAE - 2.5X2.5X0.1875	-8.39	1.2D + 1.0W Normal Wind	11.42	50	50	50	138.38	36.00	13.48	1	1	35.34	20.8	62.2	Member Z
8	150	SOL - 1" SOLID	-5.17	1.2D + 1.0W 90° Wind	5.50	50	50	50	118.74	50.00	12.59	0	0			41.1	Member X
9	170	SOL - 3/4" SOLID	-2.60	1.2D + 1.0W Normal Wind	4.74	50	50	50	136.50	50.00	5.36	0	0			48.6	Member X
10	180	SOL - 3/4" SOLID	-1.71	1.2D + 1.0W Normal Wind	4.58	50	50	50	132.03	50.00	5.73	0	0			29.8	Member X

Force/Stress Tension Summary

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 15	



Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	12B - 12"BD 2.25"	310.75	0.9D + 1.0W 60° Wind	50	536.85	57.9	Member
2	40	12B - 12"BD 2.25"	279.44	0.9D + 1.0W 60° Wind	50	536.85	52.1	Member
3	60	12B - 12"BD 2"	244.31	0.9D + 1.0W 60° Wind	50	423.90	57.6	Member
4	80	12B - 12"BD 2"	207.39	0.9D + 1.0W 60° Wind	50	423.90	48.9	Member
5	100	12B - 12"BD 1.75"	166.81	0.9D + 1.0W 60° Wind	50	324.45	51.4	Member
6	120	12B - 12"BD 1.5"	122.77	0.9D + 1.0W 60° Wind	50	238.50	51.5	Member
7	130	12B - 12"BD 1.25"	73.00	0.9D + 1.0W 60° Wind	50	165.60	44.1	Member
8	150	SOL - 2" SOLID	65.97	0.9D + 1.0W 60° Wind	50	141.37	46.7	Member
9	170	SOL - 1 1/2" SOLID	19.18	0.9D + 1.0W 60° Wind	50	79.52	24.1	Member
10	180	SOL - 1 1/2" SOLID	3.98	0.9D + 1.0W 60° Wind	50	79.52	5.9	Bolt Shear

Splices

		Top Splice						Bottom Splice					
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.0W 60° Wind	287.14	0.00	0.0			0.9D + 1.0W 60° Wind	320.1	0.00			
2	40	0.9D + 1.0W 60° Wind	252.31	0.00	0.0			0.9D + 1.0W 60° Wind	287.1	457.92	62.7	1 1/4 A325	6
3	60	0.9D + 1.0W 60° Wind	216.13	0.00	0.0			0.9D + 1.0W 60° Wind	252.3	457.92	55.1	1 1/4 A325	6
4	80	0.9D + 1.0W 60° Wind	176.67	0.00	0.0			0.9D + 1.0W 60° Wind	216.1	457.92	47.2	1 1/4 A325	6
5	100	0.9D + 1.0W 60° Wind	134.12	0.00	0.0			0.9D + 1.0W 60° Wind	176.6	318.06	55.5	1 A325	6
6	120	0.9D + 1.0W 60° Wind	85.00	0.00	0.0			0.9D + 1.0W 60° Wind	134.1	318.06	42.2	1 A325	6
7	130	0.9D + 1.0W 60° Wind	65.41	0.00	0.0			0.9D + 1.0W 60° Wind	85.00	318.06	26.7	1 A325	6
8	150	0.9D + 1.0W 60° Wind	18.65	0.00	0.0			0.9D + 1.0W 60° Wind	65.41	318.06	20.6	1 A325	6
9	170	0.9D + 1.0W 60° Wind	3.97	0.00	0.0			0.9D + 1.0W 60° Wind	18.65	0.00			
10	180		0.00	0.00	0.0			0.9D + 1.0W 60° Wind	3.97	0.00			

HORIZONTAL MEMBERS

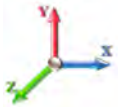
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	130	-			36	0.00	0	0					
8	150	SOL - 1" SOLID	1.78	1.2D + 1.0W Normal Wi	50	35.34	0	0				5.0	Member
9	170	SOL - 3/4" SOLID	1.05	1.2D + 1.0W 90° Wind	50	19.88	0	0				5.3	Member
10	180	SOL - 3/4" SOLID	1.19	1.2D + 1.0W Normal Wi	50	19.88	0	0				6.0	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	20	SAE - 3.5X3.5X0.3125	9.24	1.2D + 1.0W 90° Wind	36	54.17	1	1	48.32	37.52	23.70	39.0	Blck Shear
2	40	SAE - 3.5X3.5X0.3125	9.32	0.9D + 1.0W 90° Wind	36	54.17	1	1	48.32	37.52	23.70	39.3	Blck Shear
3	60	SAE - 3X3X0.3125	8.85	0.9D + 1.0W 90° Wind	36	44.05	1	1	48.32	33.17	19.04	46.5	Blck Shear
4	80	SAE - 3X3X0.3125	8.57	1.2D + 1.0W 90° Wind	36	44.05	1	1	48.32	33.17	19.04	45.0	Blck Shear
5	100	SAE - 3X3X0.1875	8.33	1.2D + 1.0W 90° Wind	36	28.68	1	1	35.34	17.94	11.68	71.3	Blck Shear
6	120	SAE - 3X3X0.1875	9.08	1.2D + 1.0W 90° Wind	36	28.68	1	1	35.34	17.94	11.68	77.7	Blck Shear
7	130	SAE - 2.5X2.5X0.1875	7.98	0.9D + 1.0W 60° Wind	36	22.55	1	1	35.34	17.94	10.66	74.9	Blck Shear

Force/Stress Tension Summary

Structure:	CT03241-S-SBA		**Code:**	EIA/TIA-222-H	6/1/2021
Site Name:	Stonington 2, CT		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	III	Page: 16



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
8	150	SOL - 1" SOLID	5.11	1.2D + 1.0W 90° Wind	50	35.34	0	0				14.5	Member
9	170	SOL - 3/4" SOLID	3.06	1.2D + 1.0W Normal Wi	50	19.88	0	0				15.4	Member
10	180	SOL - 3/4" SOLID	1.83	1.2D + 1.0W Normal Wi	50	19.88	0	0				9.2	Member

Seismic Section Forces

Structure:	CT03241-S-SBA	**Code:**	EIA/TIA-222-H	6/1/2021	
Site Name:	Stonington 2, CT	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	III	Page: 17	

Load Case: 1.2D + 1.0Ev + 1.0Eh

Dead Load Factor	1.20	**Sds**	0.195	**Ss**	0.1830	**Fa**	1.6000	**Ke**	1.1361	**TL**	6.0000
Seismic Load Factor	1.00	**Sd1**	0.083	**S1**	0.0520	**Fv**	2.4000	**Kg**	0.0000	**Cs**	0.0449
Seismic Importance Factor	1.25	**W1**	19.18	**R**	3.0000	**Vs**	2.0027	**T**	0.7723	**f1**	1.2949

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	10.00	6281.9	26.81	245.37
2	30.00	6135.5	90.93	239.65
3	50.00	5386.7	140.13	210.41
4	70.00	5110.3	193.44	199.61
5	90.00	4016.1	195.74	156.87
6	110.00	6603.1	432.53	257.92
7	125.00	1306.2	79.35	51.02
8	140.00	7232.6	630.87	282.50
9	160.00	1200.0	95.40	46.87
10	175.00	1317.7	117.47	51.47

Load Case: 0.9D + 1.0Ev + 1.0Eh

Dead Load Factor	0.90	**Sds**	0.195	**Ss**	0.1830	**Fa**	1.6000	**Ke**	1.1361	**TL**	6.0000
Seismic Load Factor	1.00	**Sd1**	0.083	**S1**	0.0520	**Fv**	2.4000	**Kg**	0.0000	**Cs**	0.0449
Seismic Importance Factor	1.25	**W1**	19.18	**R**	3.0000	**Vs**	2.0027	**T**	0.7723	**f1**	1.2949

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	10.00	6281.9	26.81	245.37
2	30.00	6135.5	90.93	239.65
3	50.00	5386.7	140.13	210.41
4	70.00	5110.3	193.44	199.61
5	90.00	4016.1	195.74	156.87
6	110.00	6603.1	432.53	257.92
7	125.00	1306.2	79.35	51.02
8	140.00	7232.6	630.87	282.50
9	160.00	1200.0	95.40	46.87
10	175.00	1317.7	117.47	51.47

Support Forces Summary

Structure:	CT03241-S-SBA		**Code:**	EIA/TIA-222-H	6/1/2021
Site Name:	Stonington 2, CT		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	III	Page: 18

Tower Engineering Solutions

Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal Wind	1	0.01	360.52	-36.32	
	1a	13.10	-153.47	-9.77	
	1b	-13.12	-153.54	-9.75	
1.2D + 1.0W 60° Wind	1	-1.77	184.93	-18.26	
	1a	-16.55	182.78	7.76	
	1b	-28.21	-314.21	-16.36	
1.2D + 1.0W 90° Wind	1	-2.17	17.91	-1.35	
	1a	-27.11	306.58	14.66	
	1b	-24.98	-270.98	-13.31	
0.9D + 1.0W Normal Wind	1	0.01	355.55	-35.96	
	1a	13.39	-157.69	-9.95	
	1b	-13.41	-157.74	-9.93	
0.9D + 1.0W 60° Wind	1	-1.78	180.22	-17.91	
	1a	-16.25	178.09	7.57	
	1b	-28.50	-318.18	-16.53	
0.9D + 1.0W 90° Wind	1	-2.18	13.43	-1.00	
	1a	-26.80	301.71	14.48	
	1b	-25.28	-275.01	-13.48	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.01	114.15	-5.81	
	1a	5.13	-7.95	-3.30	
	1b	-5.14	-8.03	-3.29	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.32	72.99	-1.78	
	1a	-1.64	71.76	0.66	
	1b	-8.57	-46.58	-4.96	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.39	32.84	2.12	
	1a	-4.07	101.20	2.20	
	1b	-7.76	-35.87	-4.32	
1.2D + 1.0Ev + 1.0Eh	1	0.00	32.78	7.30	
	1a	8.00	11.23	-4.63	
	1b	-8.00	11.23	-4.63	
0.9D + 1.0Ev + 1.0Eh	1	0.00	28.31	7.65	
	1a	8.31	6.78	-4.80	
	1b	-8.31	6.78	-4.80	
1.0D + 1.0W Normal Wind	1	0.00	81.99	-8.09	
	1a	1.81	-18.67	-1.49	
	1b	-1.81	-18.73	-1.49	
1.0D + 1.0W 60° Wind	1	-0.38	47.63	-4.51	
	1a	-4.06	47.19	1.96	
	1b	-4.80	-50.23	-2.78	
1.0D + 1.0W 90° Wind	1	-0.45	14.91	-1.16	
	1a	-6.15	71.43	3.33	
	1b	-4.16	-41.75	-2.18	

Max Reactions

Leg			Overturning		
Max Uplift:	-318.18	(kips)	Moment:	5341.90	(ft-kips)
Max Down:	360.52	(kips)	Total Down:	53.51	(kips)
Max Shear:	36.32	(kips)	Total Shear:	55.84	(kips)

Max Reactions

Leg			Overturning		
Max Uplift:	-318.18	(kips)	Moment:	5341.90	(ft-kips)
Max Down:	360.52	(kips)	Total Down:	53.51	(kips)
Max Shear:	36.32	(kips)	Total Shear:	55.84	(kips)

Anchor Bolts

Bolt Size (in.):	1.25	Number Bolts:	6	Type:	UnGrouted
Yield Strength (Ksi):	105.00	Tensile Strength (Ksi):	150.00		
		Length:	1.75		

Interaction Ratios:

Tensile: **0.72** Compression: **0.76**

Max Usages

Max Leg: 68.2% (1.2D + 1.0W Normal Wind - Sect 1)
Max Diag: 77.7% (1.2D + 1.0W 90° Wind - Sect 6)
Max Horiz: 32.9% (1.2D + 1.0W 90° Wind - Sect 9)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0Ev + 1.0Eh - Normal To Face	40.00	0.0058	0.0004	0.0120
	50.00	0.0030	0.0000	0.0127
	60.00	0.0098	-0.0006	0.0165
	70.00	0.0127	0.0008	0.0195
	90.00	0.0178	0.0000	0.0276
	100.00	0.0254	-0.0012	0.0311
	120.00	0.0378	0.0015	0.0410
	139.90	0.0545	0.0015	0.0526
	150.00	0.0642	0.0015	0.0759
	164.64	0.0790	0.0008	0.0602
	177.14	0.0923	-0.0006	0.0588
	180.00	0.0953	0.0005	0.0637
0.9D + 1.0W 137 mph Wind at 60° From Face	40.00	0.0850	0.0162	0.2267
	50.00	0.1308	-0.0189	0.2938
	60.00	0.1910	0.0050	0.3602
	70.00	0.2601	0.0311	0.4269
	90.00	0.4338	-0.0328	0.5869
	100.00	0.5470	-0.0343	0.6639
	120.00	0.8188	0.0688	0.8755
	139.90	1.1664	0.7498	1.1194
	150.00	1.3738	1.4353	1.7454
	164.64	1.6882	4.4927	2.3311
	177.14	1.9686	1.9807	1.3159
	180.00	2.0290	5.1700	3.1333

0.9D + 1.0W 137 mph Wind at 90° From Face	40.00	0.0866	-0.0284	0.2274
	50.00	0.1305	-0.0370	0.2923
	60.00	0.1904	0.0096	0.3614
	70.00	0.2596	-0.0515	0.4270
	90.00	0.4337	-0.0688	0.5812
	100.00	0.5460	-0.0751	0.6619
	120.00	0.8167	-0.0908	0.8721
	139.90	1.1644	-0.4917	1.1032
	150.00	1.3692	-0.8960	1.7174
	164.64	1.6775	-2.6758	1.1707
	177.14	1.9489	0.0788	1.4333
	180.00	1.9978	-2.7174	1.7791
0.9D + 1.0W 137 mph Wind at Normal To Face	40.00	0.0900	0.0061	0.2338
	50.00	0.1376	0.0000	0.3063
	60.00	0.1939	-0.0142	0.3735
	70.00	0.2678	-0.0166	0.4394
	90.00	0.4494	0.0000	0.6143
	100.00	0.5628	-0.0253	0.6841
	120.00	0.8424	-0.0331	0.9025
	139.90	1.2023	-0.2989	1.1656
	150.00	1.4193	-0.6140	1.7989
	164.64	1.7566	-2.0743	3.7363
	177.14	2.0623	-0.1249	1.0067
	180.00	2.1612	-2.0681	4.9039
1.0D + 1.0W 60 mph Wind at 60° From Face	40.00	0.0168	-0.0044	0.0444
	50.00	0.0258	-0.0057	0.0574
	60.00	0.0373	0.0004	0.0706
	70.00	0.0508	-0.0079	0.0833
	90.00	0.0849	-0.0105	0.1141
	100.00	0.1066	-0.0114	0.1291
	120.00	0.1592	-0.0134	0.1697
	139.90	0.2270	-0.0499	0.2165
	150.00	0.2671	-0.0871	0.3376
	164.64	0.3280	-0.2465	0.3979
	177.14	0.3823	0.0695	0.2579
	180.00	0.3939	-0.2059	0.5554
1.0D + 1.0W 60 mph Wind at 90° From Face	40.00	0.0171	-0.0055	0.0446
	50.00	0.0256	-0.0072	0.0572
	60.00	0.0372	0.0019	0.0708
	70.00	0.0510	-0.0100	0.0834
	90.00	0.0848	-0.0133	0.1132
	100.00	0.1064	-0.0145	0.1287
	120.00	0.1595	-0.0175	0.1692
	139.90	0.2266	-0.0939	0.2139
	150.00	0.2662	-0.1709	0.3323
	164.64	0.3260	-0.5088	0.2200
	177.14	0.3785	0.0102	0.2771
	180.00	0.3881	-0.5135	0.3389
1.0D + 1.0W 60 mph Wind at Normal To Face	40.00	0.0178	0.0012	0.0458
	50.00	0.0272	0.0000	0.0599
	60.00	0.0380	-0.0028	0.0731
	70.00	0.0526	-0.0032	0.0859
	90.00	0.0881	0.0000	0.1198
	100.00	0.1103	-0.0049	0.1333
	120.00	0.1648	-0.0064	0.1755
	139.90	0.2343	-0.0587	0.2261
	150.00	0.2763	-0.1206	0.3470
	164.64	0.3417	-0.4063	0.7192
	177.14	0.4010	-0.0198	0.1957
	180.00	0.4203	-0.4057	0.9434

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	40.00	0.0196	-0.0066	0.0549
	50.00	0.0307	-0.0087	0.0705
	60.00	0.0467	0.0008	0.0881
	70.00	0.0635	-0.0119	0.1045
	90.00	0.1052	-0.0158	0.1450
	100.00	0.1339	-0.0174	0.1657
	120.00	0.2023	-0.0213	0.2242
	139.90	0.2948	0.1425	0.3048
	150.00	0.3524	0.2708	0.5278
	164.64	0.4411	0.8363	1.4923
	177.14	0.5218	0.1468	0.3679
	180.00	0.5395	0.9224	0.7921
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	40.00	0.0200	-0.0094	0.0551
	50.00	0.0310	-0.0122	0.0696
	60.00	0.0462	0.0024	0.0877
	70.00	0.0628	-0.0170	0.1038
	90.00	0.1047	-0.0229	0.1424
	100.00	0.1326	-0.0254	0.1637
	120.00	0.2006	-0.0327	0.2211
	139.90	0.2915	-0.3061	0.2962
	150.00	0.3475	-0.5811	0.5120
	164.64	0.4329	-1.7995	1.3054
	177.14	0.5077	0.0163	0.3848
	180.00	0.5218	-1.8171	0.4254
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	40.00	0.0212	-0.0003	0.0569
	50.00	0.0317	0.0000	0.0741
	60.00	0.0468	-0.0031	0.0911
	70.00	0.0641	-0.0037	0.1080
	90.00	0.1088	0.0000	0.1533
	100.00	0.1374	-0.0058	0.1725
	120.00	0.2099	-0.0081	0.2361
	139.90	0.3075	-0.2279	0.3299
	150.00	0.3700	-0.4520	0.5587
	164.64	0.4714	-1.4743	2.0490
	177.14	0.5635	-0.0355	0.3181
	180.00	0.5943	-1.4778	1.4056
1.2D + 1.0Ev + 1.0Eh - Normal To Face	40.00	0.0058	0.0004	0.0120
	50.00	0.0031	0.0000	0.0127
	60.00	0.0098	-0.0006	0.0166
	70.00	0.0127	0.0008	0.0195
	90.00	0.0179	0.0000	0.0277
	100.00	0.0254	-0.0012	0.0312
	120.00	0.0378	0.0015	0.0411
	139.90	0.0546	0.0015	0.0527
	150.00	0.0643	0.0015	0.0761
	164.64	0.0791	0.0008	0.0603
	177.14	0.0925	-0.0006	0.0590
	180.00	0.0955	-0.0005	0.0639
1.2D + 1.0W 137 mph Wind at 60° From Face	40.00	0.0851	0.0163	0.2271
	50.00	0.1310	-0.0189	0.2943
	60.00	0.1912	0.0050	0.3609
	70.00	0.2605	0.0312	0.4278
	90.00	0.4346	-0.0328	0.5882
	100.00	0.5480	-0.0342	0.6654
	120.00	0.8204	0.0689	0.8777
	139.90	1.1691	0.7523	1.1227
	150.00	1.3771	1.4402	1.7520
	164.64	1.6925	4.5081	2.3333
	177.14	1.9740	1.9880	1.3197
	180.00	2.0346	5.1879	3.1374

1.2D + 1.0W 137 mph Wind at 90° From Face	40.00	0.0868	-0.0284	0.2278
	50.00	0.1306	-0.0370	0.2928
	60.00	0.1907	0.0096	0.3621
	70.00	0.2600	-0.0515	0.4278
	90.00	0.4344	-0.0688	0.5824
	100.00	0.5470	-0.0752	0.6634
	120.00	0.8183	-0.0909	0.8744
	139.90	1.1670	-0.4917	1.1065
	150.00	1.3724	-0.8960	1.7238
	164.64	1.6818	-2.6753	1.1667
	177.14	1.9541	0.0794	1.4372
	180.00	2.0031	-2.7169	1.7763
1.2D + 1.0W 137 mph Wind at Normal To Face	40.00	0.0902	0.0061	0.2342
	50.00	0.1379	0.0000	0.3069
	60.00	0.1942	-0.0142	0.3742
	70.00	0.2683	-0.0166	0.4403
	90.00	0.4503	0.0000	0.6157
	100.00	0.5639	-0.0254	0.6857
	120.00	0.8443	-0.0332	0.9050
	139.90	1.2051	-0.2986	1.1691
	150.00	1.4228	-0.6136	1.8057
	164.64	1.7612	-2.0732	3.7407
	177.14	2.0678	-0.1252	1.0102
	180.00	2.1670	-2.0668	4.9126

Last revised on March 27, 2019

Mat Foundation Design for Self Supporting Tower

			Date: 6/1/2021
Customer Name:	**SBA Communications Corp**	**EIA/TIA Standard:**	EIA-222-H
Site Name:		**Structure Height (Ft.):**	180
Site Nmber:	CT03241-S-SBA	**Engineer Name:**	J. Tibbetts
Engr. Number:	108793	**Manager Login Req'd:**	

Foundation Info Obtained from: Drawings/Calculations

Analysis or Design? Analysis

Number of Tower Legs: 3 Legs

Base Reactions (Factored):

(1). Individual Leg:

Axial Load (Kips):	360.5	Uplift Force (Kips):	318.2
Shear Force (Kips):	36.3		

(2). Tower Base:

Total Vertical Load (Kips):	53.5	Total Shear Force (Kips):	55.8
Moment (Kips-ft):	5341.9		

Foundation Geometries:

Leg distance (Center-to-Center ft.):		18.0	Mods required -Yes/No ?:	No	
Diameter of Pier (ft.):	Round	3.5	Pier Height A. G. (ft.):	0.50	
Tower center to mat center (ft):		2.60	Depth of Base BG (ft.):	7.0	
Length of Pad (ft.):		27	Width of Pad (ft.):	27	
Thickness of Pad (ft):		3.25			

Material Properties and Reabr Info:

Concrete Strength (psi):	4500	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	17	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

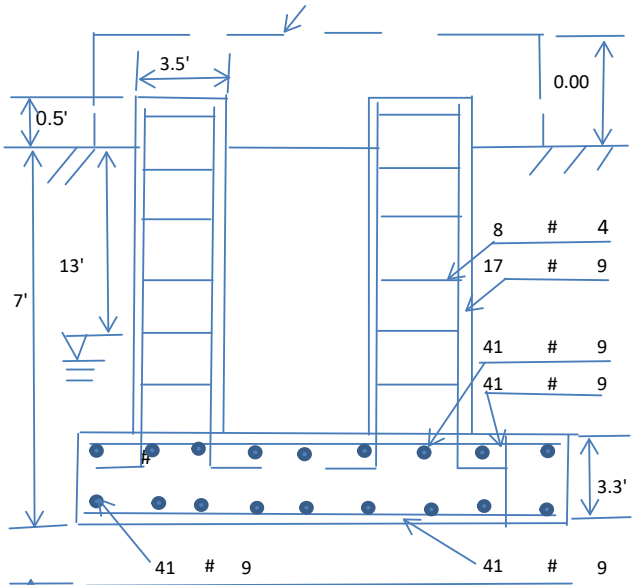
Qty. of Rebar in Pad (L):	41	Qty. of Rebar in Pad (W):	41

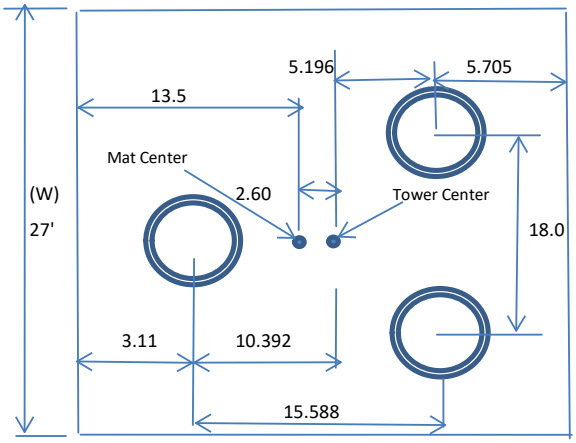
Rebar at the top of the concrete pad:

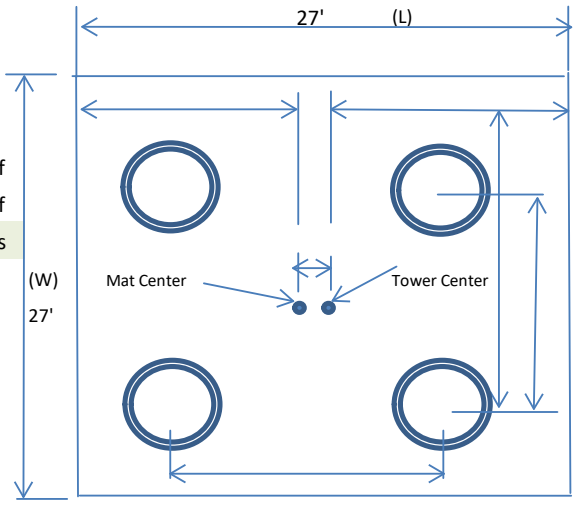
Qty. of Rebar in Pad (L):	41	Qty. of Rebar in Pad (W):	41

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	13.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	12000	Consider ties in concrete shear strength:	Yes	







Allowable overstress %: 5.00% **TES Engr. Number:** 108793 Page 2/2 Date: 6/1/2021

Apply 1.35 for e/w per G/H: 1

Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75			
Total Dry Soil Volume (cu. Ft.):		2625.51	Total Dry Soil Weight (Kips):	315.06			
Total Buoyant Soil Volume (cu. Ft.):		0.00	Total Buoyant Soil Weight (Kips):	0.00			
Total Effective Soil Weight (Kips):		315.06	Weight from the Concrete Block at Top (K):	0.00			
Total Dry Concrete Volume (cu. Ft.):		2491.92	Total Dry Concrete Weight (Kips):	373.79			
Total Buoyant Concrete Volume (cu. Ft.):		0.00	Total Buoyant Concrete Weight (Kips):	0.00			
Total Effective Concrete Weight (Kips):		373.79	Total Vertical Load on Base (Kips):	742.36			
Check Soil Capacities:						Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):		3528.61	<	Allowable Factored Soil Bearing (psf):	9000	0.39	OK!
Allowable Foundation Overturning Resistance (kips-ft.):		9091.9	>	Design Factored Momont (kips-ft):	5828	0.64	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):		1.56	OK!				
Check the capacities of Reinforceing Concrete:							
Strength reduction factor (Flexure and axial tension):		0.90	Strength reduction factor (Shear):		0.75		
Strength reduction factor (Axial compresion):		0.65	Wind Load Factor on Concrete Design:		1.00		
(1) Concrete Pier:						Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):		1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):		808.9	>	Design Factored Moment (Mu, Kips-Ft)	154.3	0.19	OK!
Calculated Shear Capacity (Kips):		118.6	>	Design Factored Shear (Kips):	36.3	0.31	OK!
Calculated Tension Capacity (Tn, Kips):		918.0	>	Design Factored Tension (Tu Kips):	318.2	0.35	OK!
Calculated Compression Capacity (Pn, Kips):		2721.8	>	Design Factored Axial Load (Pu Kips):	360.5	0.13	OK!
Moment & Tension Strength Combination:		0.19	OK!	Check Tie Spacing (Design/Req'd):	1		OK!
Pier Reinforcement Ratio:		0.012	Reinforcement Ratio is satisfied per ACI				
(2).Concrete Pad:							
One-Way Design Shear Capacity (L or W Direction, Kips):		1155.3	>	One-Way Factored Shear (L/W-Dir Kips	216.2	0.19	OK!
One-Way Design Shear Capacity (Diagonal Dir., Kips):		869.3	>	One-Way Factored Shear (Dia. Dir, Kips	236.0	0.27	OK!
Lower Steel Pad Reinforcement Ratio (L or W-Direct.):		0.0036		Lower Steel Reinf. Ratio (Dia. Dir.):	0.0033		
Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):		6349.6	>	Moment at Bottom (L-Direct. K-Ft):	856.6	0.13	OK!
Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):		5950.3	>	Moment at Bottom (Dia. Dir. K-Ft):	1758.3	0.30	OK!
Upper Steel Pad Reinforcement Ratio (L or W -Direction):		0.0036		Upper Steel Reinf. Ratio (Dia. Dir.):	0.0033		
Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):		6349.6	>	Moment at the top (L-Dir Kips-Ft):	338.9	0.05	OK!
Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):		5950.3	>	Moment at the top (Dia. Dir., K-Ft):	572.2	0.10	OK!
Punching Failure Capacity From Down Load (Kips):		1735.0	>	Punch. Failure Factored Shear (K):	360.5	0.21	OK!
Punching Failure Capacity From Uplift (Kips):		1575.3	>	Punch. Failure Factored Shear (K):	318.2	0.20	OK!
(3). Check Max. eccentricity of Loading:							
The maximum eccentricity of Loading:		7.95	ft.	Allowable eccentricity (0.45 W, ft.):	12.15		OK!

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 180-Ft Self Support Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT03241-S-SBA
Customer Site Name: Stonington 2, CT
Carrier Name: T-Mobile (App#: 116745, V#3)
Carrier Site ID / Name: CT11442A / Stonington
Site Location: 173 South Broad Street
Pawcatuck, Connecticut
New London County
Latitude: 41.369066
Longitude: -71.862361

Analysis Result:

Max Structural Usage: 61.3% [Pass]

Report Prepared By: Saroj Dangol

Introduction

The purpose of this report is to summarize the analysis results on the (3) Sector Frame at 140.00' 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 04/30/2019
Antenna Loading	SBA Application #: 116745, v3 dated 04/16/2021
Existing Modification	N/A
Proposed Modification	TES Project No. 82308

Analysis Criteria

Wind Speed Used in the Analysis: 135 mph (3-Sec. Gust) (Ultimate Wind Speed)
Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-H / 2018 IBC
Exposure Category: C
Risk Category: II
Topographic Category: 1
Crest Height (Ft): 0
Ground Elevation Factor: 0.999

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) Sector Frame at 140.00' elevation

Proposed Modifications

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

Final Antenna Configuration

3 Ericsson Air 21 B2A/B4P
3 Ericsson Air 21 B4A/B2P
3 RFS APXVAALL24_43-U-NA20
3 Ericsson KRY 112 144/1*
3 Ericsson 4449 B71 + B85

* Equipment to be flush mounted directly to the front face vertical member and are not 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 61.3%, which occurs in the front face horizontal 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
5. Modification Drawing

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.


04.30.2019 10:19


04.30.2019 10:37

Structure: CT03241-S-SBA - Stonington 2, CT

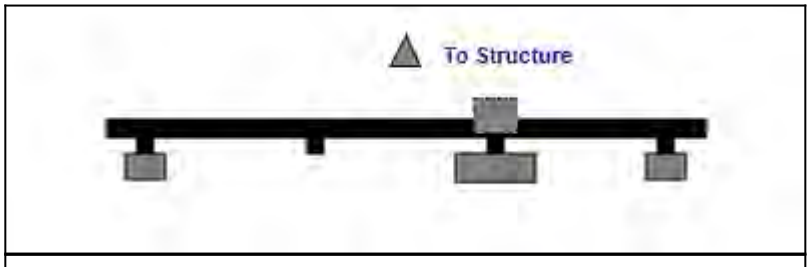
Sector: A

Structure Type: Self Support

Mount Elev: 140.00

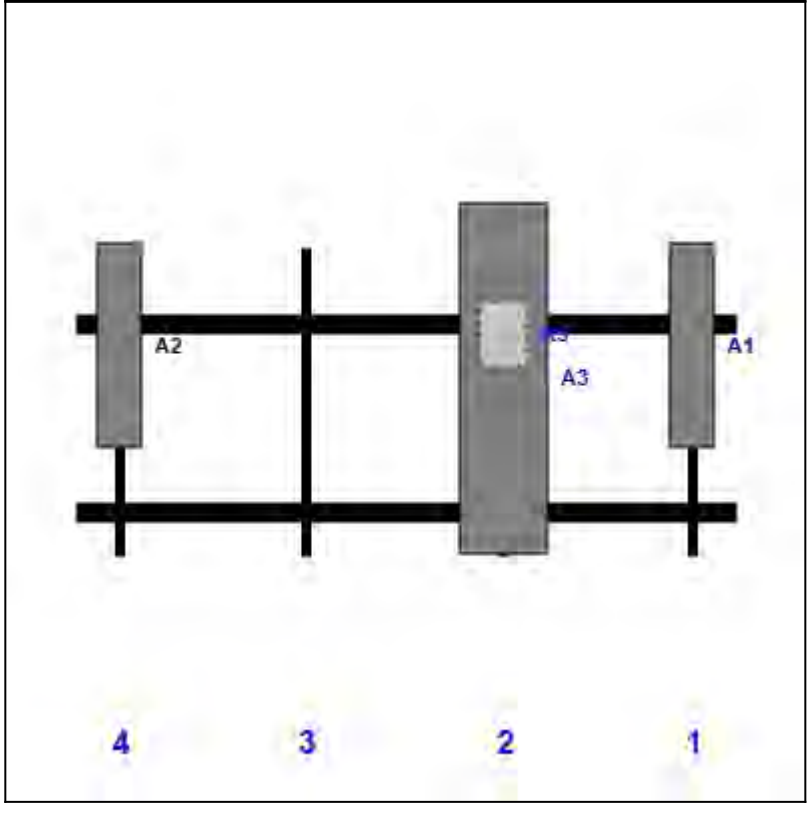
5/12/2021

Plan View



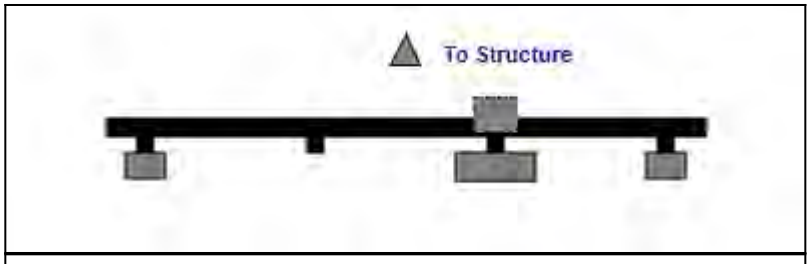
Front View

Looking Toward Structure



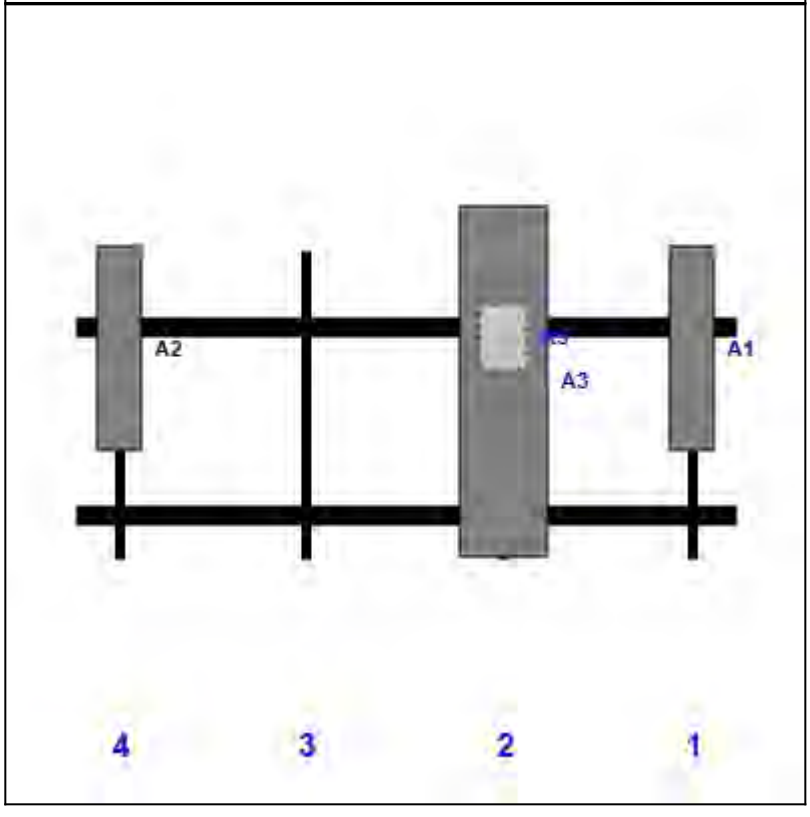
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	168.00	1	a	Front	27.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	117.00	2	a	Front	36.00			
R5	4449 B71 + B85	17.90	13.10	117.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	55.90	12.00	12.00	4	a	Front	27.00			

Plan View



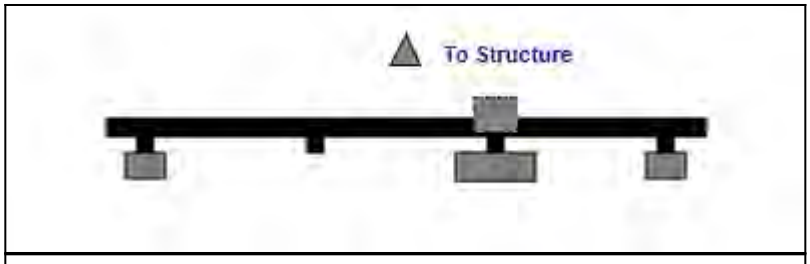
Front View

Looking Toward Structure



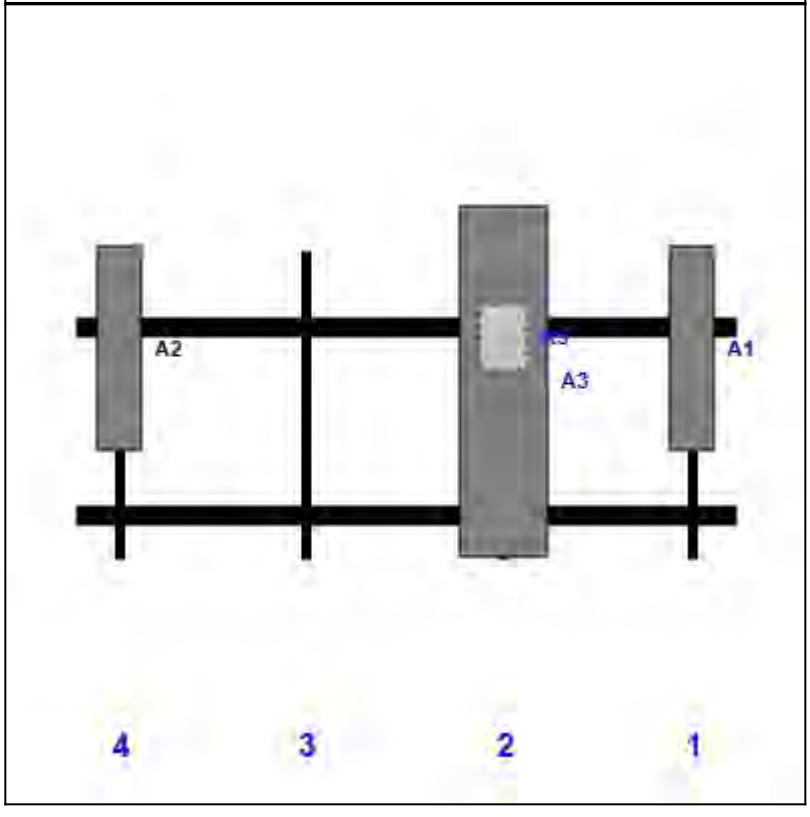
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	168.00	1	a	Front	27.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	117.00	2	a	Front	36.00			
R5	4449 B71 + B85	17.90	13.10	117.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	55.90	12.00	12.00	4	a	Front	27.00			

Plan View



Front View

Looking Toward Structure

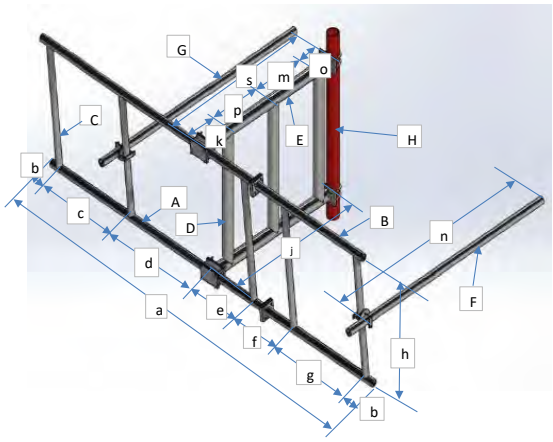


Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	168.00	1	a	Front	27.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	117.00	2	a	Front	36.00			
R5	4449 B71 + B85	17.90	13.10	117.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	55.90	12.00	12.00	4	a	Front	27.00			

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

FCC # 1213371

Tower Owner:	SBA Communications	**Mapping Date:**	4/30/19
Site Name:	Stonington 2, CT	**Structure Type:**	3-Sided S.S. Tower
Site Number or ID:	CT03538-S-SBA	**Structure Height (Ft.):**	180
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	139.1



Geometries (Unit: inches)									
a	180	**e**	17	**j**	48	**o**	13	**s**	58
b	6	**f**	40	**k**	4	**p**	15	**t**	N/A
c	39	**g**	39	**m**	16	**q**	N/A	**u ***	71
d	33	**h**	30	**n**	126	**r**	N/A	**v ***	83

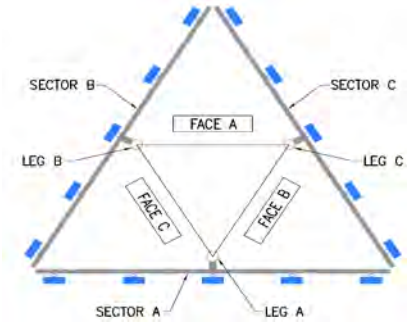
Members (Unit: inches)						* - See Ant. Layout for "u", "v" and member "K" (pipe)			
Items	**Member**	**Lx (O.D.)**	**Ly (I.D.)**	**T**	**Items**	**Member**	**Lx (O.D.)**	**Ly (I.D.)**	**T**
A	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	**F**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
B	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	**G**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
C	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	**H**	2" SR	2	0	2
D	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	**J**				
E	4.0 OD x 0.226 Pipe	4	3.548	0.226	**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

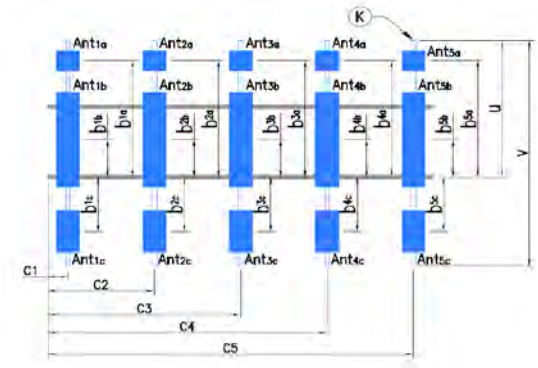
Please enter the infomation below if members can't be found from the drop down lists

(3) TMAs (6"x3"x8") mounted to Member C

Tower Face Width at the mount (ft.):	58"	Tower Leg Size at the mount (in.):	2.0" Solid Rod



Climbing facility is On Leg C, at 240° Degree Azimuth

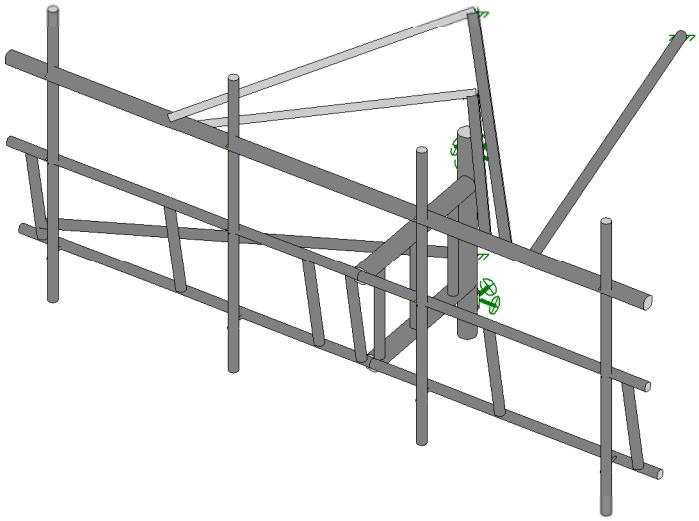


Antenna Layout

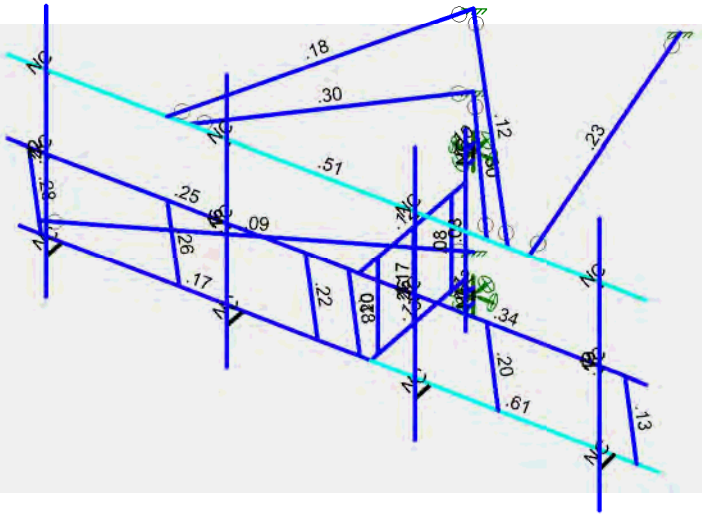
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Mounting Locations (Unit: inches) Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photos of antennas Photo Numbers
Sector A									
Ant_{1a}									
Ant_{1b}	Antenna A	12	8	56	1/2" (1)	+47"	7	12	
Ant_{1c}									
Ant_{2a}									
Ant_{2b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	64	
Ant_{2c}									
Ant_{3a}									
Ant_{3b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	117	
Ant_{3c}									
Ant_{4a}									
Ant_{4b}	Antenna B	13	9	56	1/2" (2)			168	
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?	Yes	**Antennas on Sector B are the same as Sector A**							

Azimuth (Degree) of Each Sector and Climbing Information

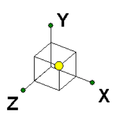
Sector A:	0°	Deg	
Sector B:	120°	Deg	
Sector C:	215°	Deg	
Climbing	240°	Deg	On Leg C
Climbing Facility	Corrosion Type:		Severe corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A



Tower Engineering Solutio...	CT03241-S-SBA_MT_LOT_Loads Only_Sector A_H	SK - 1
		May 12, 2021 at 12:30 PM
TES Project No. 106781		CT03241-S-SBA_106781_H_RISA_...

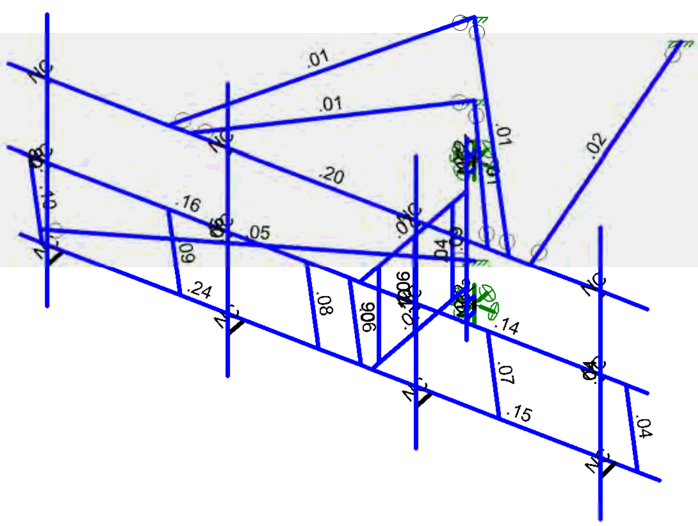


Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)



Shear Check
(Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0.-.50



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Tower Engineering Solutio...	CT03241-S-SBA_MT_LOT_Loads Only_Sector A_H	SK - 3
		May 12, 2021 at 12:31 PM
TES Project No. 106781		CT03241-S-SBA_106781_H_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					24			
2	Antenna Di	None					24			
3	Antenna Wo (0 Deg)	None					24			
4	Antenna Wo (30 Deg)	None					24			
5	Antenna Wo (60 Deg)	None					24			
6	Antenna Wo (90 Deg)	None					24			
7	Antenna Wo (120 Deg)	None					24			
8	Antenna Wo (150 Deg)	None					24			
9	Antenna Wo (180 Deg)	None					24			
10	Antenna Wo (210 Deg)	None					24			
11	Antenna Wo (240 Deg)	None					24			
12	Antenna Wo (270 Deg)	None					24			
13	Antenna Wo (300 Deg)	None					24			
14	Antenna Wo (330 Deg)	None					24			
15	Antenna Wi (0 Deg)	None					24			
16	Antenna Wi (30 Deg)	None					24			
17	Antenna Wi (60 Deg)	None					24			
18	Antenna Wi (90 Deg)	None					24			
19	Antenna Wi (120 Deg)	None					24			
20	Antenna Wi (150 Deg)	None					24			
21	Antenna Wi (180 Deg)	None					24			
22	Antenna Wi (210 Deg)	None					24			
23	Antenna Wi (240 Deg)	None					24			
24	Antenna Wi (270 Deg)	None					24			
25	Antenna Wi (300 Deg)	None					24			
26	Antenna Wi (330 Deg)	None					24			
27	Antenna Wm (0 Deg)	None					24			
28	Antenna Wm (30 Deg)	None					24			
29	Antenna Wm (60 Deg)	None					24			
30	Antenna Wm (90 Deg)	None					24			
31	Antenna Wm (120 De...	None					24			
32	Antenna Wm (150 De...	None					24			
33	Antenna Wm (180 De...	None					24			
34	Antenna Wm (210 De...	None					24			
35	Antenna Wm (240 De...	None					24			
36	Antenna Wm (270 De...	None					24			
37	Antenna Wm (300 De...	None					24			
38	Antenna Wm (330 De...	None					24			
39	Structure D	None		-1						
40	Structure Di	None						35		
41	Structure Wo (0 Deg)	None						70		
42	Structure Wo (30 Deg)	None						70		
43	Structure Wo (60 Deg)	None						70		
44	Structure Wo (90 Deg)	None						70		
45	Structure Wo (120 De...	None						70		
46	Structure Wo (150 De...	None						70		
47	Structure Wo (180 De...	None						70		
48	Structure Wo (210 De...	None						70		
49	Structure Wo (240 De...	None						70		
50	Structure Wo (270 De...	None						70		
51	Structure Wo (300 De...	None						70		
52	Structure Wo (330 De...	None						70		
53	Structure Wi (0 Deg)	None						70		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
54	Structure Wi (30 Deg)	None						70		
55	Structure Wi (60 Deg)	None						70		
56	Structure Wi (90 Deg)	None						70		
57	Structure Wi (120 Deg)	None						70		
58	Structure Wi (150 Deg)	None						70		
59	Structure Wi (180 Deg)	None						70		
60	Structure Wi (210 Deg)	None						70		
61	Structure Wi (240 Deg)	None						70		
62	Structure Wi (270 Deg)	None						70		
63	Structure Wi (300 Deg)	None						70		
64	Structure Wi (330 Deg)	None						70		
65	Structure Wm (0 Deg)	None						70		
66	Structure Wm (30 Deg)	None						70		
67	Structure Wm (60 Deg)	None						70		
68	Structure Wm (90 Deg)	None						70		
69	Structure Wm (120 D...	None						70		
70	Structure Wm (150 D...	None						70		
71	Structure Wm (180 D...	None						70		
72	Structure Wm (210 D...	None						70		
73	Structure Wm (240 D...	None						70		
74	Structure Wm (270 D...	None						70		
75	Structure Wm (300 D...	None						70		
76	Structure Wm (330 D...	None						70		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					24			
82	Antenna Eh (0 Deg)	None					16			
83	Antenna Eh (90 Deg)	None					16			
84	Structure Ev	ELY		-.034						
85	Structure Eh (0 Deg)	ELZ	-.086							
86	Structure Eh (90 Deg)	ELX			.086					

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...	B...	Fa...
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1														
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1														
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1														
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1														
5	1.2D+1.0Wo (120 De...	Yes	Y		1	1.2	39	1.2	7	1	45	1														
6	1.2D+1.0Wo (150 De...	Yes	Y		1	1.2	39	1.2	8	1	46	1														
7	1.2D+1.0Wo (180 De...	Yes	Y		1	1.2	39	1.2	9	1	47	1														
8	1.2D+1.0Wo (210 De...	Yes	Y		1	1.2	39	1.2	10	1	48	1														
9	1.2D+1.0Wo (240 De...	Yes	Y		1	1.2	39	1.2	11	1	49	1														
10	1.2D+1.0Wo (270 De...	Yes	Y		1	1.2	39	1.2	12	1	50	1														
11	1.2D+1.0Wo (300 De...	Yes	Y		1	1.2	39	1.2	13	1	51	1														
12	1.2D+1.0Wo (330 De...	Yes	Y		1	1.2	39	1.2	14	1	52	1														
13	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1										
14	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1										
15	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1										
16	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1										
17	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1										
18	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1										
19	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1										

Load Combinations (Continued)

	Description	S...	P...	SRSS	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
20	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83		ELZ	1	E...					
53	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866				
57	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
58	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...					
59	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
60	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
61	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				
63	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5				
64	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83		ELZ	1	E...					
65	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...					
71	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
72	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
73	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				
75	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	ELZ	.866	E...	-.5				

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	2.333333	4.33	0	
2	N2	0	0	4.33	0	
3	N9	0	2.333333	8.08	0	
4	N10	0	0	7.663333	0	
5	N11	-8.25	2.333333	8.08	0	
6	N12	-8.25	0	7.663333	0	
7	N13	-7.75	2.333333	8.08	0	
8	N14	-7.75	0	7.663333	0	
9	N15	-4.5	2.333333	8.08	0	
10	N16	-4.5	0	7.663333	0	
11	N23	6.75	2.333333	8.08	0	
12	N24	6.75	0	7.663333	0	
13	NP1	-7.25	6	8.23	0	
14	NP2	-7.25	-1	8.23	0	
15	NP3	-3	6	8.23	0	
16	NP4	-3	-1	8.23	0	
17	NP7	5.749996	6	8.23	0	
18	NP8	5.749996	-1	8.23	0	
19	N31	-1.25	2.333333	8.08	0	
20	N32	-1.25	0	7.663333	0	
21	N27	-.25	2.333333	8.08	0	
22	N28	-.25	0	7.663333	0	
23	N29	3	2.333333	8.08	0	
24	N30	3	0	7.663333	0	
25	N31A	6.25	2.333333	8.08	0	
26	N32A	6.25	0	7.663333	0	
27	N27A	0	0	7.413333	0	
28	N28A	0	0	6.163333	0	
29	N29A	0	0	4.830003	0	
30	N30A	0	2.333333	7.413333	0	
31	N31B	0	2.333333	6.163333	0	
32	N32B	0	2.333333	4.830003	0	
33	N33	1.41666	6	8.23	0	
34	N34	1.41666	-1	8.23	0	
35	N35	-7.25	2.333333	8.08	0	
36	N36	-3	2.333333	8.08	0	
37	N37	5.749996	2.333333	8.08	0	
38	N38	1.41666	2.333333	8.08	0	
39	N40	-3	0	8.23	0	
40	N41	5.749996	0	8.23	0	
41	N42	1.41666	0	8.23	0	
42	N157A	-7.25	0	8.23	0	
43	N158	-7.25	0	7.663333	0	
44	N73	0	3.583333	4.33	0	
45	N74	0	-1.25	4.33	0	
46	N75	0	3.083333	4.33	0	
47	N76A	0	-.75	4.33	0	
48	N93	0	3.083333	4.059367	0	
49	N94	0	-.75	4.059367	0	
50	N95	0	.5	4.06	0	
51	N95A	-3.000004	0	7.663333	0	
52	N96	1.416663	0	7.663333	0	
53	N97	5.70833	0	7.663333	0	
54	N55	0	2.708333	4.33	0	
55	N56	0	-.375	4.33	0	
56	N58	0	2.708333	4.059367	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
57	N59	0	-.375	4.059367	0	
58	N61	0	2.895833	4.059367	0	
59	N62	0	-0.5625	4.059367	0	
60	N61A	-7.75	0.364478	7.728419	0	
61	N61B	-4	4.333333	8.08	0	
62	N62A	-8.25	4.333333	8.08	0	
63	N63	6.75	4.333333	8.08	0	
64	N64	-7.25	4.333333	8.08	0	
65	N65	-3	4.333333	8.08	0	
66	N66	5.749996	4.333333	8.08	0	
67	N67	0	4.3333	4.059367	0	
68	N68	3	4.333333	8.08	0	
69	N69	-4.5	4.333333	8.08	0	
70	N70	0	6.3333	4.059367	0	
71	N71	3.5	4.333333	8.08	0	
72	N72	1.41666	4.333333	8.08	0	
73	N73A	4	4.333333	8.08	0	
74	N74A	2.25	4.3333	0.162253	0	
75	N75A	-7.25	2.333333	8.23	0	
76	N76	-3	2.333333	8.23	0	
77	N77	5.749996	2.333333	8.23	0	
78	N78	1.41666	2.333333	8.23	0	
79	N79	-7.25	4.333333	8.23	0	
80	N80	-3	4.333333	8.23	0	
81	N81	5.749996	4.333333	8.23	0	
82	N82	1.41666	4.333333	8.23	0	

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	PLT	PL3/4X2	Beam	RECT	A36 Gr.36	Typical	1.5	.07	.5	.215
2	Rod	0.5_All_Thread	Beam	BAR	A36 Gr.36	Typical	.142	.002	.002	.003
3	N SR	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	N V Brace	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
5	N Stabilizer	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N11	N9			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
2	M2	N12	N10			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
3	M3	N1	N9			PIPE_4.0	Beam	Pipe	A53 Gr.B	DR1
4	M4	N2	N10			PIPE_4.0	Beam	Pipe	A53 Gr.B	DR1
5	MP5A	N13	N14			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
6	M9	N15	N16			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
7	MP4A	NP1	NP2			PIPE_2.0X	Beam	Pipe	A992	DR1
8	MP3A	NP3	NP4			PIPE_2.0X	Beam	Pipe	A992	DR1
9	MP1A	NP7	NP8			PIPE_2.0X	Beam	Pipe	A992	DR1
10	M16	N31	N32			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
11	M14	N27	N28			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
12	M15	N29	N30			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
13	M16A	N31A	N32A			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
14	M14A	N32B	N29A			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
15	M15A	N31B	N28A			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
16	M16B	N30A	N27A			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
17	MP2A	N33	N34			PIPE_2.0X	Beam	Pipe	A992	DR1
18	M112	N9	N23			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
19	M113	N10	N24			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
20	M38	N61A	N95			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
21	M44	N73	N74			PIPE_4.0	Beam	Pipe	A53 Gr.B	Typical
22	M45	N75	N93		90	PLT	Beam	RECT	A36 Gr.36	Typical
23	M46	N76A	N94		90	PLT	Beam	RECT	A36 Gr.36	Typical
24	M44A	N158	N157A			Rod	Beam	BAR	A36 Gr.36	Typical
25	M45A	N95A	N40			Rod	Beam	BAR	A36 Gr.36	Typical
26	M46A	N96	N42			Rod	Beam	BAR	A36 Gr.36	Typical
27	M47A	N97	N41			Rod	Beam	BAR	A36 Gr.36	Typical
28	M28	N55	N58		90	PLT	Beam	RECT	A36 Gr.36	Typical
29	M29	N56	N59		90	PLT	Beam	RECT	A36 Gr.36	Typical
30	M30	N93	N58			RIGID	Beam	None	RIGID	DR1
31	M31	N59	N94			RIGID	Beam	None	RIGID	DR1
32	M32	N62A	N63			N SR	Beam	Pipe	A53 Gr.B	Typical
33	M33	N67	N61B			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
34	M34	N67	N68			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
35	M35	N70	N69			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
36	M36	N70	N71			N V Brace	Beam	Single Angle	A36 Gr.36	Typical
37	M37	N73A	N74A			N Stabilizer	Beam	Pipe	A53 Gr.B	Typical
38	M38A	N64	N79			RIGID	Beam	None	RIGID	DR1
39	M39	N35	N75A			RIGID	Beam	None	RIGID	DR1
40	M40	N65	N80			RIGID	Beam	None	RIGID	DR1
41	M41	N36	N76			RIGID	Beam	None	RIGID	DR1
42	M42	N72	N82			RIGID	Beam	None	RIGID	DR1
43	M43	N38	N78			RIGID	Beam	None	RIGID	DR1
44	M44B	N66	N81			RIGID	Beam	None	RIGID	DR1
45	M45B	N37	N77			RIGID	Beam	None	RIGID	DR1

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	MP5A						Yes				None
6	M9						Yes				None
7	MP4A						Yes		-z		None
8	MP3A						Yes		-z		None
9	MP1A						Yes		-z		None
10	M16						Yes				None
11	M14						Yes				None
12	M15						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...
13	M16A						Yes				None
14	M14A						Yes				None
15	M15A						Yes				None
16	M16B						Yes				None
17	MP2A						Yes		-z		None
18	M112						Yes				None
19	M113						Yes				None
20	M38	BenPIN	BenPIN				Yes				None
21	M44						Yes				None
22	M45						Yes				None
23	M46						Yes				None
24	M44A						Yes			Exclude	None
25	M45A						Yes			Exclude	None
26	M46A						Yes			Exclude	None
27	M47A						Yes			Exclude	None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes				None
31	M31						Yes				None
32	M32						Yes				None
33	M33	BenPIN	BenPIN				Yes				None
34	M34	BenPIN	BenPIN				Yes				None
35	M35	BenPIN	BenPIN				Yes				None
36	M36	BenPIN	BenPIN				Yes				None
37	M37	BenPIN	BenPIN				Yes				None
38	M38A						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44B						Yes				None
45	M45B						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	PIPE_2.0	8.25			Lbyy						Lateral
2	M2	PIPE_2.0	8.25			Lbyy						Lateral
3	M3	PIPE_4.0	3.75			Lbyy						Lateral
4	M4	PIPE_4.0	3.333			Lbyy						Gravity
5	MP5A	PIPE_2.0	2.37			Lbyy						Gravity
6	M9	PIPE_2.0	2.37			Lbyy						Gravity
7	MP4A	PIPE_2.0X	7			Lbyy						Lateral
8	MP3A	PIPE_2.0X	7			Lbyy						Lateral
9	MP1A	PIPE_2.0X	7			Lbyy						Lateral
10	M16	PIPE_2.0	2.37			Lbyy						Gravity
11	M14	PIPE_2.0	2.37			Lbyy						Gravity
12	M15	PIPE_2.0	2.37			Lbyy						Gravity
13	M16A	PIPE_2.0	2.37			Lbyy						Gravity
14	M14A	PIPE_2.0	2.333			Lbyy						Lateral
15	M15A	PIPE_2.0	2.333			Lbyy						Lateral
16	M16B	PIPE_2.0	2.333			Lbyy						Lateral
17	MP2A	PIPE_2.0X	7			Lbyy						Lateral
18	M112	PIPE_2.0	6.75			Lbyy						Lateral
19	M113	PIPE_2.0	6.75			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
20	M38	PIPE_2.0	8.575			Lbyy						Lateral
21	M44	PIPE_4.0	4.833			Lbyy						Lateral
22	M45	PLT	.271			Lbyy						Lateral
23	M46	PLT	.271			Lbyy						Lateral
24	M44A	Rod	.567			Lbyy						Lateral
25	M45A	Rod	.567			Lbyy						Lateral
26	M46A	Rod	.567			Lbyy						Lateral
27	M47A	Rod	.568			Lbyy						Lateral
28	M28	PLT	.271			Lbyy						Lateral
29	M29	PLT	.271			Lbyy						Lateral
30	M32	N SR	15			Lbyy						Lateral
31	M33	N V Brace	5.671			Lbyy						Lateral
32	M34	N V Brace	5.017			Lbyy						Lateral
33	M35	N V Brace	6.357			Lbyy						Lateral
34	M36	N V Brace	5.693			Lbyy						Lateral
35	M37	N Stabilizer	8.109			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						
2	N2						
3	N73						
4	N74						
5	N75						
6	N76A						
7	N93						
8	N94						
9	N95	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N55						
11	N56						
12	N58						
13	N59						
14	N61	Reaction	Reaction	Reaction	Reaction		Reaction
15	N62	Reaction	Reaction	Reaction	Reaction		Reaction
16	N67	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
17	N70	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18	N74A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N95	max	524.191	7	38.904	19	365.195	1	.072	26	.001	26	.011	8
2		min	-681.596	1	5.49	1	-294.241	7	-.022	8	0	8	-.034	26
3	N61	max	131.728	29	692.124	11	599.017	5	.053	9	0	75	.165	12
4		min	-140.717	11	-100.227	5	-1704.596	11	-.083	3	0	1	-.119	6
5	N62	max	515.493	12	685.692	12	2176.57	12	.187	1	0	75	.03	8
6		min	-440.517	6	-113.918	6	-1021.41	6	-.243	7	0	1	-.077	26
7	N67	max	3276.638	11	59.549	18	3943.198	12	0	2	0	75	0	11
8		min	-3440.69	5	14.18	12	-1458.777	6	0	8	0	1	0	5
9	N70	max	2776.965	30	1523.956	18	321.602	11	.001	12	0	27	0	9
10		min	-673.222	12	-112.146	11	-2932.901	18	0	6	0	9	0	27
11	N74A	max	614.148	5	37.674	23	2852.105	5	.005	11	0	75	.023	11
12		min	-606.891	11	12.166	68	-2874.087	11	-.004	5	0	1	-.017	5
13	Totals:	max	2206.521	11	2656.8	18	3477.623	1						
14		min	-2206.52	5	938.413	74	-3477.602	7						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
1	M1	1	max	0	75	0	32	.011	12	0	75	0	75	0	75
2			min	0	1	-.003	12	0	14	0	1	0	1	0	1
3		2	max	238.884	7	49.183	5	.136	6	.047	7	.076	5	.041	5
4			min	-78.725	1	-234.709	35	-83.018	36	-.112	25	-.053	11	-.114	35
5		3	max	257.9	6	-22.81	5	68.679	7	.015	8	.081	6	.001	6
6			min	-285.109	12	-305.607	35	-110.563	1	-.119	26	-.07	12	-.063	24
7		4	max	272.136	9	365.836	6	83.263	12	.082	12	.036	6	.053	5
8			min	-222.389	3	-479.983	12	-67.966	6	-.076	6	-.084	36	-.033	11
9		5	max	293.78	6	457.594	24	414.671	12	.018	6	.176	11	.172	35
10			min	-354.067	12	-21.284	6	-171.415	6	-.169	24	-.112	5	-.003	41
11	M2	1	max	0	75	0	20	.009	12	0	75	0	75	0	75
12			min	0	1	-750	30	0	14	0	1	0	1	0	1
13		2	max	426.436	7	-10.984	7	15.993	2	.039	7	.035	3	.044	26
14			min	-504.952	1	-124.569	25	-20.84	8	-.091	25	-.029	9	-.018	8
15		3	max	627.004	31	33.654	6	14.329	12	.025	11	.019	2	.059	6
16			min	-318.553	1	-93.564	12	-16.651	6	-.075	29	-.013	8	-.139	12
17		4	max	646.717	31	45.86	6	43.455	7	.03	11	.026	6	.081	36
18			min	-297.11	1	-121.67	12	-62.883	1	-.08	29	-.034	12	-.021	6
19		5	max	527.383	32	396.068	6	217.86	6	.04	6	.086	7	.221	35
20			min	-210.336	2	-1046.992	12	-467.621	12	-.206	12	-.16	1	.009	5
21	M3	1	max	557.944	5	678.16	11	62.519	8	.46	11	.318	6	1.129	11
22			min	-1364.845	11	-135.101	5	-52.613	2	-.34	5	-.343	12	-.302	5
23		2	max	537.857	5	616.014	11	60.622	11	.476	11	.318	6	.671	12
24			min	-1250.911	11	-146.43	5	-54.444	3	-.345	5	-.338	12	-.208	6
25		3	max	474.79	5	644.551	12	106.314	11	.453	11	.323	6	.409	12
26			min	-1003.445	11	-168.377	6	-116.709	5	-.293	5	-.339	12	-.162	6
27		4	max	479.741	5	633.22	12	114.89	11	.453	11	.221	6	.019	5
28			min	-1008.396	11	-179.709	6	-125.285	5	-.293	5	-.246	12	-.326	47
29		5	max	403.348	5	84.833	6	216.709	11	.375	11	.09	7	.02	1
30			min	-745.108	11	-190.977	48	-264.833	5	-.151	5	-.145	1	-.143	43
31	M4	1	max	1809.639	12	656.506	12	326.173	6	.341	11	.24	12	1.302	12
32			min	-954.205	6	-165.759	6	-397.087	12	-.336	5	-.231	6	-.387	6
33		2	max	1674.272	12	654.592	12	318.419	6	.348	11	.128	8	.903	12
34			min	-913.054	6	-152.523	6	-383.341	12	-.343	5	-.173	2	-.29	6
35		3	max	1671.758	12	644.52	12	316.968	6	.348	11	.285	7	.362	12
36			min	-910.54	6	-162.596	6	-381.89	12	-.343	5	-.384	1	-.159	6
37		4	max	1399.816	12	583.725	11	364.542	6	.302	11	.507	6	.179	12
38			min	-823.817	6	-170.314	5	-411.79	12	-.293	5	-.647	12	-.121	6
39		5	max	1107.277	12	1238.24	12	487.56	6	.199	9	.796	6	.034	2
40			min	-719.108	6	-451.251	6	-496.456	12	-.17	3	-.968	12	-.195	44
41	MP5A	1	max	-3.684	2	127.229	25	340.098	25	.087	25	.073	8	.113	25
42			min	-682.21	32	-62.844	7	-93.678	7	-.055	7	-.293	26	-.073	7
43		2	max	-.395	2	127.068	25	340.098	25	.087	25	.042	9	.041	1
44			min	-679.822	32	-68.791	7	-93.678	7	-.055	7	-.092	27	-.034	7
45		3	max	17.694	2	126.597	1	340.098	25	.087	25	.111	36	.016	8
46			min	-664.53	32	-85.346	7	-93.678	7	-.055	7	-.055	6	-.038	26
47		4	max	20.983	2	131.677	1	340.098	25	.087	25	.312	25	.063	7
48			min	-662.143	32	-91.293	7	-93.678	7	-.055	7	-.096	7	-.112	26
49		5	max	25.684	19	102.257	7	430.498	7	.092	25	.505	35	.04	7
50			min	-646.88	25	-139.434	1	-510.653	1	-.055	7	.028	70	-.095	25
51	M9	1	max	22.89	11	54.936	6	353.726	36	.087	26	.04	6	.04	6
52			min	-69.254	29	-52.647	12	-44.629	6	-.028	8	-.481	36	-.033	12
53		2	max	25.824	11	49.69	6	353.587	36	.087	26	.014	6	.01	31
54			min	-66.849	29	-48.268	12	-41.806	6	-.028	8	-.272	36	-.003	1
55		3	max	28.758	11	44.443	6	353.447	36	.087	26	-.008	8	.025	12
56			min	-64.444	29	-43.889	12	-38.984	6	-.028	8	-.062	26	-.019	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
57		4	max	31.691	11	39.196	6	353.308	36	.087	26	.147	36	.049	12
58			min	-62.04	29	-39.511	12	-36.161	6	-.028	8	-.032	6	-.044	6
59		5	max	34.625	11	33.95	6	353.168	36	.087	26	.356	36	.072	12
60			min	-59.635	29	-35.132	12	-33.339	6	-.028	8	-.053	6	-.065	6
61	MP4A	1	max	104.38	23	115.15	10	164.958	1	.086	10	-.029	75	0	75
62			min	39.084	69	-115.074	4	-165.011	7	-.086	4	-.078	19	0	1
63		2	max	48.023	12	42.598	3	134.936	7	.15	25	.034	12	.033	3
64			min	-548.431	30	-547.527	33	-17.218	1	-.094	7	-.406	30	-.645	33
65		3	max	58.027	12	23.119	3	126.717	31	.15	25	.031	12	.313	33
66			min	-538.427	30	-546.565	33	5.274	1	-.094	7	-.183	30	-.025	3
67		4	max	4.542	36	9.142	8	73.152	1	.011	3	.022	7	.006	8
68			min	-16.671	6	-15.288	26	-34.789	7	-.01	9	-.048	1	-.01	26
69		5	max	0	75	.009	11	.006	8	0	5	0	75	0	75
70			min	0	29	-.008	5	-.019	26	0	11	0	1	0	1
71	MP3A	1	max	0	75	.007	29	.005	2	0	11	0	75	0	75
72			min	0	36	-.007	11	-.015	23	0	29	0	1	0	1
73		2	max	326.841	12	396.096	5	174.955	7	.107	11	.291	1	.408	5
74			min	-469.434	30	-500.898	11	-218.143	1	-.053	5	-.314	7	-.447	11
75		3	max	336.845	12	376.617	5	152.463	7	.107	11	-.028	7	.414	12
76			min	-459.43	30	-481.42	11	-195.651	1	-.053	5	-.211	25	-.268	5
77		4	max	9.25	12	9.322	6	39.442	12	.009	14	.006	6	.009	5
78			min	-31.047	6	-29.869	12	-21.027	6	0	7	-.023	36	-.024	11
79		5	max	0	75	.006	11	.006	12	0	5	0	75	0	75
80			min	0	36	-.006	5	-.006	6	0	11	0	1	0	1
81	MP1A	1	max	105.1	18	115.081	10	164.713	1	.086	10	-.03	75	0	75
82			min	39.603	75	-115.145	4	-164.871	7	-.086	4	-.079	18	0	1
83		2	max	24.901	12	378.815	5	364.61	8	.068	3	.545	2	.396	5
84			min	-147.271	18	-241.239	11	-289.18	2	-.059	9	-.666	8	-.185	11
85		3	max	34.905	12	361.267	6	345.132	8	.068	3	.16	12	.242	12
86			min	-133.663	6	-225.568	12	-269.702	2	-.059	9	-.144	6	-.269	6
87		4	max	-.438	3	51.644	12	42.995	2	.022	5	.005	8	.037	12
88			min	-18.606	21	-41.946	6	-11.565	8	-.025	11	-.027	2	-.03	6
89		5	max	0	5	.005	9	.02	2	0	3	0	75	0	75
90			min	0	11	-.006	3	-.016	8	0	9	0	1	0	1
91	M16	1	max	124.854	11	28.465	9	319.464	12	.073	6	.264	6	.043	12
92			min	-206.327	29	-10.141	3	-204.848	6	-.081	12	-.404	12	-.019	6
93		2	max	127.788	11	25.209	9	316.641	12	.073	6	.143	6	.031	12
94			min	-203.922	29	-7.752	3	-202.026	6	-.081	12	-.215	12	-.018	6
95		3	max	130.722	11	27.051	12	313.818	12	.073	6	.024	6	.017	12
96			min	-201.518	29	-9.988	6	-199.203	6	-.081	12	-.029	12	-.014	6
97		4	max	133.655	11	31.43	12	310.996	12	.073	6	.156	12	.01	26
98			min	-199.113	29	-15.234	6	-196.381	6	-.081	12	-.093	6	-.014	8
99		5	max	136.731	12	35.808	12	308.173	12	.073	6	.34	12	.01	29
100			min	-196.708	29	-20.481	6	-193.558	6	-.081	12	-.208	6	-.024	47
101	M14	1	max	820.466	12	164.423	12	169.892	12	.052	5	.174	6	.199	12
102			min	-203.196	6	-54.462	6	-165.222	6	-.054	11	-.154	12	-.075	6
103		2	max	823.755	12	168.802	12	167.069	12	.052	5	.089	30	.1	12
104			min	-201.626	6	-59.708	6	-162.399	6	-.054	11	-.054	12	-.041	6
105		3	max	827.044	12	173.181	12	164.247	12	.052	5	.044	11	.002	2
106			min	-200.056	6	-64.955	6	-159.577	6	-.054	11	-.019	5	-.013	44
107		4	max	830.333	12	177.56	12	161.424	12	.052	5	.14	12	.036	6
108			min	-198.485	6	-70.201	6	-156.754	6	-.054	11	-.112	6	-.105	12
109		5	max	833.622	12	181.939	12	158.601	12	.052	5	.235	12	.079	6
110			min	-196.915	6	-75.448	6	-153.932	6	-.054	11	-.204	6	-.212	12
111	M15	1	max	99.137	8	60.914	6	102.622	6	.103	2	.296	12	.057	7
112			min	-69.957	2	-60.601	1	-272.507	12	-.092	8	-.103	6	-.058	1
113		2	max	100.708	8	55.668	6	105.841	5	.103	2	.134	12	.023	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
114			min	-66.668	2	-55.741	12	-275.33	12	-.092	8	-.041	6	-.023	1
115		3	max	102.278	8	50.421	6	110.807	5	.103	2	.028	5	.017	11
116			min	-63.379	2	-51.362	12	-279.387	11	-.092	8	-.036	11	-.017	5
117		4	max	103.848	8	45.175	6	115.773	5	.103	2	.096	5	.046	12
118			min	-60.09	2	-46.983	12	-284.353	11	-.092	8	-.203	11	-.045	6
119		5	max	105.418	8	39.928	6	120.739	5	.103	2	.166	5	.072	12
120			min	-56.801	2	-42.605	12	-289.319	11	-.092	8	-.373	11	-.07	6
121	M16A	1	max	80.951	11	67.031	8	124.564	6	.046	2	.238	11	.048	8
122			min	-89.034	5	-69.307	2	-171.942	12	-.041	8	-.193	5	-.053	2
123		2	max	83.884	11	61.784	8	129.108	5	.046	2	.135	11	.012	7
124			min	-87.108	5	-64.928	2	-175.714	11	-.041	8	-.118	5	-.017	1
125		3	max	86.818	11	56.538	8	134.074	5	.046	2	.029	11	.024	2
126			min	-85.183	5	-60.549	2	-180.68	11	-.041	8	-.04	5	-.025	8
127		4	max	89.752	11	51.291	8	139.04	5	.046	2	.043	6	.058	2
128			min	-83.257	5	-56.17	2	-185.646	11	-.041	8	-.081	12	-.057	8
129		5	max	92.685	11	46.045	8	144.006	5	.046	2	.125	5	.09	2
130			min	-81.332	5	-51.791	2	-190.612	11	-.041	8	-.191	11	-.086	8
131	M14A	1	max	49.295	2	7.191	7	118.885	11	.04	6	.034	5	.016	11
132			min	-100.1	8	-2.701	1	-25.039	5	-.044	12	-.143	11	-.005	5
133		2	max	51.725	2	9.816	8	121.717	11	.04	6	.018	5	.015	11
134			min	-97.67	8	-5.404	2	-27.871	5	-.044	12	-.073	11	-.006	5
135		3	max	54.154	2	12.648	8	124.549	11	.04	6	.003	7	.01	11
136			min	-95.241	8	-8.235	2	-30.702	5	-.044	12	-.003	1	-.005	5
137		4	max	56.584	2	17.122	9	127.949	12	.04	6	.072	11	.009	1
138			min	-92.811	8	-12.593	3	-33.733	6	-.044	12	-.018	5	-.006	7
139		5	max	59.014	2	22.027	9	132.853	12	.04	6	.147	11	.015	2
140			min	-90.382	8	-17.498	3	-38.637	6	-.044	12	-.038	5	-.015	8
141	M15A	1	max	104.949	48	59.598	6	252.416	11	.053	5	.083	5	.073	30
142			min	-117.004	49	-45.183	12	-68.018	5	-.054	11	-.299	12	-.032	12
143		2	max	107.378	48	56.766	6	255.247	11	.053	5	.044	6	.042	30
144			min	-114.574	49	-42.351	12	-70.85	5	-.054	11	-.151	12	-.006	12
145		3	max	109.808	48	53.934	6	259.617	12	.053	5	.002	7	.018	12
146			min	-112.145	49	-39.519	12	-74.402	6	-.054	11	-.002	1	-.005	6
147		4	max	112.238	48	52.676	30	264.521	12	.053	5	.151	12	.04	12
148			min	-109.715	49	-36.688	12	-79.306	6	-.054	11	-.043	6	-.036	6
149		5	max	114.667	48	52.537	30	269.426	12	.053	5	.307	12	.061	12
150			min	-107.286	49	-33.856	12	-84.211	6	-.054	11	-.091	6	-.065	6
151	M16B	1	max	275.846	6	153.029	30	270.452	12	.055	29	.102	6	.198	30
152			min	-804.043	48	-98.701	12	-82.565	6	-.049	11	-.316	12	-.085	12
153		2	max	278.275	6	152.889	30	275.357	12	.055	29	.052	6	.108	30
154			min	-801.614	48	-95.869	12	-87.469	6	-.049	11	-.157	12	-.029	12
155		3	max	280.705	6	152.749	30	280.261	12	.055	29	.01	45	.026	12
156			min	-799.184	48	-93.038	12	-92.374	6	-.049	11	-.001	3	-.006	6
157		4	max	283.135	6	152.609	30	285.166	12	.055	29	.17	12	.08	12
158			min	-796.754	48	-90.206	12	-97.278	6	-.049	11	-.056	6	-.081	6
159		5	max	285.564	6	152.469	30	290.07	12	.055	29	.338	12	.132	12
160			min	-794.325	48	-87.375	12	-102.183	6	-.049	11	-.114	6	-.159	30
161	MP2A	1	max	206.859	18	272.131	9	547.99	1	.204	11	-.04	75	0	6
162			min	53.151	74	-272.116	3	-548.197	7	-.204	5	-.155	19	0	8
163		2	max	196.069	11	312.75	29	494.423	6	.119	2	.548	12	.305	5
164			min	-245.743	5	-160.19	11	-537.059	12	-.145	8	-.662	6	-.292	11
165		3	max	296.073	11	307.905	29	387.174	6	.153	2	.198	3	0	2
166			min	-145.739	5	-62.052	11	-429.81	12	-.179	8	-.263	9	-.267	32
167		4	max	-55.748	74	174.114	3	152.503	23	.253	5	.078	5	.131	3
168			min	-219.081	17	-140.691	9	-40.657	5	-.265	11	-.043	11	-.107	9
169		5	max	0	5	.02	11	.009	13	0	5	0	75	0	75
170			min	0	11	-.019	5	-.005	7	0	11	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
171	M112	1	max	542.016	6	479.656	24	233.801	5	.129	6	.135	8	.431	11
172			min	-549.524	12	58.365	5	-331.41	11	-.156	12	-.122	2	-.115	5
173		2	max	518.786	6	127.383	2	208.329	12	.147	8	.427	6	.203	5
174			min	-609.805	12	-59.356	8	-162.71	6	-.151	2	-.554	12	-.226	11
175		3	max	424.3	6	98.089	26	158.932	11	.113	8	.201	5	.077	12
176			min	-345.39	12	24.795	44	-110.158	5	-.116	2	-.271	11	-.016	6
177		4	max	432.433	6	91.061	26	156.22	11	.113	8	.056	7	.013	9
178			min	-353.523	12	17.766	44	-107.447	5	-.116	2	-.042	1	-.088	27
179		5	max	0	75	.001	2	.009	12	0	75	0	75	0	75
180			min	0	1	0	36	-.003	2	0	1	0	1	0	1
181	M113	1	max	730.947	11	220.154	11	706.759	1	.113	7	.824	6	.341	11
182			min	-480.531	5	-83.885	5	-568.103	7	-.125	1	-1.075	12	-.144	5
183		2	max	561.8	11	187.713	11	75.649	12	.114	7	.168	5	.01	7
184			min	-337.011	5	-76.247	5	-39.784	6	-.123	1	-.222	11	-.026	1
185		3	max	267.719	11	97.372	12	93.601	12	.088	8	.12	6	.078	12
186			min	-211.608	5	-52.622	6	-65.072	6	-.093	2	-.167	12	-.049	6
187		4	max	263.024	11	90.344	12	79.514	12	.088	8	.052	2	.05	5
188			min	-206.912	5	-59.651	6	-50.985	6	-.093	2	-.05	8	-.085	11
189		5	max	0	75	.001	2	.009	12	0	75	0	75	0	75
190			min	0	1	0	36	-.005	2	0	1	0	1	0	1
191	M38	1	max	734.169	1	39.314	17	54.561	12	.025	8	0	75	0	75
192			min	-560.952	7	12.861	65	-54.561	6	-.079	26	0	1	0	1
193		2	max	743.658	1	19.657	17	27.281	12	.025	8	.088	12	-.021	65
194			min	-570.723	7	6.43	65	-27.281	6	-.079	26	-.088	6	-.063	17
195		3	max	753.147	1	0	75	0	75	.025	8	.117	12	-.028	65
196			min	-580.495	7	0	1	0	1	-.079	26	-.117	6	-.084	17
197		4	max	762.636	1	-6.43	65	27.281	6	.025	8	.088	12	-.021	65
198			min	-590.266	7	-19.657	17	-27.281	12	-.079	26	-.088	6	-.063	17
199		5	max	772.126	1	-12.861	65	54.561	6	.025	8	0	75	0	75
200			min	-600.037	7	-39.314	17	-54.561	12	-.079	26	0	1	0	1
201	M44	1	max	0	75	0	6	0	75	0	75	0	75	0	75
202			min	0	1	0	12	0	13	0	1	0	1	0	1
203		2	max	118.147	5	157.401	11	1714.15	11	.036	29	.66	11	.186	5
204			min	-674.204	11	-134.505	5	-608.588	5	-.041	11	-.213	5	-.244	11
205		3	max	57.048	8	127.976	11	358.064	11	.349	6	.034	8	.072	12
206			min	-40.371	2	-106.29	5	-59.385	5	-.384	12	-.02	2	-.037	6
207		4	max	667.772	12	506.471	12	2160.981	12	.118	6	.305	6	.238	12
208			min	-131.838	6	-431.502	6	-1005.78	6	-.144	12	-.808	12	-.226	6
209		5	max	0	75	0	8	0	20	0	75	0	75	0	75
210			min	0	1	0	26	0	2	0	1	0	1	0	1
211	M45	1	max	79.187	6	472.875	12	344.846	11	.007	12	.007	5	.07	12
212			min	-498.896	24	-344.796	6	-51.572	5	-.005	6	-.046	11	-.052	6
213		2	max	79.128	6	472.841	12	345.26	11	.007	12	.004	5	.038	12
214			min	-498.873	24	-344.762	6	-51.158	5	-.005	6	-.023	11	-.028	6
215		3	max	79.068	6	472.806	12	345.675	11	.007	12	0	37	.007	8
216			min	-498.85	24	-344.728	6	-50.743	5	-.005	6	0	8	-.007	26
217		4	max	79.009	6	472.772	12	346.089	11	.007	12	.024	11	.018	6
218			min	-498.828	24	-344.693	6	-50.329	5	-.005	6	-.003	5	-.026	12
219		5	max	78.949	6	472.738	12	346.504	11	.007	12	.047	11	.042	6
220			min	-498.805	24	-344.659	6	-49.914	5	-.005	6	-.007	5	-.058	12
221	M46	1	max	596.507	45	271.9	29	341.849	12	.001	8	.008	6	.057	5
222			min	-79.454	3	-210.62	11	-55.376	6	-.003	26	-.046	12	-.059	11
223		2	max	596.502	45	271.909	29	342.263	12	.001	8	.005	6	.041	6
224			min	-79.351	3	-210.799	11	-54.962	6	-.003	26	-.023	12	-.046	12
225		3	max	596.497	45	271.918	29	342.678	12	.001	8	.002	8	.026	6
226			min	-79.248	3	-210.977	11	-54.547	6	-.003	26	0	2	-.033	12
227		4	max	596.491	45	271.927	29	343.092	12	.001	8	.024	24	.012	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
228			min	-79.145	3	-211.155	11	-54.133	6	-.003	26	-.003	5	-.02	12
229		5	max	596.486	45	271.936	29	343.506	12	.001	8	.046	12	.011	8
230			min	-79.042	3	-211.334	11	-53.718	6	-.003	26	-.007	5	-.027	26
231	M28	1	max	541.02	5	231.683	6	343.588	11	.009	12	.007	5	.021	6
232			min	-1231.271	11	-322.907	12	-51.987	5	-.006	6	-.046	11	-.03	12
233		2	max	540.917	5	231.717	6	344.002	11	.009	12	.004	5	.009	7
234			min	-1231.168	11	-322.941	12	-51.573	5	-.006	6	-.022	11	-.012	1
235		3	max	540.814	5	231.751	6	344.417	11	.009	12	.002	48	.014	11
236			min	-1231.065	11	-322.976	12	-51.158	5	-.006	6	0	6	-.01	5
237		4	max	540.711	5	231.785	6	344.831	11	.009	12	.024	11	.036	12
238			min	-1230.962	11	-323.01	12	-50.744	5	-.006	6	-.003	5	-.026	6
239		5	max	540.608	5	231.82	6	345.245	11	.009	12	.048	11	.058	12
240			min	-1230.859	11	-323.044	12	-50.329	5	-.006	6	-.007	5	-.042	6
241	M29	1	max	1686.354	12	215.313	6	340.994	12	.002	8	.009	6	.062	6
242			min	-1043.132	6	-337.004	12	-61.833	6	-.004	26	-.046	12	-.085	12
243		2	max	1686.414	12	215.347	6	341.409	12	.002	8	.005	6	.047	6
244			min	-1043.191	6	-337.039	12	-61.418	6	-.004	26	-.023	12	-.062	12
245		3	max	1686.473	12	215.381	6	341.823	12	.002	8	.003	8	.032	6
246			min	-1043.251	6	-337.073	12	-61.004	6	-.004	26	-.001	2	-.039	12
247		4	max	1686.533	12	215.416	6	342.237	12	.002	8	.024	24	.021	29
248			min	-1043.31	6	-337.107	12	-60.589	6	-.004	26	-.003	5	-.017	11
249		5	max	1686.592	12	215.45	6	342.652	12	.002	8	.047	12	.027	26
250			min	-1043.37	6	-337.141	12	-60.175	6	-.004	26	-.007	6	-.011	8
251	M30	1	max	346.606	11	345.044	6	78.949	6	.042	6	.007	5	.007	12
252			min	-49.913	5	-469.735	12	-498.805	24	-.058	12	-.047	11	-.005	6
253		2	max	346.606	11	345.044	6	78.949	6	.042	6	.012	6	.051	12
254			min	-49.913	5	-469.735	12	-498.805	24	-.058	12	-.093	24	-.037	6
255		3	max	346.606	11	229.507	6	1230.859	11	.042	6	.095	5	.095	12
256			min	-309.31	10	-330.197	12	-540.608	5	-.058	12	-.183	11	-.07	6
257		4	max	50.314	5	229.507	6	1230.859	11	.042	6	.044	5	.028	6
258			min	-345.519	11	-330.197	12	-540.608	5	-.058	12	-.068	11	-.04	12
259		5	max	50.314	5	229.507	6	1230.859	11	.042	6	.048	11	.006	6
260			min	-345.519	11	-330.197	12	-540.608	5	-.058	12	-.007	5	-.009	12
261	M31	1	max	342.288	12	325.024	12	1686.592	12	.027	26	.007	6	.002	8
262			min	-60.2	6	-221.564	6	-1043.37	6	-.011	8	-.047	12	-.004	26
263		2	max	342.288	12	325.024	12	1686.592	12	.027	26	.112	1	.019	6
264			min	-60.2	6	-221.564	6	-1043.37	6	-.011	8	-.093	7	-.03	12
265		3	max	241.921	1	325.024	12	1686.592	12	.027	26	.269	12	.054	29
266			min	-343.404	12	-221.564	6	-1043.37	6	-.011	8	-.189	6	-.06	12
267		4	max	53.718	6	271.378	29	79.042	3	.027	26	.102	11	.029	29
268			min	-343.404	12	-207.022	11	-596.486	45	-.011	8	-.014	5	-.02	11
269		5	max	53.718	6	271.378	29	79.042	3	.027	26	.046	12	.003	26
270			min	-343.404	12	-207.022	11	-596.486	45	-.011	8	-.007	5	-.001	8
271	M32	1	max	0	75	0	20	.032	12	0	75	0	75	0	75
272			min	0	1	-.008	6	-.003	2	0	1	0	1	0	1
273		2	max	2315.116	29	600.163	30	355.725	11	.115	7	.871	6	1.056	30
274			min	-969.156	11	-296.552	12	-2406.638	29	-.225	25	-.559	1	-.052	12
275		3	max	1364.798	6	77.551	29	191.026	3	.064	1	.313	5	.042	26
276			min	-1441.118	12	-32.648	11	-225.039	9	-.135	7	-.613	11	-.061	18
277		4	max	1859.828	6	103.356	32	3048.636	11	.385	8	2.333	6	.301	20
278			min	-1830.225	12	-314.554	17	-1794.527	5	-.404	2	-2.866	12	.025	26
279		5	max	0	75	.008	12	.025	12	0	75	0	75	0	75
280			min	0	1	0	14	-.005	2	0	1	0	1	0	1
281	M33	1	max	3718.807	27	32.558	24	57.744	5	0	9	0	75	0	75
282			min	-645.126	9	9.94	64	-57.744	11	0	27	0	1	0	1
283		2	max	3718.703	27	16.279	24	28.872	5	0	9	.054	5	.033	5
284			min	-643.019	9	4.97	64	-28.872	11	0	27	-.033	11	-.054	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
285		3	max	3718.599	27	0	75	0	75	0	9	.072	5	.044	5
286			min	-640.912	9	0	1	0	1	0	27	-.044	11	-.072	11
287		4	max	3718.495	27	-4.97	75	28.872	11	0	9	.054	5	.033	5
288			min	-638.805	9	-16.279	13	-28.872	5	0	27	-.033	11	-.054	11
289		5	max	3718.391	27	-9.94	75	57.744	11	0	9	0	75	0	75
290			min	-636.698	9	-32.558	13	-57.744	5	0	27	0	1	0	1
291	M34	1	max	4845.194	12	28.798	24	54.547	3	0	12	0	75	0	75
292			min	-3180.62	6	8.792	64	-54.547	9	0	6	0	1	0	1
293		2	max	4844.814	12	14.399	24	27.273	3	0	12	.044	3	.028	3
294			min	-3180.24	6	4.396	64	-27.273	9	0	6	-.028	9	-.044	9
295		3	max	4844.434	12	0	75	0	75	0	12	.059	3	.038	3
296			min	-3179.861	6	0	1	0	1	0	6	-.038	9	-.059	9
297		4	max	4844.055	12	-4.396	75	27.273	9	0	12	.044	3	.028	3
298			min	-3179.481	6	-14.399	13	-27.273	3	0	6	-.028	9	-.044	9
299		5	max	4843.675	12	-8.792	75	54.547	9	0	12	0	75	0	75
300			min	-3179.102	6	-28.798	13	-54.547	3	0	6	0	1	0	1
301	M35	1	max	746.698	12	36.565	13	67.529	6	0	7	0	75	0	75
302			min	-4014.075	30	5.647	7	-67.529	12	-.001	25	0	1	0	1
303		2	max	742.444	12	18.282	13	33.765	6	0	7	.07	5	.048	6
304			min	-4011.315	30	2.824	7	-33.765	12	-.001	25	-.045	11	-.073	12
305		3	max	738.19	12	0	75	0	75	0	7	.093	5	.064	6
306			min	-4008.555	30	0	1	0	1	-.001	25	-.061	11	-.097	12
307		4	max	733.935	12	-2.824	7	33.765	12	0	7	.07	5	.048	6
308			min	-4005.796	30	-18.282	13	-33.765	6	-.001	25	-.045	11	-.073	12
309		5	max	730.265	11	-5.647	7	67.529	12	0	7	0	75	0	75
310			min	-4003.406	29	-36.565	13	-67.529	6	-.001	25	0	1	0	1
311	M36	1	max	-35.132	35	32.565	22	60.976	3	.001	11	0	75	0	75
312			min	-2029.326	17	3.741	4	-60.976	9	-.001	5	0	1	0	1
313		2	max	-33.005	35	16.283	22	30.488	3	.001	11	.056	2	.039	3
314			min	-2022.277	17	1.871	4	-30.488	9	-.001	5	-.037	8	-.059	9
315		3	max	-30.879	35	0	75	0	75	.001	11	.075	2	.053	3
316			min	-2015.227	17	0	1	0	1	-.001	5	-.049	8	-.079	9
317		4	max	-28.752	35	-1.871	4	30.488	9	.001	11	.056	2	.039	3
318			min	-2008.178	17	-16.283	22	-30.488	3	-.001	5	-.037	8	-.059	9
319		5	max	-26.626	35	-3.741	4	60.976	9	.001	11	0	75	0	75
320			min	-2001.129	17	-32.565	22	-60.976	3	-.001	5	0	1	0	1
321	M37	1	max	2955.727	5	37.094	24	48.512	10	.024	11	0	75	0	75
322			min	-2975.625	11	12.182	64	-48.512	4	-.018	5	0	1	0	1
323		2	max	2946.154	5	18.547	24	24.256	10	.024	11	.074	10	-.019	75
324			min	-2966.052	11	6.091	64	-24.256	4	-.018	5	-.074	4	-.056	13
325		3	max	2936.582	5	0	75	0	75	.024	11	.098	10	-.025	75
326			min	-2956.479	11	0	1	0	1	-.018	5	-.098	4	-.075	13
327		4	max	2927.009	5	-6.091	75	24.256	4	.024	11	.074	10	-.019	75
328			min	-2946.906	11	-18.547	13	-24.256	10	-.018	5	-.074	4	-.056	13
329		5	max	2917.436	5	-12.182	75	48.512	4	.024	11	0	75	0	75
330			min	-2937.333	11	-37.094	13	-48.512	10	-.018	5	0	1	0	1
331	M38A	1	max	204.468	1	612.841	30	172.92	3	.681	32	.234	9	.115	7
332			min	-322.083	7	16.139	12	-552.574	33	.115	72	-.219	3	-.225	25
333		2	max	204.468	1	612.841	30	172.92	3	.681	32	.22	8	.108	7
334			min	-322.083	7	16.139	12	-552.574	33	.115	72	-.215	2	-.248	25
335		3	max	204.468	1	612.841	30	172.92	3	.681	32	.207	8	.102	7
336			min	-322.083	7	16.139	12	-552.574	33	.115	72	-.211	2	-.27	25
337		4	max	204.468	1	612.841	30	172.92	3	.681	32	.194	8	.095	7
338			min	-322.083	7	16.139	12	-552.574	33	.115	72	-.207	2	-.293	25
339		5	max	204.468	1	612.841	30	172.92	3	.681	32	.182	8	.088	8
340			min	-322.083	7	16.139	12	-552.574	33	.115	72	-.203	2	-.316	26
341	M39	1	max	119.446	1	119.633	11	525.878	32	.441	33	.12	12	.027	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
342			min	-40.176	7	-478.34	29	74.146	2	-.116	3	-.136	6	-.026	7
343		2	max	119.446	1	119.633	11	525.878	32	.441	33	.125	12	.024	1
344			min	-40.176	7	-478.34	29	74.146	2	-.116	3	-.132	6	-.025	7
345		3	max	119.446	1	119.633	11	525.878	32	.441	33	.129	12	.036	26
346			min	-40.176	7	-478.34	29	74.146	2	-.116	3	-.128	6	-.025	8
347		4	max	119.446	1	119.633	11	525.878	32	.441	33	.134	12	.054	26
348			min	-40.176	7	-478.34	29	74.146	2	-.116	3	-.123	6	-.026	8
349		5	max	119.446	1	119.633	11	525.878	32	.441	33	.138	12	.072	26
350			min	-40.176	7	-478.34	29	74.146	2	-.116	3	-.119	6	-.028	8
351	M40	1	max	240.49	1	479.483	30	416.203	5	.473	11	.037	12	.267	1
352			min	-197.529	7	-316.529	12	-520.638	11	-.425	5	-.071	30	-.25	7
353		2	max	240.49	1	479.483	30	416.203	5	.473	11	.018	1	.271	1
354			min	-197.529	7	-316.529	12	-520.638	11	-.425	5	-.071	31	-.259	7
355		3	max	240.49	1	479.483	30	416.203	5	.473	11	.009	1	.274	1
356			min	-197.529	7	-316.529	12	-520.638	11	-.425	5	-.072	31	-.268	7
357		4	max	240.49	1	479.483	30	416.203	5	.473	11	.006	2	.278	1
358			min	-197.529	7	-316.529	12	-520.638	11	-.425	5	-.073	32	-.277	7
359		5	max	240.49	1	479.483	30	416.203	5	.473	11	.011	5	.282	1
360			min	-197.529	7	-316.529	12	-520.638	11	-.425	5	-.075	35	-.287	7
361	M41	1	max	145.386	6	337.036	12	440.736	12	.578	11	.067	31	.116	12
362			min	-205.765	12	-420.158	30	-353.839	6	-.368	5	-.029	1	-.069	6
363		2	max	145.386	6	337.036	12	440.736	12	.578	11	.067	31	.104	12
364			min	-205.765	12	-420.158	30	-353.839	6	-.368	5	-.021	1	-.054	6
365		3	max	145.386	6	337.036	12	440.736	12	.578	11	.067	32	.112	36
366			min	-205.765	12	-420.158	30	-353.839	6	-.368	5	-.014	2	-.039	6
367		4	max	145.386	6	337.036	12	440.736	12	.578	11	.068	32	.126	25
368			min	-205.765	12	-420.158	30	-353.839	6	-.368	5	-.017	2	-.025	7
369		5	max	145.386	6	337.036	12	440.736	12	.578	11	.068	34	.141	25
370			min	-205.765	12	-420.158	30	-353.839	6	-.368	5	-.023	4	-.018	7
371	M42	1	max	965.004	1	329.497	5	555.083	5	.215	2	.415	9	.48	8
372			min	-925.342	7	-111.109	11	-452.086	11	-.303	32	-.414	3	-.427	2
373		2	max	965.004	1	329.497	5	555.083	5	.215	2	.399	9	.481	8
374			min	-925.342	7	-111.109	11	-452.086	11	-.303	32	-.395	3	-.437	2
375		3	max	965.004	1	329.497	5	555.083	5	.215	2	.384	9	.482	8
376			min	-925.342	7	-111.109	11	-452.086	11	-.303	32	-.375	3	-.446	2
377		4	max	965.004	1	329.497	5	555.083	5	.215	2	.368	9	.483	8
378			min	-925.342	7	-111.109	11	-452.086	11	-.303	32	-.356	3	-.455	2
379		5	max	965.004	1	329.497	5	555.083	5	.215	2	.353	9	.484	8
380			min	-925.342	7	-111.109	11	-452.086	11	-.303	32	-.337	3	-.464	2
381	M43	1	max	388.081	6	410.831	23	91.211	2	.19	9	.2	12	.15	11
382			min	-536.613	12	-37.533	5	-283.591	32	-.447	3	-.193	6	-.127	5
383		2	max	388.081	6	410.831	23	91.211	2	.19	9	.198	12	.136	11
384			min	-536.613	12	-37.533	5	-283.591	32	-.447	3	-.194	6	-.126	5
385		3	max	388.081	6	410.831	23	91.211	2	.19	9	.196	12	.123	11
386			min	-536.613	12	-37.533	5	-283.591	32	-.447	3	-.195	6	-.124	5
387		4	max	388.081	6	410.831	23	91.211	2	.19	9	.195	12	.109	11
388			min	-536.613	12	-37.533	5	-283.591	32	-.447	3	-.196	6	-.123	5
389		5	max	388.081	6	410.831	23	91.211	2	.19	9	.193	12	.095	11
390			min	-536.613	12	-37.533	5	-283.591	32	-.447	3	-.198	6	-.122	5
391	M44B	1	max	440.922	2	270.862	18	509.333	5	.047	12	.222	11	.406	2
392			min	-516.273	8	40.203	12	-371.387	11	-.268	6	-.266	5	-.389	8
393		2	max	440.922	2	270.862	18	509.333	5	.047	12	.208	11	.402	2
394			min	-516.273	8	40.203	12	-371.387	11	-.268	6	-.247	5	-.394	8
395		3	max	440.922	2	270.862	18	509.333	5	.047	12	.196	10	.397	2
396			min	-516.273	8	40.203	12	-371.387	11	-.268	6	-.229	4	-.398	8
397		4	max	440.922	2	270.862	18	509.333	5	.047	12	.184	10	.392	2
398			min	-516.273	8	40.203	12	-371.387	11	-.268	6	-.212	4	-.403	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
399		5	max	440.922	2	270.862	18	509.333	5	.047	12	.172	10	.387	2
400			min	-516.273	8	40.203	12	-371.387	11	-.268	6	-.195	4	-.408	8
401	M45B	1	max	206.055	9	114.749	12	190.486	12	.254	11	.049	18	.069	3
402			min	-161.377	3	-65.424	6	-315.737	6	-.328	5	.004	4	-.071	9
403		2	max	206.055	9	114.749	12	190.486	12	.254	11	.043	14	.07	3
404			min	-161.377	3	-65.424	6	-315.737	6	-.328	5	-.003	4	-.073	9
405		3	max	206.055	9	114.749	12	190.486	12	.254	11	.045	10	.071	3
406			min	-161.377	3	-65.424	6	-315.737	6	-.328	5	-.01	4	-.076	9
407		4	max	206.055	9	114.749	12	190.486	12	.254	11	.047	10	.071	3
408			min	-161.377	3	-65.424	6	-315.737	6	-.328	5	-.017	4	-.078	9
409		5	max	206.055	9	114.749	12	190.486	12	.254	11	.049	10	.072	3
410			min	-161.377	3	-65.424	6	-315.737	6	-.328	5	-.024	4	-.081	9

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	M1	PIPE_2.0	.254	5.328	12	.159	8.078		24	14206...	32130	1.872	1.872	...	H1-1b
2	M2	PIPE_2.0	.172	.43	30	.243	8.25		12	14206...	32130	1.872	1.872	...	H1-1b
3	M3	PIPE_4.0	.118	0	11	.072	0		11	89138...	93240	10.631	10.631	...	H1-1b
4	M4	PIPE_4.0	.135	0	12	.065	3.09		11	89984...	93240	10.631	10.631	...	H1-1b
5	MP5A	PIPE_2.0	.284	2.37	36	.101	2		1	30037...	32130	1.872	1.872	...	H1-1b
6	M9	PIPE_2.0	.258	0	36	.088	2.37		25	30037...	32130	1.872	1.872	...	H1-1b
7	MP4A	PIPE_2.0X	.225	1.677	33	.077	3.646		25	26305...	63000	3.615	3.615	...	H1-1b
8	MP3A	PIPE_2.0X	.160	1.677	12	.061	1.677		11	26305...	63000	3.615	3.615	...	H1-1b
9	MP1A	PIPE_2.0X	.192	1.677	8	.040	1.677		3	26305...	63000	3.615	3.615	...	H1-1b
10	M16	PIPE_2.0	.219	0	12	.082	0		12	30037...	32130	1.872	1.872	...	H1-1b
11	M14	PIPE_2.0	.183	2.37	12	.057	0		11	30037...	32130	1.872	1.872	...	H1-1b
12	M15	PIPE_2.0	.203	2.37	11	.071	2.37		8	30037...	32130	1.872	1.872	...	H1-1b
13	M16A	PIPE_2.0	.128	0	11	.037	2.37		9	30037...	32130	1.872	1.872	...	H1-1b
14	M14A	PIPE_2.0	.080	2.333	11	.040	2.333		12	30099...	32130	1.872	1.872	...	H1-1b
15	M15A	PIPE_2.0	.168	2.333	12	.060	2.333		12	30099...	32130	1.872	1.872	...	H1-1b
16	M16B	PIPE_2.0	.204	2.333	12	.060	2.333		11	30099...	32130	1.872	1.872	...	H1-1b
17	MP2A	PIPE_2.0X	.265	1.604	7	.095	3.719		11	26305...	63000	3.615	3.615	...	H1-1b
18	M112	PIPE_2.0	.345	1.477	12	.142	1.406		12	18606...	32130	1.872	1.872	...	H1-1b
19	M113	PIPE_2.0	.613	0	12	.149	0		1	18606...	32130	1.872	1.872	...	H1-1b
20	M38	PIPE_2.0	.088	4.288	12	.050	0		26	13304...	32130	1.872	1.872	...	H1-1b
21	M44	PIPE_4.0	.083	3.625	12	.095	3.927		12	86526...	93240	10.631	10.631	...	H1-1b
22	M45	PL3/4X2	.100	0	11	.038	0	y	12	48027...	48600	.759	2.025	...	H1-1b
23	M46	PL3/4X2	.095	0	12	.021	.271	y	29	48027...	48600	.759	2.025	...	H1-1b
24	M28	PL3/4X2	.103	.271	11	.035	.271	y	12	48027...	48600	.759	2.025	...	H1-1b
25	M29	PL3/4X2	.119	0	12	.019	.271	y	12	48027...	48600	.759	2.025	...	H1-1b
26	M32	PIPE_3.0	.513	11.25	12	.196	11....		9	19871...	65205	5.749	5.749	...	H1-1b
27	M33	L2.5x2.5x4	.295	2.836	29	.008	0	z	11	13484...	38556	1.114	2.24	...	H2-1
28	M34	L2.5x2.5x4	.300	2.508	12	.007	0	z	3	16961...	38556	1.114	2.3	...	H2-1
29	M35	L2.5x2.5x4	.178	3.179	6	.008	6.357	z	12	10731...	38556	1.114	2.181	...	H2-1
30	M36	L2.5x2.5x4	.124	2.847	3	.009	0	z	3	13380...	38556	1.114	2.238	...	H2-1
31	M37	PIPE_2.0	.227	3.97	5	.018	8.109		10	14605...	32130	1.872	1.872	...	H1-1a

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: CT11442A

Stonington RT 1
173 South Broad Street
Stonington, Connecticut 06379

June 18, 2021

EBI Project Number: 6221002803

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**18.46%**

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

June 18, 2021

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

Emissions Analysis for Site: CT11442A - Stonington RT 1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **173 South Broad Street** in **Stonington, 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 173 South Broad Street in Stonington, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

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

4) 4 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 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 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.

8) 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.

9) The antennas used in this modeling are the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 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.

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

11) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 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):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A1 MPE %:	**0.82%**	Antenna B1 MPE %:	**0.82%**	Antenna C1 MPE %:	**0.82%**
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	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	**1.98%**	Antenna B2 MPE %:	**1.98%**	Antenna C2 MPE %:	**1.98%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A3 MPE %:	**1.24%**	Antenna B3 MPE %:	**1.24%**	Antenna C3 MPE %:	**1.24%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	4.04%
Town Antennas	3.51%
Metro PCS	0.31%
Verizon	5.53%
AT&T	5.07%
Site Total MPE % :	18.46%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	4.04%
T-Mobile Sector B Total:	4.04%
T-Mobile Sector C Total:	4.04%
Site Total MPE % :	18.46%

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	2056.61	140.0	8.24	2100 MHz LTE	1000	0.82%
T-Mobile 600 MHz LTE	2	591.73	140.0	2.37	600 MHz LTE	400	0.59%
T-Mobile 600 MHz NR	1	1577.94	140.0	3.16	600 MHz NR	400	0.79%
T-Mobile 700 MHz LTE	2	695.22	140.0	2.78	700 MHz LTE	467	0.60%
T-Mobile 1900 MHz GSM	4	1028.30	140.0	8.24	1900 MHz GSM	1000	0.82%
T-Mobile 1900 MHz UMTS	2	1028.30	140.0	4.12	1900 MHz UMTS	1000	0.41%
						Total:	**4.04%**

• 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:	4.04%
Sector B:	4.04%
Sector C:	4.04%
T-Mobile Maximum MPE % (Sector A):	4.04%
Site Total:	18.46%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **18.46%** 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.