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

March 17, 2022

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

Notice of Exempt Modification
Taugwonk Spur Road No. 2
Stonington, CT 06378
Sprint, now a part of T-Mobile USA #: CTNH646A
Latitude : 41.382249
Longitude : -71.903444

Dear Ms. Bachman:

Sprint, now a part of T-Mobile USA, hereinafter referred to as "Sprint/T-Mobile" currently maintains six (6) antennas at the 145-foot level of the existing 190-foot Monopole Tower at 2 Taugwonk Spur, Stonington, CT. The tower is owned by SBA Properties, LLC. The property is owned by Louis J. D'Amato & John C. D'Amato. Sprint/T-Mobile now intends to replace (6) existing antennas with (6) newer technology cell antennas and install three (3) additional antennas at the 145-foot level of the tower, for a total of nine (9) antennas.

- **The new antennas would support 5G services and would be installed at the 145-foot level of the tower.**

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) Commscope LNX-6515DS-VTM NNVV-65B-R4 antennas (remove) – (3) Commscope VV-65A-R1 L2100/1900 MHz antennas (replace)
- (3) RFS APXVTM14-C-I20 antennas (remove) – (3) RFS APXVAALL24_43-U-NA20 L700/600 MHz antennas (replace)

- (3) ALU TD-RRH8x20-25 RRUs (remove) – (3) Ericsson 4460 B25+B66 RRUs (replace)
- (6) ALU 800 Mhz RRUs (remove) – (3) Ericsson 4480 B71+B85 RRUs & (3) ALU 1900 Mhz RRUs (replace)
- (3) 1-1/4" fiber (remove) – (3) 1.9" Fiber (replace)

Install New:

- (3) Ericsson AIT6449 B41 2500MHz antennas

Existing Equipment to Remain:

- (1) Low Profile Platform w/handrails & Reinforcement Kit:
  - SitePro HRK14-U Handrail Kit, SitePro PRK-SFS-H-L-V-brace kit, (1) SitePro PRK-1245L Reinf. Kit, (6) SitePro SCX1-K Brackets, (3) Pipe2.0STD x 4" long corner braces and (3) Pipe2.0STD x 14' horizontal rails.
- (1) GPS antenna (at 46.5-foot level)

Entitlements:

- (1) 1-1/4" fiber

GROUND

Remove and Replace:

- GPS antenna to replace existing GPS antenna

Install New:

- 2" RGS conduit for AAV to RAC24 Cabinet
- 1" RGS conduit for CD power to RAC24 Cabinet
- Purcell RAC24 cabinet mounted to existing Unistrut
- T-Mobile Ericsson 6160 Equip. cabinet
- (2) 2" RGS conduit for Alarm & Spare
- T-Mobile Ericsson B160 Battery Cabinet
- Breakers within existing PPC
- 2" conduit for power from existing PPC
- 2" RGS conduit with LBs for DC Power wiring

Entitlements:

- N/A

Remove:

- Fiber distribution Box
- Battery backup Cabinet on existing concrete pad
- Sprint Cabinet on existing concrete pad

Existing Equipment to Remain:

- Ice Canopy mounted to existing concrete pad
- CIENA 3931 Delivery Switch

- PPC Cabinet
- Existing cable brdge
- (1) ½" Coax for GPS Antenna

This facility was approved prior to the Council's jurisdiction, on 5/19/98, by the Town of Stonington's Planning & Zoning Commission. Application #PZ9820SPA was approved for a multi-tenant monopole telecom facilities and placement of associated equipment. The only stipulation for construction was to screen with Colorado or White Spruce. There were no post-constructions conditions placed on the tower. This modification complies with all conditions.

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, Planning & Zoning Copmmission, Keith Brynes, as well as to the property owner, D'Amato Investments, LLC. (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, Sprint respectfully submits that the proposed modifications to the above-referenced telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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

Attachments

cc: Danielle Chesebrough, First Selectman / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378
Keith Brynes, Planning & Zoning Comm. / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378
Louis J. D'Amato & John C. D'Amato / D'Amato Investments, LLC / with attachments
183 Quarry Road Milford CT 06460

Exhibit List

Exhibit 1	Check Copy	x
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 Comm. #PZ9820SPA (5/19/98)
Exhibit 6	Construction Drawings	Chappell 1/14/22
Exhibit 7	Structural Analysis	TES 2/21/22
Exhibit 8	Antenna Mount Analysis	GeoStructural 2/14/22
Exhibit 9	EME Report	Centerline 3/16/22

EXHIBIT 1

copy of check

EXHIBIT 2

Mailing Labels

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.

FedEx

FedEx® Tracking Track Another Shipment Help

776329396841

ADD NICKNAME

Delivered
Friday, March 18, 2022 at 9:20 am

DELIVERED
Signature release on file

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Theresa Mercado
49 Montclair Avenue
NUTLEY, NJ US 07110
973-766-2835

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council
Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Friday, March 18, 2022		
9:20 AM	NEW BRITAIN, CT	Delivered Package delivered to recipient address - release authorized
8:38 AM	WINDSOR LOCKS, CT	At local FedEx facility
8:38 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:17 AM	WINDSOR LOCKS, CT	At local FedEx facility
2:28 AM	NEWARK, NJ	Departed FedEx hub
Thursday, March 17, 2022		
11:42 PM	NEWARK, NJ	Arrived at FedEx hub
8:21 PM	FRAMINGHAM, MA	Left FedEx origin facility
6:02 PM	FRAMINGHAM, MA	Shipment arriving On-Time
5:44 PM	FRAMINGHAM, MA	Picked up
5:12 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:26 PM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER 776329396841	**SERVICE** FedEx Priority Overnight	**WEIGHT** 2 lbs / 0.91 kgs
DELIVERY ATTEMPTS 1	**TOTAL PIECES** 1	**TOTAL SHIPMENT WEIGHT** 2 lbs / 0.91 kgs
TERMS Shipper	**SHIPPER REFERENCE** 10-56-92009-6089	**PACKAGING** FedEx Pak
SPECIAL HANDLING SECTION Deliver Weekday	**SHIP DATE** 3/17/22	**SHIPMENT-FACTS.COD-DETAIL** $0.00
STANDARD TRANSIT 3/18/22 before 10:30 am	**ACTUAL DELIVERY** 3/18/22 at 9:20 am	

All (30) Inbound (2) Outbound (28) Watch list (0)

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.
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FedEx

FedEx® Tracking Track Another Shipment Help

776329436724

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, March 18, 2022 before 12:00 pm

IN TRANSIT
On FedEx vehicle for delivery
NORWICH, CT

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Theresa Mercado
49 Montclair Avenue
NUTLEY, NJ US 07110
973-766-2835

TO
Danielle Chesebrough
Town of Stonington
First Selectman
152 Elm St
STONINGTON, CT US 06378
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Friday, March 18, 2022		
9:21 AM	NORWICH, CT	On FedEx vehicle for delivery
8:19 AM	NORWICH, CT	At local FedEx facility
3:40 AM	NEWARK, NJ	Shipment arriving On-Time
3:30 AM	NEWARK, NJ	Departed FedEx hub
Thursday, March 17, 2022		
8:28 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:35 PM	FRAMINGHAM, MA	Picked up
5:12 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:28 PM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER
776329436724

SERVICE
FedEx Priority Overnight

WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
3/17/22

SHIPMENT-FACTS.COD-DETAIL
$0.00

STANDARD TRANSIT
3/18/22 before 12:00 pm

SCHEDULED DELIVERY
3/18/22 before 12:00 pm

All (30) | Inbound (2) | Outbound (28) | Watch list (0)

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FedEx

FedEx® Tracking Track Another Shipment Help

776329449827

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, March 18, 2022 before 12:00 pm

IN TRANSIT
On FedEx vehicle for delivery
NORWICH, CT

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Theresa Mercado
49 Montclair Avenue
NUTLEY, NJ US 07110
973-766-2835

TO
Kieth Brynes
Town of Stonington
Planning & Zoning Commission
152 Elm St
STONINGTON, CT US 06378
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Friday, March 18, 2022		
9:20 AM	NORWICH, CT	On FedEx vehicle for delivery
8:22 AM	NORWICH, CT	At local FedEx facility
3:40 AM	NEWARK, NJ	Shipment arriving On-Time
3:30 AM	NEWARK, NJ	Departed FedEx hub
Thursday, March 17, 2022		
8:28 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:35 PM	FRAMINGHAM, MA	Picked up
5:12 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:29 PM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER
776329449827

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
3/17/22

SHIPMENT-FACTS.COD-DETAIL
$0.00

STANDARD TRANSIT
3/18/22 before 12:00 pm

SCHEDULED DELIVERY
3/18/22 before 12:00 pm

All (30) | Inbound (2) | Outbound (28) | Watch list (0)

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FedEx

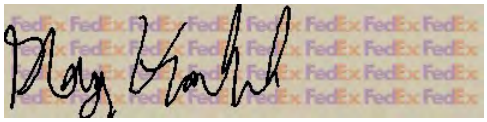
FedEx® Tracking Track Another Shipment Help

776329482311

ADD NICKNAME

Delivered
Friday, March 18, 2022 at 9:53 am

DELIVERED
Signed for by: C.RAVIC



GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Theresa Mercado

49 Montclair Avenue
NUTLEY, NJ US 07110
973-766-2835

TO
Louis J. D'Amato & John C. D'Amato

183 Quarry Rd
MILFORD, CT US 06460
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Friday, March 18, 2022		
9:53 AM	MILFORD, CT	Delivered
9:22 AM	STRATFORD, CT	On FedEx vehicle for delivery
8:37 AM	STRATFORD, CT	At local FedEx facility
3:59 AM	NEWARK, NJ	Shipment arriving On-Time
3:48 AM	NEWARK, NJ	Departed FedEx hub
Thursday, March 17, 2022		
8:28 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:35 PM	FRAMINGHAM, MA	Picked up
5:12 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:31 PM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER 776329482311	**SERVICE** FedEx Priority Overnight	**WEIGHT** 0.5 lbs / 0.23 kgs
DELIVERY ATTEMPTS 1	**DELIVERED TO** Receptionist/Front Desk	**TOTAL PIECES** 1
TOTAL SHIPMENT WEIGHT 0.5 lbs / 0.23 kgs	**TERMS** Shipper	**SHIPPER REFERENCE** 10-56-92009-6089
PACKAGING FedEx Envelope	**SPECIAL HANDLING SECTION** Deliver Weekday	**SHIP DATE** 3/17/22
SHIPMENT-FACTS.COD-DETAIL $0.00	**STANDARD TRANSIT** 3/18/22 before 10:30 am	**ACTUAL DELIVERY** 3/18/22 at 9:53 am

All (30) Inbound (2) Outbound (28) Watch list (0)

EXHIBIT 3

Property Card

Town of Stonington, CT

Property Listing Report

Map Block Lot	84-1-3	Building #	1	PID	4491	Account	00194500

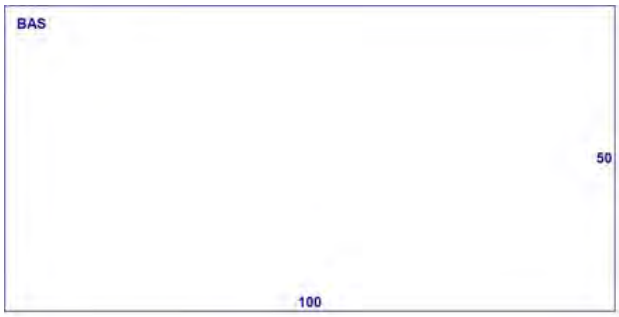
Property Information

Property Location	TAUGWONK SPUR RD
Owner	DAMATO INVESTMENTS LLC
Co-Owner	
Mailing Address	183 QUARRY RD MILFORD CT 06460-2867
Land Use	3324 COM JOB SHOP(S)
Land Class	C
Zoning Code	LI-130
Census Tract	7054

Neighborhood	2500
Acreage	8.5
Utilities	
Lot Setting/Desc	Suburban Above Street
Book / Page	0740/0277
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1984
Building Desc.	COM JOB SHOP(S)
Building Style	Job Shop(s)
Building Grade	Average
Stories	1
Occupancy	4
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	Minim/Masonry
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	Gar/Svc Statn
Building Condition	AV
Sprinkler %	
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12
First Floor Use	316I
Foundation	

Report Created On 2/24/2022

Town of Stonington, CT

Property Listing Report | Map Block Lot 84-1-3 | Building # 1 | PID 4491 | Account 00194500

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2290700	1603500
Extras	0	0
Improvements		
Outbuildings	146400	102600
Land	540100	378100
Total	2977200	2084200

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	5000	5000
Total Area	5000	5000

Outbuilding and Extra Features

Type	Description
PAVING-ASPHALT	60000.00 S.F.
CELL TOWER	1.00 UNIT
FENCE-8' CHAIN	108.00 L.F.
LIGHTS-IN W/PL	5.00 UNITS
PAVING-CONC	484.00 S.F.

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
DAMATO INVESTMENTS LLC	0740/0277	5/22/2015	2000
DAMATO INVESTMENTS LLC	0421/0081	7/7/1998	0

Report Created On 2/24/2022

Town of Stonington, CT

Property Listing Report | Map Block Lot 84-1-3 | Building # 2 | PID 4491 | Account 00194500

Photo

Sketch

Primary Construction Details

Year Built	1984
Building Desc.	Gar/Svc Statn
Building Style	Job Shop(s)
Building Grade	Average
Stories	1
Occupancy	15
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Minim/Masonry
Interior Walls 2	Drywall/Sheet
Interior Floors 1	Concr-Finished
Interior Floors 2	Carpet

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	COM JOB SHOP(S)
Building Condition	AV
Sprinkler %	
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12
First Floor Use	316I
Foundation	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	16000	16000

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	16000	16000

Report Created On 2/24/2022

Town of Stonington, CT

Property Listing Report | Map Block Lot 84-1-3 | Building # 3 | PID 4491 | Account 00194500

Photo

Sketch

Primary Construction Details

Year Built	1984
Building Desc.	Gar/Svc Statn
Building Style	Job Shop(s)
Building Grade	Average
Stories	1
Occupancy	11
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Minim/Masonry
Interior Walls 2	Drywall/Sheet
Interior Floors 1	Concr-Finished
Interior Floors 2	Carpet

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	COM JOB SHOP(S)
Building Condition	AV
Sprinkler %	
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12
First Floor Use	316I
Foundation	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	9600	9600

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	9600	9600

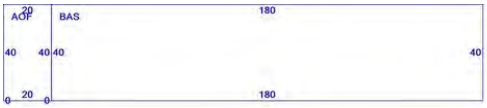
Report Created On 2/24/2022

Town of Stonington, CT

Property Listing Report | Map Block Lot 84-1-3 | Building # 4 | PID 4491 | Account 00194500

Photo

Sketch



Primary Construction Details

Year Built	1984
Building Desc.	Gar/Svc Statn
Building Style	Job Shop(s)
Building Grade	Average
Stories	1
Occupancy	1
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	COM JOB SHOP(S)
Building Condition	AV
Sprinkler %	
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12
First Floor Use	316I
Foundation	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Office, (Average)	800	800
First Floor	7200	7200

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	8000	8000

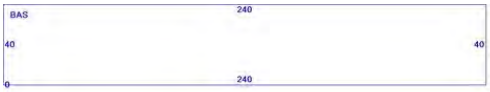
Report Created On 2/24/2022

Town of Stonington, CT

Property Listing Report | Map Block Lot 84-1-3 | Building # 5 | PID 4491 | Account 00194500

Photo

Sketch



Primary Construction Details

Year Built	1995
Building Desc.	Gar/Svc Statn
Building Style	Job Shop(s)
Building Grade	Average
Stories	1
Occupancy	6
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	Vinyl/Asphalt

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	COM JOB SHOP(S)
Building Condition	AV
Sprinkler %	
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12
First Floor Use	316I
Foundation	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	9600	9600

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	9600	9600

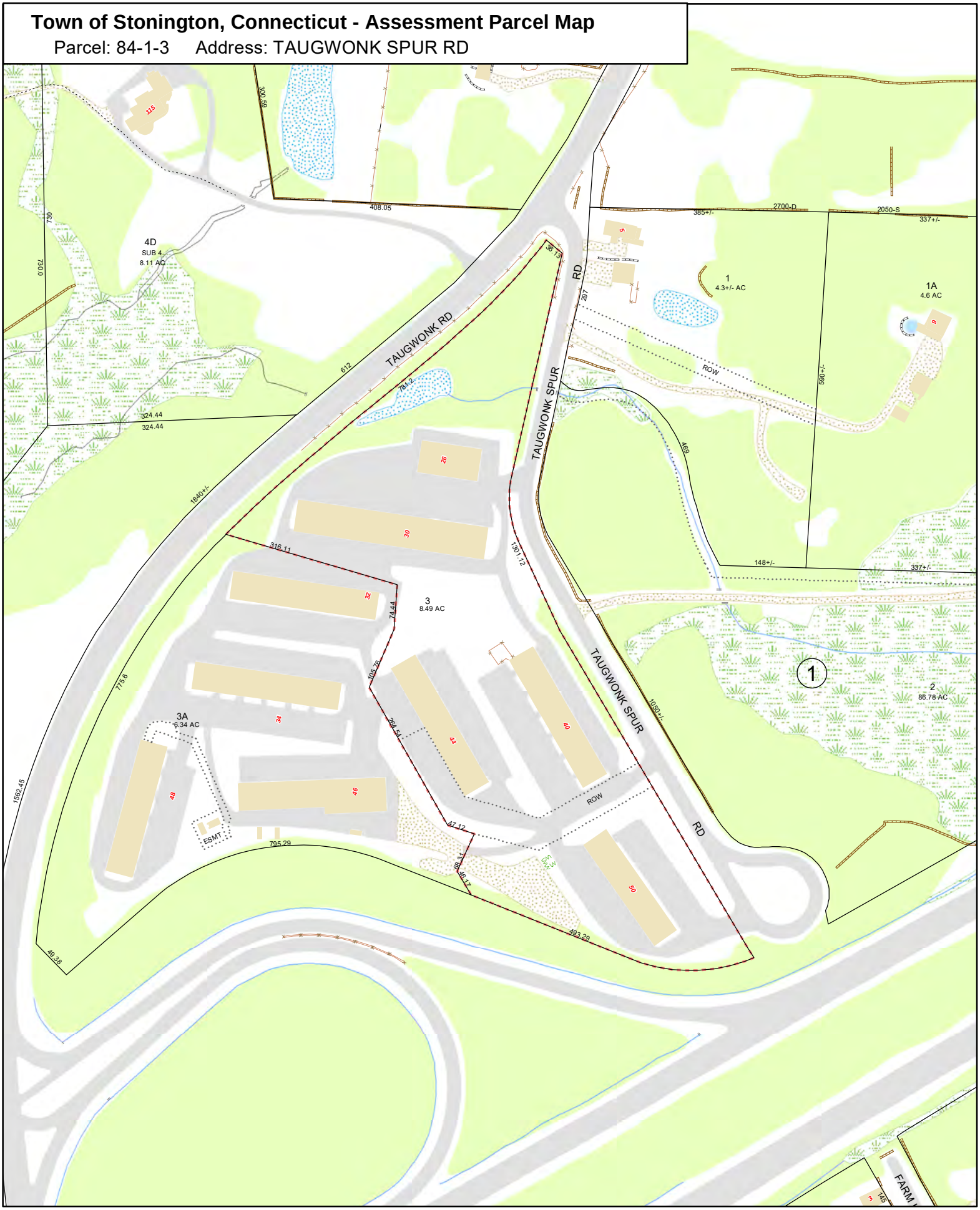
Report Created On 2/24/2022

EXHIBIT 4

Property Map

Town of Stonington, Connecticut - Assessment Parcel Map

Parcel: 84-1-3 Address: TAUGWONK SPUR RD



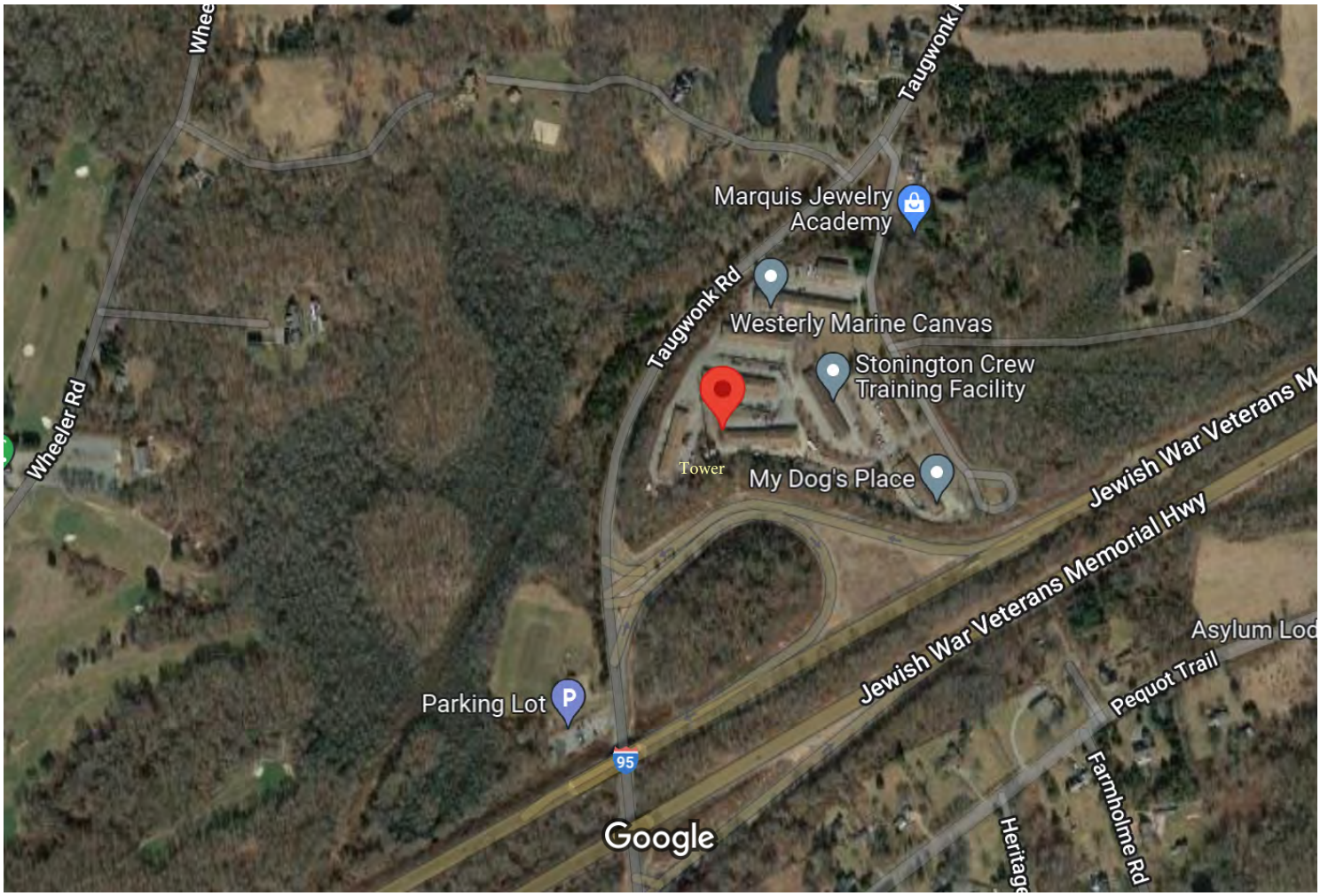
Approximate Scale:

1 inch = 200 feet

0 120 240 360 480 Feet

Revised To Grand List: October 2021 Map Produced: February 2022

Google Maps 41°22'56.1"N 71°54'12.4"W



Imagery ©2022 CNES / Airbus, Maxar Technologies, RIGIS, USDA Farm Service Agency, Map data ©2022 500 ft

EXHIBIT 5

Zoning Documents

TOWN OF STONINGTON
The Planning and Zoning Commission
152 Elm Street, P.O. Box 352
Stonington, Connecticut 06378
(860) 535-5095

May 21, 1998

Mr. Scott Thomae
SBA, Inc.
125 Shaw Street #116
New London, CT 06320

Dear Mr. Thomae:

The Planning and Zoning Commission at their meeting of May 19, 1998 voted to APPROVE your application#PZ9820SPA SBA, INC. / SCOTT THOMAE - Application for Site Plan Approval for a multi-tenant monopole telecommunications facility and placement of associated equipment. Property located at Taugwonk Spur Road, Number 2. Assessor's Map 84 Block 1 Lot 3 Zone LI-130. This application was approved with the following stipulations:

1. Provide data requested by the Town Engineer as outlined in his memorandum dated May 18, 1998.
2. For screening Colorado Spruce (Picea pungens) or White Spruce (Picea galuca) should be substituted for the Eastern White Pine.

Please schedule an appointment with the Planning Office to review the final plans which have incorporated all the above stipulations and/or changes and have been listed on the site plan. Please bring to the Planning and Zoning Office for the Chairman's signature one (1) set of bluelines and one (1) set of mylars.

If you have any questions, please feel free to contact the Planning Office.

Sincerely,

Edward Donnelly (kjt)

Edward C. Donnelly, AICP
Planning Director

:kjt

EXHIBIT 6

Construction Drawings

CTNH646A

100 TAUGWONK ROAD
STONINGTON, CT 06378
NEW LONDON COUNTY

SITE NO.: CTNH646A
CARRIER SITE ID: CT03XC107

RF DESIGN GUIDELINE: 67E5A998E 6160

SCOPE OF WORK

REMOVE:
- 6 ANTENNAS
- 12 RRUs
- 4 HYBRID CABLES
- 2 SPRINT CABINETS
- 1 FIBER DISTRIBUTION CABINET
- 1 GPS ANTENNA

INSTALL:
- 9 ANTENNAS
- 6 RRUs
- 1 B160 BATTERY CABINET
- 1 6160 CABINET
- 1 PURCELL RAC24
- 3 HYBRID CABLES
- 1 GPS ANTENNA

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.

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

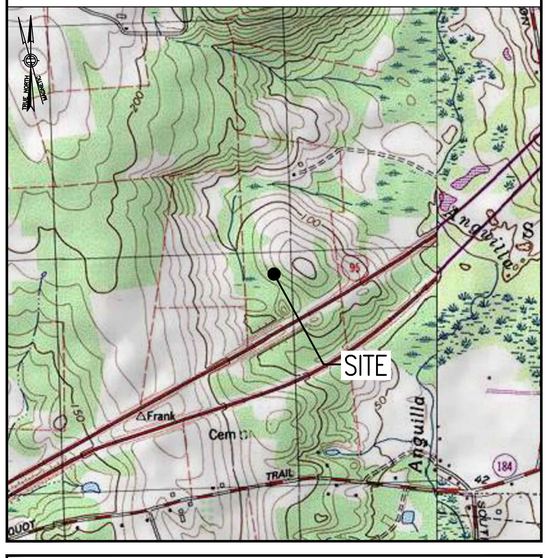
GENERAL NOTES

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"



DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 33B TO MERGE ONTO I-95 SOUTH TOWARD PROVIDENCE RI. TAKE EXIT 91 TOWARD CT-234/STONINGTON. TURN RIGHT ONTO TAUGWONK ROAD. SITE WILL BE ON THE RIGHT.

SHEET INDEX

SHT. NO.	DESCRIPTION	VER.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	TOWER ELEVATION & ANTENNA PLANS	1
A-3	SITE DETAILS	1
A-4	ANTENNA & FEEDLINE CHARTS	1
E-1	ELECTRIC & GROUNDING DETAILS	1

DO NOT SCALE DRAWINGS

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

PROJECT SUMMARY

SITE NUMBER:	CTNH646A
SBA SITE NUMBER:	CT00235-B
SBA SITE NAME:	STONY BROOK
SITE ADDRESS:	100 TAUGWONK ROAD STONINGTON, CT 06378
PROPERTY OWNER:	LOUIS J. D'AMATO & JOHN C. D'AMATO 183 QUARRY ROAD MILFORD, CT 06460
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	LIGHT INDUSTRIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	190'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
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: 41.382013° N41°22'55.2468" LONGITUDE: -71.903601° W71°54'12.9636"

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

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
1/14/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/13/22	ISSUED FOR CONSTRUCTION	JRV
0	11/30/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.351

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 (⅞"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
1/14/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/13/22	ISSUED FOR CONSTRUCTION	JRV
0	11/30/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

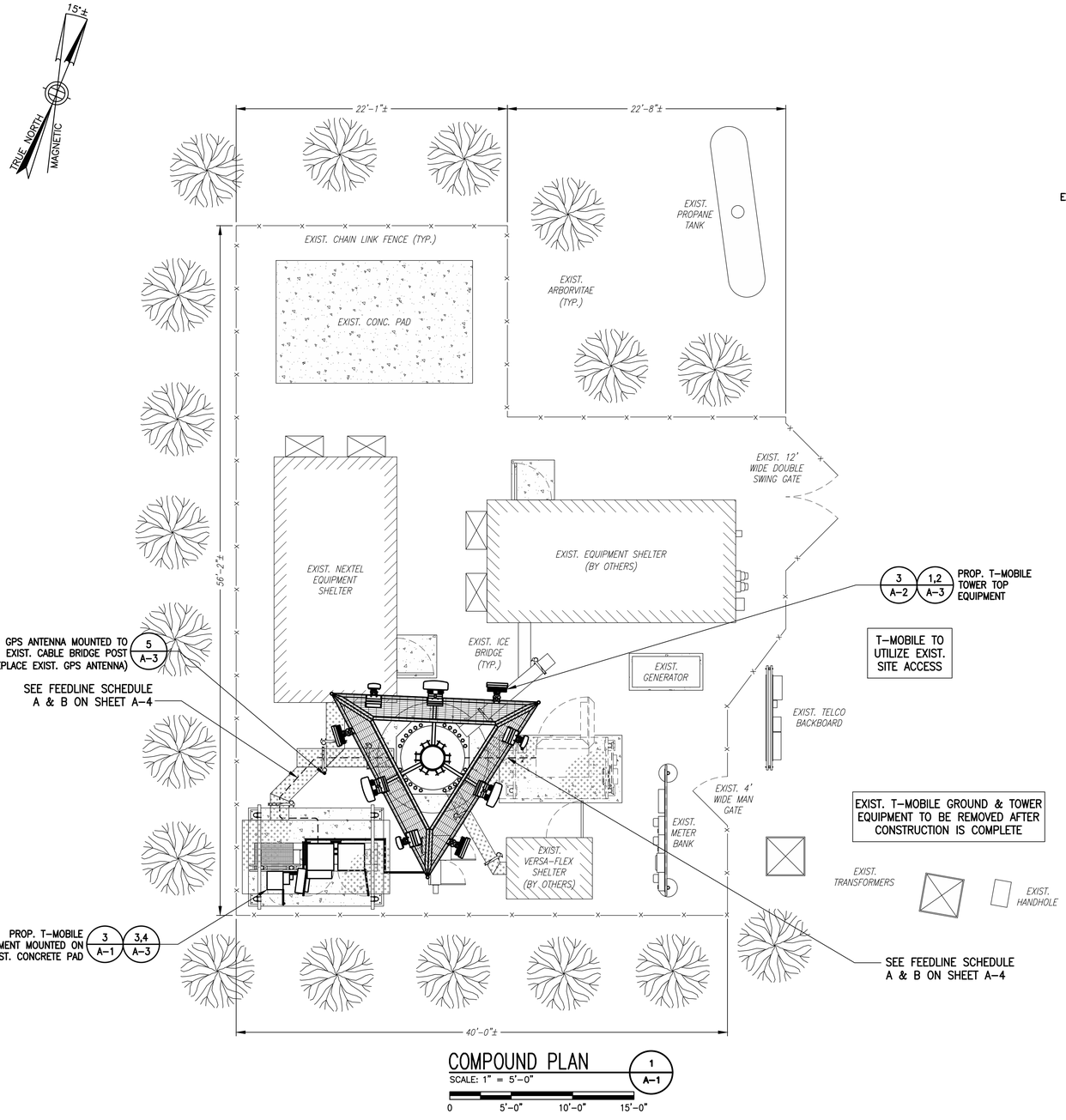
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

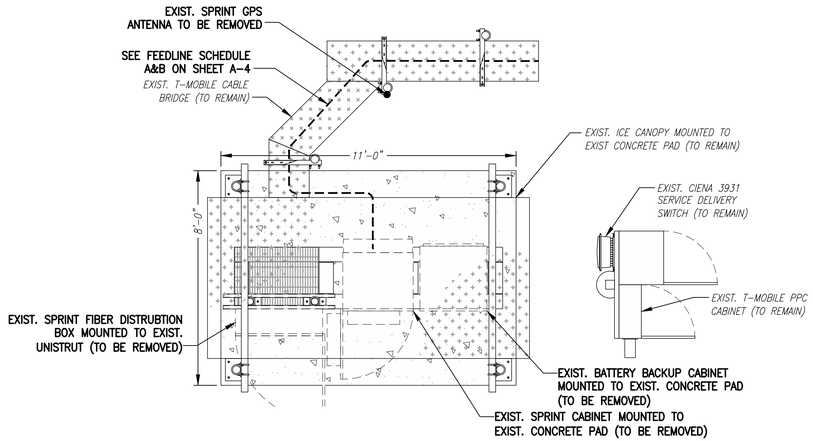
1815.351

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.

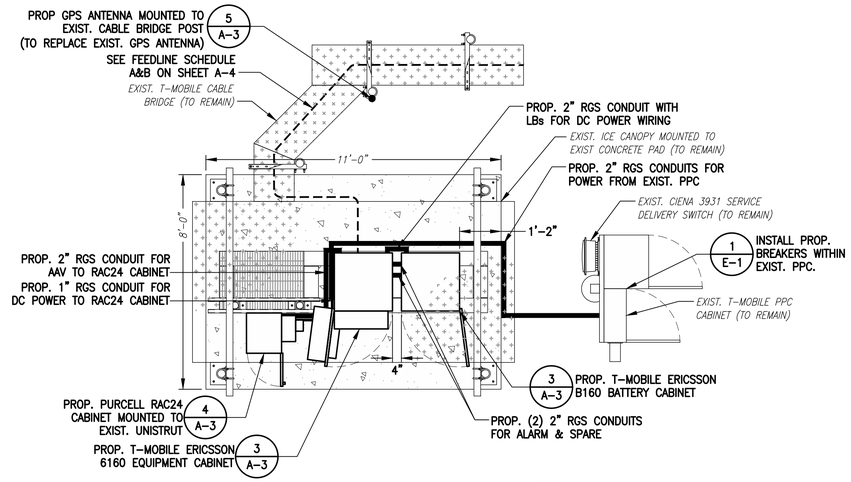
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).



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



EXISTING EQUIPMENT PLAN 2 A-1
SCALE: 3/8" = 1'-0"
0 2'-8" 5'-4" 8'-0"



PROPOSED EQUIPMENT PLAN 3 A-1
SCALE: 3/8" = 1'-0"
0 2'-8" 5'-4" 8'-0"

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No. 25937
LICENSED PROFESSIONAL CIVIL ENGINEER
1/14/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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0	11/30/21	ISSUED FOR REVIEW	JRV

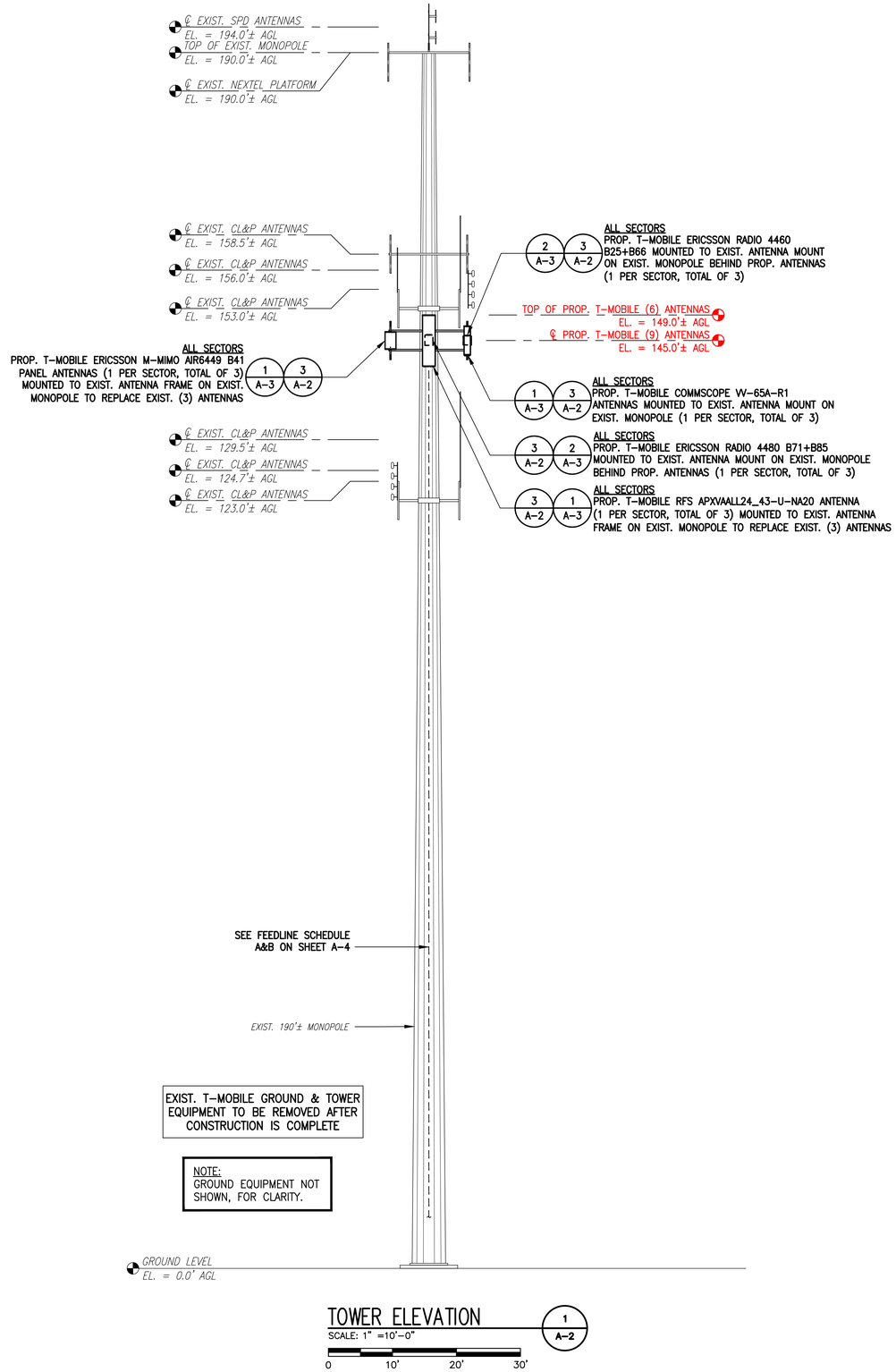
SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.351

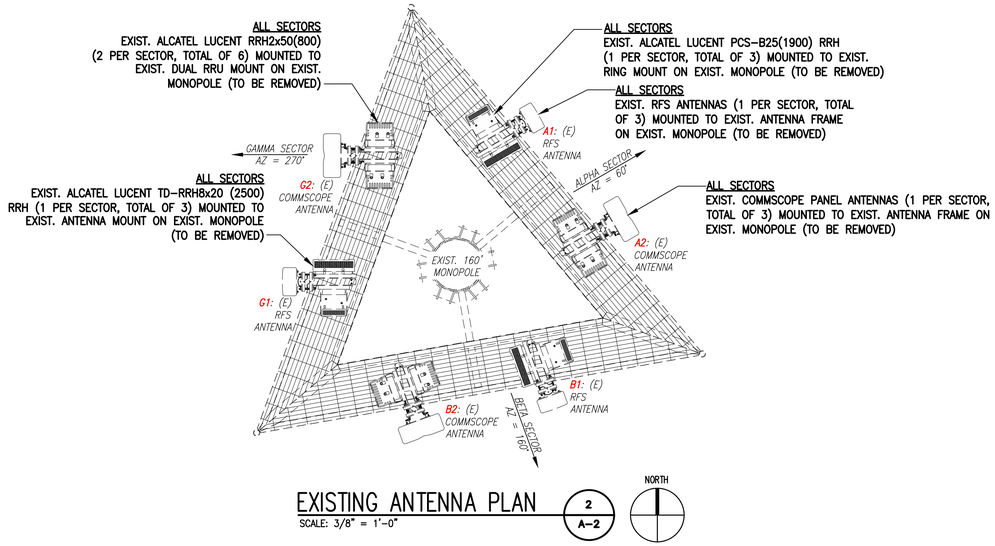


TOWER ELEVATION
SCALE: 1" =10'-0"
1 A-2
0 10' 20' 30'

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.

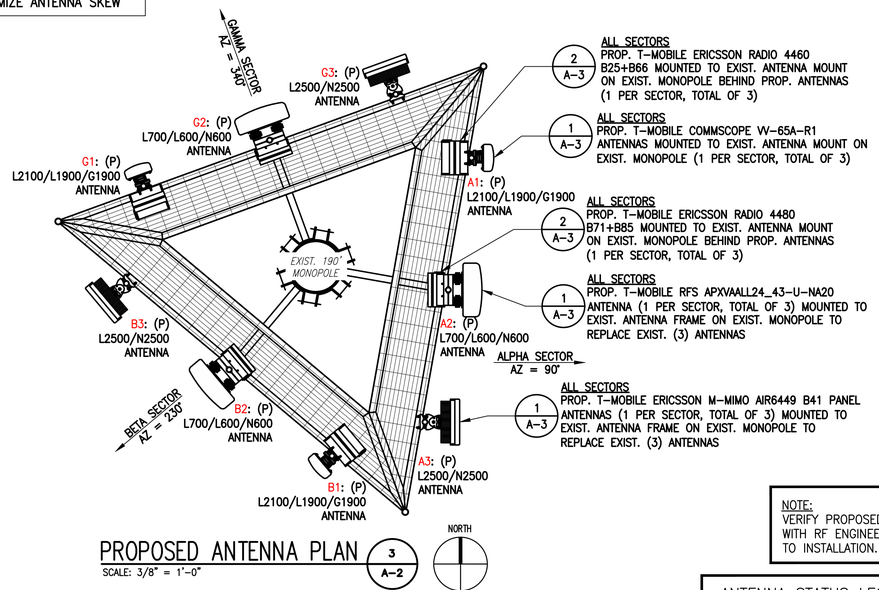
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

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



EXISTING ANTENNA PLAN
SCALE: 3/8" = 1'-0"
2 A-2

EXIST. T-MOBILE MOUNT TO BE ROTATED AS REQUIRED TO MINIMIZE ANTENNA SKEW



PROPOSED ANTENNA PLAN
SCALE: 3/8" = 1'-0"
3 A-2

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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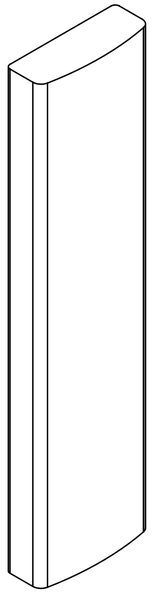
SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

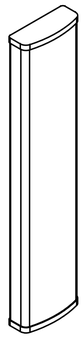
SHEET NUMBER
A-2

1815.351



RFS APXVAALL24_43-U-NA20 ANTENNA

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



COMMSCOPE VV-65A-R1 ANTENNA

DIMENSIONS: 54.7"H x 12.1"W x 4.6"D
WEIGHT: 23.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON M-MIMO AIR6449 B41 ANTENNA

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

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

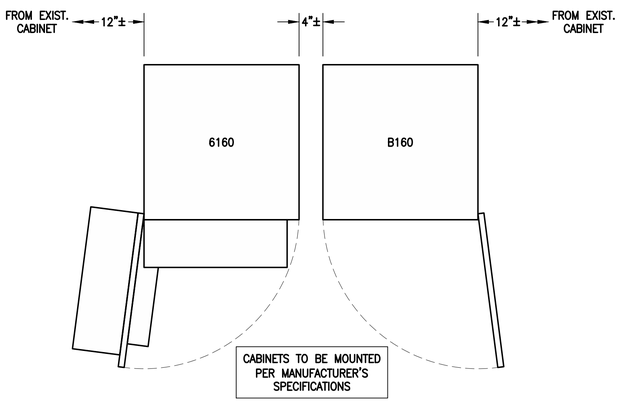
ERICSSON RADIO 4460 B25+B66

DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
WEIGHT: 104.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4480 B71+B85

DIMENSIONS: 19.2"H x 15.1"W x 7.5"D
WEIGHT: 92.6 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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



ERICSSON 6160 SITE SUPPORT CABINET

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

ERICSSON B160 BATTERY CABINET

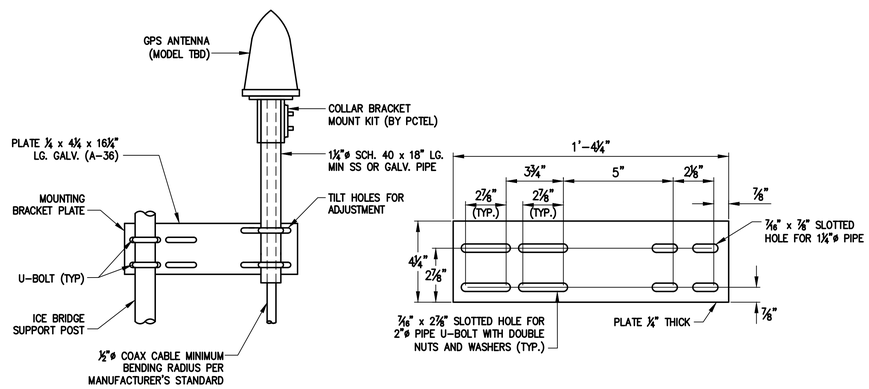
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

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

PURCELL SITE SUPPORT CABINET RAC24

DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

SSC DETAILS (4) A-3
SCALE: N.T.S.



GPS ANTENNA MOUNTING BRACKET

MOUNTING BRACKET PLATE

1. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1½" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
2. THE MOUNTING PLATE SHALL BE FASTENED AS SHOWN AND ATTACHED TO THE APPROPRIATE SUPPORT STRUCTURE USING U-BOLTS. THE SUPPORT PIPE SHALL THEN BE ATTACHED TO THE MOUNTING PLATE USING THE OVERSIZE U-BOLTS PROVIDED TO ALLOW ADJUSTMENT. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.

GPS MOUNTING DETAIL (5) A-3
SCALE: NTS

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APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/13/22	ISSUED FOR CONSTRUCTION	JRV
0	11/30/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.351

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1	COMMSCOPE VV-65A-R1	145'± AGL	90°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	(3) 2" (6x24) HCS FIBER CABLES
	A2	RFS APXVAALL24_43-U-NA20	145'± AGL	90°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	A3	ERICSSON M-MIMO AIR6449 B41	145'± AGL	90°	0°	2°	L2500/N2500	–	
BETA	B1	COMMSCOPE VV-65A-R1	145'± AGL	230°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	
	B2	RFS APXVAALL24_43-U-NA20	145'± AGL	230°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	B3	ERICSSON M-MIMO AIR6449 B41	145'± AGL	230°	0°	2°	L2500/N2500	–	
GAMMA	G1	COMMSCOPE VV-65A-R1	145'± AGL	340°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	
	G2	RFS APXVAALL24_43-U-NA20	145'± AGL	340°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	G3	ERICSSON M-MIMO AIR6449 B41	145'± AGL	340°	0°	2°	L2500/N2500	–	

CABLE NOTE: ALL SPRINT CABLES & ASSOCIATED HARDWARE TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV1 – 05/11/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) ½" COAX CABLE FOR GPS ANTENNA*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*SPRINT CABLES AND ASSOCIATED HARDWARE TO BE REMOVED*	
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.

T-MOBILE NORTHEAST LLC
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www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
1/4/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/13/22	ISSUED FOR CONSTRUCTION	JRV
0	11/30/21	ISSUED FOR REVIEW	JRV

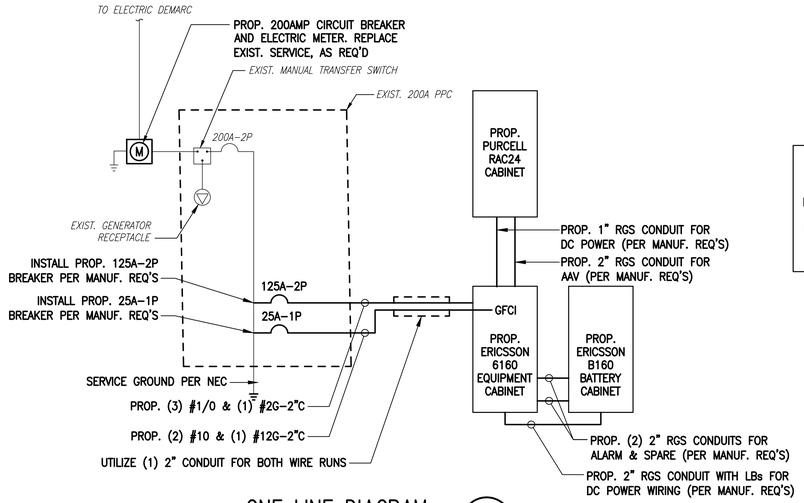
SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

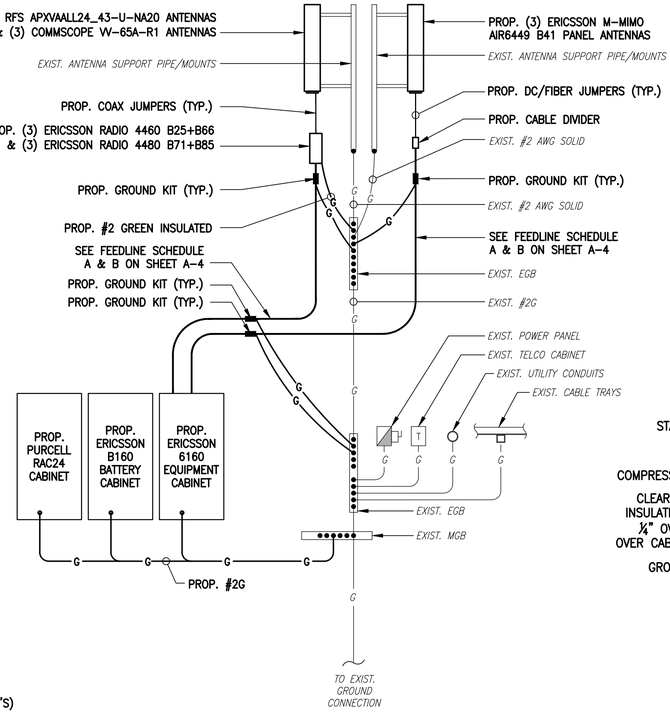
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

1815.351



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



GROUNDING RISER DIAGRAM (2 / E-1)
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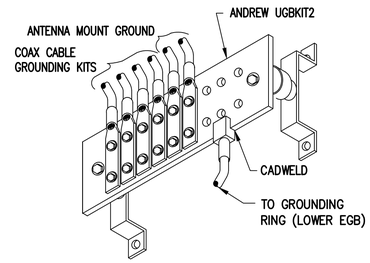
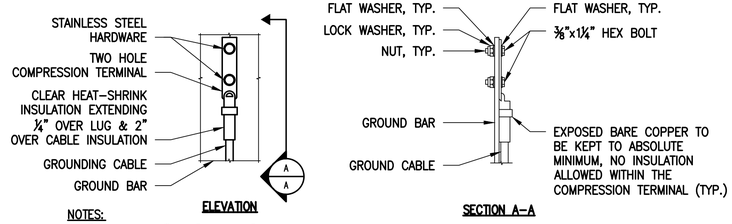
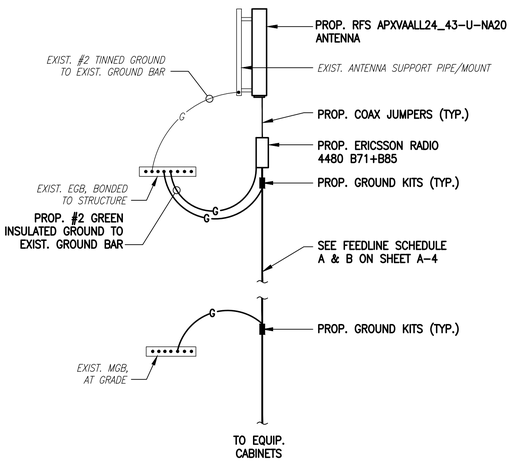


GROUND BAR (EGB) (5 / E-1)
SCALE: NOT TO SCALE

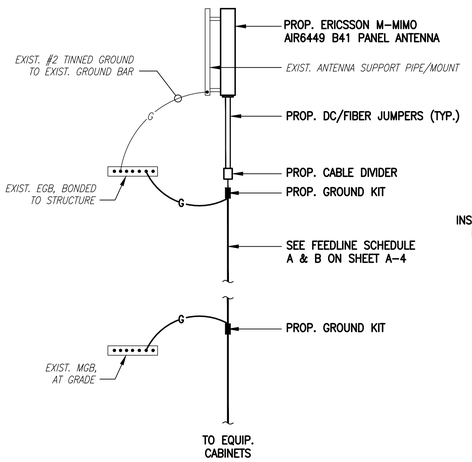


NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

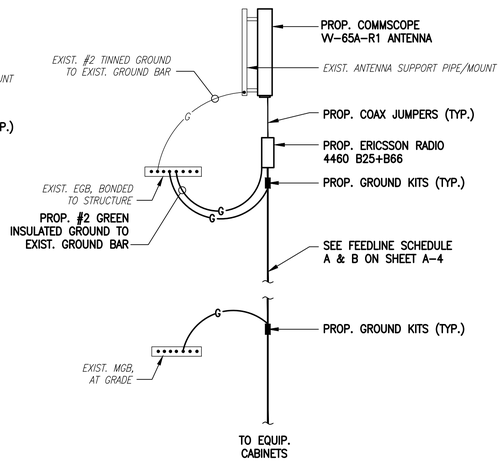
TYPICAL GROUND BAR CONNECTIONS DETAIL (3 / E-1)
SCALE: NOT TO SCALE



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/L1900/G1900 ANTENNA

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

ELECTRICAL AND GROUNDING NOTES

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

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STATE OF CONNECTICUT · JAMES M. FITZGERALD · No. 25937 · LICENSED PROFESSIONAL CIVIL ENGINEER
1/14/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/13/22	ISSUED FOR CONSTRUCTION	JRV
0	11/30/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNH646A

SITE ADDRESS:
100 TAUGWONK ROAD
STONINGTON, CT 06378

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.351

EXHIBIT 7

Structural Analysis

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

Structural Analysis Report

Existing 190 ft SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT00235-B

Customer Site Name: Stony Brook

Carrier Name: T-Mobile Sprint (App#: 160128, V#2)

Carrier Site ID / Name: CTNH646A / CT03XC107 / Stony Brook

Site Location: Taugwonk Spur Road No. 2

Stonington, Connecticut

New London County

Latitude: 41.382249

Longitude: -71.903444

Analysis Result:

Max Structural Usage: 83.7% [Pass]

Max Foundation Usage: 86% [Pass]

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

Report Prepared By : Mariana Franco

Introduction

The purpose of this report is to summarize the analysis results on the 190 ft SUMMIT Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Original Drawings from Summit Manufacturing Inc, Job#: 3535 Dated: 05/14/1998 Monopole Tower Report by FDH Job#: 08-10050T Dated: 12/29/2008 Structural Analysis by FDH, Project#:15BEFV1400(R1) Dated:02/23/2015, Revised:06/17/2017
Foundation Drawing	Foundation Design by Paul J Ford and Company Project#: 29298-318 Dated: 05/06/1998
Geotechnical Report	Geotechnical Report by SAGE Environmental Inc, Project#: S598 Dated:04/22/98
Modification Drawings	N/A
Mount Analysis	GeoStructural CTNH646A Dated: 02/14/22

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 140.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 108.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.159, S_1 = 0.058

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	194.0	1	Telwave ANT150D3 Dipole	Direct Mount	(1) 7/8"	SPD
2	190.0	-	-	Low Profile Platform	-	-
2	182.0	3	JMA Wireless MX08FRO665-21 Panel	Commscope MC-PK8-C Platform w/HRK	(1) 1.75" Hybrid	Dish Wireless
3		3	Fujitsu TA08025-B605 RRU			
4		3	Fujitsu TA08025-B604 RRU			
5		1	Raycap RDIDC-9181-PF-48 OVP			
3	172.5	3	Ericsson - Air21 B2A/B4P - Panel	(1) 13' LP Platform w/Site Pro PRK-1245 & Add PV-PHK12-B + PIPE238X174*	(8) 1 5/8" (1) 1 5/8" Fiber (3) 1.9" Fiber	T-Mobile
4		3	Ericsson - AIR 21 B4A/B2P - Panel			
5		3	RFS APXVAALL24-43-U-NA20 Panel			
6		3	Ericsson KRY 112 144/1			
7		3	Ericsson 4449 B71 + B85			
8	158.5	1	RFS PD458-2N Omni	(2) Standoffs at 150	(3) 7/8"	CL&P
9	156.0	1	RFS 114202C Omni			
10	153.0	1	Telewave ANT450D6 Omni	Low Profile Platform at 158.5'	-	
	145.0	3	ALU 1900 MHz - RRUs	Low Profile Platform with (1) SitePro HRK14-U Handrail Kit, (1) SitePro PRK-SFS-H-L V-brace Kit, (1) SitePro PRK-1245L reinforcement kit, (6) SitePro SCX1-K Brackets, (3) Pipe2.0STD x 4' long corner braces and (3) Pipe2.0STD x 14' horizontal rails	(4) 1-1/4" Fiber	Sprint Nextel
		6	ALU 800 MHz - RRUs			
		3	ALU TD-RRH8x20-25 - RRUs			
		3	RFS APXVTM14-C-I20 - Panel			
		3	Commscope NNVV-65B-R4 Panel			
17	129.5	1	RFS 220-7N Omni	(3) Standoffs at 120.0'	(3) 7/8"	CL&P
18	124.7	1	RFS/220-3AN -Omni			
19	123.0	1	Telewave ANT450D6 Omni			
-	46.5	1	GPS	(1) 4' Standoff	(1) 1/2"[1]	Sprint

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	145.0	6	ALU 800 Mhz	Low Profile Platform with (1) SitePro HRK14-U Handrail Kit, (1) SitePro PRK-SFS-H-L V-brace Kit, (1) SitePro PRK-1245L reinforcement kit, (6) SitePro SCX1-K Brackets, (3) Pipe2.0STD x 4' long corner braces and (3) Pipe2.0STD x 14' horizontal rails	(3) 1.9" Fiber	T-Mobile Sprint
12		3	Commscope VV-65A-R1 - Panel			
13		3	RFS APXVAALL24_43-U-NA20 - Panel			
14		3	Ericsson AIR6449 B41 - Panel			
15		3	Ericsson 4460 B25 + B66			
16		3	Ericsson 4480 B71 + B85			
20	46.5	1	GPS	(1) 4' Standoff	(1) 1/2"	

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**83.7%**	**82.8%**	**68.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	7231.2	54.6	101.9

Two foundation design options were included in the referenced foundation design document. Since it is not known which option was installed, both designs were analyzed using the supplied documents and soils report and both were found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2875 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.

Usage Diagram - Max Ratio 83.66% at 0.0ft

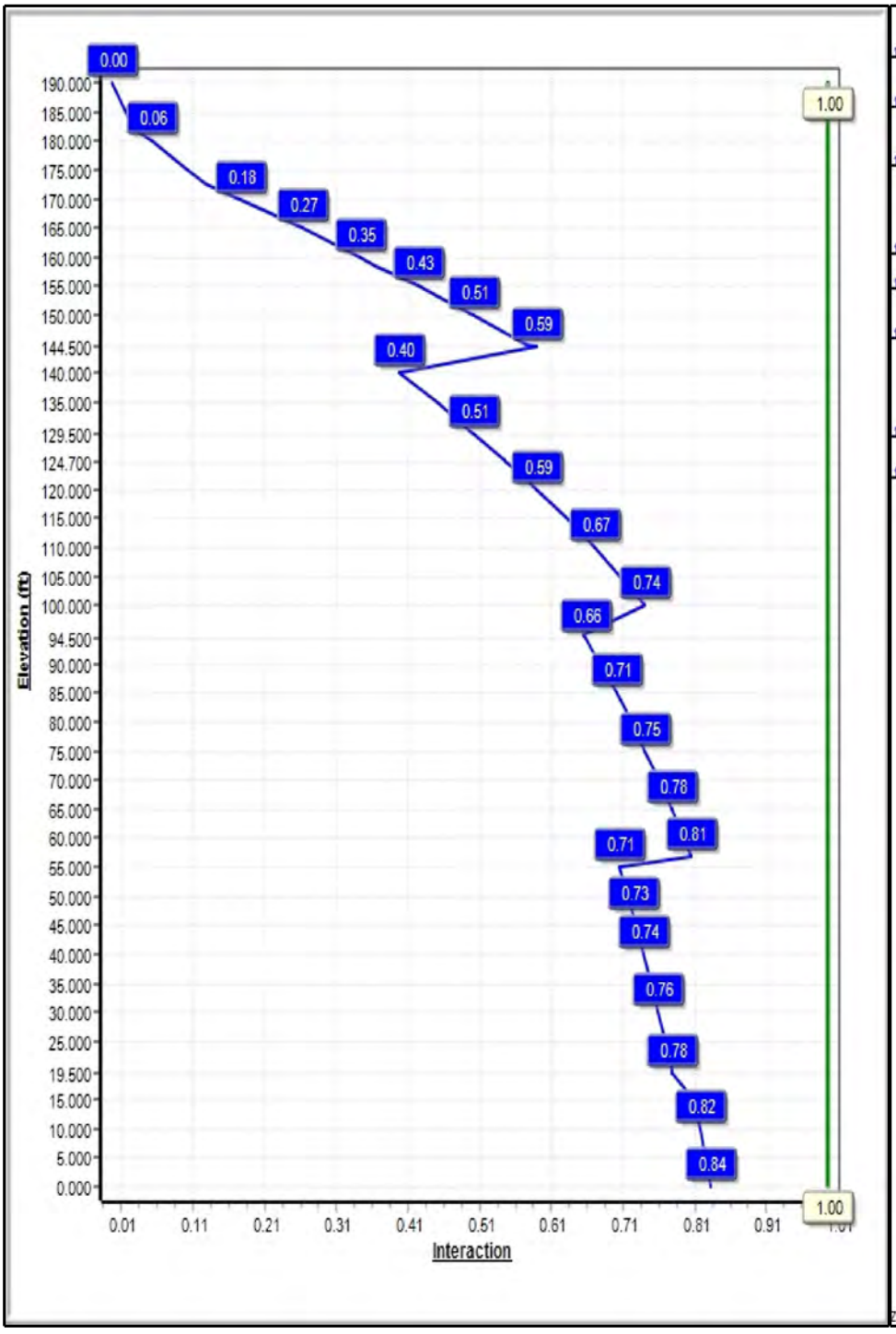
Structure:	CT00235-B-SBA	**Code:**	EIA/TIA-222-G	2/21/2022
Site Name:	Stony Brook	**Exposure:**	C	
Height:	190.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

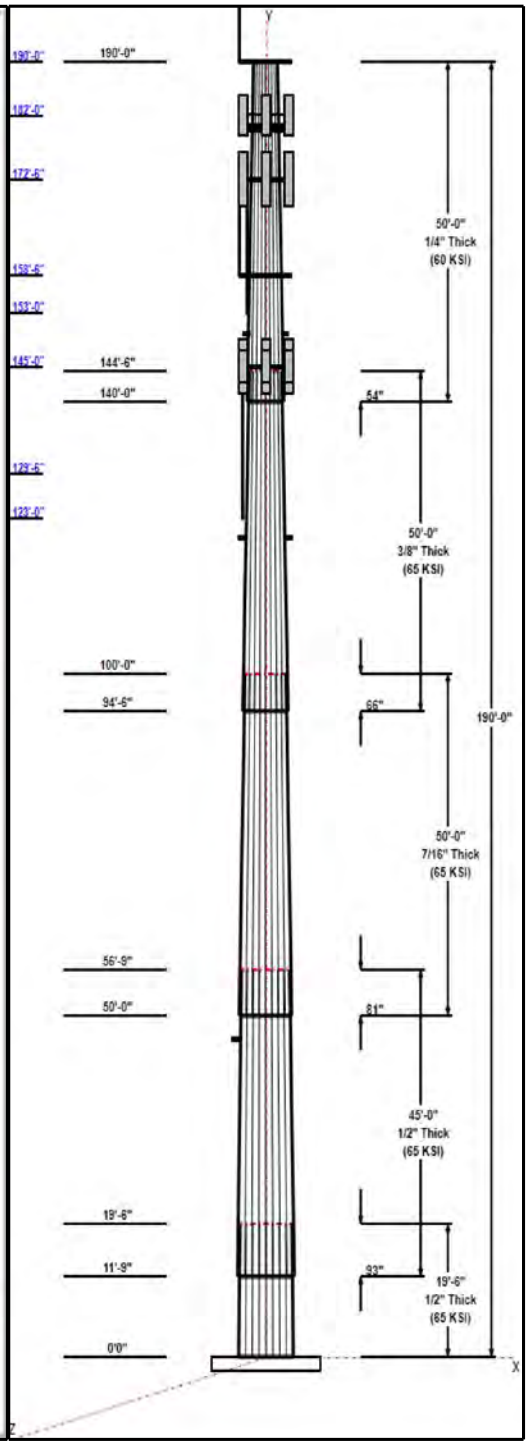
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 108 mph Wind

Iterations: 26





Structure: CT00235-B-SBA

Type: Tapered
Site Name: Stony Brook
Height: 190.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22003

2/21/2022

Tower Engineering Solutions

Shaft Properties

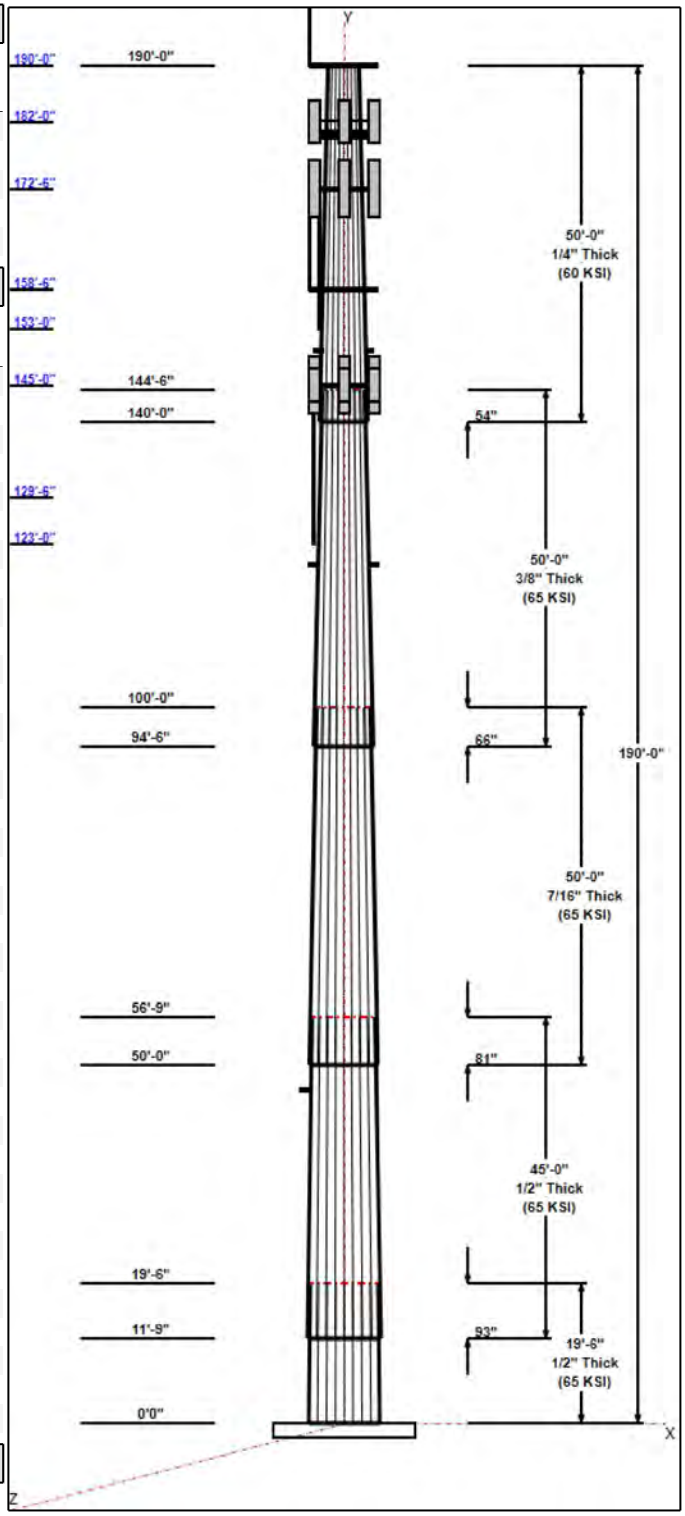
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	19.50	58.39	62.68	0.500		0.22003	65
2	45.00	51.19	61.09	0.500	Slip	0.22003	65
3	50.00	42.55	53.55	0.438	Slip	0.22003	65
4	50.00	33.51	44.51	0.375	Slip	0.22003	65
5	50.00	24.00	35.00	0.250	Slip	0.22003	60

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
190.00	190.00	1	Low Profile Platform	--
190.00	195.00	1	ANT150D3	SPD
182.00	182.00	3	MX08FRO665-21	Dish Wireless
182.00	182.00	1	MC-PK8-DSH	Dish Wireless
182.00	182.00	3	TA08025-B605	Dish Wireless
182.00	182.00	3	TA08025-B604	Dish Wireless
182.00	182.00	1	RDIDC-9181-PF-48	Dish Wireless
172.50	172.50	1	PV-PHK12-B	T-Mobile
172.50	172.50	3	Air21 B2A/B4P	T-Mobile
172.50	172.50	3	AIR 21 B4A/B2P	T-Mobile
172.50	172.50	3	APXVAALL24-43-U-NA20	T-Mobile
172.50	172.50	3	Ericsson KRY 112 144/1	T-Mobile
172.50	172.50	3	Ericsson 4449 B71 + B85	T-Mobile
172.50	172.50	1	PRK-1245	T-Mobile
172.50	172.50	1	Low Profile Platform-flat	T-Mobile
158.50	158.50	1	Low Profile Platform-flat	CL&P
158.50	165.15	1	PD458-2N	CL&P
156.00	162.30	1	114202C	CL&P
153.00	156.00	1	ANT450D6-9	CL&P
150.00	150.00	2	3 ft Standoff	CL&P
145.00	145.00	1	Low Profile Platform-flat	T-Mobile Sprint
145.00	145.00	1	HRK14	T-Mobile Sprint
145.00	145.00	1	PRK-1245 (kicker kit)	T-Mobile Sprint
145.00	145.00	1	(3) SFS-H-L (V-Braces)	T-Mobile Sprint
145.00	145.00	1	Horizontal Rail & SCX1-K	T-Mobile Sprint
145.00	145.00	6	800 MHz RRUs	T-Mobile Sprint
145.00	145.00	3	VV-65A-R1	T-Mobile Sprint
145.00	145.00	3	APXVAALL24_43-U-NA20	T-Mobile Sprint
145.00	145.00	3	AIR6449 B41	T-Mobile Sprint
145.00	145.00	3	4460 Radio	T-Mobile Sprint
145.00	145.00	3	4480 Radio	T-Mobile Sprint
129.50	139.00	1	220-7N Omni	CL&P
124.70	135.05	1	220-3AN	CL&P
123.00	126.00	1	ANT450D6-9	CL&P
120.00	120.00	3	3 ft Standoff	CL&P
46.50	46.50	1	3 ft Standoff	T-Mobile Sprint
46.50	46.50	1	GPS	T-Mobile Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	190.00	Inside	7/8" Coax	SPD
0.00	182.00	Inside	1.75" Hybrid	Dish Wireless
0.00	172.50	Inside	1 5/8" Coax	T-Mobile
0.00	172.50	Inside	1 5/8" Fiber	T-Mobile



0.00	172.50	Inside	1.9" Fiber	T-Mobile
0.00	158.50	Inside	7/8" Coax	CL&P
0.00	145.00	Inside	1.9" Fiber	T-Mobile Sprint
0.00	120.00	Inside	7/8" Coax	CL&P
0.00	46.50	Outside	1/2" GPS Line	T-Mobile Sprint

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.5000	71.0	50.0	Clipped

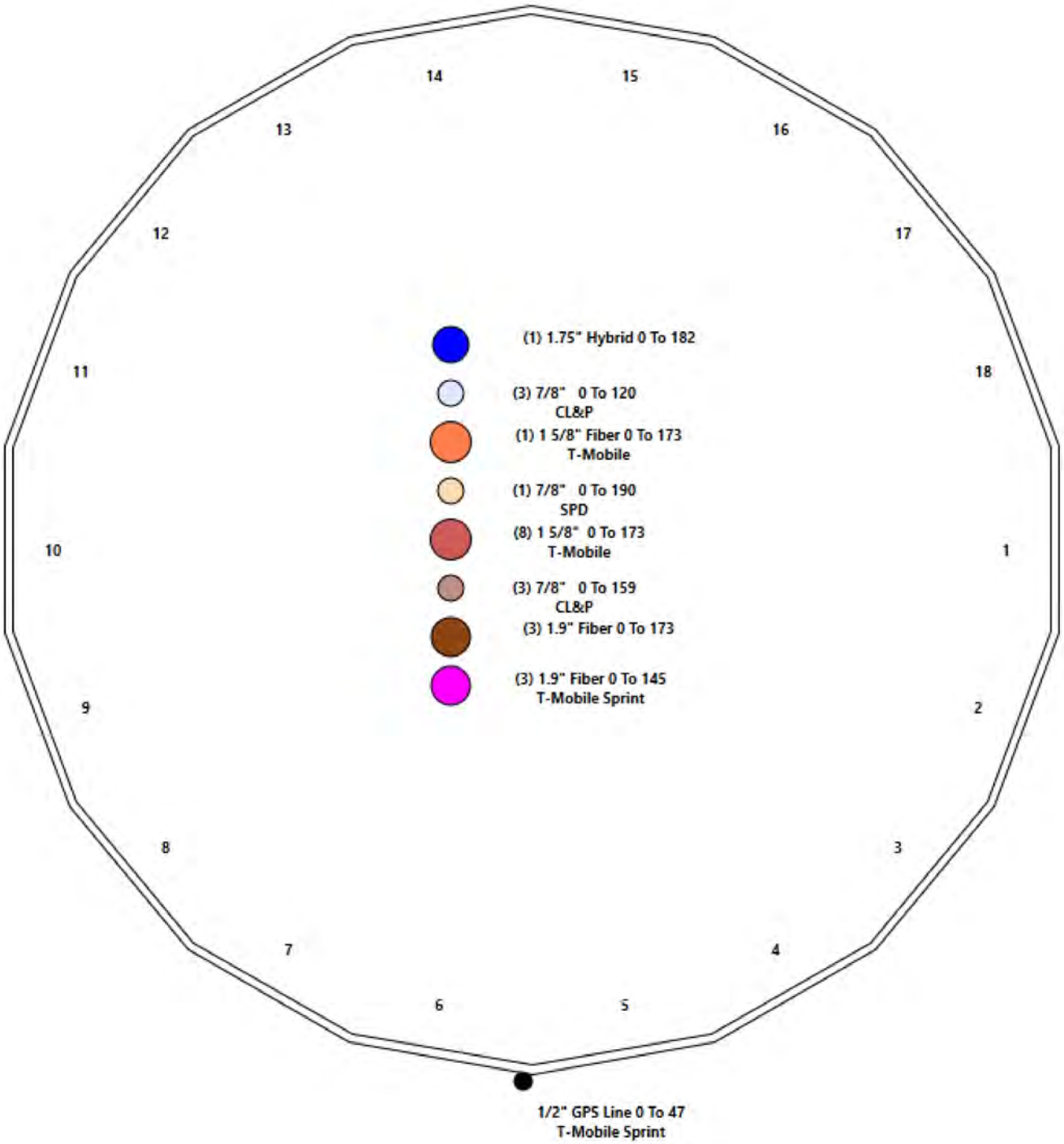
Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 108 mph Wind	7231.2	54.6	70.6
0.9D + 1.6W 108 mph Wind	7145.9	54.6	52.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1832.2	13.6	101.9
1.2D + 1.0E	282.6	2.2	70.7
0.9D + 1.0E	279.0	2.2	53.0
1.0D + 1.0W 60 mph Wind	1387.1	10.5	58.9

Structure: CT00235-B-SBA - Coax Line Placement

Type: Monopole
Site Name: Stony Brook
Height: 190.00 (ft)

2/21/2022



Shaft Properties

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	19.500	0.5000	65		0.00	6,322
2	18	45.000	0.5000	65	Slip	93.00	13,522
3	18	50.000	0.4375	65	Slip	81.00	11,249
4	18	50.000	0.3750	65	Slip	66.00	7,824
5	18	50.000	0.2500	60	Slip	54.00	3,949
					Total Shaft Weight:		**42,865**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	62.68	0.00	98.68	48202.16	20.69	125.36	58.39	19.50	91.87	38896.7	19.18	116.7	0.220026
2	61.09	11.75	96.16	44608.55	20.13	122.19	51.19	56.75	80.45	26119.8	16.64	102.3	0.220026
3	53.55	50.00	73.76	26290.75	20.17	122.41	42.55	100.00	58.48	13104.7	15.74	97.26	0.220026
4	44.51	94.50	52.53	12930.02	19.52	118.70	33.51	144.50	39.44	5471.21	14.35	89.36	0.220026
5	35.00	140.0	27.57	4207.25	23.28	140.01	24.00	190.00	18.84	1343.00	15.52	96.00	0.220026

Load Summary

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	190.00	Low Profile Platform	1	1200.00	25.00	1.00	2272.18	46.444	1.00	0.00	0.00
2	190.00	ANT150D3	1	18.00	2.18	1.00	92.89	10.878	1.00	0.00	5.00
3	182.00	MX08FRO665-21	3	64.50	12.49	0.74	361.05	13.983	0.74	0.00	0.00
4	182.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3447.79	85.746	1.00	0.00	0.00
5	182.00	TA08025-B605	3	75.00	1.96	0.67	128.33	2.532	0.67	0.00	0.00
6	182.00	TA08025-B604	3	63.90	1.96	0.67	115.52	2.532	0.67	0.00	0.00
7	182.00	RDIDC-9181-PF-48	1	21.85	2.01	1.00	76.01	2.589	1.00	0.00	0.00
8	172.50	PV-PHK12-B	1	406.61	10.52	1.00	895.94	20.946	1.00	0.00	0.00
9	172.50	Air21 B2A/B4P	3	132.20	6.51	0.87	319.65	7.707	0.87	0.00	0.00
10	172.50	AIR 21 B4A/B2P	3	91.50	6.09	0.86	263.23	7.204	0.86	0.00	0.00
11	172.50	APXVAALL24-43-U-NA20	3	128.00	20.24	0.70	552.57	22.168	0.70	0.00	0.00
12	172.50	Ericsson KRY 112 144/1	3	11.00	0.41	0.67	21.93	0.892	0.67	0.00	0.00
13	172.50	Ericsson 4449 B71 + B85	3	73.20	1.97	0.67	131.76	2.547	0.67	0.00	0.00
14	172.50	PRK-1245	1	464.91	9.50	1.00	794.02	19.588	1.00	0.00	0.00
15	172.50	Low Profile Platform-flat	1	1200.00	25.00	1.00	2261.87	46.237	1.00	0.00	0.00
16	158.50	Low Profile Platform-flat	1	1200.00	25.00	1.00	2252.92	46.058	1.00	0.00	0.00
17	158.50	PD458-2N	1	22.00	2.66	1.00	94.09	7.416	1.00	0.00	6.65
18	156.00	114202C	1	24.00	2.14	1.00	145.62	6.709	1.00	0.00	6.30
19	153.00	ANT450D6-9	1	18.00	2.77	1.00	100.69	5.806	1.00	0.00	3.00
20	150.00	3 ft Standoff	2	40.00	2.63	1.00	120.28	8.599	1.00	0.00	0.00
21	145.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2243.59	45.872	1.00	0.00	0.00
22	145.00	HRK14	1	302.36	8.13	1.00	659.97	16.049	1.00	0.00	0.00
23	145.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	788.36	19.414	1.00	0.00	0.00
24	145.00	(3) SFS-H-L (V-Braces)	1	230.00	9.70	1.00	550.03	19.823	1.00	0.00	0.00
25	145.00	Horizontal Rail & SCX1-K	1	302.36	9.97	1.00	659.97	19.681	1.00	0.00	0.00
26	145.00	800 MHz RRUs	6	53.00	2.49	0.92	126.71	3.630	0.92	0.00	0.00
27	145.00	VV-65A-R1	3	44.10	6.62	0.82	223.56	7.726	0.82	0.00	0.00
28	145.00	APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	548.87	22.134	0.73	0.00	0.00
29	145.00	AIR6449 B41	3	103.00	5.65	0.71	239.65	6.597	0.71	0.00	0.00
30	145.00	4460 Radio	3	109.00	2.85	0.67	180.66	3.522	0.67	0.00	0.00
31	145.00	4480 Radio	3	93.00	2.85	0.67	164.69	3.522	0.67	0.00	0.00
32	129.50	220-7N Omni	1	22.00	5.32	1.00	256.07	12.034	1.00	0.00	9.50
33	124.70	220-3AN	1	24.00	5.69	1.00	166.04	12.888	1.00	0.00	10.35
34	123.00	ANT450D6-9	1	18.00	2.77	1.00	98.91	5.741	1.00	0.00	3.00
35	120.00	3 ft Standoff	3	40.00	2.63	1.00	118.51	8.467	1.00	0.00	0.00
36	46.50	3 ft Standoff	1	40.00	2.63	1.00	111.41	7.939	1.00	0.00	0.00
37	46.50	GPS	1	10.00	1.00	1.00	36.08	1.633	1.00	0.00	0.00
		Totals:	**71**	**12,767.60**			**29,115.24**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	190.00	(1) 7/8" Coax	0.00	Inside
0.00	182.00	(1) 1.75" Hybrid	0.00	Inside
0.00	172.50	(8) 1 5/8" Coax	0.00	Inside
0.00	172.50	(1) 1 5/8" Fiber	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	172.50	(3) 1.9" Fiber			0.00	Inside					
0.00	158.50	(3) 7/8" Coax			0.00	Inside					
0.00	145.00	(3) 1.9" Fiber			0.00	Inside					
0.00	120.00	(3) 7/8" Coax			0.00	Inside					
0.00	46.50	(1) 1/2" GPS Line			0.50	Outside					

Shaft Section Properties

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	62.680	98.676	48202.2	20.69	125.36	77.1	1514.	0.0
5.00		0.5000	61.580	96.930	45688.7	20.31	123.16	77.5	1461.	1664.0
10.00		0.5000	60.480	95.184	43264.1	19.92	120.96	78.0	1409.	1634.3
11.75	Bot - Section 2	0.5000	60.095	94.573	42436.3	19.78	120.19	78.1	1390.	565.0
15.00		0.5000	59.380	93.439	40926.9	19.53	118.76	78.4	1357.	2096.8
19.50	Top - Section 1	0.5000	59.389	93.454	40947.5	19.53	118.78	0.0	0.0	2861.8
20.00		0.5000	59.279	93.280	40718.5	19.49	118.56	78.5	1352.	158.9
25.00		0.5000	58.179	91.534	38474.7	19.11	116.36	78.9	1302.	1572.2
30.00		0.5000	57.079	89.788	36314.9	18.72	114.16	79.4	1253.	1542.5
35.00		0.5000	55.979	88.042	34237.5	18.33	111.96	79.8	1204.	1512.8
40.00		0.5000	54.879	86.296	32240.9	17.94	109.76	80.3	1157.	1483.1
45.00		0.5000	53.779	84.550	30323.4	17.55	107.56	80.8	1110.	1453.4
46.50		0.5000	53.449	84.027	29763.4	17.44	106.90	80.9	1096.	430.2
50.00	Bot - Section 3	0.5000	52.679	82.805	28483.5	17.17	105.36	81.2	1065.	993.5
55.00		0.5000	51.579	81.059	26719.6	16.78	103.16	81.7	1020.	2635.9
56.75	Top - Section 2	0.4375	52.069	71.694	24146.5	19.57	119.01	0.0	0.0	909.4
60.00		0.4375	51.353	70.701	23157.1	19.29	117.38	78.7	888.2	787.4
65.00		0.4375	50.253	69.173	21688.2	18.84	114.86	79.2	850.0	1189.9
70.00		0.4375	49.153	67.645	20282.8	18.40	112.35	79.8	812.8	1163.9
75.00		0.4375	48.053	66.118	18939.5	17.96	109.84	80.3	776.3	1137.9
80.00		0.4375	46.953	64.590	17656.8	17.51	107.32	80.8	740.7	1111.9
85.00		0.4375	45.853	63.062	16433.4	17.07	104.81	81.3	705.9	1085.9
90.00		0.4375	44.753	61.535	15267.9	16.63	102.29	81.8	672.0	1059.9
94.50	Bot - Section 4	0.4375	43.763	60.160	14267.2	16.23	100.03	82.3	642.1	931.7
95.00		0.4375	43.652	60.007	14158.8	16.18	99.78	82.4	638.8	191.5
100.00	Top - Section 3	0.3750	43.302	51.092	11895.4	18.95	115.47	0.0	0.0	1888.4
105.00		0.3750	42.202	49.783	11004.1	18.43	112.54	79.7	513.6	858.1
110.00		0.3750	41.102	48.474	10158.4	17.92	109.61	80.3	486.8	835.9
115.00		0.3750	40.002	47.164	9357.3	17.40	106.67	80.9	460.7	813.6
120.00		0.3750	38.902	45.855	8599.4	16.88	103.74	81.5	435.4	791.3
123.00		0.3750	38.242	45.069	8164.9	16.57	101.98	81.9	420.5	464.1
124.70		0.3750	37.868	44.624	7925.3	16.39	100.98	82.1	412.2	259.4
125.00		0.3750	37.802	44.546	7883.5	16.36	100.80	82.2	410.8	45.5
129.50		0.3750	36.812	43.367	7274.3	15.90	98.16	82.5	389.2	673.1
130.00		0.3750	36.702	43.236	7208.6	15.85	97.87	82.5	386.9	73.7
135.00		0.3750	35.601	41.927	6573.3	15.33	94.94	82.5	363.7	724.5
140.00	Bot - Section 5	0.3750	34.501	40.617	5976.5	14.81	92.00	82.5	341.2	702.2
144.50	Top - Section 4	0.2500	34.011	26.789	3857.8	22.58	136.04	0.0	0.0	1029.1
145.00		0.2500	33.901	26.701	3820.2	22.50	135.60	70.1	221.9	45.5
150.00		0.2500	32.801	25.828	3457.6	21.72	131.20	70.9	207.6	446.9
153.00		0.2500	32.141	25.305	3251.5	21.26	128.56	71.4	199.3	261.0
155.00		0.2500	31.701	24.955	3118.8	20.95	126.80	71.7	193.8	171.0
156.00		0.2500	31.481	24.781	3053.8	20.79	125.92	71.9	191.1	84.6
158.50		0.2500	30.931	24.344	2895.2	20.41	123.72	72.3	184.4	209.0
160.00		0.2500	30.601	24.082	2802.8	20.17	122.40	72.6	180.4	123.6
165.00		0.2500	29.501	23.210	2508.9	19.40	118.00	73.4	167.5	402.3
170.00		0.2500	28.401	22.337	2236.4	18.62	113.60	74.2	155.1	387.5
172.50		0.2500	27.850	21.900	2107.8	18.23	111.40	74.6	149.1	188.2
175.00		0.2500	27.300	21.464	1984.3	17.84	109.20	75.0	143.2	184.4
180.00		0.2500	26.200	20.591	1751.9	17.07	104.80	75.8	131.7	357.8

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
182.00		0.2500	25.760	20.242	1664.3	16.76	103.04	76.1	127.3	138.9
185.00		0.2500	25.100	19.718	1538.4	16.29	100.40	76.2	120.7	204.0
190.00		0.2500	24.000	18.845	1343.0	15.52	96.00	76.2	110.2	328.1
										42865.3

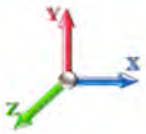
Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.112	26.52	528.12	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	24.112	26.52	518.85	0.650	0.000	5.00	26.287	17.09	725.1	0.0	1996.8
10.00		1.00	0.85	24.112	26.52	509.58	0.650	0.000	5.00	25.821	16.78	712.3	0.0	1961.2
11.75	Bot - Section 2	1.00	0.85	24.112	26.52	506.33	0.650	0.000	1.75	8.928	5.80	246.3	0.0	678.0
15.00		1.00	0.85	24.112	26.52	500.31	0.650	0.000	3.25	16.703	10.86	460.7	0.0	2516.1
19.50	Top - Section 1	1.00	0.90	25.448	27.99	505.41	0.650	0.000	4.50	22.803	14.82	663.8	0.0	3434.2
20.00		1.00	0.90	25.584	28.14	514.48	0.650	0.000	0.50	2.510	1.63	73.5	0.0	190.6
25.00		1.00	0.95	26.814	29.50	516.94	0.650	0.000	5.00	24.848	16.15	762.2	0.0	1886.6
30.00		1.00	0.98	27.863	30.65	516.99	0.650	0.000	5.00	24.383	15.85	777.2	0.0	1851.0
35.00		1.00	1.01	28.782	31.66	515.32	0.650	0.000	5.00	23.917	15.55	787.5	0.0	1815.3
40.00		1.00	1.04	29.603	32.56	512.34	0.650	0.000	5.00	23.452	15.24	794.2	0.0	1779.7
45.00		1.00	1.07	30.346	33.38	508.33	0.650	0.000	5.00	22.986	14.94	798.0	0.0	1744.1
46.50	Appurtenance(s)	1.00	1.08	30.557	33.61	506.96	0.650	0.000	1.50	6.805	4.42	237.9	0.0	516.3
50.00	Bot - Section 3	1.00	1.09	31.027	34.13	503.49	0.650	0.000	3.50	15.716	10.22	557.8	0.0	1192.1
55.00		1.00	1.12	31.656	34.82	497.95	0.650	0.000	5.00	22.426	14.58	812.1	0.0	3163.0
56.75	Top - Section 2	1.00	1.12	31.865	35.05	495.86	0.650	0.000	1.75	7.739	5.03	282.1	0.0	1091.3
60.00		1.00	1.14	32.241	35.47	500.33	0.650	0.000	3.25	14.221	9.24	524.5	0.0	944.8
65.00		1.00	1.16	32.789	36.07	493.76	0.650	0.000	5.00	21.495	13.97	806.3	0.0	1427.9
70.00		1.00	1.17	33.305	36.63	486.73	0.650	0.000	5.00	21.029	13.67	801.2	0.0	1396.7
75.00		1.00	1.19	33.792	37.17	479.30	0.650	0.000	5.00	20.564	13.37	794.9	0.0	1365.5
80.00		1.00	1.21	34.254	37.68	471.52	0.650	0.000	5.00	20.098	13.06	787.6	0.0	1334.3
85.00		1.00	1.22	34.694	38.16	463.42	0.650	0.000	5.00	19.633	12.76	779.2	0.0	1303.1
90.00		1.00	1.24	35.114	38.63	455.03	0.650	0.000	5.00	19.167	12.46	770.0	0.0	1271.9
94.50	Bot - Section 4	1.00	1.25	35.477	39.02	447.26	0.650	0.000	4.50	16.853	10.95	684.0	0.0	1118.1
95.00		1.00	1.25	35.516	39.07	446.38	0.650	0.000	0.50	1.881	1.22	76.4	0.0	229.8
100.00	Top - Section 3	1.00	1.27	35.902	39.49	437.49	0.650	0.000	5.00	18.554	12.06	762.0	0.0	2266.1
105.00		1.00	1.28	36.272	39.90	436.12	0.650	0.000	5.00	18.088	11.76	750.6	0.0	1029.8
110.00		1.00	1.29	36.629	40.29	426.84	0.650	0.000	5.00	17.623	11.45	738.5	0.0	1003.0
115.00		1.00	1.30	36.974	40.67	417.36	0.650	0.000	5.00	17.157	11.15	725.7	0.0	976.3
120.00	Appurtenance(s)	1.00	1.32	37.306	41.04	407.71	0.650	0.000	5.00	16.692	10.85	712.4	0.0	949.6
123.00	Appurtenance(s)	1.00	1.32	37.501	41.25	401.83	0.650	0.000	3.00	9.792	6.36	420.1	0.0	556.9
124.70	Appurtenance(s)	1.00	1.33	37.609	41.37	398.48	0.650	0.000	1.70	5.474	3.56	235.5	0.0	311.3
125.00		1.00	1.33	37.628	41.39	397.88	0.650	0.000	0.30	0.960	0.62	41.3	0.0	54.6
129.50	Appurtenance(s)	1.00	1.34	37.910	41.70	388.91	0.650	0.000	4.50	14.206	9.23	616.1	0.0	807.7
130.00		1.00	1.34	37.940	41.73	387.90	0.650	0.000	0.50	1.555	1.01	67.5	0.0	88.4
135.00		1.00	1.35	38.243	42.07	377.77	0.650	0.000	5.00	15.296	9.94	669.2	0.0	869.4
140.00	Bot - Section 5	1.00	1.36	38.537	42.39	367.50	0.650	0.000	5.00	14.830	9.64	653.8	0.0	842.6
144.50	Top - Section 4	1.00	1.37	38.795	42.67	358.15	0.650	0.000	4.50	13.139	8.54	583.1	0.0	1235.0
145.00	Appurtenance(s)	1.00	1.37	38.823	42.71	362.45	0.650	0.000	0.50	1.437	0.93	63.8	0.0	54.6
150.00	Appurtenance(s)	1.00	1.38	39.101	43.01	351.94	0.650	0.000	5.00	14.111	9.17	631.2	0.0	536.2
153.00	Appurtenance(s)	1.00	1.38	39.264	43.19	345.58	0.650	0.000	3.00	8.243	5.36	370.3	0.0	313.2
155.00		1.00	1.39	39.372	43.31	341.31	0.650	0.000	2.00	5.402	3.51	243.3	0.0	205.2
156.00	Appurtenance(s)	1.00	1.39	39.425	43.37	339.17	0.650	0.000	1.00	2.673	1.74	120.6	0.0	101.5
158.50	Appurtenance(s)	1.00	1.39	39.557	43.51	333.80	0.650	0.000	2.50	6.602	4.29	298.7	0.0	250.7
160.00		1.00	1.40	39.636	43.60	330.57	0.650	0.000	1.50	3.905	2.54	177.1	0.0	148.3
165.00		1.00	1.41	39.893	43.88	319.72	0.650	0.000	5.00	12.714	8.26	580.3	0.0	482.8
170.00		1.00	1.42	40.145	44.16	308.76	0.650	0.000	5.00	12.249	7.96	562.5	0.0	465.0

Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

172.50 Appurtenance(s)	1.00	1.42	40.268	44.30	303.25	0.650	0.000	2.50	5.950	3.87	274.1	0.0	225.8
175.00	1.00	1.42	40.391	44.43	297.71	0.650	0.000	2.50	5.834	3.79	269.5	0.0	221.3
180.00	1.00	1.43	40.631	44.69	286.56	0.650	0.000	5.00	11.318	7.36	526.1	0.0	429.3
182.00 Appurtenance(s)	1.00	1.44	40.725	44.80	282.08	0.650	0.000	2.00	4.397	2.86	204.8	0.0	166.7
185.00	1.00	1.44	40.866	44.95	275.32	0.650	0.000	3.00	6.456	4.20	301.8	0.0	244.8
190.00 Appurtenance(s)	1.00	1.45	41.096	45.21	264.00	0.650	0.000	5.00	10.387	6.75	488.3	0.0	393.7
							Totals:	**190.00**			**26,803.2**		**51,438.3**

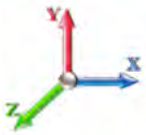
Discrete Appurtenance Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	190.00	Low Profile Platform	1	41.096	45.206	1.00	1.00	25.00	1440.00	0.000	0.000	1808.22	0.00	0.00
2	190.00	ANT150D3	1	41.321	45.453	1.00	1.00	2.18	21.60	0.000	5.000	158.54	0.00	792.71
3	182.00	RDIDC-9181-PF-48	1	40.725	44.798	1.00	1.00	2.01	26.22	0.000	0.000	144.07	0.00	0.00
4	182.00	TA08025-B604	3	40.725	44.798	0.50	0.75	2.95	230.04	0.000	0.000	211.78	0.00	0.00
5	182.00	TA08025-B605	3	40.725	44.798	0.50	0.75	2.95	270.00	0.000	0.000	211.78	0.00	0.00
6	182.00	MC-PK8-DSH	1	40.725	44.798	1.00	1.00	37.59	2072.40	0.000	0.000	2694.33	0.00	0.00
7	182.00	MX08FRO665-21	3	40.725	44.798	0.55	0.75	20.80	232.20	0.000	0.000	1490.58	0.00	0.00
8	172.50	AIR 21 B4A/B2P	3	40.268	44.295	0.65	0.75	11.78	329.40	0.000	0.000	835.17	0.00	0.00
9	172.50	APXVAALL24-43-U-NA20	3	40.268	44.295	0.52	0.75	31.88	460.80	0.000	0.000	2259.27	0.00	0.00
10	172.50	Ericsson KRY 112 144/1	3	40.268	44.295	0.50	0.75	0.62	39.60	0.000	0.000	43.80	0.00	0.00
11	172.50	Air21 B2A/B4P	3	40.268	44.295	0.65	0.75	12.74	475.92	0.000	0.000	903.15	0.00	0.00
12	172.50	PRK-1245	1	40.268	44.295	1.00	1.00	9.50	557.89	0.000	0.000	673.29	0.00	0.00
13	172.50	Ericsson 4449 B71 + B85	3	40.268	44.295	0.50	0.75	2.97	263.52	0.000	0.000	210.48	0.00	0.00
14	172.50	PV-PHK12-B	1	40.268	44.295	1.00	1.00	10.52	487.93	0.000	0.000	745.58	0.00	0.00
15	172.50	Low Profile Platform-flat	1	40.268	44.295	1.00	1.00	25.00	1440.00	0.000	0.000	1771.81	0.00	0.00
16	158.50	PD458-2N	1	39.901	43.891	0.80	0.80	2.13	26.40	0.000	6.650	149.44	0.00	993.78
17	158.50	Low Profile Platform-flat	1	39.557	43.513	1.00	1.00	25.00	1440.00	0.000	0.000	1740.52	0.00	0.00
18	156.00	114202C	1	39.755	43.730	1.00	1.00	2.14	28.80	0.000	6.300	149.73	0.00	943.32
19	153.00	ANT450D6-9	1	39.425	43.368	1.00	1.00	2.77	21.60	0.000	3.000	192.20	0.00	576.61
20	150.00	3 ft Standoff	2	39.101	43.011	1.00	1.00	5.26	96.00	0.000	0.000	361.98	0.00	0.00
21	145.00	AIR6449 B41	3	38.823	42.705	0.53	0.75	9.03	370.80	0.000	0.000	616.72	0.00	0.00
22	145.00	Low Profile Platform-flat	1	38.823	42.705	1.00	1.00	25.00	1440.00	0.000	0.000	1708.20	0.00	0.00
23	145.00	HRK14	1	38.823	42.705	1.00	1.00	8.13	362.83	0.000	0.000	555.51	0.00	0.00
24	145.00	PRK-1245 (kicker kit)	1	38.823	42.705	1.00	1.00	9.50	557.89	0.000	0.000	649.12	0.00	0.00
25	145.00	Horizontal Rail & SCX1-K	1	38.823	42.705	1.00	1.00	9.97	362.83	0.000	0.000	681.23	0.00	0.00
26	145.00	(3) SFS-H-L (V-Braces)	1	38.823	42.705	1.00	1.00	9.70	276.00	0.000	0.000	662.78	0.00	0.00
27	145.00	4460 Radio	3	38.823	42.705	0.50	0.75	4.30	392.40	0.000	0.000	293.56	0.00	0.00
28	145.00	4480 Radio	3	38.823	42.705	0.50	0.75	4.30	334.80	0.000	0.000	293.56	0.00	0.00
29	145.00	VV-65A-R1	3	38.823	42.705	0.61	0.75	12.21	158.76	0.000	0.000	834.55	0.00	0.00
30	145.00	APXVAALL24_43-U-NA20	3	38.823	42.705	0.55	0.75	33.24	442.08	0.000	0.000	2271.51	0.00	0.00
31	145.00	800 MHz RRUs	6	38.823	42.705	0.69	0.75	10.31	381.60	0.000	0.000	704.37	0.00	0.00
32	129.50	220-7N Omni	1	38.479	42.327	1.00	1.00	5.32	26.40	0.000	9.500	360.29	0.00	3422.71
33	124.70	220-3AN	1	38.246	42.071	1.00	1.00	5.69	28.80	0.000	10.350	383.01	0.00	3964.17
34	123.00	ANT450D6-9	1	37.692	41.461	1.00	1.00	2.77	21.60	0.000	3.000	183.75	0.00	551.26
35	120.00	3 ft Standoff	3	37.306	41.037	1.00	1.00	7.89	144.00	0.000	0.000	518.05	0.00	0.00
36	46.50	GPS	1	30.557	33.612	1.00	1.00	1.00	12.00	0.000	0.000	53.78	0.00	0.00
37	46.50	3 ft Standoff	1	30.557	33.612	1.00	1.00	2.63	48.00	0.000	0.000	141.44	0.00	0.00
							Totals:		**15,321.12**			**27,667.16**		

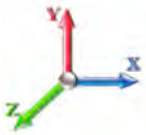
Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		725.09	2116.70	0.00	0.00
10.00		712.25	2081.06	0.00	0.00
11.75		246.26	719.95	0.00	0.00
15.00		460.75	2594.06	0.00	0.00
19.50		663.85	3542.05	0.00	0.00
20.00		73.47	202.61	0.00	0.00
25.00		762.23	2006.52	0.00	0.00
30.00		777.21	1970.88	0.00	0.00
35.00		787.52	1935.23	0.00	0.00
40.00		794.21	1899.59	0.00	0.00
45.00		798.00	1863.95	0.00	0.00
46.50	(2) attachments	433.10	612.23	0.00	0.00
50.00		557.83	1275.40	0.00	0.00
55.00		812.12	3281.95	0.00	0.00
56.75		282.12	1132.89	0.00	0.00
60.00		524.53	1022.15	0.00	0.00
65.00		806.27	1546.80	0.00	0.00
70.00		801.22	1515.61	0.00	0.00
75.00		794.95	1484.42	0.00	0.00
80.00		787.58	1453.24	0.00	0.00
85.00		779.22	1422.05	0.00	0.00
90.00		769.96	1390.86	0.00	0.00
94.50		683.97	1225.11	0.00	0.00
95.00		76.42	241.68	0.00	0.00
100.00		762.03	2384.98	0.00	0.00
105.00		750.58	1148.70	0.00	0.00
110.00		738.46	1121.96	0.00	0.00
115.00		725.72	1095.23	0.00	0.00
120.00	(3) attachments	1230.44	1212.50	0.00	0.00
123.00	(1) attachments	603.83	644.25	0.00	551.26
124.70	(1) attachments	618.54	377.36	0.00	3964.17
125.00		41.34	61.19	0.00	0.00
129.50	(1) attachments	976.37	932.71	0.00	3422.71
130.00		67.50	99.36	0.00	0.00
135.00		669.18	978.94	0.00	0.00
140.00		653.80	952.20	0.00	0.00
144.50		583.14	1333.58	0.00	0.00
145.00	(26) attachments	9334.92	5145.56	0.00	0.00
150.00	(2) attachments	993.17	732.99	0.00	0.00
153.00	(1) attachments	562.46	395.24	0.00	576.61
155.00		243.32	245.53	0.00	0.00
156.00	(1) attachments	270.30	150.49	0.00	943.32
158.50	(2) attachments	2188.70	1767.52	0.00	993.78
160.00		177.07	175.72	0.00	0.00
165.00		580.25	574.16	0.00	0.00
170.00		562.54	556.34	0.00	0.00

Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

172.50	(18) attachments	7716.64	4326.55	0.00	0.00
175.00		269.55	228.87	0.00	0.00
180.00		526.08	444.37	0.00	0.00
182.00	(11) attachments	4957.40	3003.62	0.00	0.00
185.00		301.80	246.62	0.00	0.00
190.00	(2) attachments	2455.09	1858.38	0.00	792.71
	Totals:	**54,470.36**	**70,731.92**	**0.00**	**11,244.56**

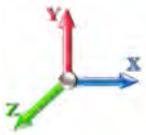
Linear Appurtenance Segment Forces (Factored)

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	24.112	0.00	0.96
10.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	24.112	0.00	0.96
11.75	1/2" GPS Line	Yes	1.75	0.000	0.50	0.07	0.00	0.008	0.000	24.112	0.00	0.34
15.00	1/2" GPS Line	Yes	3.25	0.000	0.50	0.14	0.00	0.008	0.000	24.112	0.00	0.62
19.50	1/2" GPS Line	Yes	4.50	0.000	0.50	0.19	0.00	0.008	0.000	25.448	0.00	0.86
20.00	1/2" GPS Line	Yes	0.50	0.000	0.50	0.02	0.00	0.008	0.000	25.584	0.00	0.10
25.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	26.814	0.00	0.96
30.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	27.863	0.00	0.96
35.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	28.782	0.00	0.96
40.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	29.603	0.00	0.96
45.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	30.346	0.00	0.96
46.50	1/2" GPS Line	Yes	1.50	0.000	0.50	0.06	0.00	0.009	0.000	30.557	0.00	0.29
										Totals:	**0.0**	**8.9**

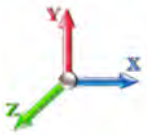
Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-70.63	-54.60	0.00	-7231.1	0.00	7231.17	6843.68	3421.84	17482.3	8754.18	0.00	0.000	0.000	0.837
5.00	-68.32	-54.12	0.00	-6958.1	0.00	6958.17	6762.41	3381.20	16966.6	8495.95	0.11	-0.209	0.000	0.829
10.00	-66.10	-53.57	0.00	-6687.5	0.00	6687.55	6679.70	3339.85	16454.8	8239.66	0.45	-0.422	0.000	0.822
11.75	-65.28	-53.44	0.00	-6593.8	0.00	6593.81	6650.41	3325.20	16276.6	8150.43	0.62	-0.498	0.000	0.819
15.00	-62.54	-53.14	0.00	-6420.1	0.00	6420.13	6595.55	3297.78	15947.1	7985.40	1.00	-0.640	0.000	0.814
19.50	-58.90	-52.54	0.00	-6181.0	0.00	6181.01	6596.31	3298.16	15951.6	7987.68	1.70	-0.837	0.000	0.783
20.00	-58.60	-52.59	0.00	-6154.7	0.00	6154.74	6587.82	3293.91	15901.1	7962.37	1.79	-0.860	0.000	0.782
25.00	-56.41	-52.00	0.00	-5891.8	0.00	5891.83	6502.11	3251.06	15398.0	7710.45	2.81	-1.070	0.000	0.773
30.00	-54.26	-51.38	0.00	-5631.8	0.00	5631.84	6414.97	3207.48	14899.4	7460.77	4.04	-1.283	0.000	0.764
35.00	-52.16	-50.75	0.00	-5374.9	0.00	5374.93	6326.39	3163.20	14405.4	7213.44	5.50	-1.499	0.000	0.754
40.00	-50.09	-50.09	0.00	-5121.2	0.00	5121.20	6236.38	3118.19	13916.4	6968.54	7.19	-1.717	0.000	0.743
45.00	-48.13	-49.36	0.00	-4870.7	0.00	4870.75	6144.94	3072.47	13432.4	6726.18	9.10	-1.937	0.000	0.732
46.50	-47.43	-49.00	0.00	-4796.7	0.00	4796.71	6117.23	3058.61	13288.2	6653.99	9.72	-2.005	0.000	0.729
50.00	-46.02	-48.55	0.00	-4625.2	0.00	4625.23	6052.06	3026.03	12953.6	6486.46	11.25	-2.163	0.000	0.721
55.00	-42.64	-47.72	0.00	-4382.5	0.00	4382.51	5957.75	2978.87	12480.3	6249.47	13.64	-2.388	0.000	0.709
56.75	-41.43	-47.47	0.00	-4299.0	0.00	4299.01	5057.23	2528.61	10722.5	5369.23	14.53	-2.469	0.000	0.809
60.00	-40.27	-47.04	0.00	-4144.7	0.00	4144.73	5008.75	2504.38	10471.4	5243.49	16.26	-2.618	0.000	0.799
65.00	-38.56	-46.33	0.00	-3909.5	0.00	3909.53	4933.00	2466.50	10088.3	5051.65	19.14	-2.865	0.000	0.782
70.00	-36.89	-45.61	0.00	-3677.8	0.00	3677.88	4855.80	2427.90	9709.24	4861.84	22.27	-3.114	0.000	0.764
75.00	-35.26	-44.89	0.00	-3449.8	0.00	3449.83	4777.18	2388.59	9334.40	4674.14	25.66	-3.364	0.000	0.746
80.00	-33.66	-44.16	0.00	-3225.3	0.00	3225.39	4697.12	2348.56	8963.98	4488.65	29.32	-3.615	0.000	0.726
85.00	-32.10	-43.43	0.00	-3004.5	0.00	3004.59	4615.63	2307.81	8598.19	4305.49	33.24	-3.866	0.000	0.705
90.00	-30.59	-42.69	0.00	-2787.4	0.00	2787.43	4532.70	2266.35	8237.22	4124.73	37.42	-4.117	0.000	0.683
94.50	-29.33	-41.99	0.00	-2595.3	0.00	2595.31	4456.84	2228.42	7916.63	3964.20	41.40	-4.342	0.000	0.662
95.00	-28.99	-41.96	0.00	-2574.3	0.00	2574.31	4448.34	2224.17	7881.27	3946.49	41.86	-4.368	0.000	0.659
100.00	-26.50	-41.13	0.00	-2364.5	0.00	2364.51	3637.80	1818.90	6411.13	3210.33	46.56	-4.616	0.000	0.744
105.00	-25.24	-40.40	0.00	-2158.8	0.00	2158.86	3571.83	1785.92	6132.14	3070.63	51.53	-4.862	0.000	0.711
110.00	-24.00	-39.68	0.00	-1956.8	0.00	1956.87	3504.43	1752.22	5856.78	2932.74	56.76	-5.128	0.000	0.675
115.00	-22.80	-38.96	0.00	-1758.4	0.00	1758.49	3435.59	1717.80	5585.22	2796.76	62.26	-5.388	0.000	0.636
120.00	-21.58	-37.69	0.00	-1563.7	0.00	1563.71	3365.32	1682.66	5317.67	2662.79	68.03	-5.640	0.000	0.594
123.00	-20.93	-37.07	0.00	-1450.0	0.00	1450.08	3322.47	1661.24	5159.15	2583.41	71.62	-5.790	0.000	0.568
124.70	-20.58	-36.43	0.00	-1383.1	0.00	1383.10	3297.96	1648.98	5070.01	2538.77	73.69	-5.874	0.000	0.552
125.00	-20.45	-36.43	0.00	-1372.1	0.00	1372.18	3293.62	1646.81	5054.33	2530.92	74.06	-5.889	0.000	0.549
129.50	-19.56	-35.40	0.00	-1204.8	0.00	1204.84	3221.96	1610.98	4812.26	2409.71	79.70	-6.098	0.000	0.507
130.00	-19.39	-35.36	0.00	-1187.1	0.00	1187.14	3212.23	1606.11	4783.10	2395.10	80.34	-6.122	0.000	0.502
135.00	-18.36	-34.66	0.00	-1010.3	0.00	1010.34	3114.95	1557.47	4496.34	2251.51	86.86	-6.338	0.000	0.455
140.00	-17.38	-33.95	0.00	-837.07	0.00	837.07	3017.67	1508.83	4218.45	2112.36	93.60	-6.538	0.000	0.403
144.50	-16.08	-33.25	0.00	-684.27	0.00	684.27	1688.87	844.44	2343.95	1173.72	99.83	-6.701	0.000	0.594
145.00	-12.01	-23.40	0.00	-667.65	0.00	667.65	1685.31	842.66	2331.34	1167.40	100.53	-6.719	0.000	0.580
150.00	-11.33	-22.36	0.00	-550.65	0.00	550.65	1649.03	824.52	2206.02	1104.65	107.67	-6.946	0.000	0.506
153.00	-10.96	-21.77	0.00	-482.99	0.00	482.99	1626.65	813.33	2131.62	1067.39	112.07	-7.073	0.000	0.460
155.00	-10.73	-21.51	0.00	-439.44	0.00	439.44	1611.48	805.74	2082.37	1042.73	115.04	-7.154	0.000	0.429
156.00	-10.59	-21.24	0.00	-416.99	0.00	416.99	1603.81	801.91	2057.85	1030.46	116.54	-7.193	0.000	0.412
158.50	-9.09	-18.86	0.00	-362.90	0.00	362.90	1584.43	792.22	1996.89	999.93	120.32	-7.284	0.000	0.369
160.00	-8.90	-18.67	0.00	-334.61	0.00	334.61	1572.65	786.33	1960.55	981.73	122.62	-7.336	0.000	0.347
165.00	-8.37	-18.04	0.00	-241.24	0.00	241.24	1532.55	766.28	1840.74	921.74	130.36	-7.482	0.000	0.268
170.00	-7.87	-17.42	0.00	-151.02	0.00	151.02	1491.18	745.59	1723.12	862.84	138.24	-7.593	0.000	0.181
172.50	-4.60	-9.20	0.00	-107.47	0.00	107.47	1470.02	735.01	1665.18	833.83	142.21	-7.634	0.000	0.132

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

175.00	-4.40	-8.91	0.00	-84.46	0.00	84.46	1448.54	724.27	1607.86	805.12	146.21	-7.666	0.000	0.108
180.00	-4.03	-8.33	0.00	-39.91	0.00	39.91	1404.63	702.31	1495.13	748.67	154.24	-7.711	0.000	0.056
182.00	-1.72	-3.01	0.00	-23.25	0.00	23.25	1386.71	693.35	1450.78	726.47	157.46	-7.721	0.000	0.033
185.00	-1.51	-2.68	0.00	-14.21	0.00	14.21	1352.25	676.13	1377.77	689.91	162.30	-7.731	0.000	0.022
190.00	0.00	-2.46	0.00	-0.79	0.00	0.79	1292.39	646.19	1257.90	629.89	170.38	-7.738	0.000	0.001

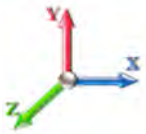
Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.112	26.52	528.12	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	24.112	26.52	518.85	0.650	0.000	5.00	26.287	17.09	725.1	0.0	1497.6
10.00		1.00	0.85	24.112	26.52	509.58	0.650	0.000	5.00	25.821	16.78	712.3	0.0	1470.9
11.75	Bot - Section 2	1.00	0.85	24.112	26.52	506.33	0.650	0.000	1.75	8.928	5.80	246.3	0.0	508.5
15.00		1.00	0.85	24.112	26.52	500.31	0.650	0.000	3.25	16.703	10.86	460.7	0.0	1887.1
19.50	Top - Section 1	1.00	0.90	25.448	27.99	505.41	0.650	0.000	4.50	22.803	14.82	663.8	0.0	2575.6
20.00		1.00	0.90	25.584	28.14	514.48	0.650	0.000	0.50	2.510	1.63	73.5	0.0	143.0
25.00		1.00	0.95	26.814	29.50	516.94	0.650	0.000	5.00	24.848	16.15	762.2	0.0	1415.0
30.00		1.00	0.98	27.863	30.65	516.99	0.650	0.000	5.00	24.383	15.85	777.2	0.0	1388.2
35.00		1.00	1.01	28.782	31.66	515.32	0.650	0.000	5.00	23.917	15.55	787.5	0.0	1361.5
40.00		1.00	1.04	29.603	32.56	512.34	0.650	0.000	5.00	23.452	15.24	794.2	0.0	1334.8
45.00		1.00	1.07	30.346	33.38	508.33	0.650	0.000	5.00	22.986	14.94	798.0	0.0	1308.0
46.50	Appurtenance(s)	1.00	1.08	30.557	33.61	506.96	0.650	0.000	1.50	6.805	4.42	237.9	0.0	387.2
50.00	Bot - Section 3	1.00	1.09	31.027	34.13	503.49	0.650	0.000	3.50	15.716	10.22	557.8	0.0	894.1
55.00		1.00	1.12	31.656	34.82	497.95	0.650	0.000	5.00	22.426	14.58	812.1	0.0	2372.3
56.75	Top - Section 2	1.00	1.12	31.865	35.05	495.86	0.650	0.000	1.75	7.739	5.03	282.1	0.0	818.5
60.00		1.00	1.14	32.241	35.47	500.33	0.650	0.000	3.25	14.221	9.24	524.5	0.0	708.6
65.00		1.00	1.16	32.789	36.07	493.76	0.650	0.000	5.00	21.495	13.97	806.3	0.0	1070.9
70.00		1.00	1.17	33.305	36.63	486.73	0.650	0.000	5.00	21.029	13.67	801.2	0.0	1047.5
75.00		1.00	1.19	33.792	37.17	479.30	0.650	0.000	5.00	20.564	13.37	794.9	0.0	1024.1
80.00		1.00	1.21	34.254	37.68	471.52	0.650	0.000	5.00	20.098	13.06	787.6	0.0	1000.7
85.00		1.00	1.22	34.694	38.16	463.42	0.650	0.000	5.00	19.633	12.76	779.2	0.0	977.3
90.00		1.00	1.24	35.114	38.63	455.03	0.650	0.000	5.00	19.167	12.46	770.0	0.0	953.9
94.50	Bot - Section 4	1.00	1.25	35.477	39.02	447.26	0.650	0.000	4.50	16.853	10.95	684.0	0.0	838.6
95.00		1.00	1.25	35.516	39.07	446.38	0.650	0.000	0.50	1.881	1.22	76.4	0.0	172.3
100.00	Top - Section 3	1.00	1.27	35.902	39.49	437.49	0.650	0.000	5.00	18.554	12.06	762.0	0.0	1699.5
105.00		1.00	1.28	36.272	39.90	436.12	0.650	0.000	5.00	18.088	11.76	750.6	0.0	772.3
110.00		1.00	1.29	36.629	40.29	426.84	0.650	0.000	5.00	17.623	11.45	738.5	0.0	752.3
115.00		1.00	1.30	36.974	40.67	417.36	0.650	0.000	5.00	17.157	11.15	725.7	0.0	732.2
120.00	Appurtenance(s)	1.00	1.32	37.306	41.04	407.71	0.650	0.000	5.00	16.692	10.85	712.4	0.0	712.2
123.00	Appurtenance(s)	1.00	1.32	37.501	41.25	401.83	0.650	0.000	3.00	9.792	6.36	420.1	0.0	417.7
124.70	Appurtenance(s)	1.00	1.33	37.609	41.37	398.48	0.650	0.000	1.70	5.474	3.56	235.5	0.0	233.5
125.00		1.00	1.33	37.628	41.39	397.88	0.650	0.000	0.30	0.960	0.62	41.3	0.0	41.0
129.50	Appurtenance(s)	1.00	1.34	37.910	41.70	388.91	0.650	0.000	4.50	14.206	9.23	616.1	0.0	605.8
130.00		1.00	1.34	37.940	41.73	387.90	0.650	0.000	0.50	1.555	1.01	67.5	0.0	66.3
135.00		1.00	1.35	38.243	42.07	377.77	0.650	0.000	5.00	15.296	9.94	669.2	0.0	652.0
140.00	Bot - Section 5	1.00	1.36	38.537	42.39	367.50	0.650	0.000	5.00	14.830	9.64	653.8	0.0	632.0
144.50	Top - Section 4	1.00	1.37	38.795	42.67	358.15	0.650	0.000	4.50	13.139	8.54	583.1	0.0	926.2
145.00	Appurtenance(s)	1.00	1.37	38.823	42.71	362.45	0.650	0.000	0.50	1.437	0.93	63.8	0.0	41.0
150.00	Appurtenance(s)	1.00	1.38	39.101	43.01	351.94	0.650	0.000	5.00	14.111	9.17	631.2	0.0	402.2
153.00	Appurtenance(s)	1.00	1.38	39.264	43.19	345.58	0.650	0.000	3.00	8.243	5.36	370.3	0.0	234.9
155.00		1.00	1.39	39.372	43.31	341.31	0.650	0.000	2.00	5.402	3.51	243.3	0.0	153.9
156.00	Appurtenance(s)	1.00	1.39	39.425	43.37	339.17	0.650	0.000	1.00	2.673	1.74	120.6	0.0	76.2
158.50	Appurtenance(s)	1.00	1.39	39.557	43.51	333.80	0.650	0.000	2.50	6.602	4.29	298.7	0.0	188.1
160.00		1.00	1.40	39.636	43.60	330.57	0.650	0.000	1.50	3.905	2.54	177.1	0.0	111.2
165.00		1.00	1.41	39.893	43.88	319.72	0.650	0.000	5.00	12.714	8.26	580.3	0.0	362.1
170.00		1.00	1.42	40.145	44.16	308.76	0.650	0.000	5.00	12.249	7.96	562.5	0.0	348.7

Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

172.50 Appurtenance(s)	1.00	1.42	40.268	44.30	303.25	0.650	0.000	2.50	5.950	3.87	274.1	0.0	169.3
175.00	1.00	1.42	40.391	44.43	297.71	0.650	0.000	2.50	5.834	3.79	269.5	0.0	166.0
180.00	1.00	1.43	40.631	44.69	286.56	0.650	0.000	5.00	11.318	7.36	526.1	0.0	322.0
182.00 Appurtenance(s)	1.00	1.44	40.725	44.80	282.08	0.650	0.000	2.00	4.397	2.86	204.8	0.0	125.0
185.00	1.00	1.44	40.866	44.95	275.32	0.650	0.000	3.00	6.456	4.20	301.8	0.0	183.6
190.00 Appurtenance(s)	1.00	1.45	41.096	45.21	264.00	0.650	0.000	5.00	10.387	6.75	488.3	0.0	295.2
							Totals:	**190.00**			**26,803.2**		**38,578.7**

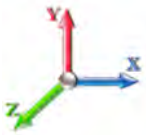
Discrete Appurtenance Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	190.00	Low Profile Platform	1	41.096	45.206	1.00	1.00	25.00	1080.00	0.000	0.000	1808.22	0.00	0.00
2	190.00	ANT150D3	1	41.321	45.453	1.00	1.00	2.18	16.20	0.000	5.000	158.54	0.00	792.71
3	182.00	RDIDC-9181-PF-48	1	40.725	44.798	1.00	1.00	2.01	19.67	0.000	0.000	144.07	0.00	0.00
4	182.00	TA08025-B604	3	40.725	44.798	0.50	0.75	2.95	172.53	0.000	0.000	211.78	0.00	0.00
5	182.00	TA08025-B605	3	40.725	44.798	0.50	0.75	2.95	202.50	0.000	0.000	211.78	0.00	0.00
6	182.00	MC-PK8-DSH	1	40.725	44.798	1.00	1.00	37.59	1554.30	0.000	0.000	2694.33	0.00	0.00
7	182.00	MX08FRO665-21	3	40.725	44.798	0.55	0.75	20.80	174.15	0.000	0.000	1490.58	0.00	0.00
8	172.50	AIR 21 B4A/B2P	3	40.268	44.295	0.65	0.75	11.78	247.05	0.000	0.000	835.17	0.00	0.00
9	172.50	APXVAALL24-43-U-NA20	3	40.268	44.295	0.52	0.75	31.88	345.60	0.000	0.000	2259.27	0.00	0.00
10	172.50	Ericsson KRY 112 144/1	3	40.268	44.295	0.50	0.75	0.62	29.70	0.000	0.000	43.80	0.00	0.00
11	172.50	Air21 B2A/B4P	3	40.268	44.295	0.65	0.75	12.74	356.94	0.000	0.000	903.15	0.00	0.00
12	172.50	PRK-1245	1	40.268	44.295	1.00	1.00	9.50	418.42	0.000	0.000	673.29	0.00	0.00
13	172.50	Ericsson 4449 B71 + B85	3	40.268	44.295	0.50	0.75	2.97	197.64	0.000	0.000	210.48	0.00	0.00
14	172.50	PV-PHK12-B	1	40.268	44.295	1.00	1.00	10.52	365.95	0.000	0.000	745.58	0.00	0.00
15	172.50	Low Profile Platform-flat	1	40.268	44.295	1.00	1.00	25.00	1080.00	0.000	0.000	1771.81	0.00	0.00
16	158.50	PD458-2N	1	39.901	43.891	0.80	0.80	2.13	19.80	0.000	6.650	149.44	0.00	993.78
17	158.50	Low Profile Platform-flat	1	39.557	43.513	1.00	1.00	25.00	1080.00	0.000	0.000	1740.52	0.00	0.00
18	156.00	114202C	1	39.755	43.730	1.00	1.00	2.14	21.60	0.000	6.300	149.73	0.00	943.32
19	153.00	ANT450D6-9	1	39.425	43.368	1.00	1.00	2.77	16.20	0.000	3.000	192.20	0.00	576.61
20	150.00	3 ft Standoff	2	39.101	43.011	1.00	1.00	5.26	72.00	0.000	0.000	361.98	0.00	0.00
21	145.00	AIR6449 B41	3	38.823	42.705	0.53	0.75	9.03	278.10	0.000	0.000	616.72	0.00	0.00
22	145.00	Low Profile Platform-flat	1	38.823	42.705	1.00	1.00	25.00	1080.00	0.000	0.000	1708.20	0.00	0.00
23	145.00	HRK14	1	38.823	42.705	1.00	1.00	8.13	272.12	0.000	0.000	555.51	0.00	0.00
24	145.00	PRK-1245 (kicker kit)	1	38.823	42.705	1.00	1.00	9.50	418.42	0.000	0.000	649.12	0.00	0.00
25	145.00	Horizontal Rail & SCX1-K	1	38.823	42.705	1.00	1.00	9.97	272.12	0.000	0.000	681.23	0.00	0.00
26	145.00	(3) SFS-H-L (V-Braces)	1	38.823	42.705	1.00	1.00	9.70	207.00	0.000	0.000	662.78	0.00	0.00
27	145.00	4460 Radio	3	38.823	42.705	0.50	0.75	4.30	294.30	0.000	0.000	293.56	0.00	0.00
28	145.00	4480 Radio	3	38.823	42.705	0.50	0.75	4.30	251.10	0.000	0.000	293.56	0.00	0.00
29	145.00	VV-65A-R1	3	38.823	42.705	0.61	0.75	12.21	119.07	0.000	0.000	834.55	0.00	0.00
30	145.00	APXVAALL24_43-U-NA20	3	38.823	42.705	0.55	0.75	33.24	331.56	0.000	0.000	2271.51	0.00	0.00
31	145.00	800 MHz RRUs	6	38.823	42.705	0.69	0.75	10.31	286.20	0.000	0.000	704.37	0.00	0.00
32	129.50	220-7N Omni	1	38.479	42.327	1.00	1.00	5.32	19.80	0.000	9.500	360.29	0.00	3422.71
33	124.70	220-3AN	1	38.246	42.071	1.00	1.00	5.69	21.60	0.000	10.350	383.01	0.00	3964.17
34	123.00	ANT450D6-9	1	37.692	41.461	1.00	1.00	2.77	16.20	0.000	3.000	183.75	0.00	551.26
35	120.00	3 ft Standoff	3	37.306	41.037	1.00	1.00	7.89	108.00	0.000	0.000	518.05	0.00	0.00
36	46.50	GPS	1	30.557	33.612	1.00	1.00	1.00	9.00	0.000	0.000	53.78	0.00	0.00
37	46.50	3 ft Standoff	1	30.557	33.612	1.00	1.00	2.63	36.00	0.000	0.000	141.44	0.00	0.00
							Totals:		**11,490.84**			**27,667.16**		

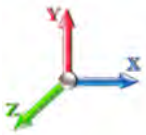
Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		725.09	1587.53	0.00	0.00
10.00		712.25	1560.79	0.00	0.00
11.75		246.26	539.96	0.00	0.00
15.00		460.75	1945.55	0.00	0.00
19.50		663.85	2656.54	0.00	0.00
20.00		73.47	151.96	0.00	0.00
25.00		762.23	1504.89	0.00	0.00
30.00		777.21	1478.16	0.00	0.00
35.00		787.52	1451.43	0.00	0.00
40.00		794.21	1424.69	0.00	0.00
45.00		798.00	1397.96	0.00	0.00
46.50	(2) attachments	433.10	459.17	0.00	0.00
50.00		557.83	956.55	0.00	0.00
55.00		812.12	2461.46	0.00	0.00
56.75		282.12	849.67	0.00	0.00
60.00		524.53	766.61	0.00	0.00
65.00		806.27	1160.10	0.00	0.00
70.00		801.22	1136.71	0.00	0.00
75.00		794.95	1113.32	0.00	0.00
80.00		787.58	1089.93	0.00	0.00
85.00		779.22	1066.53	0.00	0.00
90.00		769.96	1043.14	0.00	0.00
94.50		683.97	918.83	0.00	0.00
95.00		76.42	181.26	0.00	0.00
100.00		762.03	1788.74	0.00	0.00
105.00		750.58	861.52	0.00	0.00
110.00		738.46	841.47	0.00	0.00
115.00		725.72	821.42	0.00	0.00
120.00	(3) attachments	1230.44	909.37	0.00	0.00
123.00	(1) attachments	603.83	483.19	0.00	551.26
124.70	(1) attachments	618.54	283.02	0.00	3964.17
125.00		41.34	45.89	0.00	0.00
129.50	(1) attachments	976.37	699.53	0.00	3422.71
130.00		67.50	74.52	0.00	0.00
135.00		669.18	734.20	0.00	0.00
140.00		653.80	714.15	0.00	0.00
144.50		583.14	1000.19	0.00	0.00
145.00	(26) attachments	9334.92	3859.17	0.00	0.00
150.00	(2) attachments	993.17	549.74	0.00	0.00
153.00	(1) attachments	562.46	296.43	0.00	576.61
155.00		243.32	184.14	0.00	0.00
156.00	(1) attachments	270.30	112.87	0.00	943.32
158.50	(2) attachments	2188.70	1325.64	0.00	993.78
160.00		177.07	131.79	0.00	0.00
165.00		580.25	430.62	0.00	0.00
170.00		562.54	417.25	0.00	0.00

Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

172.50	(18) attachments	7716.64	3244.91	0.00	0.00
175.00		269.55	171.65	0.00	0.00
180.00		526.08	333.28	0.00	0.00
182.00	(11) attachments	4957.40	2252.71	0.00	0.00
185.00		301.80	184.97	0.00	0.00
190.00	(2) attachments	2455.09	1393.79	0.00	792.71
	Totals:	**54,470.36**	**53,048.94**	**0.00**	**11,244.56**

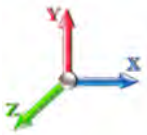
Linear Appurtenance Segment Forces (Factored)

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	24.112	0.00	0.72
10.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	24.112	0.00	0.72
11.75	1/2" GPS Line	Yes	1.75	0.000	0.50	0.07	0.00	0.008	0.000	24.112	0.00	0.25
15.00	1/2" GPS Line	Yes	3.25	0.000	0.50	0.14	0.00	0.008	0.000	24.112	0.00	0.47
19.50	1/2" GPS Line	Yes	4.50	0.000	0.50	0.19	0.00	0.008	0.000	25.448	0.00	0.65
20.00	1/2" GPS Line	Yes	0.50	0.000	0.50	0.02	0.00	0.008	0.000	25.584	0.00	0.07
25.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	26.814	0.00	0.72
30.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	27.863	0.00	0.72
35.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	28.782	0.00	0.72
40.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	29.603	0.00	0.72
45.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	30.346	0.00	0.72
46.50	1/2" GPS Line	Yes	1.50	0.000	0.50	0.06	0.00	0.009	0.000	30.557	0.00	0.22
										Totals:	**0.0**	**6.7**

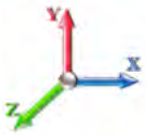
Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.95	-54.57	0.00	-7145.9	0.00	7145.95	6843.68	3421.84	17482.3	8754.18	0.00	0.000	0.000	0.824
5.00	-51.17	-54.03	0.00	-6873.1	0.00	6873.12	6762.41	3381.20	16966.6	8495.95	0.11	-0.207	0.000	0.817
10.00	-49.48	-53.43	0.00	-6602.9	0.00	6602.99	6679.70	3339.85	16454.8	8239.66	0.44	-0.417	0.000	0.809
11.75	-48.84	-53.27	0.00	-6509.4	0.00	6509.49	6650.41	3325.20	16276.6	8150.43	0.61	-0.492	0.000	0.806
15.00	-46.74	-52.93	0.00	-6336.3	0.00	6336.37	6595.55	3297.78	15947.1	7985.40	0.99	-0.632	0.000	0.801
19.50	-44.00	-52.31	0.00	-6098.2	0.00	6098.20	6596.31	3298.16	15951.6	7987.68	1.68	-0.827	0.000	0.770
20.00	-43.74	-52.32	0.00	-6072.0	0.00	6072.05	6587.82	3293.91	15901.1	7962.37	1.77	-0.849	0.000	0.769
25.00	-42.06	-51.69	0.00	-5810.4	0.00	5810.43	6502.11	3251.06	15398.0	7710.45	2.77	-1.056	0.000	0.760
30.00	-40.41	-51.03	0.00	-5551.9	0.00	5551.98	6414.97	3207.48	14899.4	7460.77	3.99	-1.266	0.000	0.751
35.00	-38.79	-50.36	0.00	-5296.8	0.00	5296.81	6326.39	3163.20	14405.4	7213.44	5.43	-1.479	0.000	0.741
40.00	-37.20	-49.66	0.00	-5045.0	0.00	5045.04	6236.38	3118.19	13916.4	6968.54	7.09	-1.694	0.000	0.730
45.00	-35.71	-48.91	0.00	-4796.7	0.00	4796.72	6144.94	3072.47	13432.4	6726.18	8.99	-1.911	0.000	0.719
46.50	-35.17	-48.53	0.00	-4723.3	0.00	4723.36	6117.23	3058.61	13288.2	6653.99	9.60	-1.978	0.000	0.716
50.00	-34.08	-48.05	0.00	-4553.5	0.00	4553.51	6052.06	3026.03	12953.6	6486.46	11.11	-2.133	0.000	0.708
55.00	-31.53	-47.23	0.00	-4313.2	0.00	4313.26	5957.75	2978.87	12480.3	6249.47	13.46	-2.354	0.000	0.696
56.75	-30.59	-46.97	0.00	-4230.6	0.00	4230.61	5057.23	2528.61	10722.5	5369.23	14.34	-2.434	0.000	0.794
60.00	-29.69	-46.51	0.00	-4077.9	0.00	4077.97	5008.75	2504.38	10471.4	5243.49	16.04	-2.581	0.000	0.784
65.00	-28.38	-45.77	0.00	-3845.4	0.00	3845.41	4933.00	2466.50	10088.3	5051.65	18.88	-2.824	0.000	0.767
70.00	-27.09	-45.03	0.00	-3616.5	0.00	3616.54	4855.80	2427.90	9709.24	4861.84	21.97	-3.069	0.000	0.750
75.00	-25.83	-44.29	0.00	-3391.3	0.00	3391.38	4777.18	2388.59	9334.40	4674.14	25.31	-3.315	0.000	0.731
80.00	-24.61	-43.54	0.00	-3169.9	0.00	3169.95	4697.12	2348.56	8963.98	4488.65	28.91	-3.561	0.000	0.712
85.00	-23.41	-42.80	0.00	-2952.2	0.00	2952.24	4615.63	2307.81	8598.19	4305.49	32.77	-3.808	0.000	0.691
90.00	-22.25	-42.05	0.00	-2738.2	0.00	2738.26	4532.70	2266.35	8237.22	4124.73	36.89	-4.054	0.000	0.669
94.50	-21.29	-41.35	0.00	-2549.0	0.00	2549.04	4456.84	2228.42	7916.63	3964.20	40.82	-4.276	0.000	0.648
95.00	-21.02	-41.31	0.00	-2528.3	0.00	2528.37	4448.34	2224.17	7881.27	3946.49	41.27	-4.301	0.000	0.646
100.00	-19.12	-40.49	0.00	-2321.8	0.00	2321.84	3637.80	1818.90	6411.13	3210.33	45.90	-4.545	0.000	0.729
105.00	-18.15	-39.75	0.00	-2119.4	0.00	2119.40	3571.83	1785.92	6132.14	3070.63	50.78	-4.786	0.000	0.696
110.00	-17.20	-39.02	0.00	-1920.6	0.00	1920.65	3504.43	1752.22	5856.78	2932.74	55.93	-5.047	0.000	0.660
115.00	-16.28	-38.30	0.00	-1725.5	0.00	1725.55	3435.59	1717.80	5585.22	2796.76	61.35	-5.302	0.000	0.622
120.00	-15.37	-37.04	0.00	-1534.0	0.00	1534.07	3365.32	1682.66	5317.67	2662.79	67.03	-5.550	0.000	0.581
123.00	-14.87	-36.42	0.00	-1422.4	0.00	1422.41	3322.47	1661.24	5159.15	2583.41	70.56	-5.697	0.000	0.556
124.70	-14.62	-35.79	0.00	-1356.5	0.00	1356.53	3297.96	1648.98	5070.01	2538.77	72.60	-5.779	0.000	0.539
125.00	-14.51	-35.77	0.00	-1345.8	0.00	1345.80	3293.62	1646.81	5054.33	2530.92	72.96	-5.794	0.000	0.537
129.50	-13.85	-34.75	0.00	-1181.4	0.00	1181.41	3221.96	1610.98	4812.26	2409.71	78.51	-5.999	0.000	0.495
130.00	-13.71	-34.71	0.00	-1164.0	0.00	1164.03	3212.23	1606.11	4783.10	2395.10	79.14	-6.022	0.000	0.491
135.00	-12.93	-34.01	0.00	-990.49	0.00	990.49	3114.95	1557.47	4496.34	2251.51	85.55	-6.235	0.000	0.445
140.00	-12.19	-33.32	0.00	-820.44	0.00	820.44	3017.67	1508.83	4218.45	2112.36	92.18	-6.431	0.000	0.393
144.50	-11.21	-32.64	0.00	-670.50	0.00	670.50	1688.87	844.44	2343.95	1173.72	98.31	-6.590	0.000	0.579
145.00	-8.40	-22.95	0.00	-654.18	0.00	654.18	1685.31	842.66	2331.34	1167.40	99.00	-6.608	0.000	0.566
150.00	-7.91	-21.92	0.00	-539.45	0.00	539.45	1649.03	824.52	2206.02	1104.65	106.02	-6.830	0.000	0.494
153.00	-7.64	-21.34	0.00	-473.12	0.00	473.12	1626.65	813.33	2131.62	1067.39	110.35	-6.955	0.000	0.449
155.00	-7.47	-21.08	0.00	-430.44	0.00	430.44	1611.48	805.74	2082.37	1042.73	113.27	-7.034	0.000	0.418
156.00	-7.36	-20.81	0.00	-408.42	0.00	408.42	1603.81	801.91	2057.85	1030.46	114.75	-7.072	0.000	0.402
158.50	-6.30	-18.48	0.00	-355.41	0.00	355.41	1584.43	792.22	1996.89	999.93	118.46	-7.161	0.000	0.360
160.00	-6.16	-18.30	0.00	-327.69	0.00	327.69	1572.65	786.33	1960.55	981.73	120.72	-7.212	0.000	0.338
165.00	-5.76	-17.68	0.00	-236.20	0.00	236.20	1532.55	766.28	1840.74	921.74	128.33	-7.355	0.000	0.261
170.00	-5.40	-17.08	0.00	-147.79	0.00	147.79	1491.18	745.59	1723.12	862.84	136.08	-7.464	0.000	0.175
172.50	-3.19	-9.00	0.00	-105.10	0.00	105.10	1470.02	735.01	1665.18	833.83	139.99	-7.504	0.000	0.128

Calculated Forces

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

175.00	-3.04	-8.72	0.00	-82.59	0.00	82.59	1448.54	724.27	1607.86	805.12	143.91	-7.536	0.000	0.105
180.00	-2.78	-8.15	0.00	-39.01	0.00	39.01	1404.63	702.31	1495.13	748.67	151.81	-7.579	0.000	0.054
182.00	-1.20	-2.94	0.00	-22.71	0.00	22.71	1386.71	693.35	1450.78	726.47	154.98	-7.589	0.000	0.032
185.00	-1.06	-2.62	0.00	-13.88	0.00	13.88	1352.25	676.13	1377.77	689.91	159.73	-7.599	0.000	0.021
190.00	0.00	-2.46	0.00	-0.79	0.00	0.79	1292.39	646.19	1257.90	629.89	167.67	-7.605	0.000	0.001

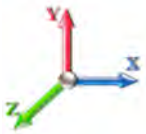
Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	27.322	32.79	186.4	488.8	2485.6
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	26.931	32.32	183.7	515.5	2476.6
11.75	Bot - Section 2	1.00	0.85	5.168	5.68	0.00	1.200	1.353	1.75	9.322	11.19	63.6	182.3	860.3
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	3.25	17.454	20.95	119.1	348.7	2864.8
19.50	Top - Section 1	1.00	0.90	5.454	6.00	0.00	1.200	1.423	4.50	23.870	28.64	171.9	487.9	3922.1
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	0.50	2.629	3.16	19.0	54.3	244.9
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	26.064	31.28	197.7	545.0	2431.7
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	25.621	30.74	202.0	545.1	2396.1
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	25.175	30.21	205.0	543.4	2358.7
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	24.726	29.67	207.1	540.3	2320.0
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	24.276	29.13	208.4	536.2	2280.3
46.50	Appurtenance(s)	1.00	1.08	6.549	7.20	0.00	1.200	1.552	1.50	7.193	8.63	62.2	160.4	676.7
50.00	Bot - Section 3	1.00	1.09	6.650	7.32	0.00	1.200	1.564	3.50	16.628	19.95	146.0	371.9	1564.0
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	23.741	28.49	212.6	534.3	3697.3
56.75	Top - Section 2	1.00	1.12	6.830	7.51	0.00	1.200	1.584	1.75	8.201	9.84	73.9	186.3	1277.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	3.25	15.084	18.10	137.6	343.3	1288.1
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	22.832	27.40	211.8	521.4	1949.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	22.377	26.85	210.8	514.3	1910.9
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	21.921	26.30	209.6	506.7	1872.2
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	21.464	25.76	208.0	498.8	1833.1
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	21.007	25.21	206.2	490.6	1793.7
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	20.549	24.66	204.1	482.0	1754.0
94.50	Bot - Section 4	1.00	1.25	7.604	8.36	0.00	1.200	1.666	4.50	18.102	21.72	181.7	426.7	1544.8
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	0.50	2.020	2.42	20.3	48.1	277.9
100.00	Top - Section 3	1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	19.950	23.94	202.6	472.1	2738.2
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	19.492	23.39	200.0	462.9	1492.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	19.033	22.84	197.2	453.5	1456.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	18.574	22.29	194.3	443.8	1420.1
120.00	Appurtenance(s)	1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	18.114	21.74	191.2	434.0	1383.6
123.00	Appurtenance(s)	1.00	1.32	8.038	8.84	0.00	1.200	1.711	3.00	10.647	12.78	113.0	256.9	813.8
124.70	Appurtenance(s)	1.00	1.33	8.061	8.87	0.00	1.200	1.713	1.70	5.960	7.15	63.4	144.4	455.7
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	0.30	1.046	1.26	11.1	25.4	80.1
129.50	Appurtenance(s)	1.00	1.34	8.125	8.94	0.00	1.200	1.720	4.50	15.496	18.59	166.2	373.5	1181.2
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	0.50	1.699	2.04	18.2	41.4	129.8
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	16.735	20.08	181.1	403.7	1273.1
140.00	Bot - Section 5	1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	16.274	19.53	177.4	393.3	1235.9
144.50	Top - Section 4	1.00	1.37	8.315	9.15	0.00	1.200	1.739	4.50	14.443	17.33	158.5	350.3	1585.3
145.00	Appurtenance(s)	1.00	1.37	8.321	9.15	0.00	1.200	1.739	0.50	1.582	1.90	17.4	38.8	93.4
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	15.565	18.68	172.2	377.5	913.8
153.00	Appurtenance(s)	1.00	1.38	8.416	9.26	0.00	1.200	1.749	3.00	9.117	10.94	101.3	222.6	535.8
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	2.00	5.986	7.18	66.7	146.7	351.9
156.00	Appurtenance(s)	1.00	1.39	8.450	9.30	0.00	1.200	1.752	1.00	2.965	3.56	33.1	72.9	174.5
158.50	Appurtenance(s)	1.00	1.39	8.478	9.33	0.00	1.200	1.755	2.50	7.333	8.80	82.1	179.6	430.3
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	1.50	4.344	5.21	48.7	106.8	255.1
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	14.183	17.02	160.1	344.9	827.7
170.00		1.00	1.42	8.604	9.46	0.00	1.200	1.767	5.00	13.721	16.47	155.8	333.8	798.7

Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

172.50 Appurtenance(s)	1.00	1.42	8.631	9.49	0.00	1.200	1.770	2.50	6.687	8.02	76.2	164.1	389.9
175.00	1.00	1.42	8.657	9.52	0.00	1.200	1.772	2.50	6.572	7.89	75.1	161.3	382.6
180.00	1.00	1.43	8.709	9.58	0.00	1.200	1.777	5.00	12.799	15.36	147.1	311.3	740.6
182.00 Appurtenance(s)	1.00	1.44	8.729	9.60	0.00	1.200	1.779	2.00	4.990	5.99	57.5	122.7	289.4
185.00	1.00	1.44	8.759	9.63	0.00	1.200	1.782	3.00	7.347	8.82	84.9	180.0	424.7
190.00 Appurtenance(s)	1.00	1.45	8.808	9.69	0.00	1.200	1.787	5.00	11.876	14.25	138.1	288.5	682.1
							Totals:	**190.00**			**7,139.3**		**68,617.1**

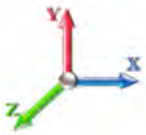
Discrete Appurtenance Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	190.00	Low Profile Platform	1	8.808	9.689	1.00	1.00	46.44	2212.18	0.000	0.000	450.00	0.00	0.00
2	190.00	ANT150D3	1	8.857	9.742	1.00	1.00	10.88	75.59	0.000	5.000	105.98	0.00	529.88
3	182.00	RDIDC-9181-PF-48	1	8.729	9.602	1.00	1.00	2.59	102.23	0.000	0.000	24.86	0.00	0.00
4	182.00	TA08025-B604	3	8.729	9.602	0.50	0.75	3.82	348.59	0.000	0.000	36.65	0.00	0.00
5	182.00	TA08025-B605	3	8.729	9.602	0.50	0.75	3.82	392.18	0.000	0.000	36.65	0.00	0.00
6	182.00	MC-PK8-DSH	1	8.729	9.602	1.00	1.00	85.75	3420.19	0.000	0.000	823.31	0.00	0.00
7	182.00	MX08FRO665-21	3	8.729	9.602	0.55	0.75	23.28	920.25	0.000	0.000	223.55	0.00	0.00
8	172.50	AIR 21 B4A/B2P	3	8.631	9.494	0.65	0.75	13.94	844.60	0.000	0.000	132.34	0.00	0.00
9	172.50	APXVAALL24-43-U-NA20	3	8.631	9.494	0.52	0.75	34.91	1734.52	0.000	0.000	331.48	0.00	0.00
10	172.50	Ericsson KRY 112 144/1	3	8.631	9.494	0.50	0.75	1.34	63.10	0.000	0.000	12.76	0.00	0.00
11	172.50	Air21 B2A/B4P	3	8.631	9.494	0.65	0.75	15.09	1038.28	0.000	0.000	143.23	0.00	0.00
12	172.50	PRK-1245	1	8.631	9.494	1.00	1.00	19.59	791.92	0.000	0.000	185.97	0.00	0.00
13	172.50	Ericsson 4449 B71 + B85	3	8.631	9.494	0.50	0.75	3.84	263.99	0.000	0.000	36.46	0.00	0.00
14	172.50	PV-PHK12-B	1	8.631	9.494	1.00	1.00	20.95	1383.88	0.000	0.000	198.86	0.00	0.00
15	172.50	Low Profile Platform-flat	1	8.631	9.494	1.00	1.00	46.24	2201.87	0.000	0.000	438.98	0.00	0.00
16	158.50	PD458-2N	1	8.552	9.407	0.80	0.80	5.93	77.99	0.000	6.650	55.81	0.00	371.13
17	158.50	Low Profile Platform-flat	1	8.478	9.326	1.00	1.00	46.06	2192.92	0.000	0.000	429.56	0.00	0.00
18	156.00	114202C	1	8.521	9.373	1.00	1.00	6.71	150.42	0.000	6.300	62.88	0.00	396.18
19	153.00	ANT450D6-9	1	8.450	9.295	1.00	1.00	5.81	80.69	0.000	3.000	53.97	0.00	161.91
20	150.00	3 ft Standoff	2	8.381	9.219	1.00	1.00	17.20	210.56	0.000	0.000	158.54	0.00	0.00
21	145.00	AIR6449 B41	3	8.321	9.153	0.53	0.75	10.54	685.66	0.000	0.000	96.47	0.00	0.00
22	145.00	Low Profile Platform-flat	1	8.321	9.153	1.00	1.00	45.87	2183.59	0.000	0.000	419.87	0.00	0.00
23	145.00	HRK14	1	8.321	9.153	1.00	1.00	16.05	362.83	0.000	0.000	146.90	0.00	0.00
24	145.00	PRK-1245 (kicker kit)	1	8.321	9.153	1.00	1.00	19.41	786.25	0.000	0.000	177.70	0.00	0.00
25	145.00	Horizontal Rail & SCX1-K	1	8.321	9.153	1.00	1.00	19.68	1022.80	0.000	0.000	180.14	0.00	0.00
26	145.00	(3) SFS-H-L (V-Braces)	1	8.321	9.153	1.00	1.00	19.82	495.03	0.000	0.000	181.44	0.00	0.00
27	145.00	4460 Radio	3	8.321	9.153	0.50	0.75	5.31	556.39	0.000	0.000	48.60	0.00	0.00
28	145.00	4480 Radio	3	8.321	9.153	0.50	0.75	5.31	498.87	0.000	0.000	48.60	0.00	0.00
29	145.00	VV-65A-R1	3	8.321	9.153	0.61	0.75	14.25	697.13	0.000	0.000	130.47	0.00	0.00
30	145.00	APXVAALL24_43-U-NA20	3	8.321	9.153	0.55	0.75	36.35	1720.30	0.000	0.000	332.76	0.00	0.00
31	145.00	800 MHz RRUs	6	8.321	9.153	0.69	0.75	15.03	697.26	0.000	0.000	137.55	0.00	0.00
32	129.50	220-7N Omni	1	8.247	9.072	1.00	1.00	12.03	260.47	0.000	9.500	109.17	0.00	1037.14
33	124.70	220-3AN	1	8.197	9.017	1.00	1.00	12.89	129.34	0.000	10.350	116.22	0.00	1202.84
34	123.00	ANT450D6-9	1	8.079	8.886	1.00	1.00	5.74	78.91	0.000	3.000	51.01	0.00	153.04
35	120.00	3 ft Standoff	3	7.996	8.796	1.00	1.00	25.40	310.53	0.000	0.000	223.42	0.00	0.00
36	46.50	GPS	1	6.549	7.204	1.00	1.00	1.63	30.08	0.000	0.000	11.77	0.00	0.00
37	46.50	3 ft Standoff	1	6.549	7.204	1.00	1.00	7.94	96.41	0.000	0.000	57.19	0.00	0.00
							Totals:		**29,117.79**			**6,411.11**		

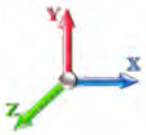
Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		186.38	2618.26	0.00	0.00
10.00		183.71	2610.89	0.00	0.00
11.75		63.59	907.39	0.00	0.00
15.00		119.07	2952.74	0.00	0.00
19.50		171.86	4044.52	0.00	0.00
20.00		19.03	258.49	0.00	0.00
25.00		197.73	2568.44	0.00	0.00
30.00		201.97	2533.37	0.00	0.00
35.00		205.00	2496.49	0.00	0.00
40.00		207.09	2458.23	0.00	0.00
45.00		208.42	2418.88	0.00	0.00
46.50	(2) attachments	131.15	844.81	0.00	0.00
50.00		145.96	1647.29	0.00	0.00
55.00		212.63	3816.23	0.00	0.00
56.75		73.93	1319.16	0.00	0.00
60.00		137.59	1365.42	0.00	0.00
65.00		211.81	2068.22	0.00	0.00
70.00		210.85	2029.88	0.00	0.00
75.00		209.57	1991.13	0.00	0.00
80.00		208.01	1952.03	0.00	0.00
85.00		206.20	1912.61	0.00	0.00
90.00		204.15	1872.90	0.00	0.00
94.50		181.70	1651.83	0.00	0.00
95.00		20.30	289.79	0.00	0.00
100.00		202.64	2857.08	0.00	0.00
105.00		200.03	1611.58	0.00	0.00
110.00		197.24	1575.42	0.00	0.00
115.00		194.29	1539.07	0.00	0.00
120.00	(3) attachments	414.61	1813.07	0.00	0.00
123.00	(1) attachments	163.98	958.41	0.00	153.04
124.70	(1) attachments	179.63	622.29	0.00	1202.84
125.00		11.14	86.64	0.00	0.00
129.50	(1) attachments	275.37	1540.26	0.00	1037.14
130.00		18.23	140.76	0.00	0.00
135.00		181.07	1382.62	0.00	0.00
140.00		177.44	1345.48	0.00	0.00
144.50		158.53	1683.90	0.00	0.00
145.00	(26) attachments	1917.87	9810.50	0.00	0.00
150.00	(2) attachments	330.72	1225.08	0.00	0.00
153.00	(1) attachments	155.25	676.98	0.00	161.91
155.00		66.68	392.23	0.00	0.00
156.00	(1) attachments	95.96	345.03	0.00	396.18
158.50	(2) attachments	567.43	2751.60	0.00	371.13
160.00		48.71	282.49	0.00	0.00
165.00		160.07	919.05	0.00	0.00
170.00		155.85	890.13	0.00	0.00

Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

172.50	(18) attachments	1556.26	8757.73	0.00	0.00
175.00		75.10	390.17	0.00	0.00
180.00		147.13	755.68	0.00	0.00
182.00	(11) attachments	1202.52	5478.91	0.00	0.00
185.00		84.94	426.58	0.00	0.00
190.00	(2) attachments	694.06	2973.02	0.00	529.88
	Totals:	**13,550.45**	**101,860.74**	**0.00**	**3,852.12**

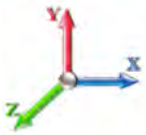
Linear Appurtenance Segment Forces (Factored)

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.24	0.00	0.008	0.000	5.168	0.00	13.70
10.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.32	0.00	0.008	0.000	5.168	0.00	15.33
11.75	1/2" GPS Line	Yes	1.75	0.000	0.50	0.47	0.00	0.008	0.000	5.168	0.00	5.51
15.00	1/2" GPS Line	Yes	3.25	0.000	0.50	0.89	0.00	0.008	0.000	5.168	0.00	10.65
19.50	1/2" GPS Line	Yes	4.50	0.000	0.50	1.25	0.00	0.008	0.000	5.454	0.00	15.39
20.00	1/2" GPS Line	Yes	0.50	0.000	0.50	0.14	0.00	0.008	0.000	5.483	0.00	1.72
25.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.42	0.00	0.008	0.000	5.747	0.00	17.83
30.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.45	0.00	0.009	0.000	5.972	0.00	18.38
35.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.47	0.00	0.009	0.000	6.169	0.00	18.86
40.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.48	0.00	0.009	0.000	6.345	0.00	19.29
45.00	1/2" GPS Line	Yes	5.00	0.000	0.50	1.50	0.00	0.009	0.000	6.504	0.00	19.67
46.50	1/2" GPS Line	Yes	1.50	0.000	0.50	0.45	0.00	0.009	0.000	6.549	0.00	5.93
										Totals:	**0.0**	**162.2**

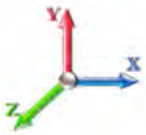
Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-101.8	-13.60	0.00	-1832.1	0.00	1832.16	6843.68	3421.84	17482.3	8754.18	0.00	0.000	0.000	0.224
5.00	-99.22	-13.50	0.00	-1764.1	0.00	1764.18	6762.41	3381.20	16966.6	8495.95	0.03	-0.053	0.000	0.222
10.00	-96.60	-13.38	0.00	-1696.6	0.00	1696.66	6679.70	3339.85	16454.8	8239.66	0.11	-0.107	0.000	0.220
11.75	-95.69	-13.36	0.00	-1673.2	0.00	1673.25	6650.41	3325.20	16276.6	8150.43	0.16	-0.126	0.000	0.220
15.00	-92.73	-13.30	0.00	-1629.8	0.00	1629.84	6595.55	3297.78	15947.1	7985.40	0.25	-0.162	0.000	0.218
19.50	-88.68	-13.16	0.00	-1569.9	0.00	1569.99	6596.31	3298.16	15951.6	7987.68	0.43	-0.212	0.000	0.210
20.00	-88.41	-13.18	0.00	-1563.4	0.00	1563.41	6587.82	3293.91	15901.1	7962.37	0.45	-0.218	0.000	0.210
25.00	-85.83	-13.06	0.00	-1497.4	0.00	1497.49	6502.11	3251.06	15398.0	7710.45	0.71	-0.272	0.000	0.207
30.00	-83.29	-12.92	0.00	-1432.2	0.00	1432.21	6414.97	3207.48	14899.4	7460.77	1.03	-0.326	0.000	0.205
35.00	-80.78	-12.78	0.00	-1367.6	0.00	1367.60	6326.39	3163.20	14405.4	7213.44	1.40	-0.381	0.000	0.202
40.00	-78.31	-12.63	0.00	-1303.7	0.00	1303.71	6236.38	3118.19	13916.4	6968.54	1.82	-0.436	0.000	0.200
45.00	-75.89	-12.45	0.00	-1240.5	0.00	1240.57	6144.94	3072.47	13432.4	6726.18	2.31	-0.492	0.000	0.197
46.50	-75.04	-12.35	0.00	-1221.8	0.00	1221.89	6117.23	3058.61	13288.2	6653.99	2.47	-0.510	0.000	0.196
50.00	-73.38	-12.25	0.00	-1178.6	0.00	1178.67	6052.06	3026.03	12953.6	6486.46	2.86	-0.550	0.000	0.194
55.00	-69.56	-12.05	0.00	-1117.4	0.00	1117.42	5957.75	2978.87	12480.3	6249.47	3.46	-0.607	0.000	0.190
56.75	-68.23	-11.99	0.00	-1096.3	0.00	1096.34	5057.23	2528.61	10722.5	5369.23	3.69	-0.628	0.000	0.218
60.00	-66.86	-11.90	0.00	-1057.3	0.00	1057.36	5008.75	2504.38	10471.4	5243.49	4.13	-0.666	0.000	0.215
65.00	-64.78	-11.73	0.00	-997.86	0.00	997.86	4933.00	2466.50	10088.3	5051.65	4.86	-0.729	0.000	0.211
70.00	-62.74	-11.57	0.00	-939.19	0.00	939.19	4855.80	2427.90	9709.24	4861.84	5.66	-0.792	0.000	0.206
75.00	-60.74	-11.40	0.00	-881.36	0.00	881.36	4777.18	2388.59	9334.40	4674.14	6.52	-0.856	0.000	0.201
80.00	-58.78	-11.22	0.00	-824.38	0.00	824.38	4697.12	2348.56	8963.98	4488.65	7.46	-0.920	0.000	0.196
85.00	-56.86	-11.05	0.00	-768.26	0.00	768.26	4615.63	2307.81	8598.19	4305.49	8.45	-0.984	0.000	0.191
90.00	-54.98	-10.87	0.00	-713.01	0.00	713.01	4532.70	2266.35	8237.22	4124.73	9.52	-1.049	0.000	0.185
94.50	-53.32	-10.69	0.00	-664.10	0.00	664.10	4456.84	2228.42	7916.63	3964.20	10.54	-1.106	0.000	0.180
95.00	-53.03	-10.69	0.00	-658.76	0.00	658.76	4448.34	2224.17	7881.27	3946.49	10.65	-1.113	0.000	0.179
100.00	-50.16	-10.49	0.00	-605.29	0.00	605.29	3637.80	1818.90	6411.13	3210.33	11.85	-1.176	0.000	0.202
105.00	-48.55	-10.31	0.00	-552.84	0.00	552.84	3571.83	1785.92	6132.14	3070.63	13.12	-1.239	0.000	0.194
110.00	-46.96	-10.13	0.00	-501.28	0.00	501.28	3504.43	1752.22	5856.78	2932.74	14.45	-1.307	0.000	0.184
115.00	-45.42	-9.96	0.00	-450.61	0.00	450.61	3435.59	1717.80	5585.22	2796.76	15.86	-1.374	0.000	0.174
120.00	-43.61	-9.54	0.00	-400.83	0.00	400.83	3365.32	1682.66	5317.67	2662.79	17.33	-1.439	0.000	0.164
123.00	-42.65	-9.37	0.00	-372.06	0.00	372.06	3322.47	1661.24	5159.15	2583.41	18.25	-1.477	0.000	0.157
124.70	-42.03	-9.18	0.00	-354.93	0.00	354.93	3297.96	1648.98	5070.01	2538.77	18.78	-1.499	0.000	0.153
125.00	-41.94	-9.19	0.00	-352.18	0.00	352.18	3293.62	1646.81	5054.33	2530.92	18.87	-1.502	0.000	0.152
129.50	-40.40	-8.90	0.00	-309.78	0.00	309.78	3221.96	1610.98	4812.26	2409.71	20.31	-1.556	0.000	0.141
130.00	-40.26	-8.90	0.00	-305.33	0.00	305.33	3212.23	1606.11	4783.10	2395.10	20.48	-1.562	0.000	0.140
135.00	-38.87	-8.71	0.00	-260.85	0.00	260.85	3114.95	1557.47	4496.34	2251.51	22.14	-1.618	0.000	0.128
140.00	-37.52	-8.53	0.00	-217.28	0.00	217.28	3017.67	1508.83	4218.45	2112.36	23.87	-1.670	0.000	0.115
144.50	-35.84	-8.33	0.00	-178.90	0.00	178.90	1688.87	844.44	2343.95	1173.72	25.46	-1.712	0.000	0.174
145.00	-26.09	-6.14	0.00	-174.74	0.00	174.74	1685.31	842.66	2331.34	1167.40	25.64	-1.717	0.000	0.165
150.00	-24.87	-5.79	0.00	-144.04	0.00	144.04	1649.03	824.52	2206.02	1104.65	27.47	-1.776	0.000	0.146
153.00	-24.20	-5.63	0.00	-126.51	0.00	126.51	1626.65	813.33	2131.62	1067.39	28.60	-1.810	0.000	0.133
155.00	-23.80	-5.55	0.00	-115.26	0.00	115.26	1611.48	805.74	2082.37	1042.73	29.36	-1.831	0.000	0.125
156.00	-23.46	-5.45	0.00	-109.31	0.00	109.31	1603.81	801.91	2057.85	1030.46	29.75	-1.841	0.000	0.121
158.50	-20.73	-4.80	0.00	-95.30	0.00	95.30	1584.43	792.22	1996.89	999.93	30.72	-1.865	0.000	0.108
160.00	-20.44	-4.76	0.00	-88.10	0.00	88.10	1572.65	786.33	1960.55	981.73	31.31	-1.879	0.000	0.103
165.00	-19.53	-4.58	0.00	-64.32	0.00	64.32	1532.55	766.28	1840.74	921.74	33.30	-1.917	0.000	0.083
170.00	-18.64	-4.40	0.00	-41.43	0.00	41.43	1491.18	745.59	1723.12	862.84	35.32	-1.947	0.000	0.061
172.50	-9.94	-2.55	0.00	-30.44	0.00	30.44	1470.02	735.01	1665.18	833.83	36.34	-1.959	0.000	0.043

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

175.00	-9.56	-2.46	0.00	-24.07	0.00	24.07	1448.54	724.27	1607.86	805.12	37.37	-1.968	0.000	0.037
180.00	-8.80	-2.29	0.00	-11.78	0.00	11.78	1404.63	702.31	1495.13	748.67	39.44	-1.981	0.000	0.022
182.00	-3.37	-0.90	0.00	-7.20	0.00	7.20	1386.71	693.35	1450.78	726.47	40.27	-1.984	0.000	0.012
185.00	-2.95	-0.80	0.00	-4.51	0.00	4.51	1352.25	676.13	1377.77	689.91	41.52	-1.987	0.000	0.009
190.00	0.00	-0.69	0.00	-0.53	0.00	0.53	1292.39	646.19	1257.90	629.89	43.60	-1.989	0.000	0.001

Seismic Segment Forces (Factored)

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.17		**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.09		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1664.0	0.00	0.03	0.01	26.02	
10.00		1634.3	0.01	0.05	0.03	37.92	
11.75	Bot - Section 2	564.99	0.01	0.05	0.03	14.08	
15.00		2096.7	0.01	0.06	0.03	57.30	
19.50	Top - Section 1	2861.8	0.02	0.06	0.04	84.38	
20.00		158.85	0.02	0.06	0.04	4.71	
25.00		1572.2	0.03	0.07	0.04	48.80	
30.00		1542.4	0.05	0.07	0.04	49.24	
35.00		1512.7	0.06	0.07	0.04	49.31	
40.00		1483.0	0.08	0.07	0.04	49.28	
45.00		1453.3	0.11	0.07	0.04	49.22	
46.50	Appurtenance(s)	480.22	0.11	0.07	0.04	16.36	
50.00	Bot - Section 3	993.46	0.13	0.07	0.03	34.29	
55.00		2635.8	0.16	0.07	0.03	92.44	
56.75	Top - Section 2	909.39	0.17	0.07	0.03	32.02	
60.00		787.37	0.19	0.06	0.02	27.85	
65.00		1189.9	0.22	0.06	0.02	41.83	
70.00		1163.9	0.26	0.05	0.02	39.70	
75.00		1137.9	0.29	0.05	0.01	36.19	
80.00		1111.9	0.34	0.04	0.01	30.91	
85.00		1085.9	0.38	0.02	0.01	23.56	
90.00		1059.9	0.42	0.01	0.01	14.15	
94.50	Bot - Section 4	931.73	0.47	0.00	0.01	3.93	
95.00		191.49	0.47	-0.01	0.01	0.60	
100.00	Top - Section 3	1888.3	0.52	-0.02	0.01	-15.12	
105.00		858.14	0.58	-0.04	0.01	-16.04	
110.00		835.86	0.63	-0.06	0.02	-23.11	
115.00		813.59	0.69	-0.08	0.03	-27.67	
120.00	Appurtenance(s)	911.31	0.75	-0.10	0.04	-34.09	
123.00	Appurtenance(s)	482.09	0.79	-0.11	0.05	-18.32	
124.70	Appurtenance(s)	283.43	0.81	-0.11	0.06	-10.73	
125.00		45.51	0.82	-0.11	0.06	-1.72	
129.50	Appurtenance(s)	695.08	0.88	-0.12	0.08	-24.74	
130.00		73.67	0.88	-0.12	0.08	-2.59	
135.00		724.48	0.95	-0.12	0.11	-21.60	
140.00	Bot - Section 5	702.20	1.03	-0.10	0.14	-15.21	
144.50	Top - Section 4	1029.1	1.09	-0.07	0.18	-12.36	
145.00	Appurtenance(s)	4278.8	1.10	-0.07	0.19	-46.22	
150.00	Appurtenance(s)	526.87	1.18	-0.02	0.24	1.45	
153.00	Appurtenance(s)	278.99	1.23	0.03	0.27	3.40	
155.00		171.02	1.26	0.07	0.30	3.25	
156.00	Appurtenance(s)	108.62	1.27	0.09	0.31	2.45	
158.50	Appurtenance(s)	1430.9	1.32	0.14	0.35	45.79	
160.00		123.59	1.34	0.18	0.37	4.69	
165.00		402.31	1.43	0.33	0.46	24.04	

Seismic Segment Forces (Factored)

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

170.00			387.46	1.51	0.53	0.56	32.68		
172.50	Appurtenance(s)		3567.3	1.56	0.65	0.61	348.63		
175.00			184.45	1.60	0.79	0.67	20.63		
180.00			357.76	1.70	1.11	0.81	50.89		
182.00	Appurtenance(s)		2497.9	1.73	1.26	0.87	387.86		
185.00			203.96	1.79	1.50	0.96	35.83		
190.00	Appurtenance(s)		1546.0	1.89	1.98	1.14	328.04		
		Totals:	**55,632.9**				**1,884.2**	**Total Wind:**	**54,470.4**

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 23

Gust Response Factor	1.10			**Sds**	0.17			**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-70.73	-2.16	0.00	-282.55	0.00	282.55	6843.68	3421.84	17482.3	8754.18		0.00	0.00	0.043
5.00	-68.61	-2.14	0.00	-271.76	0.00	271.76	6762.41	3381.20	16966.6	8495.95		0.00	-0.01	0.042
10.00	-66.53	-2.11	0.00	-261.06	0.00	261.06	6679.70	3339.85	16454.8	8239.66		0.02	-0.02	0.042
11.75	-65.81	-2.10	0.00	-257.37	0.00	257.37	6650.41	3325.20	16276.6	8150.43		0.02	-0.02	0.041
15.00	-63.22	-2.05	0.00	-250.54	0.00	250.54	6595.55	3297.78	15947.1	7985.40		0.04	-0.02	0.041
19.50	-59.68	-1.97	0.00	-241.32	0.00	241.32	6596.31	3298.16	15951.6	7987.68		0.07	-0.03	0.039
20.00	-59.47	-1.97	0.00	-240.34	0.00	240.34	6587.82	3293.91	15901.1	7962.37		0.07	-0.03	0.039
25.00	-57.47	-1.93	0.00	-230.50	0.00	230.50	6502.11	3251.06	15398.0	7710.45		0.11	-0.04	0.039
30.00	-55.50	-1.88	0.00	-220.87	0.00	220.87	6414.97	3207.48	14899.4	7460.77		0.16	-0.05	0.038
35.00	-53.56	-1.84	0.00	-211.46	0.00	211.46	6326.39	3163.20	14405.4	7213.44		0.21	-0.06	0.038
40.00	-51.66	-1.80	0.00	-202.26	0.00	202.26	6236.38	3118.19	13916.4	6968.54		0.28	-0.07	0.037
45.00	-49.80	-1.75	0.00	-193.28	0.00	193.28	6144.94	3072.47	13432.4	6726.18		0.36	-0.08	0.037
46.50	-49.18	-1.74	0.00	-190.66	0.00	190.66	6117.23	3058.61	13288.2	6653.99		0.38	-0.08	0.037
50.00	-47.91	-1.71	0.00	-184.58	0.00	184.58	6052.06	3026.03	12953.6	6486.46		0.44	-0.08	0.036
55.00	-44.63	-1.61	0.00	-176.05	0.00	176.05	5957.75	2978.87	12480.3	6249.47		0.53	-0.09	0.036
56.75	-43.49	-1.58	0.00	-173.22	0.00	173.22	5057.23	2528.61	10722.5	5369.23		0.57	-0.10	0.041
60.00	-42.47	-1.56	0.00	-168.08	0.00	168.08	5008.75	2504.38	10471.4	5243.49		0.64	-0.10	0.041
65.00	-40.92	-1.52	0.00	-160.28	0.00	160.28	4933.00	2466.50	10088.3	5051.65		0.75	-0.11	0.040
70.00	-39.41	-1.49	0.00	-152.67	0.00	152.67	4855.80	2427.90	9709.24	4861.84		0.87	-0.12	0.040
75.00	-37.92	-1.45	0.00	-145.24	0.00	145.24	4777.18	2388.59	9334.40	4674.14		1.01	-0.13	0.039
80.00	-36.47	-1.43	0.00	-137.97	0.00	137.97	4697.12	2348.56	8963.98	4488.65		1.16	-0.14	0.039
85.00	-35.05	-1.41	0.00	-130.84	0.00	130.84	4615.63	2307.81	8598.19	4305.49		1.31	-0.16	0.038
90.00	-33.66	-1.39	0.00	-123.81	0.00	123.81	4532.70	2266.35	8237.22	4124.73		1.48	-0.17	0.037
94.50	-32.43	-1.39	0.00	-117.54	0.00	117.54	4456.84	2228.42	7916.63	3964.20		1.64	-0.18	0.037
95.00	-32.19	-1.39	0.00	-116.84	0.00	116.84	4448.34	2224.17	7881.27	3946.49		1.66	-0.18	0.037
100.00	-29.81	-1.39	0.00	-109.88	0.00	109.88	3637.80	1818.90	6411.13	3210.33		1.85	-0.19	0.042
105.00	-28.66	-1.39	0.00	-102.93	0.00	102.93	3571.83	1785.92	6132.14	3070.63		2.06	-0.20	0.042
110.00	-27.53	-1.39	0.00	-95.97	0.00	95.97	3504.43	1752.22	5856.78	2932.74		2.28	-0.21	0.041
115.00	-26.44	-1.40	0.00	-89.00	0.00	89.00	3435.59	1717.80	5585.22	2796.76		2.51	-0.23	0.040
120.00	-25.23	-1.40	0.00	-82.02	0.00	82.02	3365.32	1682.66	5317.67	2662.79		2.75	-0.24	0.038
123.00	-24.58	-1.40	0.00	-77.83	0.00	77.83	3322.47	1661.24	5159.15	2583.41		2.90	-0.25	0.038
124.70	-24.20	-1.40	0.00	-75.46	0.00	75.46	3297.96	1648.98	5070.01	2538.77		2.99	-0.25	0.037
125.00	-24.14	-1.40	0.00	-75.04	0.00	75.04	3293.62	1646.81	5054.33	2530.92		3.01	-0.25	0.037
129.50	-23.21	-1.40	0.00	-68.75	0.00	68.75	3221.96	1610.98	4812.26	2409.71		3.25	-0.26	0.036
130.00	-23.11	-1.40	0.00	-68.05	0.00	68.05	3212.23	1606.11	4783.10	2395.10		3.28	-0.27	0.036
135.00	-22.13	-1.40	0.00	-61.06	0.00	61.06	3114.95	1557.47	4496.34	2251.51		3.57	-0.28	0.034
140.00	-21.18	-1.40	0.00	-54.06	0.00	54.06	3017.67	1508.83	4218.45	2112.36		3.86	-0.29	0.033
144.50	-19.84	-1.39	0.00	-47.77	0.00	47.77	1688.87	844.44	2343.95	1173.72		4.14	-0.30	0.052
145.00	-14.70	-1.37	0.00	-47.07	0.00	47.07	1685.31	842.66	2331.34	1167.40		4.18	-0.30	0.049
150.00	-13.97	-1.37	0.00	-40.23	0.00	40.23	1649.03	824.52	2206.02	1104.65		4.50	-0.32	0.045
153.00	-13.57	-1.36	0.00	-36.13	0.00	36.13	1626.65	813.33	2131.62	1067.39		4.71	-0.33	0.042
155.00	-13.32	-1.36	0.00	-33.40	0.00	33.40	1611.48	805.74	2082.37	1042.73		4.84	-0.33	0.040
156.00	-13.17	-1.36	0.00	-32.05	0.00	32.05	1603.81	801.91	2057.85	1030.46		4.92	-0.34	0.039
158.50	-11.41	-1.30	0.00	-28.65	0.00	28.65	1584.43	792.22	1996.89	999.93		5.09	-0.34	0.036
160.00	-11.23	-1.30	0.00	-26.70	0.00	26.70	1572.65	786.33	1960.55	981.73		5.20	-0.35	0.034
165.00	-10.66	-1.27	0.00	-20.21	0.00	20.21	1532.55	766.28	1840.74	921.74		5.58	-0.36	0.029
170.00	-10.10	-1.24	0.00	-13.85	0.00	13.85	1491.18	745.59	1723.12	862.84		5.96	-0.37	0.023

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

172.50	-5.78	-0.86	0.00	-10.76	0.00	10.76	1470.02	735.01	1665.18	833.83	6.15	-0.37	0.017
175.00	-5.55	-0.84	0.00	-8.60	0.00	8.60	1448.54	724.27	1607.86	805.12	6.35	-0.38	0.015
180.00	-5.10	-0.79	0.00	-4.41	0.00	4.41	1404.63	702.31	1495.13	748.67	6.75	-0.38	0.010
182.00	-2.10	-0.38	0.00	-2.84	0.00	2.84	1386.71	693.35	1450.78	726.47	6.91	-0.38	0.005
185.00	-1.86	-0.34	0.00	-1.70	0.00	1.70	1352.25	676.13	1377.77	689.91	7.15	-0.38	0.004
190.00	0.00	-0.33	0.00	0.00	0.00	0.00	1292.39	646.19	1257.90	629.89	7.56	-0.39	0.000

Seismic Segment Forces (Factored)

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

Load Case:	0.9D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.17		**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.09		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1664.0	0.00	0.03	0.01	26.02	
10.00		1634.3	0.01	0.05	0.03	37.92	
11.75	Bot - Section 2	564.99	0.01	0.05	0.03	14.08	
15.00		2096.7	0.01	0.06	0.03	57.30	
19.50	Top - Section 1	2861.8	0.02	0.06	0.04	84.38	
20.00		158.85	0.02	0.06	0.04	4.71	
25.00		1572.2	0.03	0.07	0.04	48.80	
30.00		1542.4	0.05	0.07	0.04	49.24	
35.00		1512.7	0.06	0.07	0.04	49.31	
40.00		1483.0	0.08	0.07	0.04	49.28	
45.00		1453.3	0.11	0.07	0.04	49.22	
46.50	Appurtenance(s)	480.22	0.11	0.07	0.04	16.36	
50.00	Bot - Section 3	993.46	0.13	0.07	0.03	34.29	
55.00		2635.8	0.16	0.07	0.03	92.44	
56.75	Top - Section 2	909.39	0.17	0.07	0.03	32.02	
60.00		787.37	0.19	0.06	0.02	27.85	
65.00		1189.9	0.22	0.06	0.02	41.83	
70.00		1163.9	0.26	0.05	0.02	39.70	
75.00		1137.9	0.29	0.05	0.01	36.19	
80.00		1111.9	0.34	0.04	0.01	30.91	
85.00		1085.9	0.38	0.02	0.01	23.56	
90.00		1059.9	0.42	0.01	0.01	14.15	
94.50	Bot - Section 4	931.73	0.47	0.00	0.01	3.93	
95.00		191.49	0.47	-0.01	0.01	0.60	
100.00	Top - Section 3	1888.3	0.52	-0.02	0.01	-15.12	
105.00		858.14	0.58	-0.04	0.01	-16.04	
110.00		835.86	0.63	-0.06	0.02	-23.11	
115.00		813.59	0.69	-0.08	0.03	-27.67	
120.00	Appurtenance(s)	911.31	0.75	-0.10	0.04	-34.09	
123.00	Appurtenance(s)	482.09	0.79	-0.11	0.05	-18.32	
124.70	Appurtenance(s)	283.43	0.81	-0.11	0.06	-10.73	
125.00		45.51	0.82	-0.11	0.06	-1.72	
129.50	Appurtenance(s)	695.08	0.88	-0.12	0.08	-24.74	
130.00		73.67	0.88	-0.12	0.08	-2.59	
135.00		724.48	0.95	-0.12	0.11	-21.60	
140.00	Bot - Section 5	702.20	1.03	-0.10	0.14	-15.21	
144.50	Top - Section 4	1029.1	1.09	-0.07	0.18	-12.36	
145.00	Appurtenance(s)	4278.8	1.10	-0.07	0.19	-46.22	
150.00	Appurtenance(s)	526.87	1.18	-0.02	0.24	1.45	
153.00	Appurtenance(s)	278.99	1.23	0.03	0.27	3.40	
155.00		171.02	1.26	0.07	0.30	3.25	
156.00	Appurtenance(s)	108.62	1.27	0.09	0.31	2.45	
158.50	Appurtenance(s)	1430.9	1.32	0.14	0.35	45.79	
160.00		123.59	1.34	0.18	0.37	4.69	
165.00		402.31	1.43	0.33	0.46	24.04	

Seismic Segment Forces (Factored)

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 39

170.00		387.46	1.51	0.53	0.56	32.68			
172.50	Appurtenance(s)	3567.3	1.56	0.65	0.61	348.63			
175.00		184.45	1.60	0.79	0.67	20.63			
180.00		357.76	1.70	1.11	0.81	50.89			
182.00	Appurtenance(s)	2497.9	1.73	1.26	0.87	387.86			
185.00		203.96	1.79	1.50	0.96	35.83			
190.00	Appurtenance(s)	1546.0	1.89	1.98	1.14	328.04			
	Totals:	**55,632.9**				**1,884.2**	**Total Wind:**	**54,470.4**	

Calculated Forces

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 40

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.17			**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-53.05	-2.16	0.00	-278.95	0.00	278.95	6843.68	3421.84	17482.3	8754.18		0.00	0.00	0.040
5.00	-51.46	-2.14	0.00	-268.17	0.00	268.17	6762.41	3381.20	16966.6	8495.95		0.00	-0.01	0.039
10.00	-49.90	-2.10	0.00	-257.48	0.00	257.48	6679.70	3339.85	16454.8	8239.66		0.02	-0.02	0.039
11.75	-49.36	-2.09	0.00	-253.80	0.00	253.80	6650.41	3325.20	16276.6	8150.43		0.02	-0.02	0.039
15.00	-47.41	-2.04	0.00	-247.00	0.00	247.00	6595.55	3297.78	15947.1	7985.40		0.04	-0.02	0.038
19.50	-44.76	-1.96	0.00	-237.81	0.00	237.81	6596.31	3298.16	15951.6	7987.68		0.07	-0.03	0.037
20.00	-44.61	-1.96	0.00	-236.83	0.00	236.83	6587.82	3293.91	15901.1	7962.37		0.07	-0.03	0.037
25.00	-43.10	-1.91	0.00	-227.05	0.00	227.05	6502.11	3251.06	15398.0	7710.45		0.11	-0.04	0.036
30.00	-41.62	-1.87	0.00	-217.48	0.00	217.48	6414.97	3207.48	14899.4	7460.77		0.16	-0.05	0.036
35.00	-40.17	-1.82	0.00	-208.13	0.00	208.13	6326.39	3163.20	14405.4	7213.44		0.21	-0.06	0.035
40.00	-38.75	-1.78	0.00	-199.01	0.00	199.01	6236.38	3118.19	13916.4	6968.54		0.28	-0.07	0.035
45.00	-37.35	-1.73	0.00	-190.12	0.00	190.12	6144.94	3072.47	13432.4	6726.18		0.35	-0.07	0.034
46.50	-36.89	-1.72	0.00	-187.52	0.00	187.52	6117.23	3058.61	13288.2	6653.99		0.37	-0.08	0.034
50.00	-35.93	-1.69	0.00	-181.51	0.00	181.51	6052.06	3026.03	12953.6	6486.46		0.43	-0.08	0.034
55.00	-33.47	-1.59	0.00	-173.07	0.00	173.07	5957.75	2978.87	12480.3	6249.47		0.53	-0.09	0.033
56.75	-32.62	-1.56	0.00	-170.28	0.00	170.28	5057.23	2528.61	10722.5	5369.23		0.56	-0.10	0.038
60.00	-31.85	-1.54	0.00	-165.20	0.00	165.20	5008.75	2504.38	10471.4	5243.49		0.63	-0.10	0.038
65.00	-30.69	-1.50	0.00	-157.51	0.00	157.51	4933.00	2466.50	10088.3	5051.65		0.74	-0.11	0.037
70.00	-29.56	-1.46	0.00	-150.01	0.00	150.01	4855.80	2427.90	9709.24	4861.84		0.86	-0.12	0.037
75.00	-28.44	-1.43	0.00	-142.69	0.00	142.69	4777.18	2388.59	9334.40	4674.14		0.99	-0.13	0.036
80.00	-27.35	-1.40	0.00	-135.54	0.00	135.54	4697.12	2348.56	8963.98	4488.65		1.14	-0.14	0.036
85.00	-26.29	-1.38	0.00	-128.53	0.00	128.53	4615.63	2307.81	8598.19	4305.49		1.29	-0.15	0.036
90.00	-25.24	-1.37	0.00	-121.63	0.00	121.63	4532.70	2266.35	8237.22	4124.73		1.46	-0.16	0.035
94.50	-24.32	-1.36	0.00	-115.48	0.00	115.48	4456.84	2228.42	7916.63	3964.20		1.62	-0.17	0.035
95.00	-24.14	-1.36	0.00	-114.80	0.00	114.80	4448.34	2224.17	7881.27	3946.49		1.64	-0.17	0.035
100.00	-22.35	-1.36	0.00	-107.98	0.00	107.98	3637.80	1818.90	6411.13	3210.33		1.83	-0.19	0.040
105.00	-21.49	-1.37	0.00	-101.16	0.00	101.16	3571.83	1785.92	6132.14	3070.63		2.03	-0.20	0.039
110.00	-20.65	-1.37	0.00	-94.33	0.00	94.33	3504.43	1752.22	5856.78	2932.74		2.24	-0.21	0.038
115.00	-19.83	-1.37	0.00	-87.50	0.00	87.50	3435.59	1717.80	5585.22	2796.76		2.47	-0.22	0.037
120.00	-18.92	-1.37	0.00	-80.66	0.00	80.66	3365.32	1682.66	5317.67	2662.79		2.71	-0.24	0.036
123.00	-18.43	-1.37	0.00	-76.55	0.00	76.55	3322.47	1661.24	5159.15	2583.41		2.86	-0.24	0.035
124.70	-18.15	-1.37	0.00	-74.23	0.00	74.23	3297.96	1648.98	5070.01	2538.77		2.95	-0.25	0.035
125.00	-18.11	-1.37	0.00	-73.82	0.00	73.82	3293.62	1646.81	5054.33	2530.92		2.96	-0.25	0.035
129.50	-17.41	-1.37	0.00	-67.66	0.00	67.66	3221.96	1610.98	4812.26	2409.71		3.20	-0.26	0.033
130.00	-17.33	-1.37	0.00	-66.97	0.00	66.97	3212.23	1606.11	4783.10	2395.10		3.23	-0.26	0.033
135.00	-16.60	-1.37	0.00	-60.12	0.00	60.12	3114.95	1557.47	4496.34	2251.51		3.51	-0.27	0.032
140.00	-15.88	-1.37	0.00	-53.27	0.00	53.27	3017.67	1508.83	4218.45	2112.36		3.80	-0.29	0.030
144.50	-14.88	-1.37	0.00	-47.11	0.00	47.11	1688.87	844.44	2343.95	1173.72		4.08	-0.30	0.049
145.00	-11.02	-1.35	0.00	-46.43	0.00	46.43	1685.31	842.66	2331.34	1167.40		4.11	-0.30	0.046
150.00	-10.47	-1.35	0.00	-39.69	0.00	39.69	1649.03	824.52	2206.02	1104.65		4.43	-0.31	0.042
153.00	-10.18	-1.34	0.00	-35.65	0.00	35.65	1626.65	813.33	2131.62	1067.39		4.63	-0.32	0.040
155.00	-9.99	-1.34	0.00	-32.96	0.00	32.96	1611.48	805.74	2082.37	1042.73		4.77	-0.33	0.038
156.00	-9.88	-1.34	0.00	-31.63	0.00	31.63	1603.81	801.91	2057.85	1030.46		4.84	-0.33	0.037
158.50	-8.55	-1.28	0.00	-28.28	0.00	28.28	1584.43	792.22	1996.89	999.93		5.01	-0.34	0.034
160.00	-8.42	-1.28	0.00	-26.36	0.00	26.36	1572.65	786.33	1960.55	981.73		5.12	-0.34	0.032
165.00	-7.99	-1.25	0.00	-19.96	0.00	19.96	1532.55	766.28	1840.74	921.74		5.49	-0.36	0.027
170.00	-7.57	-1.22	0.00	-13.69	0.00	13.69	1491.18	745.59	1723.12	862.84		5.86	-0.36	0.021

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

172.50	-4.33	-0.85	0.00	-10.64	0.00	10.64	1470.02	735.01	1665.18	833.83	6.06	-0.37	0.016
175.00	-4.16	-0.83	0.00	-8.51	0.00	8.51	1448.54	724.27	1607.86	805.12	6.25	-0.37	0.013
180.00	-3.83	-0.78	0.00	-4.36	0.00	4.36	1404.63	702.31	1495.13	748.67	6.64	-0.38	0.009
182.00	-1.58	-0.37	0.00	-2.81	0.00	2.81	1386.71	693.35	1450.78	726.47	6.80	-0.38	0.005
185.00	-1.39	-0.34	0.00	-1.69	0.00	1.69	1352.25	676.13	1377.77	689.91	7.04	-0.38	0.003
190.00	0.00	-0.33	0.00	0.00	0.00	0.00	1292.39	646.19	1257.90	629.89	7.44	-0.38	0.000

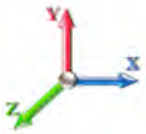
Wind Loading - Shaft

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	293.40	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	288.25	0.650	0.000	5.00	26.287	17.09	139.9	0.0	1664.0
10.00		1.00	0.85	7.442	8.19	283.10	0.650	0.000	5.00	25.821	16.78	137.4	0.0	1634.3
11.75	Bot - Section 2	1.00	0.85	7.442	8.19	281.30	0.650	0.000	1.75	8.928	5.80	47.5	0.0	565.0
15.00		1.00	0.85	7.442	8.19	277.95	0.650	0.000	3.25	16.703	10.86	88.9	0.0	2096.8
19.50	Top - Section 1	1.00	0.90	7.854	8.64	280.78	0.650	0.000	4.50	22.803	14.82	128.1	0.0	2861.8
20.00		1.00	0.90	7.896	8.69	285.82	0.650	0.000	0.50	2.510	1.63	14.2	0.0	158.9
25.00		1.00	0.95	8.276	9.10	287.19	0.650	0.000	5.00	24.848	16.15	147.0	0.0	1572.2
30.00		1.00	0.98	8.600	9.46	287.22	0.650	0.000	5.00	24.383	15.85	149.9	0.0	1542.5
35.00		1.00	1.01	8.883	9.77	286.29	0.650	0.000	5.00	23.917	15.55	151.9	0.0	1512.8
40.00		1.00	1.04	9.137	10.05	284.63	0.650	0.000	5.00	23.452	15.24	153.2	0.0	1483.1
45.00		1.00	1.07	9.366	10.30	282.41	0.650	0.000	5.00	22.986	14.94	153.9	0.0	1453.4
46.50	Appurtenance(s)	1.00	1.08	9.431	10.37	281.65	0.650	0.000	1.50	6.805	4.42	45.9	0.0	430.2
50.00	Bot - Section 3	1.00	1.09	9.576	10.53	279.72	0.650	0.000	3.50	15.716	10.22	107.6	0.0	993.5
55.00		1.00	1.12	9.770	10.75	276.64	0.650	0.000	5.00	22.426	14.58	156.7	0.0	2635.9
56.75	Top - Section 2	1.00	1.12	9.835	10.82	275.48	0.650	0.000	1.75	7.739	5.03	54.4	0.0	909.4
60.00		1.00	1.14	9.951	10.95	277.96	0.650	0.000	3.25	14.221	9.24	101.2	0.0	787.4
65.00		1.00	1.16	10.120	11.13	274.31	0.650	0.000	5.00	21.495	13.97	155.5	0.0	1189.9
70.00		1.00	1.17	10.279	11.31	270.41	0.650	0.000	5.00	21.029	13.67	154.6	0.0	1163.9
75.00		1.00	1.19	10.430	11.47	266.28	0.650	0.000	5.00	20.564	13.37	153.3	0.0	1137.9
80.00		1.00	1.21	10.572	11.63	261.96	0.650	0.000	5.00	20.098	13.06	151.9	0.0	1111.9
85.00		1.00	1.22	10.708	11.78	257.46	0.650	0.000	5.00	19.633	12.76	150.3	0.0	1085.9
90.00		1.00	1.24	10.838	11.92	252.80	0.650	0.000	5.00	19.167	12.46	148.5	0.0	1059.9
94.50	Bot - Section 4	1.00	1.25	10.950	12.04	248.48	0.650	0.000	4.50	16.853	10.95	131.9	0.0	931.7
95.00		1.00	1.25	10.962	12.06	247.99	0.650	0.000	0.50	1.881	1.22	14.7	0.0	191.5
100.00	Top - Section 3	1.00	1.27	11.081	12.19	243.05	0.650	0.000	5.00	18.554	12.06	147.0	0.0	1888.4
105.00		1.00	1.28	11.195	12.31	242.29	0.650	0.000	5.00	18.088	11.76	144.8	0.0	858.1
110.00		1.00	1.29	11.305	12.44	237.13	0.650	0.000	5.00	17.623	11.45	142.5	0.0	835.9
115.00		1.00	1.30	11.412	12.55	231.87	0.650	0.000	5.00	17.157	11.15	140.0	0.0	813.6
120.00	Appurtenance(s)	1.00	1.32	11.514	12.67	226.50	0.650	0.000	5.00	16.692	10.85	137.4	0.0	791.3
123.00	Appurtenance(s)	1.00	1.32	11.574	12.73	223.24	0.650	0.000	3.00	9.792	6.36	81.0	0.0	464.1
124.70	Appurtenance(s)	1.00	1.33	11.608	12.77	221.38	0.650	0.000	1.70	5.474	3.56	45.4	0.0	259.4
125.00		1.00	1.33	11.614	12.78	221.05	0.650	0.000	0.30	0.960	0.62	8.0	0.0	45.5
129.50	Appurtenance(s)	1.00	1.34	11.701	12.87	216.06	0.650	0.000	4.50	14.206	9.23	118.8	0.0	673.1
130.00		1.00	1.34	11.710	12.88	215.50	0.650	0.000	0.50	1.555	1.01	13.0	0.0	73.7
135.00		1.00	1.35	11.803	12.98	209.87	0.650	0.000	5.00	15.296	9.94	129.1	0.0	724.5
140.00	Bot - Section 5	1.00	1.36	11.894	13.08	204.17	0.650	0.000	5.00	14.830	9.64	126.1	0.0	702.2
144.50	Top - Section 4	1.00	1.37	11.974	13.17	198.97	0.650	0.000	4.50	13.139	8.54	112.5	0.0	1029.1
145.00	Appurtenance(s)	1.00	1.37	11.982	13.18	201.36	0.650	0.000	0.50	1.437	0.93	12.3	0.0	45.5
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	195.52	0.650	0.000	5.00	14.111	9.17	121.8	0.0	446.9
153.00	Appurtenance(s)	1.00	1.38	12.119	13.33	191.99	0.650	0.000	3.00	8.243	5.36	71.4	0.0	261.0
155.00		1.00	1.39	12.152	13.37	189.62	0.650	0.000	2.00	5.402	3.51	46.9	0.0	171.0
156.00	Appurtenance(s)	1.00	1.39	12.168	13.39	188.43	0.650	0.000	1.00	2.673	1.74	23.3	0.0	84.6
158.50	Appurtenance(s)	1.00	1.39	12.209	13.43	185.45	0.650	0.000	2.50	6.602	4.29	57.6	0.0	209.0
160.00		1.00	1.40	12.233	13.46	183.65	0.650	0.000	1.50	3.905	2.54	34.2	0.0	123.6
165.00		1.00	1.41	12.313	13.54	177.62	0.650	0.000	5.00	12.714	8.26	111.9	0.0	402.3
170.00		1.00	1.42	12.390	13.63	171.54	0.650	0.000	5.00	12.249	7.96	108.5	0.0	387.5

Wind Loading - Shaft

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

172.50 Appurtenance(s)	1.00	1.42	12.429	13.67	168.47	0.650	0.000	2.50	5.950	3.87	52.9	0.0	188.2
175.00	1.00	1.42	12.466	13.71	165.39	0.650	0.000	2.50	5.834	3.79	52.0	0.0	184.4
180.00	1.00	1.43	12.540	13.79	159.20	0.650	0.000	5.00	11.318	7.36	101.5	0.0	357.8
182.00 Appurtenance(s)	1.00	1.44	12.570	13.83	156.71	0.650	0.000	2.00	4.397	2.86	39.5	0.0	138.9
185.00	1.00	1.44	12.613	13.87	152.96	0.650	0.000	3.00	6.456	4.20	58.2	0.0	204.0
190.00 Appurtenance(s)	1.00	1.45	12.684	13.95	146.66	0.650	0.000	5.00	10.387	6.75	94.2	0.0	328.1
							Totals:	**190.00**			**5,170.4**		**42,865.3**

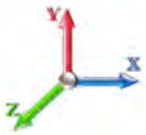
Discrete Appurtenance Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	190.00	Low Profile Platform	1	12.684	13.952	1.00	1.00	25.00	1200.00	0.000	0.000	348.81	0.00	0.00
2	190.00	ANT150D3	1	12.753	14.029	1.00	1.00	2.18	18.00	0.000	5.000	30.58	0.00	152.91
3	182.00	RDIDC-9181-PF-48	1	12.570	13.827	1.00	1.00	2.01	21.85	0.000	0.000	27.79	0.00	0.00
4	182.00	TA08025-B604	3	12.570	13.827	0.50	0.75	2.95	191.70	0.000	0.000	40.85	0.00	0.00
5	182.00	TA08025-B605	3	12.570	13.827	0.50	0.75	2.95	225.00	0.000	0.000	40.85	0.00	0.00
6	182.00	MC-PK8-DSH	1	12.570	13.827	1.00	1.00	37.59	1727.00	0.000	0.000	519.74	0.00	0.00
7	182.00	MX08FRO665-21	3	12.570	13.827	0.55	0.75	20.80	193.50	0.000	0.000	287.53	0.00	0.00
8	172.50	AIR 21 B4A/B2P	3	12.429	13.671	0.65	0.75	11.78	274.50	0.000	0.000	161.11	0.00	0.00
9	172.50	APXVAALL24-43-U-NA20	3	12.429	13.671	0.52	0.75	31.88	384.00	0.000	0.000	435.82	0.00	0.00
10	172.50	Ericsson KRY 112 144/1	3	12.429	13.671	0.50	0.75	0.62	33.00	0.000	0.000	8.45	0.00	0.00
11	172.50	Air21 B2A/B4P	3	12.429	13.671	0.65	0.75	12.74	396.60	0.000	0.000	174.22	0.00	0.00
12	172.50	PRK-1245	1	12.429	13.671	1.00	1.00	9.50	464.91	0.000	0.000	129.88	0.00	0.00
13	172.50	Ericsson 4449 B71 + B85	3	12.429	13.671	0.50	0.75	2.97	219.60	0.000	0.000	40.60	0.00	0.00
14	172.50	PV-PHK12-B	1	12.429	13.671	1.00	1.00	10.52	406.61	0.000	0.000	143.82	0.00	0.00
15	172.50	Low Profile Platform-flat	1	12.429	13.671	1.00	1.00	25.00	1200.00	0.000	0.000	341.78	0.00	0.00
16	158.50	PD458-2N	1	12.315	13.547	0.80	0.80	2.13	22.00	0.000	6.650	28.83	0.00	191.70
17	158.50	Low Profile Platform-flat	1	12.209	13.430	1.00	1.00	25.00	1200.00	0.000	0.000	335.75	0.00	0.00
18	156.00	114202C	1	12.270	13.497	1.00	1.00	2.14	24.00	0.000	6.300	28.88	0.00	181.97
19	153.00	ANT450D6-9	1	12.168	13.385	1.00	1.00	2.77	18.00	0.000	3.000	37.08	0.00	111.23
20	150.00	3 ft Standoff	2	12.068	13.275	1.00	1.00	5.26	80.00	0.000	0.000	69.83	0.00	0.00
21	145.00	AIR6449 B41	3	11.982	13.181	0.53	0.75	9.03	309.00	0.000	0.000	118.97	0.00	0.00
22	145.00	Low Profile Platform-flat	1	11.982	13.181	1.00	1.00	25.00	1200.00	0.000	0.000	329.51	0.00	0.00
23	145.00	HRK14	1	11.982	13.181	1.00	1.00	8.13	302.36	0.000	0.000	107.16	0.00	0.00
24	145.00	PRK-1245 (kicker kit)	1	11.982	13.181	1.00	1.00	9.50	464.91	0.000	0.000	125.22	0.00	0.00
25	145.00	Horizontal Rail & SCX1-K	1	11.982	13.181	1.00	1.00	9.97	302.36	0.000	0.000	131.41	0.00	0.00
26	145.00	(3) SFS-H-L (V-Braces)	1	11.982	13.181	1.00	1.00	9.70	230.00	0.000	0.000	127.85	0.00	0.00
27	145.00	4460 Radio	3	11.982	13.181	0.50	0.75	4.30	327.00	0.000	0.000	56.63	0.00	0.00
28	145.00	4480 Radio	3	11.982	13.181	0.50	0.75	4.30	279.00	0.000	0.000	56.63	0.00	0.00
29	145.00	VV-65A-R1	3	11.982	13.181	0.61	0.75	12.21	132.30	0.000	0.000	160.99	0.00	0.00
30	145.00	APXVAALL24_43-U-NA20	3	11.982	13.181	0.55	0.75	33.24	368.40	0.000	0.000	438.18	0.00	0.00
31	145.00	800 MHz RRUs	6	11.982	13.181	0.69	0.75	10.31	318.00	0.000	0.000	135.87	0.00	0.00
32	129.50	220-7N Omni	1	11.876	13.064	1.00	1.00	5.32	22.00	0.000	9.500	69.50	0.00	660.25
33	124.70	220-3AN	1	11.804	12.985	1.00	1.00	5.69	24.00	0.000	10.350	73.88	0.00	764.69
34	123.00	ANT450D6-9	1	11.633	12.797	1.00	1.00	2.77	18.00	0.000	3.000	35.45	0.00	106.34
35	120.00	3 ft Standoff	3	11.514	12.666	1.00	1.00	7.89	120.00	0.000	0.000	99.93	0.00	0.00
36	46.50	GPS	1	9.431	10.374	1.00	1.00	1.00	10.00	0.000	0.000	10.37	0.00	0.00
37	46.50	3 ft Standoff	1	9.431	10.374	1.00	1.00	2.63	40.00	0.000	0.000	27.28	0.00	0.00
							Totals:		**12,767.60**			**5,337.03**		

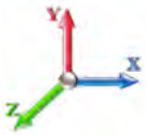
Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		139.87	1763.92	0.00	0.00
10.00		137.39	1734.21	0.00	0.00
11.75		47.50	599.96	0.00	0.00
15.00		88.88	2161.72	0.00	0.00
19.50		128.06	2951.71	0.00	0.00
20.00		14.17	168.84	0.00	0.00
25.00		147.03	1672.10	0.00	0.00
30.00		149.93	1642.40	0.00	0.00
35.00		151.91	1612.70	0.00	0.00
40.00		153.20	1582.99	0.00	0.00
45.00		153.93	1553.29	0.00	0.00
46.50	(2) attachments	83.55	510.19	0.00	0.00
50.00		107.61	1062.83	0.00	0.00
55.00		156.66	2734.96	0.00	0.00
56.75		54.42	944.08	0.00	0.00
60.00		101.18	851.79	0.00	0.00
65.00		155.53	1289.00	0.00	0.00
70.00		154.56	1263.01	0.00	0.00
75.00		153.35	1237.02	0.00	0.00
80.00		151.93	1211.03	0.00	0.00
85.00		150.31	1185.04	0.00	0.00
90.00		148.53	1159.05	0.00	0.00
94.50		131.94	1020.92	0.00	0.00
95.00		14.74	201.40	0.00	0.00
100.00		147.00	1987.49	0.00	0.00
105.00		144.79	957.25	0.00	0.00
110.00		142.45	934.97	0.00	0.00
115.00		139.99	912.69	0.00	0.00
120.00	(3) attachments	237.35	1010.41	0.00	0.00
123.00	(1) attachments	116.48	536.88	0.00	106.34
124.70	(1) attachments	119.32	314.47	0.00	764.69
125.00		7.98	50.99	0.00	0.00
129.50	(1) attachments	188.34	777.26	0.00	660.25
130.00		13.02	82.80	0.00	0.00
135.00		129.09	815.78	0.00	0.00
140.00		126.12	793.50	0.00	0.00
144.50		112.49	1111.32	0.00	0.00
145.00	(26) attachments	1800.72	4287.96	0.00	0.00
150.00	(2) attachments	191.58	610.82	0.00	0.00
153.00	(1) attachments	108.50	329.36	0.00	111.23
155.00		46.94	204.61	0.00	0.00
156.00	(1) attachments	52.14	125.41	0.00	181.97
158.50	(2) attachments	422.20	1472.93	0.00	191.70
160.00		34.16	146.44	0.00	0.00
165.00		111.93	478.47	0.00	0.00
170.00		108.51	463.61	0.00	0.00

Total Applied Force Summary

Structure:	CT00235-B-SBA		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

172.50	(18) attachments	1488.55	3605.46	0.00	0.00
175.00		52.00	190.72	0.00	0.00
180.00		101.48	370.31	0.00	0.00
182.00	(11) attachments	956.29	2503.02	0.00	0.00
185.00		58.22	205.52	0.00	0.00
190.00	(2) attachments	473.59	1548.65	0.00	152.91
	Totals:	**10,507.40**	**58,943.27**	**0.00**	**2,169.09**

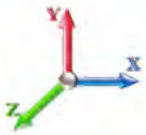
Linear Appurtenance Segment Forces (Factored)

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	7.442	0.00	0.80
10.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	7.442	0.00	0.80
11.75	1/2" GPS Line	Yes	1.75	0.000	0.50	0.07	0.00	0.008	0.000	7.442	0.00	0.28
15.00	1/2" GPS Line	Yes	3.25	0.000	0.50	0.14	0.00	0.008	0.000	7.442	0.00	0.52
19.50	1/2" GPS Line	Yes	4.50	0.000	0.50	0.19	0.00	0.008	0.000	7.854	0.00	0.72
20.00	1/2" GPS Line	Yes	0.50	0.000	0.50	0.02	0.00	0.008	0.000	7.896	0.00	0.08
25.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.008	0.000	8.276	0.00	0.80
30.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	8.600	0.00	0.80
35.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	8.883	0.00	0.80
40.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	9.137	0.00	0.80
45.00	1/2" GPS Line	Yes	5.00	0.000	0.50	0.21	0.00	0.009	0.000	9.366	0.00	0.80
46.50	1/2" GPS Line	Yes	1.50	0.000	0.50	0.06	0.00	0.009	0.000	9.431	0.00	0.24
										Totals:	**0.0**	**7.4**

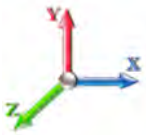
Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.94	-10.53	0.00	-1387.0	0.00	1387.05	6843.68	3421.84	17482.3	8754.18	0.00	0.000	0.000	0.167
5.00	-57.17	-10.43	0.00	-1334.4	0.00	1334.42	6762.41	3381.20	16966.6	8495.95	0.02	-0.040	0.000	0.166
10.00	-55.43	-10.31	0.00	-1282.2	0.00	1282.29	6679.70	3339.85	16454.8	8239.66	0.09	-0.081	0.000	0.164
11.75	-54.83	-10.29	0.00	-1264.2	0.00	1264.24	6650.41	3325.20	16276.6	8150.43	0.12	-0.096	0.000	0.163
15.00	-52.66	-10.22	0.00	-1230.8	0.00	1230.81	6595.55	3297.78	15947.1	7985.40	0.19	-0.123	0.000	0.162
19.50	-49.70	-10.11	0.00	-1184.8	0.00	1184.81	6596.31	3298.16	15951.6	7987.68	0.33	-0.161	0.000	0.156
20.00	-49.53	-10.11	0.00	-1179.7	0.00	1179.76	6587.82	3293.91	15901.1	7962.37	0.34	-0.165	0.000	0.156
25.00	-47.85	-9.99	0.00	-1129.2	0.00	1129.21	6502.11	3251.06	15398.0	7710.45	0.54	-0.205	0.000	0.154
30.00	-46.20	-9.87	0.00	-1079.2	0.00	1079.25	6414.97	3207.48	14899.4	7460.77	0.77	-0.246	0.000	0.152
35.00	-44.58	-9.74	0.00	-1029.9	0.00	1029.91	6326.39	3163.20	14405.4	7213.44	1.05	-0.287	0.000	0.150
40.00	-42.99	-9.61	0.00	-981.20	0.00	981.20	6236.38	3118.19	13916.4	6968.54	1.38	-0.329	0.000	0.148
45.00	-41.44	-9.47	0.00	-933.15	0.00	933.15	6144.94	3072.47	13432.4	6726.18	1.75	-0.371	0.000	0.145
46.50	-40.92	-9.40	0.00	-918.95	0.00	918.95	6117.23	3058.61	13288.2	6653.99	1.86	-0.384	0.000	0.145
50.00	-39.86	-9.31	0.00	-886.06	0.00	886.06	6052.06	3026.03	12953.6	6486.46	2.16	-0.415	0.000	0.143
55.00	-37.12	-9.15	0.00	-839.53	0.00	839.53	5957.75	2978.87	12480.3	6249.47	2.61	-0.458	0.000	0.141
56.75	-36.17	-9.10	0.00	-823.52	0.00	823.52	5057.23	2528.61	10722.5	5369.23	2.79	-0.473	0.000	0.161
60.00	-35.31	-9.02	0.00	-793.94	0.00	793.94	5008.75	2504.38	10471.4	5243.49	3.12	-0.502	0.000	0.158
65.00	-34.02	-8.88	0.00	-748.87	0.00	748.87	4933.00	2466.50	10088.3	5051.65	3.67	-0.549	0.000	0.155
70.00	-32.75	-8.74	0.00	-704.49	0.00	704.49	4855.80	2427.90	9709.24	4861.84	4.27	-0.597	0.000	0.152
75.00	-31.51	-8.60	0.00	-660.81	0.00	660.81	4777.18	2388.59	9334.40	4674.14	4.92	-0.645	0.000	0.148
80.00	-30.29	-8.46	0.00	-617.83	0.00	617.83	4697.12	2348.56	8963.98	4488.65	5.62	-0.693	0.000	0.144
85.00	-29.10	-8.31	0.00	-575.56	0.00	575.56	4615.63	2307.81	8598.19	4305.49	6.37	-0.741	0.000	0.140
90.00	-27.94	-8.17	0.00	-533.99	0.00	533.99	4532.70	2266.35	8237.22	4124.73	7.17	-0.789	0.000	0.136
94.50	-26.92	-8.04	0.00	-497.21	0.00	497.21	4456.84	2228.42	7916.63	3964.20	7.94	-0.832	0.000	0.131
95.00	-26.71	-8.03	0.00	-493.19	0.00	493.19	4448.34	2224.17	7881.27	3946.49	8.03	-0.837	0.000	0.131
100.00	-24.72	-7.88	0.00	-453.03	0.00	453.03	3637.80	1818.90	6411.13	3210.33	8.93	-0.884	0.000	0.148
105.00	-23.76	-7.74	0.00	-413.65	0.00	413.65	3571.83	1785.92	6132.14	3070.63	9.88	-0.932	0.000	0.141
110.00	-22.82	-7.60	0.00	-374.97	0.00	374.97	3504.43	1752.22	5856.78	2932.74	10.88	-0.983	0.000	0.134
115.00	-21.90	-7.46	0.00	-336.98	0.00	336.98	3435.59	1717.80	5585.22	2796.76	11.94	-1.032	0.000	0.127
120.00	-20.89	-7.22	0.00	-299.68	0.00	299.68	3365.32	1682.66	5317.67	2662.79	13.05	-1.081	0.000	0.119
123.00	-20.35	-7.10	0.00	-277.91	0.00	277.91	3322.47	1661.24	5159.15	2583.41	13.74	-1.109	0.000	0.114
124.70	-20.04	-6.98	0.00	-265.08	0.00	265.08	3297.96	1648.98	5070.01	2538.77	14.13	-1.126	0.000	0.111
125.00	-19.99	-6.98	0.00	-262.98	0.00	262.98	3293.62	1646.81	5054.33	2530.92	14.20	-1.128	0.000	0.110
129.50	-19.21	-6.78	0.00	-230.93	0.00	230.93	3221.96	1610.98	4812.26	2409.71	15.29	-1.169	0.000	0.102
130.00	-19.13	-6.77	0.00	-227.54	0.00	227.54	3212.23	1606.11	4783.10	2395.10	15.41	-1.173	0.000	0.101
135.00	-18.31	-6.64	0.00	-193.67	0.00	193.67	3114.95	1557.47	4496.34	2251.51	16.66	-1.215	0.000	0.092
140.00	-17.51	-6.51	0.00	-160.47	0.00	160.47	3017.67	1508.83	4218.45	2112.36	17.95	-1.253	0.000	0.082
144.50	-16.40	-6.38	0.00	-131.18	0.00	131.18	1688.87	844.44	2343.95	1173.72	19.15	-1.284	0.000	0.122
145.00	-12.16	-4.48	0.00	-128.00	0.00	128.00	1685.31	842.66	2331.34	1167.40	19.29	-1.287	0.000	0.117
150.00	-11.55	-4.29	0.00	-105.58	0.00	105.58	1649.03	824.52	2206.02	1104.65	20.66	-1.331	0.000	0.103
153.00	-11.22	-4.17	0.00	-92.61	0.00	92.61	1626.65	813.33	2131.62	1067.39	21.50	-1.355	0.000	0.094
155.00	-11.01	-4.12	0.00	-84.26	0.00	84.26	1611.48	805.74	2082.37	1042.73	22.07	-1.371	0.000	0.088
156.00	-10.89	-4.07	0.00	-79.96	0.00	79.96	1603.81	801.91	2057.85	1030.46	22.36	-1.378	0.000	0.084
158.50	-9.43	-3.62	0.00	-69.59	0.00	69.59	1584.43	792.22	1996.89	999.93	23.09	-1.396	0.000	0.076
160.00	-9.28	-3.58	0.00	-64.16	0.00	64.16	1572.65	786.33	1960.55	981.73	23.53	-1.406	0.000	0.071
165.00	-8.80	-3.46	0.00	-46.26	0.00	46.26	1532.55	766.28	1840.74	921.74	25.02	-1.434	0.000	0.056
170.00	-8.34	-3.34	0.00	-28.95	0.00	28.95	1491.18	745.59	1723.12	862.84	26.53	-1.455	0.000	0.039
172.50	-4.77	-1.76	0.00	-20.59	0.00	20.59	1470.02	735.01	1665.18	833.83	27.30	-1.463	0.000	0.028

Calculated Forces

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

175.00	-4.59	-1.71	0.00	-16.18	0.00	16.18	1448.54	724.27	1607.86	805.12	28.06	-1.469	0.000	0.023
180.00	-4.22	-1.60	0.00	-7.64	0.00	7.64	1404.63	702.31	1495.13	748.67	29.61	-1.478	0.000	0.013
182.00	-1.74	-0.58	0.00	-4.45	0.00	4.45	1386.71	693.35	1450.78	726.47	30.23	-1.480	0.000	0.007
185.00	-1.54	-0.51	0.00	-2.72	0.00	2.72	1352.25	676.13	1377.77	689.91	31.16	-1.481	0.000	0.005
190.00	0.00	-0.47	0.00	-0.15	0.00	0.15	1292.39	646.19	1257.90	629.89	32.71	-1.483	0.000	0.000

Final Analysis Summary

Structure:	CT00235-B-SBA	**Code:**	TIA-222-G	2/21/2022	
Site Name:	Stony Brook	**Exposure:**	C		
Height:	190.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 108 mph Wind	54.6	0.00	70.63	0.00	0.00	7231.17
0.9D + 1.6W 108 mph Wind	54.6	0.00	52.95	0.00	0.00	7145.95
1.2D + 1.0Di + 1.0Wi 50 mph Wind	13.6	0.00	101.85	0.00	0.00	1832.16
1.2D + 1.0E	2.2	0.00	70.73	0.00	0.00	282.55
0.9D + 1.0E	2.2	0.00	53.05	0.00	0.00	278.95
1.0D + 1.0W 60 mph Wind	10.5	0.00	58.94	0.00	0.00	1387.05

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 108 mph Wind	-70.63	-54.60	0.00	-7231.1	0.00	-7231.1	6843.68	3421.8	17482.3	8754.18	0.00	0.837
0.9D + 1.6W 108 mph Wind	-52.95	-54.57	0.00	-7145.9	0.00	-7145.9	6843.68	3421.8	17482.3	8754.18	0.00	0.824
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-101.85	-13.60	0.00	-1832.1	0.00	-1832.1	6843.68	3421.8	17482.3	8754.18	0.00	0.224
1.2D + 1.0E	-19.84	-1.39	0.00	-47.77	0.00	-47.77	1688.87	844.44	2343.95	1173.72	144.50	0.052
0.9D + 1.0E	-14.88	-1.37	0.00	-47.11	0.00	-47.11	1688.87	844.44	2343.95	1173.72	144.50	0.049
1.0D + 1.0W 60 mph Wind	-58.94	-10.53	0.00	-1387.0	0.00	-1387.0	6843.68	3421.8	17482.3	8754.18	0.00	0.167

Base Plate Summary

Structure:	CT00235-B-SB		**Code:**	TIA-222-G	2/21/2022
Site Name:	Stony Brook		**Exposure:**	C	
Height:	190.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 51

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	5800.00
Axial (kip):	60.00
Shear (kip):	43.00
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	7231.17
Axial (kip):	70.63
Shear (kip):	54.60

Base Plate	
Yield (ksi):	50.00
Width (in):	71.00
Style:	Clipped
Polygon Sides:	4.00
Clip Length (in):	13.00
Effective Len (in):	8.22
Moment (kip-in):	771.71
Allow Stress (ksi):	67.50
Applied Stress (ksi):	45.90
Stress Ratio:	0.68

Anchor Bolts	
Bolt Circle:	70.00
Number Bolts:	24.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00
Compression	
Force (kip):	210.85
Allowable (kip):	260.00
Ratio:	0.83
Tension	
Force (kip):	202.36
Allowable (kip):	260.00
Ratio:	0.80

Monopole Mat Foundation Design

			Date: 2/21/2022
Customer Name:	T-Mobile Sprint	**TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	190
Site Number:	CT00235-B-SBA	**Engineer Name:**	M. Franco
Engr. Number:	124741	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

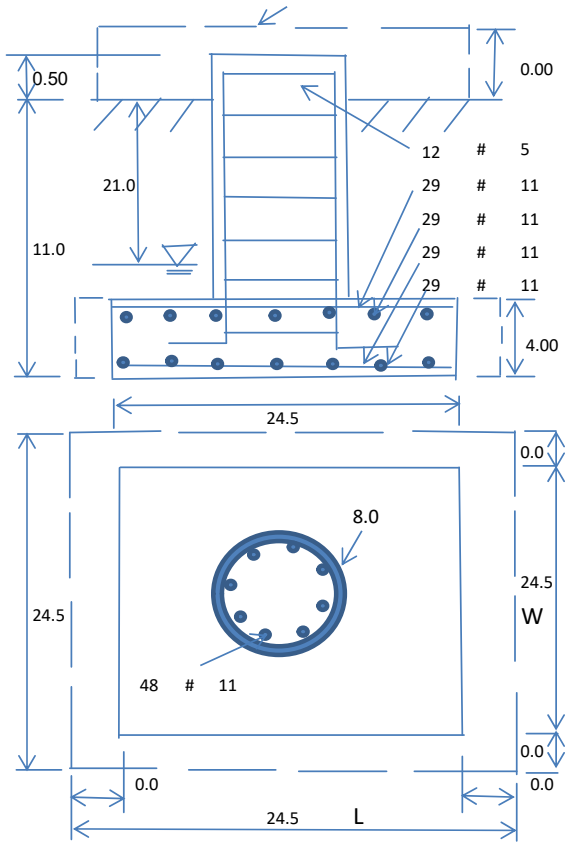
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	70.6	Shear Force (Kips):	54.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	7231.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	11.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5
Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	48	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	11	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	29	Qty. of Rebar in Pad (W):	29

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	29	Qty. of Rebar in Pad (W):	29
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	130.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	21.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

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

Total Dry Soil Volume (cu. Ft.):	3849.89	Total Dry Soil Weight (Kips):	500.49
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	500.49	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2777.99	Total Dry Concrete Weight (Kips):	416.70
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	416.70	Total Vertical Load on Base (Kips):	987.78

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	5168	<	Allowable Factored Soil Bearing (psf):	6000	0.86	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	10976.8	>	Design Factored Momont (kips-ft):	7032	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		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	13572.9	>	Design Factored Moment (Mu, Kips-F	7640.7	0.56	OK!
Calculated Shear Capacity (Kips):	832.8	>	Design Factored Shear (Kips):	54.6	0.07	OK!
Calculated Tension Capacity (Tn, Kips):	4043.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9498.6	>	Design Factored Axial Load (Pu Kips):	70.6	0.01	OK!
Moment & Axial Strength Combination:	0.56	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.010		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1070.3	>	One-Way Factored Shear (L-D. Kips):	336.1	0.31	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1070.3	>	One-Way Factored Shear (W-D., Kips)	336.1	0.31	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	841.5	>	One-Way Factored Shear (C-C, Kips):	325.3	0.39	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0035	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0035		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	8652.6	>	Moment at Bottom (L-Dir. K-Ft):	1992.2	0.23	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	8652.6	>	Moment at Bottom (W-Dir. K-Ft):	1992.2	0.23	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	12080.1	>	Moment at Bottom (C-C Dir. K-Ft):	2817.4	0.23	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0035	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0035		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	8652.6	>	Moment at the top (L-Dir K-Ft):	967.8	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	8652.6	>	Moment at the top (W-Dir K-Ft):	967.8	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	12080.1	>	Moment at the top (C-C Dir. K-Ft):	915.3	0.08	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2892.5	k-ft.	Max. factored shear stress v_{u_CD}:		5.2	Psi
Max. factored shear stress v_{u_AB}:	10.7	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	10.7	Psi	Check Usage of Punching Shear Capacity:		0.07	OK!

Pier Foundation Design For Monopole

				Date
				2/21/2022
Customer Name:	**T-Mobile Sprint**	**EIA/TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	190
Site Number:	CT00235-B-SBA	**Engineer Name:**	M. Franco
Engr. Number:	124741	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	70.6	Shear Force (Kips):	54.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	7231.2

Foundation Geometries:

Diameter of Pier (ft.):	8.0	Depth of Base B. G. S. :	24.0	ft.
Pier Height A. G. (ft.):	0.50			

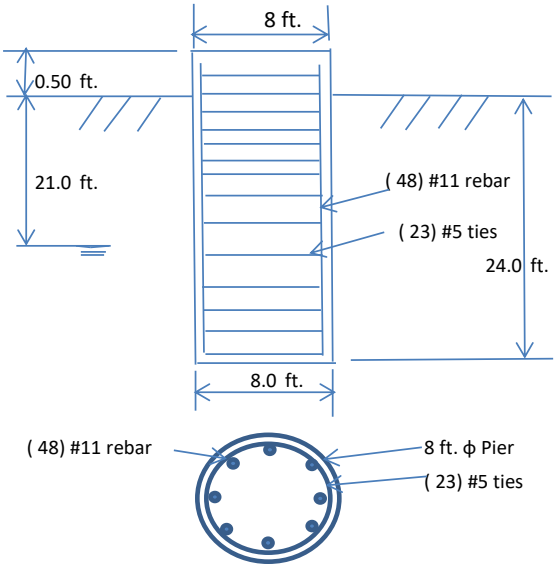
Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	40	ksi
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	48	Tie Spacing:	18.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	21.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)

Skin Frictions are to be obtained from: Soil Report



Monopole Pier Foundation

Sand

Depth of Layers (ft) Top	Depth of Layers (ft) Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types
0.0	4.0	140	0	0	0	0	Sand
4.0	21.0	140	36	0	0	0	Sand
21.0	41.5	147	36	0	0	0	Sand
41.5	46.5	147	36	0	0	0	Sand

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75	
Total Dry Soil Volume from Conical Failure (cu. Ft.):	8905	Dry Soil Weight from Conical Failure:	1247	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	75	Buoyant Soil Weight from Conical Failure (Ki	8	Kips
Total Dry Concrete Volume (cu. Ft.):	1081	Total Dry Concrete Weight:	162.1	Kips
Total Buoyant Concrete Volume (cu. Ft.):	150.8	Total Buoyant Concrete Weight:	13.21	Kips
Total Effective Concrete Weight (Kips):	175.3	Total Effective Soil Weight:	1254.6	Kips
Total Effective Vertical Load on Base (Kips):	82.1			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	10243.5	>	Design Factored Moment (kips-ft):	8143	0.79	OK!
Factor of Safety of Passive Soil Resistance against Moment:	1.26	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	

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	13515.8	>	Design Factored Moment (Mu, K-Ft):	7483.4	0.55	OK!
Calculated Shear Capacity (Kips):	1274.2	>	Design Factored Shear (Kips):	751.5	0.59	OK!
Calculated Tension Capacity (Tn, Kips):	4043.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9499	>	Design Factored Axial Load (Pu Kips):	70.6	0.01	OK!
Moment & Axial Strength Combination:	0.55	OK!	Max. Allowable Tie/Stirrup Spacing:	5.17	in.	
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is satisfied per ACI				

EXHIBIT 8

Mount Analysis

Mount Structural Analysis

SBA Site:	**CTNH646A**
T-Mobile Site Number:	**CTNH646A**
Project:	Sprint Retain
Prepared For:	T-Mobile
Mount Description:	Platform w/ V-Brace Augments
Site Location:	100 Taugwonk Rd Stonington, CT 06378 New London County 41.382017°, -71.903586°
Design Codes:	ANSI/TIA-222-G 2015 IBC w/ 2018 Connecticut State Building Code
Analysis Load Case:	T-Mobile Final Configuration
Analysis Result:	**adequate @ 89%** **See Conclusion & Recommendations for installation requirements.**

Date Signed:
2/14/2022

Revision 0
February 14, 2022

1.0 Introduction

GeoStructural LLC has completed a structural analysis for the existing T-Mobile mount assembly located at the *CTNH646A communications site* in New London County, CT considering the final appurtenance loading configurations listed in Section 3.0.

2.0 Analysis Procedure & Design Criteria

An elastic three-dimensional model of the structure has been analyzed pursuant to the following criteria:

- 2018 Connecticut State Building Code
- 2015 IBC – International Building Code
- ANSI/TIA-222 – Structural Standard for Antenna Supporting Structures and Antennas.
- ASCE 7 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- AISC – Steel Construction Manual.
- ANSI/AWS D1.1 – Structural Welding Code.

Wind w/o ice = 106 mph (3-sec gust Equivalent per TIA-222-G Code) Wind w/o ice = 136 mph (3-sec gust Ultimate Wind Speed) Wind w/ ice = 50 mph (3-sec gust Basic) with 0.75" Design Ice (Escalated with Height) [1]
Topographic Category 1; Exposure Category C Structure Class (Risk Category) II; Ground Elevation = 141 ft (NAVD 88) Gust Effect Factor = 1.0; Directionality Factor = 0.95;
Seismic Design Parameters: Site Class D "Stiff Soil"; S_s = 0.159, S_1 = 0.058, S_{DS} = 0.170
Maintenance Loads[2]: L_m = 500 lb @ Worst Case Mount Pipe (Concurrent with 30 mph Wind Speed) L_v = 250 lb @ Worst Case Member Location (Center Span or Cantilever)
1. Ice loading has been ignored with Design Ice Thickness ≤ 0.5". *2. The face horizontal boom rails of T-Arm mount assemblies are not rated for rigging, hoisting or maintenance loading unless noted otherwise.*

GeoStructural has <u>not</u> conducted a site visit or independent study to verify existing structural conditions and the results of this analysis are based solely on the information provided. The following documents were obtained and/or provided:

- Mod Drawings Site #: CTNH646A, GeoStructural Mod Drawings, Dated 04/16/2018
- Previous MMA Site #: CTNH646A, GeoStructural Site.# NY03271-A, Dated 04/12/2018
- RFDS Site #: CTNH646A, ID:CTNH646A Rev.1,Dated 10/08/21
- Previous CDs Site #: CTNH646A, Infinigy, Rev A, 01/17/18

The results of the analysis are illustrated in Section 4.0. If any of the existing or proposed conditions reported in this analysis are not accurately represented, please contact our office immediately to request an amended report.

3.0 Appurtenance Information

Table 3.1 - Final T-Mobile Appurtenance Configuration[1,2]

COR	(Quantity) Appurtenance Make/Model	Mount Description
145'±	(3) ANDREW/COMMSCOPE VV-65A-R1	*Platform w/ V-Brace Augments*
	(3) RFS APXVAALL24_43-U-NA20	
	(3) ERICSSON AIR6449 B41	
	(3) RRH 4460 B25+B66	
	(3) RRH Ericsson 4480 B71 + B8	

1. *Refer to antenna installation Construction Drawings (when applicable) for additional information regarding final antenna and equipment orientations.*
2. *All RRH units must be installed on the back-to-back pipe mount assemblies installed on the pipe at location 3 in order for this analysis to be valid.*

4.0 Structural Analysis Results

Table 4.1 – Mount Capacity

Load Case	Governing Mount Component[1]	% Capacity[2]	Result
Final T-Mobile Configuration	Horizontal Boom	65%	Adequate
	Handrail	28%	
	Standoff	42%	
	Mod Support	6%	
	Mount Pipe	32%	
	Connection	89%	

1. *Refer to the Calculations & Software Output portion of this report for mount component and structural information.*
2. *Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.2. 105% is an acceptable allowable stress percentage for mount components. Refer to Section 7.0 for additional member usage capacities.*

Table 4.2 – Structural Component Material Strengths

Structural Component	Nominal Strength/Material[1]
Pipe	F_y = 35 ksi (A53, Gr. B)
Tube	F_y = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate & Bar	F_y = 36 ksi (A36)
Uni-Strut (P1000, etc.)	F_y = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F_y = 57 ksi (Yield) & F_u = 74 ksi (Tension)
	SAE J429 Grade 5 (¼" to 1" Nominal ϕ) F_y = 92 ksi (Yield) & F_u = 120 ksi (Tension)
Welds	E70XX Electrodes

1. *Strengths listed were assumed for this analysis and are based upon ASTM, AISC, RCSC, AWS and ACI preferred specification values. Values and materials are consistent with industry standards. Material strengths were taken from original design documents when available.*

5.0 Conclusion & Recommendations

Based on T-Mobile's final equipment loading configuration, the mount assembly has sufficient capacity to support the loading considered in this analysis pursuant to the listed standards.

Antennas and equipment shall be installed centered vertically between the primary platform mount front rail and handrail (limit vertical installation eccentricity). If this assumption is incorrect, the results of this analysis will be inaccurate and may result in a failing mount condition.

This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If any of the existing or proposed conditions (appurtenance loading, member sizes, etc.) reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

Prepared by:

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518.892.0471
fathullah.zamani@geostructural.com

Reviewed and Approved by:

Gregory Durgin
509.999.5278
gregory.durgin@geostructural.com

6.0 Standard Conditions

- All data required to complete our structural analysis was furnished by our client. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.

- The default Structure Classification is Class II in accordance with ANSI/TIA-222 §A.2.2 & §A.15.4 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.

- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222 §15.6 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.

- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.

- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.

- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.

- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.

- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

7.0 Attachments, Calculations & Software Output

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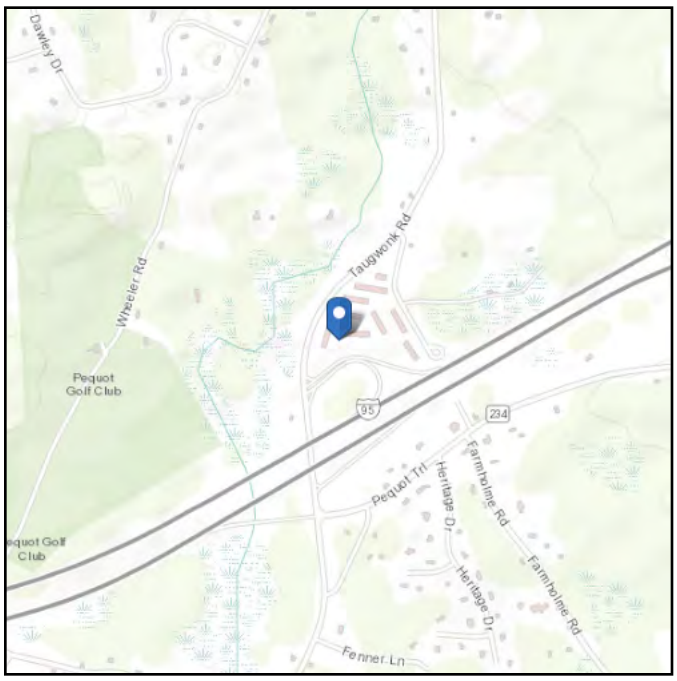
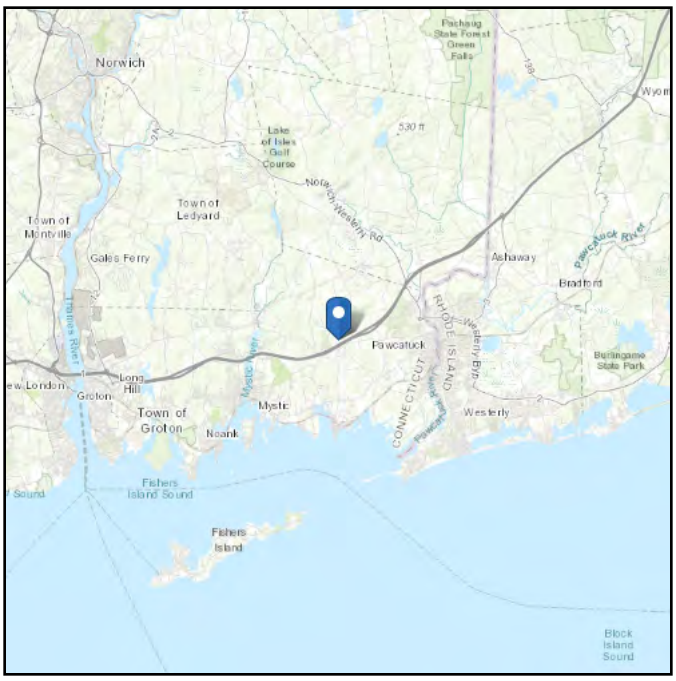
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 141.53 ft (NAVD 88)
Latitude: 41.382017
Longitude: -71.903586





Wind

Results:

Wind Speed	136 Vmph
10-year MRI	80 Vmph
25-year MRI	90 Vmph
50-year MRI	100 Vmph
100-year MRI	110 Vmph

Data Accessed: Mon Feb 14 2022

Date Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

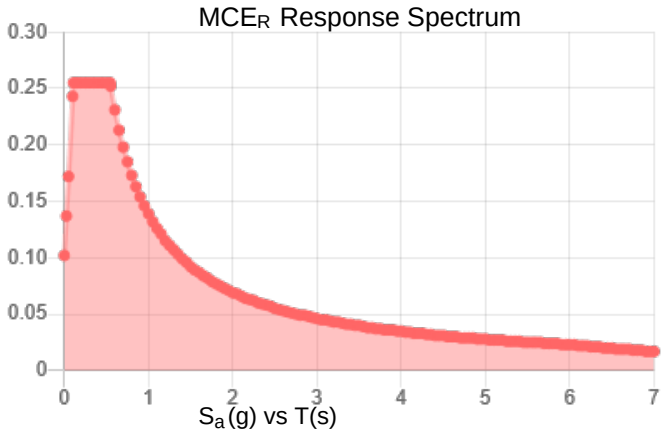
Seismic

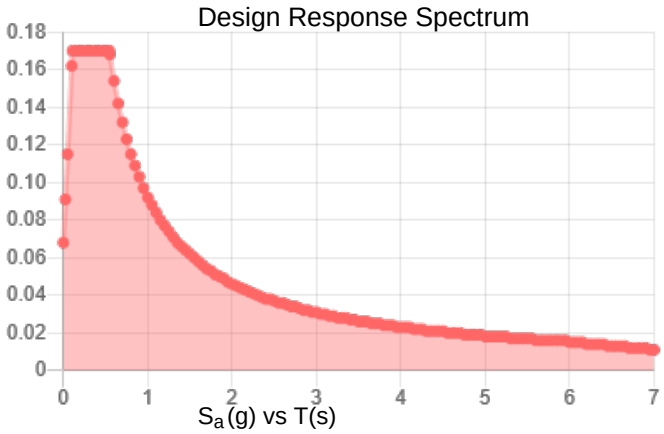
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.159	S_{DS} :	0.17
S_1 :	0.058	S_{D1} :	0.092
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.079
S_{MS} :	0.255	PGA_M :	0.127
S_{M1} :	0.139	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: **Mon Feb 14 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Feb 14 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Design Wind Force on Appurtenances

ASCE 7-10 & IBC 2015

Wind Design Parmeters:

V_{basic} =	106	mph	*Basic Ult Wind (§2.6.4)*	C	*Exposure Category (§2.6.5.1.2)*		
V_{ice} =	50	mph	*Basic Wind w/ ice (§2.6.4)*	1	*Topographic Category (§2.6.6.2.1)*		
t_{ice} =	0.75	inch	*Ice Thickness (§2.6.10)*	II	*Risk Category (§2, Table 2-1)*		
K_a =	0.9			30	*mph*	Service Wind Speed	
K_d =	0.95						
G_h =	1						

q_z =	37	psf	*Wind Load without Ice*	t_{ice} =	0	inch
q_z =	8	psf	*Wind Load with Ice*	t_{ice} =	0.87	inch

z =	145.0	ft	*COR (Height above ground level at the base of structure)*
H =	0	ft	*Height of crest above surrounding terrain (Topo Categories 2, 3 & 4)*
z_s =	141	ft	*Mean elevation of base of structure above sea level*

Seismic Design Parmeters:

Site Class:	D	**Occupancy Cat:**	II	**Seismic Design Cat:**	B	z =	145
						h =	145

Amp. Factor, ap: 1 Response Factor, Rp: 2.5

S_{DS} = 0.1696 S_{D1} = 0.093

(ASCE 7-10 13.3-3)	$F_{p,\min} = 0.3 S_{DS} I_p W_p$	= 0.05088	w_p
(ASCE 7-10 13.3-1)	$F_p = \frac{0.4 a_p S_{DS} W_p}{\left(\frac{R_p}{I_p}\right)}\left(1+2\frac{z}{h}\right)$	= 0.081408	w_p
(ASCE 7-10 13.3-2)	$F_{p,\max} = 1.6 S_{DS} I_p W_p$	= 0.27136	w_p

Use F_p = 0.081 Wp

Importance Factor (§2, Table 2-3):

I =	1.00	*Wind Load without Ice*
I =	1.00	*Wind Load with Ice*
I =	1.00	*Ice Thickness*
I =	1.00	*Earthquake*

Appurtenances

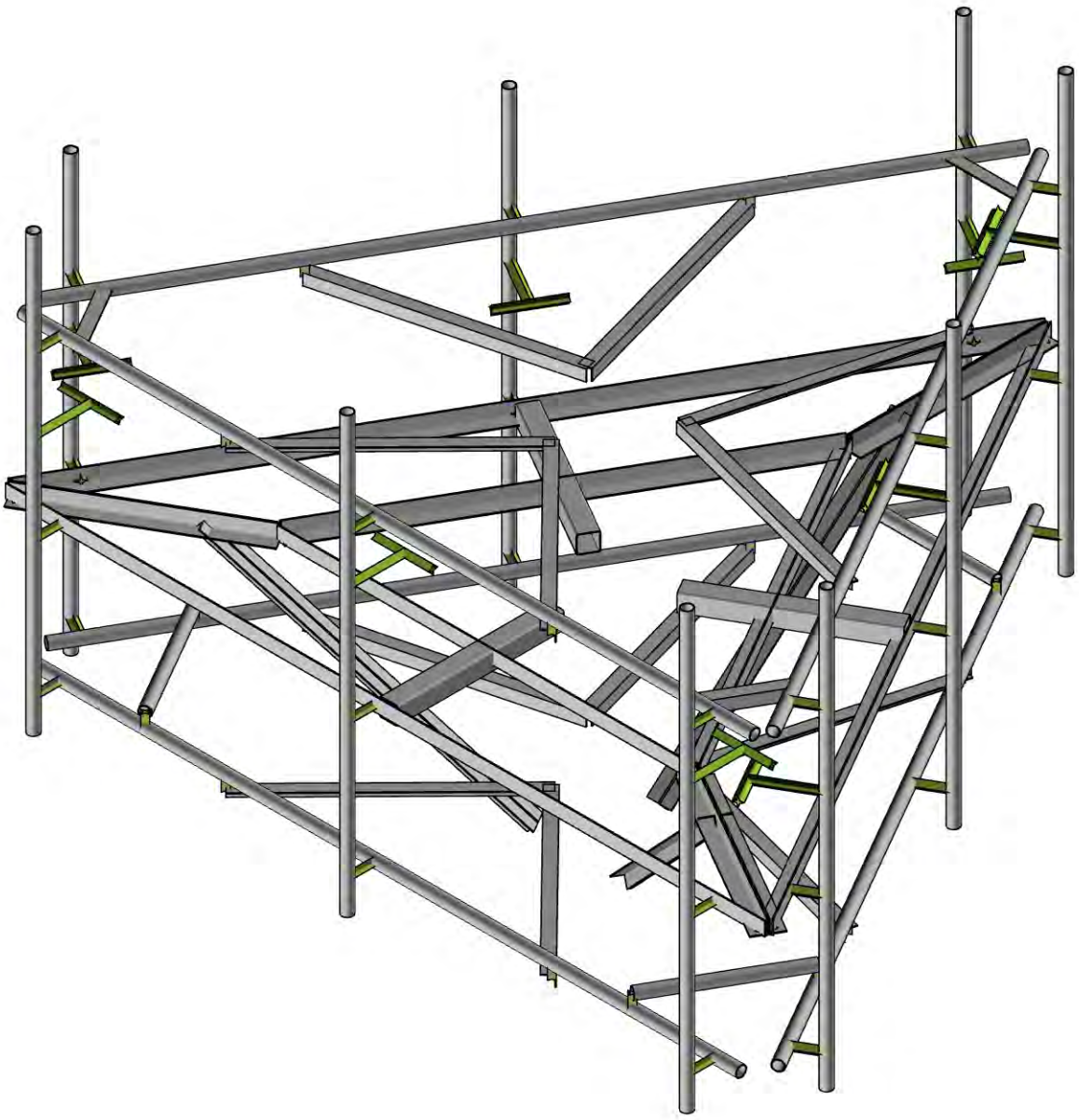
ANDREW/COMMSCOPE	VV-65A-R1			
	FFRONT	FSIDE	WT	E
No Ice	198.5	91.5	27.0	2.2
0.87 inch Ice	52.1	28.9	54.6	

RFS	APXVAALL24_43-U-NA20			
	FFRONT	FSIDE	WT	E
No Ice	677.9	297.6	128.0	10.4
0.87 inch Ice	164.7	80.9	188.5	

ERICSSON	AIR6449 B41			
	FFRONT	FSIDE	WT	E
No Ice	190.3	80.9	103.0	8.3
0.87 inch Ice	48.3	22.9	63.6	

RRH	Ericsson 4460 B25+B66			
	FFRONT	FSIDE	WT	E
No Ice	85.9	66.2	110.0	8.9
0.87 inch Ice	23.1	18.3	41.4	

RRH	Ericsson 4480 B71 + B8			
	FFRONT	FSIDE	WT	E
No Ice	93.7	45.8	93.0	7.5
0.87 inch Ice	25.1	13.6	34.4	



Envelope Only Solution

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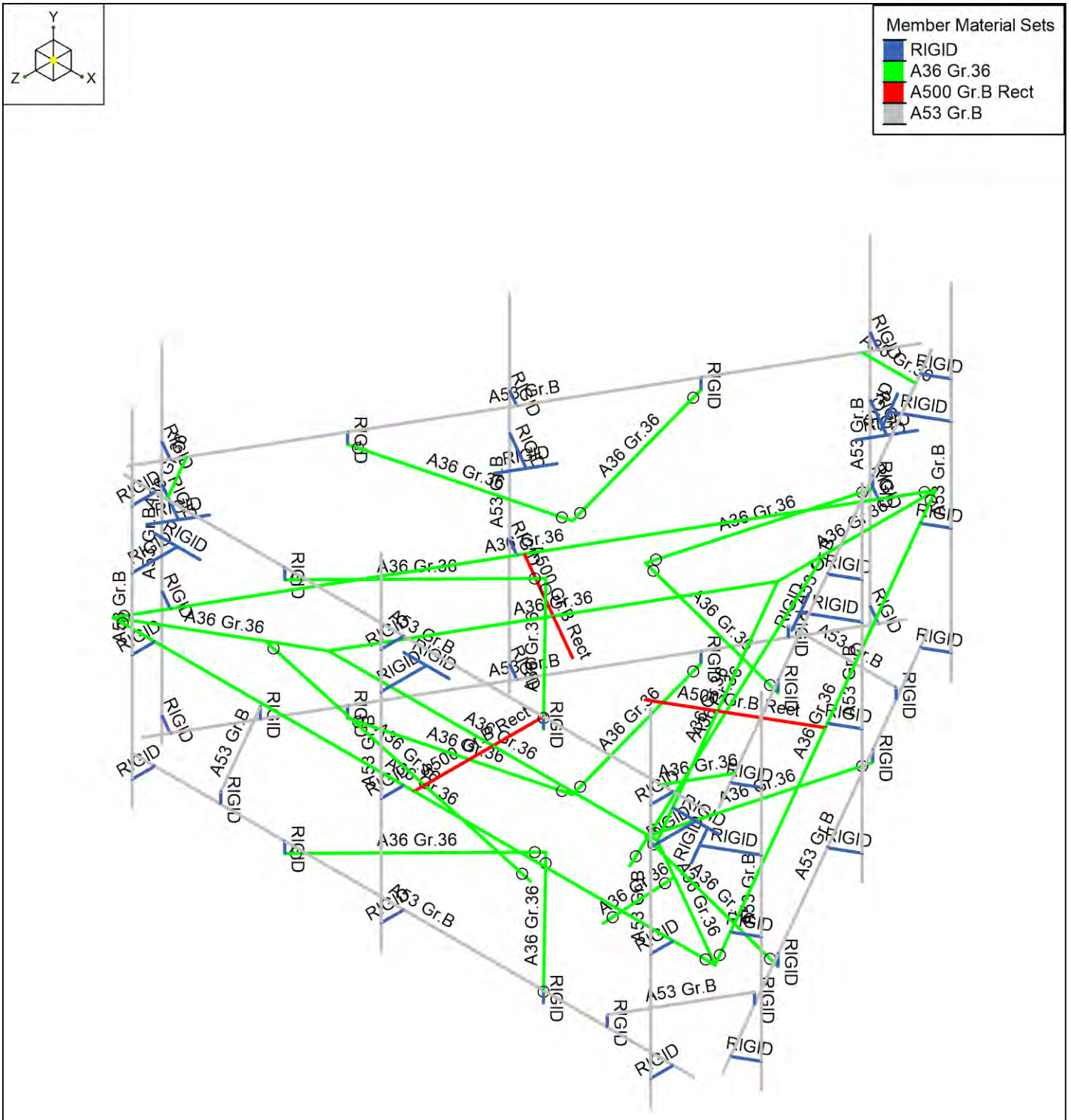
Fathullah Zamani		Feb 14, 2022
		CT03XC107_Mount Analysis_R0 …



Envelope Only Solution

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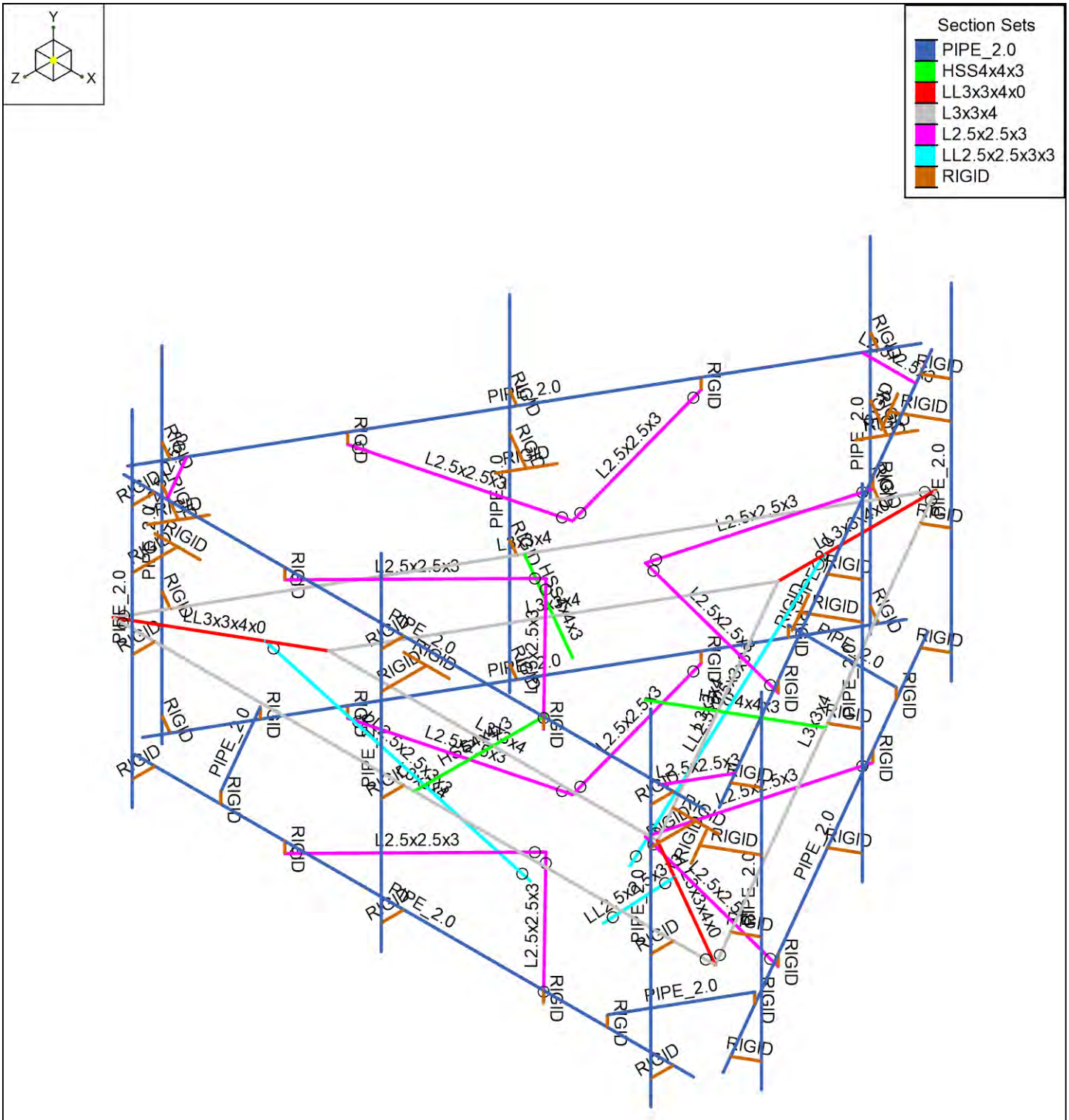

Envelope Only Solution

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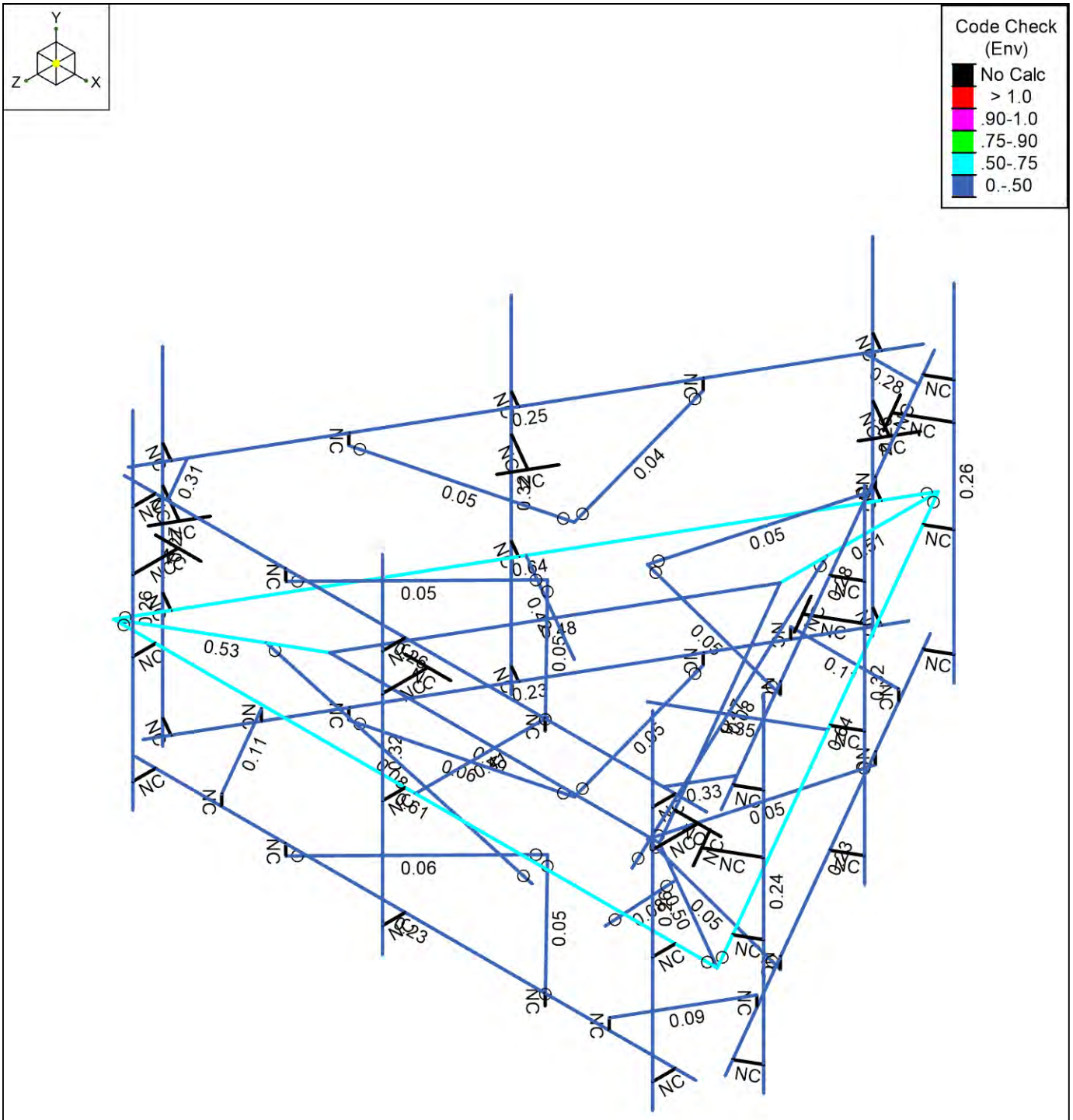

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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Fathullah Zamani		Feb 14, 2022
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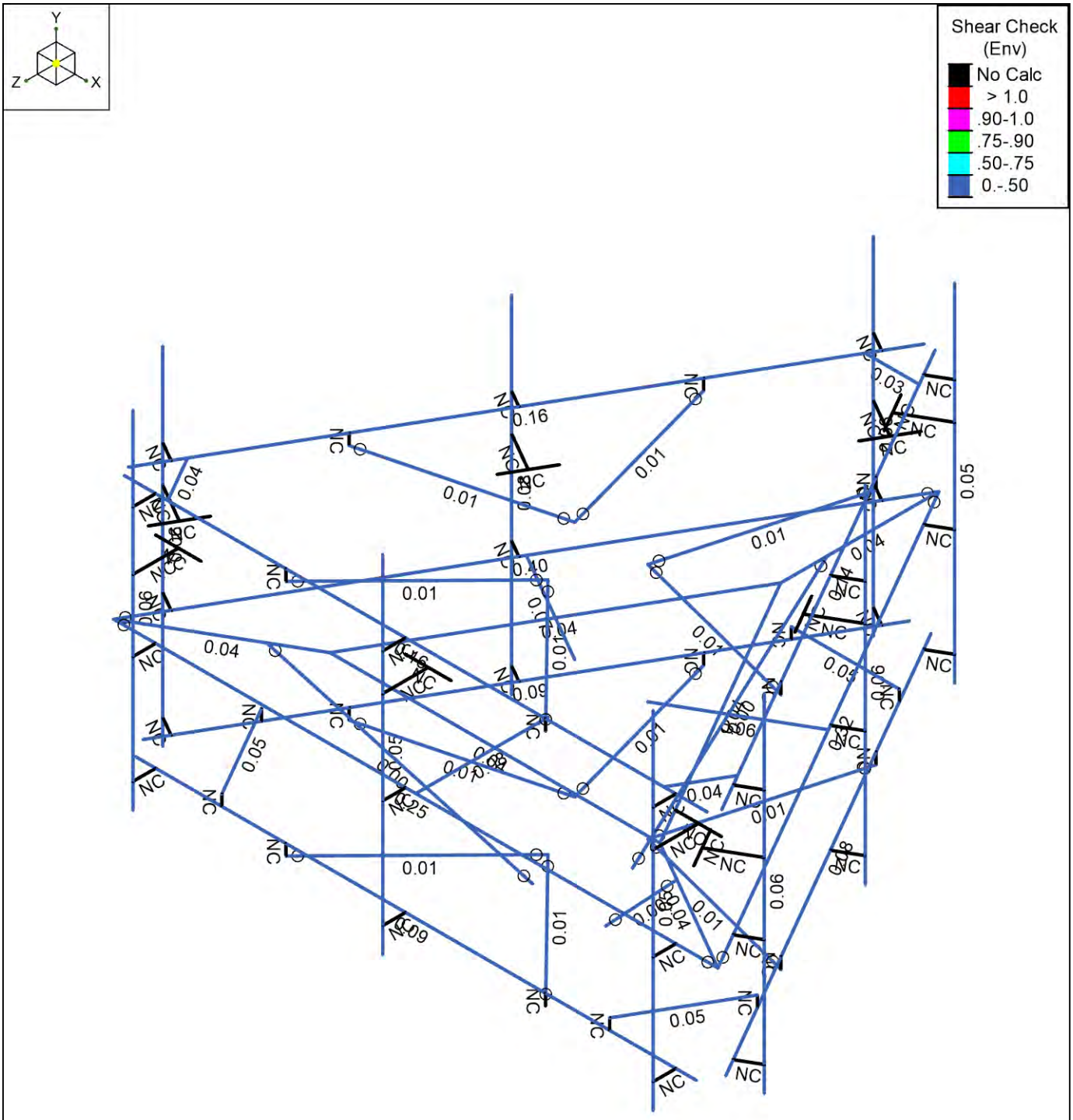


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

GeoStructural, LLC	CT03XC107	SK-7
Fathullah Zamani		Feb 14, 2022
CTNH646A		CT03XC107_Mount Analysis_R0…

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Distributed	Area(Member)
1	Self Weight	DL		-1.1		24		3
2	Wind Load AZI 000	WLZ				24	111	
3	Wind Load AZI 090	WLX				24	111	
4	Ice Weight	OL1				24	111	3
5	Wind + Ice Load AZI 000	OL2				24	111	
6	Wind + Ice Load AZI 090	OL3				24	111	
7	Service Lm1	LL				3		
8	Service Lm2	OL4				3		
9	Service Lm3	OL5				3		
10	Service Lv 1	OL8				3		
11	Service Lv 2	OL9				3		
12	Service Lv 3	OL10				3		
13	Seismic Load AZI 000	ELZ			-0.08	24		
14	Seismic Load AZI 090	ELX	-0.08			24		
15	BLC 1 Transient Area Loads	None					27	
16	BLC 4 Transient Area Loads	None					27	

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	1.0D		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	0.6W AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	0.6W AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	0.6W AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	0.6W AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	0.6W AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	0.6W AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	0.6W AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	0.6W AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	0.6W AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	0.6W AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	0.6W AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	0.6W AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	0.7E AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	0.7E AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	0.7E AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	0.7E AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	0.7E AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	0.7E AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
20	0.7E AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	0.7E AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	0.7E AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	0.7E AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	0.7E AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	0.7E AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
26	1D + 0.6W AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	1D + 0.6W AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
28	1D + 0.6W AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
29	1D + 0.6W AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	1D + 0.6W AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
31	1D + 0.6W AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
32	1D + 0.6W AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
33	1D + 0.6W AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
34	1D + 0.6W AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
35	1D + 0.6W AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
36	1D + 0.6W AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
37	1D + 0.6W AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
38	0.6D + 0.6W AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
39	0.6D + 0.6W AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
40	0.6D + 0.6W AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
41	0.6D + 0.6W AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
42	0.6D + 0.6W AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
43	0.6D + 0.6W AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
44	0.6D + 0.6W AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
45	0.6D + 0.6W AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
46	0.6D + 0.6W AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
47	0.6D + 0.6W AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
48	0.6D + 0.6W AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
49	0.6D + 0.6W AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50	1D + 1Di		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
51	1D + 1Di + 1Wi AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
52	1D + 1Di + 1Wi AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
53	1D + 1Di + 1Wi AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
54	1D + 1Di + 1Wi AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
55	1D + 1Di + 1Wi AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
56	1D + 1Di + 1Wi AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
57	1D + 1Di + 1Wi AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
58	1D + 1Di + 1Wi AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
59	1D + 1Di + 1Wi AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
60	1D + 1Di + 1Wi AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
61	1D + 1Di + 1Wi AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62	1D + 1Di + 1Wi AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
63	1D + 1.5LM1 + 0.08WL (30 mph) AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
64	1D + 1.5LM1 + 0.08WL (30 mph) AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
65	1D + 1.5LM1 + 0.08WL (30 mph) AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
66	1D + 1.5LM1 + 0.08WL (30 mph) AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
67	1D + 1.5LM1 + 0.08WL (30 mph) AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
68	1D + 1.5LM1 + 0.08WL (30 mph) AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
69	1D + 1.5LM1 + 0.08WL (30 mph) AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
70	1D + 1.5LM1 + 0.08WL (30 mph) AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
71	1D + 1.5LM1 + 0.08WL (30 mph) AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
72	1D + 1.5LM1 + 0.08WL (30 mph) AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
73	1D + 1.5LM1 + 0.08WL (30 mph) AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
74	1D + 1.5LM1 + 0.08WL (30 mph) AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
75	1D + 1.5LM2 + 0.08WL (30 mph) AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
76	1D + 1.5LM2 + 0.08WL (30 mph) AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
77	1D + 1.5LM2 + 0.08WL (30 mph) AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
78	1D + 1.5LM2 + 0.08WL (30 mph) AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
79	1D + 1.5LM2 + 0.08WL (30 mph) AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
80	1D + 1.5LM2 + 0.08WL (30 mph) AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
81	1D + 1.5LM2 + 0.08WL (30 mph) AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
82	1D + 1.5LM2 + 0.08WL (30 mph) AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
83	1D + 1.5LM2 + 0.08WL (30 mph) AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
84	1D + 1.5LM2 + 0.08WL (30 mph) AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
85	1D + 1.5LM2 + 0.08WL (30 mph) AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
86	1D + 1.5LM2 + 0.08WL (30 mph) AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
87	1D + 1.5LM3 + 0.08WL (30 mph) AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
88	1D + 1.5LM3 + 0.08WL (30 mph) AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
89	1D + 1.5LM3 + 0.08WL (30 mph) AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
90	1D + 1.5LM3 + 0.08WL (30 mph) AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
91	1D + 1.5LM3 + 0.08WL (30 mph) AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
92	1D + 1.5LM3 + 0.08WL (30 mph) AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
93	1D + 1.5LM3 + 0.08WL (30 mph) AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
94	1D + 1.5LM3 + 0.08WL (30 mph) AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
95	1D + 1.5LM3 + 0.08WL (30 mph) AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
96	1D + 1.5LM3 + 0.08WL (30 mph) AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
97	1D + 1.5LM3 + 0.08WL (30 mph) AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
98	1D + 1.5LM3 + 0.08WL (30 mph) AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
99	1D + 1.5Lv1		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
100	1D + 1.5Lv2		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
101	1D + 1.5Lv3		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
102	(1.0+0.14Sds)D + 0.7E AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
103	(1.0+0.14Sds)D + 0.7E AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
104	(1.0+0.14Sds)D + 0.7E AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
105	(1.0+0.14Sds)D + 0.7E AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
106	(1.0+0.14Sds)D + 0.7E AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
107	(1.0+0.14Sds)D + 0.7E AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
108	(1.0+0.14Sds)D + 0.7E AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
109	(1.0+0.14Sds)D + 0.7E AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
110	(1.0+0.14Sds)D + 0.7E AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
111	(1.0+0.14Sds)D + 0.7E AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
112	(1.0+0.14Sds)D + 0.7E AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
113	(1.0+0.14Sds)D + 0.7E AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
114	(0.6-0.2Sds)D + 0.7E AZI 000		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
115	(0.6-0.2Sds)D + 0.7E AZI 030		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
116	(0.6-0.2Sds)D + 0.7E AZI 060		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
117	(0.6-0.2Sds)D + 0.7E AZI 090		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
118	(0.6-0.2Sds)D + 0.7E AZI 120		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
119	(0.6-0.2Sds)D + 0.7E AZI 150		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
120	(0.6-0.2Sds)D + 0.7E AZI 180		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
121	(0.6-0.2Sds)D + 0.7E AZI 210		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
122	(0.6-0.2Sds)D + 0.7E AZI 240		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
123	(0.6-0.2Sds)D + 0.7E AZI 270		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
124	(0.6-0.2Sds)D + 0.7E AZI 300		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
125	(0.6-0.2Sds)D + 0.7E AZI 330		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	PIPE_1.5	PIPE_1.5	Beam	Pipe	A53 Gr.B	Typical	0.749	0.293	0.293	0.586
2	PIPE_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	PIPE_2.5	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	PIPE_3.0	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	PIPE_3.5	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
6	PIPE_4.0	PIPE_4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
7	PIPE_5.0	PIPE_5.0	Beam	Pipe	A53 Gr.B	Typical	4.01	14.3	14.3	28.6
8	HSS2x2x3	HSS2X2X3	Beam	Tube	A500 Gr.B Rect	Typical	1.19	0.641	0.641	1.09
9	HSS3x3x3	HSS3X3X3	Beam	Tube	A500 Gr.B Rect	Typical	1.89	2.46	2.46	4.03
10	HSS4x4x3	HSS4X4X3	Beam	Tube	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
11	HSS4x4x4	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
12	HSS5x5x4	HSS5X5X4	Beam	Tube	A500 Gr.B Rect	Typical	4.3	16	16	25.8
13	C3x3.5	C3X3.5	Beam	Channel	A36 Gr.36	Typical	1.09	0.169	1.57	0.023
14	C4x4.5	C4X4.5_HRA	Beam	Channel	A36 Gr.36	Typical	1.38	0.289	3.65	0.032
15	C5.62x3.88x3/8	C5.62x3.88x3/8	Beam	Channel	A36 Gr.36	Typical	4.736	7.118	23.657	0.21
16	LL3x3x4x0	LL3x3x4x0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical	2.88	4.5	2.46	0.063
17	L2.5x2.5x4	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
18	L3x3x3	L3X3X3	Beam	Single Angle	A36 Gr.36	Typical	1.09	0.948	0.948	0.014
19	L3x3x4	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
20	L3x3x6	L3X3X6	Beam	Single Angle	A36 Gr.36	Typical	2.11	1.75	1.75	0.101
21	L2.5x2.5x3	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
22	L4x4x4	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
23	1/4" x 4"	4" x 1/4" Bar	Beam	BAR	A36 Gr.36	Typical	1	0.005	1.333	0.02
24	WT4.5x0.25	WT4.5x0.25	Beam	W_Tee	A36 Gr.36	Typical	2.188	1.904	4.371	0.046
25	LL3x3x3x6	LL3x3x3x6	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	2.18	4.97	1.9	0.027
26	L6x6x5	L6X6X5	Beam	Single Angle	A36 Gr.36	Typical	3.67	13	13	0.129
27	6" x 3/8" Bar	6" x 3/8" Bar	Beam	BAR	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
28	LL2.5x2.5x3x3	LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	1.8	2.46	1.07	0.023
29	L3.5x3.5x4	L3.5X3.5X4	Beam	Single Angle	A36 Gr.36	Typical	1.7	2	2	0.039

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M28	N1	N2		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
2	M68A	N4	N5		RIGID	None	None	RIGID	Typical
3	M69A	N7	N6		RIGID	None	None	RIGID	Typical
4	M40	N10	N11		RIGID	None	None	RIGID	Typical
5	M41A	N13	N12	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
6	M47	N17	N16	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
7	M48	N21	N20	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
8	M49A	N23	N14	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
9	M50	N15	N18	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
10	M51A	N19	N22	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
11	M73	N24	N26		RIGID	None	None	RIGID	Typical
12	M74	N26	N25	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
13	M75	N27	N28		RIGID	None	None	RIGID	Typical
14	M76	N28	N25	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
15	M77	N29	N31		RIGID	None	None	RIGID	Typical
16	M78	N31	N30	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
17	M79	N32	N33		RIGID	None	None	RIGID	Typical
18	M80	N33	N30	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
19	M81	N34	N36		RIGID	None	None	RIGID	Typical
20	M82	N36	N35	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
21	M83	N37	N38		RIGID	None	None	RIGID	Typical
22	M84	N38	N35	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
23	M36	N3	N39		RIGID	None	None	RIGID	Typical
24	M52	N40	N41	90	HSS4x4x3	Beam	Tube	A500 Gr.B Rect	Typical
25	M53	N42	N43	90	HSS4x4x3	Beam	Tube	A500 Gr.B Rect	Typical
26	M57	N47	N50	180	LL3x3x4x0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
27	M58	N46	N49	180	LL3x3x4x0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
28	M59	N48	N51	180	LL3x3x4x0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
29	M60	N44	N45	90	HSS4x4x3	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
30	M61	N48	N46	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
31	M62	N46	N47	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
32	M63	N47	N48	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
33	M64_1	N51	N49	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
34	M65	N49	N50	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
35	M66	N50	N51	270	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical
36	M57C	N56	N57		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
37	M58B	N59	N60		RIGID	None	None	RIGID	Typical
38	M59A	N62	N61		RIGID	None	None	RIGID	Typical
39	M60A	N63	N64		RIGID	None	None	RIGID	Typical
40	M62A	N58	N65		RIGID	None	None	RIGID	Typical
41	M75A	N66	N67		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
42	M76A	N69	N70		RIGID	None	None	RIGID	Typical
43	M77A	N72	N71		RIGID	None	None	RIGID	Typical
44	M78A	N73	N74		RIGID	None	None	RIGID	Typical
45	M80A	N68	N75		RIGID	None	None	RIGID	Typical
46	M93	N76	N77		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
47	M94	N79	N80		RIGID	None	None	RIGID	Typical
48	M95	N82	N81		RIGID	None	None	RIGID	Typical
49	M96	N83	N84		RIGID	None	None	RIGID	Typical
50	M98	N78	N85		RIGID	None	None	RIGID	Typical
51	M54	N86	N87		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
52	M55	N89	N90		RIGID	None	None	RIGID	Typical
53	M56	N92	N91		RIGID	None	None	RIGID	Typical
54	M57A	N88	N95		RIGID	None	None	RIGID	Typical
55	M62B	N96	N97		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
56	M63A	N99	N100		RIGID	None	None	RIGID	Typical
57	M64	N102	N101		RIGID	None	None	RIGID	Typical
58	M65A	N98	N105		RIGID	None	None	RIGID	Typical
59	M70	N106	N107		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
60	M71	N109	N110		RIGID	None	None	RIGID	Typical
61	M72	N112	N111		RIGID	None	None	RIGID	Typical
62	M73A	N108	N115		RIGID	None	None	RIGID	Typical
63	M104	N117	N116		LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
64	M105	N119	N118		LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
65	M106	N121	N120		LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
66	M57A_1	N153	N154	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
67	M58A_1	N124	N122		RIGID	None	None	RIGID	Typical
68	M59B_1	N125	N123		RIGID	None	None	RIGID	Typical
69	M63C	N128	N126		RIGID	None	None	RIGID	Typical
70	M64_2	N129	N127		RIGID	None	None	RIGID	Typical
71	M68_1	N132	N130		RIGID	None	None	RIGID	Typical
72	M69_1	N133	N131		RIGID	None	None	RIGID	Typical
73	M70_1	N133	N124		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
74	M71_1	N125	N128		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
75	M72_1	N129	N132		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
76	M73_1	N134	N136		RIGID	None	None	RIGID	Typical
77	M74_1	N136	N135	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
78	M75_1	N137	N138		RIGID	None	None	RIGID	Typical
79	M76_1	N138	N135	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
80	M77_1	N139	N141		RIGID	None	None	RIGID	Typical
81	M78_1	N141	N140	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
82	M79_1	N142	N143		RIGID	None	None	RIGID	Typical
83	M80_1	N143	N140	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
84	M81_1	N144	N146		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
85	M82_1	N146	N145	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
86	M83_1	N147	N148		RIGID	None	None	RIGID	Typical
87	M84_1	N148	N145	180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
88	M55A	N149	N150		RIGID	None	None	RIGID	Typical
89	M61A_1	N151	N152		RIGID	None	None	RIGID	Typical
90	M61B	N155	N156	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
91	M62B_1	N157	N158	270	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
92	M79A_1	N159	N160		RIGID	None	None	RIGID	Typical
93	M97	N161	N162		RIGID	None	None	RIGID	Typical
94	M110	N163	N164		RIGID	None	None	RIGID	Typical
95	M111	N165	N166		RIGID	None	None	RIGID	Typical
96	M112	N167	N168		RIGID	None	None	RIGID	Typical
97	M108	N175	N176		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
98	M109	N178	N179		RIGID	None	None	RIGID	Typical
99	M110A	N181	N180		RIGID	None	None	RIGID	Typical
100	M111A	N184	N185		RIGID	None	None	RIGID	Typical
101	M112A	N177	N186		RIGID	None	None	RIGID	Typical
102	M118	N189	N190		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
103	M119	N192	N193		RIGID	None	None	RIGID	Typical
104	M120	N195	N194		RIGID	None	None	RIGID	Typical
105	M121	N198	N199		RIGID	None	None	RIGID	Typical
106	M122	N191	N200		RIGID	None	None	RIGID	Typical
107	M128	N93	N94		RIGID	None	None	RIGID	Typical
108	M129	N103	N104		RIGID	None	None	RIGID	Typical
109	M130	N113	N114		RIGID	None	None	RIGID	Typical
110	M110B	N204	N188		RIGID	None	None	RIGID	Typical
111	M111B	N205	N202		RIGID	None	None	RIGID	Typical

Node Boundary Conditions

	Node 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	N25	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N30	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N35	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N42	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N40	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N44	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N116	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N117						
9	N118	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N119						
11	N120	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N121						
13	N135	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N140	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N145	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Node Loads and Enforced Displacements (BLC 1 : Self Weight)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	Y	-0.014
2	N206	L	Y	-0.014
3	N2	L	Y	-0.064
4	N1	L	Y	-0.064
5	N209	L	Y	-0.052

Node Loads and Enforced Displacements (BLC 1 : Self Weight) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
6	N212	L	Y	-0.052
7	N91	L	Y	-0.11
8	N6	L	Y	-0.093
9	N203	L	Y	-0.014
10	N208	L	Y	-0.014
11	N190	L	Y	-0.064
12	N189	L	Y	-0.064
13	N211	L	Y	-0.052
14	N214	L	Y	-0.052
15	N111	L	Y	-0.11
16	N194	L	Y	-0.093
17	N197	L	Y	-0.015
18	N207	L	Y	-0.015
19	N176	L	Y	0
20	N175	L	Y	0
21	N210	L	Y	0
22	N213	L	Y	0
23	N101	L	Y	-0.064
24	N180	L	Y	0

Node Loads and Enforced Displacements (BLC 2 : Wind Load AZI 000)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	Z	-0.099
2	N206	L	Z	-0.099
3	N2	L	Z	-0.339
4	N1	L	Z	-0.339
5	N209	L	Z	-0.095
6	N212	L	Z	-0.095
7	N91	L	Z	-0.086
8	N6	L	Z	-0.094
9	N203	L	Z	-0.046
10	N208	L	Z	-0.046
11	N190	L	Z	-0.149
12	N189	L	Z	-0.149
13	N211	L	Z	-0.04
14	N214	L	Z	-0.04
15	N111	L	Z	-0.066
16	N194	L	Z	-0.046
17	N197	L	Z	-0.046
18	N207	L	Z	-0.046
19	N176	L	Z	-0.149
20	N175	L	Z	-0.149
21	N210	L	Z	-0.04
22	N213	L	Z	-0.04
23	N101	L	Z	-0.066
24	N180	L	Z	-0.046

Node Loads and Enforced Displacements (BLC 3 : Wind Load AZI 090)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	X	-0.046
2	N206	L	X	-0.046
3	N2	L	X	-0.149
4	N1	L	X	-0.149

Node Loads and Enforced Displacements (BLC 3 : Wind Load AZI 090) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
5	N209	L	X	-0.04
6	N212	L	X	-0.04
7	N91	L	X	-0.066
8	N6	L	X	-0.046
9	N203	L	X	-0.099
10	N208	L	X	-0.099
11	N190	L	X	-0.339
12	N189	L	X	-0.339
13	N211	L	X	-0.095
14	N214	L	X	-0.095
15	N111	L	X	-0.086
16	N194	L	X	-0.094
17	N197	L	X	-0.099
18	N207	L	X	-0.099
19	N176	L	X	-0.339
20	N175	L	X	-0.339
21	N210	L	X	-0.095
22	N213	L	X	-0.095
23	N101	L	X	-0.086
24	N180	L	X	-0.094

Node Loads and Enforced Displacements (BLC 4 : Ice Weight)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	Y	-0.027
2	N206	L	Y	-0.027
3	N2	L	Y	-0.094
4	N1	L	Y	-0.094
5	N209	L	Y	-0.032
6	N212	L	Y	-0.032
7	N91	L	Y	-0.041
8	N6	L	Y	-0.034
9	N203	L	Y	-0.027
10	N208	L	Y	-0.027
11	N190	L	Y	-0.094
12	N189	L	Y	-0.094
13	N211	L	Y	-0.032
14	N214	L	Y	-0.032
15	N111	L	Y	-0.041
16	N194	L	Y	-0.034
17	N197	L	Y	-0.027
18	N207	L	Y	-0.027
19	N176	L	Y	-0.094
20	N175	L	Y	-0.094
21	N210	L	Y	-0.032
22	N213	L	Y	-0.032
23	N101	L	Y	-0.041
24	N180	L	Y	-0.034

Node Loads and Enforced Displacements (BLC 5 : Wind + Ice Load AZI 000)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	Z	-0.026
2	N206	L	Z	-0.026
3	N2	L	Z	-0.082

Node Loads and Enforced Displacements (BLC 5 : Wind + Ice Load AZI 000) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
4	N1	L	Z	-0.082
5	N209	L	Z	-0.024
6	N212	L	Z	-0.024
7	N91	L	Z	-0.023
8	N6	L	Z	-0.025
9	N203	L	Z	-0.014
10	N208	L	Z	-0.014
11	N190	L	Z	-0.04
12	N189	L	Z	-0.04
13	N211	L	Z	-0.011
14	N214	L	Z	-0.011
15	N111	L	Z	-0.018
16	N194	L	Z	-0.014
17	N197	L	Z	-0.014
18	N207	L	Z	-0.014
19	N176	L	Z	-0.04
20	N175	L	Z	-0.04
21	N210	L	Z	-0.011
22	N213	L	Z	-0.011
23	N101	L	Z	-0.018
24	N180	L	Z	-0.014

Node Loads and Enforced Displacements (BLC 6 : Wind + Ice Load AZI 090)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	X	-0.014
2	N206	L	X	-0.014
3	N2	L	X	-0.04
4	N1	L	X	-0.04
5	N209	L	X	-0.011
6	N212	L	X	-0.011
7	N91	L	X	-0.018
8	N6	L	X	-0.014
9	N203	L	X	-0.026
10	N208	L	X	-0.026
11	N190	L	X	-0.082
12	N189	L	X	-0.082
13	N211	L	X	-0.024
14	N214	L	X	-0.024
15	N111	L	X	-0.023
16	N194	L	X	-0.025
17	N197	L	X	-0.026
18	N207	L	X	-0.026
19	N176	L	X	-0.082
20	N175	L	X	-0.082
21	N210	L	X	-0.024
22	N213	L	X	-0.024
23	N101	L	X	-0.023
24	N180	L	X	-0.025

Node Loads and Enforced Displacements (BLC 7 : Service Lm1)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N94	L	Y	-0.5
2	N114	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 7 : Service Lm1) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
3	N104	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 8 : Service Lm2)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N11	L	Y	-0.5
2	N199	L	Y	-0.5
3	N185	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 9 : Service Lm3)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N64	L	Y	-0.5
2	N84	L	Y	-0.5
3	N74	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 10 : Service Lv 1)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N49	L	Y	-0.25
2	N51	L	Y	-0.25
3	N50	L	Y	-0.25

Node Loads and Enforced Displacements (BLC 11 : Service Lv 2)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N3	L	Y	-0.25
2	N191	L	Y	-0.25
3	N177	L	Y	-0.25

Node Loads and Enforced Displacements (BLC 12 : Service Lv 3)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N51	L	Y	-0.25
2	N50	L	Y	-0.25
3	N49	L	Y	-0.25

Node Loads and Enforced Displacements (BLC 13 : Seismic Load AZI 000)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	Z	-0.001
2	N206	L	Z	-0.001
3	N2	L	Z	-0.005
4	N1	L	Z	-0.005
5	N209	L	Z	-0.004
6	N212	L	Z	-0.004
7	N91	L	Z	-0.009
8	N6	L	Z	-0.008
9	N203	L	Z	-0.001
10	N208	L	Z	-0.001
11	N190	L	Z	-0.005
12	N189	L	Z	-0.005
13	N211	L	Z	-0.004

Node Loads and Enforced Displacements (BLC 13 : Seismic Load AZI 000) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
14	N214	L	Z	-0.004
15	N111	L	Z	-0.009
16	N194	L	Z	-0.008
17	N197	L	Z	-0.001
18	N207	L	Z	-0.001
19	N176	L	Z	-0.005
20	N175	L	Z	-0.005
21	N210	L	Z	-0.004
22	N213	L	Z	-0.004
23	N101	L	Z	-0.009
24	N180	L	Z	-0.008

Node Loads and Enforced Displacements (BLC 14 : Seismic Load AZI 090)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N196	L	X	-0.001
2	N206	L	X	-0.001
3	N2	L	X	-0.005
4	N1	L	X	-0.005
5	N209	L	X	-0.004
6	N212	L	X	-0.004
7	N91	L	X	-0.009
8	N6	L	X	-0.008
9	N203	L	X	-0.001
10	N208	L	X	-0.001
11	N190	L	X	-0.005
12	N189	L	X	-0.005
13	N211	L	X	-0.004
14	N214	L	X	-0.004
15	N111	L	X	-0.009
16	N194	L	X	-0.008
17	N197	L	X	-0.001
18	N207	L	X	-0.001
19	N176	L	X	-0.005
20	N175	L	X	-0.005
21	N210	L	X	-0.004
22	N213	L	X	-0.004
23	N101	L	X	-0.009
24	N180	L	X	-0.008

Member Distributed Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M80_1	SZ	-0.019	-0.019	0	%100
2	M82_1	SZ	-0.019	-0.019	0	%100
3	M52	SZ	-0.019	-0.019	0	%100
4	M58	SZ	-0.019	-0.019	0	%100
5	M74	SZ	-0.019	-0.019	0	%100
6	M76_1	SZ	-0.019	-0.019	0	%100
7	M84_1	SZ	-0.019	-0.019	0	%100
8	M74_1	SZ	-0.019	-0.019	0	%100
9	M61	SZ	-0.019	-0.019	0	%100
10	M59	SZ	-0.019	-0.019	0	%100
11	M57	SZ	-0.019	-0.019	0	%100
12	M84	SZ	-0.019	-0.019	0	%100

Member Distributed Loads (BLC 2 : Wind Load AZI 000) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
13	M106	SZ	-0.019	-0.019	0	%100
14	M63	SZ	-0.019	-0.019	0	%100
15	M53	SZ	-0.019	-0.019	0	%100
16	M65	SZ	-0.019	-0.019	0	%100
17	M78_1	SZ	-0.019	-0.019	0	%100
18	M104	SZ	-0.019	-0.019	0	%100
19	M82	SZ	-0.019	-0.019	0	%100
20	M76	SZ	-0.019	-0.019	0	%100
21	M66	SZ	-0.019	-0.019	0	%100
22	M80	SZ	-0.019	-0.019	0	%100
23	M105	SZ	-0.019	-0.019	0	%100
24	M64_1	SZ	-0.019	-0.019	0	%100
25	M78	SZ	-0.019	-0.019	0	%100
26	M62	SZ	-0.019	-0.019	0	%100
27	M60	SZ	-0.019	-0.019	0	%100
28	M70_1	SZ	-0.011	-0.011	0	%100
29	M108	SZ	-0.011	-0.011	0	%100
30	M111A	SZ	-0.011	-0.011	0	%100
31	M61B	SZ	-0.011	-0.011	0	%100
32	M110	SZ	-0.011	-0.011	0	%100
33	M73_1	SZ	-0.011	-0.011	0	%100
34	M72_1	SZ	-0.011	-0.011	0	%100
35	M71_1	SZ	-0.011	-0.011	0	%100
36	M81_1	SZ	-0.011	-0.011	0	%100
37	M97	SZ	-0.011	-0.011	0	%100
38	M128	SZ	-0.011	-0.011	0	%100
39	M130	SZ	-0.011	-0.011	0	%100
40	M120	SZ	-0.011	-0.011	0	%100
41	M75_1	SZ	-0.011	-0.011	0	%100
42	M61A_1	SZ	-0.011	-0.011	0	%100
43	M55A	SZ	-0.011	-0.011	0	%100
44	M77_1	SZ	-0.011	-0.011	0	%100
45	M118	SZ	-0.011	-0.011	0	%100
46	M119	SZ	-0.011	-0.011	0	%100
47	M111B	SZ	-0.011	-0.011	0	%100
48	M129	SZ	-0.011	-0.011	0	%100
49	M121	SZ	-0.011	-0.011	0	%100
50	M79A_1	SZ	-0.011	-0.011	0	%100
51	M111	SZ	-0.011	-0.011	0	%100
52	M83_1	SZ	-0.011	-0.011	0	%100
53	M122	SZ	-0.011	-0.011	0	%100
54	M110B	SZ	-0.011	-0.011	0	%100
55	M63A	SZ	-0.011	-0.011	0	%100
56	M73A	SZ	-0.011	-0.011	0	%100
57	M57A_1	SZ	-0.011	-0.011	0	%100
58	M93	SZ	-0.011	-0.011	0	%100
59	M79	SZ	-0.011	-0.011	0	%100
60	M80A	SZ	-0.011	-0.011	0	%100
61	M63C	SZ	-0.011	-0.011	0	%100
62	M57A	SZ	-0.011	-0.011	0	%100
63	M96	SZ	-0.011	-0.011	0	%100
64	M62A	SZ	-0.011	-0.011	0	%100
65	M71	SZ	-0.011	-0.011	0	%100
66	M79_1	SZ	-0.011	-0.011	0	%100
67	M98	SZ	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 2 : Wind Load AZI 000) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
68	M70	SZ	-0.011	-0.011	0	%100
69	M50	SZ	-0.011	-0.011	0	%100
70	M62B	SZ	-0.011	-0.011	0	%100
71	M76A	SZ	-0.011	-0.011	0	%100
72	M77	SZ	-0.011	-0.011	0	%100
73	M62B_1	SZ	-0.011	-0.011	0	%100
74	M68_1	SZ	-0.011	-0.011	0	%100
75	M94	SZ	-0.011	-0.011	0	%100
76	M73	SZ	-0.011	-0.011	0	%100
77	M69_1	SZ	-0.011	-0.011	0	%100
78	M57C	SZ	-0.011	-0.011	0	%100
79	M72	SZ	-0.011	-0.011	0	%100
80	M83	SZ	-0.011	-0.011	0	%100
81	M112A	SZ	-0.011	-0.011	0	%100
82	M56	SZ	-0.011	-0.011	0	%100
83	M59B_1	SZ	-0.011	-0.011	0	%100
84	M110A	SZ	-0.011	-0.011	0	%100
85	M81	SZ	-0.011	-0.011	0	%100
86	M64	SZ	-0.011	-0.011	0	%100
87	M75A	SZ	-0.011	-0.011	0	%100
88	M109	SZ	-0.011	-0.011	0	%100
89	M64_2	SZ	-0.011	-0.011	0	%100
90	M58B	SZ	-0.011	-0.011	0	%100
91	M77A	SZ	-0.011	-0.011	0	%100
92	M36	SZ	-0.011	-0.011	0	%100
93	M59A	SZ	-0.011	-0.011	0	%100
94	M54	SZ	-0.011	-0.011	0	%100
95	M49A	SZ	-0.011	-0.011	0	%100
96	M65A	SZ	-0.011	-0.011	0	%100
97	M58A_1	SZ	-0.011	-0.011	0	%100
98	M60A	SZ	-0.011	-0.011	0	%100
99	M95	SZ	-0.011	-0.011	0	%100
100	M55	SZ	-0.011	-0.011	0	%100
101	M48	SZ	-0.011	-0.011	0	%100
102	M78A	SZ	-0.011	-0.011	0	%100
103	M75	SZ	-0.011	-0.011	0	%100
104	M47	SZ	-0.011	-0.011	0	%100
105	M40	SZ	-0.011	-0.011	0	%100
106	M69A	SZ	-0.011	-0.011	0	%100
107	M41A	SZ	-0.011	-0.011	0	%100
108	M68A	SZ	-0.011	-0.011	0	%100
109	M28	SZ	-0.011	-0.011	0	%100
110	M51A	SZ	-0.011	-0.011	0	%100
111	M112	SZ	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M84_1	SX	-0.019	-0.019	0	%100
2	M82_1	SX	-0.019	-0.019	0	%100
3	M61	SX	-0.019	-0.019	0	%100
4	M104	SX	-0.019	-0.019	0	%100
5	M105	SX	-0.019	-0.019	0	%100
6	M76	SX	-0.019	-0.019	0	%100
7	M59	SX	-0.019	-0.019	0	%100
8	M74	SX	-0.019	-0.019	0	%100

Member Distributed Loads (BLC 3 : Wind Load AZI 090) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
9	M65	SX	-0.019	-0.019	0	%100
10	M52	SX	-0.019	-0.019	0	%100
11	M84	SX	-0.019	-0.019	0	%100
12	M74_1	SX	-0.019	-0.019	0	%100
13	M53	SX	-0.019	-0.019	0	%100
14	M57	SX	-0.019	-0.019	0	%100
15	M66	SX	-0.019	-0.019	0	%100
16	M76_1	SX	-0.019	-0.019	0	%100
17	M63	SX	-0.019	-0.019	0	%100
18	M80_1	SX	-0.019	-0.019	0	%100
19	M58	SX	-0.019	-0.019	0	%100
20	M106	SX	-0.019	-0.019	0	%100
21	M64_1	SX	-0.019	-0.019	0	%100
22	M80	SX	-0.019	-0.019	0	%100
23	M78_1	SX	-0.019	-0.019	0	%100
24	M78	SX	-0.019	-0.019	0	%100
25	M82	SX	-0.019	-0.019	0	%100
26	M60	SX	-0.019	-0.019	0	%100
27	M62	SX	-0.019	-0.019	0	%100
28	M76A	SX	-0.011	-0.011	0	%100
29	M62A	SX	-0.011	-0.011	0	%100
30	M60A	SX	-0.011	-0.011	0	%100
31	M65A	SX	-0.011	-0.011	0	%100
32	M110A	SX	-0.011	-0.011	0	%100
33	M75A	SX	-0.011	-0.011	0	%100
34	M98	SX	-0.011	-0.011	0	%100
35	M79_1	SX	-0.011	-0.011	0	%100
36	M58B	SX	-0.011	-0.011	0	%100
37	M40	SX	-0.011	-0.011	0	%100
38	M48	SX	-0.011	-0.011	0	%100
39	M36	SX	-0.011	-0.011	0	%100
40	M94	SX	-0.011	-0.011	0	%100
41	M81	SX	-0.011	-0.011	0	%100
42	M62B_1	SX	-0.011	-0.011	0	%100
43	M79	SX	-0.011	-0.011	0	%100
44	M69A	SX	-0.011	-0.011	0	%100
45	M41A	SX	-0.011	-0.011	0	%100
46	M95	SX	-0.011	-0.011	0	%100
47	M57C	SX	-0.011	-0.011	0	%100
48	M77	SX	-0.011	-0.011	0	%100
49	M75	SX	-0.011	-0.011	0	%100
50	M47	SX	-0.011	-0.011	0	%100
51	M28	SX	-0.011	-0.011	0	%100
52	M59A	SX	-0.011	-0.011	0	%100
53	M50	SX	-0.011	-0.011	0	%100
54	M112	SX	-0.011	-0.011	0	%100
55	M73	SX	-0.011	-0.011	0	%100
56	M51A	SX	-0.011	-0.011	0	%100
57	M109	SX	-0.011	-0.011	0	%100
58	M49A	SX	-0.011	-0.011	0	%100
59	M68A	SX	-0.011	-0.011	0	%100
60	M83	SX	-0.011	-0.011	0	%100
61	M77A	SX	-0.011	-0.011	0	%100
62	M96	SX	-0.011	-0.011	0	%100
63	M78A	SX	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 3 : Wind Load AZI 090) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
64	M80A	SX	-0.011	-0.011	0	%100
65	M93	SX	-0.011	-0.011	0	%100
66	M54	SX	-0.011	-0.011	0	%100
67	M55	SX	-0.011	-0.011	0	%100
68	M56	SX	-0.011	-0.011	0	%100
69	M57A	SX	-0.011	-0.011	0	%100
70	M62B	SX	-0.011	-0.011	0	%100
71	M71	SX	-0.011	-0.011	0	%100
72	M63A	SX	-0.011	-0.011	0	%100
73	M72	SX	-0.011	-0.011	0	%100
74	M64	SX	-0.011	-0.011	0	%100
75	M70	SX	-0.011	-0.011	0	%100
76	M73A	SX	-0.011	-0.011	0	%100
77	M112A	SX	-0.011	-0.011	0	%100
78	M57A_1	SX	-0.011	-0.011	0	%100
79	M58A_1	SX	-0.011	-0.011	0	%100
80	M59B_1	SX	-0.011	-0.011	0	%100
81	M63C	SX	-0.011	-0.011	0	%100
82	M64_2	SX	-0.011	-0.011	0	%100
83	M68_1	SX	-0.011	-0.011	0	%100
84	M69_1	SX	-0.011	-0.011	0	%100
85	M70_1	SX	-0.011	-0.011	0	%100
86	M71_1	SX	-0.011	-0.011	0	%100
87	M72_1	SX	-0.011	-0.011	0	%100
88	M73_1	SX	-0.011	-0.011	0	%100
89	M75_1	SX	-0.011	-0.011	0	%100
90	M77_1	SX	-0.011	-0.011	0	%100
91	M81_1	SX	-0.011	-0.011	0	%100
92	M83_1	SX	-0.011	-0.011	0	%100
93	M55A	SX	-0.011	-0.011	0	%100
94	M61A_1	SX	-0.011	-0.011	0	%100
95	M61B	SX	-0.011	-0.011	0	%100
96	M79A_1	SX	-0.011	-0.011	0	%100
97	M97	SX	-0.011	-0.011	0	%100
98	M110	SX	-0.011	-0.011	0	%100
99	M111	SX	-0.011	-0.011	0	%100
100	M108	SX	-0.011	-0.011	0	%100
101	M111A	SX	-0.011	-0.011	0	%100
102	M118	SX	-0.011	-0.011	0	%100
103	M119	SX	-0.011	-0.011	0	%100
104	M120	SX	-0.011	-0.011	0	%100
105	M121	SX	-0.011	-0.011	0	%100
106	M122	SX	-0.011	-0.011	0	%100
107	M128	SX	-0.011	-0.011	0	%100
108	M129	SX	-0.011	-0.011	0	%100
109	M130	SX	-0.011	-0.011	0	%100
110	M110B	SX	-0.011	-0.011	0	%100
111	M111B	SX	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M57	Y	-0.005	-0.005	0	%100
2	M84_1	Y	-0.005	-0.005	0	%100
3	M58	Y	-0.005	-0.005	0	%100
4	M74_1	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	M63	Y	-0.005	-0.005	0	%100
6	M66	Y	-0.005	-0.005	0	%100
7	M80_1	Y	-0.005	-0.005	0	%100
8	M59	Y	-0.005	-0.005	0	%100
9	M106	Y	-0.005	-0.005	0	%100
10	M82_1	Y	-0.005	-0.005	0	%100
11	M65	Y	-0.005	-0.005	0	%100
12	M76_1	Y	-0.005	-0.005	0	%100
13	M52	Y	-0.005	-0.005	0	%100
14	M74	Y	-0.005	-0.005	0	%100
15	M78_1	Y	-0.005	-0.005	0	%100
16	M84	Y	-0.005	-0.005	0	%100
17	M82	Y	-0.005	-0.005	0	%100
18	M80	Y	-0.005	-0.005	0	%100
19	M78	Y	-0.005	-0.005	0	%100
20	M61	Y	-0.005	-0.005	0	%100
21	M64_1	Y	-0.005	-0.005	0	%100
22	M53	Y	-0.005	-0.005	0	%100
23	M104	Y	-0.005	-0.005	0	%100
24	M76	Y	-0.005	-0.005	0	%100
25	M105	Y	-0.005	-0.005	0	%100
26	M62	Y	-0.005	-0.005	0	%100
27	M60	Y	-0.005	-0.005	0	%100
28	M47	Y	-0.004	-0.004	0	%100
29	M75	Y	-0.004	-0.004	0	%100
30	M51A	Y	-0.004	-0.004	0	%100
31	M28	Y	-0.004	-0.004	0	%100
32	M68A	Y	-0.004	-0.004	0	%100
33	M112	Y	-0.004	-0.004	0	%100
34	M69A	Y	-0.004	-0.004	0	%100
35	M40	Y	-0.004	-0.004	0	%100
36	M41A	Y	-0.004	-0.004	0	%100
37	M94	Y	-0.004	-0.004	0	%100
38	M95	Y	-0.004	-0.004	0	%100
39	M49A	Y	-0.004	-0.004	0	%100
40	M48	Y	-0.004	-0.004	0	%100
41	M50	Y	-0.004	-0.004	0	%100
42	M73	Y	-0.004	-0.004	0	%100
43	M62B_1	Y	-0.004	-0.004	0	%100
44	M79_1	Y	-0.004	-0.004	0	%100
45	M77	Y	-0.004	-0.004	0	%100
46	M98	Y	-0.004	-0.004	0	%100
47	M79	Y	-0.004	-0.004	0	%100
48	M81	Y	-0.004	-0.004	0	%100
49	M83	Y	-0.004	-0.004	0	%100
50	M36	Y	-0.004	-0.004	0	%100
51	M58B	Y	-0.004	-0.004	0	%100
52	M57C	Y	-0.004	-0.004	0	%100
53	M109	Y	-0.004	-0.004	0	%100
54	M59A	Y	-0.004	-0.004	0	%100
55	M75A	Y	-0.004	-0.004	0	%100
56	M60A	Y	-0.004	-0.004	0	%100
57	M65A	Y	-0.004	-0.004	0	%100
58	M62A	Y	-0.004	-0.004	0	%100
59	M76A	Y	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
60	M110A	Y	-0.004	-0.004	0	%100
61	M77A	Y	-0.004	-0.004	0	%100
62	M96	Y	-0.004	-0.004	0	%100
63	M78A	Y	-0.004	-0.004	0	%100
64	M80A	Y	-0.004	-0.004	0	%100
65	M93	Y	-0.004	-0.004	0	%100
66	M54	Y	-0.004	-0.004	0	%100
67	M55	Y	-0.004	-0.004	0	%100
68	M56	Y	-0.004	-0.004	0	%100
69	M57A	Y	-0.004	-0.004	0	%100
70	M62B	Y	-0.004	-0.004	0	%100
71	M71	Y	-0.004	-0.004	0	%100
72	M63A	Y	-0.004	-0.004	0	%100
73	M72	Y	-0.004	-0.004	0	%100
74	M64	Y	-0.004	-0.004	0	%100
75	M70	Y	-0.004	-0.004	0	%100
76	M73A	Y	-0.004	-0.004	0	%100
77	M112A	Y	-0.004	-0.004	0	%100
78	M57A_1	Y	-0.004	-0.004	0	%100
79	M58A_1	Y	-0.004	-0.004	0	%100
80	M59B_1	Y	-0.004	-0.004	0	%100
81	M63C	Y	-0.004	-0.004	0	%100
82	M64_2	Y	-0.004	-0.004	0	%100
83	M68_1	Y	-0.004	-0.004	0	%100
84	M69_1	Y	-0.004	-0.004	0	%100
85	M70_1	Y	-0.004	-0.004	0	%100
86	M71_1	Y	-0.004	-0.004	0	%100
87	M72_1	Y	-0.004	-0.004	0	%100
88	M73_1	Y	-0.004	-0.004	0	%100
89	M75_1	Y	-0.004	-0.004	0	%100
90	M77_1	Y	-0.004	-0.004	0	%100
91	M81_1	Y	-0.004	-0.004	0	%100
92	M83_1	Y	-0.004	-0.004	0	%100
93	M55A	Y	-0.004	-0.004	0	%100
94	M61A_1	Y	-0.004	-0.004	0	%100
95	M61B	Y	-0.004	-0.004	0	%100
96	M79A_1	Y	-0.004	-0.004	0	%100
97	M97	Y	-0.004	-0.004	0	%100
98	M110	Y	-0.004	-0.004	0	%100
99	M111	Y	-0.004	-0.004	0	%100
100	M108	Y	-0.004	-0.004	0	%100
101	M111A	Y	-0.004	-0.004	0	%100
102	M118	Y	-0.004	-0.004	0	%100
103	M119	Y	-0.004	-0.004	0	%100
104	M120	Y	-0.004	-0.004	0	%100
105	M121	Y	-0.004	-0.004	0	%100
106	M122	Y	-0.004	-0.004	0	%100
107	M128	Y	-0.004	-0.004	0	%100
108	M129	Y	-0.004	-0.004	0	%100
109	M130	Y	-0.004	-0.004	0	%100
110	M110B	Y	-0.004	-0.004	0	%100
111	M111B	Y	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M76	SZ	-0.007	-0.007	0	%100
2	M66	SZ	-0.007	-0.007	0	%100
3	M104	SZ	-0.007	-0.007	0	%100
4	M52	SZ	-0.007	-0.007	0	%100
5	M84	SZ	-0.007	-0.007	0	%100
6	M78	SZ	-0.007	-0.007	0	%100
7	M76_1	SZ	-0.007	-0.007	0	%100
8	M57	SZ	-0.007	-0.007	0	%100
9	M106	SZ	-0.007	-0.007	0	%100
10	M74	SZ	-0.007	-0.007	0	%100
11	M59	SZ	-0.007	-0.007	0	%100
12	M53	SZ	-0.007	-0.007	0	%100
13	M65	SZ	-0.007	-0.007	0	%100
14	M82	SZ	-0.007	-0.007	0	%100
15	M84_1	SZ	-0.007	-0.007	0	%100
16	M82_1	SZ	-0.007	-0.007	0	%100
17	M63	SZ	-0.007	-0.007	0	%100
18	M61	SZ	-0.007	-0.007	0	%100
19	M105	SZ	-0.007	-0.007	0	%100
20	M80	SZ	-0.007	-0.007	0	%100
21	M74_1	SZ	-0.007	-0.007	0	%100
22	M58	SZ	-0.007	-0.007	0	%100
23	M80_1	SZ	-0.007	-0.007	0	%100
24	M64_1	SZ	-0.007	-0.007	0	%100
25	M78_1	SZ	-0.007	-0.007	0	%100
26	M60	SZ	-0.007	-0.007	0	%100
27	M62	SZ	-0.007	-0.007	0	%100
28	M47	SZ	-0.004	-0.004	0	%100
29	M75	SZ	-0.004	-0.004	0	%100
30	M51A	SZ	-0.004	-0.004	0	%100
31	M28	SZ	-0.004	-0.004	0	%100
32	M68A	SZ	-0.004	-0.004	0	%100
33	M112	SZ	-0.004	-0.004	0	%100
34	M69A	SZ	-0.004	-0.004	0	%100
35	M40	SZ	-0.004	-0.004	0	%100
36	M41A	SZ	-0.004	-0.004	0	%100
37	M94	SZ	-0.004	-0.004	0	%100
38	M95	SZ	-0.004	-0.004	0	%100
39	M49A	SZ	-0.004	-0.004	0	%100
40	M48	SZ	-0.004	-0.004	0	%100
41	M50	SZ	-0.004	-0.004	0	%100
42	M73	SZ	-0.004	-0.004	0	%100
43	M62B_1	SZ	-0.004	-0.004	0	%100
44	M79_1	SZ	-0.004	-0.004	0	%100
45	M77	SZ	-0.004	-0.004	0	%100
46	M98	SZ	-0.004	-0.004	0	%100
47	M79	SZ	-0.004	-0.004	0	%100
48	M81	SZ	-0.004	-0.004	0	%100
49	M83	SZ	-0.004	-0.004	0	%100
50	M36	SZ	-0.004	-0.004	0	%100
51	M58B	SZ	-0.004	-0.004	0	%100
52	M57C	SZ	-0.004	-0.004	0	%100
53	M109	SZ	-0.004	-0.004	0	%100
54	M59A	SZ	-0.004	-0.004	0	%100
55	M75A	SZ	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : Wind + Ice Load AZI 000) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	M60A	SZ	-0.004	-0.004	0	%100
57	M65A	SZ	-0.004	-0.004	0	%100
58	M62A	SZ	-0.004	-0.004	0	%100
59	M76A	SZ	-0.004	-0.004	0	%100
60	M110A	SZ	-0.004	-0.004	0	%100
61	M77A	SZ	-0.004	-0.004	0	%100
62	M96	SZ	-0.004	-0.004	0	%100
63	M78A	SZ	-0.004	-0.004	0	%100
64	M80A	SZ	-0.004	-0.004	0	%100
65	M93	SZ	-0.004	-0.004	0	%100
66	M54	SZ	-0.004	-0.004	0	%100
67	M55	SZ	-0.004	-0.004	0	%100
68	M56	SZ	-0.004	-0.004	0	%100
69	M57A	SZ	-0.004	-0.004	0	%100
70	M62B	SZ	-0.004	-0.004	0	%100
71	M71	SZ	-0.004	-0.004	0	%100
72	M63A	SZ	-0.004	-0.004	0	%100
73	M72	SZ	-0.004	-0.004	0	%100
74	M64	SZ	-0.004	-0.004	0	%100
75	M70	SZ	-0.004	-0.004	0	%100
76	M73A	SZ	-0.004	-0.004	0	%100
77	M112A	SZ	-0.004	-0.004	0	%100
78	M57A_1	SZ	-0.004	-0.004	0	%100
79	M58A_1	SZ	-0.004	-0.004	0	%100
80	M59B_1	SZ	-0.004	-0.004	0	%100
81	M63C	SZ	-0.004	-0.004	0	%100
82	M64_2	SZ	-0.004	-0.004	0	%100
83	M68_1	SZ	-0.004	-0.004	0	%100
84	M69_1	SZ	-0.004	-0.004	0	%100
85	M70_1	SZ	-0.004	-0.004	0	%100
86	M71_1	SZ	-0.004	-0.004	0	%100
87	M72_1	SZ	-0.004	-0.004	0	%100
88	M73_1	SZ	-0.004	-0.004	0	%100
89	M75_1	SZ	-0.004	-0.004	0	%100
90	M77_1	SZ	-0.004	-0.004	0	%100
91	M81_1	SZ	-0.004	-0.004	0	%100
92	M83_1	SZ	-0.004	-0.004	0	%100
93	M55A	SZ	-0.004	-0.004	0	%100
94	M61A_1	SZ	-0.004	-0.004	0	%100
95	M61B	SZ	-0.004	-0.004	0	%100
96	M79A_1	SZ	-0.004	-0.004	0	%100
97	M97	SZ	-0.004	-0.004	0	%100
98	M110	SZ	-0.004	-0.004	0	%100
99	M111	SZ	-0.004	-0.004	0	%100
100	M108	SZ	-0.004	-0.004	0	%100
101	M111A	SZ	-0.004	-0.004	0	%100
102	M118	SZ	-0.004	-0.004	0	%100
103	M119	SZ	-0.004	-0.004	0	%100
104	M120	SZ	-0.004	-0.004	0	%100
105	M121	SZ	-0.004	-0.004	0	%100
106	M122	SZ	-0.004	-0.004	0	%100
107	M128	SZ	-0.004	-0.004	0	%100
108	M129	SZ	-0.004	-0.004	0	%100
109	M130	SZ	-0.004	-0.004	0	%100
110	M110B	SZ	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : Wind + Ice Load AZI 000) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
111	M111B	SZ	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M78_1	SX	-0.007	-0.007	0	%100
2	M82_1	SX	-0.007	-0.007	0	%100
3	M74_1	SX	-0.007	-0.007	0	%100
4	M84_1	SX	-0.007	-0.007	0	%100
5	M74	SX	-0.007	-0.007	0	%100
6	M61	SX	-0.007	-0.007	0	%100
7	M78	SX	-0.007	-0.007	0	%100
8	M57	SX	-0.007	-0.007	0	%100
9	M105	SX	-0.007	-0.007	0	%100
10	M66	SX	-0.007	-0.007	0	%100
11	M76_1	SX	-0.007	-0.007	0	%100
12	M53	SX	-0.007	-0.007	0	%100
13	M80	SX	-0.007	-0.007	0	%100
14	M80_1	SX	-0.007	-0.007	0	%100
15	M59	SX	-0.007	-0.007	0	%100
16	M63	SX	-0.007	-0.007	0	%100
17	M84	SX	-0.007	-0.007	0	%100
18	M82	SX	-0.007	-0.007	0	%100
19	M52	SX	-0.007	-0.007	0	%100
20	M76	SX	-0.007	-0.007	0	%100
21	M104	SX	-0.007	-0.007	0	%100
22	M106	SX	-0.007	-0.007	0	%100
23	M65	SX	-0.007	-0.007	0	%100
24	M58	SX	-0.007	-0.007	0	%100
25	M64_1	SX	-0.007	-0.007	0	%100
26	M60	SX	-0.007	-0.007	0	%100
27	M62	SX	-0.007	-0.007	0	%100
28	M47	SX	-0.004	-0.004	0	%100
29	M75	SX	-0.004	-0.004	0	%100
30	M51A	SX	-0.004	-0.004	0	%100
31	M28	SX	-0.004	-0.004	0	%100
32	M68A	SX	-0.004	-0.004	0	%100
33	M112	SX	-0.004	-0.004	0	%100
34	M69A	SX	-0.004	-0.004	0	%100
35	M40	SX	-0.004	-0.004	0	%100
36	M41A	SX	-0.004	-0.004	0	%100
37	M94	SX	-0.004	-0.004	0	%100
38	M95	SX	-0.004	-0.004	0	%100
39	M49A	SX	-0.004	-0.004	0	%100
40	M48	SX	-0.004	-0.004	0	%100
41	M50	SX	-0.004	-0.004	0	%100
42	M73	SX	-0.004	-0.004	0	%100
43	M62B_1	SX	-0.004	-0.004	0	%100
44	M79_1	SX	-0.004	-0.004	0	%100
45	M77	SX	-0.004	-0.004	0	%100
46	M98	SX	-0.004	-0.004	0	%100
47	M79	SX	-0.004	-0.004	0	%100
48	M81	SX	-0.004	-0.004	0	%100
49	M83	SX	-0.004	-0.004	0	%100
50	M36	SX	-0.004	-0.004	0	%100
51	M58B	SX	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
52	M57C	SX	-0.004	-0.004	0	%100
53	M109	SX	-0.004	-0.004	0	%100
54	M59A	SX	-0.004	-0.004	0	%100
55	M75A	SX	-0.004	-0.004	0	%100
56	M60A	SX	-0.004	-0.004	0	%100
57	M65A	SX	-0.004	-0.004	0	%100
58	M62A	SX	-0.004	-0.004	0	%100
59	M76A	SX	-0.004	-0.004	0	%100
60	M110A	SX	-0.004	-0.004	0	%100
61	M77A	SX	-0.004	-0.004	0	%100
62	M96	SX	-0.004	-0.004	0	%100
63	M78A	SX	-0.004	-0.004	0	%100
64	M80A	SX	-0.004	-0.004	0	%100
65	M93	SX	-0.004	-0.004	0	%100
66	M54	SX	-0.004	-0.004	0	%100
67	M55	SX	-0.004	-0.004	0	%100
68	M56	SX	-0.004	-0.004	0	%100
69	M57A	SX	-0.004	-0.004	0	%100
70	M62B	SX	-0.004	-0.004	0	%100
71	M71	SX	-0.004	-0.004	0	%100
72	M63A	SX	-0.004	-0.004	0	%100
73	M72	SX	-0.004	-0.004	0	%100
74	M64	SX	-0.004	-0.004	0	%100
75	M70	SX	-0.004	-0.004	0	%100
76	M73A	SX	-0.004	-0.004	0	%100
77	M112A	SX	-0.004	-0.004	0	%100
78	M57A_1	SX	-0.004	-0.004	0	%100
79	M58A_1	SX	-0.004	-0.004	0	%100
80	M59B_1	SX	-0.004	-0.004	0	%100
81	M63C	SX	-0.004	-0.004	0	%100
82	M64_2	SX	-0.004	-0.004	0	%100
83	M68_1	SX	-0.004	-0.004	0	%100
84	M69_1	SX	-0.004	-0.004	0	%100
85	M70_1	SX	-0.004	-0.004	0	%100
86	M71_1	SX	-0.004	-0.004	0	%100
87	M72_1	SX	-0.004	-0.004	0	%100
88	M73_1	SX	-0.004	-0.004	0	%100
89	M75_1	SX	-0.004	-0.004	0	%100
90	M77_1	SX	-0.004	-0.004	0	%100
91	M81_1	SX	-0.004	-0.004	0	%100
92	M83_1	SX	-0.004	-0.004	0	%100
93	M55A	SX	-0.004	-0.004	0	%100
94	M61A_1	SX	-0.004	-0.004	0	%100
95	M61B	SX	-0.004	-0.004	0	%100
96	M79A_1	SX	-0.004	-0.004	0	%100
97	M97	SX	-0.004	-0.004	0	%100
98	M110	SX	-0.004	-0.004	0	%100
99	M111	SX	-0.004	-0.004	0	%100
100	M108	SX	-0.004	-0.004	0	%100
101	M111A	SX	-0.004	-0.004	0	%100
102	M118	SX	-0.004	-0.004	0	%100
103	M119	SX	-0.004	-0.004	0	%100
104	M120	SX	-0.004	-0.004	0	%100
105	M121	SX	-0.004	-0.004	0	%100
106	M122	SX	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
107	M128	SX	-0.004	-0.004	0	%100
108	M129	SX	-0.004	-0.004	0	%100
109	M130	SX	-0.004	-0.004	0	%100
110	M110B	SX	-0.004	-0.004	0	%100
111	M111B	SX	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 15 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M57	Y	-0.016	-0.009	0	1.83
2	M57	Y	-0.009	-0.002	1.83	3.66
3	M59	Y	-0.016	-0.009	0	1.83
4	M59	Y	-0.009	-0.002	1.83	3.66
5	M63	Y	-0.009	-0.009	0.018	7.608
6	M66	Y	-0.0005005	-0.007	0	2.328
7	M66	Y	-0.007	-0.009	2.328	4.655
8	M66	Y	-0.009	-0.008	4.655	6.983
9	M66	Y	-0.008	-0.009	6.983	9.31
10	M66	Y	-0.009	-0.007	9.31	11.638
11	M66	Y	-0.007	-0.0005005	11.638	13.965
12	M58	Y	-0.016	-0.009	0	1.83
13	M58	Y	-0.009	-0.002	1.83	3.66
14	M61	Y	-0.009	-0.009	0.018	7.608
15	M64_1	Y	-0.0005005	-0.007	0	2.328
16	M64_1	Y	-0.007	-0.009	2.328	4.655
17	M64_1	Y	-0.009	-0.008	4.655	6.983
18	M64_1	Y	-0.008	-0.009	6.983	9.31
19	M64_1	Y	-0.009	-0.007	9.31	11.638
20	M64_1	Y	-0.007	-0.0005005	11.638	13.965
21	M62	Y	-0.009	-0.009	0.018	7.608
22	M65	Y	-0.0005005	-0.007	0	2.328
23	M65	Y	-0.007	-0.009	2.328	4.655
24	M65	Y	-0.009	-0.008	4.655	6.983
25	M65	Y	-0.008	-0.009	6.983	9.31
26	M65	Y	-0.009	-0.007	9.31	11.638
27	M65	Y	-0.007	-0.0005005	11.638	13.965

Member Distributed Loads (BLC 16 : BLC 4 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M65	Y	-0.0002052	-0.003	0	2.328
2	M65	Y	-0.003	-0.004	2.328	4.655
3	M65	Y	-0.004	-0.003	4.655	6.983
4	M65	Y	-0.003	-0.004	6.983	9.31
5	M65	Y	-0.004	-0.003	9.31	11.638
6	M65	Y	-0.003	-0.0002052	11.638	13.965
7	M57	Y	-0.007	-0.004	0	1.83
8	M57	Y	-0.004	-0.0007663	1.83	3.66
9	M59	Y	-0.007	-0.004	0	1.83
10	M59	Y	-0.004	-0.0007663	1.83	3.66
11	M63	Y	-0.004	-0.004	0.018	7.608
12	M66	Y	-0.0002052	-0.003	0	2.328
13	M66	Y	-0.003	-0.004	2.328	4.655
14	M66	Y	-0.004	-0.003	4.655	6.983
15	M66	Y	-0.003	-0.004	6.983	9.31

Member Distributed Loads (BLC 16 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	M66	Y	-0.004	-0.003	9.31	11.638
17	M66	Y	-0.003	-0.0002052	11.638	13.965
18	M58	Y	-0.007	-0.004	0	1.83
19	M58	Y	-0.004	-0.0007663	1.83	3.66
20	M61	Y	-0.004	-0.004	0.018	7.608
21	M64_1	Y	-0.0002052	-0.003	0	2.328
22	M64_1	Y	-0.003	-0.004	2.328	4.655
23	M64_1	Y	-0.004	-0.003	4.655	6.983
24	M64_1	Y	-0.003	-0.004	6.983	9.31
25	M64_1	Y	-0.004	-0.003	9.31	11.638
26	M64_1	Y	-0.003	-0.0002052	11.638	13.965
27	M62	Y	-0.004	-0.004	0.018	7.608

Member Area Loads (BLC 1 : Self Weight)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N51	N48	N47	N50	Y	Two Way	-0.01
2	N51	N48	N46	N49	Y	Two Way	-0.01
3	N49	N46	N47	N50	Y	Two Way	-0.01

Member Area Loads (BLC 4 : Ice Weight)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N51	N48	N47	N50	Y	Two Way	-0.004
2	N51	N48	N46	N49	Y	Two Way	-0.004
3	N49	N46	N47	N50	Y	Two Way	-0.004

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N25	max	0.164	29	0.038	57	0.494	2	0.001	63	0	125	0	5
2		min	-0.148	11	0	2	-0.506	32	-0.001	8	0	1	0	72
3	N30	max	0.407	5	0.038	61	0.23	37	0	11	0	125	0	12
4		min	-0.412	35	0	6	-0.222	7	-0.001	66	0	1	-0.001	91
5	N35	max	0.452	29	0.038	53	0.199	3	0	5	0	125	0.001	71
6		min	-0.435	11	0	10	-0.214	33	-0.001	96	0	1	0	4
7	N42	max	0.341	4	0.804	78	0.604	28	1.426	84	0.699	10	2.412	78
8		min	-0.406	34	-0.007	11	-0.519	10	-0.025	5	-0.729	28	-0.021	11
9	N40	max	0.476	30	0.988	84	0.538	36	1.679	78	0.679	12	0.026	5
10		min	-0.322	12	-0.01	5	-0.493	6	-0.026	11	-0.706	30	-2.969	84
11	N44	max	0.314	29	0.979	75	0.057	2	0.017	7	0.107	105	0.022	11
12		min	-0.229	11	-0.012	8	-0.33	93	-3.382	86	-0.039	23	-0.05	78
13	N116	max	0.007	5	1.304	87	0.04	8	0	125	0	35	0	5
14		min	-0.007	11	-0.044	8	-1.444	87	0	1	0	5	0	35
15	N118	max	0.046	12	1.359	67	0.753	66	0	5	0	35	0	35
16		min	-1.303	67	-0.058	12	-0.029	11	0	35	0	5	0	5
17	N120	max	1.219	71	1.273	71	0.704	72	0	11	0	11	0	11
18		min	-0.047	4	-0.059	4	-0.03	5	0	29	0	29	0	29
19	N135	max	0.072	5	0.036	57	0.383	26	0.001	93	0	125	0	11
20		min	-0.104	35	0	17	-0.299	8	0	2	0	1	0	66
21	N140	max	0.265	29	0.036	61	0.117	12	0	3	0	125	0	7
22		min	-0.238	11	0	21	-0.143	30	0	71	0	1	-0.001	98
23	N145	max	0.255	5	0.035	53	0.107	4	0	12	0	125	0.001	64
24		min	-0.341	35	0	19	-0.14	33	0	91	0	1	0	9
25	Totals:	max	2.298	29	6.041	58	1.922	2						

Envelope Node Reactions (Continued)

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
26		min	-2.298	11	0	3	-1.922	32						

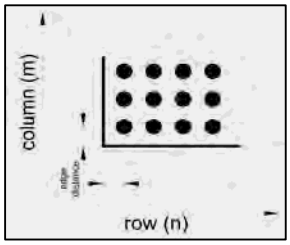
Envelope AISC 14TH (360-10): ASD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
1	M65	L3X3X4	0.645	6.983	88	0.318	6.983	z	100	21.778	31.042	1.123	1.516	1	H2-1
2	M66	L3X3X4	0.645	6.983	91	0.396	6.983	z	100	21.778	31.042	1.123	1.516	1	H2-1
3	M64_1	L3X3X4	0.612	6.982	67	0.251	6.982	z	100	21.778	31.042	1.123	1.516	1	H2-1
4	M59	LL3x3x4x0	0.534	1.067	67	0.041	1.105	y	91	52.827	62.084	4.311	3.267	1.668	H1-1b
5	M57	LL3x3x4x0	0.51	1.067	98	0.04	1.105	y	89	52.827	62.084	4.311	3.267	1.782	H1-1b
6	M58	LL3x3x4x0	0.496	1.067	72	0.039	1.105	y	97	52.827	62.084	4.311	3.267	1.518	H1-1b
7	M61	L3X3X4	0.488	0	67	0.039	0	z	54	8.844	31.042	1.123	2.183	1.5	H2-1
8	M63	L3X3X4	0.484	7.627	91	0.038	7.627	z	56	8.844	31.042	1.123	2.183	1.5	H2-1
9	M62	L3X3X4	0.466	7.627	98	0.035	7.627	z	98	8.844	31.042	1.123	2.183	1.5	H2-1
10	M52	HSS4X4X3	0.42	0	79	0.072	1.241	z	81	68.447	71.066	8.424	8.424	3	H1-1b
11	M60	HSS4X4X3	0.413	0	86	0.078	1.241	z	78	68.447	71.066	8.424	8.424	3	H1-1b
12	M53	HSS4X4X3	0.349	0	77	0.06	1.241	z	76	68.447	71.066	8.424	8.424	3	H1-1b
13	M50	L2.5x2.5x3	0.325	0	64	0.04	1.25	y	67	18.175	19.423	0.581	1.312	1.5	H2-1
14	M28	PIPE_2.0	0.32	6.083	26	0.055	6		28	9.924	21.377	1.245	1.245	1.419	H1-1b
15	M118	PIPE_2.0	0.32	6.083	35	0.084	6		30	9.924	21.377	1.245	1.245	1.838	H1-1b
16	M108	PIPE_2.0	0.315	6.083	29	0.058	6		27	9.924	21.377	1.245	1.245	1.923	H1-1b
17	M49A	L2.5x2.5x3	0.308	0	72	0.036	1.25	y	64	18.175	19.423	0.581	1.312	1.5	H2-1
18	M51A	L2.5x2.5x3	0.281	0	67	0.033	1.25	y	71	18.175	19.423	0.581	1.312	1.5	H2-1
19	M47	PIPE_2.0	0.277	6.873	35	0.144	12.483		73	11.88	21.377	1.245	1.245	1	H1-1b
20	M70	PIPE_2.0	0.266	3.083	73	0.059	5.167		66	9.924	21.377	1.245	1.245	1.656	H1-1b
21	M62B	PIPE_2.0	0.264	3.083	68	0.054	5.167		74	9.924	21.377	1.245	1.245	1.742	H1-1b
22	M41A	PIPE_2.0	0.264	6.452	96	0.162	12.483		69	11.88	21.377	1.245	1.245	1	H1-1b
23	M54	PIPE_2.0	0.264	3.083	65	0.053	5.167		71	9.924	21.377	1.245	1.245	1.578	H1-1b
24	M57C	PIPE_2.0	0.256	3.083	96	0.064	4.667		92	9.924	21.377	1.245	1.245	1.778	H1-1b
25	M93	PIPE_2.0	0.256	3.083	94	0.061	4.667		88	9.924	21.377	1.245	1.245	1.854	H1-1b
26	M48	PIPE_2.0	0.251	6.732	91	0.162	12.483		66	11.88	21.377	1.245	1.245	1	H1-1b
27	M75A	PIPE_2.0	0.245	3.083	88	0.058	4.667		96	9.924	21.377	1.245	1.245	1.832	H1-1b
28	M61B	PIPE_2.0	0.23	6.618	65	0.08	9.589		72	11.88	21.377	1.245	1.245	1	H1-1b
29	M57A_1	PIPE_2.0	0.227	6.212	88	0.094	3.376		94	11.88	21.377	1.245	1.245	1	H1-1b
30	M62B_1	PIPE_2.0	0.225	6.618	69	0.089	9.589		63	11.88	21.377	1.245	1.245	1	H1-1b
31	M70_1	PIPE_2.0	0.109	2.5	95	0.053	0		93	19.834	21.377	1.245	1.245	1.461	H1-1b
32	M72_1	PIPE_2.0	0.108	2.5	90	0.052	0		90	19.834	21.377	1.245	1.245	1.589	H1-1b
33	M71_1	PIPE_2.0	0.091	0	67	0.055	0		87	19.834	21.377	1.245	1.245	1.582	H1-1b
34	M105	LL2.5x2.5x3x3	0.084	6.021	67	0.003	6.021	y	55	24.213	38.802	2.631	1.696	1.136	H1-1b*
35	M104	LL2.5x2.5x3x3	0.08	6.021	87	0.003	6.021	y	62	24.213	38.802	2.631	1.696	1	H1-1b*
36	M106	LL2.5x2.5x3x3	0.078	6.021	71	0.003	6.021	y	59	24.213	38.802	2.631	1.696	1.136	H1-1b*
37	M74_1	L2.5x2.5x3	0.057	2.141	62	0.008	4.282	z	67	10.609	19.423	0.581	1.149	1.136	H2-1
38	M84_1	L2.5x2.5x3	0.057	2.141	60	0.008	4.282	y	90	10.609	19.423	0.581	1.149	1.136	H2-1
39	M76_1	L2.5x2.5x3	0.05	2.141	52	0.007	4.282	y	94	10.609	19.423	0.581	1.149	1.136	H2-1
40	M78_1	L2.5x2.5x3	0.05	2.141	53	0.008	4.282	z	71	10.609	19.423	0.581	1.149	1.136	H2-1
41	M82_1	L2.5x2.5x3	0.05	2.141	58	0.007	4.282	z	63	10.609	19.423	0.581	1.149	1.136	H2-1
42	M80_1	L2.5x2.5x3	0.049	2.141	56	0.009	4.282	y	87	10.609	19.423	0.581	1.149	1.136	H2-1
43	M84	L2.5x2.5x3	0.048	2.141	35	0.011	4.282	y	96	10.609	19.423	0.581	1.149	1.136	H2-1
44	M76	L2.5x2.5x3	0.047	2.141	52	0.01	4.282	y	87	10.609	19.423	0.581	1.149	1.136	H2-1
45	M78	L2.5x2.5x3	0.047	2.141	54	0.011	4.282	z	66	10.609	19.423	0.581	1.149	1.136	H2-1
46	M74	L2.5x2.5x3	0.047	2.141	57	0.011	4.282	z	63	10.609	19.423	0.581	1.149	1.136	H2-1
47	M80	L2.5x2.5x3	0.046	2.141	61	0.011	4.282	y	91	10.609	19.423	0.581	1.149	1.136	H2-1
48	M82	L2.5x2.5x3	0.044	2.141	58	0.01	4.282	z	71	10.609	19.423	0.581	1.149	1.136	H2-1

Bolt Calculator

Capacity Input:	N
Analysis/Design:	Analysis
ASD/LRFD:	ASD
Data	Auto Calc Capacity

4/3 Increase N



Bolt Properties		
Nominal Diameter (d)	5/8	inches
Steel Grade	A307	
Threads Excluded?	N	
Yield Strength (Fyb)	36	ksi
Ultimate Strength (Fub)	60	ksi
Threads/in (n)	11	
Gross Area (Agb)	0.307	in^2
Net Area (Anb)	0.226	in^2

Bolt Group Properties		
No. of Column	2	
No. of Rows	2	
Bolt Spacing per Row	3	inches
Bolt Spacing per Column	6	inches
Edge Distance	1	inches
Parallel along	Y-Axis	

Pu_x	1219.0	lbs
Pu_y	1359.0	lbs
Pu_z	753.0	lbs

Mu_x	1679.0	lbs-ft
Mu_y	699.0	lbs-ft
Mu_z	2412.0	lbs-ft

Bolt Capacity (0.625 A307 Bolts)				
	Ult Load/ Bolt	Capacity	# of Bolts	Factor Joint Capacity
Shear	3129.3	3129.3	4	12517.3
Axial	6074.6	6074.6	4	24298.3

Interaction Check	
V /ϕVn	31.4%
T /ϕTn	88.8%
≤1.0	88.8%
	Pass

EXHIBIT 9

EME Report

Radio Frequency Emissions Analysis Report

March 16, 2022

Centerline Communications on behalf of T-Mobile

Site Name: CTNH646A
Site Address: 100 Taugwonk Road, Stonington, CT 06378

Site Compliance Summary

Compliance Status:	Compliant
Carrier MPE% of FCC General Population Allowable Limit:	2.18361400%
Composite MPE% of FCC General Population Allowable Limit:	2.18369600%

March 16, 2022

Attn: T-Mobile

Emissions Analysis for Site: **CTNH646A**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed T-Mobile facility to be located a monopole near **100 Taugwonk Road, Stonington CT 06378** for the purpose of determining whether the emissions from the proposed facility 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2). The number of µW/cm^2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (µW/cm^2). The general population exposure limits for the 45 MHz and 150 MHz bands is 200 µW/cm^2, the 450 MHz band is 300 µW/cm^2, 600MHz band is 400 µW/cm^2, the 700 MHz band is 466.67 µW/cm^2, the 850 MHz band is 566.67 µW/cm^2, and the 1900 MHz, 2100 MHz, and 2500 MHz bands is 1000 µW/cm^2.

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, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

Calculations

Calculations were performed for the proposed facility using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing focused omnidirectional antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. This is a very conservative estimate since the gain reduction in actual applications is typically greater than 10 dB in the direction of ground immediately surrounding the facility. Real world emissions values from this facility are expected to be lower than values listed in this report at ground level. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
1	1900	GSM	1	15
2	1900	LTE	2	140
2	2100	LTE	2	140
3	700	LTE	2	40
3	600	LTE	4	60
3	600	NR	2	40
4	2500	LTE	1	90
4	2500	NR	1	90
4	2500	LTE	1	30
4	2500	NR	1	30
5	1900	GSM	1	15
6	1900	LTE	2	140
6	2100	LTE	2	140
7	700	LTE	2	40
7	600	LTE	4	60
7	600	NR	2	40
8	2500	LTE	1	90
8	2500	NR	1	90

8	2500	LTE	1	30
8	2500	NR	1	30
9	1900	GSM	1	15
10	1900	LTE	2	140
10	2100	LTE	2	140
11	700	LTE	2	40
11	600	LTE	4	60
11	600	NR	2	40
12	2500	LTE	1	90
12	2500	NR	1	90
12	2500	LTE	1	30
12	2500	NR	1	30
13	600	NR	4	40
14	2007	NR	4	40
14	2100	NR	4	40
15	600	NR	4	40
16	2007	NR	4	40
16	2100	NR	4	40
17	600	NR	4	40
18	2007	NR	4	40
18	2100	NR	4	40
19	1900	LTE	1	100
19	1900	LTE	1	100
20	850	LTE	1	90
21	2500	LTE	1	120
22	1900	LTE	1	100
22	1900	LTE	1	100
23	850	LTE	1	90
24	2500	LTE	1	120
25	1900	LTE	1	100
25	1900	LTE	1	100
26	850	LTE	1	90
27	2500	LTE	1	120
28	150	-	1	25.4
29	450	-	1	25.4
30	45	-	1	25.4
31	450	-	1	25.4
32	150	-	1	25.4

33	150	-	1	25.4
34	450	-	1	25.4

Table 1: Channel Data Table

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

The following antennas listed in Table 2 were used in the modeling for transmission in the 45 MHz, 150 MHz, 450 MHz, 600MHz, 700 MHz, the 850 MHz, 1900 MHz, 2100 MHz, and 2500 MHz frequency bands. This is based on information from the carrier with regard to anticipated antenna selection.

Sector	Antenna Number	Make / Model	Centerline (ft)
A	1	COMMSCOPE VV-65A-R1B	145
A	1	COMMSCOPE VV-65A-R1B	145
A	1	COMMSCOPE VV-65A-R1B	145
A	2	RFS APXVAALL24 43-U-NA20	145
A	2	RFS APXVAALL24 43-U-NA20	145
A	2	RFS APXVAALL24 43-U-NA20	145
A	3	ERICSSON SON_AIR6449 2500	145
A	3	ERICSSON SON_AIR6449 2500 NR	145
A	3	ERICSSON AIR6449 LTE BrM	145
A	3	ERICSSON AIR6449 NR BrM 02DT	145
B	4	COMMSCOPE VV-65A-R1B	145
B	4	COMMSCOPE VV-65A-R1B	145
B	4	COMMSCOPE VV-65A-R1B	145
B	5	RFS APXVAALL24 43-U-NA20	145
B	5	RFS APXVAALL24 43-U-NA20	145
B	5	RFS APXVAALL24 43-U-NA20	145
B	6	ERICSSON SON_AIR6449 2500	145
B	6	ERICSSON SON_AIR6449 2500 NR	145
B	6	ERICSSON AIR6449 LTE BrM	145
B	6	ERICSSON AIR6449 NR BrM 02DT	145
C	7	COMMSCOPE VV-65A-R1B	145
C	7	COMMSCOPE VV-65A-R1B	145
C	7	COMMSCOPE VV-65A-R1B	145
C	8	RFS APXVAALL24 43-U-NA20	145
C	8	RFS APXVAALL24 43-U-NA20	145
C	8	RFS APXVAALL24 43-U-NA20	145
C	9	ERICSSON SON_AIR6449 2500	145
C	9	ERICSSON SON_AIR6449 2500 NR	145
C	9	ERICSSON AIR6449 LTE BrM	145
C	9	ERICSSON AIR6449 NR BrM 02DT	145
A	10	JMA MX08FRO665-21	182
A	10	JMA MX08FRO665-21	182
A	10	JMA MX08FRO665-21	182
B	11	JMA MX08FRO665-21	182

B	11	JMA MX08FRO665-21	182
B	11	JMA MX08FRO665-21	182
C	12	JMA MX08FRO665-21	182
C	12	JMA MX08FRO665-21	182
C	12	JMA MX08FRO665-21	182
A	13	COMMSCOPE NNVV-65B-R4	145
A	13	COMMSCOPE NNVV-65B-R4	145
A	13	COMMSCOPE NNVV-65B-R4	145
A	14	RFS APXVTM14 ALU-I20	145
B	15	COMMSCOPE NNVV-65B-R4	145
B	15	COMMSCOPE NNVV-65B-R4	145
B	15	COMMSCOPE NNVV-65B-R4	145
B	16	RFS APXVTM14 ALU-I20	145
C	17	COMMSCOPE NNVV-65B-R4	145
C	17	COMMSCOPE NNVV-65B-R4	145
C	17	COMMSCOPE NNVV-65B-R4	145
C	18	RFS APXVTM14 ALU-I20	145
A	19	RFS PD458-2N	194
A	20	RFS 114202C	158.5
A	21	Telewave ANT450D6	156.1
A	22	RFS 220-7N	153
A	23	RFS 220-3AN	129.5
A	24	Telewave ANT450D6	124.8
A	25	RFS PD458-2N	123.1

Table 2: Antenna Data

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

Results

Per the calculations completed for the proposed T-Mobile configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

ID	Make / Model	Frequency Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
T-Mobile 1	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	1	15	502.4482	0.000001000
T-Mobile 1	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	2	140	9379.0323	0.000022000
T-Mobile 1	COMMSCOPE VV-65A-R1B	2100	15.87	145.0	2	140	10818.2754	0.000021000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	700	13.65	145.0	2	40	1853.9157	0.000012000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	4	60	4733.8146	0.000036000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	2	40	1577.9382	0.000012000
T-Mobile 3	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	1.072212000
T-Mobile 3	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	1.072212000
T-Mobile 3	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000002000
T-Mobile 3	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000002000
T-Mobile 4	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	1	15	502.4482	0.000000000
T-Mobile 4	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	2	140	9379.0323	0.000000000
T-Mobile 4	COMMSCOPE VV-65A-R1B	2100	15.87	145.0	2	140	10818.2754	0.000000000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	700	13.65	145.0	2	40	1853.9157	0.000000000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	4	60	4733.8146	0.000000000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	2	40	1577.9382	0.000000000
T-Mobile 6	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	0.000127000
T-Mobile 6	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	0.000127000
T-Mobile 6	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000000000
T-Mobile 6	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000000000
T-Mobile 7	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	1	15	502.4482	0.000000000
T-Mobile 7	COMMSCOPE VV-65A-R1B	1900	15.25	145.0	2	140	9379.0323	0.000000000
T-Mobile 7	COMMSCOPE VV-65A-R1B	2100	15.87	145.0	2	140	10818.2754	0.000000000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	700	13.65	145.0	2	40	1853.9157	0.000000000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	4	60	4733.8146	0.000000000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	600	12.95	145.0	2	40	1577.9382	0.000000000
T-Mobile 9	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	0.019414000
T-Mobile 9	ERICSSON SON AIR6449	2500	22.35	145.0	1	90	15461.1755	0.019414000
T-Mobile 9	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000000000
T-Mobile 9	ERICSSON SON AIR6449	2500	15.15	145.0	1	30	982.0221	0.000000000
Dish 10	JMA MX08FRO665-21	600	11.35	182.0	4	40	2183.3330	0.000020000
Dish 10	JMA MX08FRO665-21	2007	15.75	182.0	4	40	6013.3985	0.000007000
Dish 10	JMA MX08FRO665-21	2100	16.75	182.0	4	40	7570.4201	0.000007000
Dish 11	JMA MX08FRO665-21	600	11.35	182.0	4	40	2183.3330	0.000000000
Dish 11	JMA MX08FRO665-21	2007	15.75	182.0	4	40	6013.3985	0.000000000
Dish 11	JMA MX08FRO665-21	2100	16.75	182.0	4	40	7570.4201	0.000000000
Dish 12	JMA MX08FRO665-21	600	11.35	182.0	4	40	2183.3330	0.000000000
Dish 12	JMA MX08FRO665-21	2007	15.75	182.0	4	40	6013.3985	0.000000000
Dish 12	JMA MX08FRO665-21	2100	16.75	182.0	4	40	7570.4201	0.000000000
Sprint 13	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000010000
Sprint 13	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000010000
Sprint 13	COMMSCOPE NNVV-65B-R4	850	12.54	145.0	1	90	1615.2603	0.000013000
Sprint 14	RFS APXVTM14 ALU-I20	2500	15.85	145.0	1	120	4615.1014	0.000006000
Sprint 15	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000000000
Sprint 15	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000000000
Sprint 15	COMMSCOPE NNVV-65B-R4	850	12.54	145.0	1	90	1615.2603	0.000000000
Sprint 16	RFS APXVTM14 ALU-I20	2500	15.85	145.0	1	120	4615.1014	0.000000000
Sprint 17	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000000000

Sprint 17	COMMSCOPE NNVV-65B-R4	1900	14.68	145.0	1	100	2937.6497	0.000000000
Sprint 17	COMMSCOPE NNVV-65B-R4	850	12.54	145.0	1	90	1615.2603	0.000000000
Sprint 18	RFS APXVTM14 ALU-I20	2500	15.85	145.0	1	120	4615.1014	0.000000000
SPD 19	Telwave ANT150D3 Dipole	150	5.96	194.0	1	25.4	100.1922	0.000001000
CL&P 20	RFS PD458-2N	450	5.96	158.5	1	25.4	100.1922	0.000001000
CL&P 21	RFS 114202C	45	5.96	156.1	1	25.4	100.1922	0.000001000
CL&P 22	Telewave ANT450D6	450	5.96	153.0	1	25.4	100.1922	0.000001000
CL&P 23	RFS 220-7N	150	5.96	129.5	1	25.4	100.1922	0.000002000
CL&P 24	RFS 220-3AN	150	5.96	124.8	1	25.4	100.1922	0.000002000
CL&P 25	Telewave ANT450D6	450	5.96	123.1	1	25.4	100.1922	0.000001000
T-Mobile MPE%								**2.18361400 %**

Table 3: T-Mobile Antenna Inventory & Power Level

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-Mobile sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
1900	GSM	145.0	1	502.4481587	0.0000120	1000	0.00000100
1900	LTE	145.0	2	4689.516148	0.0002210	1000	0.00002200
2100	LTE	145.0	2	5409.137679	0.0002150	1000	0.00002100
700	LTE	145.0	2	926.95786	0.0000540	467	0.00001200
600	LTE	145.0	4	1183.453642	0.0001460	400	0.00003600
600	NR	145.0	2	788.9690944	0.0000490	400	0.00001200
2500	LTE	145.0	1	15461.17548	10.7221230	1000	1.07221200
2500	NR	145.0	1	15461.17548	10.7221230	1000	1.07221200
2500	LTE	145.0	1	982.0220846	0.0000230	1000	0.00000200
2500	NR	145.0	1	982.0220846	0.0000230	1000	0.00000200
1900	GSM	145.0	1	502.4481587	0.0000000	1000	0.00000000
1900	LTE	145.0	2	4689.516148	0.0000000	1000	0.00000000
2100	LTE	145.0	2	5409.137679	0.0000000	1000	0.00000000
700	LTE	145.0	2	926.95786	0.0000000	467	0.00000000
600	LTE	145.0	4	1183.453642	0.0000000	400	0.00000000
600	NR	145.0	2	788.9690944	0.0000000	400	0.00000000
2500	LTE	145.0	1	15461.17548	0.0012670	1000	0.00012700
2500	NR	145.0	1	15461.17548	0.0012670	1000	0.00012700
2500	LTE	145.0	1	982.0220846	0.0000000	1000	0.00000000
2500	NR	145.0	1	982.0220846	0.0000000	1000	0.00000000
1900	GSM	145.0	1	502.4481587	0.0000000	1000	0.00000000
1900	LTE	145.0	2	4689.516148	0.0000020	1000	0.00000000
2100	LTE	145.0	2	5409.137679	0.0000000	1000	0.00000000
700	LTE	145.0	2	926.95786	0.0000000	467	0.00000000
600	LTE	145.0	4	1183.453642	0.0000010	400	0.00000000
600	NR	145.0	2	788.9690944	0.0000000	400	0.00000000
2500	LTE	145.0	1	15461.17548	0.1941370	1000	0.01941400
2500	NR	145.0	1	15461.17548	0.1941370	1000	0.01941400
2500	LTE	145.0	1	982.0220846	0.0000000	1000	0.00000000
2500	NR	145.0	1	982.0220846	0.0000000	1000	0.00000000
T-Mobile MPE%							**2.18361400 %**

Table 4: T-Mobile Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the 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:

Carrier	Predicted MPE %
T-Mobile	2.18361400%
Dish	0.00003400%
Sprint	0.00003900%
SPD	0.00000100%
CL&P	0.00000900%
Composite	**2.18369600%**

Table 5: Total Predicted MPE(%) by Carrier

Compliance Status:

The anticipated composite MPE value for this site assuming all carriers present is **2.18369600%** of the allowable FCC established general population limit sampled at the ground level.

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.

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