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

January 27, 2022

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

RE: Notice of Exempt Modification
133 Clearview Ave., Harwinton, CT 06791-1636
Latitude: 41.775522
Longitude: -73.098202
T-Mobile Site #: CT11712A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 192-foot level of the existing 195-foot Monopole Tower at **133 Clearview Ave., Harwinton**, CT. The 195-foot tower is owned by SBA Properties, LLC. The property is owned by Clearview Storage Park, LLC. T-Mobile now intends to remove three (3) antennas and replace with three (3) new 2500MHz antennas and install three (3) new L2100/1900/ MHz antennas, for a total of nine (9) antennas.

- **The new antennas would support 5G services and be installed at the 192-foot level of the tower.**

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) RFS APXV18-206516S-C-A20 antennas (remove) – (3) Ericsson AIR6449 B41 2500MHz antenna (replace)
- (3) Radio 4449 B71+B12 RRUs (remove) – (3) Ericsson 4449 B71+B85 RRUs (replace)

Install New:

- (3) Commscope VV-65A-R1 Antennas
- (3) Ericsson 4460 B25+B66 RRUs
- (2) 1.9" (6x24) Fiber

Existing Equipment to Remain:

- (3) RFS APXVAARR24_43-U-NA20 antennas
- (1) Low Profile Platform
- (3) Ericsson KRY 112 489/2 TMAs
- (9) 1-5/8" Coax
- (3) Kathrein Bias Ts
- (1) 1-5/8" Fiber

Entitlements:

- (2) 1-5/8" Coax

GROUND

Install New:

- Ericsson B160 Battery Cabinet
- (1) 2" RGS Conduit w/LBs for DC power wiring
- T-Mobile Slackbox mounted to H-Frame
- (1) 2" RGS conduit for power from existing PPC to Prop. Equip, Cabinet
- (1) 2" RGS conduit for AAV from existing fiber cabinet to prop. equip. cabinet
- (1) 1" RGS conduit for DC power from exist. Fiber cabinet to prop. equip. cabinet
- Reconnect exist 2" RGS conduit for Ethernet cable for generator controls & Alarms to prop. 6160 equip. cabinet
- (1) Ericsson 6160 Equipment cabinet
- (2) 2" RGS conduit for alarm & spare

Remain:

- (1) 25kw Diesel Generator
- Existing Ice Bridge
- Emerson Nextend Compact 2416 Fiber cabinet
- PPC, CIENA & ATS on Existing H-Frame
- 10' x 20' concrete pad
- GPS antenna mounted to existing ice bridge
- (1) ½" coax for GPS

Remove:

- T-Mobile PTS 8003 Battery Cabinet
- Ericsson RBS6201 ODE V1 Equip. Cabinet

This facility was approved by the Town of Harwinton's Zoning Commission on March 13, 2000. Special Permit was given for a 195' monopole designed to accommodate five (5) licensed carriers at 10' intervals starting at the top. A tower manager was to be designated and removal bond placed. An 8' fence was to secure the site. A security alarm would protect the tower. Each carrier was to certify that the EMF output was within FCC standards and the Tower Manager would provide annual certification during the service life of the tower. There were to be no lights. The Town and Town Volunteer Fire Departments were to be allowed to place their antennas on the tower at no cost provided there was no proven signal interference and subject to reasonable terms and conditions. Any further structural additions or modifications, including accessory structures, were to be submitted (prior to Council's jurisdiction) to the Zoning Commission. There were no further post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Cromwell's Mayor, Enzo Faienza, and Director of Planning and Development, Stuart Popper, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

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

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

Sincerely,

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

Attachments

cc: Michael R. Criss, First Selectman / with attachments
Town of Harwinton, 100 Bentley Dr., Harwinton, CT 06791
Jeffrey Neumann, Building Official / with attachments
Town of Harwinton, 100 Bentley Dr., Harwinton, CT 06791
Clearview Storage Park, LLC / with attachments
133 Clearview Ave., Hawinton, CT 06791-1636 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Check Copy	x
Exhibit 2	Notification Receipts	
Exhibit 3	Property Card	X
Exhibit 4	Property Map	X
Exhibit 5	Original Zoning Approval	Town of Hawinton Special Permit 3/13/2000
Exhibit 6	Construction Drawings	Chappell Engineering 1/3/22
Exhibit 7	Structural Analysis	TES 11/30/21
Exhibit 8	Mount Analysis	TES 11/18/21
Exhibit 9	EME Report	EBI Consulting 12/16/21

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

TRACK ANOTHER SHIPMENT

775892187303

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, 1/28/2022 before 10:30 am

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

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

Thursday, January 27, 2022

4:27 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:07 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT
775892187303	FedEx Priority Overnight	2 lbs / 0.91 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	2 lbs / 0.91 kgs	Shipper

After printing this label:
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FedEx

TRACK ANOTHER SHIPMENT

775892224665

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, 1/28/2022 before 10:30 am

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Michael R. Criss
Town of Hawinton
First Selectman
HARWINTON, CT US 06791
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Thursday, January 27, 2022

4:27 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:09 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT
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TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**

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FedEx

TRACK ANOTHER SHIPMENT

775892241451

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, 1/28/2022 before 10:30 am

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WESTBOROUGH, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Jeffrey Neumann
Town of Hawinton
Building Ofiicial
HARWINTON, CT US 06791
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Thursday, January 27, 2022

4:27 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:09 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT
775892241451	FedEx Priority Overnight	0.5 lbs / 0.23 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	0.5 lbs / 0.23 kgs	Shipper

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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FedEx

TRACK ANOTHER SHIPMENT

775892267256

ADD NICKNAME

ON TIME

Scheduled delivery:
Friday, 1/28/2022 before 10:30 am

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WESTBOROUGH, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Clearview Storage Park, LLC
133 Clearview Ave.
HARWINTON, CT US 06791
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Thursday, January 27, 2022

4:27 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
2:11 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT
775892267256	FedEx Priority Overnight	0.5 lbs / 0.23 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**

EXHIBIT 3

Property Card

qPublic.net™ Town of Harwinton, CT

Summary

ParcelId	589
Account Number	1060
Location Address	133 CLEARVIEW AVE
Map-Block-Lot	B7 /01 /0017
Use Class/Description	2-1 COMM LAND
Assessing Neighborhood	0001A
Census Tract	07
Acreage	14.13
Utilities	

Owner

CLEARVIEW STORAGE PARK LLC
P O BOX 155
HARWINTON, CT 06791

Current Appraised Value

		2020	2019
+	Building Value	$734,440	$734,440
+	XF Value	$0	$0
+	OB Value	$22,370	$22,370
+	Land Value	$599,310	$599,310
+	Special Land Value		
+	Total Appraised Value	$1,356,120	$1,356,120
+	Net Appraised Value	$0	$1,356,120
+	Current Assessment	$949,290	$949,290

Assessment History

		2019	2017	2016
+	Building Value	$514,110	$720,280	$720,280
+	OB/Misc	$15,660	$15,660	$15,660
+	Land	$419,520	$142,070	$142,070
+	Total Assessment	$949,290	$878,010	$878,010

Land

Use	Class	Zoning	Area	Value
2-1 COMM LAND	C		0.01 SF	$0
2-1 COMM LAND	C		0.01 SF	$0
2-1 COMM LAND	C		0.01 SF	$0
2-1 COMM LAND	C		0.01 SF	$0
2-1 COMM LAND	C		0.01 SF	$0
2-1 COMM LAND	C	LI-B	4.73 AC	$351,630
5-2 EX COMM	C		9.4 AC	$67,680
3-1 IND LAND	I		1 BL	$180,000

Commercial Building

Building #	1
Style	Warehouse
Actual Year Built	1987
Effective Year Built	1986
Gross Area	6000
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Minim/Masonry
Wall Height	16
Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip

Floor Type	Average
Heat Type	Oil
Heat Fuel	Hot Water
AC Type	HEAT/AC SPLIT
Sprinkler	01
Construction	STEEL
Plumbing	AVERAGE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	6000	6000	6000
	Totals	6000	6000	6000

Building #	2
Style	Mini Warehouse
Actual Year Built	1992
Effective Year Built	1991
Gross Area	2880
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Drywall/Sheet
Wall Height	10
Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip
Floor Type	Concr-Finished
Heat Type	Coal or Wood
Heat Fuel	None
AC Type	NONE
Sprinkler	01
Construction	STEEL
Plumbing	NONE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	2880	2880	2880
	Totals	2880	2880	2880

Building #	3
Style	Mini Warehouse
Actual Year Built	1991
Effective Year Built	1991
Gross Area	2880
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Minim/Masonry
Wall Height	10
Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip
Floor Type	Average
Heat Type	Coal or Wood
Heat Fuel	None
AC Type	HEAT/AC SPLIT
Sprinkler	01
Construction	STEEL
Plumbing	NONE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	2880	2880	2880
	Totals	2880	2880	2880

Building #	4
Style	Warehouse
Actual Year Built	2003
Effective Year Built	2001
Gross Area	4200
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Minim/Masonry
Wall Height	15

Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip
Floor Type	Average
Heat Type	Oil
Heat Fuel	Hot Air-no Duc
AC Type	NONE
Sprinkler	01
Construction	STEEL
Plumbing	AVERAGE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	4200	4200	4200
	Totals	4200	4200	4200

Building #	5
Style	Mini Warehouse
Actual Year Built	2005
Effective Year Built	2003
Gross Area	2000
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Minim/Masonry
Wall Height	10
Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip
Floor Type	Average
Heat Type	Coal or Wood
Heat Fuel	None
AC Type	NONE
Sprinkler	01
Construction	STEEL
Plumbing	NONE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	2000	2000	2000
	Totals	2000	2000	2000

Building #	6
Style	Mini Warehouse
Actual Year Built	2005
Effective Year Built	2003
Gross Area	2625
Stories	1
Grade	Average +10
Exterior Wall	Pre-finsh Metl
Interior Wall	Minim/Masonry
Wall Height	10
Units	1
Roof Cover	Metal/Tin
Roof Structure	Gable/Hip
Floor Type	Average
Heat Type	Coal or Wood
Heat Fuel	None
AC Type	NONE
Sprinkler	01
Construction	STEEL
Plumbing	NONE
Comm Walls	0

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	2625	2625	2625
	Totals	2625	2625	2625

Out Buildings\Extra Features

Description	Sub Description	Area	Year Built	Value
SHED FRAME AVE		490S.F.	2004	$14,090
SHED FRAME AVE		288S.F.	2004	$8,280

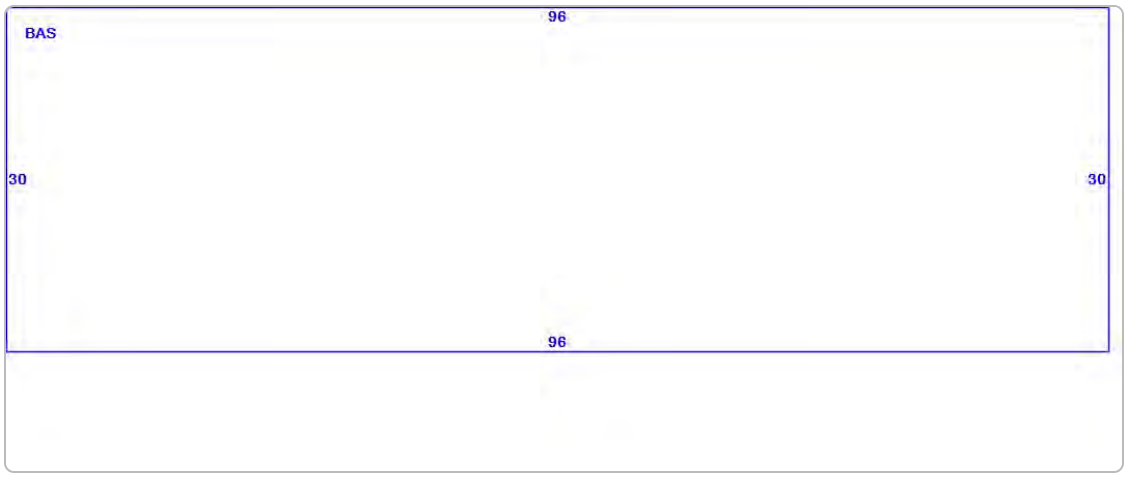
Sales History

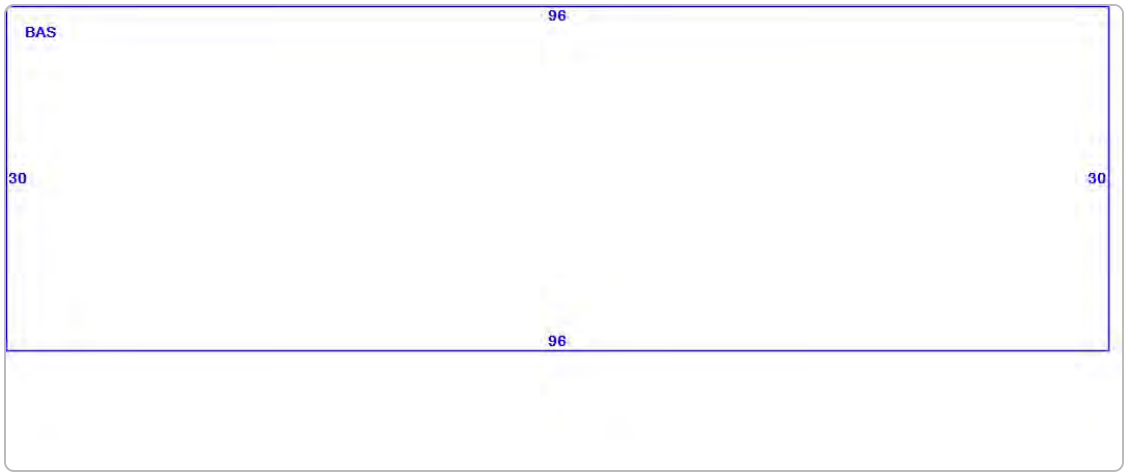
Sales Date	Type of Document	Grantee	Vacant/Improved	Book/Page	Amount
12-29-1998	Q	CLEARVIEW STORAGE PARK LLC	Vacant	0178/0416	$0
03-03-1998		CLEARVIEW INDUSTRIAL PARK LLC	Improved	0149/0796	$0
04-07-1986		GERVAIS DANIEL R + PAMELA	Improved	0103/0733	$0

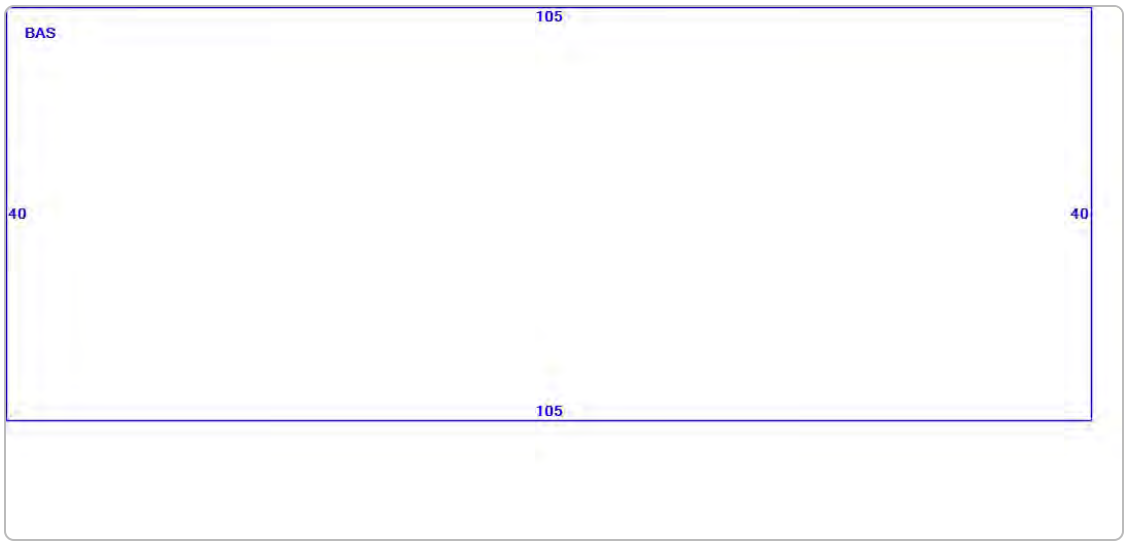
Permit Information

Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
2114CA	12-03-2021	CO	CO ISSUED	$0		100		CO FOR GENERATOR
21125E	10-21-2021	EL	Electric	$12,000		100		GENERATOR
217CA	07-06-2021	CO	CO ISSUED	$0		100		FOR ANTENNAS
2074B	06-23-2020	EL	Electric	$20,000		100		REPLACE CELL ANTENNAS
1980E	11-08-2019	EL	Electric	$1,000		100		
1710	04-04-2017		INSTALL LP TANKS	$2,400		100		
	03-23-2017		CO ISSUED	$0		0		UPGRADES TO T MOBILE
16181B	09-26-2016		UPGRADES TO ANTENNAS	$15,000		0		
8594	09-19-2012	HE	HEATING	$7,000		0		
8559	08-16-2012	EL	Electric	$5,000		0		
1001	05-16-2012		30x138 bldg	$80,000		0		
8284	11-22-2011		PROPANE TANK	$600		0		
7918	10-20-2010	WD	WOODSTOVE	$900		0		PELLET
7336	10-29-2008			$399		0		WOOD BURNING STOVE
59	02-23-2004	CO	CO ISSUED	$0		0		

Sketch



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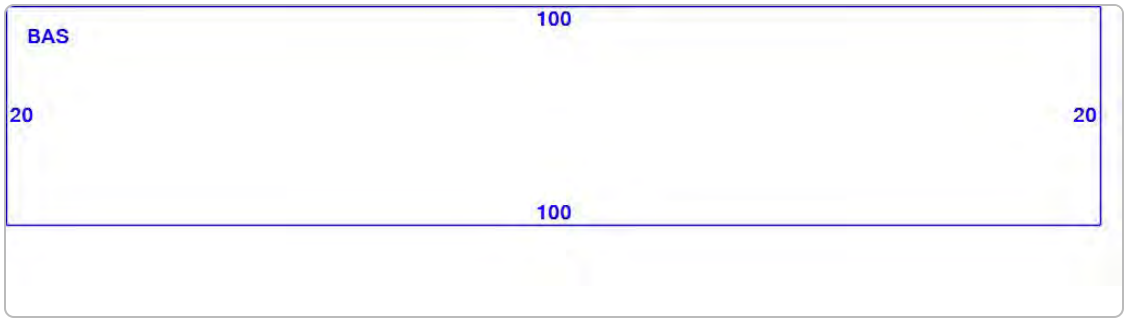
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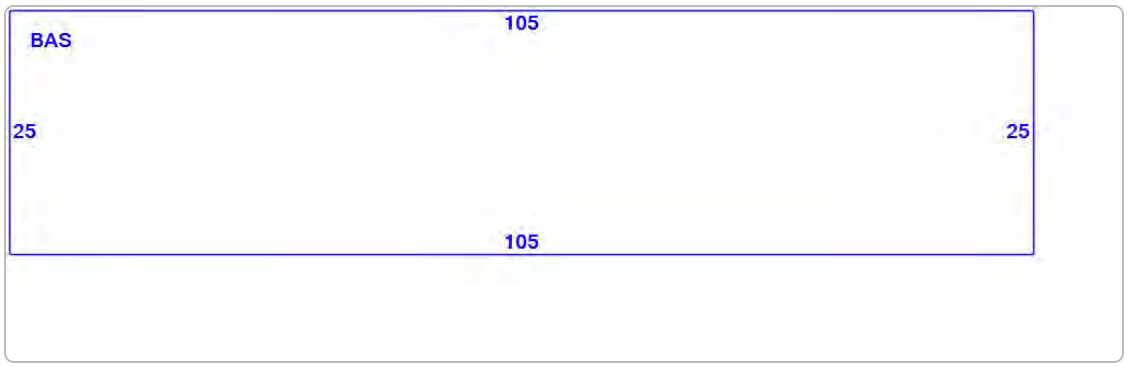
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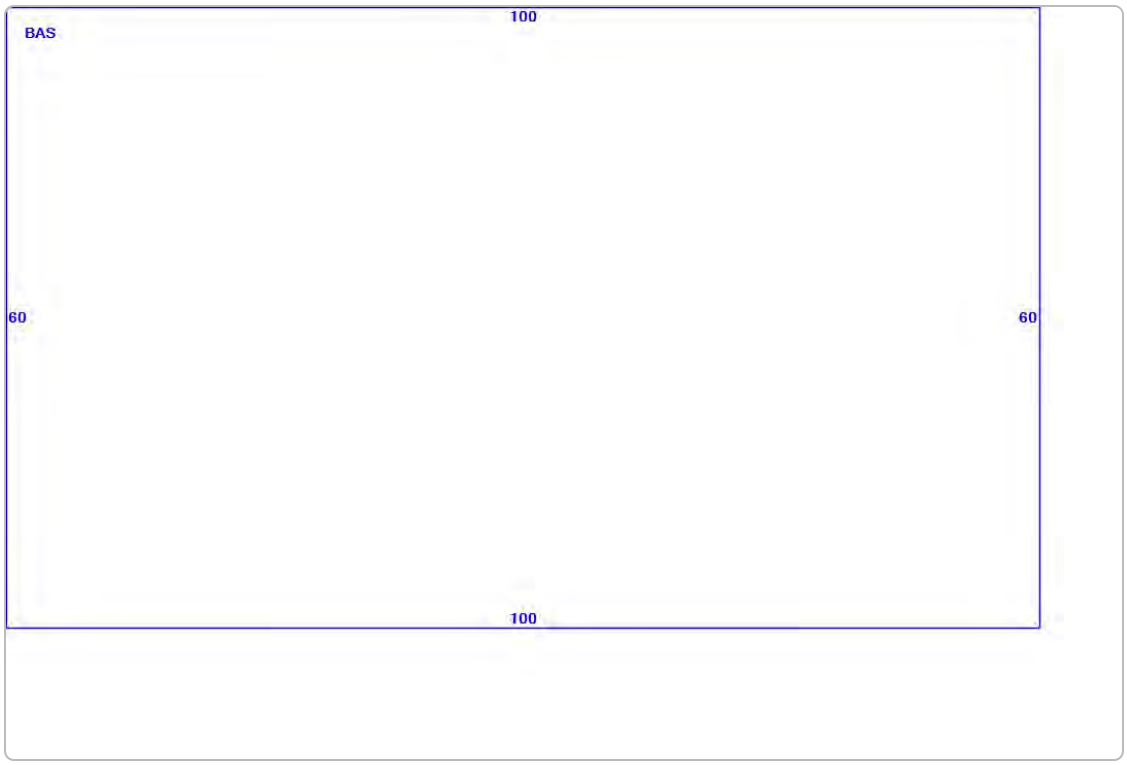


Photos

No data available for the following modules: Building Data.

Developed by Schneider GEOSPATIAL

Last Data Upload: 1/26/2022, 11:34:34 PM

Version 2.3.174

EXHIBIT 4

Property Map

Google Maps 133 Clearview Ave

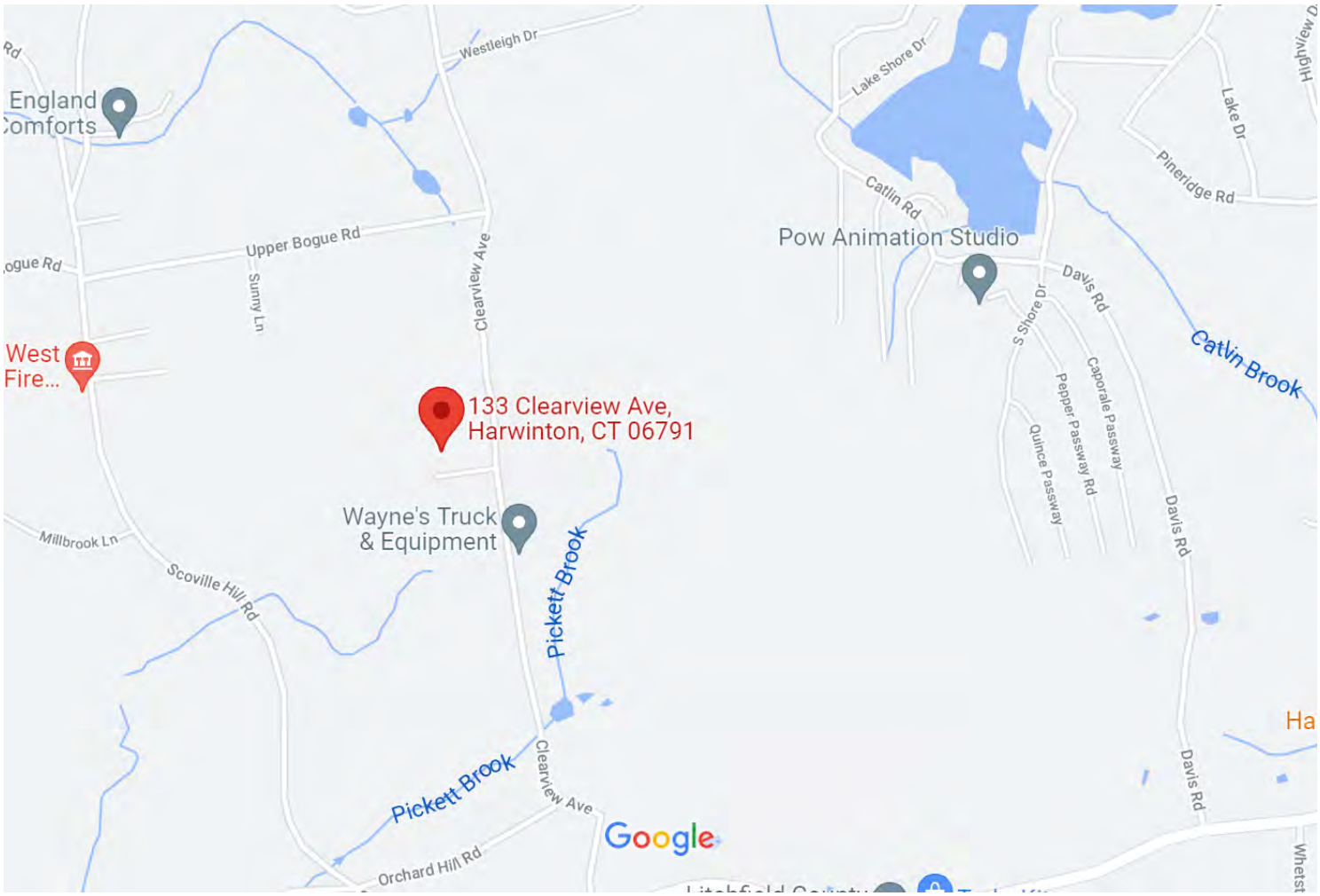


EXHIBIT 5

Zoning Documents

SITE ID #4275-040 SITE NAME: Harwinton

CT01944-S

JOB COST #001944

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site:LI

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Special Use Permit

* Date of Zoning Decision: 03/13/00

Summary of zoning conditions **(Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).**

annual EMF certification

See attached conditions.

Submitted by: Esther McNany Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.

4275-040

HARWINTON ZONING COMMISSION

Notice of Decision re:
Special Permit and Site Plan Approval

March 13, 2000

SITE # 4275-040

FILE TYPE Zoning

SECTION

Application No.: 3764

Applicant: SBA Communications, Inc.
49 Leavenworth Street, Suite 200
Waterbury, CT 06701
Attn: Thomas F. Flynn, III

Owner: Clearview Industrial Park, LLC
115 Orchard Hill Road
Harwinton, CT 06791

Property: 133 Clearview Avenue

Assessor's Map: B7-01-0017

APPLICATION HISTORY

The above applicant filed an application for a special permit and site plan approval for a 195' tall monopole telecommunications tower with the Zoning Commission on October 10, 1999. The application was formally received at the Zoning Commission's meeting on October 12, and a public hearing was set for November 8, 7:30 p.m. Legal notices were published in the Republican American on October 29, and November 5. The applicant sent certified mail notices to property owners within 200' of the boundaries of the subject property on October 22.

The public hearing convened on November 8, and was continued to December 13. At the request of the applicant and subject to the applicant's written extension, the public hearing was continued to January 10, 2000, at which time it was adjourned.

OTHER AGENCY APPROVALS

The Inland Wetlands & Watercourses Commission issued a declaratory ruling of no wetlands impact on October 4, 1999.

APPLICATION SUMMARY

The property is located in the Light Industrial ("LI") zone for a depth of 1,000' from Clearview Avenue. The total area of the property is 12.59 acres and is currently used for a contractor's garage (30' x 96') and two (2) sheet metal storage buildings (30' x 96' and 60' x 100'). The property is basically a ledge plateau which rises from 950' elevation at Clearview Avenue to 990' in the rear.

The applicant proposes to lease a plot of 100' by 100' from the owner for a term of twenty (20) years, and to construct a 195' tall monopole telecommunications tower at the rear of the property.

The leased site will be fenced for security. The site plan dated 8/26/99, revised to 9/28/99, does not propose any other structures in connection with the tower on the property.

The tower site is located at the western end of the property, within the LI zone. The tower site is to be accessed by a proposed 195' extension of the existing 840' driveway, 20' in width. The base of the tower is located at least 200' from existing property lines.

The proposed elevation of the base of the tower is 990' NAVD 88. The tower location coordinates are NAD 27 Lat. North 41° 46' 32.25" Long. West 73° 05' 56.45"; NAD 83 Lat. North 41° 46' 32.60" Long. West 73° 05' 54.84".

The tower is designed to accommodate five (5) licensed carriers' antennae, at 10' intervals starting at the top.

STATUTORY AUTHORITY

This application is governed by C.G.S. §8-3c re special permits and §8-3(g) re

site plans.

The applicant conceded that it is not a licensed telecommunications carrier within the meaning of the Telecommunications Act of 1934, as amended by the Telecommunications Act of 1996, 47 U.S.C.A. §332(c)(7), and does not have a co-applicant which is a licensed carrier. The applicant intends to seek tenant carriers for the tower only if it obtains approval.

ZONING REGULATIONS

This application is governed by Zoning Regulations §8.10 et seq, as follows:

8.10 TRANSMISSION TOWERS. A special permit may be granted for the erection and operation of radio relay and similar towers is any zone. In approving applications the Commission must find the following:

8.10.1 That the tower is located a distance from any property line which exceeds the height of the tower.

8.10.2 That the tower is required for the public interest, convenience or necessity.

8.10.3 That the proposed location is necessary and that alternate locations where similar special permit uses are located are not available.

8.10.4 That the visual inconvenience of the location is clearly less than the public necessity which requires the tower.

In addition, all special permit applications are governed by Zoning Regulations, §8.1 (Procedures), and §8.1.1. (General Standards).

Furthermore, a site plan is required under Zoning Regulations, §§7.1 - 7.5, and an erosion and sediment control plan is required under §7.6.

FINDINGS OF FACT

§8.10.1 - Fall zone: The proposed site of the 195' tower shown on the site plan is 208'± from an interior northeasterly boundary corner, 292.5'± from the northerly boundary and 208'± from the westerly boundary of the property, and clearly more than 195' from the southerly boundary. It is 1041'± from the street line and 651.7'± from the closest of the three (3) buildings on the property. It therefore satisfies the fall zone requirement of §8.10.1.

§8.10.2 - Public interest, convenience or necessity: The applicant admitted that it is not a provider of "personal wireless services," meaning a provider of "commercial mobile services, unlicenced wireless services, and common carrier wireless exchange access services" within the meaning of the Telecommunications Act, 47 U.S.C. §332(c)(7)(C), and had no specific providers as lessees or co-applicants. It was therefore able to present only one Sprint and one Nextel propagation study for the tower service area. As far as the two existing SNET towers in the service area, i.e. an existing lattice cellular tower at 125 Wildcat Hill Road and a 180' high monopole cellular tower on Weingart Road, the applicant simply stated that the SNET tower (presumably on Weingart Road) "would not work for PCS coverage" and "was structurally not capable." An overlap with existing towers in Torrington and Plymouth is required to serve the Route 8 corridor, and the west side of Harwinton and East Litchfield areas. The applicant presented no evidence as to the level of service or signal quality required to do so. Finally the applicant did not specifically demonstrate why a 195' high tower was required, as opposed to a lesser height.

The applicant's evidence was quite weak in regard to public necessity; however, the Commission feels that the merits of the proposed location of the tower outweigh the applicant's failure to clearly demonstrate its necessity and proposed height.

§8.10.3 - Alternate locations: Based on information and belief, it appears that the SNET lattice tower at 125 Wildcat Hill Road is not in service at this time, and the SNET monopole tower on Weingart Road may accommodate one additional carrier, although an engineering assessment of the structural capability of that tower may be

required.

There are currently pending before the Commission five (5) tower applications. Two of them - SBA at 205 County Line Road and Sprint Spectrum LP at 529 Burlington Road - are clearly intended to serve the east side of Harwinton and a portion of Burlington. Two others - SBA at 601 Hill Road and Sprint Spectrum LP at 123 Campville Hill Road - are intended to serve the Route 8 corridor and the southwestern part of Harwinton; however, both of those proposed towers are in the Country Residential ("CR") zone and appear to be more visible sites in residential neighborhoods.

Therefore the Commission believes that this site is the most appropriately zoned tower site for this service area.

§8.10.4 - Visual inconvenience vs. public necessity: Assuming that a 195' high tower is necessary somewhere in western Harwinton, this site appears to be the least obtrusive and most appropriately zoned of the three (3) sites proposed to serve the Route 8 corridor.

§8.1.1. - General standards; Subject to appropriate conditions of approval, the application will satisfy the general standards applicable to special permits.

§§7.1 - 7.6 - Site plans and erosion control plan: Subject to appropriate modifications, the site plan and erosion control plan can be made to satisfy these requirements.

THEREFORE, based on the foregoing regulations, findings of fact and reasons for decision, Application No. 3764 for a special permit to construct a 195' monopole telecommunications tower at 133 Clearview Avenue, as shown on 5 sheets constituting the site plan and erosion control plan, dated 8/26/99, revised 9/28/99, are hereby APPROVED, subject to the following conditions and modifications:

1. Tower Manager: That a Tower Manager be designated by name, address, contact person and telephone number as the person and firm responsible for the construction and operation of the tower, and be kept current and on file with the Commission at all times.

2. Tower Removal Bond: That the applicant file, prior to construction, a tower removal bond, in sufficient amount, and with sufficient surety, to guarantee the cost of removal of the tower, fence, and accessory structures, when the tower is no longer in service (other than for routine maintenance and testing), or its lease (and renewal options) expire, whichever occurs first. The bond shall protect both the Town of Harwinton and the landowner, and their heirs, successors and assigns, as per C.G.S. §8-3(g) and Zoning Regulation §7.4.

3. Landscaping and Fencing: That the tower site be fenced with a secure chain link fence with green webbing, and such fence be maintained in a safe condition at all times.

4. Security Alarm: That the tower be protected by a security alarm which shall be regularly tested and operational at all times.

5. EMF Certification: That each carrier shall certify that the EMF output of any antenna, combined with that of any previously installed antenna(s), is within FCC standards for public health and safety, and that the Tower Manager provide annual certification during the service life of the tower.

6. Tower Construction: That the monopole tower satisfy all structural requirements of the State Building Code, as certified by a Connecticut licensed structural engineer; that the applicant comply with the threshold structural notification requirements of C.G.S. §29-276b and the Connecticut Supplement to the State Building Code; and that the monopole be of a matte gray finish with no lights or striping.

7. Fall Zone: That the property lines be maintained at all times while the tower is standing at a distance from the base of the tower not less than its total height.

8. Municipal, VFD and EMS Use: As offered by the applicant at the public hearing, that the Town of Harwinton, the Westside Volunteer Fire Department, the Harwinton Volunteer Fire Department and the Harwinton Ambulance Association be allowed to place their antenna(s) on the tower at no cost, provided that there is no proven signal interference and subject to such reasonable terms and conditions as the applicant or Tower Manager may impose.

9. Future structures and modifications: That any future structural additions or modifications, including accessory structures, be submitted to the Zoning

Commission in accordance with the Zoning Regulations of the Commission then in effect, i.e., Regulations §A.8.10.1 - A.8.10.12, as amended, and any other land use regulations and ordinances as may then be in effect.

10. Recording and filing: That this special permit and the mylar site plans, be recorded in the Harwinton Land Records within fifteen (15) days, and shall run with the land described in the Harwinton Land Records in Volume 149 at Pages 796-97 and Volume 154 at Pages 105-06.

Dated at Harwinton, Connecticut this 13th day of March, 2000.

HARWINTON ZONING COMMISSION

By: John Byrnes
John Byrnes, Its Chairman

A:\MDR.harwinton.2\HPC. notice of decison - 133 Clearview Ave

EXHIBIT 6

Construction Drawings

SBA HARWINTON

133 CLEARVIEW AVENUE
HARWINTON, CT 06791
LITCHFIELD COUNTY

SITE NO.: CT11712A

SITE TYPE: 195'± MONOPOLE

RF DESIGN GUIDELINE: 67D5A998E 6160

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 1 RBS6201 EQUIPMENT CABINET
- 1 PTS 8003 BATTERY CABINET
- 9 COAX CABLES

INSTALL:
- 6 ANTENNAS
- 3 RADIOS
- 1 6160 EQUIPMENT CABINET
- 1 B160 BATTERY CABINET
- 1 SLACKBOX
- 2 HYBRID CABLES
- 1 125A-2P BREAKER
- 1 20A-1P BREAKER

SITE NOTES

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

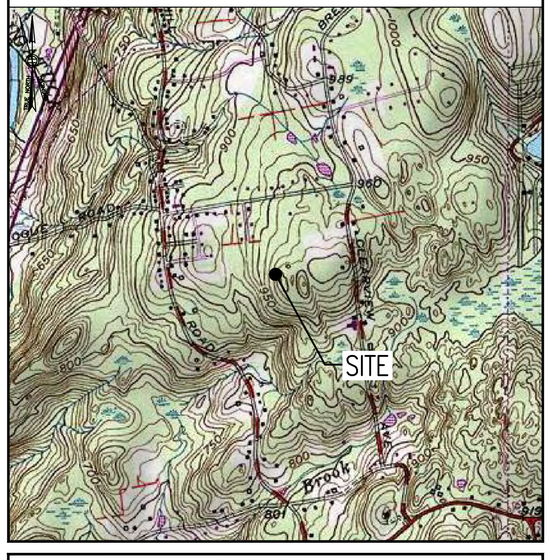
GENERAL NOTES

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

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. TAKE EXIT 58 TO MERGE ONTO I-90 WEST TOWARD ALBANY. USE RIGHT 2 LANES TO TAKE EXIT 78 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY. CONTINUE ONTO I-84. KEEP LEFT TO STAY ON I-84. KEEP LEFT TO STAY ON I-84. KEEP RIGHT TO STAY ON I-84 & FOLLOW SIGNS FOR I-91 NORTH/HARTFORD. USE RIGHT 2 LANES TO TAKE EXIT 39 TOWARD FARMINGTON/CT-4. CONTINUE ONTO STATE HIGHWAY 508. STATE HIGHWAY 508 TURNS SLIGHTLY RIGHT & BECOMES CT-4 WEST. TURN RIGHT ONTO CT-177 NORTH/CT-4 WEST. TAKE SLIGHT LEFT ONTO CT-4 WEST. TURN LEFT ONTO CT-4. CONTINUE ONTO CT-118 WEST/LITCHFIELD ROAD. TURN RIGHT ONTO CLEARVIEW AVENUE. SITE IS LOCATED ON THE LEFT HAND SIDE.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
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:	CT11712A
SITE NAME:	SBA HARWINTON
SBA SITE NUMBER:	CT01944-S
SBA SITE NAME:	HARWINTON
SITE ADDRESS:	133 CLEARVIEW AVENUE HARWINTON, CT 06791
PROPERTY OWNER:	CLEARVIEW STORAGE PARK LLC PO BOX 155 HARWINTON, CT 06791
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	LITCHFIELD
ZONING DISTRICT:	LI-A (LIGHT INDUSTRIAL ZONE A)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	195'±
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: 41.775731° N41°46'32.63" LONGITUDE: -73.098572° W73°05'54.86"

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
01/03/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/03/22	ISSUED FOR CONSTRUCTION	CMC
0	11/29/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11712A

SITE ADDRESS:
133 CLEARVIEW AVENUE
HARWINTON, CT 06791

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.348

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

01/03/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/03/22	ISSUED FOR CONSTRUCTION	CMC
0	11/29/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11712A

SITE ADDRESS:
133 CLEARVIEW AVENUE
HARWINTON, CT 06791

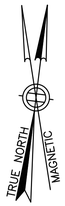
SHEET TITLE
GENERAL NOTES

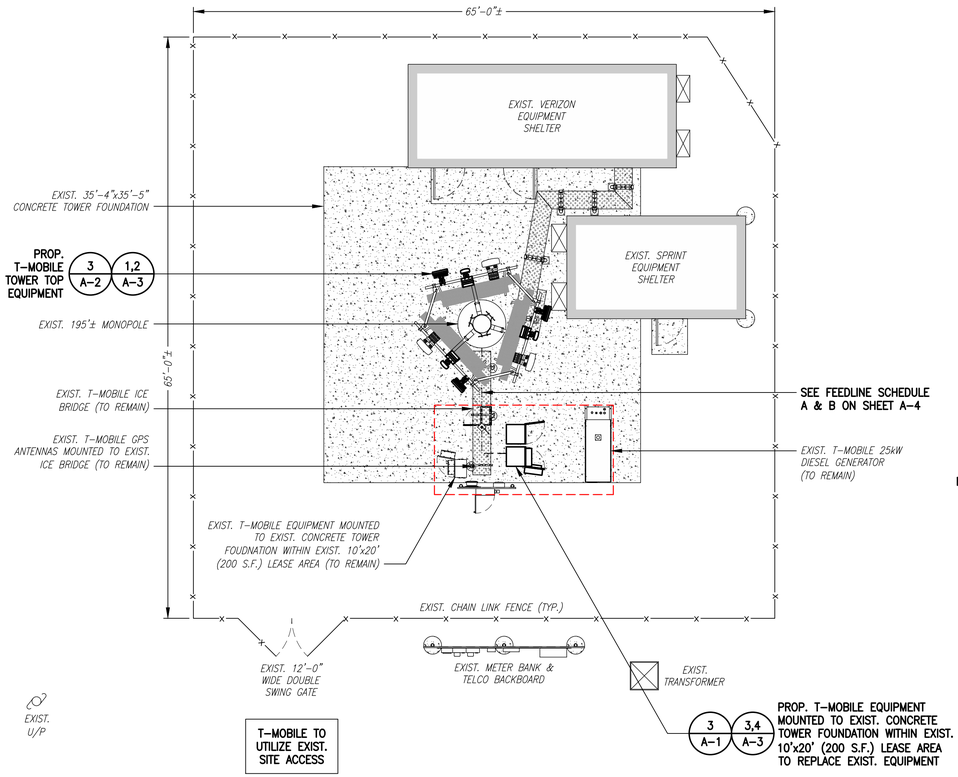
SHEET NUMBER
GN-1

1815.348

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.

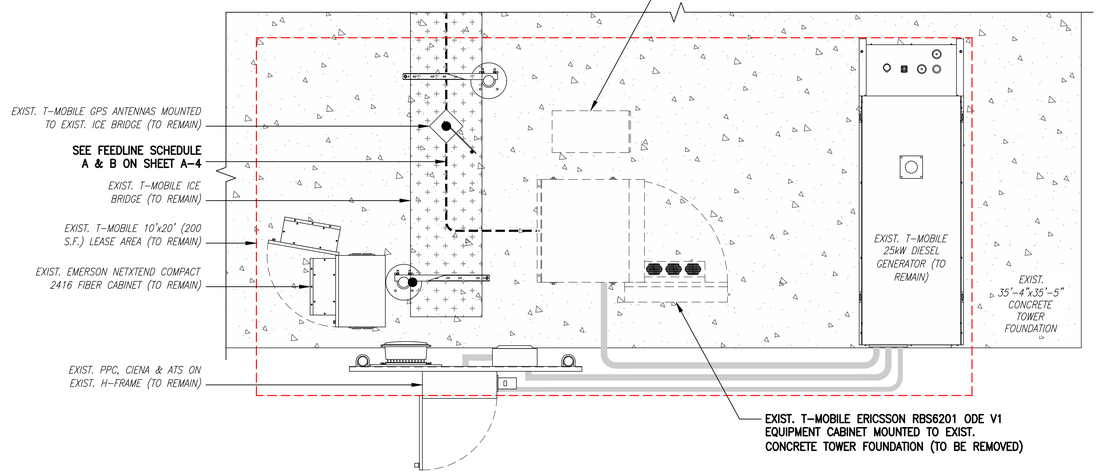
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED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



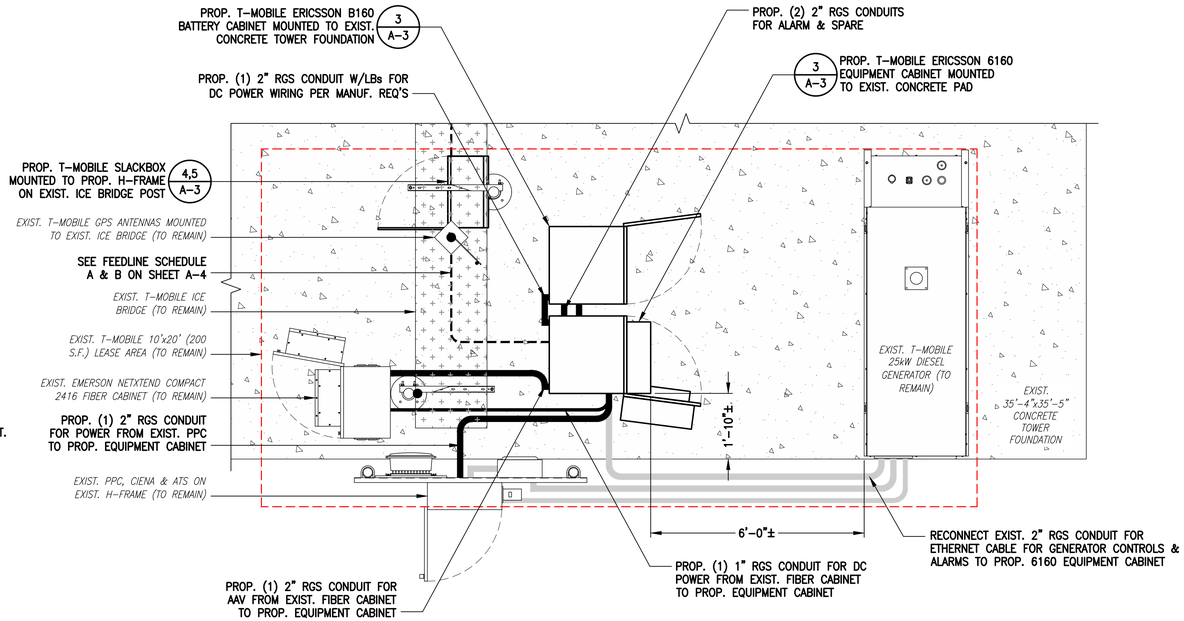


COMPOUND PLAN 1/A-1
SCALE: 1/8" = 1'-0"
0 8' 16' 24'

NOTE:
REMOVE CONDUITS TO RBS6201 ODE V1 EQUIPMENT CABINET, AS REQUIRED.



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



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

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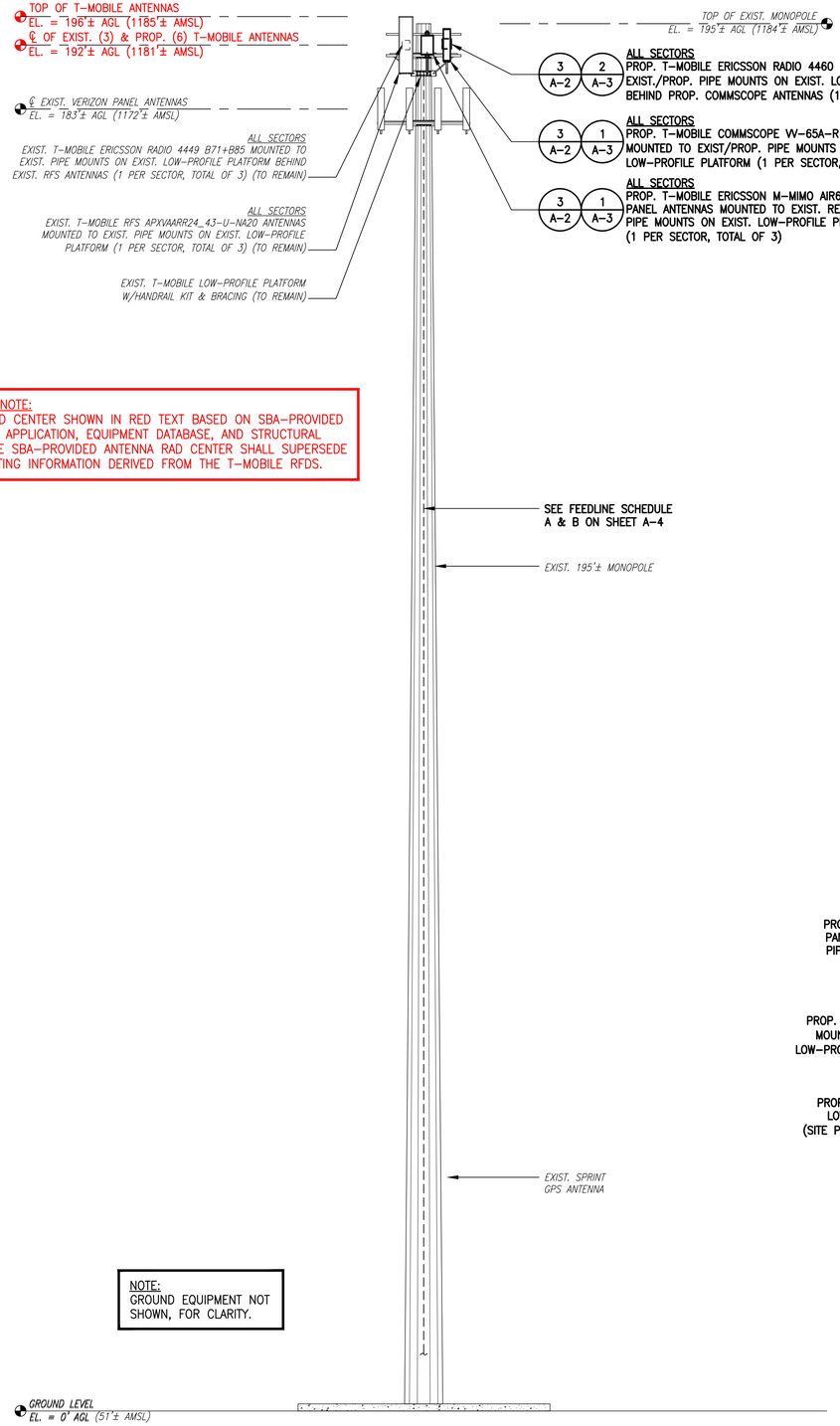
SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

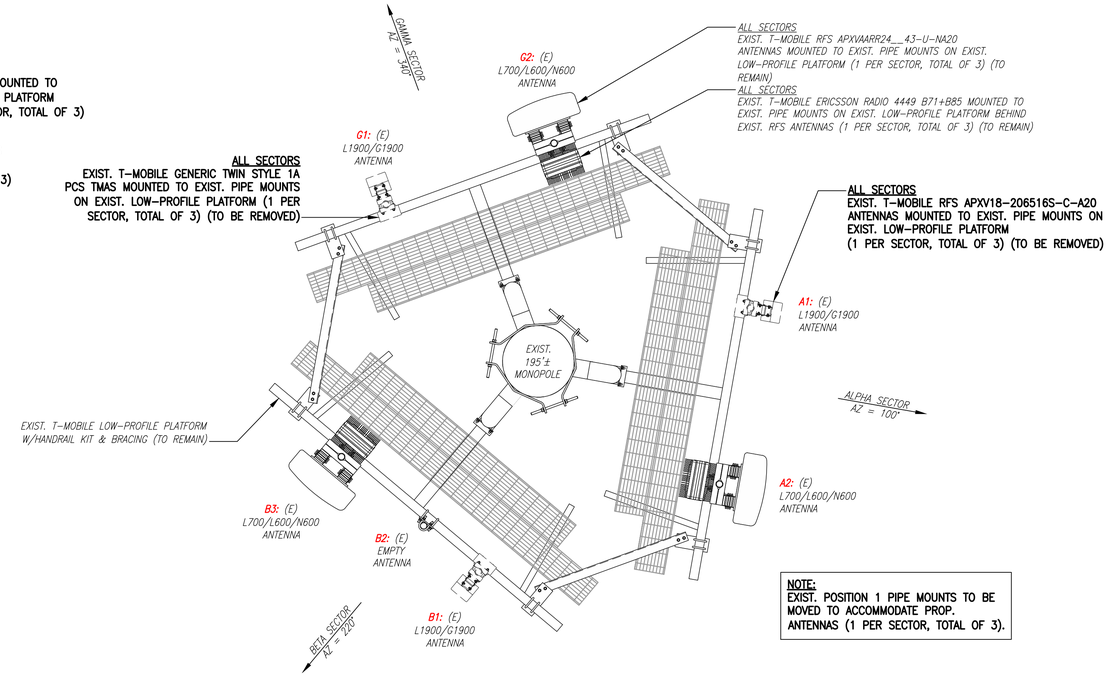
1815.348



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

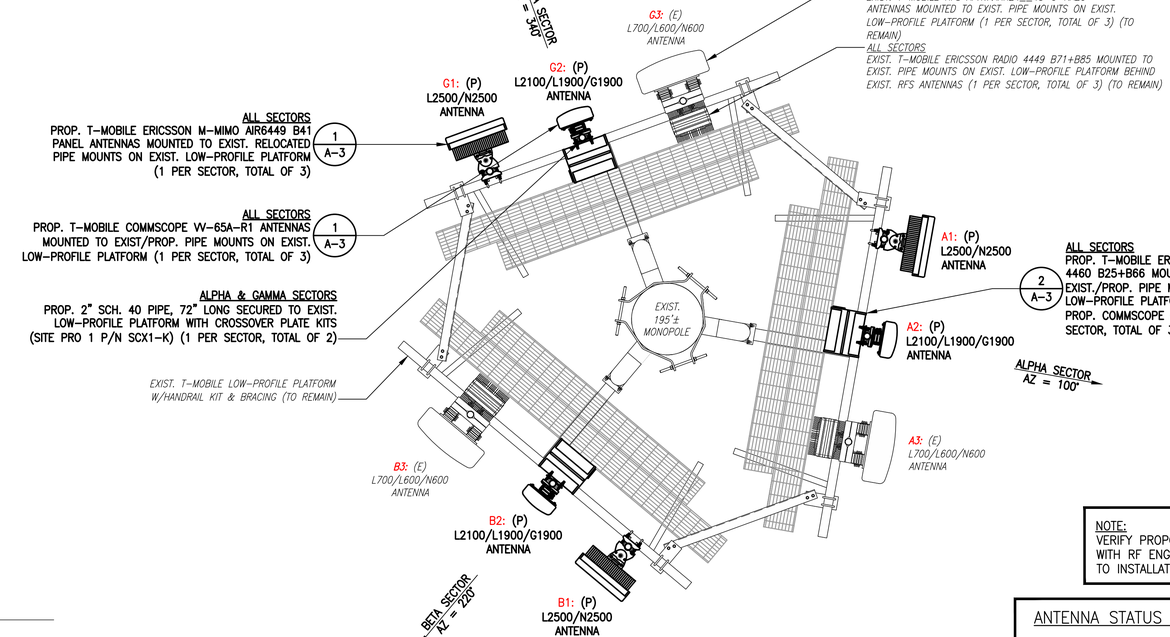
NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

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



NOTE:
EXIST. POSITION 1 PIPE MOUNTS TO BE MOVED TO ACCOMMODATE PROP. ANTENNAS (1 PER SECTOR, TOTAL OF 3).

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



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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

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

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

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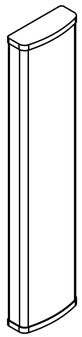
HARWINTON, CT 06791

SHEET TITLE
TOWER ELEVATION & ANTENNA PLANS

SHEET NUMBER
A-2

1815.348



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

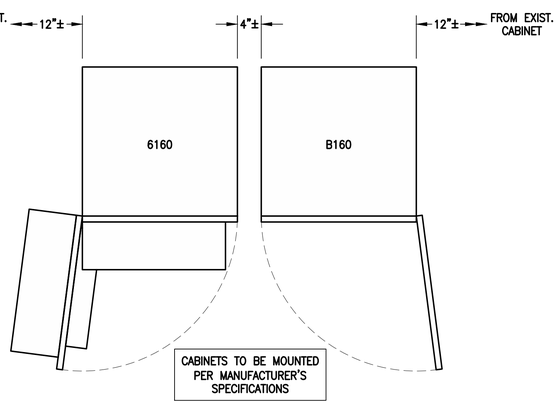
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

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

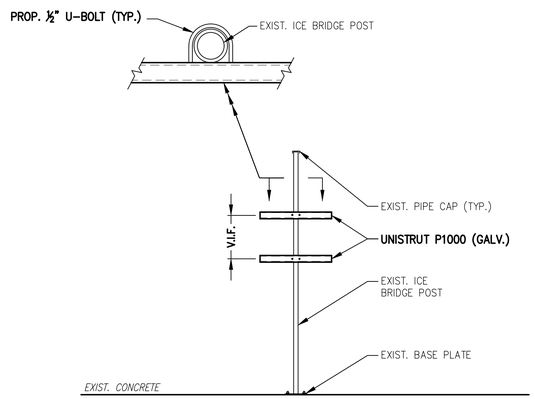
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

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

SLACKBOX – HOFFMAN 32FH91 NEMA 3R ENCLOSURE

DIMENSIONS: 24.0"H x 24.0"W x 12.0"D
QUANTITY: TOTAL OF 1

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



H-FRAME DETAIL (5 / A-3)
SCALE: N.T.S.

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(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
01/03/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/03/22	ISSUED FOR CONSTRUCTION	CMC
0	11/29/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11712A

SITE ADDRESS:
133 CLEARVIEW AVENUE
HARWINTON, CT 06791

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.348

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1	ERICSSON M-MIMO AIR6449 B41	192'± AGL	100°	0°	2°	L2500/N2500	–	EXIST. (1) 1-5/8" (6x12) HCS FIBER CABLE PROP. (2) 2" (6x24) HCS FIBER CABLES
	A2	COMMSCOPE VV-65A-R1	192'± AGL	100°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	A3	RFS APXVAARR24_43-U-NA20	192'± AGL	100°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
BETA	B1	ERICSSON M-MIMO AIR6449 B41	192'± AGL	220°	0°	2°	L2500/N2500	–	
	B2	COMMSCOPE VV-65A-R1	192'± AGL	220°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	B3	RFS APXVAARR24_43-U-NA20	192'± AGL	220°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	
GAMMA	G1	ERICSSON M-MIMO AIR6449 B41	192'± AGL	340°	0°	2°	L2500/N2500	–	
	G2	COMMSCOPE VV-65A-R1	192'± AGL	340°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	G3	RFS APXVAARR24_43-U-NA20	192'± AGL	340°	0°	2°	L700/L600/N600	ERICSSON RADIO 4449 B71+B85	

CABLE NOTE: EXISTING (9) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV4 – 10/06/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAX FOR GPS ANTENNA (1) 1-5/8" (6x12) HCS FIBER CABLE EXISTING TO BE REMOVED: (9) 1-5/8" COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (2) 2" (6x24) HCS FIBER CABLES	

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

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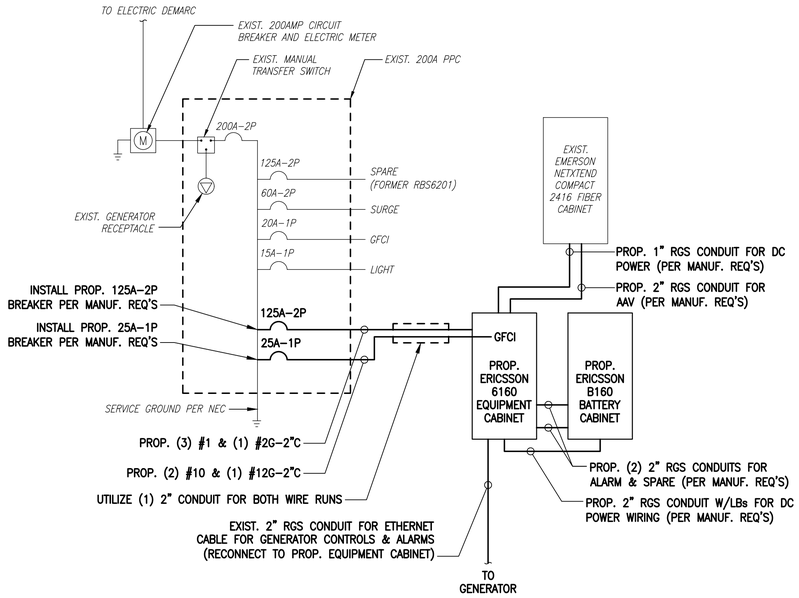
CT11712A

SITE ADDRESS:
133 CLEARVIEW AVENUE
HARWINTON, CT 06791

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

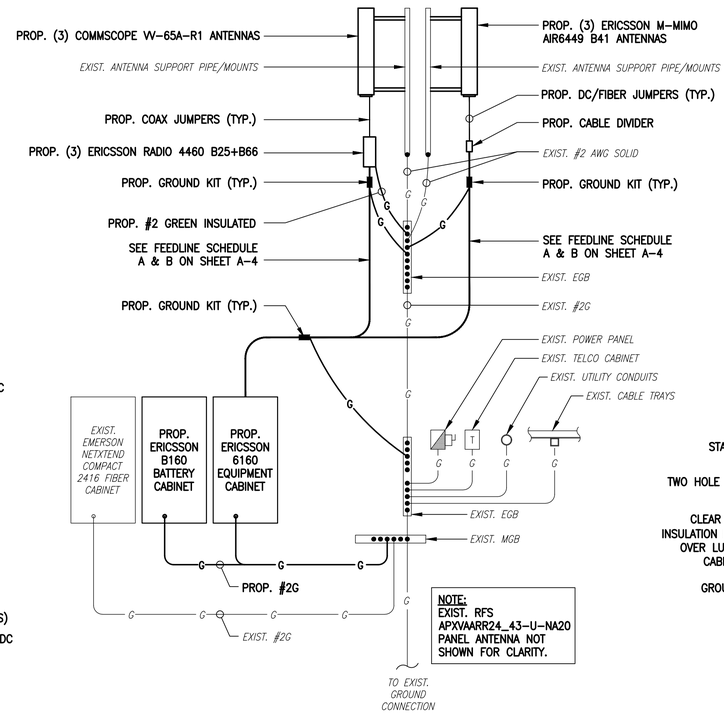
SHEET NUMBER
A-4

1815.348



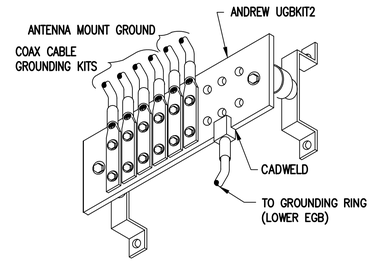
ONE LINE DIAGRAM

SCALE: NOT TO SCALE — 1 / E–1



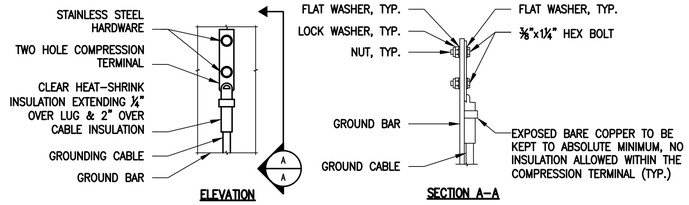
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE — 2 / E–1



GROUND BAR (EGB)

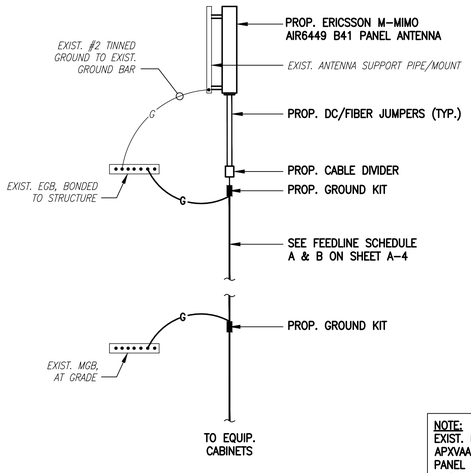
SCALE: NOT TO SCALE — 5 / E–1



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

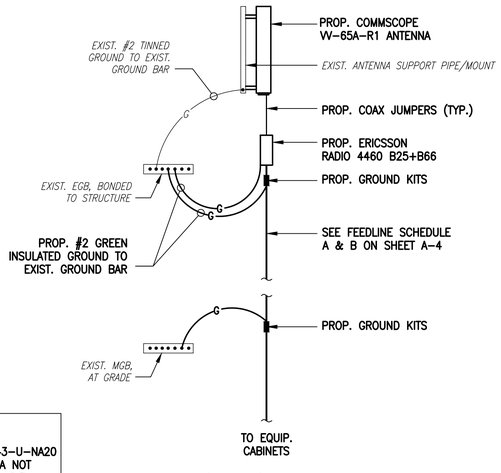
TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: NOT TO SCALE — 3 / E–1



L2500/N2500 ANTENNA

NOTE: EXIST. RFS APXVAARR24_43–U–NA20 PANEL ANTENNA NOT SHOWN FOR CLARITY.



L2100/L1900/G1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE — 4 / E–1

ELECTRICAL AND GROUNDING NOTES

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

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01/03/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/03/22	ISSUED FOR CONSTRUCTION	CMC
0	11/29/21	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11712A

SITE ADDRESS:
133 CLEARVIEW AVENUE
HARWINTON, CT 06791

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.348

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 195 ft Nudd Corporation Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT01944-S
Customer Site Name: Harwinton
Carrier Name: T-Mobile (App#: 179018-1)
Carrier Site ID / Name: CT11712A / Harwinton
Site Location: 133 Clearview Ave
Harwinton, Connecticut
Litchfield County
Latitude: 41.775522
Longitude: -73.098202

Analysis Result:

Max Structural Usage: 86.9% [Pass]
Max Foundation Usage: 25% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Suvash Chapain

Introduction

The purpose of this report is to summarize the analysis results on the 195 ft Nudd Corporation 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	Fred A. Nudd Corporation, Project # 7218-1 Dated 12/30/1999
Foundation Drawing	Fred A. Nudd Corporation, Project # 7218-1 Dated 12/30/1999
Geotechnical Report	Jaworski Geotech, Project # 99503G Dated 11/29/1999
Modification Drawings	Vertical Structures, TA2003007014-T1 Dated 09/09/2003
Mount Analysis	TES Project Number: 119399 dated November 17, 2021

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H**.** In accordance with this standard, the structure was analyzed using **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:	120.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Category:	2
Crest Height:	427 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.054

This structural analysis is based upon the tower being classified as a Risk Category 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	192.0	3	RFS - APXV18-206516S-C-A20 - Panel	Low Profile Platform MS-HRECP-35 (SUPPORT RAIL PIPE W/ END CONNECTION KIT) MS-KI22-5 (KICKER SUPPORT) + (Replace all mount pipes & add additional plan bracing)	(11) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
2		3	RFS APXVAARR24_43-U-NA20 Panels			
3		3	Ericsson KRY 112 489/2 TMAs			
4		3	Ericsson Radio 4449 B71+B12 RRU			
5		3	Kathrein 782 11056 BIAS-T			
6	183.0	6	JMA Wireless- MX06FRO660-03 - Panel	Low Profile Platform w/ VZWSMART- PLK3 (Support rail w/ end connection) VZWSMART-PLK5 (Kicker Kit) VZWSMART- PLK7 (Collar Mount)	(17) 1 5/8" Coax (1) 1 5/8" Hybrid	Verizon
7		3	Samsung - RFV01U-D1A - RRU			
8		3	Samsung - RFV01U-D2A - RRU			
9		1	RFS - DB-C1-12C-24AB-0Z - OVP			
10		3	Samsung - MT6407-77A - Panel			

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
1	192.0	3	Ericsson AIR6449 B41- Panel	Low Profile Platform MS-HRECP-35 (SUPPORT RAIL PIPE W/ END CONNECTION KIT) MS-KI22-5 (KICKER SUPPORT) + (Replace all mount pipes & add additional plan bracing)	(2) 1.9" Fiber (8) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
2		3	RFS APXVAARR24_43-U-NA20-Panel			
3		3	Commscope VV-65A-R1- Panel			
4		3	Ericsson KRY 112 489/2-TMA			
5		3	Ericsson 4449 B71 + B85-RRU			
6		3	Kathrein 782 11056-Bias-T			
7		3	Ericsson 4460 B25 + B66-RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flange Plate
Max. Usage:	**57.0%**	**49.2%**	**86.9%**	**77.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3412.2	26.1	54.4

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

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2497 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 56.97% at 0.0ft

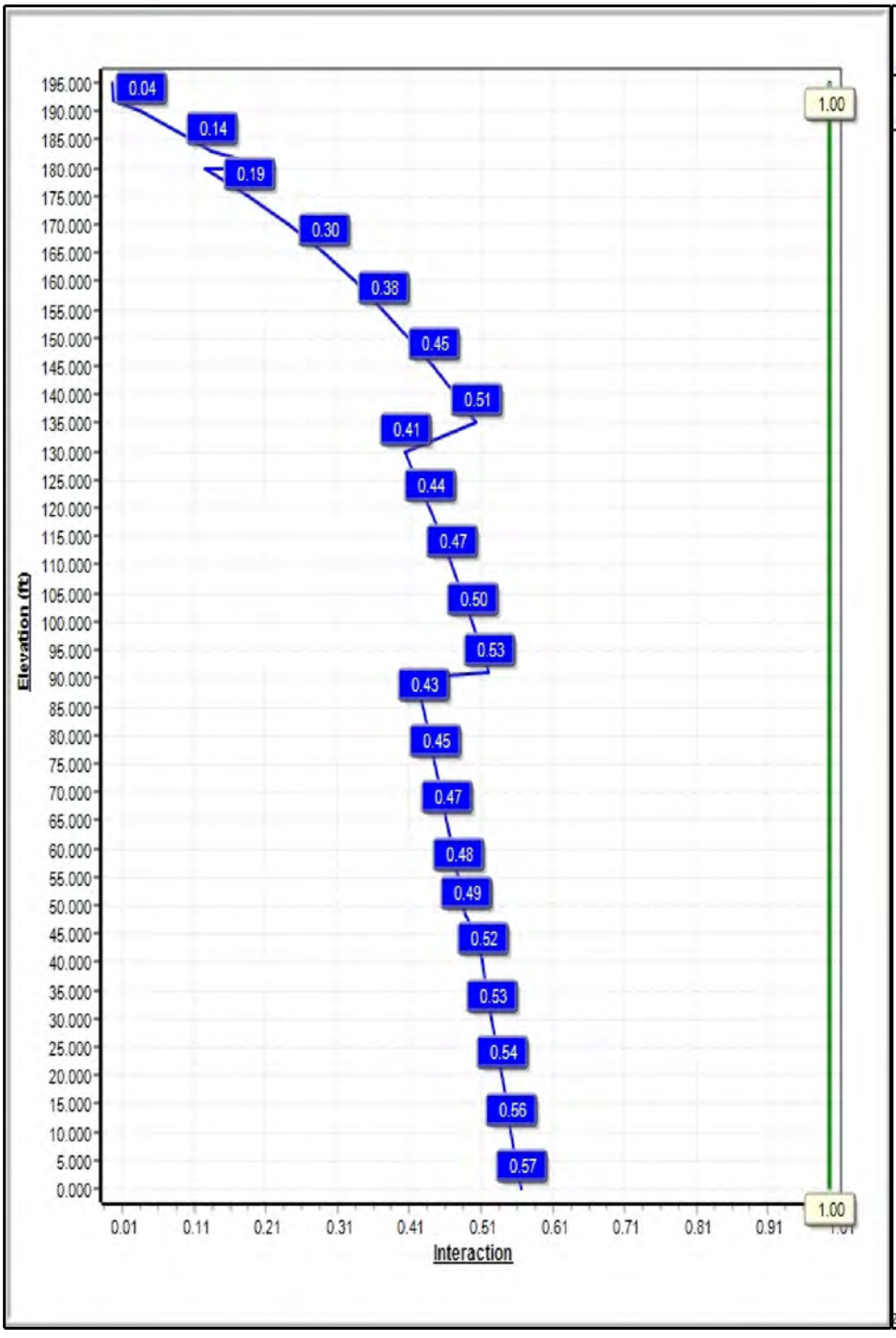
Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton	**Exposure:**	B	
Height:	195.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

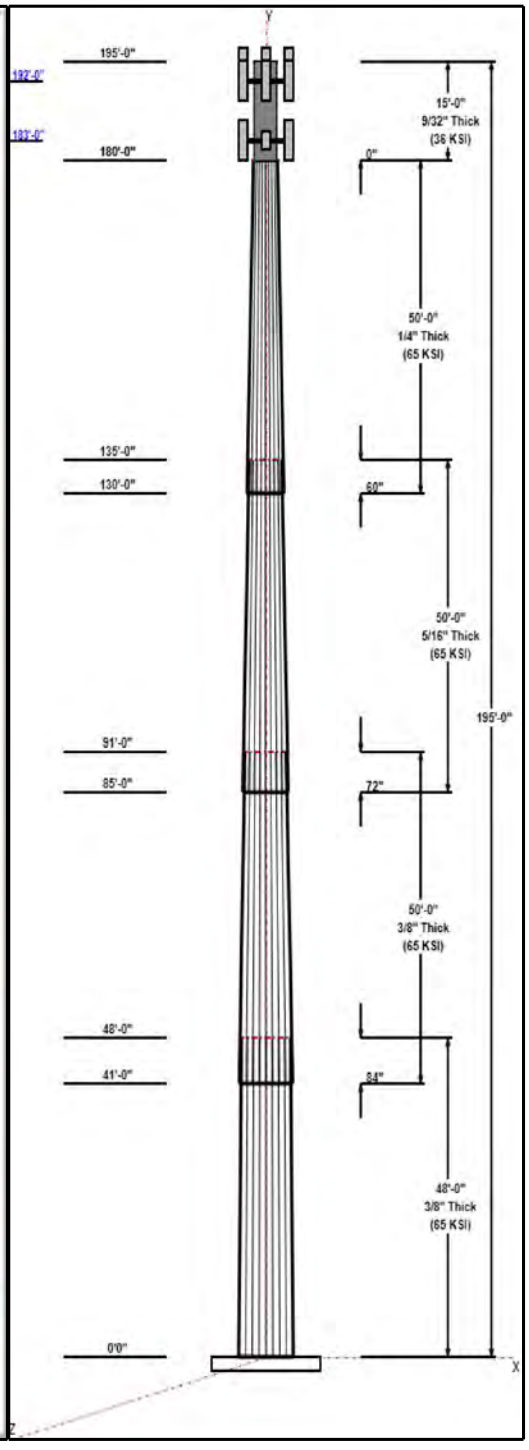
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.00

Load Case : 1.2D + 1.0W 120 mph Wind

Iterations: 27





Structure: CT01944-S-SBA

Type: Custom
Site Name: Harwinton
Height: 195.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23542

11/30/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	53.20	64.50	0.375		0.23542	65
2	50.00	43.83	55.60	0.375	Slip	0.23542	65
3	50.00	34.09	45.86	0.313	Slip	0.23542	65
4	50.00	24.00	35.77	0.250	Slip	0.23542	65
5	15.00	24.00	24.00	0.281	Butt	0.00000	36

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
195.00	195.00	1	6' Lightning rod	N/A
192.00	192.00	3	782 11056	T-Mobile
192.00	192.00	1	Low Profile Platform	T-Mobile
192.00	193.00	3	RFS	T-Mobile
192.00	193.00	3	KRY 112 489/2	T-Mobile
192.00	192.00	1	MS-KI22-5 (Kickers w/o	T-Mobile
192.00	192.00	1	MS-HRECP	T-Mobile
192.00	192.00	3	AIR6449 B41	T-Mobile
192.00	192.00	3	VV-65A-R1	T-Mobile
192.00	192.00	3	4449 B71 + B85	T-Mobile
192.00	192.00	3	4460 B25 + B66	T-Mobile
183.00	183.00	1	MS-H1436 (Heavy Collar	Verizon
183.00	183.00	1	Support Rail w/ end	Verizon
183.00	183.00	3	MT6407-77A	Verizon
183.00	183.00	1	Low Profile Platform	Verizon
183.00	183.00	6	MX06FRO660-03	Verizon
183.00	183.00	3	RFV01U-D1A	Verizon
183.00	183.00	3	RFV01U-D2A	Verizon
183.00	183.00	1	DB-C1-12C-24AB-0Z	Verizon
183.00	183.00	1	MS-KI22-5 (Kickers w/o	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	192.00	Inside	1 5/8" Fiber	T-Mobile
0.00	192.00	Inside	1 5/8" Coax	T-Mobile
0.00	192.00	Inside	1.9" Fiber	T-Mobile
0.00	183.00	Inside	1 5/8" Coax	Verizon
0.00	183.00	Inside	1 5/8" Hybrid	Verizon

Anchor Bolts

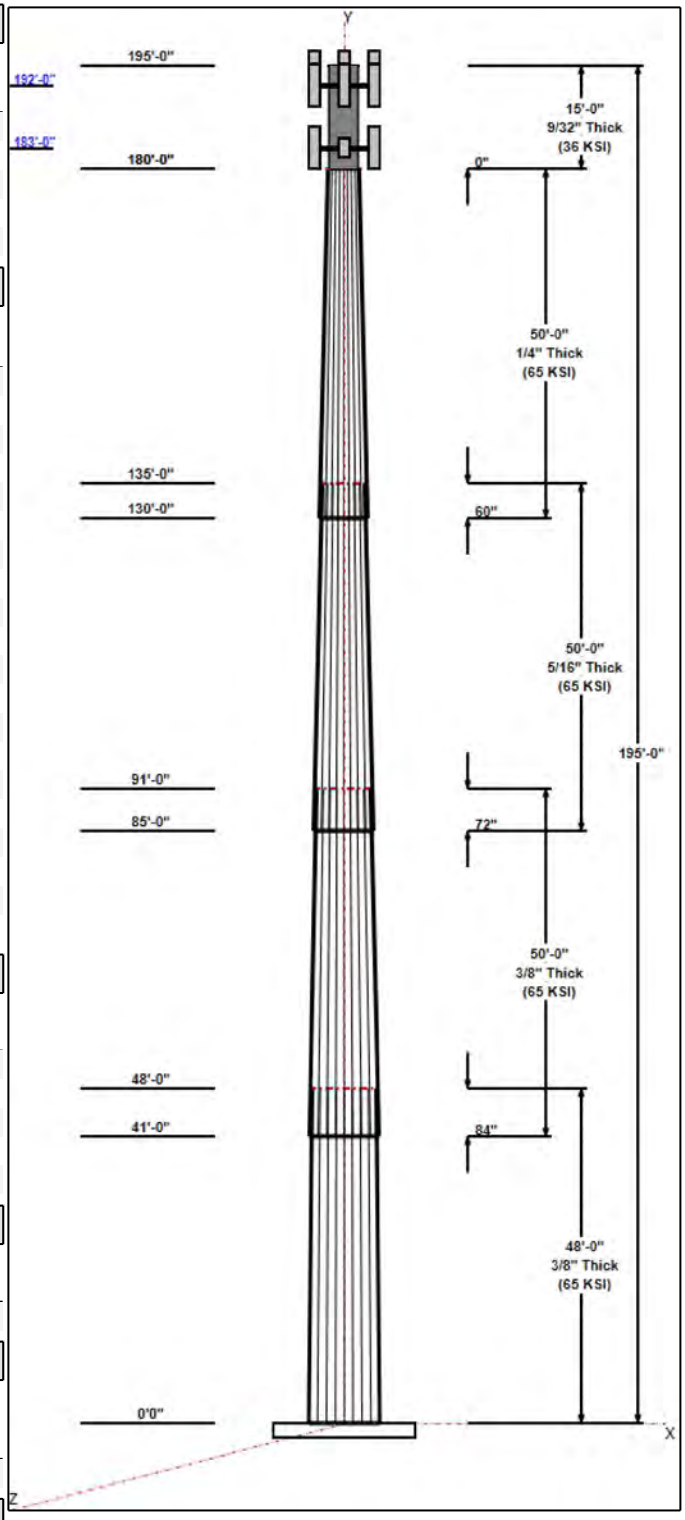
Qty	Specifications	Grade (ksi)	Arrangement
24	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	64.5	45.0	Polygon

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 120 mph Wind	3412.2	26.1	54.4
0.9D + 1.0W 120 mph Wind	3366.9	26.1	40.8

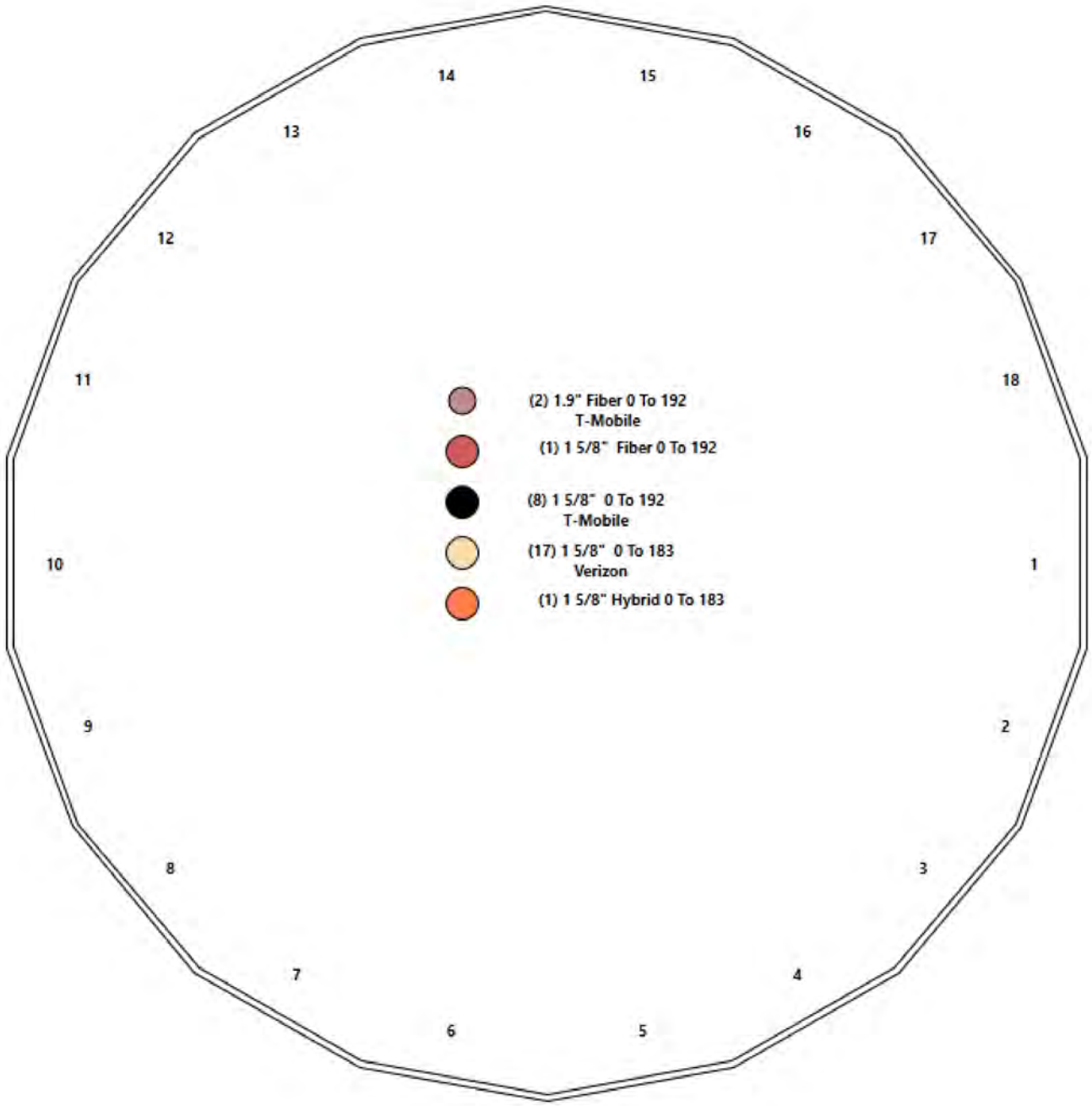


1.2D + 1.0Di + 1.0Wi 50 mph Wind	891.1	7.0	71.7
1.2D + 1.0Ev + 1.0Eh	128.4	0.7	56.2
0.9D + 1.0Ev + 1.0Eh	127.1	0.7	42.5
1.0D + 1.0W 60 mph Wind	757.2	5.8	45.4

Structure: CT01944-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Harwinton
Height: 195.00 (ft)

11/30/2021



Shaft Properties

Structure:	CT01944-S-SBA		**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	427.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3750	65		0.00	11,368
2	18	50.000	0.3750	65	Slip	84.00	9,991
3	18	50.000	0.3125	65	Slip	72.00	6,694
4	18	50.000	0.2500	65	Slip	60.00	4,001
5	R	15.000	0.2810	36	Flange	0.00	1,069
					Total Shaft Weight:		**33,122**

	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	64.50	0.00	76.32	39651.33	28.92	172.00	53.20	48.00	62.87	22166.3	23.60	141.8	0.235417
2	55.60	41.00	65.73	25324.08	24.73	148.26	43.83	91.00	51.72	12336.9	19.20	116.8	0.235417
3	45.86	85.00	45.18	11844.57	24.47	146.77	34.09	135.00	33.51	4830.83	17.83	109.1	0.235417
4	35.77	130.0	28.18	4492.97	23.82	143.08	24.00	180.00	18.84	1343.00	15.52	96.00	0.235417
5	24.00	180.0	20.94	1473.63	0.00	85.41	24.00	195.00	20.94	1473.63	0.00	85.41	0.000000

Load Summary

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 6	

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)
1	195.00	6' Lightning rod	1	6.50	0.38	1.00	31.34	1.124	1.00	0.00	0.00
2	192.00	782 11056	3	1.80	0.28	0.87	3.99	0.554	0.50	0.00	0.00
3	192.00	Low Profile Platform	1	1500.00	22.00	1.00	2394.42	34.069	1.00	0.00	0.00
4	192.00	RFS APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	402.17	21.523	0.50	0.00	1.00
5	192.00	KRY 112 489/2	3	13.20	0.68	1.00	25.74	1.122	0.50	0.00	1.00
6	192.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	285.29	9.144	1.00	0.00	0.00
7	192.00	MS-HRECP	1	514.00	12.25	1.00	930.82	20.431	1.00	0.00	0.00
8	192.00	AIR6449 B41	3	103.00	5.65	0.71	196.70	6.300	0.72	0.00	0.00
9	192.00	VV-65A-R1	3	29.50	7.90	0.74	140.43	8.756	0.76	0.00	0.00
10	192.00	4449 B71 + B85	3	73.20	1.97	0.67	112.66	2.359	0.67	0.00	0.00
11	192.00	4460 B25 + B66	3	109.00	2.85	0.67	158.14	3.311	0.67	0.00	0.00
12	183.00	MS-H1436 (Heavy Collar Mount)	1	136.70	2.25	1.00	266.49	3.852	1.00	0.00	0.00
13	183.00	Support Rail w/ end Connection	1	514.00	12.25	1.00	928.83	20.392	1.00	0.00	0.00
14	183.00	MT6407-77A	3	79.40	4.69	0.70	155.32	5.327	0.50	0.00	0.00
15	183.00	Low Profile Platform	1	1500.00	22.00	1.00	2390.13	34.011	1.00	0.00	0.00
16	183.00	MX06FRO660-03	6	46.00	9.87	0.87	220.05	10.789	0.50	0.00	0.00
17	183.00	RFV01U-D1A	3	84.40	1.88	0.67	119.26	2.255	0.67	0.00	0.00
18	183.00	RFV01U-D2A	3	70.30	1.88	0.67	103.37	2.255	0.67	0.00	0.00
19	183.00	DB-C1-12C-24AB-0Z	1	32.00	4.06	0.90	109.48	4.619	0.50	0.00	0.00
20	183.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	284.62	9.126	1.00	0.00	0.00
		Totals:	**45**	**6,846.60**			**13,195.03**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	192.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	192.00	(8) 1 5/8" Coax	0.00	Inside
0.00	192.00	(2) 1.9" Fiber	0.00	Inside
0.00	183.00	(17) 1 5/8" Coax	0.00	Inside
0.00	183.00	(1) 1 5/8" Hybrid	0.00	Inside

Shaft Section Properties

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	64.500	76.322	39651.3	28.92	172.00	67.4	1210.	0.0
5.00		0.3750	63.323	74.921	37507.6	28.36	168.86	68.0	1166.	1286.6
10.00		0.3750	62.146	73.520	35442.6	27.81	165.72	68.7	1123.	1262.8
15.00		0.3750	60.969	72.119	33454.9	27.26	162.58	69.3	1080.	1238.9
20.00		0.3750	59.792	70.718	31542.8	26.70	159.44	70.0	1039.	1215.1
25.00		0.3750	58.615	69.317	29705.1	26.15	156.31	70.6	998.2	1191.3
30.00		0.3750	57.437	67.916	27940.1	25.60	153.17	71.3	958.1	1167.4
35.00		0.3750	56.260	66.515	26246.5	25.04	150.03	71.9	918.9	1143.6
40.00		0.3750	55.083	65.114	24622.7	24.49	146.89	72.6	880.4	1119.8
41.00	Bot - Section 2	0.3750	54.848	64.834	24306.2	24.38	146.26	72.7	872.8	221.1
45.00		0.3750	53.906	63.713	23067.4	23.94	143.75	73.2	842.8	1761.8
48.00	Top - Section 1	0.3750	53.950	63.765	23124.0	23.96	143.87	0.0	0.0	1301.3
50.00		0.3750	53.479	63.205	22519.6	23.74	142.61	73.5	829.4	432.1
55.00		0.3750	52.302	61.804	21055.1	23.18	139.47	74.1	792.9	1063.4
60.00		0.3750	51.125	60.403	19655.5	22.63	136.33	74.8	757.2	1039.6
65.00		0.3750	49.948	59.002	18319.3	22.08	133.19	75.4	722.4	1015.8
70.00		0.3750	48.771	57.601	17045.1	21.52	130.06	76.1	688.4	991.9
75.00		0.3750	47.594	56.200	15831.4	20.97	126.92	76.7	655.2	968.1
80.00		0.3750	46.417	54.799	14676.7	20.41	123.78	77.4	622.8	944.3
85.00	Bot - Section 3	0.3750	45.240	53.398	13579.6	19.86	120.64	78.0	591.2	920.4
90.00		0.3750	44.062	51.997	12538.5	19.31	117.50	78.7	560.5	1655.4
91.00	Top - Section 2	0.3125	44.452	43.779	10776.5	23.67	142.25	0.0	0.0	325.8
95.00		0.3125	43.510	42.845	10101.4	23.14	139.23	74.2	457.3	589.5
100.00		0.3125	42.333	41.678	9298.0	22.48	135.47	75.0	432.6	719.0
105.00		0.3125	41.156	40.510	8538.3	21.81	131.70	75.7	408.6	699.2
110.00		0.3125	39.979	39.343	7821.2	21.15	127.93	76.5	385.3	679.3
115.00		0.3125	38.802	38.175	7145.4	20.48	124.17	77.3	362.7	659.4
120.00		0.3125	37.625	37.008	6509.6	19.82	120.40	78.1	340.8	639.6
125.00		0.3125	36.448	35.841	5912.8	19.15	116.63	78.9	319.5	619.7
130.00	Bot - Section 4	0.3125	35.271	34.673	5353.6	18.49	112.87	79.7	299.0	599.9
135.00	Top - Section 3	0.2500	34.594	27.251	4060.9	22.99	138.37	0.0	0.0	1051.6
140.00		0.2500	33.417	26.317	3657.5	22.16	133.67	75.3	215.6	455.7
145.00		0.2500	32.240	25.383	3281.8	21.33	128.96	76.3	200.5	439.8
150.00		0.2500	31.062	24.449	2932.7	20.50	124.25	77.3	186.0	423.9
155.00		0.2500	29.885	23.515	2609.3	19.67	119.54	78.3	172.0	408.0
160.00		0.2500	28.708	22.581	2310.5	18.84	114.83	79.2	158.5	392.1
165.00		0.2500	27.531	21.647	2035.5	18.01	110.12	80.2	145.6	376.2
170.00		0.2500	26.354	20.713	1783.3	17.18	105.42	81.2	133.3	360.4
175.00		0.2500	25.177	19.779	1552.7	16.35	100.71	82.2	121.5	344.5
180.00	Top - Section 4	0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	328.6
180.00	Bot - Section 5	0.2810	24.000	20.939	1473.6	13.80	85.41	36.0	122.8	
183.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	213.8
185.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
190.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	356.3
192.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
195.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	213.8
										33121.7

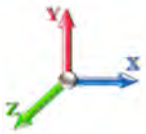
Wind Loading - Shaft

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

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	0.70	23.657	26.02	538.30	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	23.657	26.02	528.48	0.730	0.000	5.00	27.041	19.74	513.7	0.0	1543.9
10.00		1.00	0.70	23.657	26.02	518.66	0.730	0.000	5.00	26.543	19.38	504.2	0.0	1515.3
15.00		1.00	0.70	23.657	26.02	508.83	0.730	0.000	5.00	26.045	19.01	494.8	0.0	1486.7
20.00		1.00	0.70	23.657	26.02	499.01	0.730	0.000	5.00	25.547	18.65	485.3	0.0	1458.1
25.00		1.00	0.70	23.657	26.02	489.18	0.730	0.000	5.00	25.049	18.29	475.8	0.0	1429.5
30.00		1.00	0.70	23.677	26.04	479.56	0.730	0.000	5.00	24.550	17.92	466.8	0.0	1400.9
35.00		1.00	0.73	24.743	27.22	480.19	0.730	0.000	5.00	24.052	17.56	477.9	0.0	1372.3
40.00		1.00	0.76	25.705	28.28	479.20	0.730	0.000	5.00	23.554	17.19	486.2	0.0	1343.7
41.00	Bot - Section 2	1.00	0.77	25.887	28.48	478.84	0.730	0.000	1.00	4.651	3.40	96.7	0.0	265.3
45.00		1.00	0.79	26.585	29.24	476.92	0.730	0.000	4.00	18.659	13.62	398.3	0.0	2114.2
48.00	Top - Section 1	1.00	0.80	27.080	29.79	475.03	0.730	0.000	3.00	13.785	10.06	299.8	0.0	1561.6
50.00		1.00	0.81	27.398	30.14	480.32	0.730	0.000	2.00	9.091	6.64	200.0	0.0	518.5
55.00		1.00	0.83	28.154	30.97	476.18	0.730	0.000	5.00	22.378	16.34	505.9	0.0	1276.1
60.00		1.00	0.85	28.863	31.75	471.29	0.730	0.000	5.00	21.880	15.97	507.1	0.0	1247.5
65.00		1.00	0.87	29.530	32.48	465.73	0.730	0.000	5.00	21.382	15.61	507.0	0.0	1218.9
70.00		1.00	0.89	30.162	33.18	459.60	0.730	0.000	5.00	20.884	15.25	505.8	0.0	1190.3
75.00		1.00	0.91	30.763	33.84	452.95	0.730	0.000	5.00	20.386	14.88	503.6	0.0	1161.7
80.00		1.00	0.93	31.335	34.47	445.84	0.730	0.000	5.00	19.888	14.52	500.4	0.0	1133.1
85.00	Bot - Section 3	1.00	0.94	31.883	35.07	438.31	0.730	0.000	5.00	19.390	14.15	496.4	0.0	1104.5
90.00		1.00	0.96	32.408	35.65	430.41	0.730	0.000	5.00	19.156	13.98	498.5	0.0	1986.4
91.00	Top - Section 2	1.00	0.96	32.510	35.76	428.78	0.730	0.000	1.00	3.771	2.75	98.5	0.0	391.0
95.00		1.00	0.97	32.912	36.20	428.31	0.730	0.000	4.00	14.887	10.87	393.4	0.0	707.4
100.00		1.00	0.99	33.398	36.74	419.79	0.730	0.000	5.00	18.160	13.26	487.0	0.0	862.8
105.00		1.00	1.00	33.867	37.25	410.97	0.730	0.000	5.00	17.662	12.89	480.3	0.0	839.0
110.00		1.00	1.02	34.320	37.75	401.88	0.730	0.000	5.00	17.164	12.53	473.0	0.0	815.2
115.00		1.00	1.03	34.759	38.23	392.53	0.730	0.000	5.00	16.666	12.17	465.2	0.0	791.3
120.00		1.00	1.04	35.184	38.70	382.94	0.730	0.000	5.00	16.168	11.80	456.8	0.0	767.5
125.00		1.00	1.05	35.597	39.16	373.13	0.730	0.000	5.00	15.670	11.44	447.9	0.0	743.7
130.00	Bot - Section 4	1.00	1.07	35.998	39.60	363.11	0.730	0.000	5.00	15.172	11.08	438.6	0.0	719.8
135.00	Top - Section 3	1.00	1.08	36.388	40.03	352.89	0.730	0.000	5.00	14.885	10.87	434.9	0.0	1261.9
140.00		1.00	1.09	36.768	40.45	347.68	0.730	0.000	5.00	14.387	10.50	424.8	0.0	546.8
145.00		1.00	1.10	37.139	40.85	337.12	0.730	0.000	5.00	13.889	10.14	414.2	0.0	527.8
150.00		1.00	1.11	37.500	41.25	326.39	0.730	0.000	5.00	13.391	9.78	403.3	0.0	508.7
155.00		1.00	1.12	37.853	41.64	315.50	0.730	0.000	5.00	12.893	9.41	391.9	0.0	489.6
160.00		1.00	1.13	38.198	42.02	304.45	0.730	0.000	5.00	12.395	9.05	380.2	0.0	470.6
165.00		1.00	1.14	38.536	42.39	293.25	0.730	0.000	5.00	11.897	8.69	368.2	0.0	451.5
170.00		1.00	1.15	38.866	42.75	281.91	0.730	0.000	5.00	11.399	8.32	355.8	0.0	432.4
175.00		1.00	1.16	39.189	43.11	270.44	0.730	0.000	5.00	10.901	7.96	343.0	0.0	413.4
180.00	Top - Section 4	1.00	1.17	39.506	43.46	258.84	0.730	0.000	5.00	10.403	7.59	330.0	0.0	394.3
183.00	Appurtenance(s)	1.00	1.17	39.693	43.66	255.51	0.600	0.000	3.00	6.000	3.60	157.2	0.0	256.5
185.00		1.00	1.18	39.816	43.80	255.90	0.600	0.000	2.00	4.000	2.40	105.1	0.0	171.0
190.00		1.00	1.19	40.121	44.13	256.88	0.600	0.000	5.00	10.000	6.00	264.8	0.0	427.5
192.00	Appurtenance(s)	1.00	1.19	40.241	44.26	257.27	0.600	0.000	2.00	4.000	2.40	106.2	0.0	171.0
195.00	Appurtenance(s)	1.00	1.20	40.419	44.46	257.84	0.600	0.000	3.00	6.000	3.60	160.1	0.0	256.5
								Totals:	**195.00**			**17,304.6**		**39,746.1**

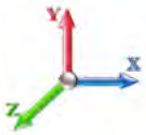
Discrete Appurtenance Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

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	195.00	6' Lightning rod	1	40.419	44.461	1.00	1.00	0.38	7.80	0.000	0.000	16.90	0.00	0.00
2	192.00	Low Profile Platform	1	40.241	44.265	1.00	1.00	22.00	1800.00	0.000	0.000	973.83	0.00	0.00
3	192.00	4460 B25 + B66	3	40.241	44.265	0.50	0.75	4.30	392.40	0.000	0.000	190.18	0.00	0.00
4	192.00	4449 B71 + B85	3	40.241	44.265	0.50	0.75	2.97	263.52	0.000	0.000	131.46	0.00	0.00
5	192.00	VV-65A-R1	3	40.241	44.265	0.55	0.75	13.15	106.20	0.000	0.000	582.24	0.00	0.00
6	192.00	AIR6449 B41	3	40.241	44.265	0.53	0.75	9.03	370.80	0.000	0.000	399.53	0.00	0.00
7	192.00	MS-HRECP	1	40.241	44.265	1.00	1.00	12.25	616.80	0.000	0.000	542.24	0.00	0.00
8	192.00	MS-KI22-5 (Kickers w/o	1	40.241	44.265	1.00	1.00	5.33	175.20	0.000	0.000	235.93	0.00	0.00
9	192.00	KRY 112 489/2	3	40.301	44.331	0.75	0.75	1.53	47.52	0.000	1.000	67.83	0.00	67.83
10	192.00	RFS	3	40.301	44.331	0.52	0.75	31.88	460.80	0.000	1.000	1413.17	0.00	1413.17
11	192.00	782 11056	3	40.241	44.265	0.65	0.75	0.55	6.48	0.000	0.000	24.26	0.00	0.00
12	183.00	MS-KI22-5 (Kickers w/o	1	39.693	43.662	1.00	1.00	5.33	175.20	0.000	0.000	232.72	0.00	0.00
13	183.00	DB-C1-12C-24AB-0Z	1	39.693	43.662	0.68	0.75	2.74	38.40	0.000	0.000	119.66	0.00	0.00
14	183.00	RFV01U-D2A	3	39.693	43.662	0.50	0.75	2.83	253.08	0.000	0.000	123.74	0.00	0.00
15	183.00	RFV01U-D1A	3	39.693	43.662	0.50	0.75	2.83	303.84	0.000	0.000	123.74	0.00	0.00
16	183.00	MX06FRO660-03	6	39.693	43.662	0.65	0.75	38.64	331.20	0.000	0.000	1687.14	0.00	0.00
17	183.00	Low Profile Platform	1	39.693	43.662	1.00	1.00	22.00	1800.00	0.000	0.000	960.56	0.00	0.00
18	183.00	MT6407-77A	3	39.693	43.662	0.52	0.75	7.39	285.84	0.000	0.000	322.52	0.00	0.00
19	183.00	Support Rail w/ end	1	39.693	43.662	1.00	1.00	12.25	616.80	0.000	0.000	534.86	0.00	0.00
20	183.00	MS-H1436 (Heavy Collar	1	39.693	43.662	1.00	1.00	2.25	164.04	0.000	0.000	98.24	0.00	0.00
							Totals:		**8,215.92**			**8,780.72**		

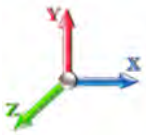
Total Applied Force Summary

Structure:	CT01944-S-SBA		**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	427.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 10

Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

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		513.68	1718.78	0.00	0.00
10.00		504.22	1690.18	0.00	0.00
15.00		494.76	1661.57	0.00	0.00
20.00		485.30	1632.97	0.00	0.00
25.00		475.84	1604.37	0.00	0.00
30.00		466.77	1575.76	0.00	0.00
35.00		477.89	1547.16	0.00	0.00
40.00		486.20	1518.56	0.00	0.00
41.00		96.69	300.28	0.00	0.00
45.00		398.33	2254.06	0.00	0.00
48.00		299.76	1666.52	0.00	0.00
50.00		200.00	588.40	0.00	0.00
55.00		505.91	1450.97	0.00	0.00
60.00		507.10	1422.37	0.00	0.00
65.00		507.02	1393.77	0.00	0.00
70.00		505.81	1365.16	0.00	0.00
75.00		503.58	1336.56	0.00	0.00
80.00		500.42	1307.96	0.00	0.00
85.00		496.41	1279.35	0.00	0.00
90.00		498.51	2161.26	0.00	0.00
91.00		98.46	425.96	0.00	0.00
95.00		393.43	847.31	0.00	0.00
100.00		487.03	1037.68	0.00	0.00
105.00		480.32	1013.85	0.00	0.00
110.00		473.02	990.01	0.00	0.00
115.00		465.17	966.17	0.00	0.00
120.00		456.79	942.34	0.00	0.00
125.00		447.91	918.50	0.00	0.00
130.00		438.56	894.67	0.00	0.00
135.00		434.95	1436.73	0.00	0.00
140.00		424.79	721.68	0.00	0.00
145.00		414.22	702.61	0.00	0.00
150.00		403.25	683.54	0.00	0.00
155.00		391.91	664.47	0.00	0.00
160.00		380.20	645.40	0.00	0.00
165.00		368.15	626.33	0.00	0.00
170.00		355.76	607.26	0.00	0.00
175.00		343.05	588.19	0.00	0.00
180.00		330.02	569.13	0.00	0.00
183.00	(20) attachments	4360.35	4329.80	0.00	0.00
185.00		105.11	195.86	0.00	0.00
190.00		264.80	489.66	0.00	0.00
192.00	(24) attachments	4666.89	4435.58	0.00	1481.00
195.00	(1) attachments	176.96	264.30	0.00	0.00
	Totals:	**26,085.31**	**54,473.05**	**0.00**	**1,481.00**

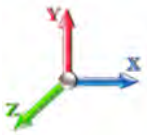
Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

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	-54.44	-26.14	0.00	-3412.2	0.00	3412.21	4628.91	1339.45	7126.38	6119.66	0.00	0.000	0.000	0.570
5.00	-52.67	-25.74	0.00	-3281.4	0.00	3281.49	4587.84	1314.86	6867.16	5953.37	0.06	-0.120	0.000	0.563
10.00	-50.93	-25.34	0.00	-3152.8	0.00	3152.80	4545.12	1290.28	6612.74	5787.00	0.26	-0.242	0.000	0.556
15.00	-49.22	-24.94	0.00	-3026.1	0.00	3026.11	4500.76	1265.69	6363.12	5620.67	0.58	-0.366	0.000	0.550
20.00	-47.53	-24.55	0.00	-2901.4	0.00	2901.40	4454.76	1241.10	6118.30	5454.49	1.03	-0.492	0.000	0.543
25.00	-45.88	-24.16	0.00	-2778.6	0.00	2778.64	4407.12	1216.52	5878.29	5288.58	1.61	-0.620	0.000	0.536
30.00	-44.25	-23.78	0.00	-2657.8	0.00	2657.83	4357.84	1191.93	5643.07	5123.07	2.33	-0.750	0.000	0.529
35.00	-42.66	-23.38	0.00	-2538.9	0.00	2538.94	4306.92	1167.34	5412.67	4958.08	3.19	-0.883	0.000	0.522
40.00	-41.12	-22.92	0.00	-2422.0	0.00	2422.05	4254.35	1142.76	5187.06	4793.73	4.19	-1.017	0.000	0.515
41.00	-40.79	-22.87	0.00	-2399.1	0.00	2399.13	4243.64	1137.84	5142.51	4760.94	4.40	-1.045	0.000	0.514
45.00	-38.51	-22.50	0.00	-2307.6	0.00	2307.64	4200.14	1118.17	4966.25	4630.13	5.32	-1.155	0.000	0.508
48.00	-36.82	-22.21	0.00	-2240.1	0.00	2240.15	4202.19	1119.08	4974.38	4636.19	6.08	-1.239	0.000	0.492
50.00	-36.20	-22.05	0.00	-2195.7	0.00	2195.74	4180.07	1109.25	4887.33	4570.98	6.61	-1.296	0.000	0.489
55.00	-34.71	-21.60	0.00	-2085.4	0.00	2085.47	4123.62	1084.66	4673.07	4408.60	8.04	-1.431	0.000	0.482
60.00	-33.25	-21.13	0.00	-1977.4	0.00	1977.49	4065.54	1060.07	4463.61	4247.27	9.61	-1.569	0.000	0.474
65.00	-31.82	-20.66	0.00	-1871.8	0.00	1871.83	4005.81	1035.49	4258.96	4087.10	11.33	-1.708	0.000	0.466
70.00	-30.42	-20.19	0.00	-1768.5	0.00	1768.51	3944.44	1010.90	4059.10	3928.21	13.19	-1.849	0.000	0.458
75.00	-29.05	-19.72	0.00	-1667.5	0.00	1667.55	3881.43	986.31	3864.05	3770.72	15.21	-1.993	0.000	0.450
80.00	-27.72	-19.24	0.00	-1568.9	0.00	1568.97	3816.78	961.72	3673.81	3614.75	17.37	-2.138	0.000	0.442
85.00	-26.41	-18.76	0.00	-1472.7	0.00	1472.77	3750.48	937.14	3488.36	3460.42	19.69	-2.285	0.000	0.433
90.00	-24.24	-18.21	0.00	-1378.9	0.00	1378.95	3682.55	912.55	3307.72	3307.86	22.16	-2.435	0.000	0.424
91.00	-23.79	-18.13	0.00	-1360.7	0.00	1360.74	2898.33	768.33	2813.78	2634.30	22.68	-2.466	0.000	0.525
95.00	-22.92	-17.76	0.00	-1288.2	0.00	1288.22	2860.60	751.94	2695.00	2544.15	24.79	-2.588	0.000	0.515
100.00	-21.85	-17.29	0.00	-1199.4	0.00	1199.42	2811.95	731.45	2550.13	2432.25	27.60	-2.763	0.000	0.501
105.00	-20.81	-16.83	0.00	-1112.9	0.00	1112.97	2761.66	710.96	2409.26	2321.34	30.59	-2.940	0.000	0.488
110.00	-19.80	-16.36	0.00	-1028.8	0.00	1028.84	2709.73	690.47	2272.40	2211.55	33.76	-3.119	0.000	0.473
115.00	-18.81	-15.90	0.00	-947.02	0.00	947.02	2656.16	669.98	2139.54	2103.00	37.12	-3.298	0.000	0.458
120.00	-17.85	-15.45	0.00	-867.51	0.00	867.51	2600.95	649.49	2010.67	1995.80	40.67	-3.479	0.000	0.442
125.00	-16.91	-15.00	0.00	-790.27	0.00	790.27	2544.10	629.00	1885.82	1890.08	44.41	-3.660	0.000	0.425
130.00	-16.00	-14.55	0.00	-715.28	0.00	715.28	2485.60	608.51	1764.96	1785.96	48.34	-3.841	0.000	0.408
135.00	-14.55	-14.07	0.00	-642.52	0.00	642.52	1823.78	478.25	1362.76	1289.51	52.45	-4.022	0.000	0.507
140.00	-13.82	-13.64	0.00	-572.19	0.00	572.19	1784.40	461.86	1270.94	1218.11	56.76	-4.200	0.000	0.478
145.00	-13.10	-13.22	0.00	-504.01	0.00	504.01	1743.38	445.47	1182.33	1147.55	61.27	-4.410	0.000	0.448
150.00	-12.40	-12.81	0.00	-437.91	0.00	437.91	1700.71	429.08	1096.92	1077.96	65.99	-4.614	0.000	0.414
155.00	-11.73	-12.40	0.00	-373.88	0.00	373.88	1656.41	412.69	1014.72	1009.45	70.92	-4.811	0.000	0.378
160.00	-11.09	-12.00	0.00	-311.88	0.00	311.88	1610.46	396.29	935.71	942.14	76.06	-4.998	0.000	0.339
165.00	-10.46	-11.61	0.00	-251.87	0.00	251.87	1562.88	379.90	859.91	876.15	81.38	-5.171	0.000	0.295
170.00	-9.86	-11.22	0.00	-193.83	0.00	193.83	1513.65	363.51	787.30	811.61	86.88	-5.327	0.000	0.246
175.00	-9.28	-10.85	0.00	-137.71	0.00	137.71	1462.77	347.12	717.90	748.63	92.52	-5.459	0.000	0.191
180.00	-8.74	-10.47	0.00	-83.47	0.00	83.47	1400.09	330.73	651.70	682.38	98.29	-5.560	0.000	0.130
180.00	-8.74	-10.47	0.00	-83.47	0.00	83.47	678.42	203.53	25205.7	396.30	98.29	-5.560	0.000	0.226
183.00	-4.85	-5.72	0.00	-52.05	0.00	52.05	678.42	203.53	25205.7	396.30	101.79	-5.603	0.000	0.139
185.00	-4.66	-5.59	0.00	-40.62	0.00	40.62	678.42	203.53	25205.7	396.30	104.14	-5.621	0.000	0.110
190.00	-4.20	-5.28	0.00	-12.65	0.00	12.65	678.42	203.53	25205.7	396.30	110.03	-5.647	0.000	0.039
192.00	-0.25	-0.20	0.00	-0.61	0.00	0.61	678.42	203.53	25205.7	396.30	112.40	-5.650	0.000	0.002
195.00	0.00	-0.18	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	115.94	-5.650	0.000	0.000

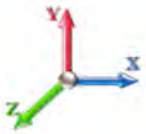
Wind Loading - Shaft

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 12	

Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



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	0.70	23.657	26.02	538.30	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	23.657	26.02	528.48	0.730	0.000	5.00	27.041	19.74	513.7	0.0	1158.0
10.00		1.00	0.70	23.657	26.02	518.66	0.730	0.000	5.00	26.543	19.38	504.2	0.0	1136.5
15.00		1.00	0.70	23.657	26.02	508.83	0.730	0.000	5.00	26.045	19.01	494.8	0.0	1115.1
20.00		1.00	0.70	23.657	26.02	499.01	0.730	0.000	5.00	25.547	18.65	485.3	0.0	1093.6
25.00		1.00	0.70	23.657	26.02	489.18	0.730	0.000	5.00	25.049	18.29	475.8	0.0	1072.1
30.00		1.00	0.70	23.677	26.04	479.56	0.730	0.000	5.00	24.550	17.92	466.8	0.0	1050.7
35.00		1.00	0.73	24.743	27.22	480.19	0.730	0.000	5.00	24.052	17.56	477.9	0.0	1029.2
40.00		1.00	0.76	25.705	28.28	479.20	0.730	0.000	5.00	23.554	17.19	486.2	0.0	1007.8
41.00	Bot - Section 2	1.00	0.77	25.887	28.48	478.84	0.730	0.000	1.00	4.651	3.40	96.7	0.0	199.0
45.00		1.00	0.79	26.585	29.24	476.92	0.730	0.000	4.00	18.659	13.62	398.3	0.0	1585.6
48.00	Top - Section 1	1.00	0.80	27.080	29.79	475.03	0.730	0.000	3.00	13.785	10.06	299.8	0.0	1171.2
50.00		1.00	0.81	27.398	30.14	480.32	0.730	0.000	2.00	9.091	6.64	200.0	0.0	388.8
55.00		1.00	0.83	28.154	30.97	476.18	0.730	0.000	5.00	22.378	16.34	505.9	0.0	957.1
60.00		1.00	0.85	28.863	31.75	471.29	0.730	0.000	5.00	21.880	15.97	507.1	0.0	935.6
65.00		1.00	0.87	29.530	32.48	465.73	0.730	0.000	5.00	21.382	15.61	507.0	0.0	914.2
70.00		1.00	0.89	30.162	33.18	459.60	0.730	0.000	5.00	20.884	15.25	505.8	0.0	892.7
75.00		1.00	0.91	30.763	33.84	452.95	0.730	0.000	5.00	20.386	14.88	503.6	0.0	871.3
80.00		1.00	0.93	31.335	34.47	445.84	0.730	0.000	5.00	19.888	14.52	500.4	0.0	849.8
85.00	Bot - Section 3	1.00	0.94	31.883	35.07	438.31	0.730	0.000	5.00	19.390	14.15	496.4	0.0	828.4
90.00		1.00	0.96	32.408	35.65	430.41	0.730	0.000	5.00	19.156	13.98	498.5	0.0	1489.8
91.00	Top - Section 2	1.00	0.96	32.510	35.76	428.78	0.730	0.000	1.00	3.771	2.75	98.5	0.0	293.2
95.00		1.00	0.97	32.912	36.20	428.31	0.730	0.000	4.00	14.887	10.87	393.4	0.0	530.6
100.00		1.00	0.99	33.398	36.74	419.79	0.730	0.000	5.00	18.160	13.26	487.0	0.0	647.1
105.00		1.00	1.00	33.867	37.25	410.97	0.730	0.000	5.00	17.662	12.89	480.3	0.0	629.3
110.00		1.00	1.02	34.320	37.75	401.88	0.730	0.000	5.00	17.164	12.53	473.0	0.0	611.4
115.00		1.00	1.03	34.759	38.23	392.53	0.730	0.000	5.00	16.666	12.17	465.2	0.0	593.5
120.00		1.00	1.04	35.184	38.70	382.94	0.730	0.000	5.00	16.168	11.80	456.8	0.0	575.6
125.00		1.00	1.05	35.597	39.16	373.13	0.730	0.000	5.00	15.670	11.44	447.9	0.0	557.7
130.00	Bot - Section 4	1.00	1.07	35.998	39.60	363.11	0.730	0.000	5.00	15.172	11.08	438.6	0.0	539.9
135.00	Top - Section 3	1.00	1.08	36.388	40.03	352.89	0.730	0.000	5.00	14.885	10.87	434.9	0.0	946.4
140.00		1.00	1.09	36.768	40.45	347.68	0.730	0.000	5.00	14.387	10.50	424.8	0.0	410.1
145.00		1.00	1.10	37.139	40.85	337.12	0.730	0.000	5.00	13.889	10.14	414.2	0.0	395.8
150.00		1.00	1.11	37.500	41.25	326.39	0.730	0.000	5.00	13.391	9.78	403.3	0.0	381.5
155.00		1.00	1.12	37.853	41.64	315.50	0.730	0.000	5.00	12.893	9.41	391.9	0.0	367.2
160.00		1.00	1.13	38.198	42.02	304.45	0.730	0.000	5.00	12.395	9.05	380.2	0.0	352.9
165.00		1.00	1.14	38.536	42.39	293.25	0.730	0.000	5.00	11.897	8.69	368.2	0.0	338.6
170.00		1.00	1.15	38.866	42.75	281.91	0.730	0.000	5.00	11.399	8.32	355.8	0.0	324.3
175.00		1.00	1.16	39.189	43.11	270.44	0.730	0.000	5.00	10.901	7.96	343.0	0.0	310.0
180.00	Top - Section 4	1.00	1.17	39.506	43.46	258.84	0.730	0.000	5.00	10.403	7.59	330.0	0.0	295.7
183.00	Appurtenance(s)	1.00	1.17	39.693	43.66	255.51	0.600	0.000	3.00	6.000	3.60	157.2	0.0	192.4
185.00		1.00	1.18	39.816	43.80	255.90	0.600	0.000	2.00	4.000	2.40	105.1	0.0	128.3
190.00		1.00	1.19	40.121	44.13	256.88	0.600	0.000	5.00	10.000	6.00	264.8	0.0	320.6
192.00	Appurtenance(s)	1.00	1.19	40.241	44.26	257.27	0.600	0.000	2.00	4.000	2.40	106.2	0.0	128.3
195.00	Appurtenance(s)	1.00	1.20	40.419	44.46	257.84	0.600	0.000	3.00	6.000	3.60	160.1	0.0	192.4
								Totals:	**195.00**			**17,304.6**		**29,809.6**

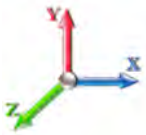
Discrete Appurtenance Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 13	

Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



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	195.00	6' Lightning rod	1	40.419	44.461	1.00	1.00	0.38	5.85	0.000	0.000	16.90	0.00	0.00
2	192.00	Low Profile Platform	1	40.241	44.265	1.00	1.00	22.00	1350.00	0.000	0.000	973.83	0.00	0.00
3	192.00	4460 B25 + B66	3	40.241	44.265	0.50	0.75	4.30	294.30	0.000	0.000	190.18	0.00	0.00
4	192.00	4449 B71 + B85	3	40.241	44.265	0.50	0.75	2.97	197.64	0.000	0.000	131.46	0.00	0.00
5	192.00	VV-65A-R1	3	40.241	44.265	0.55	0.75	13.15	79.65	0.000	0.000	582.24	0.00	0.00
6	192.00	AIR6449 B41	3	40.241	44.265	0.53	0.75	9.03	278.10	0.000	0.000	399.53	0.00	0.00
7	192.00	MS-HRECP	1	40.241	44.265	1.00	1.00	12.25	462.60	0.000	0.000	542.24	0.00	0.00
8	192.00	MS-KI22-5 (Kickers w/o	1	40.241	44.265	1.00	1.00	5.33	131.40	0.000	0.000	235.93	0.00	0.00
9	192.00	KRY 112 489/2	3	40.301	44.331	0.75	0.75	1.53	35.64	0.000	1.000	67.83	0.00	67.83
10	192.00	RFS	3	40.301	44.331	0.52	0.75	31.88	345.60	0.000	1.000	1413.17	0.00	1413.17
11	192.00	782 11056	3	40.241	44.265	0.65	0.75	0.55	4.86	0.000	0.000	24.26	0.00	0.00
12	183.00	MS-KI22-5 (Kickers w/o	1	39.693	43.662	1.00	1.00	5.33	131.40	0.000	0.000	232.72	0.00	0.00
13	183.00	DB-C1-12C-24AB-0Z	1	39.693	43.662	0.68	0.75	2.74	28.80	0.000	0.000	119.66	0.00	0.00
14	183.00	RFV01U-D2A	3	39.693	43.662	0.50	0.75	2.83	189.81	0.000	0.000	123.74	0.00	0.00
15	183.00	RFV01U-D1A	3	39.693	43.662	0.50	0.75	2.83	227.88	0.000	0.000	123.74	0.00	0.00
16	183.00	MX06FRO660-03	6	39.693	43.662	0.65	0.75	38.64	248.40	0.000	0.000	1687.14	0.00	0.00
17	183.00	Low Profile Platform	1	39.693	43.662	1.00	1.00	22.00	1350.00	0.000	0.000	960.56	0.00	0.00
18	183.00	MT6407-77A	3	39.693	43.662	0.52	0.75	7.39	214.38	0.000	0.000	322.52	0.00	0.00
19	183.00	Support Rail w/ end	1	39.693	43.662	1.00	1.00	12.25	462.60	0.000	0.000	534.86	0.00	0.00
20	183.00	MS-H1436 (Heavy Collar	1	39.693	43.662	1.00	1.00	2.25	123.03	0.000	0.000	98.24	0.00	0.00
							Totals:		**6,161.94**			**8,780.72**		

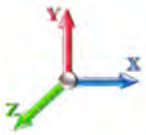
Total Applied Force Summary

Structure:	CT01944-S-SBA		**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	427.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 14

Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



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		513.68	1289.08	0.00	0.00
10.00		504.22	1267.63	0.00	0.00
15.00		494.76	1246.18	0.00	0.00
20.00		485.30	1224.73	0.00	0.00
25.00		475.84	1203.28	0.00	0.00
30.00		466.77	1181.82	0.00	0.00
35.00		477.89	1160.37	0.00	0.00
40.00		486.20	1138.92	0.00	0.00
41.00		96.69	225.21	0.00	0.00
45.00		398.33	1690.54	0.00	0.00
48.00		299.76	1249.89	0.00	0.00
50.00		200.00	441.30	0.00	0.00
55.00		505.91	1088.23	0.00	0.00
60.00		507.10	1066.78	0.00	0.00
65.00		507.02	1045.32	0.00	0.00
70.00		505.81	1023.87	0.00	0.00
75.00		503.58	1002.42	0.00	0.00
80.00		500.42	980.97	0.00	0.00
85.00		496.41	959.52	0.00	0.00
90.00		498.51	1620.95	0.00	0.00
91.00		98.46	319.47	0.00	0.00
95.00		393.43	635.48	0.00	0.00
100.00		487.03	778.26	0.00	0.00
105.00		480.32	760.38	0.00	0.00
110.00		473.02	742.51	0.00	0.00
115.00		465.17	724.63	0.00	0.00
120.00		456.79	706.75	0.00	0.00
125.00		447.91	688.88	0.00	0.00
130.00		438.56	671.00	0.00	0.00
135.00		434.95	1077.55	0.00	0.00
140.00		424.79	541.26	0.00	0.00
145.00		414.22	526.96	0.00	0.00
150.00		403.25	512.65	0.00	0.00
155.00		391.91	498.35	0.00	0.00
160.00		380.20	484.05	0.00	0.00
165.00		368.15	469.75	0.00	0.00
170.00		355.76	455.45	0.00	0.00
175.00		343.05	441.15	0.00	0.00
180.00		330.02	426.84	0.00	0.00
183.00	(20) attachments	4360.35	3247.35	0.00	0.00
185.00		105.11	146.90	0.00	0.00
190.00		264.80	367.25	0.00	0.00
192.00	(24) attachments	4666.89	3326.69	0.00	1481.00
195.00	(1) attachments	176.96	198.23	0.00	0.00
	Totals:	**26,085.31**	**40,854.79**	**0.00**	**1,481.00**

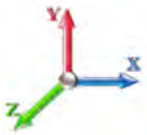
Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



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	-40.83	-26.13	0.00	-3366.9	0.00	3366.93	4628.91	1339.45	7126.38	6119.66	0.00	0.000	0.000	0.559
5.00	-39.48	-25.69	0.00	-3236.3	0.00	3236.30	4587.84	1314.86	6867.16	5953.37	0.06	-0.118	0.000	0.553
10.00	-38.17	-25.27	0.00	-3107.8	0.00	3107.82	4545.12	1290.28	6612.74	5787.00	0.25	-0.239	0.000	0.546
15.00	-36.87	-24.85	0.00	-2981.4	0.00	2981.49	4500.76	1265.69	6363.12	5620.67	0.57	-0.361	0.000	0.539
20.00	-35.59	-24.43	0.00	-2857.2	0.00	2857.26	4454.76	1241.10	6118.30	5454.49	1.01	-0.485	0.000	0.532
25.00	-34.34	-24.02	0.00	-2735.1	0.00	2735.12	4407.12	1216.52	5878.29	5288.58	1.59	-0.611	0.000	0.525
30.00	-33.11	-23.61	0.00	-2615.0	0.00	2615.03	4357.84	1191.93	5643.07	5123.07	2.30	-0.739	0.000	0.518
35.00	-31.91	-23.19	0.00	-2496.9	0.00	2496.98	4306.92	1167.34	5412.67	4958.08	3.14	-0.869	0.000	0.511
40.00	-30.74	-22.73	0.00	-2381.0	0.00	2381.03	4254.35	1142.76	5187.06	4793.73	4.12	-1.002	0.000	0.504
41.00	-30.49	-22.66	0.00	-2358.3	0.00	2358.30	4243.64	1137.84	5142.51	4760.94	4.34	-1.029	0.000	0.503
45.00	-28.77	-22.28	0.00	-2267.6	0.00	2267.64	4200.14	1118.17	4966.25	4630.13	5.25	-1.137	0.000	0.497
48.00	-27.50	-21.99	0.00	-2200.8	0.00	2200.80	4202.19	1119.08	4974.38	4636.19	5.99	-1.220	0.000	0.482
50.00	-27.03	-21.82	0.00	-2156.8	0.00	2156.82	4180.07	1109.25	4887.33	4570.98	6.51	-1.276	0.000	0.479
55.00	-25.91	-21.35	0.00	-2047.7	0.00	2047.70	4123.62	1084.66	4673.07	4408.60	7.92	-1.409	0.000	0.471
60.00	-24.80	-20.88	0.00	-1940.9	0.00	1940.93	4065.54	1060.07	4463.61	4247.27	9.47	-1.543	0.000	0.463
65.00	-23.72	-20.40	0.00	-1836.5	0.00	1836.54	4005.81	1035.49	4258.96	4087.10	11.16	-1.680	0.000	0.456
70.00	-22.67	-19.92	0.00	-1734.5	0.00	1734.54	3944.44	1010.90	4059.10	3928.21	12.99	-1.819	0.000	0.448
75.00	-21.63	-19.43	0.00	-1634.9	0.00	1634.96	3881.43	986.31	3864.05	3770.72	14.97	-1.959	0.000	0.440
80.00	-20.62	-18.95	0.00	-1537.7	0.00	1537.78	3816.78	961.72	3673.81	3614.75	17.10	-2.102	0.000	0.431
85.00	-19.64	-18.47	0.00	-1443.0	0.00	1443.03	3750.48	937.14	3488.36	3460.42	19.38	-2.246	0.000	0.423
90.00	-18.01	-17.93	0.00	-1350.6	0.00	1350.68	3682.55	912.55	3307.72	3307.86	21.81	-2.393	0.000	0.414
91.00	-17.67	-17.84	0.00	-1332.7	0.00	1332.75	2898.33	768.33	2813.78	2634.30	22.31	-2.423	0.000	0.513
95.00	-17.01	-17.47	0.00	-1261.3	0.00	1261.37	2860.60	751.94	2695.00	2544.15	24.39	-2.543	0.000	0.502
100.00	-16.20	-16.99	0.00	-1174.0	0.00	1174.04	2811.95	731.45	2550.13	2432.25	27.15	-2.714	0.000	0.489
105.00	-15.42	-16.52	0.00	-1089.0	0.00	1089.07	2761.66	710.96	2409.26	2321.34	30.08	-2.887	0.000	0.475
110.00	-14.65	-16.06	0.00	-1006.4	0.00	1006.45	2709.73	690.47	2272.40	2211.55	33.20	-3.062	0.000	0.461
115.00	-13.90	-15.60	0.00	-926.16	0.00	926.16	2656.16	669.98	2139.54	2103.00	36.50	-3.238	0.000	0.446
120.00	-13.18	-15.14	0.00	-848.18	0.00	848.18	2600.95	649.49	2010.67	1995.80	39.98	-3.414	0.000	0.431
125.00	-12.47	-14.69	0.00	-772.48	0.00	772.48	2544.10	629.00	1885.82	1890.08	43.65	-3.591	0.000	0.414
130.00	-11.79	-14.25	0.00	-699.04	0.00	699.04	2485.60	608.51	1764.96	1785.96	47.50	-3.768	0.000	0.397
135.00	-10.70	-13.77	0.00	-627.81	0.00	627.81	1823.78	478.25	1362.76	1289.51	51.54	-3.945	0.000	0.494
140.00	-10.15	-13.34	0.00	-558.95	0.00	558.95	1784.40	461.86	1270.94	1218.11	55.77	-4.119	0.000	0.465
145.00	-9.61	-12.93	0.00	-492.23	0.00	492.23	1743.38	445.47	1182.33	1147.55	60.19	-4.324	0.000	0.435
150.00	-9.08	-12.52	0.00	-427.61	0.00	427.61	1700.71	429.08	1096.92	1077.96	64.82	-4.523	0.000	0.403
155.00	-8.58	-12.11	0.00	-365.03	0.00	365.03	1656.41	412.69	1014.72	1009.45	69.66	-4.715	0.000	0.368
160.00	-8.09	-11.72	0.00	-304.47	0.00	304.47	1610.46	396.29	935.71	942.14	74.69	-4.898	0.000	0.329
165.00	-7.62	-11.33	0.00	-245.88	0.00	245.88	1562.88	379.90	859.91	876.15	79.90	-5.067	0.000	0.286
170.00	-7.18	-10.95	0.00	-189.22	0.00	189.22	1513.65	363.51	787.30	811.61	85.29	-5.219	0.000	0.239
175.00	-6.75	-10.59	0.00	-134.44	0.00	134.44	1462.77	347.12	717.90	748.63	90.82	-5.348	0.000	0.185
180.00	-6.34	-10.22	0.00	-81.51	0.00	81.51	1400.09	330.73	651.70	682.38	96.47	-5.447	0.000	0.125
180.00	-6.34	-10.22	0.00	-81.51	0.00	81.51	678.42	203.53	25205.7	396.30	96.47	-5.447	0.000	0.218
183.00	-3.52	-5.58	0.00	-50.84	0.00	50.84	678.42	203.53	25205.7	396.30	99.90	-5.489	0.000	0.134
185.00	-3.38	-5.46	0.00	-39.68	0.00	39.68	678.42	203.53	25205.7	396.30	102.20	-5.507	0.000	0.106
190.00	-3.04	-5.16	0.00	-12.39	0.00	12.39	678.42	203.53	25205.7	396.30	107.98	-5.532	0.000	0.036
192.00	-0.18	-0.20	0.00	-0.59	0.00	0.59	678.42	203.53	25205.7	396.30	110.29	-5.535	0.000	0.002
195.00	0.00	-0.18	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	113.77	-5.535	0.000	0.000

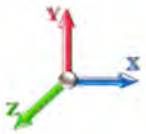
Wind Loading - Shaft

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 16	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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	0.70	4.107	4.52	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.107	4.52	0.00	1.200	0.828	5.00	27.731	33.28	150.3	329.4	1873.4
10.00		1.00	0.70	4.107	4.52	0.00	1.200	0.887	5.00	27.282	32.74	147.9	346.9	1862.2
15.00		1.00	0.70	4.107	4.52	0.00	1.200	0.924	5.00	26.815	32.18	145.4	354.7	1841.5
20.00		1.00	0.70	4.107	4.52	0.00	1.200	0.951	5.00	26.339	31.61	142.8	358.3	1816.4
25.00		1.00	0.70	4.107	4.52	0.00	1.200	0.973	5.00	25.859	31.03	140.2	359.4	1788.9
30.00		1.00	0.70	4.111	4.52	0.00	1.200	0.991	5.00	25.376	30.45	137.7	358.9	1759.8
35.00		1.00	0.73	4.296	4.73	0.00	1.200	1.006	5.00	24.891	29.87	141.1	357.2	1729.5
40.00		1.00	0.76	4.463	4.91	0.00	1.200	1.019	5.00	24.404	29.28	143.8	354.7	1698.4
41.00	Bot - Section 2	1.00	0.77	4.494	4.94	0.00	1.200	1.022	1.00	4.821	5.79	28.6	70.8	336.1
45.00		1.00	0.79	4.615	5.08	0.00	1.200	1.032	4.00	19.347	23.22	117.9	285.0	2399.2
48.00	Top - Section 1	1.00	0.80	4.701	5.17	0.00	1.200	1.038	3.00	14.304	17.17	88.8	212.4	1774.0
50.00		1.00	0.81	4.757	5.23	0.00	1.200	1.042	2.00	9.438	11.33	59.3	141.0	659.4
55.00		1.00	0.83	4.888	5.38	0.00	1.200	1.052	5.00	23.255	27.91	150.0	348.2	1624.3
60.00		1.00	0.85	5.011	5.51	0.00	1.200	1.062	5.00	22.764	27.32	150.6	343.5	1591.1
65.00		1.00	0.87	5.127	5.64	0.00	1.200	1.070	5.00	22.273	26.73	150.7	338.5	1557.5
70.00		1.00	0.89	5.237	5.76	0.00	1.200	1.078	5.00	21.782	26.14	150.6	333.2	1523.6
75.00		1.00	0.91	5.341	5.87	0.00	1.200	1.086	5.00	21.290	25.55	150.1	327.7	1489.4
80.00		1.00	0.93	5.440	5.98	0.00	1.200	1.093	5.00	20.798	24.96	149.4	321.9	1455.0
85.00	Bot - Section 3	1.00	0.94	5.535	6.09	0.00	1.200	1.099	5.00	20.306	24.37	148.4	315.8	1420.4
90.00		1.00	0.96	5.626	6.19	0.00	1.200	1.106	5.00	20.077	24.09	149.1	313.9	2300.3
91.00	Top - Section 2	1.00	0.96	5.644	6.21	0.00	1.200	1.107	1.00	3.956	4.75	29.5	62.5	453.5
95.00		1.00	0.97	5.714	6.29	0.00	1.200	1.112	4.00	15.628	18.75	117.9	246.0	953.5
100.00		1.00	0.99	5.798	6.38	0.00	1.200	1.117	5.00	19.091	22.91	146.1	301.0	1163.8
105.00		1.00	1.00	5.880	6.47	0.00	1.200	1.123	5.00	18.598	22.32	144.3	294.3	1133.3
110.00		1.00	1.02	5.958	6.55	0.00	1.200	1.128	5.00	18.104	21.72	142.4	287.5	1102.7
115.00		1.00	1.03	6.035	6.64	0.00	1.200	1.133	5.00	17.610	21.13	140.3	280.5	1071.9
120.00		1.00	1.04	6.108	6.72	0.00	1.200	1.138	5.00	17.116	20.54	138.0	273.5	1041.0
125.00		1.00	1.05	6.180	6.80	0.00	1.200	1.142	5.00	16.622	19.95	135.6	266.3	1009.9
130.00	Bot - Section 4	1.00	1.07	6.250	6.87	0.00	1.200	1.147	5.00	16.128	19.35	133.0	259.0	978.8
135.00	Top - Section 3	1.00	1.08	6.317	6.95	0.00	1.200	1.151	5.00	15.845	19.01	132.1	255.1	1517.0
140.00		1.00	1.09	6.383	7.02	0.00	1.200	1.155	5.00	15.350	18.42	129.3	247.7	794.5
145.00		1.00	1.10	6.448	7.09	0.00	1.200	1.160	5.00	14.856	17.83	126.4	240.1	767.9
150.00		1.00	1.11	6.510	7.16	0.00	1.200	1.163	5.00	14.361	17.23	123.4	232.4	741.1
155.00		1.00	1.12	6.572	7.23	0.00	1.200	1.167	5.00	13.866	16.64	120.3	224.7	714.3
160.00		1.00	1.13	6.632	7.29	0.00	1.200	1.171	5.00	13.371	16.05	117.0	216.9	687.5
165.00		1.00	1.14	6.690	7.36	0.00	1.200	1.175	5.00	12.876	15.45	113.7	209.0	660.5
170.00		1.00	1.15	6.747	7.42	0.00	1.200	1.178	5.00	12.381	14.86	110.3	201.1	633.5
175.00		1.00	1.16	6.804	7.48	0.00	1.200	1.182	5.00	11.886	14.26	106.7	193.1	606.4
180.00	Top - Section 4	1.00	1.17	6.859	7.54	0.00	1.200	1.185	5.00	11.391	13.67	103.1	185.0	579.3
183.00	Appurtenance(s)	1.00	1.17	6.891	7.58	0.00	1.200	1.187	3.00	6.593	7.91	60.0	109.6	366.1
185.00		1.00	1.18	6.912	7.60	0.00	1.200	1.188	2.00	4.396	5.28	40.1	73.1	244.1
190.00		1.00	1.19	6.965	7.66	0.00	1.200	1.191	5.00	10.993	13.19	101.1	183.3	610.8
192.00	Appurtenance(s)	1.00	1.19	6.986	7.68	0.00	1.200	1.193	2.00	4.398	5.28	40.6	73.4	244.4
195.00	Appurtenance(s)	1.00	1.20	7.017	7.72	0.00	1.200	1.194	3.00	6.597	7.92	61.1	110.3	366.8
								Totals:	**195.00**			**5,255.0**		**50,943.0**

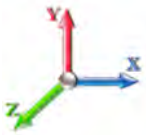
Discrete Appurtenance Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 17	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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	195.00	6' Lightning rod	1	7.017	7.719	1.00	1.00	1.12	27.34	0.000	0.000	8.68	0.00	0.00
2	192.00	Low Profile Platform	1	6.986	7.685	1.00	1.00	34.07	2394.42	0.000	0.000	261.81	0.00	0.00
3	192.00	4460 B25 + B66	3	6.986	7.685	0.50	0.75	4.99	488.81	0.000	0.000	38.36	0.00	0.00
4	192.00	4449 B71 + B85	3	6.986	7.685	0.50	0.75	3.56	206.69	0.000	0.000	27.33	0.00	0.00
5	192.00	VV-65A-R1	3	6.986	7.685	0.57	0.75	14.97	438.99	0.000	0.000	115.07	0.00	0.00
6	192.00	AIR6449 B41	3	6.986	7.685	0.54	0.75	10.21	556.79	0.000	0.000	78.43	0.00	0.00
7	192.00	MS-HRECP	1	6.986	7.685	1.00	1.00	20.43	1547.62	0.000	0.000	157.01	0.00	0.00
8	192.00	MS-KI22-5 (Kickers w/o	1	6.986	7.685	1.00	1.00	9.14	250.49	0.000	0.000	70.27	0.00	0.00
9	192.00	KRY 112 489/2	3	6.997	7.696	0.38	0.75	1.26	70.13	0.000	1.000	9.72	0.00	9.72
10	192.00	RFS	3	6.997	7.696	0.38	0.75	24.21	1283.32	0.000	1.000	186.35	0.00	186.35
11	192.00	782 11056	3	6.986	7.685	0.38	0.75	0.62	-5.54	0.000	0.000	4.79	0.00	0.00
12	183.00	MS-KI22-5 (Kickers w/o	1	6.891	7.580	1.00	1.00	9.13	249.82	0.000	0.000	69.17	0.00	0.00
13	183.00	DB-C1-12C-24AB-0Z	1	6.891	7.580	0.38	0.75	1.73	87.28	0.000	0.000	13.13	0.00	0.00
14	183.00	RFV01U-D2A	3	6.891	7.580	0.50	0.75	3.40	317.50	0.000	0.000	25.77	0.00	0.00
15	183.00	RFV01U-D1A	3	6.891	7.580	0.50	0.75	3.40	302.82	0.000	0.000	25.77	0.00	0.00
16	183.00	MX06FRO660-03	6	6.891	7.580	0.38	0.75	24.28	1375.48	0.000	0.000	184.01	0.00	0.00
17	183.00	Low Profile Platform	1	6.891	7.580	1.00	1.00	34.01	2390.13	0.000	0.000	257.81	0.00	0.00
18	183.00	MT6407-77A	3	6.891	7.580	0.38	0.75	5.99	513.60	0.000	0.000	45.43	0.00	0.00
19	183.00	Support Rail w/ end	1	6.891	7.580	1.00	1.00	20.39	1545.63	0.000	0.000	154.57	0.00	0.00
20	183.00	MS-H1436 (Heavy Collar	1	6.891	7.580	1.00	1.00	3.85	233.73	0.000	0.000	29.20	0.00	0.00
							Totals:		**14,275.05**			**1,762.67**		

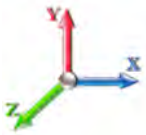
Total Applied Force Summary

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 18	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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		150.34	2048.21	0.00	0.00
10.00		147.91	2037.09	0.00	0.00
15.00		145.37	2016.30	0.00	0.00
20.00		142.80	1991.26	0.00	0.00
25.00		140.19	1963.77	0.00	0.00
30.00		137.69	1934.66	0.00	0.00
35.00		141.14	1904.38	0.00	0.00
40.00		143.76	1873.22	0.00	0.00
41.00		28.60	371.09	0.00	0.00
45.00		117.87	2539.02	0.00	0.00
48.00		88.77	1878.92	0.00	0.00
50.00		59.26	729.37	0.00	0.00
55.00		150.04	1799.17	0.00	0.00
60.00		150.57	1765.91	0.00	0.00
65.00		150.73	1732.31	0.00	0.00
70.00		150.56	1698.41	0.00	0.00
75.00		150.09	1664.24	0.00	0.00
80.00		149.35	1629.83	0.00	0.00
85.00		148.36	1595.20	0.00	0.00
90.00		149.11	2475.18	0.00	0.00
91.00		29.47	488.49	0.00	0.00
95.00		117.87	1093.34	0.00	0.00
100.00		146.12	1338.68	0.00	0.00
105.00		144.34	1308.16	0.00	0.00
110.00		142.39	1277.50	0.00	0.00
115.00		140.27	1246.70	0.00	0.00
120.00		138.01	1215.79	0.00	0.00
125.00		135.60	1184.76	0.00	0.00
130.00		133.05	1153.63	0.00	0.00
135.00		132.13	1691.87	0.00	0.00
140.00		129.34	969.34	0.00	0.00
145.00		126.44	942.70	0.00	0.00
150.00		123.42	915.98	0.00	0.00
155.00		120.28	889.18	0.00	0.00
160.00		117.05	862.30	0.00	0.00
165.00		113.71	835.35	0.00	0.00
170.00		110.27	808.33	0.00	0.00
175.00		106.74	781.25	0.00	0.00
180.00		103.12	754.09	0.00	0.00
183.00	(20) attachments	864.84	7486.96	0.00	0.00
185.00		40.11	268.99	0.00	0.00
190.00		101.07	672.99	0.00	0.00
192.00	(24) attachments	989.68	7500.99	0.00	196.07
195.00	(1) attachments	69.79	394.14	0.00	0.00
	Totals:	**7,017.63**	**71,729.06**	**0.00**	**196.07**

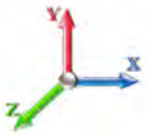
Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 19	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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	-71.73	-7.04	0.00	-891.08	0.00	891.08	4628.91	1339.45	7126.38	6119.66	0.00	0.000	0.000	0.161
5.00	-69.68	-6.92	0.00	-855.90	0.00	855.90	4587.84	1314.86	6867.16	5953.37	0.02	-0.031	0.000	0.159
10.00	-67.63	-6.81	0.00	-821.27	0.00	821.27	4545.12	1290.28	6612.74	5787.00	0.07	-0.063	0.000	0.157
15.00	-65.61	-6.70	0.00	-787.21	0.00	787.21	4500.76	1265.69	6363.12	5620.67	0.15	-0.095	0.000	0.155
20.00	-63.62	-6.59	0.00	-753.70	0.00	753.70	4454.76	1241.10	6118.30	5454.49	0.27	-0.128	0.000	0.152
25.00	-61.65	-6.48	0.00	-720.74	0.00	720.74	4407.12	1216.52	5878.29	5288.58	0.42	-0.161	0.000	0.150
30.00	-59.71	-6.37	0.00	-688.32	0.00	688.32	4357.84	1191.93	5643.07	5123.07	0.61	-0.195	0.000	0.148
35.00	-57.81	-6.26	0.00	-656.45	0.00	656.45	4306.92	1167.34	5412.67	4958.08	0.83	-0.229	0.000	0.146
40.00	-55.93	-6.13	0.00	-625.15	0.00	625.15	4254.35	1142.76	5187.06	4793.73	1.09	-0.264	0.000	0.144
41.00	-55.56	-6.12	0.00	-619.02	0.00	619.02	4243.64	1137.84	5142.51	4760.94	1.15	-0.271	0.000	0.143
45.00	-53.02	-6.01	0.00	-594.55	0.00	594.55	4200.14	1118.17	4966.25	4630.13	1.38	-0.300	0.000	0.141
48.00	-51.14	-5.93	0.00	-576.52	0.00	576.52	4202.19	1119.08	4974.38	4636.19	1.58	-0.321	0.000	0.137
50.00	-50.41	-5.89	0.00	-564.67	0.00	564.67	4180.07	1109.25	4887.33	4570.98	1.72	-0.336	0.000	0.136
55.00	-48.60	-5.75	0.00	-535.25	0.00	535.25	4123.62	1084.66	4673.07	4408.60	2.09	-0.371	0.000	0.133
60.00	-46.84	-5.62	0.00	-506.48	0.00	506.48	4065.54	1060.07	4463.61	4247.27	2.50	-0.406	0.000	0.131
65.00	-45.10	-5.48	0.00	-478.38	0.00	478.38	4005.81	1035.49	4258.96	4087.10	2.94	-0.442	0.000	0.128
70.00	-43.40	-5.35	0.00	-450.96	0.00	450.96	3944.44	1010.90	4059.10	3928.21	3.42	-0.478	0.000	0.126
75.00	-41.74	-5.21	0.00	-424.22	0.00	424.22	3881.43	986.31	3864.05	3770.72	3.94	-0.514	0.000	0.123
80.00	-40.10	-5.07	0.00	-398.17	0.00	398.17	3816.78	961.72	3673.81	3614.75	4.50	-0.551	0.000	0.121
85.00	-38.51	-4.93	0.00	-372.81	0.00	372.81	3750.48	937.14	3488.36	3460.42	5.10	-0.589	0.000	0.118
90.00	-36.03	-4.77	0.00	-348.15	0.00	348.15	3682.55	912.55	3307.72	3307.86	5.73	-0.626	0.000	0.115
91.00	-35.54	-4.75	0.00	-343.38	0.00	343.38	2898.33	768.33	2813.78	2634.30	5.87	-0.634	0.000	0.143
95.00	-34.45	-4.64	0.00	-324.38	0.00	324.38	2860.60	751.94	2695.00	2544.15	6.41	-0.665	0.000	0.140
100.00	-33.11	-4.50	0.00	-301.18	0.00	301.18	2811.95	731.45	2550.13	2432.25	7.13	-0.709	0.000	0.136
105.00	-31.80	-4.37	0.00	-278.66	0.00	278.66	2761.66	710.96	2409.26	2321.34	7.90	-0.753	0.000	0.132
110.00	-30.52	-4.23	0.00	-256.82	0.00	256.82	2709.73	690.47	2272.40	2211.55	8.71	-0.798	0.000	0.127
115.00	-29.27	-4.10	0.00	-235.65	0.00	235.65	2656.16	669.98	2139.54	2103.00	9.57	-0.843	0.000	0.123
120.00	-28.05	-3.96	0.00	-215.17	0.00	215.17	2600.95	649.49	2010.67	1995.80	10.48	-0.888	0.000	0.119
125.00	-26.87	-3.83	0.00	-195.36	0.00	195.36	2544.10	629.00	1885.82	1890.08	11.43	-0.932	0.000	0.114
130.00	-25.71	-3.70	0.00	-176.21	0.00	176.21	2485.60	608.51	1764.96	1785.96	12.43	-0.977	0.000	0.109
135.00	-24.02	-3.55	0.00	-157.73	0.00	157.73	1823.78	478.25	1362.76	1289.51	13.48	-1.022	0.000	0.136
140.00	-23.05	-3.43	0.00	-139.96	0.00	139.96	1784.40	461.86	1270.94	1218.11	14.57	-1.065	0.000	0.128
145.00	-22.11	-3.30	0.00	-122.83	0.00	122.83	1743.38	445.47	1182.33	1147.55	15.72	-1.116	0.000	0.120
150.00	-21.19	-3.18	0.00	-106.32	0.00	106.32	1700.71	429.08	1096.92	1077.96	16.91	-1.166	0.000	0.111
155.00	-20.30	-3.06	0.00	-90.43	0.00	90.43	1656.41	412.69	1014.72	1009.45	18.16	-1.214	0.000	0.102
160.00	-19.44	-2.93	0.00	-75.16	0.00	75.16	1610.46	396.29	935.71	942.14	19.45	-1.259	0.000	0.092
165.00	-18.61	-2.82	0.00	-60.48	0.00	60.48	1562.88	379.90	859.91	876.15	20.80	-1.301	0.000	0.081
170.00	-17.80	-2.70	0.00	-46.41	0.00	46.41	1513.65	363.51	787.30	811.61	22.18	-1.338	0.000	0.069
175.00	-17.02	-2.58	0.00	-32.92	0.00	32.92	1462.77	347.12	717.90	748.63	23.60	-1.370	0.000	0.056
180.00	-16.27	-2.46	0.00	-20.02	0.00	20.02	1400.09	330.73	651.70	682.38	25.05	-1.394	0.000	0.041
180.00	-16.27	-2.46	0.00	-20.02	0.00	20.02	678.42	203.53	25205.7	396.30	25.05	-1.394	0.000	0.075
183.00	-8.80	-1.42	0.00	-12.63	0.00	12.63	678.42	203.53	25205.7	396.30	25.93	-1.404	0.000	0.045
185.00	-8.54	-1.37	0.00	-9.80	0.00	9.80	678.42	203.53	25205.7	396.30	26.52	-1.409	0.000	0.037
190.00	-7.87	-1.25	0.00	-2.94	0.00	2.94	678.42	203.53	25205.7	396.30	27.99	-1.415	0.000	0.019
192.00	-0.39	-0.08	0.00	-0.24	0.00	0.24	678.42	203.53	25205.7	396.30	28.59	-1.415	0.000	0.001
195.00	0.00	-0.07	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	29.48	-1.416	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 20	

Load Case: 1.2D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	23
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03	**S1**	0.05
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1461.4	2.50	54.87	0.01	
10.00		1437.6	7.50	53.98	0.07	
15.00		1413.7	12.50	53.08	0.18	
20.00		1389.9	17.50	52.19	0.35	
25.00		1366.1	22.50	51.29	0.56	
30.00		1342.2	27.50	50.40	0.80	
35.00		1318.4	32.50	49.50	1.08	
40.00		1294.6	37.50	48.61	1.39	
41.00	Bot - Section 2	256.06	40.50	9.61	0.06	
45.00		1901.6	43.00	71.40	3.93	
48.00	Top - Section 1	1406.2	46.50	52.80	2.52	
50.00		501.99	49.00	18.85	0.36	
55.00		1238.2	52.50	46.49	2.49	
60.00		1214.4	57.50	45.60	2.87	
65.00		1190.6	62.50	44.70	3.26	
70.00		1166.7	67.50	43.81	3.65	
75.00		1142.9	72.50	42.91	4.04	
80.00		1119.1	77.50	42.02	4.43	
85.00	Bot - Section 3	1095.2	82.50	41.12	4.80	
90.00		1830.1	87.50	68.72	15.09	
91.00	Top - Section 2	360.79	90.50	13.55	0.63	
95.00		729.40	93.00	27.39	2.71	
100.00		893.88	97.50	33.56	4.47	
105.00		874.01	102.50	32.82	4.72	
110.00		854.15	107.50	32.07	4.96	
115.00		834.29	112.50	31.32	5.18	
120.00		814.42	117.50	30.58	5.39	
125.00		794.56	122.50	29.83	5.57	
130.00	Bot - Section 4	774.70	127.50	29.09	5.74	
135.00	Top - Section 3	1226.4	132.50	46.05	15.54	
140.00		630.54	137.50	23.67	4.42	
145.00		614.65	142.50	23.08	4.51	
150.00		598.76	147.50	22.48	4.59	
155.00		582.86	152.50	21.88	4.65	
160.00		566.97	157.50	21.29	4.69	
165.00		551.08	162.50	20.69	4.72	
170.00		535.19	167.50	20.09	4.73	
175.00		519.30	172.50	19.50	4.72	
180.00	Top - Section 4	503.41	177.50	18.90	4.70	
183.00	Appurtenance(s)	3625.6	181.50	136.13	254.79	
185.00		167.36	184.00	6.28	0.56	
190.00		418.41	187.50	15.71	3.62	
192.00	Appurtenance(s)	3700.4	191.00	138.94	293.92	
195.00	Appurtenance(s)	220.25	193.50	8.27	1.07	
	Totals:	**46,479.4**		**1,745.1**	**702.5**	**Total Wind:** **26,085.3**

Seismic Segment Forces (Factored)

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 21	

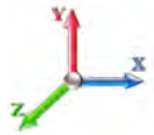
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Ev + 1.0Eh



Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	23		
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.18		
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03	**S1**	0.05	**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	-56.22	-0.70	0.00	-128.42	0.00	128.42	4628.91	1339.45	7126.38	6119.66		0.00	0.00	0.033
5.00	-54.44	-0.71	0.00	-124.90	0.00	124.90	4587.84	1314.86	6867.16	5953.37		0.00	0.00	0.033
10.00	-52.70	-0.71	0.00	-121.36	0.00	121.36	4545.12	1290.28	6612.74	5787.00		0.01	-0.01	0.033
15.00	-50.99	-0.72	0.00	-117.81	0.00	117.81	4500.76	1265.69	6363.12	5620.67		0.02	-0.01	0.032
20.00	-49.30	-0.72	0.00	-114.23	0.00	114.23	4454.76	1241.10	6118.30	5454.49		0.04	-0.02	0.032
25.00	-47.64	-0.72	0.00	-110.63	0.00	110.63	4407.12	1216.52	5878.29	5288.58		0.06	-0.02	0.032
30.00	-46.02	-0.72	0.00	-107.02	0.00	107.02	4357.84	1191.93	5643.07	5123.07		0.09	-0.03	0.031
35.00	-44.42	-0.73	0.00	-103.40	0.00	103.40	4306.92	1167.34	5412.67	4958.08		0.12	-0.03	0.031
40.00	-42.85	-0.73	0.00	-99.76	0.00	99.76	4254.35	1142.76	5187.06	4793.73		0.16	-0.04	0.031
41.00	-42.54	-0.73	0.00	-99.04	0.00	99.04	4243.64	1137.84	5142.51	4760.94		0.17	-0.04	0.031
45.00	-40.22	-0.73	0.00	-96.12	0.00	96.12	4200.14	1118.17	4966.25	4630.13		0.21	-0.05	0.030
48.00	-38.50	-0.72	0.00	-93.94	0.00	93.94	4202.19	1119.08	4974.38	4636.19		0.24	-0.05	0.029
50.00	-37.89	-0.73	0.00	-92.49	0.00	92.49	4180.07	1109.25	4887.33	4570.98		0.26	-0.05	0.029
55.00	-36.39	-0.73	0.00	-88.86	0.00	88.86	4123.62	1084.66	4673.07	4408.60		0.32	-0.06	0.029
60.00	-34.93	-0.73	0.00	-85.23	0.00	85.23	4065.54	1060.07	4463.61	4247.27		0.38	-0.06	0.029
65.00	-33.49	-0.72	0.00	-81.61	0.00	81.61	4005.81	1035.49	4258.96	4087.10		0.45	-0.07	0.028
70.00	-32.08	-0.72	0.00	-77.99	0.00	77.99	3944.44	1010.90	4059.10	3928.21		0.52	-0.08	0.028
75.00	-30.70	-0.72	0.00	-74.38	0.00	74.38	3881.43	986.31	3864.05	3770.72		0.61	-0.08	0.028
80.00	-29.35	-0.72	0.00	-70.79	0.00	70.79	3816.78	961.72	3673.81	3614.75		0.70	-0.09	0.027
85.00	-28.03	-0.71	0.00	-67.21	0.00	67.21	3750.48	937.14	3488.36	3460.42		0.79	-0.10	0.027
90.00	-25.80	-0.70	0.00	-63.64	0.00	63.64	3682.55	912.55	3307.72	3307.86		0.90	-0.10	0.026
91.00	-25.36	-0.70	0.00	-62.95	0.00	62.95	2898.33	768.33	2813.78	2634.30		0.92	-0.10	0.033
95.00	-24.48	-0.69	0.00	-60.16	0.00	60.16	2860.60	751.94	2695.00	2544.15		1.01	-0.11	0.032
100.00	-23.41	-0.69	0.00	-56.69	0.00	56.69	2811.95	731.45	2550.13	2432.25		1.13	-0.12	0.032
105.00	-22.37	-0.69	0.00	-53.24	0.00	53.24	2761.66	710.96	2409.26	2321.34		1.25	-0.13	0.031
110.00	-21.34	-0.68	0.00	-49.80	0.00	49.80	2709.73	690.47	2272.40	2211.55		1.39	-0.13	0.030
115.00	-20.35	-0.68	0.00	-46.38	0.00	46.38	2656.16	669.98	2139.54	2103.00		1.53	-0.14	0.030
120.00	-19.37	-0.67	0.00	-42.98	0.00	42.98	2600.95	649.49	2010.67	1995.80		1.69	-0.15	0.029
125.00	-18.43	-0.67	0.00	-39.61	0.00	39.61	2544.10	629.00	1885.82	1890.08		1.85	-0.16	0.028
130.00	-17.50	-0.66	0.00	-36.27	0.00	36.27	2485.60	608.51	1764.96	1785.96		2.03	-0.17	0.027
135.00	-16.02	-0.65	0.00	-32.95	0.00	32.95	1823.78	478.25	1362.76	1289.51		2.21	-0.18	0.034
140.00	-15.27	-0.64	0.00	-29.72	0.00	29.72	1784.40	461.86	1270.94	1218.11		2.40	-0.19	0.033
145.00	-14.55	-0.64	0.00	-26.51	0.00	26.51	1743.38	445.47	1182.33	1147.55		2.61	-0.20	0.031
150.00	-13.84	-0.63	0.00	-23.32	0.00	23.32	1700.71	429.08	1096.92	1077.96		2.82	-0.21	0.030
155.00	-13.15	-0.63	0.00	-20.15	0.00	20.15	1656.41	412.69	1014.72	1009.45		3.05	-0.22	0.028
160.00	-12.49	-0.62	0.00	-17.01	0.00	17.01	1610.46	396.29	935.71	942.14		3.28	-0.23	0.026
165.00	-11.84	-0.62	0.00	-13.89	0.00	13.89	1562.88	379.90	859.91	876.15		3.53	-0.24	0.023
170.00	-11.21	-0.61	0.00	-10.80	0.00	10.80	1513.65	363.51	787.30	811.61		3.79	-0.25	0.021
175.00	-10.61	-0.61	0.00	-7.74	0.00	7.74	1462.77	347.12	717.90	748.63		4.05	-0.26	0.018
180.00	-10.02	-0.60	0.00	-4.71	0.00	4.71	1400.09	330.73	651.70	682.38		4.32	-0.26	0.014
180.00	-10.02	-0.60	0.00	-4.71	0.00	4.71	678.42	203.53	25205.7	396.30		4.32	-0.26	0.027
183.00	-5.55	-0.32	0.00	-2.91	0.00	2.91	678.42	203.53	25205.7	396.30		4.49	-0.26	0.016
185.00	-5.35	-0.32	0.00	-2.26	0.00	2.26	678.42	203.53	25205.7	396.30		4.60	-0.27	0.014
190.00	-4.85	-0.32	0.00	-0.64	0.00	0.64	678.42	203.53	25205.7	396.30		4.88	-0.27	0.009
192.00	-0.27	0.00	0.00	-0.01	0.00	0.01	678.42	203.53	25205.7	396.30		4.99	-0.27	0.000
195.00	0.00	0.00	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30		5.16	-0.27	0.000

Calculated Forces

Structure:	CT01944-S-SBA		**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	427.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 23

Seismic Segment Forces (Factored)

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 24	

Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	23
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03	**S1**	0.05
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1417.7	2.50	53.23	0.01	
10.00		1393.9	7.50	52.34	0.07	
15.00		1370.0	12.50	51.44	0.18	
20.00		1346.2	17.50	50.55	0.34	
25.00		1322.4	22.50	49.65	0.54	
30.00		1298.5	27.50	48.76	0.77	
35.00		1274.7	32.50	47.86	1.04	
40.00		1250.8	37.50	46.97	1.33	
41.00	Bot - Section 2	247.32	40.50	9.29	0.06	
45.00		1866.7	43.00	70.09	3.90	
48.00	Top - Section 1	1380.0	46.50	51.82	2.49	
50.00		484.50	49.00	18.19	0.34	
55.00		1194.5	52.50	44.85	2.38	
60.00		1170.7	57.50	43.96	2.74	
65.00		1146.9	62.50	43.06	3.11	
70.00		1123.0	67.50	42.17	3.48	
75.00		1099.2	72.50	41.27	3.84	
80.00		1075.3	77.50	40.38	4.20	
85.00	Bot - Section 3	1051.5	82.50	39.48	4.55	
90.00		1786.4	87.50	67.08	14.79	
91.00	Top - Section 2	352.05	90.50	13.22	0.61	
95.00		694.43	93.00	26.07	2.52	
100.00		850.17	97.50	31.92	4.16	
105.00		830.30	102.50	31.18	4.38	
110.00		810.44	107.50	30.43	4.59	
115.00		790.58	112.50	29.68	4.79	
120.00		770.71	117.50	28.94	4.96	
125.00		750.85	122.50	28.19	5.12	
130.00	Bot - Section 4	730.99	127.50	27.45	5.26	
135.00	Top - Section 3	1182.7	132.50	44.41	14.86	
140.00		586.83	137.50	22.03	3.94	
145.00		570.94	142.50	21.44	4.01	
150.00		555.05	147.50	20.84	4.06	
155.00		539.15	152.50	20.24	4.09	
160.00		523.26	157.50	19.65	4.11	
165.00		507.37	162.50	19.05	4.11	
170.00		491.48	167.50	18.45	4.10	
175.00		475.59	172.50	17.86	4.07	
180.00	Top - Section 4	459.70	177.50	17.26	4.03	
183.00	Appurtenance(s)	3599.4	181.50	135.15	258.25	
185.00		161.15	184.00	6.05	0.53	
190.00		402.87	187.50	15.13	3.45	
192.00	Appurtenance(s)	3694.2	191.00	138.71	301.26	
195.00	Appurtenance(s)	220.25	193.50	8.27	1.10	
	Totals:	**44,851.6**		**1,684.0**	**702.5**	**Total Wind:** **26,085.3**

Seismic Segment Forces (Factored)

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 25	

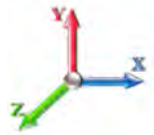
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.0Ev + 1.0Eh



Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	23		
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.18		
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03	**S1**	0.05	**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	-42.54	-0.70	0.00	-127.13	0.00	127.13	4628.91	1339.45	7126.38	6119.66		0.00	0.00	0.030
5.00	-41.20	-0.71	0.00	-123.61	0.00	123.61	4587.84	1314.86	6867.16	5953.37		0.00	0.00	0.030
10.00	-39.88	-0.71	0.00	-120.08	0.00	120.08	4545.12	1290.28	6612.74	5787.00		0.01	-0.01	0.030
15.00	-38.58	-0.71	0.00	-116.54	0.00	116.54	4500.76	1265.69	6363.12	5620.67		0.02	-0.01	0.029
20.00	-37.30	-0.71	0.00	-112.98	0.00	112.98	4454.76	1241.10	6118.30	5454.49		0.04	-0.02	0.029
25.00	-36.05	-0.72	0.00	-109.40	0.00	109.40	4407.12	1216.52	5878.29	5288.58		0.06	-0.02	0.029
30.00	-34.82	-0.72	0.00	-105.82	0.00	105.82	4357.84	1191.93	5643.07	5123.07		0.09	-0.03	0.029
35.00	-33.61	-0.72	0.00	-102.23	0.00	102.23	4306.92	1167.34	5412.67	4958.08		0.12	-0.03	0.028
40.00	-32.43	-0.72	0.00	-98.63	0.00	98.63	4254.35	1142.76	5187.06	4793.73		0.16	-0.04	0.028
41.00	-32.19	-0.72	0.00	-97.91	0.00	97.91	4243.64	1137.84	5142.51	4760.94		0.17	-0.04	0.028
45.00	-30.43	-0.72	0.00	-95.03	0.00	95.03	4200.14	1118.17	4966.25	4630.13		0.21	-0.05	0.028
48.00	-29.13	-0.72	0.00	-92.87	0.00	92.87	4202.19	1119.08	4974.38	4636.19		0.23	-0.05	0.027
50.00	-28.67	-0.72	0.00	-91.44	0.00	91.44	4180.07	1109.25	4887.33	4570.98		0.26	-0.05	0.027
55.00	-27.54	-0.72	0.00	-87.85	0.00	87.85	4123.62	1084.66	4673.07	4408.60		0.31	-0.06	0.027
60.00	-26.43	-0.72	0.00	-84.27	0.00	84.27	4065.54	1060.07	4463.61	4247.27		0.37	-0.06	0.026
65.00	-25.34	-0.71	0.00	-80.69	0.00	80.69	4005.81	1035.49	4258.96	4087.10		0.44	-0.07	0.026
70.00	-24.27	-0.71	0.00	-77.13	0.00	77.13	3944.44	1010.90	4059.10	3928.21		0.52	-0.07	0.026
75.00	-23.23	-0.71	0.00	-73.57	0.00	73.57	3881.43	986.31	3864.05	3770.72		0.60	-0.08	0.025
80.00	-22.21	-0.71	0.00	-70.02	0.00	70.02	3816.78	961.72	3673.81	3614.75		0.69	-0.09	0.025
85.00	-21.21	-0.70	0.00	-66.50	0.00	66.50	3750.48	937.14	3488.36	3460.42		0.78	-0.09	0.025
90.00	-19.52	-0.69	0.00	-62.99	0.00	62.99	3682.55	912.55	3307.72	3307.86		0.89	-0.10	0.024
91.00	-19.19	-0.69	0.00	-62.30	0.00	62.30	2898.33	768.33	2813.78	2634.30		0.91	-0.10	0.030
95.00	-18.52	-0.68	0.00	-59.56	0.00	59.56	2860.60	751.94	2695.00	2544.15		1.00	-0.11	0.030
100.00	-17.71	-0.68	0.00	-56.13	0.00	56.13	2811.95	731.45	2550.13	2432.25		1.11	-0.12	0.029
105.00	-16.92	-0.68	0.00	-52.73	0.00	52.73	2761.66	710.96	2409.26	2321.34		1.24	-0.12	0.029
110.00	-16.15	-0.67	0.00	-49.34	0.00	49.34	2709.73	690.47	2272.40	2211.55		1.37	-0.13	0.028
115.00	-15.39	-0.67	0.00	-45.97	0.00	45.97	2656.16	669.98	2139.54	2103.00		1.52	-0.14	0.028
120.00	-14.66	-0.66	0.00	-42.62	0.00	42.62	2600.95	649.49	2010.67	1995.80		1.67	-0.15	0.027
125.00	-13.94	-0.66	0.00	-39.30	0.00	39.30	2544.10	629.00	1885.82	1890.08		1.83	-0.16	0.026
130.00	-13.24	-0.66	0.00	-36.00	0.00	36.00	2485.60	608.51	1764.96	1785.96		2.00	-0.17	0.025
135.00	-12.12	-0.64	0.00	-32.72	0.00	32.72	1823.78	478.25	1362.76	1289.51		2.19	-0.18	0.032
140.00	-11.56	-0.64	0.00	-29.53	0.00	29.53	1784.40	461.86	1270.94	1218.11		2.38	-0.19	0.031
145.00	-11.01	-0.63	0.00	-26.36	0.00	26.36	1743.38	445.47	1182.33	1147.55		2.58	-0.20	0.029
150.00	-10.48	-0.63	0.00	-23.20	0.00	23.20	1700.71	429.08	1096.92	1077.96		2.79	-0.21	0.028
155.00	-9.96	-0.62	0.00	-20.06	0.00	20.06	1656.41	412.69	1014.72	1009.45		3.01	-0.22	0.026
160.00	-9.45	-0.62	0.00	-16.95	0.00	16.95	1610.46	396.29	935.71	942.14		3.25	-0.23	0.024
165.00	-8.96	-0.61	0.00	-13.85	0.00	13.85	1562.88	379.90	859.91	876.15		3.49	-0.24	0.022
170.00	-8.49	-0.61	0.00	-10.78	0.00	10.78	1513.65	363.51	787.30	811.61		3.75	-0.25	0.019
175.00	-8.03	-0.60	0.00	-7.73	0.00	7.73	1462.77	347.12	717.90	748.63		4.01	-0.25	0.016
180.00	-7.59	-0.60	0.00	-4.71	0.00	4.71	1400.09	330.73	651.70	682.38		4.28	-0.26	0.012
180.00	-7.59	-0.60	0.00	-4.71	0.00	4.71	678.42	203.53	25205.7	396.30		4.28	-0.26	0.023
183.00	-4.21	-0.33	0.00	-2.92	0.00	2.92	678.42	203.53	25205.7	396.30		4.44	-0.26	0.014
185.00	-4.05	-0.32	0.00	-2.27	0.00	2.27	678.42	203.53	25205.7	396.30		4.56	-0.26	0.012
190.00	-3.67	-0.32	0.00	-0.64	0.00	0.64	678.42	203.53	25205.7	396.30		4.83	-0.26	0.007
192.00	-0.21	0.00	0.00	-0.01	0.00	0.01	678.42	203.53	25205.7	396.30		4.94	-0.26	0.000
195.00	0.00	0.00	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30		5.11	-0.26	0.000

Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 27	

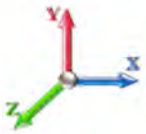
Wind Loading - Shaft

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 28	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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	0.70	5.292	5.82	269.15	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	5.292	5.82	264.24	0.730	0.000	5.00	27.041	19.74	114.9	0.0	1286.6
10.00		1.00	0.70	5.292	5.82	259.33	0.730	0.000	5.00	26.543	19.38	112.8	0.0	1262.8
15.00		1.00	0.70	5.292	5.82	254.42	0.730	0.000	5.00	26.045	19.01	110.7	0.0	1238.9
20.00		1.00	0.70	5.292	5.82	249.50	0.730	0.000	5.00	25.547	18.65	108.6	0.0	1215.1
25.00		1.00	0.70	5.292	5.82	244.59	0.730	0.000	5.00	25.049	18.29	106.4	0.0	1191.3
30.00		1.00	0.70	5.296	5.83	239.78	0.730	0.000	5.00	24.550	17.92	104.4	0.0	1167.4
35.00		1.00	0.73	5.535	6.09	240.10	0.730	0.000	5.00	24.052	17.56	106.9	0.0	1143.6
40.00		1.00	0.76	5.750	6.32	239.60	0.730	0.000	5.00	23.554	17.19	108.8	0.0	1119.8
41.00	Bot - Section 2	1.00	0.77	5.791	6.37	239.42	0.730	0.000	1.00	4.651	3.40	21.6	0.0	221.1
45.00		1.00	0.79	5.947	6.54	238.46	0.730	0.000	4.00	18.659	13.62	89.1	0.0	1761.8
48.00	Top - Section 1	1.00	0.80	6.057	6.66	237.52	0.730	0.000	3.00	13.785	10.06	67.1	0.0	1301.3
50.00		1.00	0.81	6.128	6.74	240.16	0.730	0.000	2.00	9.091	6.64	44.7	0.0	432.1
55.00		1.00	0.83	6.298	6.93	238.09	0.730	0.000	5.00	22.378	16.34	113.2	0.0	1063.4
60.00		1.00	0.85	6.456	7.10	235.64	0.730	0.000	5.00	21.880	15.97	113.4	0.0	1039.6
65.00		1.00	0.87	6.605	7.27	232.87	0.730	0.000	5.00	21.382	15.61	113.4	0.0	1015.8
70.00		1.00	0.89	6.747	7.42	229.80	0.730	0.000	5.00	20.884	15.25	113.1	0.0	991.9
75.00		1.00	0.91	6.881	7.57	226.47	0.730	0.000	5.00	20.386	14.88	112.6	0.0	968.1
80.00		1.00	0.93	7.009	7.71	222.92	0.730	0.000	5.00	19.888	14.52	111.9	0.0	944.3
85.00	Bot - Section 3	1.00	0.94	7.132	7.84	219.16	0.730	0.000	5.00	19.390	14.15	111.0	0.0	920.4
90.00		1.00	0.96	7.249	7.97	215.20	0.730	0.000	5.00	19.156	13.98	111.5	0.0	1655.4
91.00	Top - Section 2	1.00	0.96	7.272	8.00	214.39	0.730	0.000	1.00	3.771	2.75	22.0	0.0	325.8
95.00		1.00	0.97	7.362	8.10	214.15	0.730	0.000	4.00	14.887	10.87	88.0	0.0	589.5
100.00		1.00	0.99	7.471	8.22	209.89	0.730	0.000	5.00	18.160	13.26	108.9	0.0	719.0
105.00		1.00	1.00	7.576	8.33	205.48	0.730	0.000	5.00	17.662	12.89	107.4	0.0	699.2
110.00		1.00	1.02	7.677	8.44	200.94	0.730	0.000	5.00	17.164	12.53	105.8	0.0	679.3
115.00		1.00	1.03	7.775	8.55	196.27	0.730	0.000	5.00	16.666	12.17	104.1	0.0	659.4
120.00		1.00	1.04	7.870	8.66	191.47	0.730	0.000	5.00	16.168	11.80	102.2	0.0	639.6
125.00		1.00	1.05	7.962	8.76	186.57	0.730	0.000	5.00	15.670	11.44	100.2	0.0	619.7
130.00	Bot - Section 4	1.00	1.07	8.052	8.86	181.56	0.730	0.000	5.00	15.172	11.08	98.1	0.0	599.9
135.00	Top - Section 3	1.00	1.08	8.139	8.95	176.45	0.730	0.000	5.00	14.885	10.87	97.3	0.0	1051.6
140.00		1.00	1.09	8.224	9.05	173.84	0.730	0.000	5.00	14.387	10.50	95.0	0.0	455.7
145.00		1.00	1.10	8.307	9.14	168.56	0.730	0.000	5.00	13.889	10.14	92.7	0.0	439.8
150.00		1.00	1.11	8.388	9.23	163.20	0.730	0.000	5.00	13.391	9.78	90.2	0.0	423.9
155.00		1.00	1.12	8.467	9.31	157.75	0.730	0.000	5.00	12.893	9.41	87.7	0.0	408.0
160.00		1.00	1.13	8.544	9.40	152.22	0.730	0.000	5.00	12.395	9.05	85.0	0.0	392.1
165.00		1.00	1.14	8.620	9.48	146.63	0.730	0.000	5.00	11.897	8.69	82.3	0.0	376.2
170.00		1.00	1.15	8.694	9.56	140.96	0.730	0.000	5.00	11.399	8.32	79.6	0.0	360.4
175.00		1.00	1.16	8.766	9.64	135.22	0.730	0.000	5.00	10.901	7.96	76.7	0.0	344.5
180.00	Top - Section 4	1.00	1.17	8.837	9.72	129.42	0.730	0.000	5.00	10.403	7.59	73.8	0.0	328.6
183.00	Appurtenance(s)	1.00	1.17	8.879	9.77	127.75	0.600	0.000	3.00	6.000	3.60	35.2	0.0	213.8
185.00		1.00	1.18	8.906	9.80	127.95	0.600	0.000	2.00	4.000	2.40	23.5	0.0	142.5
190.00		1.00	1.19	8.974	9.87	128.44	0.600	0.000	5.00	10.000	6.00	59.2	0.0	356.3
192.00	Appurtenance(s)	1.00	1.19	9.001	9.90	128.63	0.600	0.000	2.00	4.000	2.40	23.8	0.0	142.5
195.00	Appurtenance(s)	1.00	1.20	9.041	9.95	128.92	0.600	0.000	3.00	6.000	3.60	35.8	0.0	213.8
								Totals:	**195.00**			**3,870.8**		**33,121.7**

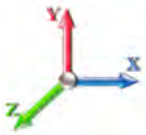
Discrete Appurtenance Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 29	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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	195.00	6' Lightning rod	1	9.041	9.945	1.00	1.00	0.38	6.50	0.000	0.000	3.78	0.00	0.00
2	192.00	Low Profile Platform	1	9.001	9.901	1.00	1.00	22.00	1500.00	0.000	0.000	217.83	0.00	0.00
3	192.00	4460 B25 + B66	3	9.001	9.901	0.50	0.75	4.30	327.00	0.000	0.000	42.54	0.00	0.00
4	192.00	4449 B71 + B85	3	9.001	9.901	0.50	0.75	2.97	219.60	0.000	0.000	29.40	0.00	0.00
5	192.00	VV-65A-R1	3	9.001	9.901	0.55	0.75	13.15	88.50	0.000	0.000	130.24	0.00	0.00
6	192.00	AIR6449 B41	3	9.001	9.901	0.53	0.75	9.03	309.00	0.000	0.000	89.37	0.00	0.00
7	192.00	MS-HRECP	1	9.001	9.901	1.00	1.00	12.25	514.00	0.000	0.000	121.29	0.00	0.00
8	192.00	MS-KI22-5 (Kickers w/o	1	9.001	9.901	1.00	1.00	5.33	146.00	0.000	0.000	52.77	0.00	0.00
9	192.00	KRY 112 489/2	3	9.015	9.916	0.75	0.75	1.53	39.60	0.000	1.000	15.17	0.00	15.17
10	192.00	RFS	3	9.015	9.916	0.52	0.75	31.88	384.00	0.000	1.000	316.10	0.00	316.10
11	192.00	782 11056	3	9.001	9.901	0.65	0.75	0.55	5.40	0.000	0.000	5.43	0.00	0.00
12	183.00	MS-KI22-5 (Kickers w/o	1	8.879	9.766	1.00	1.00	5.33	146.00	0.000	0.000	52.06	0.00	0.00
13	183.00	DB-C1-12C-24AB-0Z	1	8.879	9.766	0.68	0.75	2.74	32.00	0.000	0.000	26.76	0.00	0.00
14	183.00	RFV01U-D2A	3	8.879	9.766	0.50	0.75	2.83	210.90	0.000	0.000	27.68	0.00	0.00
15	183.00	RFV01U-D1A	3	8.879	9.766	0.50	0.75	2.83	253.20	0.000	0.000	27.68	0.00	0.00
16	183.00	MX06FRO660-03	6	8.879	9.766	0.65	0.75	38.64	276.00	0.000	0.000	377.39	0.00	0.00
17	183.00	Low Profile Platform	1	8.879	9.766	1.00	1.00	22.00	1500.00	0.000	0.000	214.86	0.00	0.00
18	183.00	MT6407-77A	3	8.879	9.766	0.52	0.75	7.39	238.20	0.000	0.000	72.14	0.00	0.00
19	183.00	Support Rail w/ end	1	8.879	9.766	1.00	1.00	12.25	514.00	0.000	0.000	119.64	0.00	0.00
20	183.00	MS-H1436 (Heavy Collar	1	8.879	9.766	1.00	1.00	2.25	136.70	0.000	0.000	21.97	0.00	0.00
							Totals:		**6,846.60**			**1,964.11**		

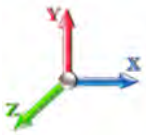
Total Applied Force Summary

Structure:	CT01944-S-SBA		**Code:**	EIA/TIA-222-H	11/30/2021
Site Name:	Harwinton		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	427.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 30

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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		114.90	1432.32	0.00	0.00
10.00		112.79	1408.48	0.00	0.00
15.00		110.67	1384.64	0.00	0.00
20.00		108.55	1360.81	0.00	0.00
25.00		106.44	1336.97	0.00	0.00
30.00		104.41	1313.14	0.00	0.00
35.00		106.90	1289.30	0.00	0.00
40.00		108.76	1265.46	0.00	0.00
41.00		21.63	250.23	0.00	0.00
45.00		89.10	1878.38	0.00	0.00
48.00		67.05	1388.76	0.00	0.00
50.00		44.74	490.33	0.00	0.00
55.00		113.16	1209.14	0.00	0.00
60.00		113.43	1185.31	0.00	0.00
65.00		113.41	1161.47	0.00	0.00
70.00		113.14	1137.64	0.00	0.00
75.00		112.64	1113.80	0.00	0.00
80.00		111.94	1089.96	0.00	0.00
85.00		111.04	1066.13	0.00	0.00
90.00		111.51	1801.05	0.00	0.00
91.00		22.02	354.97	0.00	0.00
95.00		88.00	706.09	0.00	0.00
100.00		108.94	864.74	0.00	0.00
105.00		107.44	844.87	0.00	0.00
110.00		105.81	825.01	0.00	0.00
115.00		104.05	805.15	0.00	0.00
120.00		102.18	785.28	0.00	0.00
125.00		100.19	765.42	0.00	0.00
130.00		98.10	745.56	0.00	0.00
135.00		97.29	1197.28	0.00	0.00
140.00		95.02	601.40	0.00	0.00
145.00		92.65	585.51	0.00	0.00
150.00		90.20	569.62	0.00	0.00
155.00		87.66	553.72	0.00	0.00
160.00		85.05	537.83	0.00	0.00
165.00		82.35	521.94	0.00	0.00
170.00		79.58	506.05	0.00	0.00
175.00		76.73	490.16	0.00	0.00
180.00		73.82	474.27	0.00	0.00
183.00	(20) attachments	975.34	3608.17	0.00	0.00
185.00		23.51	163.22	0.00	0.00
190.00		59.23	408.05	0.00	0.00
192.00	(24) attachments	1043.91	3696.32	0.00	331.28
195.00	(1) attachments	39.58	220.25	0.00	0.00
	Totals:	**5,834.87**	**45,394.21**	**0.00**	**331.28**

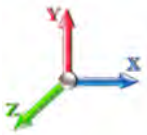
Calculated Forces

Structure:	CT01944-S-SBA	**Code:**	EIA/TIA-222-H	11/30/2021	
Site Name:	Harwinton	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	427.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 31	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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	-45.39	-5.84	0.00	-757.22	0.00	757.22	4628.91	1339.45	7126.38	6119.66	0.00	0.000	0.000	0.134
5.00	-43.96	-5.75	0.00	-728.00	0.00	728.00	4587.84	1314.86	6867.16	5953.37	0.01	-0.027	0.000	0.132
10.00	-42.55	-5.66	0.00	-699.25	0.00	699.25	4545.12	1290.28	6612.74	5787.00	0.06	-0.054	0.000	0.130
15.00	-41.16	-5.56	0.00	-670.96	0.00	670.96	4500.76	1265.69	6363.12	5620.67	0.13	-0.081	0.000	0.129
20.00	-39.80	-5.47	0.00	-643.14	0.00	643.14	4454.76	1241.10	6118.30	5454.49	0.23	-0.109	0.000	0.127
25.00	-38.46	-5.38	0.00	-615.78	0.00	615.78	4407.12	1216.52	5878.29	5288.58	0.36	-0.138	0.000	0.125
30.00	-37.14	-5.29	0.00	-588.86	0.00	588.86	4357.84	1191.93	5643.07	5123.07	0.52	-0.166	0.000	0.123
35.00	-35.85	-5.20	0.00	-562.39	0.00	562.39	4306.92	1167.34	5412.67	4958.08	0.71	-0.196	0.000	0.122
40.00	-34.58	-5.10	0.00	-536.39	0.00	536.39	4254.35	1142.76	5187.06	4793.73	0.93	-0.225	0.000	0.120
41.00	-34.33	-5.09	0.00	-531.29	0.00	531.29	4243.64	1137.84	5142.51	4760.94	0.98	-0.232	0.000	0.120
45.00	-32.45	-5.00	0.00	-510.95	0.00	510.95	4200.14	1118.17	4966.25	4630.13	1.18	-0.256	0.000	0.118
48.00	-31.06	-4.94	0.00	-495.95	0.00	495.95	4202.19	1119.08	4974.38	4636.19	1.35	-0.275	0.000	0.114
50.00	-30.57	-4.90	0.00	-486.08	0.00	486.08	4180.07	1109.25	4887.33	4570.98	1.47	-0.287	0.000	0.114
55.00	-29.36	-4.80	0.00	-461.58	0.00	461.58	4123.62	1084.66	4673.07	4408.60	1.78	-0.317	0.000	0.112
60.00	-28.17	-4.69	0.00	-437.60	0.00	437.60	4065.54	1060.07	4463.61	4247.27	2.13	-0.348	0.000	0.110
65.00	-27.01	-4.58	0.00	-414.15	0.00	414.15	4005.81	1035.49	4258.96	4087.10	2.51	-0.378	0.000	0.108
70.00	-25.87	-4.48	0.00	-391.23	0.00	391.23	3944.44	1010.90	4059.10	3928.21	2.92	-0.410	0.000	0.106
75.00	-24.75	-4.37	0.00	-368.84	0.00	368.84	3881.43	986.31	3864.05	3770.72	3.37	-0.441	0.000	0.104
80.00	-23.66	-4.26	0.00	-346.99	0.00	346.99	3816.78	961.72	3673.81	3614.75	3.85	-0.474	0.000	0.102
85.00	-22.59	-4.16	0.00	-325.68	0.00	325.68	3750.48	937.14	3488.36	3460.42	4.36	-0.506	0.000	0.100
90.00	-20.79	-4.04	0.00	-304.90	0.00	304.90	3682.55	912.55	3307.72	3307.86	4.91	-0.539	0.000	0.098
91.00	-20.44	-4.02	0.00	-300.86	0.00	300.86	2898.33	768.33	2813.78	2634.30	5.02	-0.546	0.000	0.121
95.00	-19.73	-3.93	0.00	-284.80	0.00	284.80	2860.60	751.94	2695.00	2544.15	5.49	-0.573	0.000	0.119
100.00	-18.86	-3.83	0.00	-265.14	0.00	265.14	2811.95	731.45	2550.13	2432.25	6.12	-0.612	0.000	0.116
105.00	-18.02	-3.72	0.00	-246.00	0.00	246.00	2761.66	710.96	2409.26	2321.34	6.78	-0.651	0.000	0.113
110.00	-17.19	-3.62	0.00	-227.39	0.00	227.39	2709.73	690.47	2272.40	2211.55	7.48	-0.690	0.000	0.109
115.00	-16.39	-3.52	0.00	-209.29	0.00	209.29	2656.16	669.98	2139.54	2103.00	8.22	-0.730	0.000	0.106
120.00	-15.60	-3.42	0.00	-191.71	0.00	191.71	2600.95	649.49	2010.67	1995.80	9.01	-0.770	0.000	0.102
125.00	-14.83	-3.31	0.00	-174.64	0.00	174.64	2544.10	629.00	1885.82	1890.08	9.84	-0.810	0.000	0.098
130.00	-14.09	-3.22	0.00	-158.06	0.00	158.06	2485.60	608.51	1764.96	1785.96	10.71	-0.850	0.000	0.094
135.00	-12.89	-3.11	0.00	-141.98	0.00	141.98	1823.78	478.25	1362.76	1289.51	11.62	-0.890	0.000	0.117
140.00	-12.29	-3.01	0.00	-126.44	0.00	126.44	1784.40	461.86	1270.94	1218.11	12.57	-0.929	0.000	0.111
145.00	-11.70	-2.92	0.00	-111.37	0.00	111.37	1743.38	445.47	1182.33	1147.55	13.57	-0.976	0.000	0.104
150.00	-11.13	-2.83	0.00	-96.77	0.00	96.77	1700.71	429.08	1096.92	1077.96	14.62	-1.021	0.000	0.096
155.00	-10.58	-2.74	0.00	-82.62	0.00	82.62	1656.41	412.69	1014.72	1009.45	15.71	-1.064	0.000	0.088
160.00	-10.04	-2.65	0.00	-68.92	0.00	68.92	1610.46	396.29	935.71	942.14	16.85	-1.106	0.000	0.079
165.00	-9.52	-2.56	0.00	-55.66	0.00	55.66	1562.88	379.90	859.91	876.15	18.03	-1.144	0.000	0.070
170.00	-9.01	-2.48	0.00	-42.84	0.00	42.84	1513.65	363.51	787.30	811.61	19.24	-1.178	0.000	0.059
175.00	-8.52	-2.40	0.00	-30.44	0.00	30.44	1462.77	347.12	717.90	748.63	20.49	-1.208	0.000	0.047
180.00	-8.05	-2.32	0.00	-18.46	0.00	18.46	1400.09	330.73	651.70	682.38	21.77	-1.230	0.000	0.033
180.00	-8.05	-2.32	0.00	-18.46	0.00	18.46	678.42	203.53	25205.7	396.30	21.77	-1.230	0.000	0.059
183.00	-4.46	-1.26	0.00	-11.51	0.00	11.51	678.42	203.53	25205.7	396.30	22.55	-1.239	0.000	0.036
185.00	-4.30	-1.24	0.00	-8.98	0.00	8.98	678.42	203.53	25205.7	396.30	23.07	-1.243	0.000	0.029
190.00	-3.89	-1.17	0.00	-2.80	0.00	2.80	678.42	203.53	25205.7	396.30	24.37	-1.249	0.000	0.013
192.00	-0.22	-0.04	0.00	-0.13	0.00	0.13	678.42	203.53	25205.7	396.30	24.90	-1.250	0.000	0.001
195.00	0.00	-0.04	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	25.68	-1.250	0.000	0.000

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 + 1.0W 120 mph Wind	26.1	0.00	54.44	0.00	0.00	3412.21
0.9D + 1.0W 120 mph Wind	26.1	0.00	40.83	0.00	0.00	3366.93
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	0.00	71.73	0.00	0.00	891.08
1.2D + 1.0Ev + 1.0Eh	0.7	0.00	56.22	0.00	0.00	128.42
0.9D + 1.0Ev + 1.0Eh	0.7	0.00	42.54	0.00	0.00	127.13
1.0D + 1.0W 60 mph Wind	5.8	0.00	45.39	0.00	0.00	757.22

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 + 1.0W 120 mph Wind	-54.44	-26.14	0.00	-3412.2	0.00	-3412.2	4628.91	1339.4	7126.38	6119.66	0.00	0.570
0.9D + 1.0W 120 mph Wind	-40.83	-26.13	0.00	-3366.9	0.00	-3366.9	4628.91	1339.4	7126.38	6119.66	0.00	0.559
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-71.73	-7.04	0.00	-891.08	0.00	-891.08	4628.91	1339.4	7126.38	6119.66	0.00	0.161
1.2D + 1.0Ev + 1.0Eh	-16.02	-0.65	0.00	-32.95	0.00	-32.95	1823.78	478.25	1362.76	1289.51	135.00	0.034
0.9D + 1.0Ev + 1.0Eh	-12.12	-0.64	0.00	-32.72	0.00	-32.72	1823.78	478.25	1362.76	1289.51	135.00	0.032
1.0D + 1.0W 60 mph Wind	-45.39	-5.84	0.00	-757.22	0.00	-757.22	4628.91	1339.4	7126.38	6119.66	0.00	0.134

Monopole Mat Foundation Design

			Date: 11/30/2021
Customer Name:		EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	300
Site Number:	194213-VZW	Engineer Name:	J. Tibbetts
Engr. Number:		Engineer Login ID:	

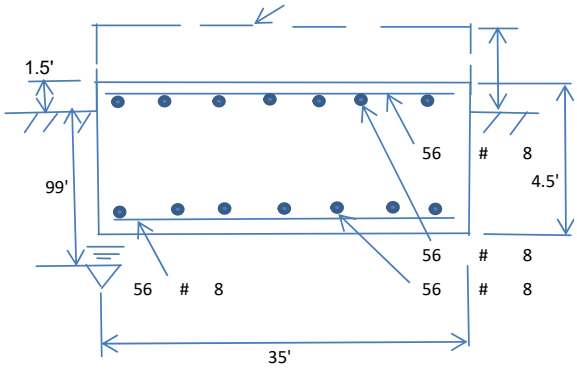
Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

Analysis or Design? Analysis

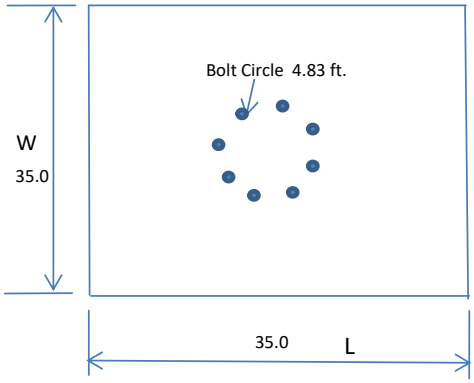
Base Reactions (Factored):

Axial Load (Kips):	54.4	Shear Force (Kips):	26.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3412.2
Allowable overstress %:	5.0%		



Foundation Geometries:

		Mods required -Yes/No ?:	No
Anchor Bolt Circle (ft.):	4.83	Depth of Base BG (ft.):	3.00
Thickness of Pad (ft):	4.50		
Length of Pad (ft.):	35	Width of Pad (ft.):	35
Final Length of pad (ft)	35.0	Final width of pad (ft):	35.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	6.0	
Pad Steel Rebar Size (#):	8			
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	56	Qty. of Rebar in Pad (W):	56	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	56	Qty. of Rebar in Pad (W):	56	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	15000	Ultimate Skin Friction:		Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	5512.50	Total Dry Concrete Weight (Kips):	826.88
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	826.88	Total Vertical Load on Base (Kips):	881.32

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1387	<	Allowable Factored Soil Bearing (psf): 11250	0.12	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	13976.0	>	Design Factored Momont (kips-ft): 3531	0.25	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.96	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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1742.6	>	One-Way Factored Shear (L-D. Kips):	369.7	0.21	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1742.6	>	One-Way Factored Shear (W-D., Kips)	369.7	0.21	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	2199.0	>	One-Way Factored Shear (C-C, Kips):	517.4	0.24	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0021	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0021		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	9806.8	>	Moment at Bottom (L-Direct. K-Ft):	1964.6	0.20	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	9806.8	>	Moment at Bottom (W-Direct. K-Ft):	1964.6	0.20	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	13826.9	>	Moment at Bottom (C-C Dir. K-Ft):	2778.4	0.20	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0021	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0021		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	9806.8	>	Moment at the top (L-Dir Kips-Ft):	320.6	0.03	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	9806.8	>	Moment at the top (W-Dir Kips-Ft):	320.6	0.03	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	13826.9	>	Moment at the top (C-C Direc. K-Ft):	612.4	0.04	OK!

EXHIBIT 8

Mount Analysis

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

Antenna Mount Analysis Report

Existing 196-Ft Monopole Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT01944-S-SBA / Harwinton
Customer Site Name: Harwinton
Carrier Name: T-Mobile (App#: 179018, V#1)
Carrier Site ID / Name: CT11712A / Harwinton
Site Location: 133 Clearview Ave
Harwinton, Connecticut
Litchfield County
Latitude: 41.775522
Longitude: -73.098202

Analysis Result:

Max Structural Usage: 85.4% [Pass]

Report Prepared By: Osuba Gurung

Introduction

The purpose of this report is to summarize the analysis results on the (1) Modified platform w/ support rails at 192.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping info by Full Metal Tower Services, Site name: Harwinton, Dated 04/27/2019
Antenna Loading	SBA, Application #: 179018, v1, Dated 11/15/2021
Modification Drawings	TES Job no. 81812, Dated 08/07/2019

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 117 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 93 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
Exposure Category: B
Structure Class: II
Topographic Category: 3
Crest Height (Ft): 451

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

Mount Information

(1) Modified platform w/ support rails at 192.00' elevation

Final Antenna Configuration

3 Ericsson AIR6449 B41
3 RFS APXVAARR24_43-U-NA20
3 Commscope VV-65A-R1
3 Ericsson KRY 112 489/2*
3 Ericsson 4449 B71 + B85
3 Ericsson 4460 B25 + B66
3 Kathrein 782 11056*

* Equipment to be flush mounted directly to the Face horizontal. They are not included in the antenna placement diagrams.

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 85.4%, which occurs in the Face horizontal. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

NOTE: Replace the mid Mount pipes w/ 2.5 standard 8' long pipes.

Attachments

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

Standard Conditions

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

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

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

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

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

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

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

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

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

Structure: CT01944-S-SBA - Harwinton

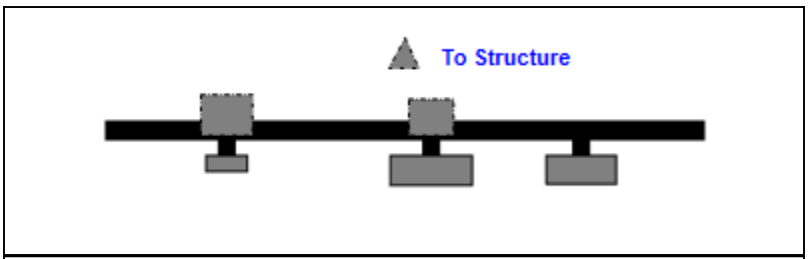
Sector: **A**

Structure Type: Monopole

Mount Elev: 192.00

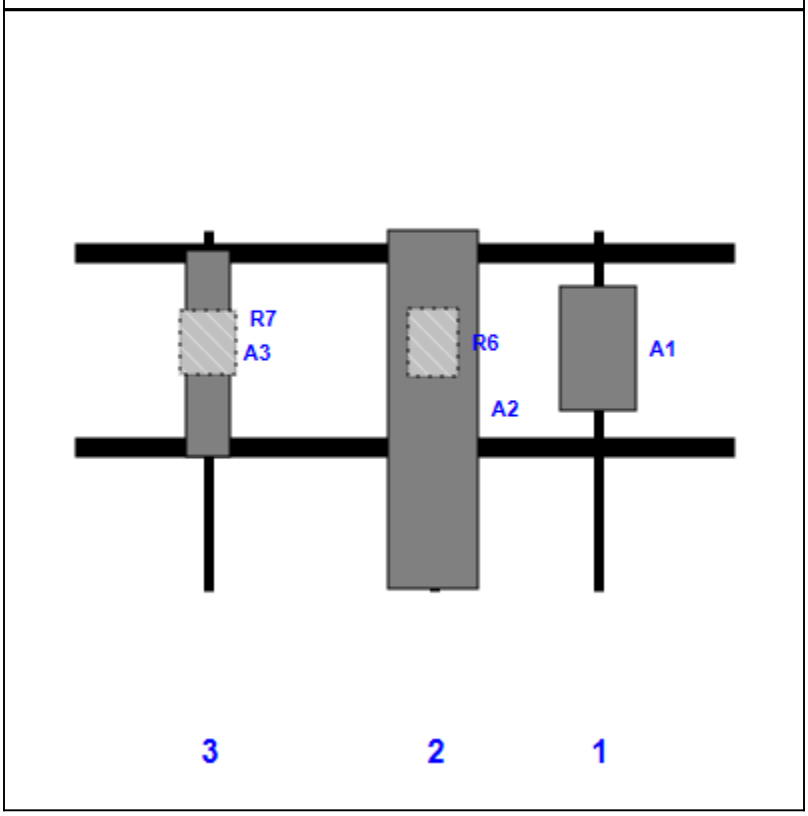
11/17/2021

Plan View



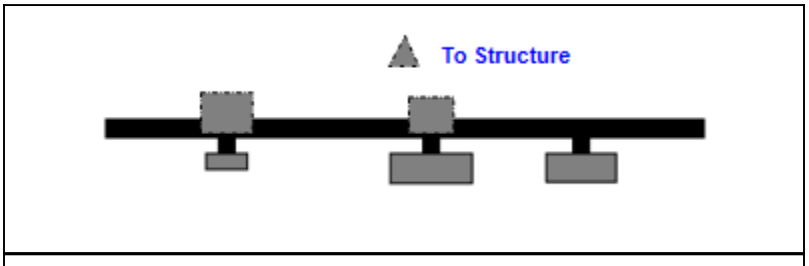
Front View

Looking Toward Structure



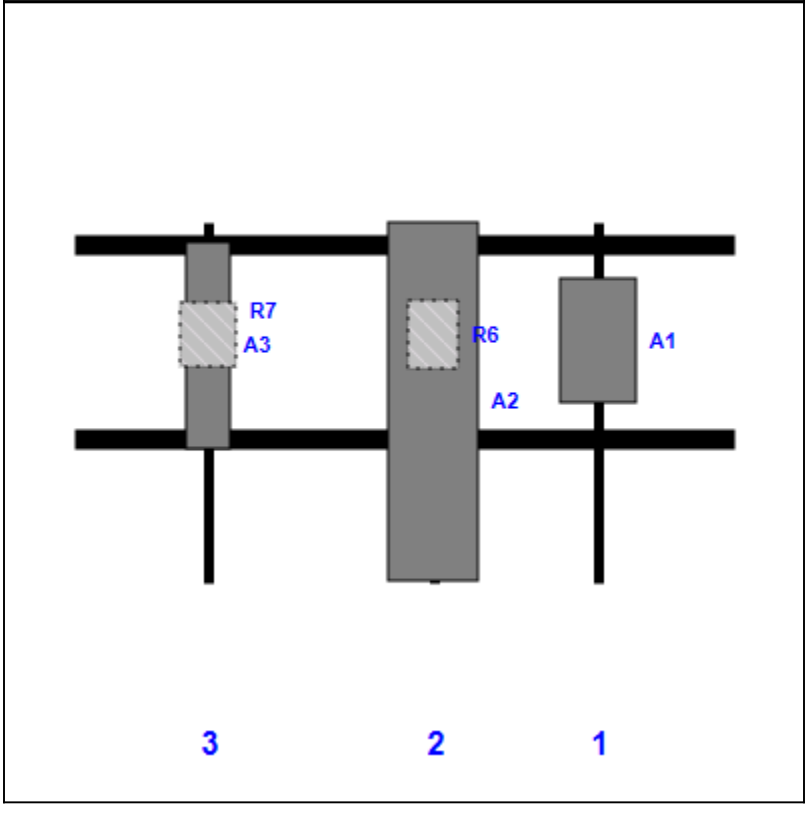
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6449 B41	33.10	20.50	140.00	1	a	Front	31.50			
A2	APXVAARR24_43-U-NA20	95.90	24.00	96.00	2	a	Front	48.00			
R6	4449 B71 + B85	17.90	13.10	96.00	2	a	Behind	30.00			
A3	VV-65A-R1	54.72	12.08	36.00	3	a	Front	33.00			
R7	4460 B25 + B66	17.00	15.10	36.00	3	a	Behind	30.00			

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6449 B41	33.10	20.50	140.00	1	a	Front	31.50			
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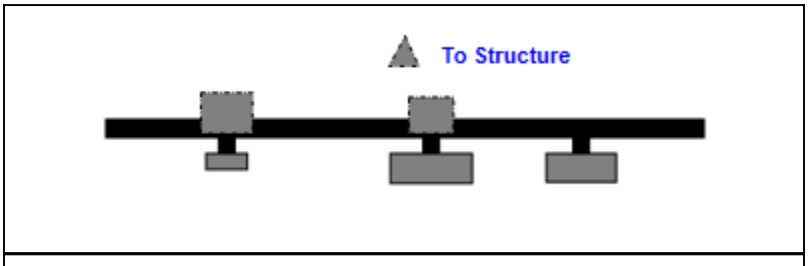
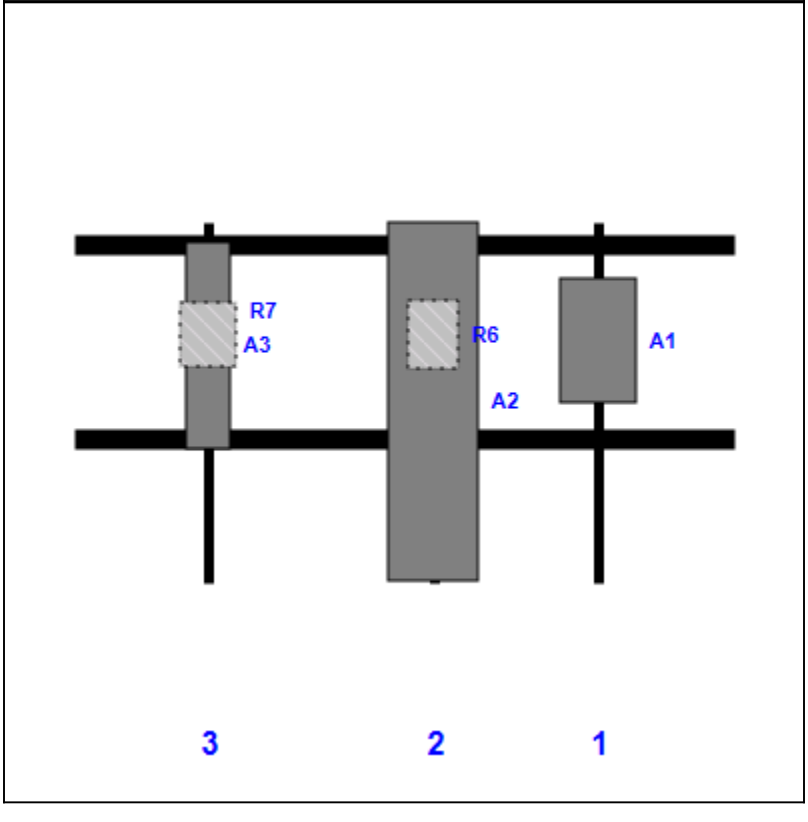
R6	4449 B71 + B85	17.90	13.10	96.00	2	a	Behind	30.00			
A3	VV-65A-R1	54.72	12.08	36.00	3	a	Front	33.00			
R7	4460 B25 + B66	17.00	15.10	36.00	3	a	Behind	30.00			

Plan View



Front View

Looking Toward Structure

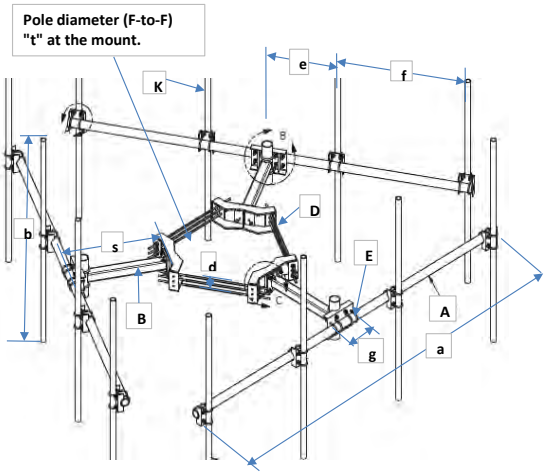


Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6449 B41	33.10	20.50	140.00	1	a	Front	31.50			
A2	APXVAARR24_43-U-NA20	95.90	24.00	96.00	2	a	Front	48.00			
R6	4449 B71 + B85	17.90	13.10	96.00	2	a	Behind	30.00			
A3	VV-65A-R1	54.72	12.08	36.00	3	a	Front	33.00			
R7	4460 B25 + B66	17.00	15.10	36.00	3	a	Behind	30.00			

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

FCC # 1228076

Tower Owner:	SBA Communications	**Mapping Date:**	4/27/19
Site Name:	Harwinton	**Structure Type:**	Monopole
Site Number or ID:	CT01944-S-SBA	**Structure Height (Ft.):**	196
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	196



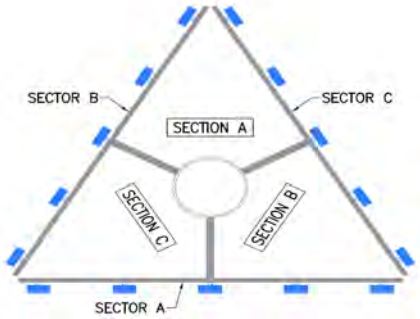
Geometries (Unit: inches)

a	176	**e**		**j**		**o**		**s**	60
b	96	**f**		**k**		**p**		**t**	20.5
c		**g**		**m**		**q**		**u ***	61
d		**h**		**n**		**r**		**v ***	96

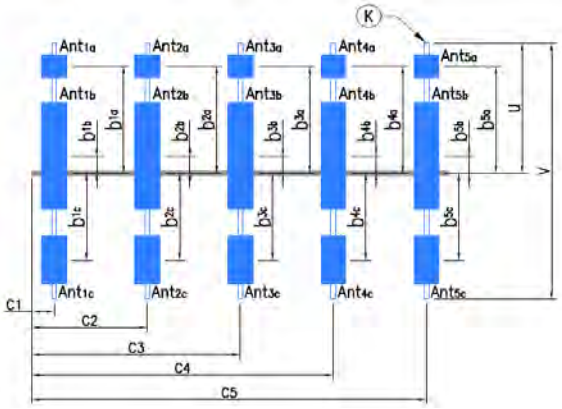
Members/Bolts (Unit: inches) — * - See Ant. Layout for "u", "v" and member "K" (pipe)

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	**F**				
B	Tubing 4x4x1/4	4	4	0.25	**G**				
C					**H**				
D	5/8" Bolt				**J**				
E	5/8" Bolt	U-Bolt			**K* (pipe)**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)									N/A
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)									7.5'

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



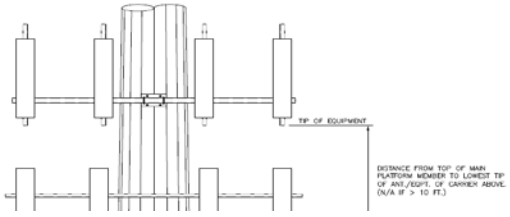
Climbing ladder is Located at Section A, at 60° Degree Azimuth



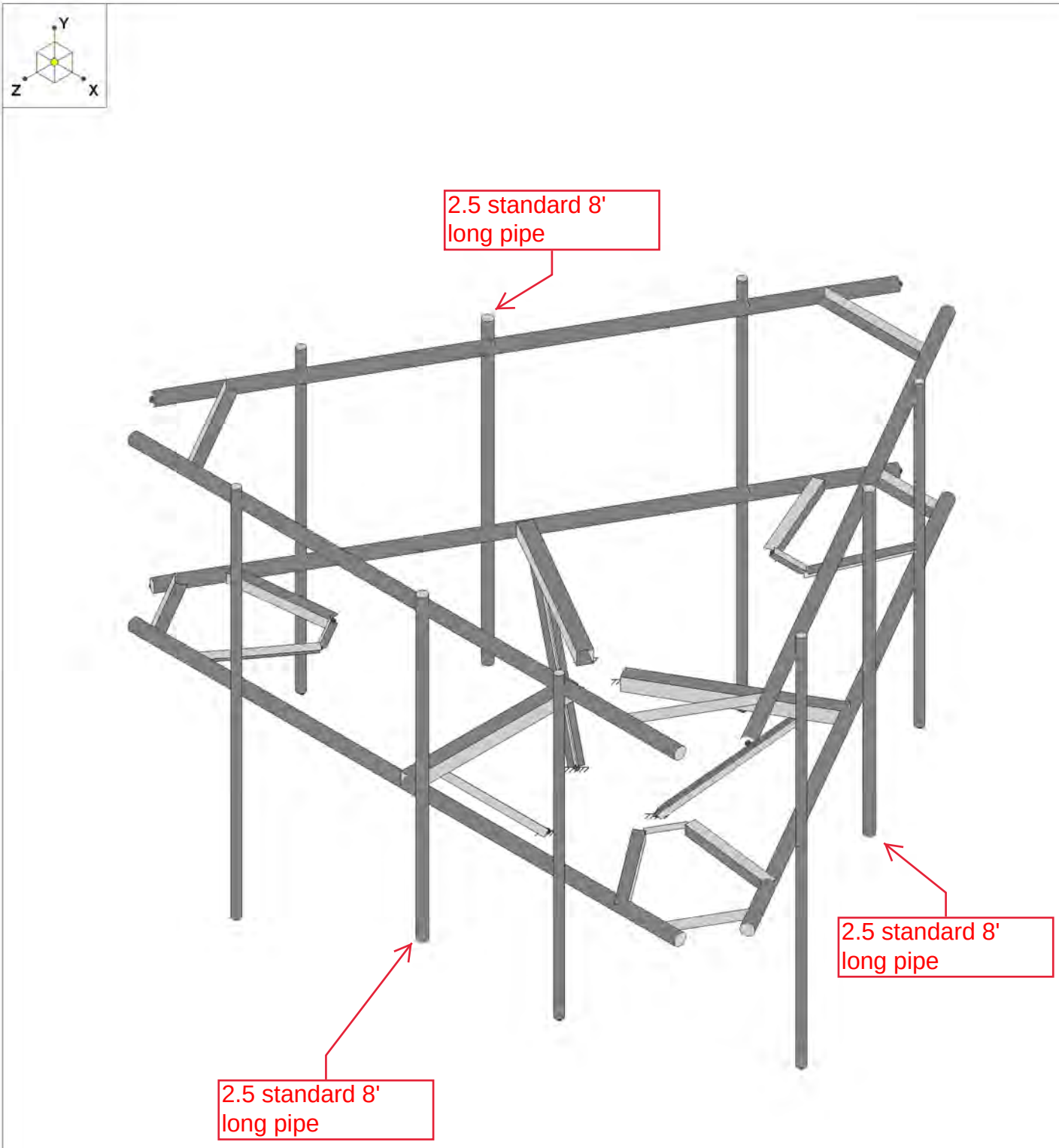
Antenna Layout

Azimuth (Degree) of Each Sector and Climbing Information

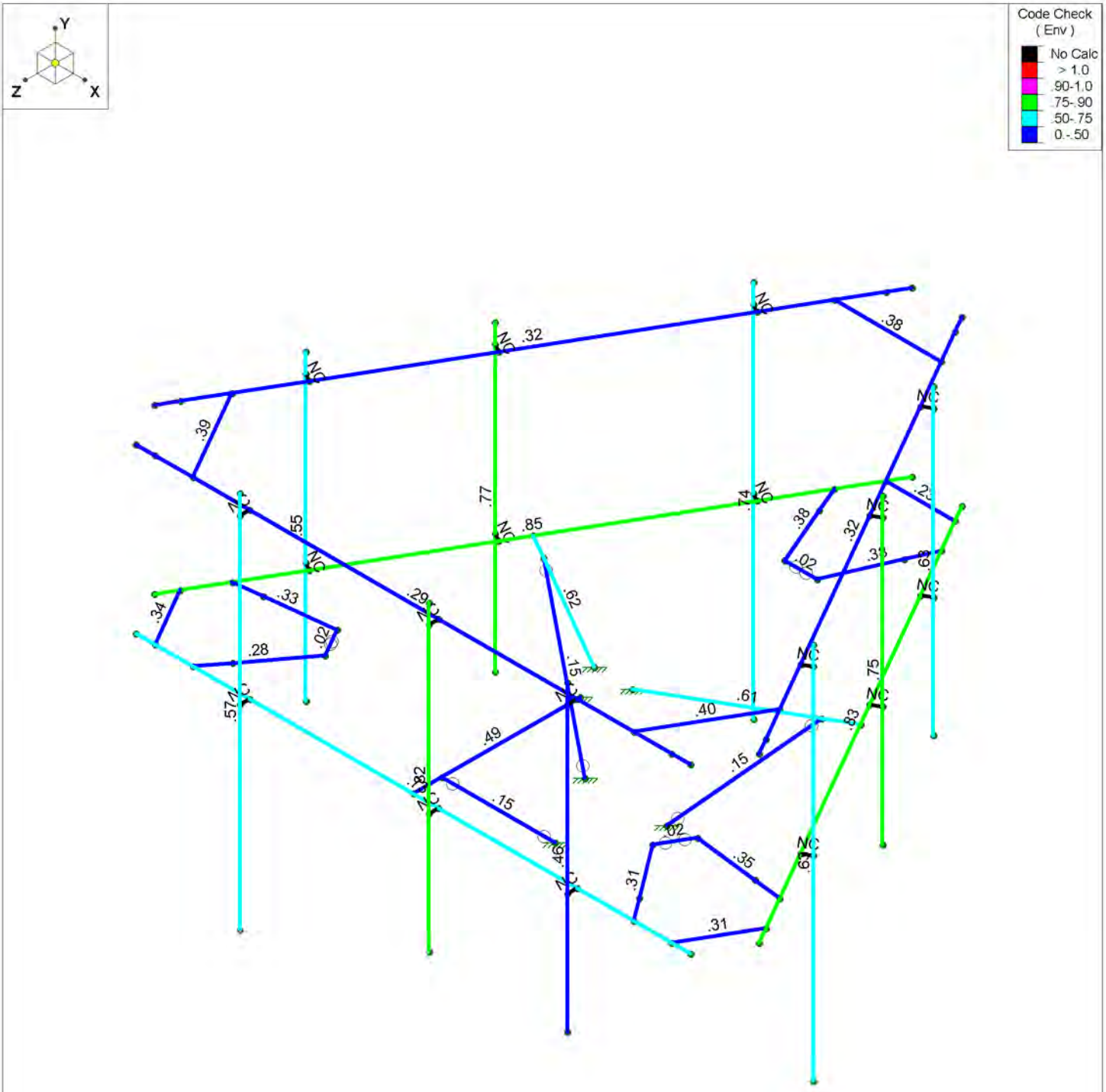
Sector A:	0°	Deg	
Sector B:	120°	Deg	
Sector C:	240°	Deg	
Climbing	60°	Deg	Located at Section A
Climbing Facility	Corrosion Type:		Minor corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A



Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Mounting Locations (Unit: inches)							Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photo Numbers
Sector A									
Ant_{1a}									
Ant_{1b}	Antenna A	7	3.5	53	1/2" (2)	14	6	36	
Ant_{1c}	TMA A	6	3.5	12	1/2" (2)	12	N/A	36	
Ant_{2a}									
Ant_{2b}	Antenna B	12	7.5	96.5	1/2" (2)	20	7	80	
Ant_{2c}									
Ant_{3a}									
Ant_{3b}									
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?		No	**Sector B**						
Ant_{1a}									
Ant_{1b}	Antenna A	7	3.5	53	1/2" (2)			36	
Ant_{1c}	TMA A				1/2" (2)		N/A	36	
Ant_{2a}									
Ant_{2b}	Antenna B	12	7.5	96.5	1/2" (2)			140	
Ant_{2c}									
Ant_{3a}									
Ant_{3b}									
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A/B?		Same As B	**Antennas on Sector C are the same as Sector B**						

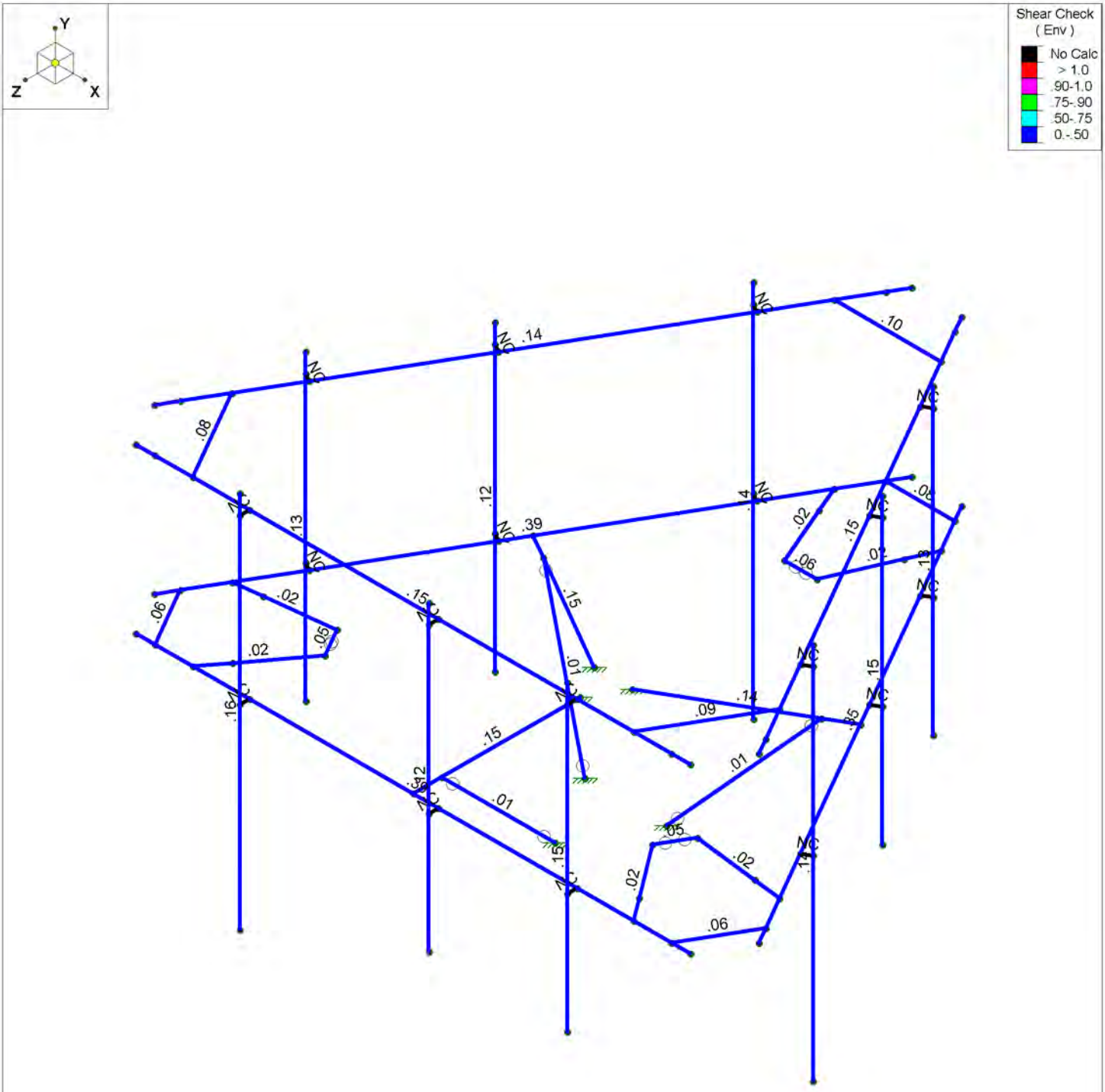


Tower Engineering Solutio...	CT01944-S-SBA_MT_LO_Loads Only_G	SK - 1
		Nov 17, 2021 at 1:48 PM
TES Project No. 119399		CT01944-S-SBA_119399_G_RISA_...



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

Tower Engineering Solutio...	CT01944-S-SBA_MT_LO_Loads Only_G	SK - 2
		Nov 17, 2021 at 1:48 PM
TES Project No. 119399		CT01944-S-SBA_119399_G_RISA_...



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

Tower Engineering Solutio...	CT01944-S-SBA_MT_LO_Loads Only_G	SK - 3
		Nov 17, 2021 at 1:49 PM
TES Project No. 119399		CT01944-S-SBA_119399_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					30			
2	Antenna Di	None					30			
3	Antenna W Front	None					30			
4	Antenna Wi Front	None					30			
5	Antenna W Side	None					30			
6	Antenna Wi Side	None					30			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						36		
11	Structure W Front	None						36		
12	Structure Wi Front	None						36		
13	Structure W Side	None						36		
14	Structure Wi Side	None						36		
15	BLC 9 Transient Area...	None						30		

Load Combinations

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Kickers	LL2x2x4x0	Beam	Double Angle ...	A36 Gr.36	Typical	1.89	1.34	.692	.042
2	Mount pipe 2.5	PIPE_2.5	Beam	Pipe	A36 Gr.36	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Properties

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

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	MP4A	N4	N3			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
2	MP4C	N7	N6			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
3	MP4B	N10	N9			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
4	M4	N1	N2			HSS4X4X4	Beam	SquareTube	A36 Gr.36	Typical
5	M5	N65	N5			HSS4X4X4	Beam	SquareTube	A36 Gr.36	Typical
6	M6	N66	N8			HSS4X4X4	Beam	SquareTube	A36 Gr.36	Typical
7	M7	N11	N13		90	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N12	N14		180	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N19	N15		90	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N20	N16		180	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N21	N17		90	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N22	N18		180	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N13	N18			L1.75x1.75x3	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N17	N16			L1.75x1.75x3	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N15	N14			L1.75x1.75x3	Beam	Single Angle	A36 Gr.36	Typical
16	MP1A	N25	N27			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
17	MP2A	N26	N28			Mount pipe 2.5	Beam	Pipe	A36 Gr.36	Typical
18	M18	N29	N32			LL2x2x4x0	Beam	Double Angle (...	A36 Gr.36	Typical
19	M19	N31	N33			LL2x2x4x0	Beam	Double Angle (...	A36 Gr.36	Typical
20	M20	N30	N34			LL2x2x4x0	Beam	Double Angle (...	A36 Gr.36	Typical
21	M21	N35	N40			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N39	N38			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N37	N36			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
24	M24	N42	N41			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
25	M25	N44	N43			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
26	M26	N46	N45			PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
27	M27	N55	N60			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N59	N58			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N57	N56			L3X3X4	Beam	Single Angle	A36 Gr.36	Typical
30	MP3A	N62	N63			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
31	M31	N64	N72			RIGID	Beam	None	RIGID	DR1
32	M32	N61	N71			RIGID	Beam	None	RIGID	DR1
33	M33	N48	N70			RIGID	Beam	None	RIGID	DR1
34	M34	N24	N68			RIGID	Beam	None	RIGID	DR1
35	M35	N47	N69			RIGID	Beam	None	RIGID	DR1
36	M36	N23	N67			RIGID	Beam	None	RIGID	DR1
37	MP1C	N75	N77			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
38	MP2C	N76	N78			Mount pipe 2.5	Beam	Pipe	A36 Gr.36	Typical
39	M40	N84	N90			RIGID	Beam	None	RIGID	DR1
40	M41	N81	N89			RIGID	Beam	None	RIGID	DR1
41	M42	N80	N88			RIGID	Beam	None	RIGID	DR1
42	M43	N74	N86			RIGID	Beam	None	RIGID	DR1
43	M44	N79	N87			RIGID	Beam	None	RIGID	DR1
44	M45	N73	N85			RIGID	Beam	None	RIGID	DR1
45	MP1B	N93	N95			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
46	MP2B	N94	N96			Mount pipe 2.5	Beam	Pipe	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
47	M49	N102	N108			RIGID	Beam	None	RIGID	DR1
48	M50	N99	N107			RIGID	Beam	None	RIGID	DR1
49	M51	N98	N106			RIGID	Beam	None	RIGID	DR1
50	M52	N92	N104			RIGID	Beam	None	RIGID	DR1
51	M53	N97	N105			RIGID	Beam	None	RIGID	DR1
52	M54	N91	N103			RIGID	Beam	None	RIGID	DR1
53	MP3C	N82	N108A			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
54	MP3B	N100	N110			PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	MP4A						Yes				None
2	MP4C						Yes				None
3	MP4B						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13	BenPIN	BenPIN				Yes				None
14	M14	BenPIN	BenPIN				Yes				None
15	M15	BenPIN	BenPIN				Yes				None
16	MP1A						Yes				None
17	MP2A						Yes				None
18	M18	BenPIN	BenPIN				Yes				None
19	M19	BenPIN	BenPIN				Yes				None
20	M20	BenPIN	BenPIN				Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	MP3A						Yes				None
31	M31						Yes				None
32	M32						Yes				None
33	M33						Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	MP1C						Yes				None
38	MP2C						Yes				None
39	M40						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
40	M41						Yes				None
41	M42						Yes				None
42	M43						Yes				None
43	M44						Yes				None
44	M45						Yes				None
45	MP1B						Yes				None
46	MP2B						Yes				None
47	M49						Yes				None
48	M50						Yes				None
49	M51						Yes				None
50	M52						Yes				None
51	M53						Yes				None
52	M54						Yes				None
53	MP3C						Yes				None
54	MP3B						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	MP4A	PIPE_3.0	14.667			Lbyy						Lateral
2	MP4C	PIPE_3.0	14.667			Lbyy						Lateral
3	MP4B	PIPE_3.0	14.667			Lbyy						Lateral
4	M4	HSS4X4X4	4.417			Lbyy						Lateral
5	M5	HSS4X4X4	4.417			Lbyy						Lateral
6	M6	HSS4X4X4	4.417			Lbyy						Lateral
7	M7	L3X3X4	2.5			Lbyy						Lateral
8	M8	L3X3X4	2.5			Lbyy						Lateral
9	M9	L3X3X4	2.5			Lbyy						Lateral
10	M10	L3X3X4	2.5			Lbyy						Lateral
11	M11	L3X3X4	2.5			Lbyy						Lateral
12	M12	L3X3X4	2.5			Lbyy						Lateral
13	M13	L1.75x1.75x3	.863			Lbyy						Lateral
14	M14	L1.75x1.75x3	.863			Lbyy						Lateral
15	M15	L1.75x1.75x3	.863			Lbyy						Lateral
16	MP1A	PIPE_2.0	8			Lbyy						Lateral
17	MP2A	Mount pipe ...	8			Lbyy						Lateral
18	M18	LL2x2x4x0	4.243			Lbyy						Lateral
19	M19	LL2x2x4x0	4.243			Lbyy						Lateral
20	M20	LL2x2x4x0	4.243			Lbyy						Lateral
21	M21	L3X3X4	1.827			Lbyy						Lateral
22	M22	L3X3X4	1.827			Lbyy						Lateral
23	M23	L3X3X4	1.827			Lbyy						Lateral
24	M24	PIPE_3.0	14.667			Lbyy						Lateral
25	M25	PIPE_3.0	14.667			Lbyy						Lateral
26	M26	PIPE_3.0	14.667			Lbyy						Lateral
27	M27	L3X3X4	2.827			Lbyy						Lateral
28	M28	L3X3X4	2.827			Lbyy						Lateral
29	M29	L3X3X4	2.827			Lbyy						Lateral
30	MP3A	PIPE_2.0	10			Lbyy						Lateral
31	MP1C	PIPE_2.0	8			Lbyy						Lateral
32	MP2C	Mount pipe ...	8			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
33	MP1B	PIPE_2.0	8			Lbyy						Lateral
34	MP2B	Mount pipe ...	8			Lbyy						Lateral
35	MP3C	PIPE_2.0	10			Lbyy						Lateral
36	MP3B	PIPE_2.0	10			Lbyy						Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N2						
3	N3						
4	N4						
5	N5						
6	N6						
7	N7						
8	N8						
9	N9						
10	N10						
11	N11						
12	N12						
13	N13						
14	N14						
15	N15						
16	N16						
17	N17						
18	N18						
19	N19						
20	N20						
21	N21						
22	N22						
23	N29	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
24	N30	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
25	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
26	N35						
27	N36						
28	N37						
29	N38						
30	N39						
31	N40						
32	N41						
33	N42						
34	N43						
35	N44						
36	N45						
37	N46						
38	N49						
39	N50						
40	N51						
41	N52						
42	N53						
43	N54						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
44	N55						
45	N56						
46	N57						
47	N58						
48	N59						
49	N60						
50	N65	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
51	N66	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	2209.855	4	674.108	1	3698.931	1	1.238	2	5.863	4	.834	3
2		min	-2203.736	3	-1178.905	2	-6337.752	2	-.732	1	-5.866	3	-.751	4
3	N29	max	36.955	4	4527.229	6	4466.215	6	0	11	.001	4	.001	4
4		min	-37.072	3	-493.196	1	-477.563	1	0	1	0	3	0	3
5	N30	max	3815.228	7	4465.41	7	181.521	4	.002	3	.002	3	.001	4
6		min	-273.653	4	-342.338	4	-2201.294	7	-.002	4	-.002	4	-.001	3
7	N31	max	268.814	3	4464.737	8	178.451	3	.002	4	.002	3	.001	4
8		min	-3814.462	8	-336.611	3	-2201.274	8	-.002	3	-.002	4	-.001	3
9	N65	max	3615.676	4	626.115	4	3888.595	1	.763	4	6.803	2	.57	2
10		min	-5915.81	3	-1127.042	3	-2561.664	2	-.938	3	-6.758	1	-1.035	1
11	N66	max	5934.422	4	642.047	3	3857.816	1	.602	3	6.815	1	.99	1
12		min	-3641.97	3	-1143.648	4	-2520.81	2	-.925	4	-6.866	2	-.61	2
13	Totals:	max	8846.699	4	9722.549	8	8651.689	1						
14		min	-8846.695	3	3452.402	3	-8651.683	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	MP4A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
2			min	0	1	0	1	0	1	0	1	0	1	0	1
3		2	max	808.063	2	171.761	1	682.815	2	.39	2	.431	1	.28	9
4			min	-583.914	1	-609.351	6	-714.54	1	-.408	1	-.38	2	-.472	3
5		3	max	1537.096	4	2488.15	6	2323.419	1	1.281	1	2.574	2	2.282	6
6			min	-1308.953	3	174.979	1	-2238.288	2	-1.307	2	-2.669	1	-.504	1
7		4	max	700.625	2	369.48	2	544.311	1	.447	1	.449	1	.449	10
8			min	-544.63	1	-192.861	1	-512.084	2	-.33	2	-.389	2	-.42	4
9		5	max	0	11	0	11	0	11	0	11	0	11	0	11
10			min	0	1	0	1	0	1	0	1	0	1	0	1
11	MP4C	1	max	0	11	.022	3	0	5	0	11	0	11	0	11
12			min	0	1	-.003	5	-.002	3	0	1	0	1	0	1
13		2	max	1069.663	1	98.957	4	819.81	3	.376	3	.444	2	.274	2
14			min	-847.46	2	-587.857	7	-857.985	4	-.392	4	-.398	1	-.481	1
15		3	max	1972.408	3	2476.713	7	1683.083	4	1.245	4	3.074	3	2.287	5
16			min	-1746.976	4	200.22	4	-1624.329	3	-1.252	3	-3.162	4	-.477	4
17		4	max	1068.771	3	370.211	3	638.574	2	.379	4	.66	4	.318	1
18			min	-915.201	4	-191.666	4	-599.498	1	-.252	3	-.604	3	-.382	2
19		5	max	0	11	.006	3	.006	1	0	11	0	11	0	11
20			min	0	1	-.023	1	-.005	3	0	1	0	1	0	1
21	MP4B	1	max	0	11	.023	1	.006	4	0	11	0	11	0	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
22			min	0	1	-.007	4	-.006	1	0	1	0	1	0	1
23		2	max	1233.427	4	160.691	3	676.034	1	.346	4	.628	3	.212	3
24			min	-1011.073	3	-603.775	8	-712.309	2	-.374	3	-.583	4	-.418	4
25		3	max	2012.136	1	2451.906	8	2170.004	3	1.318	3	3.199	4	2.334	8
26			min	-1786.952	2	-103.051	2	-2085.772	4	-1.34	4	-3.312	3	-.548	3
27		4	max	921.536	1	300.838	4	696.339	3	.371	3	.5	2	.324	2
28			min	-767.939	2	-125.741	3	-656.647	4	-.258	4	-.446	1	-.396	1
29		5	max	0	11	.003	5	.003	4	0	11	0	11	0	11
30			min	0	1	-.022	4	0	10	0	1	0	1	0	1
31	M4	1	max	3698.931	1	673.834	1	2197.359	3	.834	3	5.863	4	.732	1
32			min	-6337.752	2	-1180.514	2	-2203.482	4	-.751	4	-5.866	3	-1.238	2
33		2	max	3698.931	1	658.64	1	2150.353	3	.834	3	3.456	4	.112	6
34			min	-6337.752	2	-1195.708	2	-2156.476	4	-.751	4	-3.465	3	-.004	1
35		3	max	3698.931	1	643.445	1	2103.348	3	.834	3	1.101	4	1.403	2
36			min	-6337.752	2	-1210.902	2	-2109.47	4	-.751	4	-1.117	3	-.722	1
37		4	max	3698.931	1	617.031	1	2056.342	3	.834	3	1.18	3	2.753	2
38			min	-6337.752	2	-1237.316	2	-2062.464	4	-.751	4	-1.202	4	-1.419	1
39		5	max	3157.51	1	3240.939	6	1962.723	3	.833	3	3.388	3	1.697	2
40			min	-3030.257	2	63.97	1	-1968.826	4	-.75	4	-3.418	4	-1.688	1
41	M5	1	max	3114.163	4	625.935	4	2342.452	1	.676	1	6.803	2	.686	4
42			min	-5755.605	3	-1128.405	3	-2365.548	2	-.593	2	-6.758	1	-1.187	3
43		2	max	3093.809	4	610.741	4	2307.198	1	.676	1	4.211	2	.11	7
44			min	-5735.251	3	-1143.6	3	-2330.294	2	-.593	2	-4.191	1	.004	4
45		3	max	3073.455	4	595.547	4	2271.943	1	.676	1	2.025	3	1.339	3
46			min	-5714.897	3	-1158.794	3	-2295.039	2	-.593	2	-2.064	4	-.662	4
47		4	max	3053.101	4	569.133	4	2236.689	1	.676	1	.826	1	2.631	3
48			min	-5694.543	3	-1185.208	3	-2259.785	2	-.593	2	-.857	2	-1.307	4
49		5	max	2643.166	4	3209.13	7	2160.903	1	.674	1	3.244	1	1.628	3
50			min	-2516.408	3	168.204	4	-2188.38	2	-.591	2	-3.304	2	-1.637	4
51	M6	1	max	3127.797	3	641.867	3	2335.331	2	.737	2	6.815	1	.705	3
52			min	-5768.135	4	-1145.012	4	-2324.009	1	-.651	1	-6.866	2	-1.207	4
53		2	max	3107.443	3	626.672	3	2300.077	2	.737	2	4.268	1	.11	8
54			min	-5747.781	4	-1160.207	4	-2288.754	1	-.651	1	-4.307	2	.005	3
55		3	max	3087.089	3	611.478	3	2264.822	2	.737	2	1.76	1	1.355	4
56			min	-5727.427	4	-1175.401	4	-2253.5	1	-.651	1	-1.787	2	-.679	3
57		4	max	3066.734	3	585.064	3	2229.568	2	.737	2	.694	2	2.667	4
58			min	-5707.073	4	-1201.815	4	-2218.246	1	-.651	1	-.708	1	-1.34	3
59		5	max	2662.526	3	3200.133	8	2158.446	2	.735	2	3.108	2	1.686	4
60			min	-2535.514	4	189.717	3	-2142.212	1	-.649	1	-3.106	1	-1.692	3
61	M7	1	max	131.477	4	170.817	1	-24.329	2	.001	1	.349	4	.359	3
62			min	-133.861	3	-167.309	2	-64.175	7	-.001	2	-.285	3	-.28	4
63		2	max	121.899	4	169.548	3	-20.654	2	.001	1	.266	4	.274	3
64			min	-124.282	3	-164.877	4	-52.544	7	-.001	2	-.225	3	-.223	4
65		3	max	112.32	4	182.009	3	-15.555	2	.001	1	.179	4	.186	3
66			min	-114.704	3	-177.974	4	-39.184	7	-.001	2	-.159	3	-.158	4
67		4	max	102.741	4	194.78	3	-7.708	2	.001	1	.09	4	.094	3
68			min	-105.125	3	-190.745	4	-23.38	7	-.001	2	-.083	3	-.085	4
69		5	max	93.163	4	207.552	3	2.402	2	.001	1	.002	2	.002	2
70			min	-95.546	3	-203.517	4	-5.313	7	-.001	2	-.002	1	-.002	1
71	M8	1	max	137.204	3	-24.946	2	170.953	4	.001	2	.373	3	.305	3
72			min	-140.1	4	-63.93	8	-166.127	3	-.001	1	-.311	4	-.383	4
73		2	max	127.625	3	-21.271	2	183.724	4	.001	2	.284	3	.242	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
74			min	-130.521	4	-52.299	8	-178.898	3	-.001	1	-.245	4	-.292	4
75		3	max	118.047	3	-16.147	2	196.138	4	.001	2	.192	3	.17	3
76			min	-120.943	4	-38.948	8	-192.04	3	-.001	1	-.172	4	-.197	4
77		4	max	108.468	3	-8.3	2	208.91	4	.001	2	.096	3	.091	3
78			min	-111.364	4	-23.144	8	-204.812	3	-.001	1	-.09	4	-.1	4
79		5	max	98.89	3	1.811	2	221.681	4	.001	2	.002	2	.002	1
80			min	-101.786	4	-5.077	8	-217.583	3	-.001	1	-.002	1	-.002	2
81	M9	1	max	112.068	3	229.668	4	-24.039	3	.001	2	.422	3	.429	4
82			min	-113.127	4	-224.604	3	-64.047	5	-.001	1	-.38	4	-.371	3
83		2	max	109.698	3	229.382	4	-20.364	3	.001	2	.313	3	.317	4
84			min	-110.757	4	-224.319	3	-52.416	5	-.001	1	-.289	4	-.282	3
85		3	max	107.328	3	228.763	4	-15.243	3	.001	2	.206	3	.208	4
86			min	-108.388	4	-224.375	3	-39.065	5	-.001	1	-.196	4	-.19	3
87		4	max	104.958	3	228.477	4	-7.396	3	.001	2	.101	3	.101	4
88			min	-106.018	4	-224.089	3	-23.262	5	-.001	1	-.101	4	-.096	3
89		5	max	102.589	3	228.192	4	2.715	3	.001	2	.002	1	.002	1
90			min	-103.648	4	-223.803	3	-5.195	5	-.001	1	-.002	2	-.002	2
91	M10	1	max	142.824	1	-26.617	1	239.245	2	.002	3	.454	1	.397	1
92			min	-145.03	2	-63.754	8	-234.179	1	-.002	4	-.405	2	-.462	2
93		2	max	135.615	1	-22.942	1	242.324	2	.002	3	.339	1	.303	1
94			min	-137.821	2	-52.123	8	-237.258	1	-.002	4	-.309	2	-.345	2
95		3	max	128.407	1	-17.949	1	244.959	2	.002	3	.224	1	.207	1
96			min	-130.612	2	-38.774	8	-240.792	1	-.002	4	-.211	2	-.228	2
97		4	max	121.198	1	-10.102	1	248.039	2	.002	3	.111	1	.106	1
98			min	-123.403	2	-22.97	8	-243.871	1	-.002	4	-.108	2	-.112	2
99		5	max	113.989	1	.009	1	251.118	2	.002	3	.003	3	.003	4
100			min	-116.195	2	-4.902	8	-246.951	1	-.002	4	-.003	4	-.003	3
101	M11	1	max	143.044	1	239.275	2	-27.377	1	.002	3	.455	1	.465	2
102			min	-144.88	2	-234.119	1	-63.975	6	-.002	4	-.402	2	-.395	1
103		2	max	135.835	1	242.354	2	-23.702	1	.002	3	.34	1	.347	2
104			min	-137.671	2	-237.198	1	-52.344	6	-.002	4	-.307	2	-.302	1
105		3	max	128.626	1	244.995	2	-18.537	4	.002	3	.225	1	.229	2
106			min	-130.462	2	-240.73	1	-39	6	-.002	4	-.209	2	-.206	1
107		4	max	121.417	1	248.074	2	-10.689	4	.002	3	.111	1	.113	2
108			min	-123.254	2	-243.809	1	-23.197	6	-.002	4	-.107	2	-.106	1
109		5	max	114.209	1	251.153	2	-.579	4	.002	3	.003	4	.003	4
110			min	-116.045	2	-246.888	1	-5.13	6	-.002	4	-.003	3	-.003	3
111	M12	1	max	105.851	4	-23.929	4	215.43	3	.001	1	.397	4	.347	4
112			min	-107.246	3	-63.965	5	-210.703	4	-.001	2	-.356	3	-.402	3
113		2	max	103.481	4	-20.254	4	215.145	3	.001	1	.294	4	.263	4
114			min	-104.877	3	-52.334	5	-210.418	4	-.001	2	-.271	3	-.297	3
115		3	max	101.111	4	-15.111	4	214.562	3	.001	1	.193	4	.178	4
116			min	-102.507	3	-38.986	5	-210.436	4	-.001	2	-.184	3	-.194	3
117		4	max	98.742	4	-7.263	4	214.276	3	.001	1	.095	4	.09	4
118			min	-100.137	3	-23.182	5	-210.15	4	-.001	2	-.095	3	-.094	3
119		5	max	96.372	4	2.847	4	213.991	3	.001	1	.002	1	.002	2
120			min	-97.767	3	-5.115	5	-209.865	4	-.001	2	-.002	2	-.002	1
121	M13	1	max	223.662	4	4.877	8	6.026	4	.003	1	0	11	0	11
122			min	-228.471	3	1.094	1	-6.026	3	-.003	2	0	1	0	1
123		2	max	225.401	4	2.439	8	3.013	4	.003	1	0	8	0	4
124			min	-230.211	3	.547	1	-3.013	3	-.003	2	0	3	0	7
125		3	max	227.141	4	0	11	0	11	.003	1	.001	8	0	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
126			min	-231.951	3	0	1	0	1	-.003	2	0	3	-.001	7
127		4	max	228.88	4	-.547	10	3.013	3	.003	1	0	8	0	4
128			min	-233.69	3	-2.439	5	-3.013	4	-.003	2	0	3	0	7
129		5	max	230.62	4	-1.094	10	6.026	3	.003	1	0	11	0	11
130			min	-235.43	3	-4.877	5	-6.026	4	-.003	2	0	1	0	1
131	M14	1	max	271.65	1	4.877	8	8.035	1	.004	3	0	11	0	11
132			min	-276.795	2	1.094	1	-8.035	2	-.004	4	0	1	0	1
133		2	max	271.65	1	2.439	8	4.018	1	.004	3	.001	1	0	1
134			min	-276.795	2	.547	1	-4.018	2	-.004	4	0	2	-.001	2
135		3	max	271.65	1	0	11	0	11	.004	3	.001	1	.001	1
136			min	-276.795	2	0	1	0	1	-.004	4	-.001	2	-.001	2
137		4	max	271.65	1	-.547	10	4.018	2	.004	3	.001	1	0	1
138			min	-276.795	2	-2.439	5	-4.018	1	-.004	4	0	2	-.001	2
139		5	max	271.65	1	-1.094	10	8.035	2	.004	3	0	11	0	11
140			min	-276.795	2	-4.877	5	-8.035	1	-.004	4	0	1	0	1
141	M15	1	max	245.822	3	4.877	8	6.026	3	.003	2	0	11	0	11
142			min	-250.857	4	1.094	1	-6.026	4	-.003	1	0	1	0	1
143		2	max	244.083	3	2.439	8	3.013	3	.003	2	0	7	0	3
144			min	-249.117	4	.547	1	-3.013	4	-.003	1	0	4	0	8
145		3	max	242.343	3	0	11	0	11	.003	2	.001	7	0	3
146			min	-247.378	4	0	1	0	1	-.003	1	0	4	-.001	8
147		4	max	240.603	3	-.547	10	3.013	4	.003	2	0	7	0	3
148			min	-245.638	4	-2.439	5	-3.013	3	-.003	1	0	4	0	8
149		5	max	238.864	3	-1.094	10	6.026	4	.003	2	0	11	0	11
150			min	-243.898	4	-4.877	5	-6.026	3	-.003	1	0	1	0	1
151	MP1A	1	max	0	11	.004	1	.016	1	0	11	0	11	0	11
152			min	0	1	-.022	6	-.019	6	0	1	0	1	0	1
153		2	max	113.483	2	337.349	2	129.501	1	.151	1	.051	1	.278	2
154			min	-518.96	10	-176.442	1	-83.332	2	-.178	2	-.075	2	-.168	3
155		3	max	155.09	2	382.115	4	256.969	1	.151	1	.342	1	.185	1
156			min	-477.353	10	-223.615	3	-210.801	2	-.178	2	-.274	2	-.406	10
157		4	max	-8.33	10	30.383	3	30.387	2	0	11	.03	1	.03	3
158			min	-30.284	5	-30.363	4	-30.381	1	0	1	-.03	2	-.03	4
159		5	max	0	11	.137	7	.079	6	0	11	0	11	0	11
160			min	0	1	-.031	4	-.049	1	0	1	0	1	0	1
161	MP2A	1	max	333.224	8	284.311	4	647.979	1	0	11	0	11	0	11
162			min	76.8	1	-284.342	3	-647.979	2	0	1	0	1	0	1
163		2	max	1435.277	6	549.117	4	890.093	1	.173	1	.303	1	.292	4
164			min	111.141	1	-475.623	3	-854.803	2	-.19	2	-.223	2	-.311	3
165		3	max	1659.266	6	680.418	4	983.324	1	.173	1	2.208	1	.822	3
166			min	214.289	1	-606.924	3	-948.034	2	-.19	2	-2.057	2	-.988	4
167		4	max	-89.948	10	314.207	3	676.275	2	0	11	1.322	1	.598	3
168			min	-368.326	5	-314.063	4	-676.107	1	0	1	-1.322	2	-.598	4
169		5	max	-76.8	10	283.875	3	645.943	2	0	11	0	11	0	11
170			min	-333.224	5	-283.731	4	-645.775	1	0	1	0	1	0	1
171	M18	1	max	6359.325	6	44.573	6	45.154	3	.002	4	0	11	0	11
172			min	-686.431	1	-11.001	1	-45.154	4	-.001	3	0	1	0	1
173		2	max	6346.101	6	22.287	6	22.577	3	.002	4	.036	3	.009	1
174			min	-703.507	1	-5.5	1	-22.577	4	-.001	3	-.036	4	-.035	6
175		3	max	6332.877	6	0	11	0	11	.002	4	.048	3	.012	1
176			min	-720.584	1	0	1	0	1	-.001	3	-.048	4	-.047	6
177		4	max	6319.653	6	5.5	1	22.577	4	.002	4	.036	3	.009	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
178			min	-737.66	1	-22.287	6	-22.577	3	-.001	3	-.036	4	-.035	6
179		5	max	6306.429	6	11.001	1	45.154	4	.002	4	0	11	0	11
180			min	-754.737	1	-44.573	6	-45.154	3	-.001	3	0	1	0	1
181	M19	1	max	6271.185	8	44.286	8	36.579	2	.003	3	0	11	0	11
182			min	-465.726	3	-10.284	3	-36.579	1	-.003	4	0	1	0	1
183		2	max	6257.817	8	22.143	8	18.289	2	.003	3	.029	2	.008	3
184			min	-482.444	3	-5.142	3	-18.289	1	-.003	4	-.029	1	-.035	8
185		3	max	6244.449	8	0	11	0	11	.003	3	.039	2	.011	3
186			min	-499.162	3	0	1	0	1	-.003	4	-.039	1	-.047	8
187		4	max	6231.081	8	5.142	3	18.289	1	.003	3	.029	2	.008	3
188			min	-515.88	3	-22.143	8	-18.289	2	-.003	4	-.029	1	-.035	8
189		5	max	6217.714	8	10.284	3	36.579	1	.003	3	0	11	0	11
190			min	-532.598	3	-44.286	8	-36.579	2	-.003	4	0	1	0	1
191	M20	1	max	6272.138	7	44.286	7	36.579	1	.003	3	0	11	0	11
192			min	-473.824	4	-10.284	4	-36.579	2	-.003	4	0	1	0	1
193		2	max	6258.77	7	22.143	7	18.289	1	.003	3	.029	1	.008	4
194			min	-490.542	4	-5.142	4	-18.289	2	-.003	4	-.029	2	-.035	7
195		3	max	6245.402	7	0	11	0	11	.003	3	.039	1	.011	4
196			min	-507.261	4	0	1	0	1	-.003	4	-.039	2	-.047	7
197		4	max	6232.034	7	5.142	4	18.289	2	.003	3	.029	1	.008	4
198			min	-523.979	4	-22.143	7	-18.289	1	-.003	4	-.029	2	-.035	7
199		5	max	6218.666	7	10.284	4	36.579	2	.003	3	0	11	0	11
200			min	-540.697	4	-44.286	7	-36.579	1	-.003	4	0	1	0	1
201	M21	1	max	148.325	4	90.239	2	324.544	1	.008	1	.311	9	.369	2
202			min	-137.604	3	-325.846	9	-333.339	2	-.009	2	-.249	1	-.592	9
203		2	max	154.639	4	87.554	2	328.19	1	.008	1	.227	2	.243	4
204			min	-143.918	3	-328.531	9	-336.985	2	-.009	2	-.176	1	-.47	9
205		3	max	160.954	4	84.868	2	331.836	1	.008	1	.178	4	.289	4
206			min	-150.233	3	-331.217	9	-340.63	2	-.009	2	-.137	3	-.354	3
207		4	max	167.268	4	82.183	2	335.482	1	.008	1	.196	4	.332	4
208			min	-156.547	3	-333.903	9	-344.276	2	-.009	2	-.166	3	-.393	3
209		5	max	173.583	4	79.497	2	339.127	1	.008	1	.209	4	.373	4
210			min	-162.862	3	-336.588	9	-347.922	2	-.009	2	-.191	3	-.428	3
211	M22	1	max	195.105	1	138.616	4	437.35	3	.011	3	.255	4	.326	1
212			min	-185.498	2	-147.839	3	-447.206	4	-.012	4	-.196	3	-.396	2
213		2	max	195.105	1	135.931	4	437.35	3	.011	3	.235	1	.326	1
214			min	-185.498	2	-150.524	3	-447.206	4	-.012	4	-.186	2	-.395	2
215		3	max	195.105	1	133.245	4	437.35	3	.011	3	.227	1	.322	1
216			min	-185.498	2	-153.21	3	-447.206	4	-.012	4	-.187	2	-.388	2
217		4	max	195.105	1	130.56	4	437.35	3	.011	3	.214	1	.315	1
218			min	-185.498	2	-155.896	3	-447.206	4	-.012	4	-.184	2	-.376	2
219		5	max	195.105	1	127.874	4	437.35	3	.011	3	.195	1	.391	3
220			min	-185.498	2	-158.581	3	-447.206	4	-.012	4	-.178	2	-.442	4
221	M23	1	max	155.43	3	279.407	10	318.6	2	.009	2	.285	3	.359	3
222			min	-144.54	4	-96.801	2	-328.868	1	-.01	1	-.23	4	-.429	4
223		2	max	149.116	3	276.722	10	314.954	2	.009	2	.249	3	.307	3
224			min	-138.225	4	-99.486	2	-325.223	1	-.01	1	-.2	4	-.375	4
225		3	max	142.801	3	274.036	10	311.309	2	.009	2	.207	3	.252	3
226			min	-131.911	4	-102.172	2	-321.577	1	-.01	1	-.167	4	-.351	10
227		4	max	136.487	3	271.351	10	307.663	2	.009	2	.202	10	.295	2
228			min	-125.596	4	-104.857	2	-317.931	1	-.01	1	-.132	4	-.459	10
229		5	max	130.172	3	268.665	10	304.017	2	.009	2	.27	10	.428	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
230			min	-119.282	4	-107.543	2	-314.286	1	-.01	1	-.197	1	-.566	10
231	M24	1	max	0	11	0	11	0	11	0	11	0	11	0	11
232			min	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	91.217	1	68.17	4	33.117	9	.59	1	.278	1	.218	2
234			min	-419.113	6	-376.509	7	-50.821	4	-.524	2	-.308	2	-.489	9
235		3	max	91.217	1	37.178	4	87.982	2	.59	1	.033	9	1.264	6
236			min	-419.113	6	-458.014	7	-111.425	1	-.524	2	-.169	5	-.465	1
237		4	max	77.886	1	538.881	6	45.278	5	.672	2	.261	1	.388	2
238			min	-300.755	6	-17.174	1	-36.022	10	-.755	1	-.317	2	-.479	1
239		5	max	0	11	0	11	0	11	0	11	0	11	0	11
240			min	0	1	0	1	0	1	0	1	0	1	0	1
241	M25	1	max	0	11	.024	3	.012	3	0	11	0	11	0	11
242			min	0	1	-.004	1	0	2	0	1	0	1	0	1
243		2	max	61.423	4	149.574	2	67.351	1	.463	4	.197	4	.301	3
244			min	-409.16	7	-398.855	5	-92.429	2	-.394	3	-.228	3	-.516	4
245		3	max	96.908	4	118.582	2	87.839	1	.463	4	.088	1	1.345	1
246			min	-423.031	7	-480.36	5	-112.916	2	-.394	3	-.212	9	-.59	2
247		4	max	54.55	9	570.855	7	70.786	2	.555	3	.265	4	.29	3
248			min	-288.577	10	-155.885	4	-47.072	1	-.641	4	-.311	3	-.383	4
249		5	max	0	11	.015	3	.001	6	0	11	0	11	0	11
250			min	0	1	-.022	1	-.002	4	0	1	0	1	0	1
251	M26	1	max	0	11	.02	1	.001	4	0	11	0	11	0	11
252			min	0	1	-.015	4	0	9	0	1	0	1	0	1
253		2	max	36.536	10	158.596	3	43.174	4	.545	3	.3	3	.212	1
254			min	-396.721	8	-396.835	8	-68.196	3	-.478	4	-.32	4	-.431	2
255		3	max	32.987	10	127.603	3	104.636	4	.545	3	.114	1	1.54	4
256			min	-409.321	5	-478.34	8	-129.659	3	-.478	4	-.218	2	-.781	3
257		4	max	58.501	10	563.76	5	74.411	2	.523	4	.172	2	.37	4
258			min	-290.449	8	-113.576	2	-48.139	1	-.61	3	-.212	1	-.461	3
259		5	max	0	11	.004	5	.003	1	0	11	0	11	0	11
260			min	0	1	-.026	4	-.013	4	0	1	0	1	0	1
261	M27	1	max	80.327	1	409.264	2	169.82	4	.014	1	.328	1	.575	2
262			min	-159.672	2	-379.824	1	-160.68	2	-.014	2	-.351	2	-.731	1
263		2	max	90.098	1	405.109	2	174.803	1	.014	1	.223	1	.289	2
264			min	-169.443	2	-383.979	1	-166.321	2	-.014	2	-.23	2	-.454	1
265		3	max	99.869	1	400.953	2	180.444	1	.014	1	.137	3	.148	4
266			min	-179.214	2	-388.135	1	-171.963	2	-.014	2	-.128	4	-.315	3
267		4	max	109.639	1	396.798	2	186.085	1	.014	1	.184	3	.311	4
268			min	-188.984	2	-392.291	1	-177.604	2	-.014	2	-.164	4	-.472	3
269		5	max	119.41	1	392.642	2	191.726	1	.014	1	.237	3	.469	4
270			min	-198.755	2	-396.446	1	-183.245	2	-.014	2	-.211	4	-.618	3
271	M28	1	max	-20.948	3	484.076	4	198.983	3	.017	3	.252	3	.57	4
272			min	-108.795	6	-456.789	3	-186.41	4	-.017	4	-.279	4	-.731	3
273		2	max	-20.948	3	479.921	4	198.983	3	.017	3	.122	3	.236	4
274			min	-108.795	6	-460.945	3	-186.41	4	-.017	4	-.131	4	-.403	3
275		3	max	-20.948	3	475.765	4	198.983	3	.017	3	.086	2	.235	1
276			min	-108.795	6	-465.1	3	-186.41	4	-.017	4	-.075	1	-.401	2
277		4	max	-20.948	3	471.61	4	198.983	3	.017	3	.158	4	.261	3
278			min	-108.795	6	-469.256	3	-186.41	4	-.017	4	-.144	3	-.426	4
279		5	max	-20.948	3	467.454	4	198.983	3	.017	3	.299	4	.596	3
280			min	-108.795	6	-473.411	3	-186.41	4	-.017	4	-.28	3	-.754	4
281	M29	1	max	113.337	1	395.717	1	195.997	2	.015	2	.208	4	.487	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
282			min	-192.011	2	-370.878	2	-179.222	1	-.014	1	-.228	3	-.642	4
283		2	max	103.566	1	391.562	1	190.356	2	.015	2	.164	4	.312	3
284			min	-182.24	2	-375.033	2	-173.581	1	-.014	1	-.168	3	-.475	4
285		3	max	93.795	1	387.406	1	184.714	2	.015	2	.132	1	.13	3
286			min	-172.469	2	-379.189	2	-167.939	1	-.014	1	-.126	2	-.303	8
287		4	max	84.025	1	383.25	1	179.073	2	.015	2	.242	1	.291	2
288			min	-162.698	2	-383.344	2	-162.298	1	-.014	1	-.225	2	-.453	1
289		5	max	85.724	4	379.095	1	181.758	4	.015	2	.353	1	.572	2
290			min	-162.578	3	-387.5	2	-173.861	3	-.014	1	-.33	2	-.723	1
291	MP3A	1	max	0	11	.019	6	.016	1	0	11	0	11	0	11
292			min	0	1	-.005	1	-.019	6	0	1	0	1	0	1
293		2	max	242.235	2	197.501	1	172.24	1	.181	2	.115	1	.154	4
294			min	-316.731	9	-410.661	2	-138.544	2	-.172	1	-.098	2	-.169	3
295		3	max	-33.728	10	155.18	3	266.84	2	0	11	.191	1	.19	3
296			min	-164.833	5	-155.238	4	-266.809	1	0	1	-.191	2	-.19	4
297		4	max	-10.413	10	37.953	3	38.013	2	0	11	.048	1	.047	3
298			min	-37.855	5	-38.011	4	-37.982	1	0	1	-.048	2	-.048	4
299		5	max	0	11	.045	1	.258	6	0	11	0	11	0	11
300			min	0	1	-.501	6	-.067	1	0	1	0	1	0	1
301	M31	1	max	101.685	1	379.775	9	197.592	1	.92	2	.122	1	.05	2
302			min	-142.639	2	-181.421	2	-410.33	2	-.478	1	-.078	2	-.065	1
303		2	max	101.685	1	379.775	9	197.592	1	.92	2	.135	1	.062	2
304			min	-142.639	2	-181.421	2	-410.33	2	-.478	1	-.104	2	-.086	1
305		3	max	101.685	1	379.775	9	197.592	1	.92	2	.147	1	.073	2
306			min	-142.639	2	-181.421	2	-410.33	2	-.478	1	-.13	2	-.106	1
307		4	max	101.685	1	379.775	9	197.592	1	.92	2	.159	1	.084	2
308			min	-142.639	2	-181.421	2	-410.33	2	-.478	1	-.155	2	-.126	1
309		5	max	101.685	1	379.775	9	197.592	1	.92	2	.172	1	.096	2
310			min	-142.639	2	-181.421	2	-410.33	2	-.478	1	-.181	2	-.146	1
311	M32	1	max	563.66	1	449.548	6	629.613	3	.86	2	.139	4	.463	2
312			min	-522.751	2	-184.339	9	-419.846	4	-.378	1	-.187	3	-.499	1
313		2	max	563.66	1	449.548	6	629.613	3	.86	2	.113	4	.44	2
314			min	-522.751	2	-184.339	9	-419.846	4	-.378	1	-.147	3	-.491	1
315		3	max	563.66	1	449.548	6	629.613	3	.86	2	.13	2	.417	2
316			min	-522.751	2	-184.339	9	-419.846	4	-.378	1	-.147	1	-.483	1
317		4	max	563.66	1	449.548	6	629.613	3	.86	2	.155	2	.393	2
318			min	-522.751	2	-184.339	9	-419.846	4	-.378	1	-.159	1	-.474	1
319		5	max	563.66	1	449.548	6	629.613	3	.86	2	.181	2	.37	2
320			min	-522.751	2	-184.339	9	-419.846	4	-.378	1	-.172	1	-.466	1
321	M33	1	max	161.255	2	-16.572	1	230.396	4	1.151	3	.168	2	1.195	2
322			min	-210.449	1	-1066.875	6	-156.606	3	-1.243	4	-.17	1	-1.345	1
323		2	max	161.255	2	-16.572	1	230.396	4	1.151	3	.173	2	1.238	2
324			min	-210.449	1	-1066.875	6	-156.606	3	-1.243	4	-.171	1	-1.344	1
325		3	max	161.255	2	-16.572	1	230.396	4	1.151	3	.179	2	1.282	2
326			min	-210.449	1	-1066.875	6	-156.606	3	-1.243	4	-.171	1	-1.343	1
327		4	max	161.255	2	-16.572	1	230.396	4	1.151	3	.184	2	1.325	2
328			min	-210.449	1	-1066.875	6	-156.606	3	-1.243	4	-.172	1	-1.342	1
329		5	max	161.255	2	-16.572	1	230.396	4	1.151	3	.19	2	1.368	2
330			min	-210.449	1	-1066.875	6	-156.606	3	-1.243	4	-.173	1	-1.341	1
331	M34	1	max	1687.094	1	2061.174	6	946.499	3	.358	3	.168	1	.976	2
332			min	-1638.036	2	310.123	1	-1020.447	4	-.586	4	-.169	2	-.834	1
333		2	max	1687.094	1	2061.174	6	946.499	3	.358	3	.169	1	.915	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
334			min	-1638.036	2	310.123	1	-1020.447	4	-.586	4	-.174	2	-.854	1
335		3	max	1687.094	1	2061.174	6	946.499	3	.358	3	.171	1	.854	2
336			min	-1638.036	2	310.123	1	-1020.447	4	-.586	4	-.179	2	-.873	1
337		4	max	1687.094	1	2061.174	6	946.499	3	.358	3	.172	1	.792	2
338			min	-1638.036	2	310.123	1	-1020.447	4	-.586	4	-.185	2	-.892	1
339		5	max	1687.094	1	2061.174	6	946.499	3	.358	3	.173	1	.731	2
340			min	-1638.036	2	310.123	1	-1020.447	4	-.586	4	-.19	2	-.912	1
341	M35	1	max	77.637	1	589.018	10	337.12	2	.432	1	.093	2	.089	1
342			min	-128.967	2	-45.465	2	-176.457	1	-.784	2	-.107	1	-.112	2
343		2	max	77.637	1	589.018	10	337.12	2	.432	1	.114	2	.069	1
344			min	-128.967	2	-45.465	2	-176.457	1	-.784	2	-.118	1	-.109	2
345		3	max	77.637	1	589.018	10	337.12	2	.432	1	.135	2	.048	1
346			min	-128.967	2	-45.465	2	-176.457	1	-.784	2	-.129	1	-.106	2
347		4	max	77.637	1	589.018	10	337.12	2	.432	1	.157	2	.027	1
348			min	-128.967	2	-45.465	2	-176.457	1	-.784	2	-.14	1	-.111	6
349		5	max	77.637	1	589.018	10	337.12	2	.432	1	.178	2	.007	1
350			min	-128.967	2	-45.465	2	-176.457	1	-.784	2	-.151	1	-.132	6
351	M36	1	max	404.541	1	197.098	2	320.944	3	.332	1	.139	4	.495	2
352			min	-353.043	2	-431.846	10	-478.547	4	-.678	2	-.121	3	-.597	1
353		2	max	404.541	1	197.098	2	320.944	3	.332	1	.118	1	.483	2
354			min	-353.043	2	-431.846	10	-478.547	4	-.678	2	-.115	2	-.586	1
355		3	max	404.541	1	197.098	2	320.944	3	.332	1	.129	1	.471	2
356			min	-353.043	2	-431.846	10	-478.547	4	-.678	2	-.136	2	-.575	1
357		4	max	404.541	1	197.098	2	320.944	3	.332	1	.14	1	.459	2
358			min	-353.043	2	-431.846	10	-478.547	4	-.678	2	-.157	2	-.564	1
359		5	max	404.541	1	197.098	2	320.944	3	.332	1	.151	1	.446	2
360			min	-353.043	2	-431.846	10	-478.547	4	-.678	2	-.178	2	-.553	1
361	MP1C	1	max	0	11	.016	8	.026	5	0	11	0	11	0	11
362			min	0	1	-.01	3	-.009	2	0	1	0	1	0	1
363		2	max	62.363	3	285.755	4	220.084	4	.084	2	.38	3	.145	4
364			min	-251.702	8	-326.286	3	-382.177	3	-.109	3	-.272	4	-.178	3
365		3	max	103.97	3	399.322	4	220.084	4	.084	2	.168	4	.507	3
366			min	-168.521	4	-439.853	3	-382.177	3	-.109	3	-.384	3	-.458	4
367		4	max	-8.33	10	30.371	3	30.377	2	0	11	.03	1	.03	3
368			min	-30.284	5	-30.376	4	-30.397	1	0	1	-.03	2	-.03	4
369		5	max	0	11	.039	3	.045	2	0	11	0	11	0	11
370			min	0	1	-.061	8	-.154	5	0	1	0	1	0	1
371	MP2C	1	max	333.224	8	557.031	4	375.233	1	0	11	0	11	0	11
372			min	76.8	1	-557.009	3	-375.216	2	0	1	0	1	0	1
373		2	max	1421.871	7	826.642	4	598.318	1	.255	4	.254	3	.178	1
374			min	136.47	4	-831.122	3	-684.268	2	-.272	3	-.31	4	-.239	2
375		3	max	1645.86	7	976.565	4	682.238	1	.255	4	1.076	1	1.876	3
376			min	239.618	4	-981.046	3	-768.189	2	-.272	3	-1.305	2	-1.928	4
377		4	max	-89.948	10	585.703	3	404.595	2	0	11	.779	1	1.141	3
378			min	-368.326	5	-585.634	4	-404.799	1	0	1	-.779	2	-1.141	4
379		5	max	-76.8	10	555.371	3	374.263	2	0	11	0	11	0	11
380			min	-333.224	5	-555.302	4	-374.467	1	0	1	0	1	0	1
381	M40	1	max	80.662	4	316.754	4	159.746	2	1.163	1	.154	4	.079	10
382			min	-120.582	3	-173.951	3	-369.3	5	-.725	2	-.108	3	-.113	9
383		2	max	80.662	4	316.754	4	159.746	2	1.163	1	.16	4	.067	10
384			min	-120.582	3	-173.951	3	-369.3	5	-.725	2	-.128	3	-.117	9
385		3	max	80.662	4	316.754	4	159.746	2	1.163	1	.167	4	.069	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
386			min	-120.582	3	-173.951	3	-369.3	5	-.725	2	-.147	3	-.122	9
387		4	max	80.662	4	316.754	4	159.746	2	1.163	1	.173	4	.08	3
388			min	-120.582	3	-173.951	3	-369.3	5	-.725	2	-.167	3	-.126	9
389		5	max	80.662	4	316.754	4	159.746	2	1.163	1	.179	4	.091	3
390			min	-120.582	3	-173.951	3	-369.3	5	-.725	2	-.187	3	-.14	4
391	M41	1	max	504.789	4	445.978	7	760.271	1	.975	1	.193	3	.451	3
392			min	-464.839	3	-125.825	4	-551.666	2	-.497	2	-.238	4	-.489	4
393		2	max	504.789	4	445.978	7	760.271	1	.975	1	.191	3	.429	3
394			min	-464.839	3	-125.825	4	-551.666	2	-.497	2	-.223	4	-.481	4
395		3	max	504.789	4	445.978	7	760.271	1	.975	1	.19	3	.406	3
396			min	-464.839	3	-125.825	4	-551.666	2	-.497	2	-.209	4	-.473	4
397		4	max	504.789	4	445.978	7	760.271	1	.975	1	.188	3	.383	3
398			min	-464.839	3	-125.825	4	-551.666	2	-.497	2	-.194	4	-.465	4
399		5	max	504.789	4	445.978	7	760.271	1	.975	1	.187	3	.361	3
400			min	-464.839	3	-125.825	4	-551.666	2	-.497	2	-.179	4	-.457	4
401	M42	1	max	157.89	3	-42.73	4	200.389	2	1.16	1	.225	3	.95	3
402			min	-206.971	4	-1053.537	7	-123.916	1	-1.25	2	-.226	4	-1.104	4
403		2	max	157.89	3	-42.73	4	200.389	2	1.16	1	.237	3	.991	3
404			min	-206.971	4	-1053.537	7	-123.916	1	-1.25	2	-.233	4	-1.101	4
405		3	max	157.89	3	-42.73	4	200.389	2	1.16	1	.249	3	1.033	3
406			min	-206.971	4	-1053.537	7	-123.916	1	-1.25	2	-.24	4	-1.099	4
407		4	max	157.89	3	-42.73	4	200.389	2	1.16	1	.26	3	1.075	3
408			min	-206.971	4	-1053.537	7	-123.916	1	-1.25	2	-.248	4	-1.096	4
409		5	max	157.89	3	-42.73	4	200.389	2	1.16	1	.272	3	1.117	3
410			min	-206.971	4	-1053.537	7	-123.916	1	-1.25	2	-.255	4	-1.093	4
411	M43	1	max	1378.018	4	2048.143	7	922.406	1	.18	4	.15	2	1	3
412			min	-1328.998	3	337.102	4	-1001.877	2	-.445	6	-.146	1	-.866	4
413		2	max	1378.018	4	2048.143	7	922.406	1	.18	4	.104	4	.94	3
414			min	-1328.998	3	337.102	4	-1001.877	2	-.445	6	-.112	3	-.887	4
415		3	max	1378.018	4	2048.143	7	922.406	1	.18	4	.155	4	.88	3
416			min	-1328.998	3	337.102	4	-1001.877	2	-.445	6	-.165	3	-.908	4
417		4	max	1378.018	4	2048.143	7	922.406	1	.18	4	.205	4	.82	3
418			min	-1328.998	3	337.102	4	-1001.877	2	-.445	6	-.219	3	-.929	4
419		5	max	1378.018	4	2048.143	7	922.406	1	.18	4	.255	4	.761	3
420			min	-1328.998	3	337.102	4	-1001.877	2	-.445	6	-.272	3	-.95	4
421	M44	1	max	20.201	4	435.817	8	401.37	3	.743	4	.083	1	.068	10
422			min	-77.684	7	6.826	3	-242.216	4	-1.094	3	-.102	2	-.127	9
423		2	max	20.201	4	435.817	8	401.37	3	.743	4	.089	1	.055	10
424			min	-77.684	7	6.826	3	-242.216	4	-1.094	3	-.097	2	-.134	9
425		3	max	20.201	4	435.817	8	401.37	3	.743	4	.095	1	.042	10
426			min	-77.684	7	6.826	3	-242.216	4	-1.094	3	-.093	2	-.141	9
427		4	max	20.201	4	435.817	8	401.37	3	.743	4	.1	1	.029	10
428			min	-77.684	7	6.826	3	-242.216	4	-1.094	3	-.088	2	-.147	9
429		5	max	20.201	4	435.817	8	401.37	3	.743	4	.109	3	.016	10
430			min	-77.684	7	6.826	3	-242.216	4	-1.094	3	-.084	2	-.154	9
431	M45	1	max	352.644	4	146.714	3	459.386	4	.693	4	.172	2	.43	3
432			min	-303.348	3	-125.885	4	-614.916	3	-1.039	3	-.154	1	-.529	4
433		2	max	352.644	4	146.714	3	459.386	4	.693	4	.15	2	.421	3
434			min	-303.348	3	-125.885	4	-614.916	3	-1.039	3	-.142	1	-.521	4
435		3	max	352.644	4	146.714	3	459.386	4	.693	4	.128	2	.412	3
436			min	-303.348	3	-125.885	4	-614.916	3	-1.039	3	-.13	1	-.513	4
437		4	max	352.644	4	146.714	3	459.386	4	.693	4	.106	2	.403	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
438			min	-303.348	3	-125.885	4	-614.916	3	-1.039	3	-.118	1	-.506	4
439		5	max	352.644	4	146.714	3	459.386	4	.693	4	.084	2	.393	3
440			min	-303.348	3	-125.885	4	-614.916	3	-1.039	3	-.109	3	-.498	4
441	MP1B	1	max	0	11	.027	8	.003	1	0	11	0	11	0	11
442			min	0	1	-.016	3	-.018	6	0	1	0	1	0	1
443		2	max	111.322	4	63.495	2	408.838	1	.159	3	.253	2	.116	2
444			min	-314.21	9	-201.42	5	-293.606	2	-.184	4	-.334	1	-.192	1
445		3	max	152.929	4	103.913	4	494.601	1	.159	3	.515	1	.288	7
446			min	-272.603	9	-224.169	3	-379.369	2	-.184	4	-.366	2	-.115	4
447		4	max	-8.33	10	30.388	3	30.373	2	0	11	.03	1	.03	3
448			min	-30.284	5	-30.403	4	-30.358	1	0	1	-.03	2	-.03	4
449		5	max	0	11	.056	3	.102	6	0	11	0	11	0	11
450			min	0	1	-.135	8	-.026	1	0	1	0	1	0	1
451	MP2B	1	max	333.224	8	557.096	4	375.135	1	0	11	0	11	0	11
452			min	76.8	1	-557.084	3	-375.173	2	0	1	0	1	0	1
453		2	max	1422.737	8	774.285	4	680.455	1	.226	2	.261	4	.252	2
454			min	154.846	3	-843.452	3	-639.284	2	-.243	1	-.285	3	-.172	1
455		3	max	1646.726	8	924.208	4	764.375	1	.226	2	1.253	1	1.975	3
456			min	257.994	3	-993.376	3	-723.204	2	-.243	1	-1.196	2	-1.757	4
457		4	max	-89.948	10	585.653	3	404.628	2	0	11	.779	1	1.141	3
458			min	-368.326	5	-585.869	4	-404.581	1	0	1	-.779	2	-1.141	4
459		5	max	-76.8	10	555.321	3	374.296	2	0	11	0	11	0	11
460			min	-333.224	5	-555.537	4	-374.249	1	0	1	0	1	0	1
461	M49	1	max	88.096	3	265.981	3	223.112	3	1.272	4	.113	2	.105	1
462			min	-126.357	4	-122.087	4	-434.317	4	-.83	3	-.064	1	-.116	2
463		2	max	88.096	3	265.981	3	223.112	3	1.272	4	.109	2	.109	1
464			min	-126.357	4	-122.087	4	-434.317	4	-.83	3	-.074	1	-.13	2
465		3	max	88.096	3	265.981	3	223.112	3	1.272	4	.105	2	.113	1
466			min	-126.357	4	-122.087	4	-434.317	4	-.83	3	-.083	1	-.143	2
467		4	max	88.096	3	265.981	3	223.112	3	1.272	4	.101	2	.117	1
468			min	-126.357	4	-122.087	4	-434.317	4	-.83	3	-.093	1	-.156	2
469		5	max	88.096	3	265.981	3	223.112	3	1.272	4	.1	3	.121	1
470			min	-126.357	4	-122.087	4	-434.317	4	-.83	3	-.109	4	-.169	2
471	M50	1	max	497.38	3	433.94	8	769.369	4	1.169	4	.163	1	.421	4
472			min	-459.158	4	-75.023	3	-564.347	3	-.687	3	-.21	2	-.455	3
473		2	max	497.38	3	433.94	8	769.369	4	1.169	4	.147	1	.401	4
474			min	-459.158	4	-75.023	3	-564.347	3	-.687	3	-.182	2	-.45	3
475		3	max	497.38	3	433.94	8	769.369	4	1.169	4	.132	1	.382	4
476			min	-459.158	4	-75.023	3	-564.347	3	-.687	3	-.153	2	-.446	3
477		4	max	497.38	3	433.94	8	769.369	4	1.169	4	.117	1	.362	4
478			min	-459.158	4	-75.023	3	-564.347	3	-.687	3	-.125	2	-.441	3
479		5	max	497.38	3	433.94	8	769.369	4	1.169	4	.109	4	.343	4
480			min	-459.158	4	-75.023	3	-564.347	3	-.687	3	-.1	3	-.436	3
481	M51	1	max	188.593	4	-60.422	3	249.752	1	1.24	2	.181	1	1.002	4
482			min	-237.457	3	-1054.352	8	-178.419	2	-1.333	1	-.182	2	-1.155	3
483		2	max	188.593	4	-60.422	3	249.752	1	1.24	2	.197	1	1.042	4
484			min	-237.457	3	-1054.352	8	-178.419	2	-1.333	1	-.193	2	-1.151	3
485		3	max	188.593	4	-60.422	3	249.752	1	1.24	2	.212	1	1.083	4
486			min	-237.457	3	-1054.352	8	-178.419	2	-1.333	1	-.204	2	-1.147	3
487		4	max	188.593	4	-60.422	3	249.752	1	1.24	2	.228	1	1.123	4
488			min	-237.457	3	-1054.352	8	-178.419	2	-1.333	1	-.215	2	-1.144	3
489		5	max	188.593	4	-60.422	3	249.752	1	1.24	2	.243	1	1.164	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
490			min	-237.457	3	-1054.352	8	-178.419	2	-1.333	1	-.226	2	-1.14	3
491	M52	1	max	1408.34	3	2048.94	8	981.662	2	.281	2	.229	3	1.082	4
492			min	-1359.622	4	355.117	3	-1046.757	1	-.511	1	-.225	4	-.948	3
493		2	max	1408.34	3	2048.94	8	981.662	2	.281	2	.181	3	1.023	4
494			min	-1359.622	4	355.117	3	-1046.757	1	-.511	1	-.182	4	-.97	3
495		3	max	1408.34	3	2048.94	8	981.662	2	.281	2	.132	3	.964	4
496			min	-1359.622	4	355.117	3	-1046.757	1	-.511	1	-.139	4	-.992	3
497		4	max	1408.34	3	2048.94	8	981.662	2	.281	2	.165	2	.906	4
498			min	-1359.622	4	355.117	3	-1046.757	1	-.511	1	-.178	1	-1.014	3
499		5	max	1408.34	3	2048.94	8	981.662	2	.281	2	.226	2	.847	4
500			min	-1359.622	4	355.117	3	-1046.757	1	-.511	1	-.243	1	-1.036	3
501	M53	1	max	49.87	3	440.694	7	329.349	1	.626	2	.129	4	.081	3
502			min	-100.62	4	-42.639	4	-172.185	2	-.973	1	-.145	3	-.132	10
503		2	max	49.87	3	440.694	7	329.349	1	.626	2	.143	4	.061	3
504			min	-100.62	4	-42.639	4	-172.185	2	-.973	1	-.149	3	-.139	10
505		3	max	49.87	3	440.694	7	329.349	1	.626	2	.156	4	.04	3
506			min	-100.62	4	-42.639	4	-172.185	2	-.973	1	-.152	3	-.146	10
507		4	max	49.87	3	440.694	7	329.349	1	.626	2	.17	4	.027	1
508			min	-100.62	4	-42.639	4	-172.185	2	-.973	1	-.155	3	-.153	10
509		5	max	49.87	3	440.694	7	329.349	1	.626	2	.184	4	.025	1
510			min	-100.62	4	-42.639	4	-172.185	2	-.973	1	-.159	3	-.16	10
511	M54	1	max	322.968	3	195.849	4	455.702	2	.594	2	.199	3	.39	4
512			min	-272.192	4	-227.422	9	-612.634	1	-.937	1	-.183	4	-.492	3
513		2	max	322.968	3	195.849	4	455.702	2	.594	2	.189	3	.377	4
514			min	-272.192	4	-227.422	9	-612.634	1	-.937	1	-.183	4	-.481	3
515		3	max	322.968	3	195.849	4	455.702	2	.594	2	.179	3	.365	4
516			min	-272.192	4	-227.422	9	-612.634	1	-.937	1	-.183	4	-.47	3
517		4	max	322.968	3	195.849	4	455.702	2	.594	2	.169	3	.353	4
518			min	-272.192	4	-227.422	9	-612.634	1	-.937	1	-.183	4	-.459	3
519		5	max	322.968	3	195.849	4	455.702	2	.594	2	.159	3	.341	4
520			min	-272.192	4	-227.422	9	-612.634	1	-.937	1	-.184	4	-.448	3
521	MP3C	1	max	0	11	.015	4	.003	1	0	11	0	11	0	11
522			min	0	1	-.024	7	-.014	6	0	1	0	1	0	1
523		2	max	235.374	3	234.264	5	477.856	1	.187	3	.119	2	.108	1
524			min	-254.694	4	-83.37	2	-311.338	2	-.179	4	-.14	1	-.114	2
525		3	max	-33.728	10	238.993	3	183.099	2	0	11	.19	1	.191	3
526			min	-164.833	5	-238.938	4	-183.062	1	0	1	-.19	2	-.191	4
527		4	max	-10.412	10	38.066	3	37.972	2	0	11	.047	1	.048	3
528			min	-37.855	5	-38.011	4	-37.935	1	0	1	-.048	2	-.048	4
529		5	max	0	11	.479	7	.309	7	0	11	0	11	0	11
530			min	0	1	-.095	4	-.03	4	0	1	0	1	0	1
531	MP3B	1	max	0	11	.01	4	.022	5	0	11	0	11	0	11
532			min	0	1	-.013	7	-.009	2	0	1	0	1	0	1
533		2	max	183.495	4	379.33	4	237.624	3	.109	4	.184	4	.087	2
534			min	-203.998	3	-301.668	3	-438.971	4	-.1	3	-.178	3	-.064	1
535		3	max	-33.728	10	238.899	3	183.113	2	0	11	.191	1	.191	3
536			min	-164.833	5	-238.894	4	-183.177	1	0	1	-.19	2	-.191	4
537		4	max	-10.412	10	37.972	3	37.986	2	0	11	.048	1	.048	3
538			min	-37.855	5	-37.967	4	-38.05	1	0	1	-.048	2	-.048	4
539		5	max	0	11	.056	3	.071	2	0	11	0	11	0	11
540			min	0	1	-.052	4	-.536	5	0	1	0	1	0	1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	MP4A	PIPE 3.0	.730	7.333	2	.391	7.333		2	20785.4...	65205	5.749	5.749	1....	H3-6
2	MP4C	PIPE 3.0	.830	7.333	3	.354	7.333		3	20785.4...	65205	5.749	5.749	1....	H3-6
3	MP4B	PIPE 3.0	.854	7.333	4	.387	7.333		4	20785.4...	65205	5.749	5.749	1....	H3-6
4	M4	HSS4X4X4	.489	0	3	.151	0	z	3	102430....	109188	12.663	12.663	1....	H1-1b
5	M5	HSS4X4X4	.614	0	1	.141	0	z	1	102430....	109188	12.663	12.663	1....	H1-1b
6	M6	HSS4X4X4	.615	0	1	.147	0	z	2	102430....	109188	12.663	12.663	1....	H1-1b
7	M7	L3X3X4	.284	0	4	.018	2.5	y	3	40623.8...	46656	1.688	3.756	1....	H2-1
8	M8	L3X3X4	.306	0	3	.018	2.5	z	3	40623.8...	46656	1.688	3.756	1....	H2-1
9	M9	L3X3X4	.351	0	3	.019	0	y	3	40623.8...	46656	1.688	3.756	1....	H2-1
10	M10	L3X3X4	.378	0	1	.018	2.5	z	2	40623.8...	46656	1.688	3.756	1....	H2-1
11	M11	L3X3X4	.378	0	1	.018	2.5	y	2	40623.8...	46656	1.688	3.756	1....	H2-1
12	M12	L3X3X4	.330	0	4	.018	0	z	3	40623.8...	46656	1.688	3.756	1....	H2-1
13	M13	L1.75x1.75x3	.015	.44	4	.046	.863	z	2	19178.0...	20120.4	.413	.933	1....	H2-1
14	M14	L1.75x1.75x3	.019	.431	1	.057	.863	y	4	19178.0...	20120.4	.413	.933	1....	H2-1
15	M15	L1.75x1.75x3	.016	.422	3	.047	0	z	2	19178.0...	20120.4	.413	.933	1....	H2-1
16	MP1A	PIPE 2.0	.464	4.833	2	.154	4.833		2	14916.0...	32130	1.872	1.872	2....	H1-1b
17	MP2A	PIPE 2.5	.823	4.833	1	.120	4.833		2	30437.8...	52164	3.699	3.699	2....	H1-1b
18	M18	LL2x2x4x0	.151	0	6	.007	0	z	4	42184.3...	61236	2.894	2.114	1	H1-1b*
19	M19	LL2x2x4x0	.149	0	8	.011	4.243	y	4	42184.3...	61236	2.894	2.114	1....	H1-1b*
20	M20	LL2x2x4x0	.149	0	7	.012	0	y	3	42184.3...	61236	2.894	2.114	1....	H1-1b*
21	M21	L3X3X4	.343	0	9	.062	1.827	z	2	43330.9...	46656	1.688	3.756	1....	H2-1
22	M22	L3X3X4	.233	0	4	.078	0	z	4	43330.9...	46656	1.688	3.756	2....	H2-1
23	M23	L3X3X4	.311	1.827	10	.062	0	z	1	43330.9...	46656	1.688	3.756	1....	H2-1
24	M24	PIPE 3.0	.291	8.097	6	.152	8.097		2	20785.4...	65205	5.749	5.749	2.1	H1-1b
25	M25	PIPE 3.0	.318	8.097	3	.151	13.139		4	20785.4...	65205	5.749	5.749	2....	H1-1b
26	M26	PIPE 3.0	.315	7.944	4	.142	1.528		3	20785.4...	65205	5.749	5.749	1....	H1-1b
27	M27	L3X3X4	.391	0	1	.085	2.827	y	1	39086.5...	46656	1.688	3.756	2....	H2-1
28	M28	L3X3X4	.379	2.827	4	.102	2.827	y	3	39086.5...	46656	1.688	3.756	2....	H2-1
29	M29	L3X3X4	.403	2.827	1	.087	2.827	y	2	39086.5...	46656	1.688	3.756	2....	H2-1
30	MP3A	PIPE 2.0	.570	4.792	2	.158	4.792		2	9836.597	32130	1.872	1.872	4....	H1-1b
31	MP1C	PIPE 2.0	.630	4.833	3	.133	4.833		3	14916.0...	32130	1.872	1.872	2....	H1-1b
32	MP2C	PIPE 2.5	.752	4.833	4	.147	4.833		3	30437.8...	52164	3.699	3.699	1....	H1-1b
33	MP1B	PIPE 2.0	.550	4.833	1	.135	4.833		4	14916.0...	32130	1.872	1.872	2....	H1-1b
34	MP2B	PIPE 2.5	.771	4.833	3	.124	4.833		1	30437.8...	52164	3.699	3.699	1....	H1-1b
35	MP3C	PIPE 2.0	.631	4.792	1	.140	4.792		3	9836.597	32130	1.872	1.872	4....	H1-1b
36	MP3B	PIPE 2.0	.745	4.792	4	.137	4.792		4	9836.597	32130	1.872	1.872	3....	H1-1b

EXHIBIT 9

EME Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11712A

SBA Harwinton
133 Clearview Avenue
Harwinton, Connecticut 06791

December 16, 2021

EBI Project Number: 6221007722

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**7.26%**

December 16, 2021

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

Emissions Analysis for Site: CT11712A - SBA Harwinton

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **133 Clearview Avenue** in **Harwinton, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 133 Clearview Avenue in Harwinton, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

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

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

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

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

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

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

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels

are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 192 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	192 feet	Height (AGL):	192 feet	Height (AGL):	192 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**3.78%**	Antenna B1 MPE %:	**3.78%**	Antenna C1 MPE %:	**3.78%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd
Height (AGL):	192 feet	Height (AGL):	192 feet	Height (AGL):	192 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,059.02	ERP (W):	4,059.02	ERP (W):	4,059.02
Antenna A2 MPE %:	**1.01%**	Antenna B2 MPE %:	**1.01%**	Antenna C2 MPE %:	**1.01%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.8 dBd
Height (AGL):	192 feet	Height (AGL):	192 feet	Height (AGL):	192 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,418.45	ERP (W):	12,418.45	ERP (W):	12,418.45
Antenna A3 MPE %:	**1.29%**	Antenna B3 MPE %:	**1.29%**	Antenna C3 MPE %:	**1.29%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	6.07%
Verizon	0.99%
Nextel	0.2%
Site Total MPE % :	7.26%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	6.07%
T-Mobile Sector B Total:	6.07%
T-Mobile Sector C Total:	6.07%
Site Total MPE % :	7.26%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	192.0	11.48	2500 MHz LTE 1C & 2C Traffic	1000	1.15%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	192.0	1.12	2500 MHz LTE 1C & 2C Broadcast	1000	0.11%
T-Mobile 2500 MHz NR Traffic	1	22089.26	192.0	22.95	2500 MHz NR Traffic	1000	2.30%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	192.0	2.23	2500 MHz NR Broadcast	1000	0.22%
T-Mobile 600 MHz LTE	2	591.73	192.0	1.23	600 MHz LTE	400	0.31%
T-Mobile 600 MHz NR	1	1577.94	192.0	1.64	600 MHz NR	400	0.41%
T-Mobile 700 MHz LTE	2	648.82	192.0	1.35	700 MHz LTE	467	0.29%
T-Mobile 1900 MHz GSM	4	982.02	192.0	4.08	1900 MHz GSM	1000	0.41%
T-Mobile 1900 MHz LTE	2	1964.04	192.0	4.08	1900 MHz LTE	1000	0.41%
T-Mobile 2100 MHz LTE	2	2281.14	192.0	4.74	2100 MHz LTE	1000	0.47%
						Total:	**6.07%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	6.07%
Sector B:	6.07%
Sector C:	6.07%
T-Mobile Maximum MPE % (Sector A):	6.07%
Site Total:	7.26%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.26%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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