smartlink

May 15. 2020

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

Re:	**Notice of Exempt Modification – Antenna and RRU Add**
Property Address:	**3 Polly Lane, Bozrah CT 06334**
Applicant:	**AT&T Mobility, LLC**

Dear Ms. Bachman:

On behalf of AT&T, please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16- 50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 188-feet on an existing 187-foot guyed tower, owned by Everest Infrastructure Partners, 3 Polly Lane, Bozrah CT 06334. AT&T intends to replace six (6) Panel Antennas, (9) RRUS, and add (1) Raycap Squid, as well as (2) DC Power Cables to their existing equipment configuration.

Attached is a summary of the planned modifications including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5l0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Carl Zorn – First Selectman, Town of Bozrah CT, 1 River Road, Bozrah CT 06334 and Stephen Seder – Planning / Zoning Chair, Town Bozrah CT, 1 River Road, Bozrah CT 06334. A copy of this letter is being sent to the property owner, 17 Mile Real Estate LLC, 69 Harry Street, Conshohocken PA 19428, and to the tower owner EIP Communications, 290 Congress Street, 7th floor, Boston, MA 02210.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **EM-AT&T-013-020607** - AT&T Wireless notice of intent to modify an existing telecommunications facility located at 3 Polly Lane, **Bozrah,** Connecticut.
- **EM-CING-013-105-132-158-083-061221** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 3 Polly Lane, **Bozrah** Connecticut.
- **EM-CING-013-090202** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 3 Polly Lane, **Bozrah**, Connecticut.
- **EM-CING-013-130301** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 3 Polly Lane, **Bozrah**, Connecticut

The planned modifications to AT&T's 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 tower. AT&T's replacement antennas will be installed at the 188-foot level of the 187-foot lattice tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to

levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

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

Sincerely,

Kristen LeDuc

CC w/enclosures:
Carl Zorn – First Selectman, Town of Bozrah CT
Stephen Seder - Planning / Zoning Chair, Town of Bozrah CT
17 Mile Real Estate LLC – Property Owner
EIP Communications - Tower Owner

All information is for assessment purposes only. Assessments are calculated at 70% of the estimated October 1, 2017 market value which was the date of the last revaluation as completed by eQuality Valuation Services, LLC.

Information on the Property Records for the Municipality of Bozrah was last updated on 5/11/2020.

Parcel Information

Location:	3 POLLY LA	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	66666555	Map Block Lot:	02/039-A	Acres:	1.60
490 Acres:	0.00	Zone:	I-80	Volume / Page:	107/ 483
Developers Map / Lot:		Census:	7131		

Value Information

	Appraised Value	Assessed Value
Land	200,000	140,000

	Appraised Value	Assessed Value
Buildings	0	0
Detached Outbuildings	5,969	4,180
Total	205,969	144,180

Owner's Information

Owner's Data

17 MILE REAL ESTATE LLC
69 HARRY STREEET
CONSHOCKEN PA 19428

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Cblk/Fr Shed	2001	20.00	12.00	240
Cblk/Fr Shed	0000	24.00	12.00	288

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
17 MILE REAL ESTATE LLC	107	483	01/02/2019	Warranty Deed	No	$1,141,162
MAYNARD BARBARA A	104	81	10/06/2016	Certificate of Devise	No	$0
MAYNARD LEONARD P	0084	0593	09/19/2006		No	$0
MAYNARD ALICE	0021	0524	07/27/1998		No	$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
614-15		06/18/2015		Visit for Grand List	FACILITY MODIFICATIONS
602-14		06/05/2014		Visit for Grand List	REPLACE ANTENNAS
307-13		03/28/2013		Visit for Grand List	ADDING ANTENNAS ETC....
704-02		07/11/2002		Closed	AT&T ON EXISTING TOWER

INFINIGY

THE SOLUTIONS ARE ENDLESS

Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Bozrah - CDT

Site FA: 10105789

Site ID: CTL02029

3 Polly Lane, Bozrah CT 06334

Latitude: 41.5742419 Longitude: -72.2004161

Structure Type: Monopole

Report Date: May 8, 2020

Status: AT&T will be compliant with FCC rules on RF Exposure with the recommended signage in section 4 of this report.

Table of Contents

1. Executive Summary:

Smartlink on behalf of AT&T has contracted Infinigy Solutions, LLC to determine whether the site Bozrah - CDT located at 3 Polly Lane in Bozrah, CT Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as "Occupational or Controlled" and "General Public or Uncontrolled" (see Appendix A and B).

This document and the conclusions herein are based on information provided by Smartlink on behalf of AT&T.

As a result of the analysis, **AT&T Will Be Compliant with FCC rules with the installation of recommended signage in section 4.**

Engineering assumptions were made regarding the collocated operators. The assumptions are based upon typical deployment practices of each operator.

All Carriers, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0177
	% Exposure	3.23%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0177
	% Exposure	0.65%

2. Site Summary:

Site Information	
Site Name: Bozrah - CDT	
Site Address: 3 Polly Lane, Bozrah, CT 06334	
Site Type: Monopole	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

Base of tower

Caution 2 Sign.

Note: The recommendation above can be disregarded if a Caution 2 sign is already installed at the base of the tower.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
1a	Alpha	AT&T	CCI	DMP65R-BU8D	700	188	1476
1b	Alpha	AT&T	CCI	DMP65R-BU8D	850	188	1000
1c	Alpha	AT&T	CCI	DMP65R-BU8D	1900	188	3664
2a	Alpha	AT&T	CCI	DMP65R-BU8D	700	188	2951
2b	Alpha	AT&T	CCI	DMP65R-BU8D	2100	188	3837
3	Alpha	AT&T	Powerwave	7770	850	188	341
4a	Beta	AT&T	CCI	DMP65R-BU8D	700	188	1476
4b	Beta	AT&T	CCI	DMP65R-BU8D	850	188	1000
4c	Beta	AT&T	CCI	DMP65R-BU8D	1900	188	3664
5a	Beta	AT&T	CCI	DMP65R-BU8D	700	188	2951
5b	Beta	AT&T	CCI	DMP65R-BU8D	2100	188	3837
6	Beta	AT&T	Powerwave	7770	850	188	341
7a	Gamma	AT&T	CCI	DMP65R-BU8D	700	188	1476
7b	Gamma	AT&T	CCI	DMP65R-BU8D	850	188	1000
7c	Gamma	AT&T	CCI	DMP65R-BU8D	1900	188	3664
8a	Gamma	AT&T	CCI	DMP65R-BU8D	700	188	2951
8b	Gamma	AT&T	CCI	DMP65R-BU8D	2100	188	3837
9	Gamma	AT&T	Powerwave	7770	850	188	341
10a	Alpha	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516
10b	Alpha	Verizon Wireless	Commscope	NNH-65C-R2B	1900	150	1839
11a	Alpha	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516
11b	Alpha	Verizon Wireless	Commscope	NNH-65C-R2B	2100	150	2039
12a	Beta	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516
12b	Beta	Verizon Wireless	Commscope	NNH-65C-R2B	1900	150	1839
13a	Beta	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
13b	Beta	Verizon Wireless	Commscope	NNH-65C-R2B	2100	150	2039
14a	Gamma	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516
14b	Gamma	Verizon Wireless	Commscope	NNH-65C-R2B	1900	150	1839
15a	Gamma	Verizon Wireless	Commscope	NNH-65C-R2B	700	150	1516
15b	Gamma	Verizon Wireless	Commscope	NNH-65C-R2B	2100	150	2039
16a	Alpha	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	2100	160	3039
16b	Alpha	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	1900	160	3154
17a	Alpha	T-Mobile	RFS	APXVARR24_43-C-NA20	600	160	2790
17b	Alpha	T-Mobile	RFS	APXVARR24_43-C-NA20	700	160	2990
18a	Alpha	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	2366
18b	Alpha	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	1577
19a	Beta	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	2100	160	3039
19b	Beta	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	1900	160	3154
20a	Beta	T-Mobile	RFS	APXVARR24_43-C-NA20	600	160	2790
20b	Beta	T-Mobile	RFS	APXVARR24_43-C-NA20	700	160	2990
21a	Beta	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	2366
21b	Beta	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	1577
22a	Gamma	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	2100	160	3039
22b	Gamma	T-Mobile	Ericsson	AIR32 KRD901146-1_B66A_B2A	1900	160	3154
23a	Gamma	T-Mobile	RFS	APXVARR24_43-C-NA20	600	160	2790

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
23b	Gamma	T-Mobile	RFS	APXVARR24_43-C-NA20	700	160	2990
24a	Gamma	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	2366
24b	Gamma	T-Mobile	Ericsson	AIRKRC118023-1	1900	160	1577
25	Alpha	Sprint	RFS	APXVAARR18_N43-U-NA20	1900	170	2021
26a	Alpha	Sprint	Commscope	DT465B-2XR-V2	850	170	2037
26b	Alpha	Sprint	Commscope	DT465B-2XR-V2	2500	170	2405
27	Beta	Sprint	RFS	APXVAARR18_N43-U-NA20	1900	170	2021
28a	Beta	Sprint	Commscope	DT465B-2XR-V2	850	170	2037
28b	Beta	Sprint	Commscope	DT465B-2XR-V2	2500	170	2405
29	Gamma	Sprint	RFS	APXVAARR18_N43-U-NA20	1900	170	2021
30a	Gamma	Sprint	Commscope	DT465B-2XR-V2	850	170	2037
30b	Gamma	Sprint	Commscope	DT465B-2XR-V2	2500	170	2405

6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

a) Worksite: Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.

b) RF Safety Training and Awareness: All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.

c) Site Access: Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:

- Locked doors/gates/ladder access
- Alarmed doors
- Restrictive barriers

d) Three-foot Buffer: There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.

e) Antennas: Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

Attachment 1: AT&T Exposure Analysis

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	0.5
	Exposure values at the site (mW/cm²)	0.0021
	% Exposure	0.42%
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	2.3
	Exposure values at the site (mW/cm²)	0.0021
	% Exposure	0.09%

AT&T 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	0.6
	Exposure values at the site (mW/cm²)	0.0005
	% Exposure	0.08%
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	2.8
	Exposure values at the site (mW/cm²)	0.0005
	% Exposure	0.02%

AT&T 850 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	0.6
	Exposure values at the site (mW/cm²)	0.0002
	% Exposure	0.03%
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	2.8
	Exposure values at the site (mW/cm²)	0.0002
	% Exposure	0.01%

AT&T 1900 MHz LTE

Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	0.6
	Exposure values at the site (mW/cm²)	0.0000
	% Exposure	0.00%
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	2.8
	Exposure values at the site (mW/cm²)	0.0000
	% Exposure	0.00%

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	1.0
	Exposure values at the site (mW/cm²)	0.0018
	% Exposure	0.18%
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	5.0
	Exposure values at the site (mW/cm²)	0.0018
	% Exposure	0.04%

Attachment 2: Verizon Wireless Exposure Analysis

Verizon Wireless 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0022**
	% Exposure	**0.44%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0022**
	% Exposure	**0.10%**

Verizon Wireless 800 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0011**
	% Exposure	**0.18%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0011**
	% Exposure	**0.04%**

Verizon Wireless 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0013**
	% Exposure	**0.13%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0013**
	% Exposure	**0.03%**

Verizon Wireless 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0015**
	% Exposure	**0.15%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0015**
	% Exposure	**0.03%**

Attachment 3: T-Mobile Exposure Analysis

T-Mobile 600 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.4**
	Exposure values at the site (mW/cm^2)	**0.0035**
	% Exposure	**0.88%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0035**
	% Exposure	**0.1536%**

T-Mobile 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0038**
	% Exposure	**0.76%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0038**
	% Exposure	**0.1646%**

T-Mobile 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0040**
	% Exposure	**0.40%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0040**
	% Exposure	**0.0799%**

T-Mobile 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0038**
	% Exposure	**0.38%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0038**
	% Exposure	**0.0770%**

Attachment 4: Sprint Exposure Analysis

Sprint 862 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**0.6**
	Exposure values at the site (mW/cm²)	**0.001169**
	% Exposure	**0.19%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**2.8**
	Exposure values at the site (mW/cm²)	**0.001169**
	% Exposure	**0.0417%**

T-Mobile 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**1.0**
	Exposure values at the site (mW/cm²)	**0.001159**
	% Exposure	**0.12%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**5.0**
	Exposure values at the site (mW/cm²)	**0.001159**
	% Exposure	**0.0232%**

T-Mobile 2500 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**1.0**
	Exposure values at the site (mW/cm²)	**0.001380**
	% Exposure	**0.14%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**5.0**
	Exposure values at the site (mW/cm²)	**0.001380**
	% Exposure	**0.0276%**

Attachment 5: Combined Exposure Analysis for each Carrier

AT&T All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0045
	% Exposure	0.70%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0045
	% Exposure	0.15%

Verizon Wireless All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0011
	% Exposure	0.22%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0011
	% Exposure	0.05%

T-Mobile All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0073
	% Exposure	1.64%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0073
	% Exposure	0.32%

Sprint All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.003708
	% Exposure	0.449%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.003708
	% Exposure	0.0925%

7. Appendix A: FCC Guidelines

FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm^2.

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when 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. limits for Occupational/Controlled exposure can be found on Table 1(A).

General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

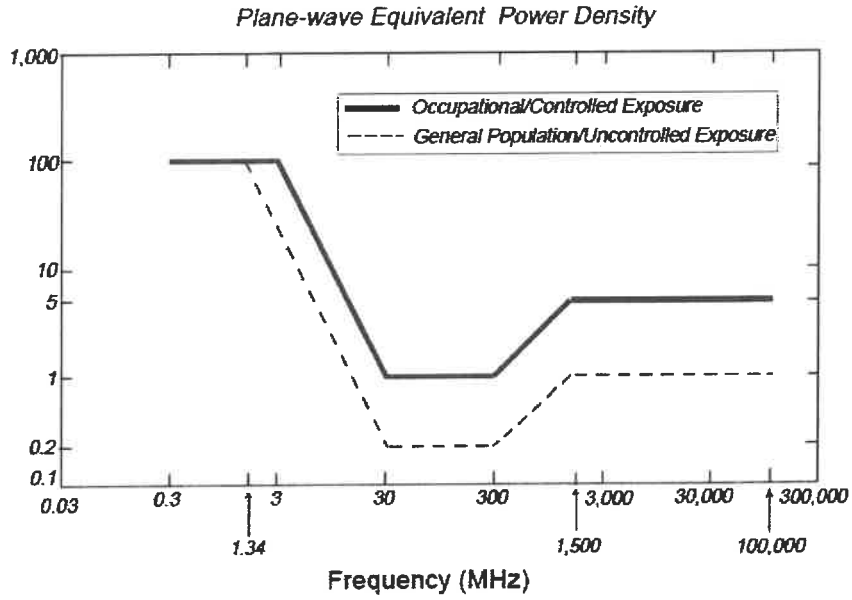
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Figure 1. ***FCC Limits for Maximum Permissible Exposure (MPE)***



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

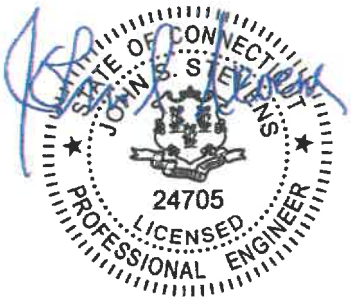
8. Appendix B: Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Heath Administration regarding Human Exposure to Radio Frequency Radiation. In addition, I have been trained in 1) RF safety and 2) RF modeling using RoofView modeling software.

I certify that the information contained in this report is true and correct to the best of my knowledge.

Timothy A. Harris *5/8/2020*

Signature Date



PAUL J. FORD & COMPANY

Report Date:	March 12, 2020
Client:	Everest Infrastructure Partners 1435 Bedford Avenue Pittsburgh, PA 15219 Attn: Michael Culbert Michael.culbert@everestinfrastructure.com
Structure:	Modified 187-ft Guyed Tower
Site Name:	Bozrah Polly Lane
Site Reference #:	701695
Site Address:	3 Polly Lane
City, County, State:	Bozrah, New London County, CT
Latitude, Longitude:	41.573333, -72.203333
PJF Project:	A00019-0431.002.8800_R1

Paul J. Ford and Company is pleased to submit this "**Structural Modification Report**" to determine the tower stress level.

Analysis Criteria:

Reference Standard:	2018 Connecticut State Building Code with the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1.
Ultimate Wind Speed:	135 mph 3-second gust wind speed without ice
Nominal Wind Speed:	104 mph 3-second gust wind speed without ice
Ice Wind Speed:	50 mph 3-second gust wind speed with 0.75" ice
Service Wind Speed:	60 mph (Serviceability) without ice
IBC Site Criteria:	Risk Category II, Topographic Category 1, Exposure Category B

Proposed Appurtenance Loads:

The structure was analyzed with the addition of the proposed appurtenance loads shown in Table 1 combined with the existing loads shown in Table 2 of this report.

Summary of Analysis Results:

Existing Structure:	Pass – 98.8%
Modified Foundation:	Pass – 98.1%

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and Everest Infrastructure Partners. If you have any questions or need further assistance on this or any other projects, please give us a call.

Respectfully Submitted by:
Paul J. Ford and Company

Anthony Pelino, E.I.
Structural Designer
apelino@pauljford.com

JPJ

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
PEN 22731
LICENSED PROFESSIONAL ENGINEER

03.13.2020

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TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 187 ft Guyed tower designed by Fred A. Nudd Corporation.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Risk Category:	II
Wind Speed:	104 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
187.0	187.0	6	cci antennas	DMP65R-BU8D w/ Mount Pipe	-	-	-
		3	ericsson	RRUS 4449 B5/B12			
		3	ericsson	RRUS 4478 B14			
		3	ericsson	RRUS 8843 B2/B66A			
		1	raycap	DC6-48-60-18-8F			
		3	tower mounts	Mount Modifications			

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
187.0	187.0	3	powerwave technologies	7770.00 w/ Mount Pipe	-	-	3
		2	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		1	andrew	SBNH-1D6565C_TIA w/ Mount Pipe			
		3	ericsson	RRUS 11			
		3	powerwave technologies	7770.00 w/ Mount Pipe	12 1 2	1-5/8 1-3/8 0.66	1
		6	powerwave technologies	LGP 17201			
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts	Sector Mount [SM 801-3]			
182.0	182.0	3	ericsson	RADIO 4415	12 3	1-5/8 1-3/8	2
		3	ericsson	RADIO 4415 B66A			
		3	ericsson	RADIO 4449 B12/B71			
		3	rfs celwave	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe			
		3	commscope	SF-QV12-B [SM 502-3]			
		3	ems	RR90_17_02DP			
173.0	173.0	3	commscope	LNX-6515DS	-	-	3
		3	ericsson	KRY 112			
		6	tower mounts	8' x 2" Sch 40 Pipe Mount	-	-	1
		1	tower mounts	12 ft Boom Frame			
150.0	150.0	3	rfs celwave	APXV9ERR18-C-A20_TIA w/ Mount Pipe	4	1-1/4	1
		3	alcatel lucent	1900 MHz 4x45W RRH			
		3	alcatel lucent	RRH 8x20W + Solar Shield			
		6	alcatel lucent	RRH2x50-WCS			
		3	commscope	DT465B-2XR w/ Mount Pipe			
		1	tower mounts	12 ft Boom Frame			
136.0	136.0	3	antel	BXA-171085-8CF-EDIN-X w/ Mount Pipe	12	1-5/8	1
		3	antel	BXA-70063/6CF-EDIN w/ Mount Pipe			
		6	antel	LPA-80080-4CF-EDIN-0 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
		1	tower mounts	12 ft Boom Frame			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Foundation Mapping Report	TEP, 11/20/2019	133845.318836	Everest
Geotechnical Report	TEP, 8/24/2009	080004.46E	Everest
Previous Structural Analysis	Fred A. Nudd Corporation, 12/28/2017	117-23243.4	Everest
Mount Analysis	Infinigy, 1/22/2020	1106-A001-B	Everest
Mount Analysis	Centek Engineering, 5/3/2019	19027.17	Everest
Tower Modification Drawings	PJF, 3/12/2020	00019-0431.002.8800_R1	Attached

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures have been built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	187 - 180	Leg	P2.875"x0.203" (2.5 STD)	3	-18.56	74.72	24.8	Pass
T2	180 - 160	Leg	P2.875"x0.203" (2.5 STD)	26	-77.00	79.61	96.7	Pass
T3	160 - 140	Leg	P2.875"x0.203" (2.5 STD)	86	-77.06	79.61	96.8	Pass
T4	140 - 120	Leg	P2.875"x0.203" (2.5 STD)	146	-78.63	79.61	98.8	Pass
T5	120 - 100	Leg	P2.875"x0.203" (2.5 STD)	206	-76.31	79.61	95.9	Pass
T6	100 - 80	Leg	P2.875"x0.203" (2.5 STD)	267	-57.80	79.61	72.6	Pass
T7	80 - 60	Leg	P2.875"x0.203" (2.5 STD)	327	-59.77	79.61	75.1	Pass
T8	60 - 40	Leg	P2.875"x0.203" (2.5 STD)	387	-67.09	79.61	84.3	Pass
T9	40 - 20	Leg	P2.875"x0.203" (2.5 STD)	447	-69.67	79.61	87.5	Pass
T10	20 - 0	Leg	P2.875"x0.203" (2.5 STD)	507	-69.75	79.61	87.6	Pass
T1	187 - 180	Diagonal	5/8	13	9.22	9.94	92.7	Pass
T2	180 - 160	Diagonal	C3x4.1	81	-6.74	31.24	21.6	Pass
T3	160 - 140	Diagonal	5/8	142	7.78	9.94	78.3	Pass
T4	140 - 120	Diagonal	5/8	165	4.83	9.94	48.6	Pass
T5	120 - 100	Diagonal	5/8	261	8.42	9.94	84.8	Pass
T6	100 - 80	Diagonal	5/8	321	4.17	9.94	42.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T7	80 - 60	Diagonal	5/8	336	4.68	9.94	47.1	Pass
T8	60 - 40	Diagonal	5/8	431	4.83	9.94	48.6	Pass
T9	40 - 20	Diagonal	5/8	457	4.12	9.94	41.4	Pass
T10	20 - 0	Diagonal	5/8	517	6.52	9.94	65.6	Pass
T1	187 - 180	Horizontal	L 1.5 x 1.5 x 3/16	17	-6.65	7.19	92.5	Pass
T2	180 - 160	Horizontal	L 1.5 x 1.5 x 3/16	50	-3.18	7.19	44.3	Pass
T3	160 - 140	Horizontal	L 1.5 x 1.5 x 3/16	137	-5.29	7.19	73.5	Pass
T4	140 - 120	Horizontal	L 1.5 x 1.5 x 3/16	170	-4.88	7.19	67.8	Pass
T5	120 - 100	Horizontal	L 1.5 x 1.5 x 3/16	257	-5.76	7.19	80.1	Pass
T6	100 - 80	Horizontal	L 1.5 x 1.5 x 3/16	282	-3.75	7.19	52.2	Pass
T7	80 - 60	Horizontal	L 1.5 x 1.5 x 3/16	378	-3.57	7.19	49.7	Pass
T8	60 - 40	Horizontal	L 1.5 x 1.5 x 3/16	400	-3.54	7.19	49.2	Pass
T9	40 - 20	Horizontal	L 1.5 x 1.5 x 3/16	462	-3.80	7.19	52.9	Pass
T10	20 - 0	Horizontal	L 1.5 x 1.5 x 3/16	521	-4.75	7.19	66.1	Pass
T1	187 - 180	Top Girt	L 1.5 x 1.5 x 3/16	4	-4.13	7.19	57.5	Pass
T2	180 - 160	Top Girt	L 1.5 x 1.5 x 3/16	28	-0.56	7.19	7.8	Pass
T3	160 - 140	Top Girt	L 1.5 x 1.5 x 3/16	89	-4.20	7.19	58.4	Pass
T4	140 - 120	Top Girt	L 1.5 x 1.5 x 3/16	149	-2.64	7.19	36.7	Pass
T5	120 - 100	Top Girt	L 1.5 x 1.5 x 3/16	210	-3.62	7.19	50.3	Pass
T6	100 - 80	Top Girt	L 1.5 x 1.5 x 3/16	269	-2.15	7.19	29.9	Pass
T7	80 - 60	Top Girt	L 1.5 x 1.5 x 3/16	330	-2.07	7.19	28.8	Pass
T9	40 - 20	Top Girt	L 1.5 x 1.5 x 3/16	448	-1.74	7.19	24.3	Pass
T10	20 - 0	Top Girt	L 1.5 x 1.5 x 3/16	510	-2.10	7.19	29.3	Pass
T1	187 - 180	Bottom Girt	L 1.5 x 1.5 x 3/16	9	-4.97	7.19	69.1	Pass
T2	180 - 160	Bottom Girt	L 1.5 x 1.5 x 3/16	33	6.76	17.09	39.5	Pass
T3	160 - 140	Bottom Girt	L 1.5 x 1.5 x 3/16	92	-2.42	7.19	33.6	Pass
T4	140 - 120	Bottom Girt	L 1.5 x 1.5 x 3/16	152	-4.68	7.19	65.0	Pass
T5	120 - 100	Bottom Girt	L 1.5 x 1.5 x 3/16	213	-2.20	7.19	30.6	Pass
T6	100 - 80	Bottom Girt	L 1.5 x 1.5 x 3/16	271	-1.83	7.19	25.5	Pass
T7	80 - 60	Bottom Girt	L 1.5 x 1.5 x 3/16	331	-1.74	7.19	24.2	Pass
T8	60 - 40	Bottom Girt	L 1.5 x 1.5 x 3/16	393	-2.18	7.19	30.4	Pass
T9	40 - 20	Bottom Girt	L 1.5 x 1.5 x 3/16	453	-1.81	7.19	25.2	Pass
T10	20 - 0	Bottom Girt	L 1.5 x 1.5 x 3/16	512	-0.54	7.19	7.5	Pass
T2	180 - 160	Guy A@160.375	5/8	578	15.16	25.44	59.6	Pass
		Guy A@170	5/8	606	16.47	25.44	64.7	Pass
T4	140 - 120	Guy A@120.375	9/16	595	9.96	21.00	47.4	Pass
T8	60 - 40	Guy A@59.625	9/16	603	10.60	21.00	50.5	Pass
T2	180 - 160	Guy B@160.375	5/8	572	15.88	25.44	62.4	Pass
		Guy B@170	5/8	605	16.61	25.44	65.3	Pass
T4	140 - 120	Guy B@120.375	9/16	590	10.42	21.00	49.6	Pass
T8	60 - 40	Guy B@59.625	9/16	602	11.23	21.00	53.5	Pass
T2	180 - 160	Guy C@160.375	5/8	565	17.63	25.44	69.3	Pass
		Guy C@170	5/8	604	18.01	25.44	70.8	Pass
T4	140 - 120	Guy C@120.375	9/16	583	11.90	21.00	56.7	Pass
T8	60 - 40	Guy C@59.625	9/16	601	11.87	21.00	56.5	Pass
T2	180 - 160	Top Guy Pull-Off@160.375	L 2 x 2 x 5/16	41	11.73	37.26	31.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
		Top Guy Pull-Off@170	L 1.5 x 1.5 x 3/16	60	5.49	17.09	32.2	Pass
T4	140 - 120	Top Guy Pull-Off@120.375	L 2 x 2 x 5/16	162	-7.37	21.94	33.6	Pass
T8	60 - 40	Top Guy Pull-Off@59.625	L 1.5 x 1.5 x 3/16	390	-1.40	6.70	20.9	Pass
T2	180 - 160	Torque Arm Top@160.375	L 3 x 3 x 1/4	568	16.99	46.58	36.5	Pass
T4	140 - 120	Torque Arm Top@120.375	L 3 x 3 x 1/4	586	10.06	46.58	21.6	Pass
T2	180 - 160	Torque Arm Bottom@160.375	L 3 x 3 x 1/4	575	-14.17	36.39	38.9	Pass
T4	140 - 120	Torque Arm Bottom@120.375	L 3 x 3 x 1/4	593	-9.10	36.39	25.0	Pass
							Summary	
						Leg (T4)	98.8	Pass
						Diagonal (T1)	92.7	Pass
						Horizontal (T1)	92.5	Pass
						Top Girt (T3)	58.4	Pass
						Bottom Girt (T1)	69.1	Pass
						Guy A (T2)	64.7	Pass
						Guy B (T2)	65.3	Pass
						Guy C (T2)	70.8	Pass
						Top Guy Pull-Off (T4)	33.6	Pass
						Torque Arm Top (T2)	36.5	Pass
						Torque Arm Bottom (T2)	38.9	Pass
						Bolt Checks	26.1	Pass
						Rating =	98.8	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation Structural	-	0.5	Pass
1	Base Foundation Soil Interaction	-	71.1	Pass
1	Guy Anchor Shaft	-	89.7	Pass
1	Guy Anchor Foundation Structural	-	49.0	Pass
1	Guy Anchor Foundation Soil Interaction	-	98.1	Pass
Structure Rating (max from all components) =				**98.8%**

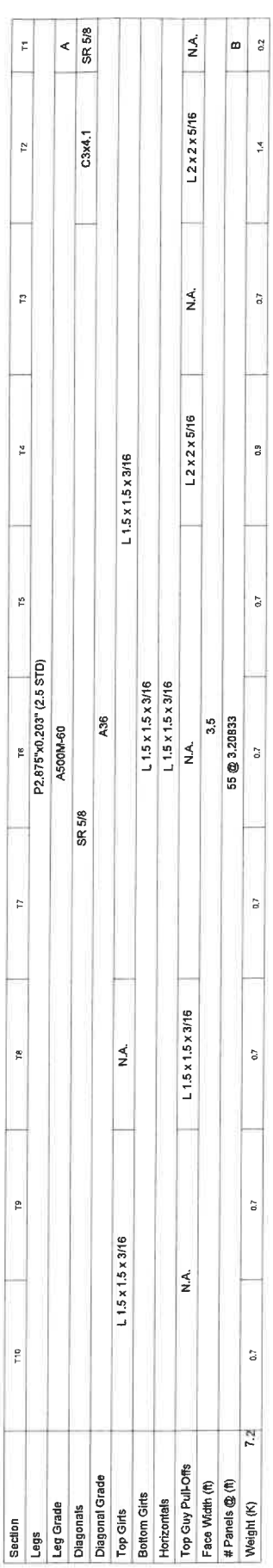
Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

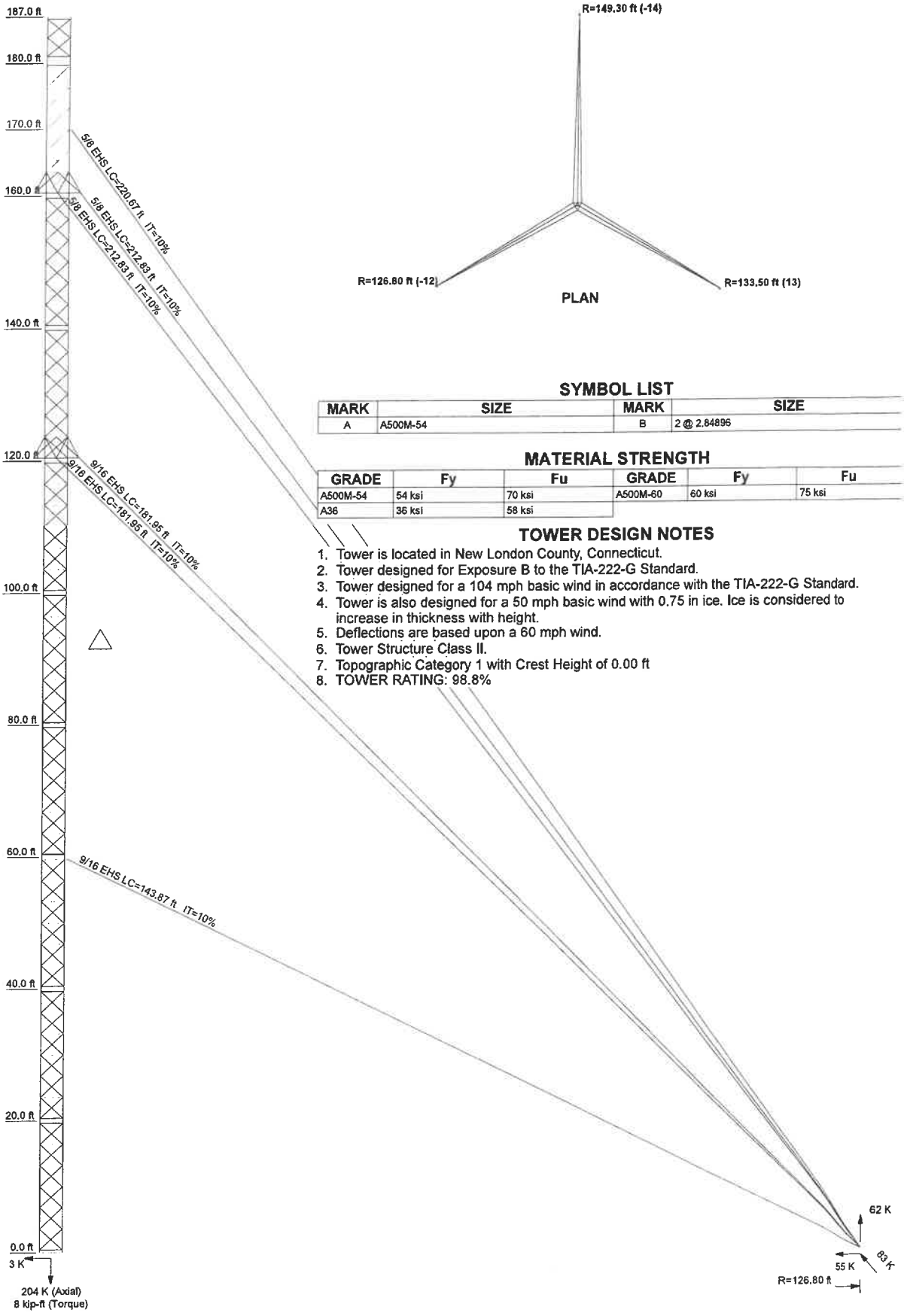
4.1) Recommendations

Install the proposed modifications per the attached drawings dated 3/12/2020.

APPENDIX A

TNXTOWER OUTPUT





PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	A500M-54	B	2 @ 2.84896

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500M-54	54 ksi	70 ksi	A500M-60	60 ksi	75 ksi
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 104 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 98.8%

ALL REACTIONS ARE FACTORED

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250 E. Broad St., Ste 600
Columbus, OH 43215
Phone: 614-221-6679
FAX:

Job: A00019-0431.002.8800			
Project: Bozrah Polly Lane			
Client: Everest Infrastructure Partners	Drawn by: ADP	App'd:	
Code: TIA-222-G	Date: 03/05/20	Scale: NT	
Path:		Dwg No. E	

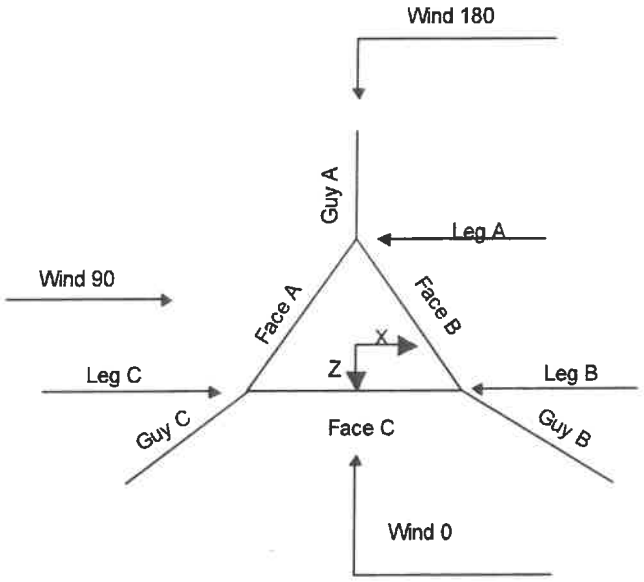
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 187.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 3.50 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

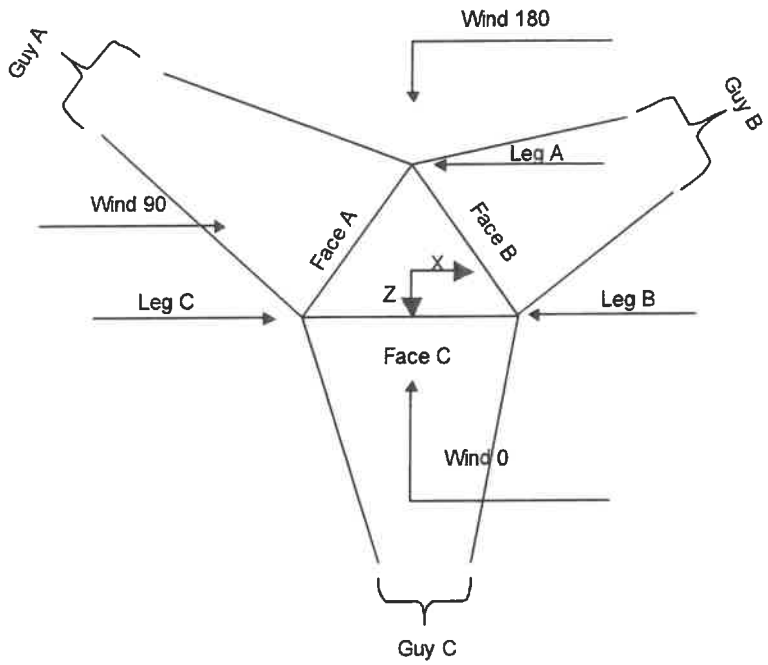
1) Tower is located in New London County, Connecticut.
2) Basic wind speed of 104 mph.
3) Structure Class II.
4) Exposure Category B.
5) Topographic Category 1.
6) Crest Height 0.00 ft.
7) Nominal ice thickness of 0.7500 in.
8) Ice thickness is considered to increase with height.
9) Ice density of 56 pcf.
10) A wind speed of 50 mph is used in combination with ice.
11) Temperature drop of 50 °F.
12) Deflections calculated using a wind speed of 60 mph.
13) Tension only take-up is 0.0313 in.
14) Pressures are calculated at each section.
15) Safety factor used in guy design is 1.
16) Stress ratio used in tower member design is 1.
17) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
√ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	187.00-180.00			3.50	1	7.00
T2	180.00-160.00			3.50	1	20.00
T3	160.00-140.00			3.50	1	20.00
T4	140.00-120.00			3.50	1	20.00
T5-T6	120.00-80.00			3.50	2	20.00
T7	80.00-60.00			3.50	1	20.00
T8-T10	60.00-0.00			3.50	3	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	187.00-180.00	2.85	TX Brace	No	Yes	3.7500	11.8750
T2	180.00-160.00	3.21	X Brace	No	Yes	4.5000	4.5000
T3	160.00-140.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T4	140.00-120.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T5-T6	120.00-80.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T7	80.00-60.00	3.21	TX Brace	No	Yes	4.5000	4.5000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T8-T10	60.00-0.00	3.21	TX Brace	No	Yes	4.5000	4.5000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 187.00-180.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-54 (54 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 180.00-160.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Channel	C3x4.1	A36 (36 ksi)
T3 160.00-140.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 140.00-120.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T5-T6 120.00-80.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 80.00-60.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T8-T10 60.00-0.00	Pipe	P2.875"x0.203" (2.5 STD)	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 187.00-180.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T2 180.00-160.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T3 160.00-140.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T4 140.00-120.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T5-T6 120.00-80.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T7 80.00-60.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T8-T10 60.00-0.00	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 187.00-180.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T2 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T3 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T4 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T5-T6 120.00-80.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T7 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T8-T10 60.00-0.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 187.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5-T6 120.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8-T10 60.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 187.00-180.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 180.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 160.00-140.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 140.00-120.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5-T6 120.00-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 80.00-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8-T10 60.00-0.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 187.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5-T6 120.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8-T10 60.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 187.00-180.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5-T6 120.00-80.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8-T10 60.00-0.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
160.375	EHS	A	5/8	4.24	10%	23000	0.813	228.10	149.30	0.0000	-14.00	100%
		B	5/8	4.24	10%	23000	0.813	197.38	133.50	0.0000	13.00	100%
		C	5/8	4.24	10%	23000	0.813	212.66	126.80	0.0000	-12.00	100%
120.375	EHS	A	9/16	3.50	10%	23000	0.671	199.25	149.30	0.0000	-14.00	100%
		B	9/16	3.50	10%	23000	0.671	169.66	133.50	0.0000	13.00	100%
		C	9/16	3.50	10%	23000	0.671	181.81	126.80	0.0000	-12.00	100%
59.625	EHS	A	9/16	3.50	10%	23000	0.671	164.53	149.30	0.0000	-14.00	100%
		B	9/16	3.50	10%	23000	0.671	139.40	133.50	0.0000	13.00	100%
		C	9/16	3.50	10%	23000	0.671	143.76	126.80	0.0000	-12.00	100%
170	EHS	A	5/8	4.24	10%	23000	0.813	235.50	149.30	0.0000	-14.00	100%
		B	5/8	4.24	10%	23000	0.813	204.63	133.50	0.0000	13.00	100%
		C	5/8	4.24	10%	23000	0.813	220.50	126.80	0.0000	-12.00	100%

Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
160.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L 3 x 3 x 1/4
120.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L 3 x 3 x 1/4
59.625	Corner						
170	Corner						

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
160.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L 2 x 2 x 5/16
120.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L 2 x 2 x 5/16
59.63	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16
170.00	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L 1.5 x 1.5 x 3/16

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
160.375	0.19	0.16	0.17		4.91 3.8 sec/pulse	3.69 3.3 sec/pulse	4.27 3.6 sec/pulse	
120.375	0.13	0.11	0.12		3.76 3.3 sec/pulse	2.73 2.9 sec/pulse	3.13 3.1 sec/pulse	
59.625	0.11	0.09	0.10		2.58 2.8 sec/pulse	1.86 2.4 sec/pulse	1.97 2.4 sec/pulse	
170	0.19	0.17	0.18		5.23 3.9 sec/pulse	3.96 3.4 sec/pulse	4.59 3.7 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
160.375	No	No	1	1	1	1	1	1
120.375	No	No	1	1	1	1	1	1

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
59.625	No	No			1	1	1	1
170	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
160.375	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
120.375	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
59.625	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
170	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
160.375	A	73.19	21	5	1.6244
	B	86.69	22	5	1.6521
	C	74.19	21	5	1.6266
120.375	A	53.19	19	4	1.5733
	B	66.69	21	5	1.6093
	C	54.19	20	5	1.5763
59.625	A	22.81	16	4	1.4456
	B	36.31	17	4	1.5144
	C	23.81	16	4	1.4518
170	A	78.00	22	5	1.6347
	B	91.50	23	5	1.6610
	C	79.00	22	5	1.6368

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
AVA7-50(1-5/8) (T-Mobile)	A	No	No	Ar (CaAa)	182.00 - 0.00	0.0000	0.25	12	9	1.0000 2.0100	2.0100		0.70
FDH1206-24S50-xxM(13/8) (T-Mobile) *****	A	No	No	Ar (CaAa)	182.00 - 0.00	0.0000	0.25	3	3	1.0000 1.4300	1.4300		1.63
FXL-1480(1-1/4) (Sprint)	B	No	No	Ar (CaAa)	150.00 - 0.00	0.0000	0.25	4	4	1.0000 1.5700	1.5700		0.45
AVA7-50(1-5/8) (AT&T)	B	No	No	Ar (CaAa)	187.00 - 0.00	0.0000	0.25	12	4	1.0000 2.0100	2.0100		0.70

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
AVA7-50(1-5/8) (Verizon)	A	No	No	Ar (CaAa)	136.00 - 0.00	0.0000	0.4	12	6	1.0000 2.0100	2.0100		0.70
.66" Fiber (AT&T)	B	No	No	Ar (CaAa)	187.00 - 0.00	0.0000	0.25	2	2	0.6600	0.6600		0.40
FDH1206-24S50-xxM(1-3/8) (AT&T)	B	No	No	Ar (CaAa)	187.00 - 0.00	0.0000	0.25	1	1	1.4300	1.4300		1.63
3" Conduit (2 1/2" EMT) (AT&T) *****	B	No	No	Ar (CaAa)	187.00 - 0.00	0.0000	0.25	1	1	2.8750	2.8750		2.16
Safety Line 3/8 *****	C	No	No	Ar (CaAa)	187.00 - 0.00	0.5000	0	1	1	0.3750	0.3750		0.22

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
187									
(2) DMP65R-BU8D w/ Mount Pipe (P - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.13 0.25 0.38
(2) DMP65R-BU8D w/ Mount Pipe (P - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.13 0.25 0.38
(2) DMP65R-BU8D w/ Mount Pipe (P - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.13 0.25 0.38
RRUS 4449 B5/B12 (P - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12 (P - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12 (P - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 8843 B2/B66A (P - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A (P - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A (P - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 4478 B14	A	From Leg	4.00	0.0000	187.00	No Ice	2.02	1.25	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(P - AT&T)			0.00 0.00			1/2" Ice 1" Ice	2.20 2.39	1.40 1.55	0.08 0.10
RRUS 4478 B14 (P - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	2.02 2.20 2.39	1.25 1.40 1.55	0.06 0.08 0.10
RRUS 4478 B14 (P - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	2.02 2.20 2.39	1.25 1.40 1.55	0.06 0.08 0.10
7770.00 w/ Mount Pipe (E - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
7770.00 w/ Mount Pipe (E - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
7770.00 w/ Mount Pipe (E - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
(2) LGP 17201 (E - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.67 1.83 2.00	0.47 0.57 0.68	0.03 0.04 0.06
(2) LGP 17201 (E - AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.67 1.83 2.00	0.47 0.57 0.68	0.03 0.04 0.06
(2) LGP 17201 (E - AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.67 1.83 2.00	0.47 0.57 0.68	0.03 0.04 0.06
(2) DC6-48-60-18-8F (E - AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	1.21 1.89 2.11	1.21 1.89 2.11	0.03 0.05 0.08
Sector Mount [SM 801-3] (E - AT&T)	C	None		0.0000	187.00	No Ice 1/2" Ice 1" Ice	20.61 29.42 38.23	20.61 29.42 38.23	0.88 1.28 1.82
mount mods	A	From Leg	2.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	4.16 5.29 6.42	8.47 10.84 13.22	0.24 0.27 0.29
mount mods	B	From Leg	2.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	4.16 5.29 6.42	8.47 10.84 13.22	0.24 0.27 0.29
mount mods	C	From Leg	2.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	4.16 5.29 6.42	8.47 10.84 13.22	0.24 0.27 0.29
182 APXVAARR24_43-U-NA20_TIA w/ Mount Pipe (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	0.19 0.32 0.47
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	0.19 0.32 0.47
APXVAARR24_43-U-	C	From Leg	4.00	0.0000	182.00	No Ice	20.48	11.02	0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
NA20_TIA w/ Mount Pipe (TMO)			0.00 0.00			1/2" Ice 1" Ice	21.23 21.99	12.55 14.10	0.32 0.47
RADIO 4449 B12/B71 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4415 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.14	0.05 0.06 0.08
RADIO 4415 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.14	0.05 0.06 0.08
RADIO 4415 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.14	0.05 0.06 0.08
RADIO 4415 B66A (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.13	0.05 0.06 0.08
RADIO 4415 B66A (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.13	0.05 0.06 0.08
RADIO 4415 B66A (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.87 1.00 1.13	0.05 0.06 0.08
Sector Mount [SM 502-3]	C	None		0.0000	182.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	1.67 2.27 3.05
173									
(2) 8' x 2" Sch 40 Pipe Mount (empty)	A	From Leg	4.00 0.00 0.00	0.0000	173.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8' x 2" Sch 40 Pipe Mount (empty)	B	From Leg	4.00 0.00 0.00	0.0000	173.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8' x 2" Sch 40 Pipe Mount (empty)	C	From Leg	4.00 0.00 0.00	0.0000	173.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
Sector Mount [SM 502-3] (empty)	C	None		0.0000	173.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	1.67 2.27 3.05
150									
APXV9ERR18-C-A20_TIA w/ Mount Pipe (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	7.47 8.66 9.56	0.10 0.17 0.24

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXV9ERR18-C-A20_TIA w/ Mount Pipe (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	7.47 8.66 9.56	0.10 0.17 0.24
APXV9ERR18-C-A20_TIA w/ Mount Pipe (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	7.47 8.66 9.56	0.10 0.17 0.24
DT465B-2XR w/ Mount Pipe (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.09 0.16 0.25
DT465B-2XR w/ Mount Pipe (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.09 0.16 0.25
DT465B-2XR w/ Mount Pipe (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.09 0.16 0.25
1900 MHz 4x45W RRH (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
1900 MHz 4x45W RRH (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
1900 MHz 4x45W RRH (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
RRH 8x20W + Solar Shield (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
RRH 8x20W + Solar Shield (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
RRH 8x20W + Solar Shield (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
(2) RRH2x50-WCS (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.91 5.23 5.55	2.70 3.00 3.30	0.08 0.11 0.14
(2) RRH2x50-WCS (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.91 5.23 5.55	2.70 3.00 3.30	0.08 0.11 0.14
(2) RRH2x50-WCS (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	4.91 5.23 5.55	2.70 3.00 3.30	0.08 0.11 0.14
Sector Mount [SM 502-3]	C	None		0.0000	150.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	1.67 2.27 3.05
136									
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe (VZW)	A	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe (VZW)	B	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe (VZW)	C	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
BXA-70063/6CF-EDIN w/ Mount Pipe (VZW)	A	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.40 6.55 7.41	0.04 0.10 0.17
BXA-70063/6CF-EDIN w/ Mount Pipe (VZW)	B	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.40 6.55 7.41	0.04 0.10 0.17
BXA-70063/6CF-EDIN w/ Mount Pipe (VZW)	C	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.40 6.55 7.41	0.04 0.10 0.17
BXA-171085-8CF-EDIN-X w/ Mount Pipe (VZW)	A	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	3.16 3.53 3.90	3.33 3.94 4.56	0.03 0.06 0.10
BXA-171085-8CF-EDIN-X w/ Mount Pipe (VZW)	B	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	3.16 3.53 3.90	3.33 3.94 4.56	0.03 0.06 0.10
BXA-171085-8CF-EDIN-X w/ Mount Pipe (VZW)	C	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	3.16 3.53 3.90	3.33 3.94 4.56	0.03 0.06 0.10
(2) FD9R6004/2C-3L (VZW)	A	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L (VZW)	B	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L (VZW)	C	From Leg	4.00 0.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
Sector Mount [SM 502-3]	C	None		0.0000	136.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	1.67 2.27 3.05
***** *** * *									

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	3.25			
Bracing Weight	3.96			
Total Member Self-Weight	7.21			
Guy Weight	2.61			
Total Weight	29.33			
Wind 0 deg - No Ice		0.00	-25.63	4.35
Wind 30 deg - No Ice		11.85	-20.53	3.24
Wind 60 deg - No Ice		22.31	-12.88	-3.79
Wind 90 deg - No Ice		29.08	0.00	-12.34
Wind 120 deg - No Ice		25.47	14.71	-12.69
Wind 150 deg - No Ice		14.04	24.32	-7.76
Wind 180 deg - No Ice		0.00	25.24	-4.35
Wind 210 deg - No Ice		-11.85	20.53	-3.24
Wind 240 deg - No Ice		-22.65	13.08	3.79
Wind 270 deg - No Ice		-29.08	0.00	12.34
Wind 300 deg - No Ice		-25.13	-14.51	12.69
Wind 330 deg - No Ice		-14.04	-24.32	7.76
Member Ice	19.65			
Guy Ice	14.98			
Total Weight Ice	130.79			
Wind 0 deg - Ice		0.00	-9.58	1.32
Wind 30 deg - Ice		4.69	-8.13	0.98
Wind 60 deg - Ice		8.47	-4.89	-0.47
Wind 90 deg - Ice		10.35	0.00	-2.50
Wind 120 deg - Ice		9.14	5.28	-3.00
Wind 150 deg - Ice		5.05	8.74	-2.00
Wind 180 deg - Ice		0.00	9.52	-1.32
Wind 210 deg - Ice		-4.69	8.13	-0.98
Wind 240 deg - Ice		-8.53	4.92	0.47
Wind 270 deg - Ice		-10.35	0.00	2.50
Wind 300 deg - Ice		-9.08	-5.24	3.00
Wind 330 deg - Ice		-5.05	-8.74	2.00
Total Weight	29.33			
Wind 0 deg - Service		0.00	-8.53	1.45
Wind 30 deg - Service		3.95	-6.83	1.08
Wind 60 deg - Service		7.42	-4.29	-1.26
Wind 90 deg - Service		9.68	0.00	-4.11
Wind 120 deg - Service		8.48	4.89	-4.22
Wind 150 deg - Service		4.67	8.10	-2.58
Wind 180 deg - Service		0.00	8.40	-1.45
Wind 210 deg - Service		-3.95	6.83	-1.08
Wind 240 deg - Service		-7.54	4.35	1.26
Wind 270 deg - Service		-9.68	0.00	4.11
Wind 300 deg - Service		-8.36	-4.83	4.22
Wind 330 deg - Service		-4.67	-8.10	2.58

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy

Comb. No.	Description
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	187 - 180	2.731	29	0.2473	0.0871
T2	180 - 160	2.342	29	0.2405	0.0821
T3	160 - 140	1.519	29	0.1467	0.0791
T4	140 - 120	1.102	29	0.0837	0.1012
T5	120 - 100	0.909	30	0.0374	0.1030
T6	100 - 80	0.905	30	0.0161	0.1637
T7	80 - 60	0.850	30	0.0253	0.1893
T8	60 - 40	0.720	31	0.0257	0.1812
T9	40 - 20	0.630	31	0.0367	0.1453
T10	20 - 0	0.397	31	0.0767	0.0819

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
187.00	(2) DMP65R-BU8D w/ Mount Pipe	29	2.731	0.2473	0.0871	14750
182.00	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	29	2.449	0.2439	0.0835	14750
173.00	(2) 8' x 2" Sch 40 Pipe Mount	29	2.000	0.2152	0.0779	9829
170.00	Guy	29	1.872	0.2000	0.0768	9558
160.38	Guy	29	1.530	0.1485	0.0788	8852
150.00	APXV9ERR18-C-A20_TIA w/ Mount Pipe	29	1.277	0.1095	0.0914	15609
136.00	(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	30	1.051	0.0738	0.1011	43300
120.38	Guy	30	0.910	0.0381	0.1024	16663
59.63	Guy	31	0.718	0.0257	0.1808	43380

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	187 - 180	24.211	6	1.7857	0.6513
T2	180 - 160	21.577	6	1.7538	0.6331
T3	160 - 140	15.459	6	1.2826	0.6222
T4	140 - 120	11.590	6	0.8791	0.7240
T5	120 - 100	9.015	6	0.4941	0.7282
T6	100 - 80	8.153	6	0.2320	1.1571
T7	80 - 60	7.393	6	0.2271	1.2555
T8	60 - 40	6.269	6	0.2617	1.1771
T9	40 - 20	5.112	6	0.3738	0.9564
T10	20 - 0	3.048	6	0.6142	0.6040

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
187.00	(2) DMP65R-BU8D w/ Mount Pipe	6	24.211	1.7857	0.6513	3223
182.00	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	6	22.314	1.7699	0.6384	3223
173.00	(2) 8' x 2" Sch 40 Pipe Mount	6	19.165	1.6313	0.6159	2065
170.00	Guy	6	18.217	1.5564	0.6112	1995
160.38	Guy	6	15.550	1.2922	0.6207	1848
150.00	APXV9ERR18-C-A20_TIA w/ Mount Pipe	6	13.317	1.0637	0.6814	2796
136.00	(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	6	10.965	0.8027	0.7199	4337
120.38	Guy	6	9.046	0.5008	0.7247	2084
59.63	Guy	6	6.249	0.2627	1.1745	9745

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	187	Leg	A325N	0.7500	4	0.35	29.82	0.012	1	Bolt Tension
T2	180	Leg	A325N	0.7500	4	3.34	29.82	0.112	1	Bolt Tension
T3	160	Leg	A325N	0.7500	4	7.78	29.82	0.261	1	Bolt Tension
T4	140	Leg	A325N	0.7500	4	4.68	29.82	0.157	1	Bolt Tension
T5	120	Leg	A325N	0.7500	4	6.35	29.82	0.213	1	Bolt Tension
T6	100	Leg	A325N	0.7500	4	4.48	29.82	0.150	1	Bolt Tension
T7	80	Leg	A325N	0.7500	4	4.73	29.82	0.158	1	Bolt Tension
T8	60	Leg	A325N	0.7500	4	4.92	29.82	0.165	1	Bolt Tension
T9	40	Leg	A325N	0.7500	4	5.57	29.82	0.187	1	Bolt Tension
T10	20	Leg	A325N	0.7500	4	5.77	29.82	0.193	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T2	160.38 (A) (577)	5/8 EHS	4.24	42.40	15.08	25.44	1.000	1.687
	160.38 (A) (578)	5/8 EHS	4.24	42.40	15.16	25.44	1.000	1.678
	160.38 (B) (571)	5/8 EHS	4.24	42.40	14.94	25.44	1.000	1.703
	160.38 (B) (572)	5/8 EHS	4.24	42.40	15.88	25.44	1.000	1.602
	160.38 (C) (565)	5/8 EHS	4.24	42.40	17.63	25.44	1.000	1.443
	160.38 (C) (566)	5/8 EHS	4.24	42.40	16.54	25.44	1.000	1.538
	170.00 (A) (606)	5/8 EHS	4.24	42.40	16.47	25.44	1.000	1.545
	170.00 (B) (605)	5/8 EHS	4.24	42.40	16.61	25.44	1.000	1.532
	170.00 (C) (604)	5/8 EHS	4.24	42.40	18.01	25.44	1.000	1.412
T4	120.38 (A) (595)	9/16 EHS	3.50	35.00	9.96	21.00	1.000	2.108
	120.38 (A) (596)	9/16 EHS	3.50	35.00	9.49	21.00	1.000	2.212
	120.38 (B) (589)	9/16 EHS	3.50	35.00	8.96	21.00	1.000	2.343
	120.38 (B) (590)	9/16 EHS	3.50	35.00	10.42	21.00	1.000	2.014
	120.38 (C) (583)	9/16 EHS	3.50	35.00	11.90	21.00	1.000	1.765
	120.38 (C) (584)	9/16 EHS	3.50	35.00	10.21	21.00	1.000	2.057
T8	59.63 (A) (603)	9/16 EHS	3.50	35.00	10.60	21.00	1.000	1.980
	59.63 (B) (602)	9/16 EHS	3.50	35.00	11.23	21.00	1.000	1.869
	59.63 (C) (601)	9/16 EHS	3.50	35.00	11.87	21.00	1.000	1.769

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	P2.875"x0.203" (2.5 STD)	7.00	2.85	36.1 K=1.00	1.7040	-18.56	74.72	0.248 [1]
T2	180 - 160	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-77.00	79.61	0.967 [1]
T3	160 - 140	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-77.06	79.61	0.968 [1]
T4	140 - 120	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-78.63	79.61	0.988 [1]
T5	120 - 100	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-76.31	79.61	0.959 [1]
T6	100 - 80	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-57.80	79.61	0.726 [1]
T7	80 - 60	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-59.77	79.61	0.751 [1]
T8	60 - 40	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6 K=1.00	1.7040	-67.09	79.61	0.843 [1]
T9	40 - 20	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6	1.7040	-69.67	79.61	0.875 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	P2.875"x0.203" (2.5 STD)	20.00	3.21	K=1.00 40.6 K=1.00	1.7040	-69.75	79.61	0.876 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	C3x4.1	4.75	2.21	65.7 K=1.00	1.2100	-6.74	31.24	0.216 [1]

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-6.65	7.19	0.925 [1]
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.18	7.19	0.443 [1]
T3	160 - 140	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-5.29	7.19	0.735 [1]
T4	140 - 120	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.88	7.19	0.678 [1]
T5	120 - 100	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-5.76	7.19	0.801 [1]
T6	100 - 80	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.75	7.19	0.522 [1]
T7	80 - 60	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.57	7.19	0.497 [1]
T8	60 - 40	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.54	7.19	0.492 [1]
T9	40 - 20	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.80	7.19	0.529 [1]
T10	20 - 0	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.75	7.19	0.661 [1]

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.13	7.19	0.575 [1]
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-0.56	7.19	0.078 [1]
T3	160 - 140	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.20	7.19	0.584 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	140 - 120	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.64	7.19	0.367 [1]
T5	120 - 100	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.62	7.19	0.503 [1]
T6	100 - 80	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.15	7.19	0.299 [1]
T7	80 - 60	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.07	7.19	0.288 [1]
T9	40 - 20	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-1.74	7.19	0.243 [1]
T10	20 - 0	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.10	7.19	0.293 [1]

[1] $P_u / \phi P_n$ controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.97	7.19	0.691 [1]
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-1.91	7.19	0.266 [1]
T3	160 - 140	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.42	7.19	0.336 [1]
T4	140 - 120	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-4.68	7.19	0.650 [1]
T5	120 - 100	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.20	7.19	0.306 [1]
T6	100 - 80	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-1.83	7.19	0.255 [1]
T7	80 - 60	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-1.74	7.19	0.242 [1]
T8	60 - 40	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-2.18	7.19	0.304 [1]
T9	40 - 20	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-1.81	7.19	0.252 [1]
T10	20 - 0	L 1.5 x 1.5 x 3/16	3.50	3.26	128.2 K=0.96	0.5273	-0.54	7.19	0.075 [1]

[1] $P_u / \phi P_n$ controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L 2 x 2 x 5/16	3.50	3.26	100.3 K=1.00	1.1500	-5.25	21.94	0.239 [1]
T4	140 - 120	L 2 x 2 x 5/16	3.50	3.26	100.3 K=1.00	1.1500	-7.37	21.94	0.336 [1]
T8	60 - 40	L 1.5 x 1.5 x 3/16	3.50	3.26	133.4 K=1.00	0.5273	-1.40	6.70	0.209 [1]

[1] $P_u / \phi P_n$ controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (569)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-13.61	36.39	0.374 [1]
T2	180 - 160 (570)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-12.50	36.39	0.343 [1]
T2	180 - 160 (575)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-14.17	36.39	0.389 [1]
T2	180 - 160 (576)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-12.73	36.39	0.350 [1]
T2	180 - 160 (581)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-13.19	36.39	0.362 [1]
T2	180 - 160 (582)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-13.45	36.39	0.370 [1]
T4	140 - 120 (587)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-7.94	36.39	0.218 [1]
T4	140 - 120 (588)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-7.12	36.39	0.196 [1]
T4	140 - 120 (593)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-9.10	36.39	0.250 [1]
T4	140 - 120 (594)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-7.38	36.39	0.203 [1]
T4	140 - 120 (599)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-8.17	36.39	0.225 [1]
T4	140 - 120 (600)	L 3 x 3 x 1/4	3.50	3.38	68.5 K=1.00	1.4375	-8.84	36.39	0.243 [1]

[1] $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	P2.875"x0.203" (2.5 STD)	7.00	2.85	36.1	1.7040	13.37	82.82	0.161 [1]
T2	180 - 160	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6	1.7040	44.14	92.02	0.480 [1]
T3	160 - 140	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6	1.7040	31.14	92.02	0.338 [1]
T4	140 - 120	P2.875"x0.203" (2.5 STD)	20.00	3.21	40.6	1.7040	1.46	92.02	0.016 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	187 - 180	5/8	4.51	4.20	322.9	0.3068	9.22	9.94	0.927 [1]
T2	180 - 160	C3x4.1	4.75	2.21	65.7	1.2100	7.55	39.20	0.193 [1]
T3	160 - 140	5/8	4.75	4.42	339.7	0.3068	7.78	9.94	0.783 [1]
T4	140 - 120	5/8	4.75	4.42	339.7	0.3068	4.83	9.94	0.486 [1]
T5	120 - 100	5/8	4.75	4.42	339.7	0.3068	8.42	9.94	0.848 [1]
T6	100 - 80	5/8	4.75	4.42	339.7	0.3068	4.17	9.94	0.420 [1]
T7	80 - 60	5/8	4.75	4.42	339.7	0.3068	4.68	9.94	0.471 [1]

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T8	60 - 40	5/8	4.75	4.42	339.7	0.3068	4.83	9.94	0.486 [1]
T9	40 - 20	5/8	4.75	4.42	339.7	0.3068	4.12	9.94	0.414 [1]
T10	20 - 0	5/8	4.75	4.42	339.7	0.3068	6.52	9.94	0.656 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	187 - 180	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.32	17.09	0.019 [1]
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	5.54	17.09	0.324 [1]
T3	160 - 140	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.33	17.09	0.078 [1]
T4	140 - 120	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.36	17.09	0.080 [1]
T5	120 - 100	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.32	17.09	0.077 [1]
T6	100 - 80	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.00	17.09	0.059 [1]
T7	80 - 60	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.04	17.09	0.061 [1]
T8	60 - 40	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.16	17.09	0.068 [1]
T9	40 - 20	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.21	17.09	0.071 [1]
T10	20 - 0	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	1.21	17.09	0.071 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.94	17.09	0.055 [1]
T3	160 - 140	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.97	17.09	0.056 [1]
T5	120 - 100	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.06	17.09	0.004 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	6.76	17.09	0.395 [1]
T4	140 - 120	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.98	17.09	0.057 [1]
T10	20 - 0	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	0.90	17.09	0.053 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L 2 x 2 x 5/16	3.50	3.26	65.1	1.1500	11.73	37.26	0.315 [1]
T2	180 - 160	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	5.49	17.09	0.322 [1]
T8	60 - 40	L 1.5 x 1.5 x 3/16	3.50	3.26	85.7	0.5273	3.54	17.09	0.207 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (567)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	16.90	46.58	0.363 [1]
T2	180 - 160 (568)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	16.99	46.58	0.365 [1]
T2	180 - 160 (573)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	16.04	46.58	0.344 [1]
T2	180 - 160 (574)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	16.47	46.58	0.354 [1]
T2	180 - 160 (579)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	14.99	46.58	0.322 [1]
T2	180 - 160 (580)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	15.38	46.58	0.330 [1]
T4	140 - 120 (585)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	9.87	46.58	0.212 [1]
T4	140 - 120 (586)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	10.06	46.58	0.216 [1]
T4	140 - 120 (591)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	8.01	46.58	0.172 [1]
T4	140 - 120 (592)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	8.51	46.58	0.183 [1]
T4	140 - 120 (597)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	7.46	46.58	0.160 [1]
T4	140 - 120 (598)	L 3 x 3 x 1/4	4.75	4.59	59.1	1.4375	8.00	46.58	0.172 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (569)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.32	46.58	0.114 [1]
T2	180 - 160 (570)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	4.74	46.58	0.102 [1]
T2	180 - 160 (575)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.84	46.58	0.125 [1]
T2	180 - 160 (576)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.07	46.58	0.109 [1]
T2	180 - 160 (581)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.92	46.58	0.127 [1]
T2	180 - 160 (582)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	6.08	46.58	0.131 [1]
T4	140 - 120 (587)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	4.39	46.58	0.094 [1]
T4	140 - 120 (588)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	4.07	46.58	0.087 [1]
T4	140 - 120	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	4.68	46.58	0.100 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	(593) 140 - 120 (594)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	4.63	46.58	0.099 [1]
T4	140 - 120 (599)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.44	46.58	0.117 [1]
T4	140 - 120 (600)	L 3 x 3 x 1/4	3.50	3.38	43.6	1.4375	5.25	46.58	0.113 [1]

[1] $P_u / \phi P_n$ controls

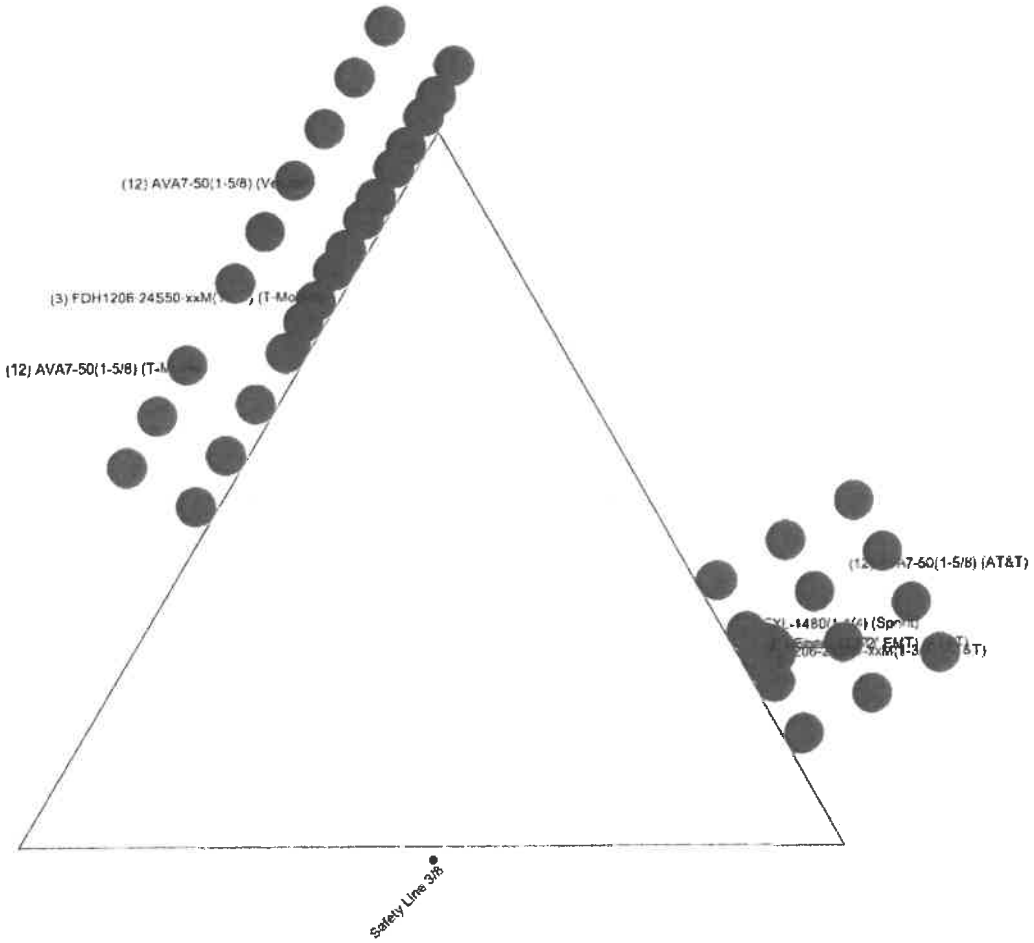
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	187 - 180	Leg	P2.875"x0.203" (2.5 STD)	3	-18.56	74.72	24.8	Pass
T2	180 - 160	Leg	P2.875"x0.203" (2.5 STD)	26	-77.00	79.61	96.7	Pass
T3	160 - 140	Leg	P2.875"x0.203" (2.5 STD)	86	-77.06	79.61	96.8	Pass
T4	140 - 120	Leg	P2.875"x0.203" (2.5 STD)	146	-78.63	79.61	98.8	Pass
T5	120 - 100	Leg	P2.875"x0.203" (2.5 STD)	206	-76.31	79.61	95.9	Pass
T6	100 - 80	Leg	P2.875"x0.203" (2.5 STD)	267	-57.80	79.61	72.6	Pass
T7	80 - 60	Leg	P2.875"x0.203" (2.5 STD)	327	-59.77	79.61	75.1	Pass
T8	60 - 40	Leg	P2.875"x0.203" (2.5 STD)	387	-67.09	79.61	84.3	Pass
T9	40 - 20	Leg	P2.875"x0.203" (2.5 STD)	447	-69.67	79.61	87.5	Pass
T10	20 - 0	Leg	P2.875"x0.203" (2.5 STD)	507	-69.75	79.61	87.6	Pass
T1	187 - 180	Diagonal	5/8	13	9.22	9.94	92.7	Pass
T2	180 - 160	Diagonal	C3x4.1	81	-6.74	31.24	21.6	Pass
T3	160 - 140	Diagonal	5/8	142	7.78	9.94	78.3	Pass
T4	140 - 120	Diagonal	5/8	165	4.83	9.94	48.6	Pass
T5	120 - 100	Diagonal	5/8	261	8.42	9.94	84.8	Pass
T6	100 - 80	Diagonal	5/8	321	4.17	9.94	42.0	Pass
T7	80 - 60	Diagonal	5/8	336	4.68	9.94	47.1	Pass
T8	60 - 40	Diagonal	5/8	431	4.83	9.94	48.6	Pass
T9	40 - 20	Diagonal	5/8	457	4.12	9.94	41.4	Pass
T10	20 - 0	Diagonal	5/8	517	6.52	9.94	65.6	Pass
T1	187 - 180	Horizontal	L 1.5 x 1.5 x 3/16	17	-6.65	7.19	92.5	Pass
T2	180 - 160	Horizontal	L 1.5 x 1.5 x 3/16	50	-3.18	7.19	44.3	Pass
T3	160 - 140	Horizontal	L 1.5 x 1.5 x 3/16	137	-5.29	7.19	73.5	Pass
T4	140 - 120	Horizontal	L 1.5 x 1.5 x 3/16	170	-4.88	7.19	67.8	Pass
T5	120 - 100	Horizontal	L 1.5 x 1.5 x 3/16	257	-5.76	7.19	80.1	Pass
T6	100 - 80	Horizontal	L 1.5 x 1.5 x 3/16	282	-3.75	7.19	52.2	Pass
T7	80 - 60	Horizontal	L 1.5 x 1.5 x 3/16	378	-3.57	7.19	49.7	Pass
T8	60 - 40	Horizontal	L 1.5 x 1.5 x 3/16	400	-3.54	7.19	49.2	Pass
T9	40 - 20	Horizontal	L 1.5 x 1.5 x 3/16	462	-3.80	7.19	52.9	Pass
T10	20 - 0	Horizontal	L 1.5 x 1.5 x 3/16	521	-4.75	7.19	66.1	Pass
T1	187 - 180	Top Girt	L 1.5 x 1.5 x 3/16	4	-4.13	7.19	57.5	Pass
T2	180 - 160	Top Girt	L 1.5 x 1.5 x 3/16	28	-0.56	7.19	7.8	Pass
T3	160 - 140	Top Girt	L 1.5 x 1.5 x 3/16	89	-4.20	7.19	58.4	Pass
T4	140 - 120	Top Girt	L 1.5 x 1.5 x 3/16	149	-2.64	7.19	36.7	Pass
T5	120 - 100	Top Girt	L 1.5 x 1.5 x 3/16	210	-3.62	7.19	50.3	Pass
T6	100 - 80	Top Girt	L 1.5 x 1.5 x 3/16	269	-2.15	7.19	29.9	Pass
T7	80 - 60	Top Girt	L 1.5 x 1.5 x 3/16	330	-2.07	7.19	28.8	Pass
T9	40 - 20	Top Girt	L 1.5 x 1.5 x 3/16	448	-1.74	7.19	24.3	Pass
T10	20 - 0	Top Girt	L 1.5 x 1.5 x 3/16	510	-2.10	7.19	29.3	Pass
T1	187 - 180	Bottom Girt	L 1.5 x 1.5 x 3/16	9	-4.97	7.19	69.1	Pass
T2	180 - 160	Bottom Girt	L 1.5 x 1.5 x 3/16	33	6.76	17.09	39.5	Pass
T3	160 - 140	Bottom Girt	L 1.5 x 1.5 x 3/16	92	-2.42	7.19	33.6	Pass
T4	140 - 120	Bottom Girt	L 1.5 x 1.5 x 3/16	152	-4.68	7.19	65.0	Pass
T5	120 - 100	Bottom Girt	L 1.5 x 1.5 x 3/16	213	-2.20	7.19	30.6	Pass
T6	100 - 80	Bottom Girt	L 1.5 x 1.5 x 3/16	271	-1.83	7.19	25.5	Pass
T7	80 - 60	Bottom Girt	L 1.5 x 1.5 x 3/16	331	-1.74	7.19	24.2	Pass
T8	60 - 40	Bottom Girt	L 1.5 x 1.5 x 3/16	393	-2.18	7.19	30.4	Pass
T9	40 - 20	Bottom Girt	L 1.5 x 1.5 x 3/16	453	-1.81	7.19	25.2	Pass
T10	20 - 0	Bottom Girt	L 1.5 x 1.5 x 3/16	512	-0.54	7.19	7.5	Pass
T2	180 - 160	Guy A@160.375	5/8	578	15.16	25.44	59.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Guy A@170	5/8	606	16.47	25.44	64.7	Pass
T4	140 - 120	Guy A@120.375	9/16	595	9.96	21.00	47.4	Pass
T8	60 - 40	Guy A@59.625	9/16	603	10.60	21.00	50.5	Pass
T2	180 - 160	Guy B@160.375	5/8	572	15.88	25.44	62.4	Pass
		Guy B@170	5/8	605	16.61	25.44	65.3	Pass
T4	140 - 120	Guy B@120.375	9/16	590	10.42	21.00	49.6	Pass
T8	60 - 40	Guy B@59.625	9/16	602	11.23	21.00	53.5	Pass
T2	180 - 160	Guy C@160.375	5/8	565	17.63	25.44	69.3	Pass
		Guy C@170	5/8	604	18.01	25.44	70.8	Pass
T4	140 - 120	Guy C@120.375	9/16	583	11.90	21.00	56.7	Pass
T8	60 - 40	Guy C@59.625	9/16	601	11.87	21.00	56.5	Pass
T2	180 - 160	Top Guy Pull-Off@160.375	L 2 x 2 x 5/16	41	11.73	37.26	31.5	Pass
		Top Guy Pull-Off@170	L 1.5 x 1.5 x 3/16	60	5.49	17.09	32.2	Pass
T4	140 - 120	Top Guy Pull-Off@120.375	L 2 x 2 x 5/16	162	-7.37	21.94	33.6	Pass
T8	60 - 40	Top Guy Pull-Off@59.625	L 1.5 x 1.5 x 3/16	390	-1.40	6.70	20.9	Pass
T2	180 - 160	Torque Arm Top@160.375	L 3 x 3 x 1/4	568	16.99	46.58	36.5	Pass
T4	140 - 120	Torque Arm Top@120.375	L 3 x 3 x 1/4	586	10.06	46.58	21.6	Pass
T2	180 - 160	Torque Arm Bottom@160.375	L 3 x 3 x 1/4	575	-14.17	36.39	38.9	Pass
T4	140 - 120	Torque Arm Bottom@120.375	L 3 x 3 x 1/4	593	-9.10	36.39	25.0	Pass
						Summary		
						Leg (T4)	98.8	Pass
						Diagonal (T1)	92.7	Pass
						Horizontal (T1)	92.5	Pass
						Top Girt (T3)	58.4	Pass
						Bottom Girt (T1)	69.1	Pass
						Guy A (T2)	64.7	Pass
						Guy B (T2)	65.3	Pass
						Guy C (T2)	70.8	Pass
						Top Guy Pull-Off (T4)	33.6	Pass
						Torque Arm Top (T2)	36.5	Pass
						Torque Arm Bottom (T2)	38.9	Pass
						Bolt Checks	26.1	Pass
						RATING =	**98.8**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(12) AVA7-50(1-5/8) (V
(3) FDH1206-24550-xxM(
(12) AVA7-50(1-5/8) (T-M
(12) AVA7-50(1-5/8) (AT&T)
Safety Line 3/8

APPENDIX C

ADDITIONAL CALCULATIONS

foundation loads

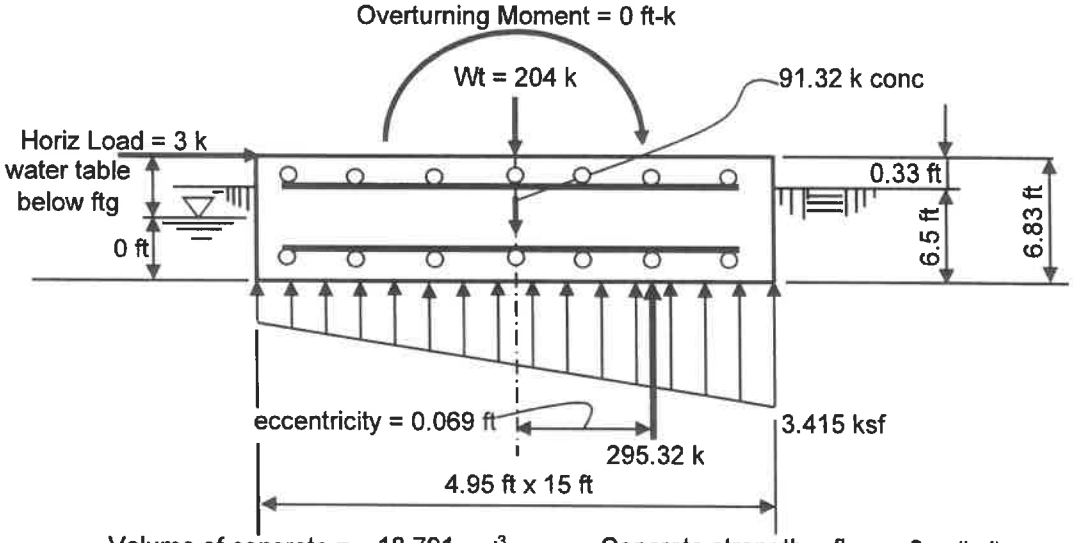
Limit states Tower or Pole Weight =	**204**	kips
limit states total horizontal force =	**3**	kips
limit states overturning moment =	**0**	ft-kips

soil properties

Safety factor against overturning =	**1**	
Soil Density =	**115**	pcf
Ultimate soil bearing =	**8**	ksf
Depth to water table =	**20**	ft

mat dimensions

depth to bottom of footing =	**6.5**	ft
Footing thickness =	**6.833**	ft
Footing Width =	**4.95**	ft
Footing Length =	**15**	ft
Tower/Pole Center Offset =	**0**	ft



Volume of concrete = 18.791 yd^3 Concrete strength = f'_c = **3** (ksi)

Rebar = (18) #9 x 4.45 ft long plus (58) #9 x 14.5 ft long

reinforcing steel = **(9) #9 by 4.45 long @ 21.75 in o.c. top and bot short bars**

reinforcing steel = **(29) #9 by 14.5 long @ 1.91 in o.c. top and bot long bars**

Summary of analysis results

Overturning Moment: (Stress Ratio = 0.037)

Calculated Ultimate Overturning Moment = 20.5 ft-kips

Resisting Moment = 548.2 ft-kips

Factor of Safety against overturning = 26.742 **> 1 okay**

Rebar strength = F_y = **60** (ksi)

minimum cover over rebar = **3** inches

Soil Bearing (Stress Ratio = 0.711) < CONTROLLING CRITERIA

Limit States Maximum Net Soil Bearing = 4.8 ksf

Calculated limit states Soil Bearing Pressure = 3.415 **ksf < 4.8 ksf okay**

Bending Moment (Stress Ratio = 0.001)

Ultimate Bending Moment Resistance = 9339 ft-kips

Calculated Ultimate Bending Moment = 10 **ft-kips < 9339 ft-kips okay**

Bending Shear (Stress Ratio = 0.005)

Ultimate Bending Shear Resistance = 377 kips

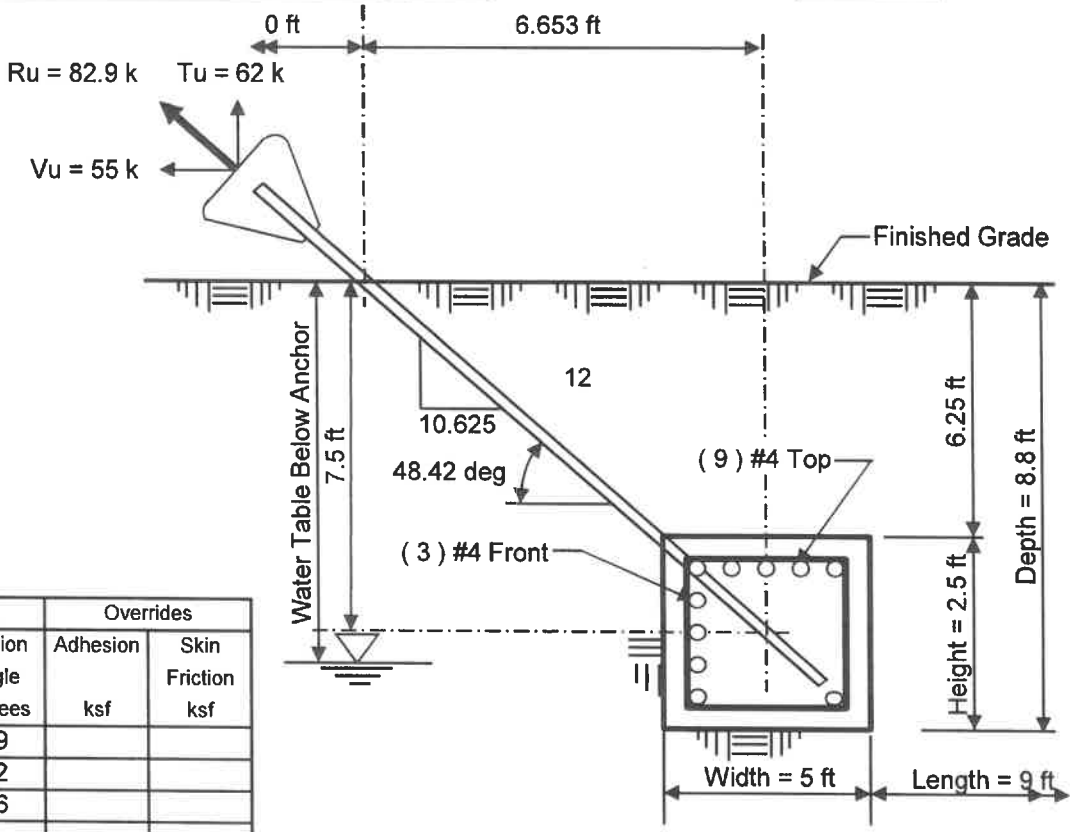
Calculated Ultimate Bending Shear = 2 **kips < 377 kips okay**

Deadman Guy Anchor Analysis (LRFD)

Guy Anchor: Bozrah, CT

PJF Job No. **00019-0431.001.8700** Project Name: **Bozrah Polly Lane** Engineer: **ADP**

Uplift Force =	62	k
Horizontal Force =	55	k
Load Factor, Concrete Weight =	0.9	
Φ, Soil Weight =	0.75	
Depth to Water Table =	20	ft
Toe Width (If Any) =	0	in
Toe Height (If Any) =	0	in
Depth to Bottom of Deadman =	8.75	ft
Deadman Block Height =	2.5	ft
Deadman Block Width =	5	ft
Deadman Block Length =	9	ft
Guy Rod Steel Strength, Fy =	48	ksi
Guy Rod Cross-Sectional Area =	2.405	in^2
Concrete Strength, f'c =	3	ksi
Rebar Strength, Fy =	60	ksi
Minimum Cover Over Rebar =	3	in
Horiz. Ult. Passive Press. Override =		ksf/ft



Layer Thk ft	Dry Soil Density pcf	Sat Soil Density pcf	Uplift Cohesion ksf	Uplift Friction Angle degrees	Horizontal Cohesion ksf	Horizontal Friction Angle degrees	Overrides Adhesion ksf	Overrides Skin Friction ksf
2.5	110	100		29		29		
2.5	115	115		32		32		
12	120	120		36		36		

Uplift Based on: **Soil Cone**

Inverted pyramid of soil in uplift will be taken from the top of the anchor.

Concrete Volume per Anchor =	4.17	yd^3
Concrete Volume for (3) Anchors =	12.50	yd^3

Summary Results:

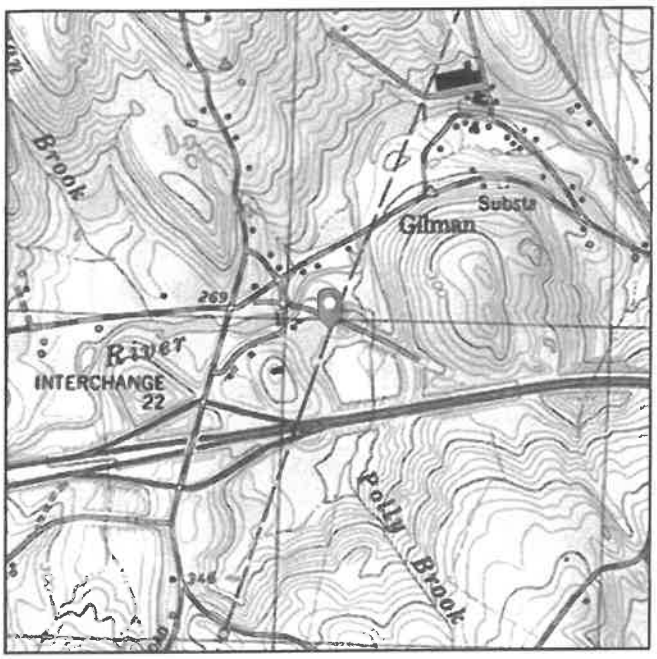
	Required		Available				
Guy Rod Tensile Force =	82.88	k	92.4	k	Capacity Ratio =	89.7%	in Tensile Force
Soil, Horizontal Resistance =	55.0	k	56.1	k	Capacity Ratio =	98.1%	in Horiz Resistance
Soil, Uplift Resistance =	62.0	k	96.7	k	Capacity Ratio =	64.1%	in Uplift Resistance
Steel, Uplift Bending Moment =	93.3	k-ft	199.2	k-ft	Capacity Ratio =	46.9%	in Bending Moment
Steel, Horizontal Bending Moment =	61.9	k-ft	126.4	k-ft	Capacity Ratio =	49.0%	in Bending Moment
Toe Shear =		k/ft		k/ft	Capacity Ratio =		in Shear

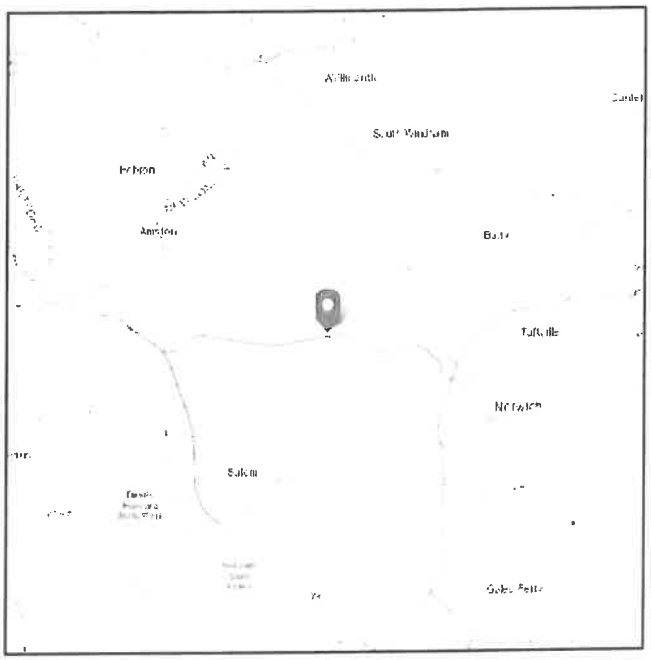
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 260.65 ft (NAVD 88)
Latitude: 41.573333
Longitude: -72.203333





Wind

Results:

Wind Speed:	130 Vmph ← 135 mph per jurisdiction
10-year MRI	79 Vmph
25-year MRI	88 Vmph
50-year MRI	97 Vmph
100-year MRI	106 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Tue Jul 30 2019

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

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

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

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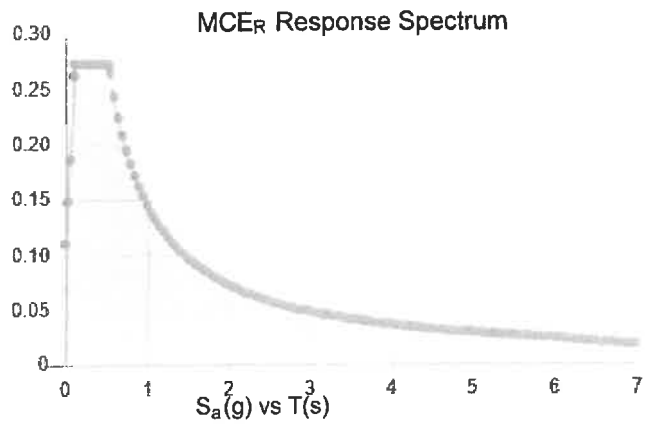
Seismic

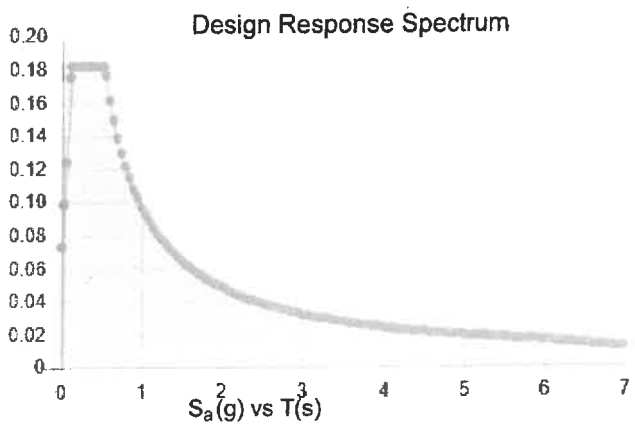
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.171	S_{DS} :	0.183
S_1 :	0.061	S_{D1} :	0.097
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.086
S_{MS} :	0.274	PGA_M :	0.137
S_{M1} :	0.146	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Jul 30 2019

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

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Jul 30 2019

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

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

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES BY PAUL J. FORD AND COMPANY

1) Paul J. Ford and Company has not made a field inspection to verify the tower member sizes or the antenna/coax loading. If the existing conditions are not as represented on these drawings, we should be contacted immediately to evaluate the significance of the deviation.

2) No allowance was made for any damaged, missing, or rusted members. The analysis of this tower assumes that no physical deterioration has occurred in any of the structural components of the tower and that all the tower members have the same load carrying capacity as the day the tower was erected.

3) It is not possible to have all the detailed information to perform a thorough analysis of every structural sub-component of an existing tower. The structural analysis by Paul J. Ford and Company verifies the adequacy of the main structural members of the tower. Paul J. Ford and Company provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc.

4) This tower has been analyzed according to the minimum design wind loads recommended by the Telecommunications Industry Association Standard ANSI/TIA-222-G. If the owner or local or state agencies require a higher design wind load, Paul J. Ford and Company should be made aware of this requirement.

5) The enclosed sketches are a schematic representation of the tower that we have analyzed. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions and for the proper fit and clearance in the field.

6) Miscellaneous items such as antenna mounts etc. have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

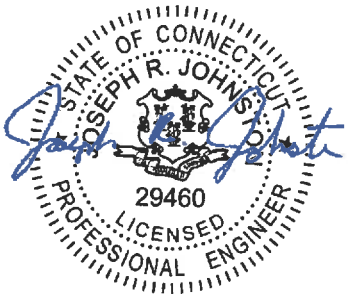
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Post Mod Mount Analysis Report

January 22, 2020

Site Name	Bozrah CDT Tower
Site Number	CTL02029
FA Number	10035235
PACE Number	MRCTB041844 / MRCTB041452 / MRCTB041553 MRCTB041634 / MRCTB041418
PTN Number	2051A0Q90Y / 2051A0QAG7 / 2051A0Q7HX 2051A0QA6B / 2051A0Q92G
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T Mobility
Site Location	3 Polly Lane Bozrah, CT 06334 New London County 41.5742190 N NAD83 72.2004161 W NAD83
Mount Centerline EL.	188.0 ft
Mount Type	Sector Frame
Structural Usage Ratio	**88.7%**
Overall Result	**Pass**
Note	**See appended documents for mount modifications.**

Upon reviewing the results of this analysis, it is our opinion that the post modification mounts meet the specified TIA code requirements. The mounts and connections for the proposed carrier are therefore deemed adequate to support the final loading configuration as listed in this report.



01-22-2020

Thomas Marr
Project Engineer I

Contents

Introduction

Infinigy Engineering has been requested to perform a post modification mount analysis on the existing AT&T Mobility mounts. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.4 analysis software.

Supporting Documentation

RFDS	RFDS ID #3168733, dated June 07, 2019
Construction Drawings	Infinigy Engineering, PLLC. Job #499-006, dated October 11, 2019
Site Photos	Smartlink Provided, dated June 26, 2019

Analysis Code Requirements

Wind Speed	135 mph (3-Second Gust)
Wind Speed w/ Ice	50 mph (3 Second Gust) w/ 1" Ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC / 2018 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Spectral Response	S_s = 0.171 g, S_1 = 0.061 g
Site Class	D - Stiff Soil
HMSL	299 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the post modification mounts meet the specified TIA code requirements. The mount and connections are therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Thomas Marr
Project Engineer I | **INFINIGY**
1033 Watervliet Shaker Road, Albany, NY 12205
(O) (518) 690-0802
tmarr@infinigy.com | www.infinigy.com

Final Configuration Loading

Mount CL (ft)	Vert. O/S (ft)	Rad. HT (ft)	Horiz. O/S (ft) (1)	Qty	Appurtenance	Carrier
188.0	0.0	188.0	6.0, 11.8	6	CCI DMP65R-BU8DA	AT&T
			0.3	3	POWERWAVE 7770.00	
			11.8	3	ERICSSON 4449 B5/B12	
			11.8	3	ERICSSON 8843 B2/B66A	
			6.0	3	ERICSSON B14 4478	
			0.3	6	POWERWAVE LGP 17201	
			6.0	2	RAYCAP DC6-48-60-18-8F	

(1) Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower
(2) Raycap assumed to be installed directly on tower

Mount Usages

Horizontals	62.3%	Pass
Standoffs	88.7%	Pass
Mount Pipes	82.7%	Pass
Tieback	11.9%	Pass
Bracing	63.4%	Pass
Bolts	12.4%	Pass
Max Usage	**88.7%**	**Pass**

Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	10170.07	-	-
Max Shear (lbs.)	6212.62	773.28	12.4%
Unity Check	-	-	1.5%

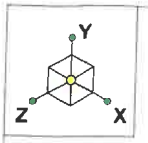
*Assumed (1) 0.625" A307 Bolts, Total (2) per Connection. Contractor to field verify prior to proposed installation.

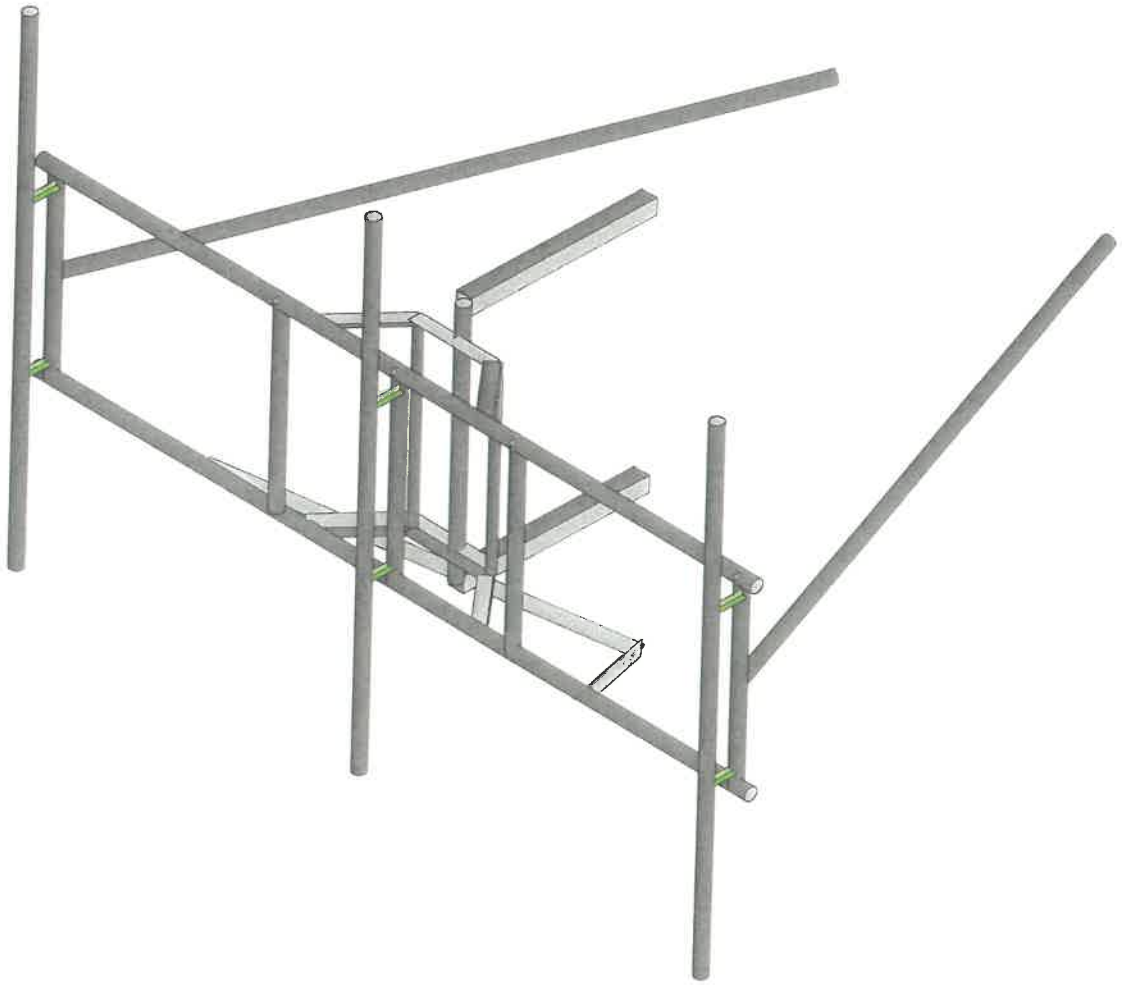
Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

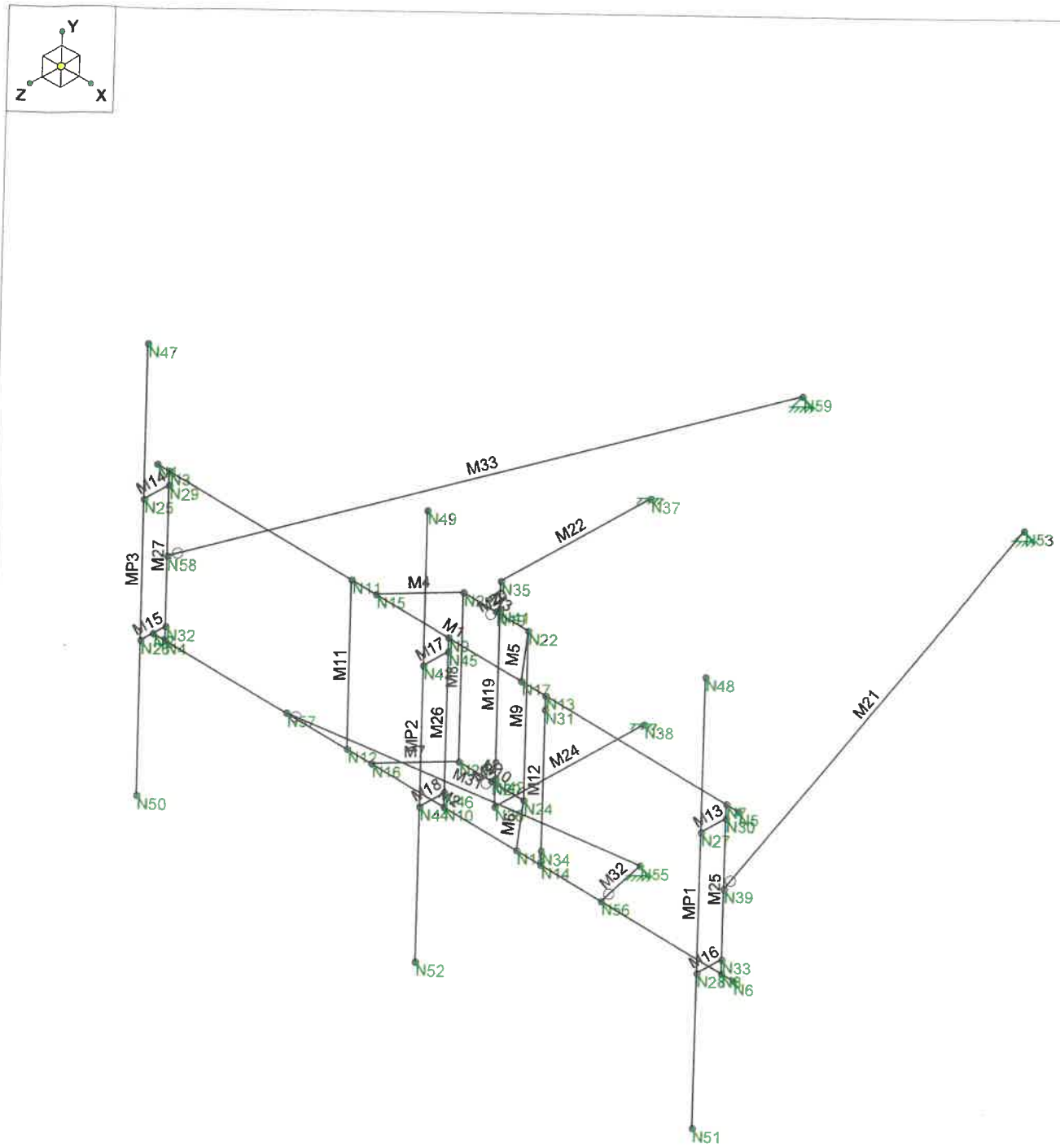
This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.





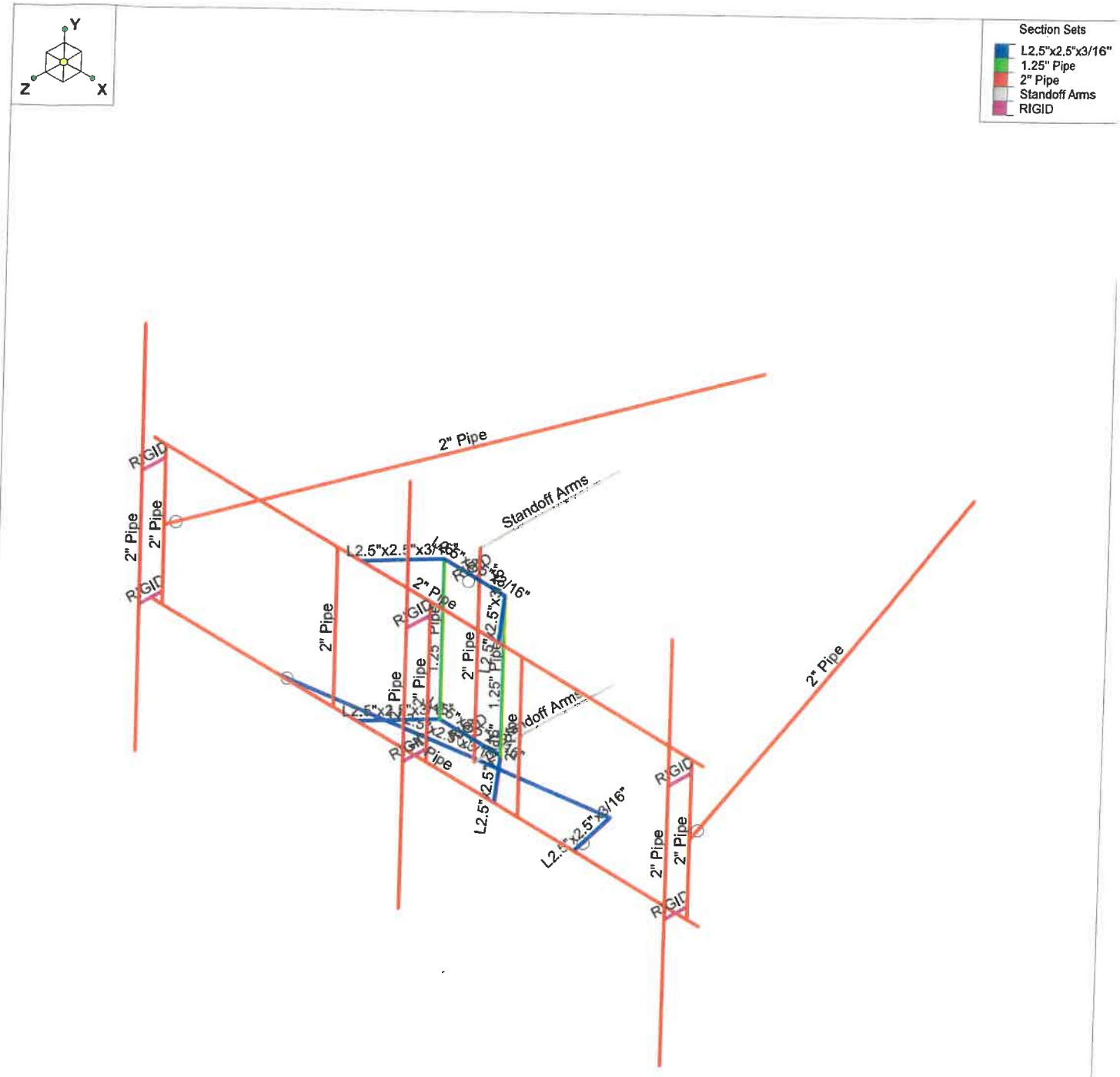
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Final Configuration
TM		Jan 20, 2020 at 8:49 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



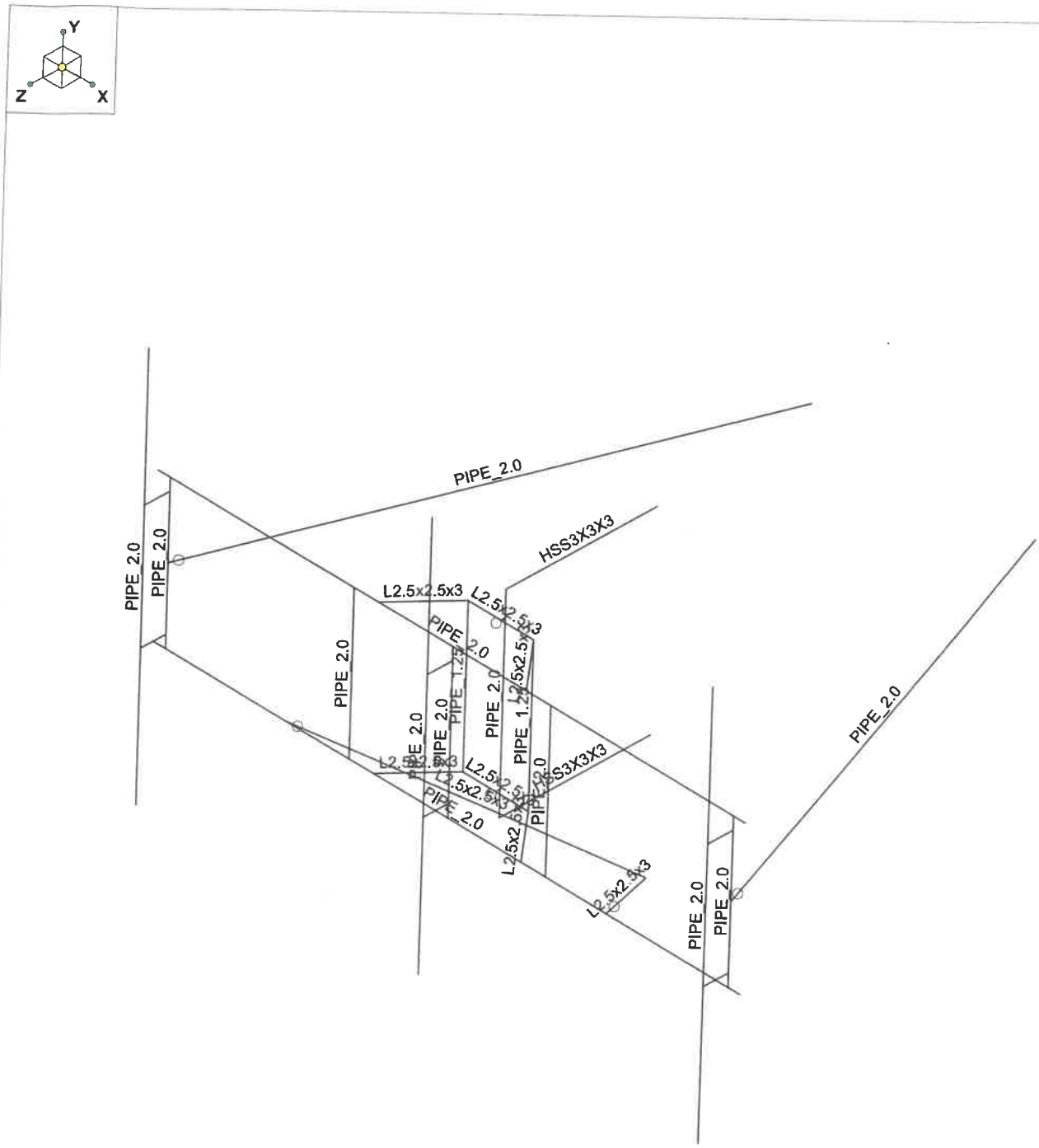
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Wire Frame
TM		Jan 20, 2020 at 8:49 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



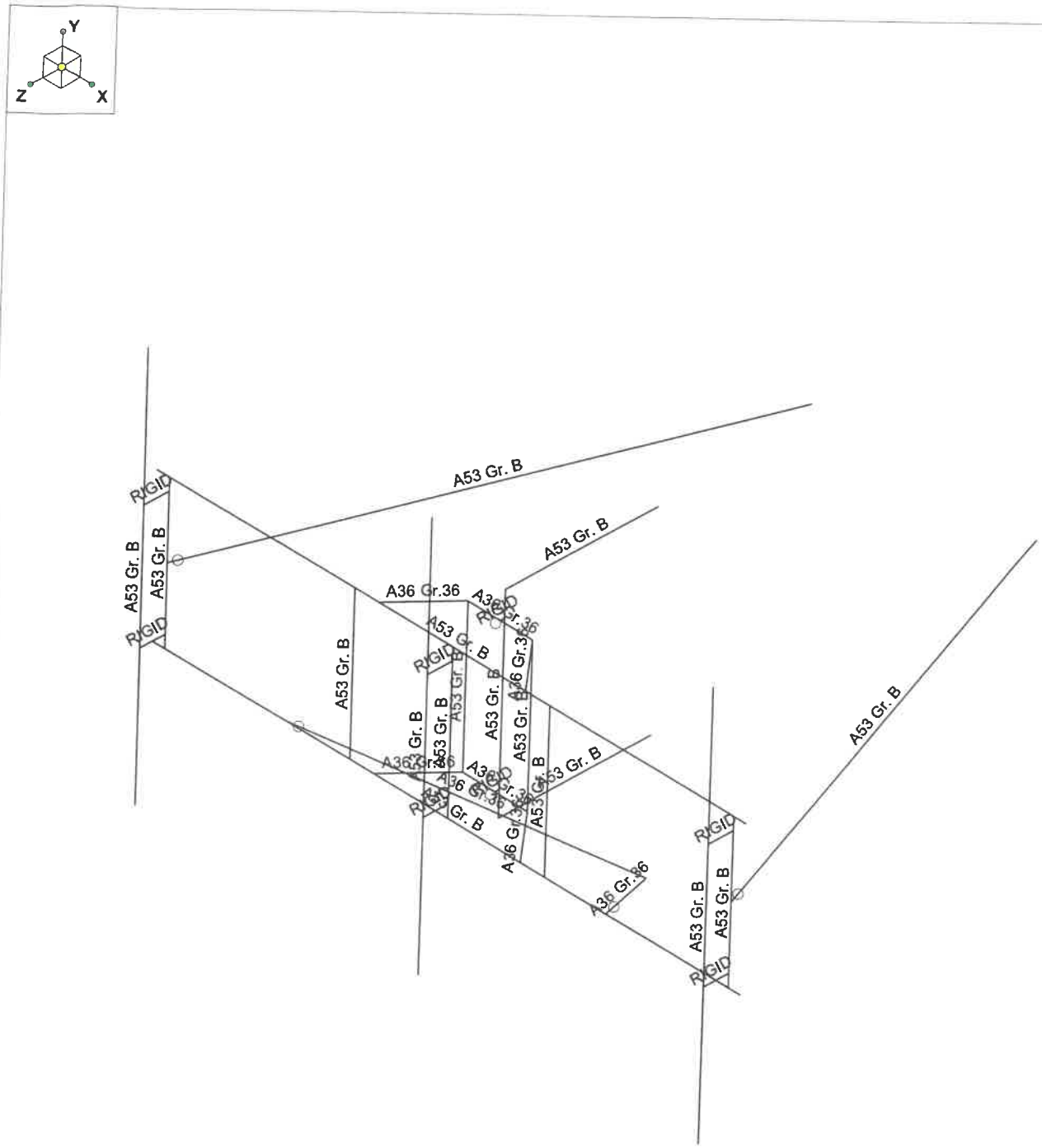
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Section Sets
TM		Jan 20, 2020 at 8:50 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



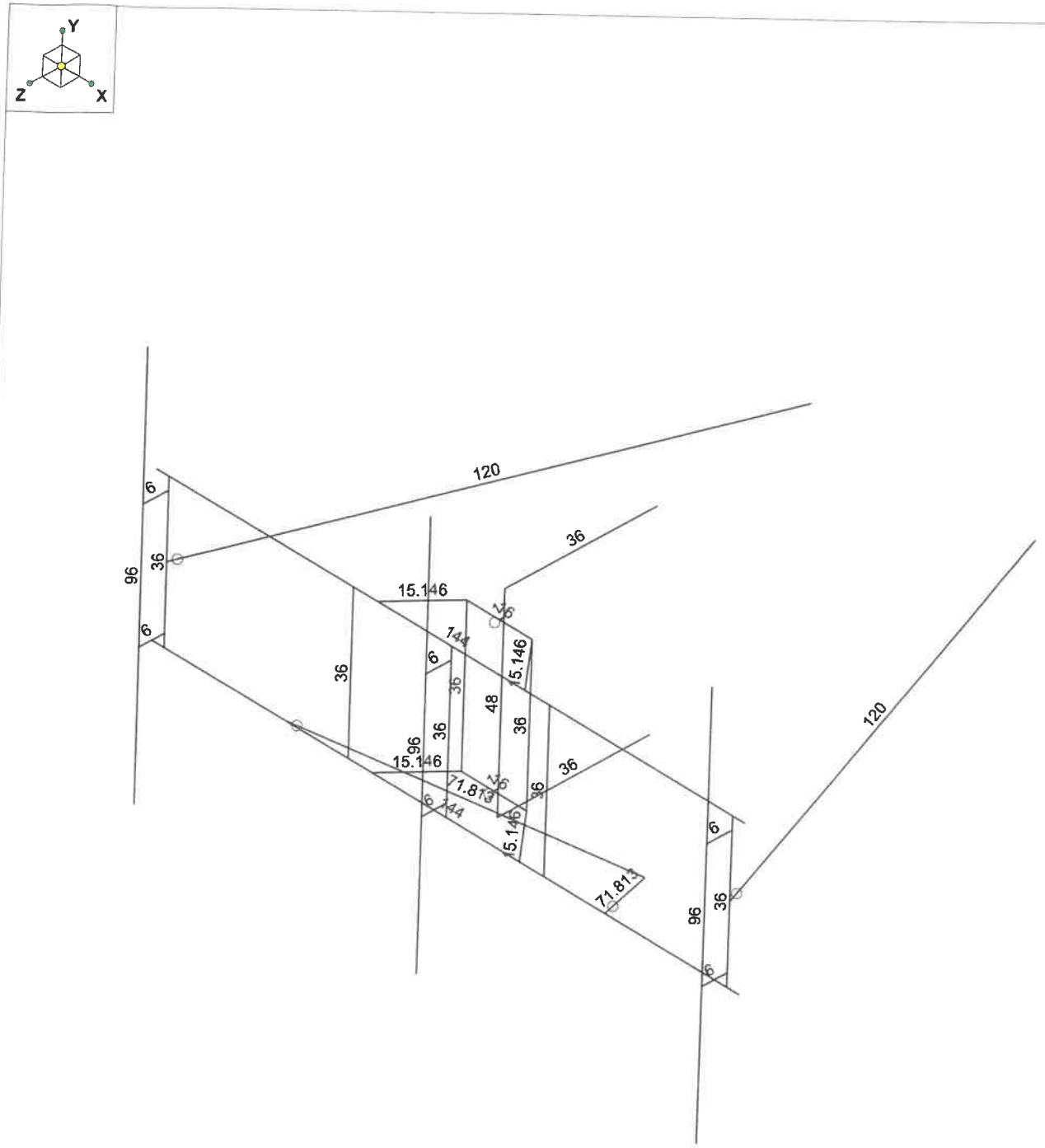
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Member Shape
TM		Jan 20, 2020 at 8:50 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



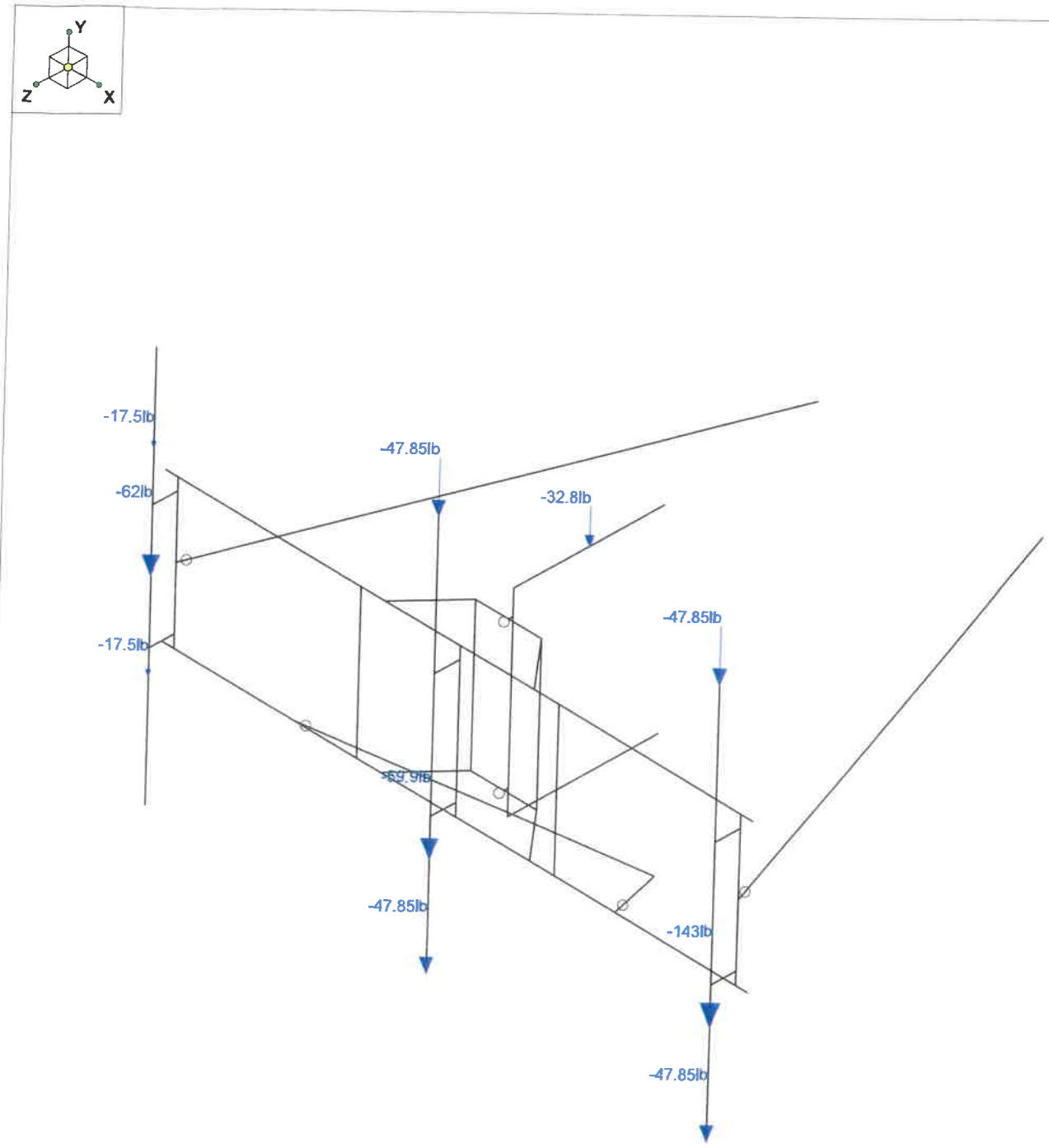
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Material Sets
TM		Jan 20, 2020 at 8:50 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



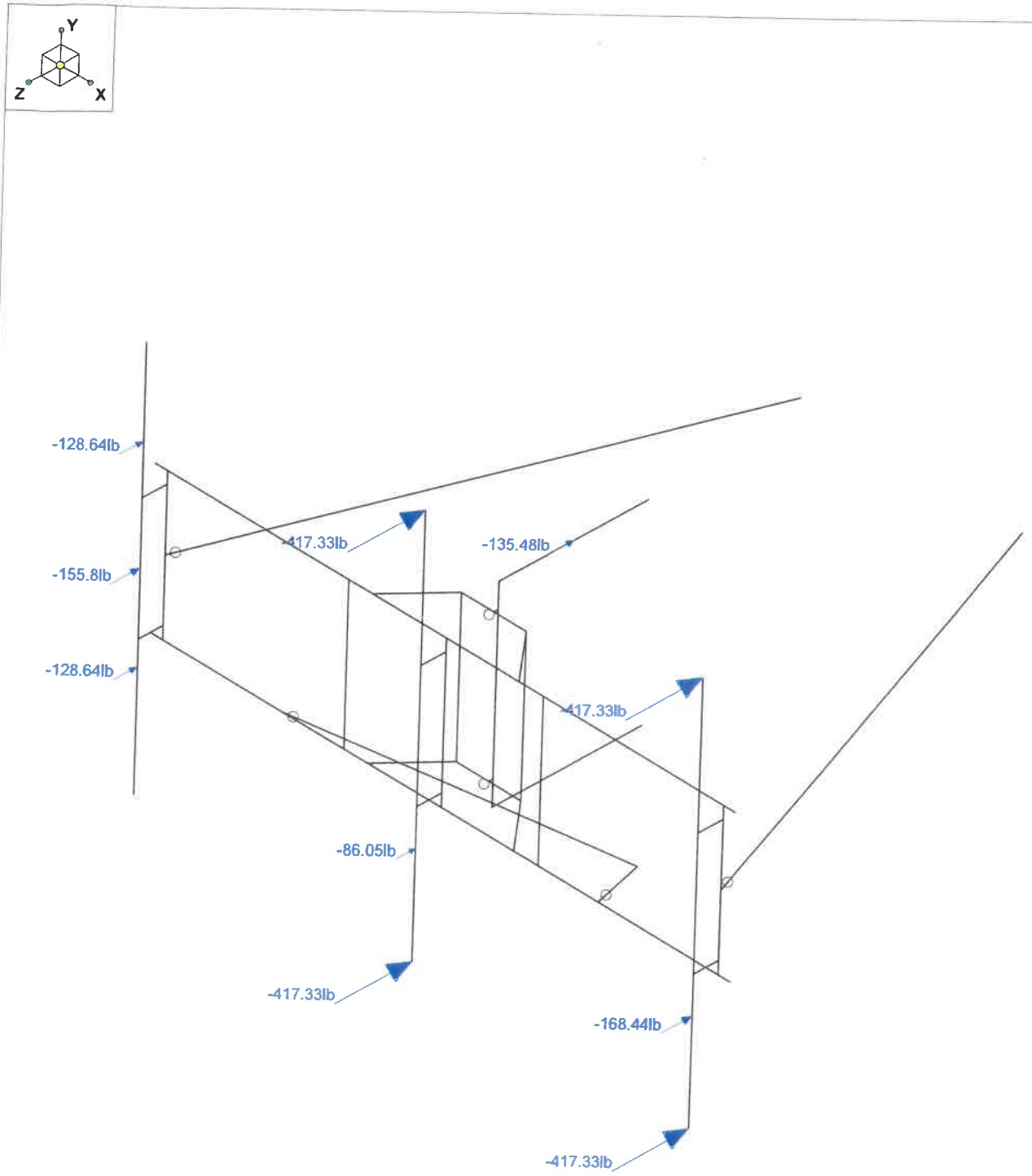
Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Member Length
TM		Jan 20, 2020 at 8:50 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



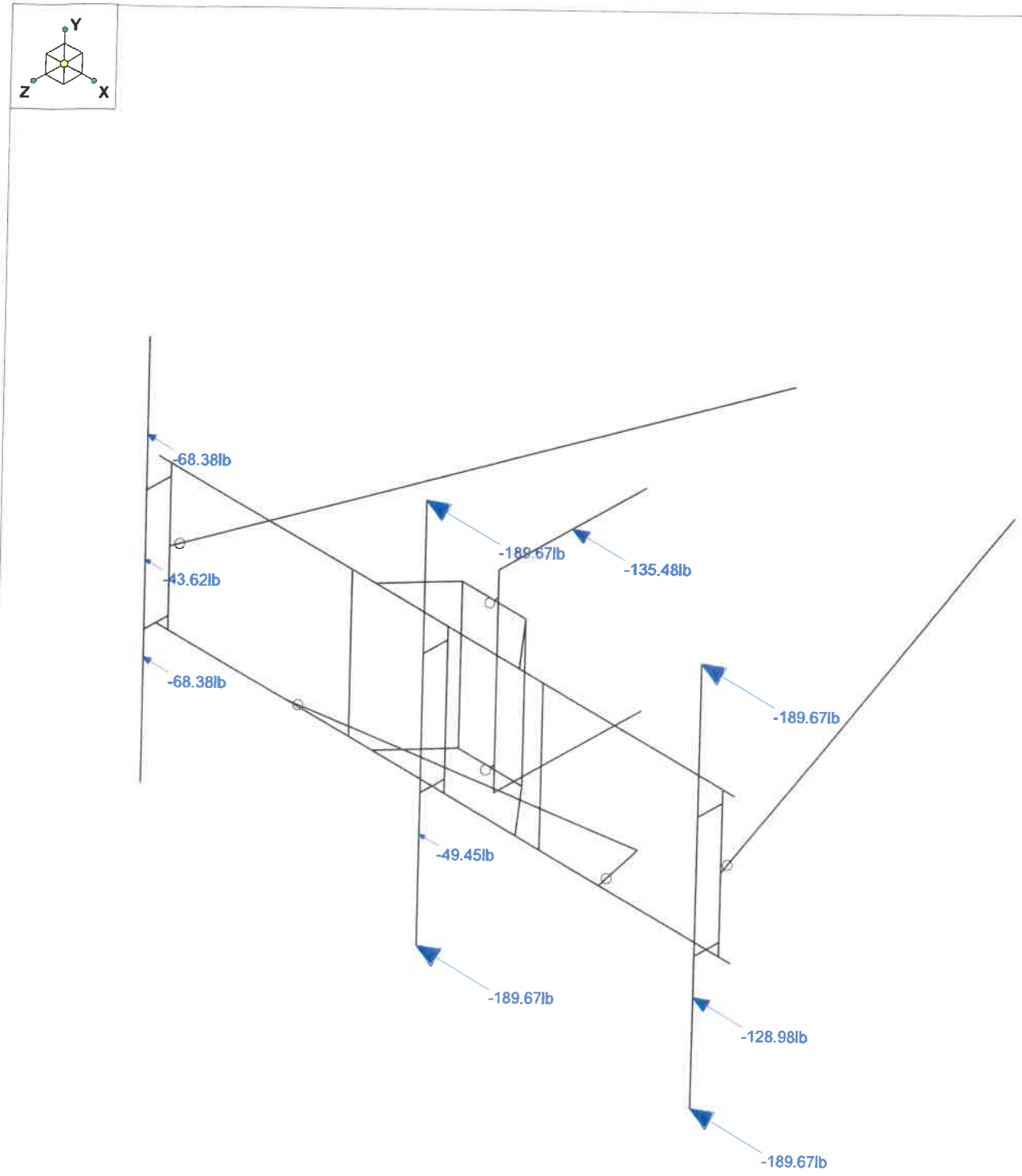
Loads: BLC 1, Self Weight
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Self Weight
TM		Jan 20, 2020 at 8:51 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



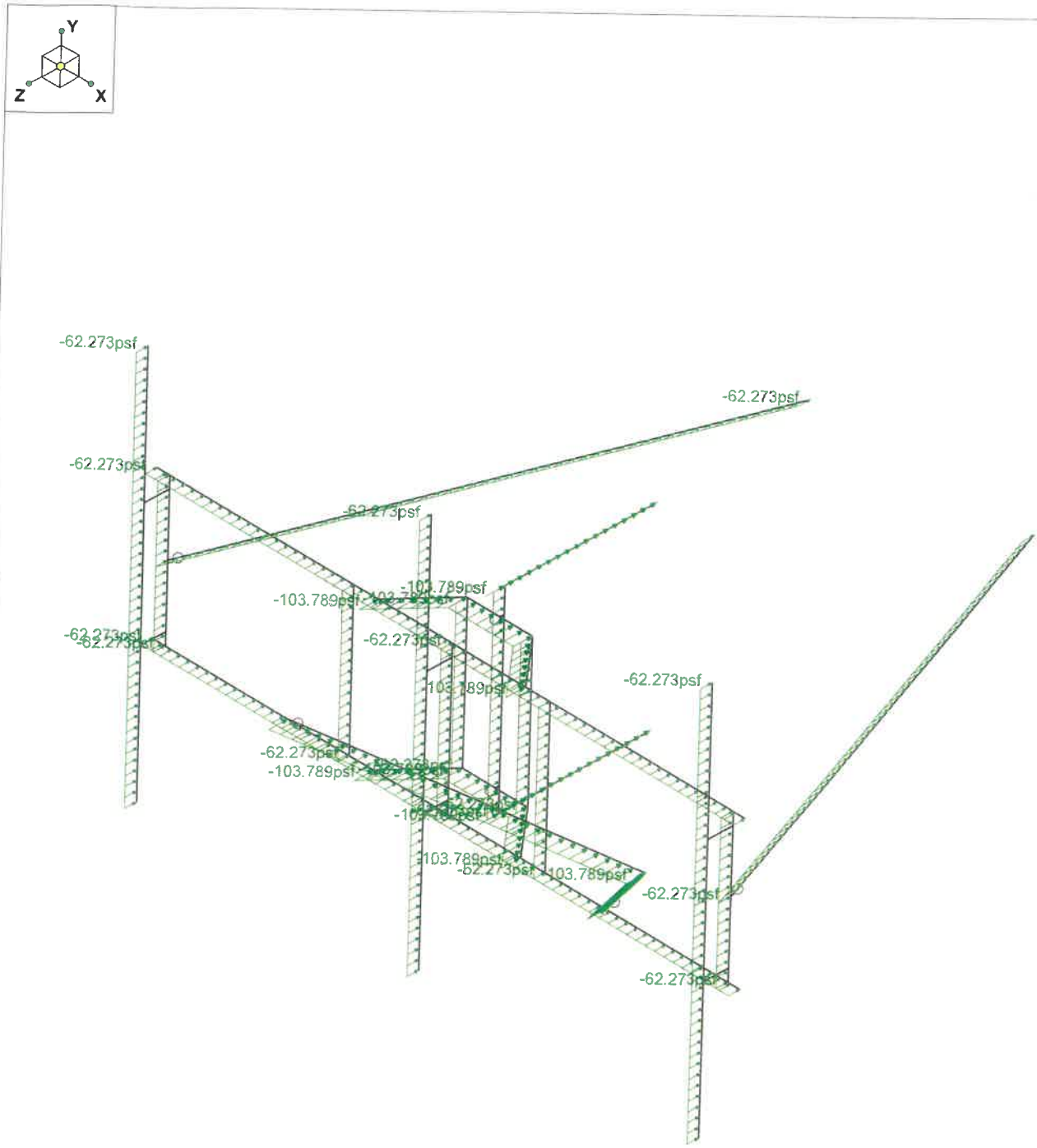
Loads: BLC 2, Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Wind Load AZI 000
TM		Jan 20, 2020 at 8:51 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



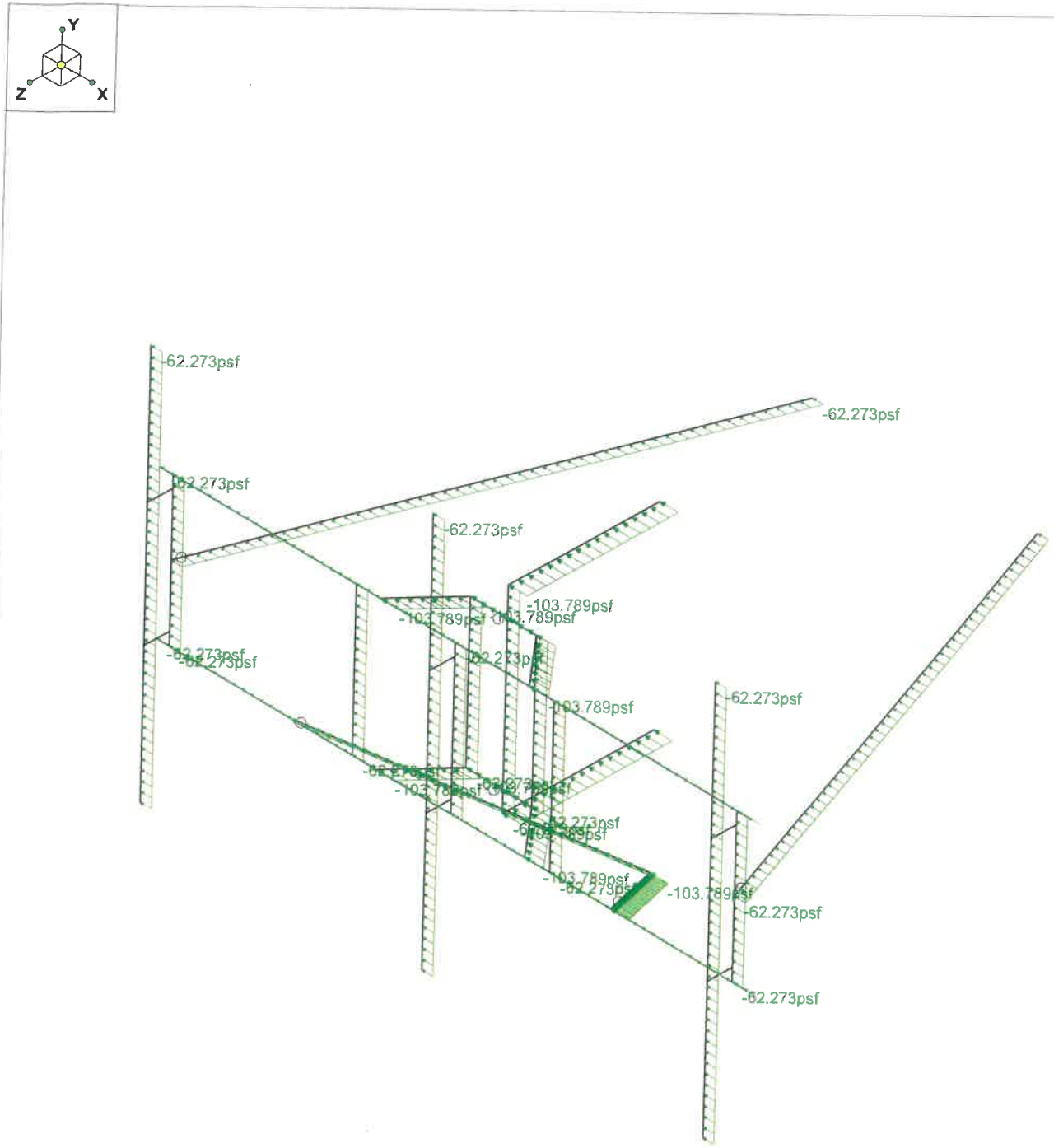
Loads: BLC 5, Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Wind Load AZI 090
TM		Jan 20, 2020 at 8:51 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



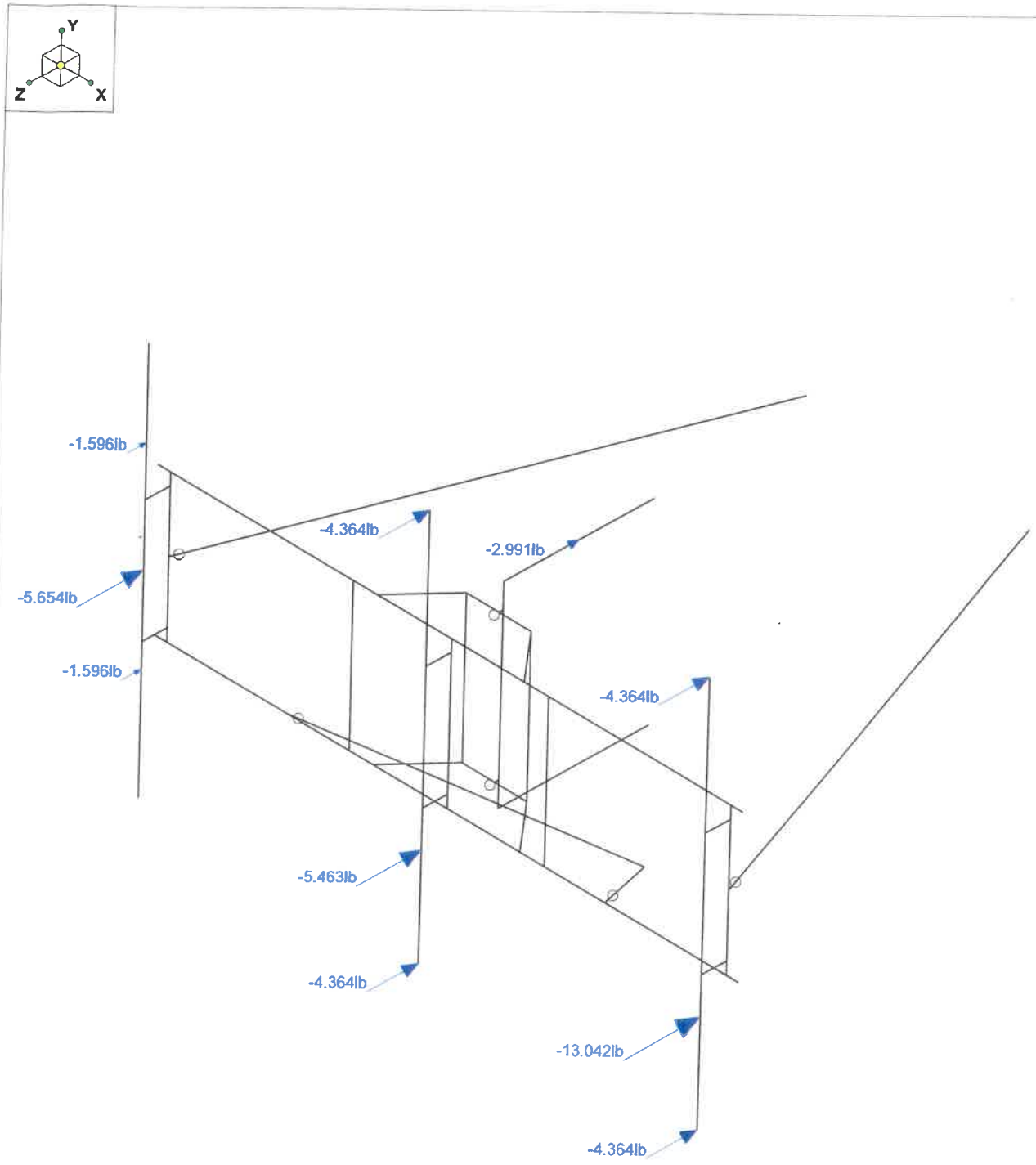
Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Distr Wind Load AZI 000
TM		Jan 20, 2020 at 8:51 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



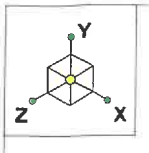
Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

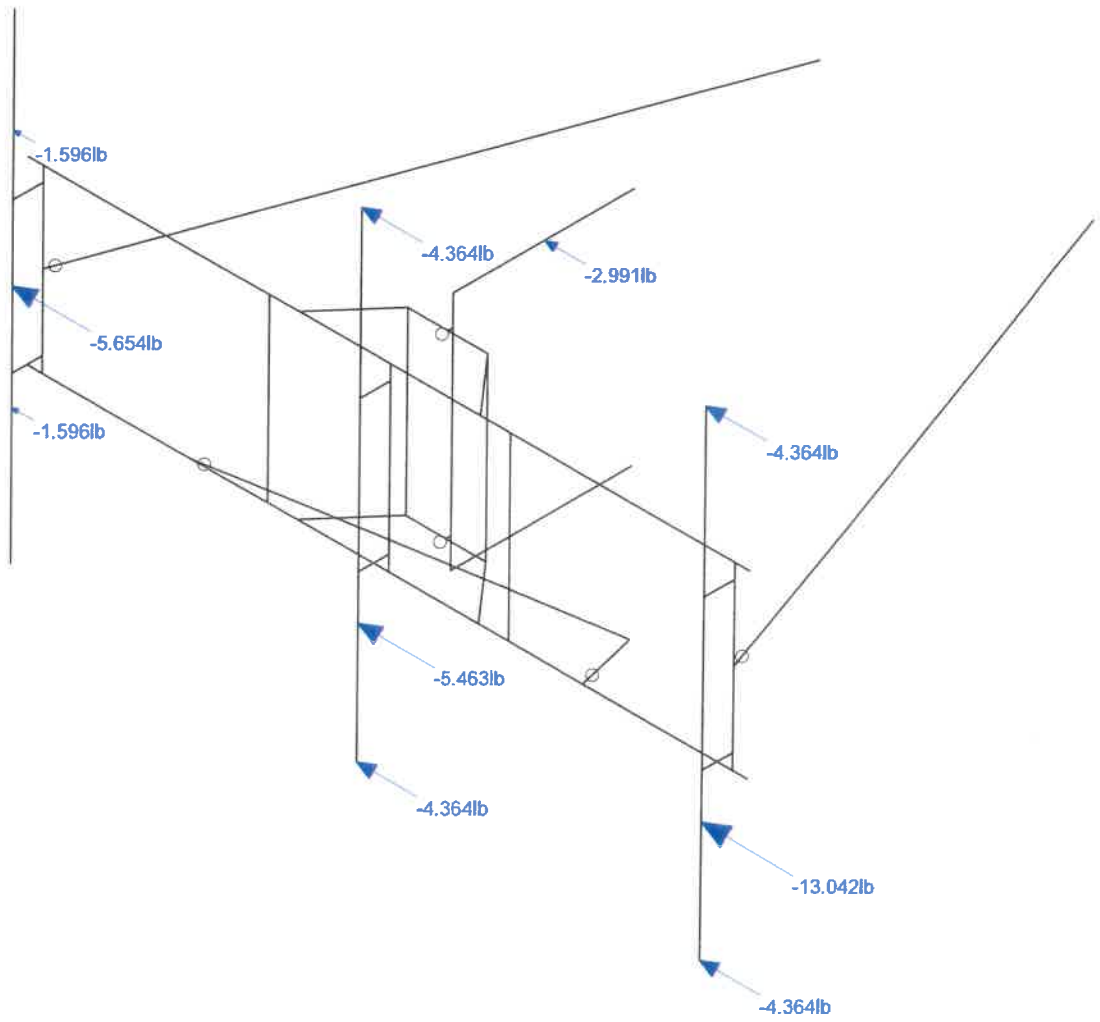
Infinigy Engineering, PLLC.	CTL02029	Distr Wind Load AZI 090
TM		Jan 20, 2020 at 8:51 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d



Loads: BLC 31, Seismic Load Z
Envelope Only Solution

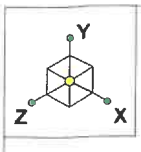
Infinigy Engineering, PLLC.	CTL02029	Seismic Load AZI 000
TM		Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d

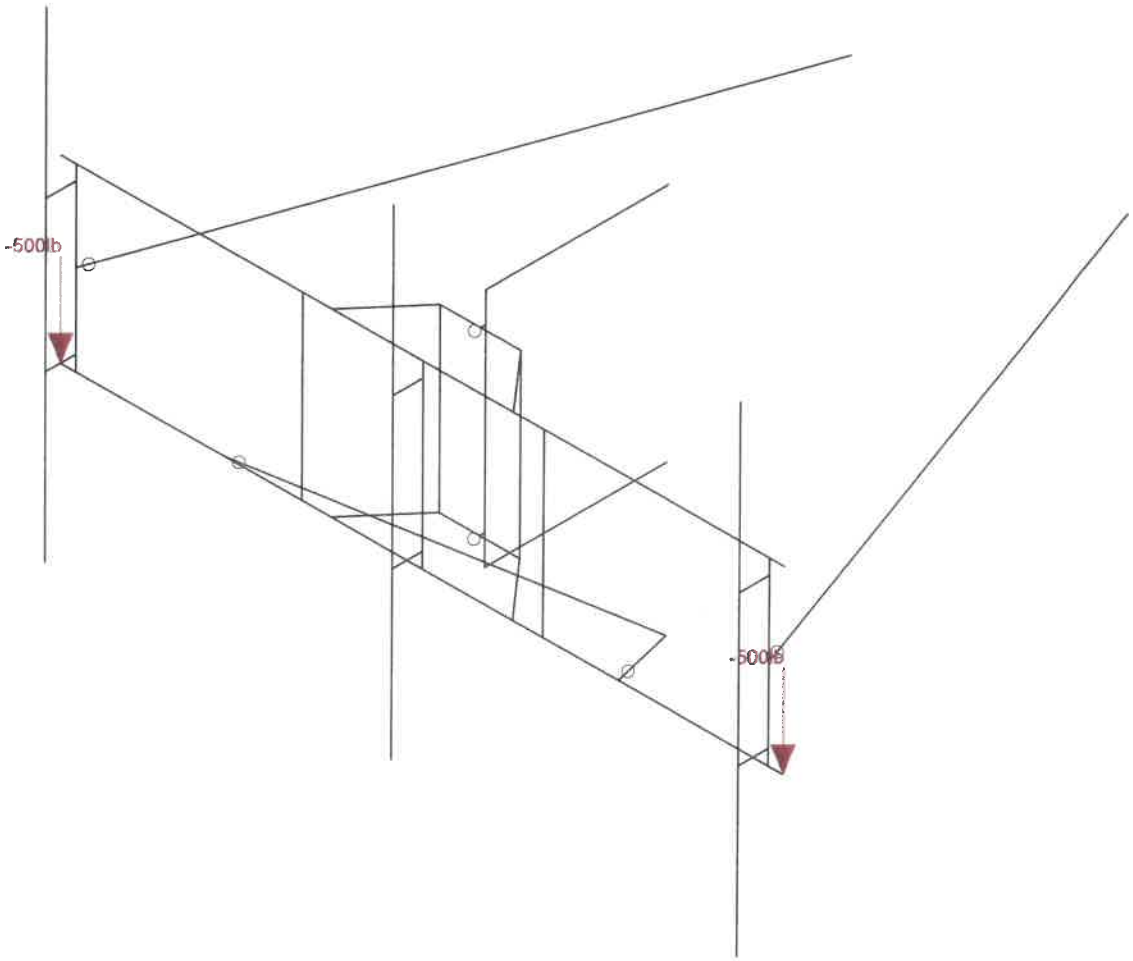




Loads: BLC 32, Seismic Load X
Envelope Only Solution

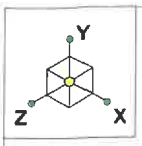
Infinigy Engineering, PLLC.	CTL02029	Seismic Load AZI 090
TM		Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d

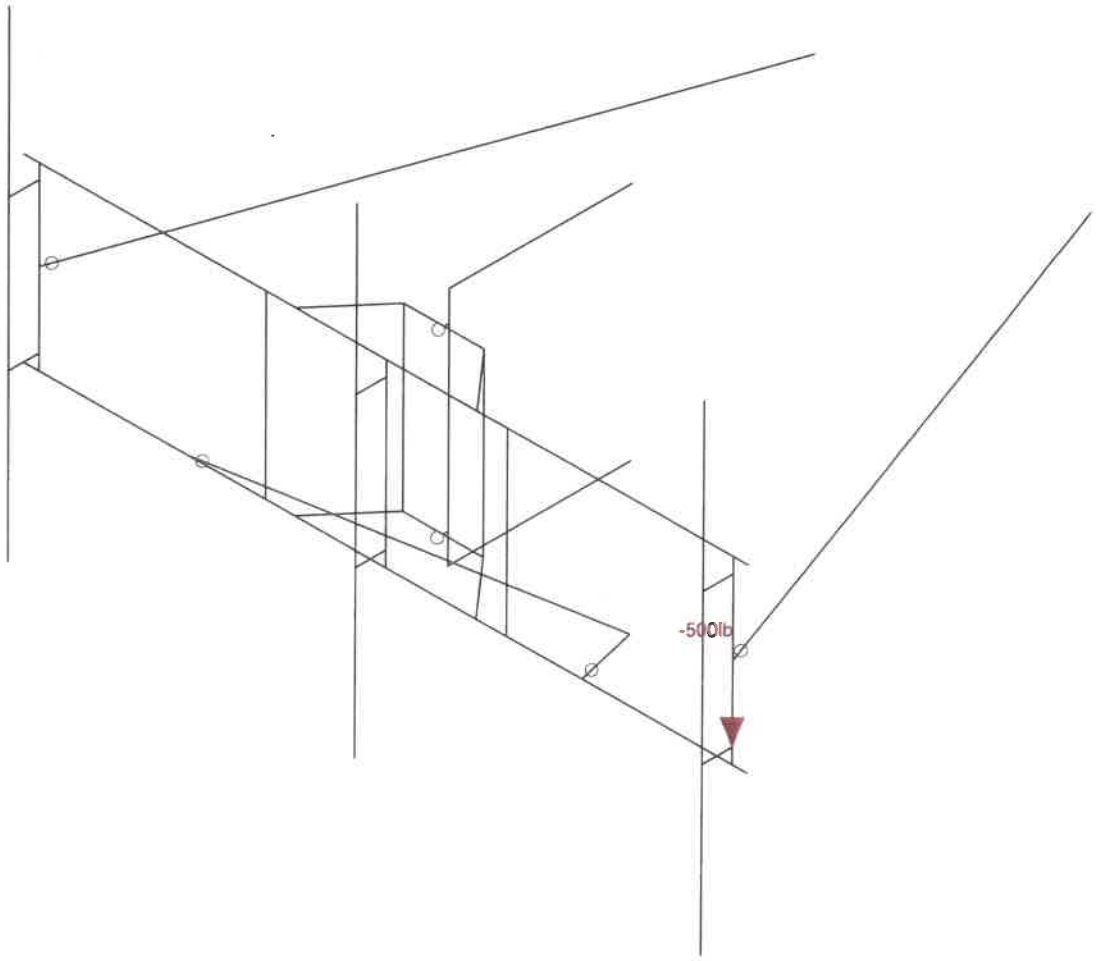




Loads: BLC 33, Service Live Loads
Envelope Only Solution

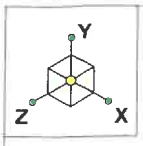
Infinigy Engineering, PLLC.	CTL02029	Service Load
TM		Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d

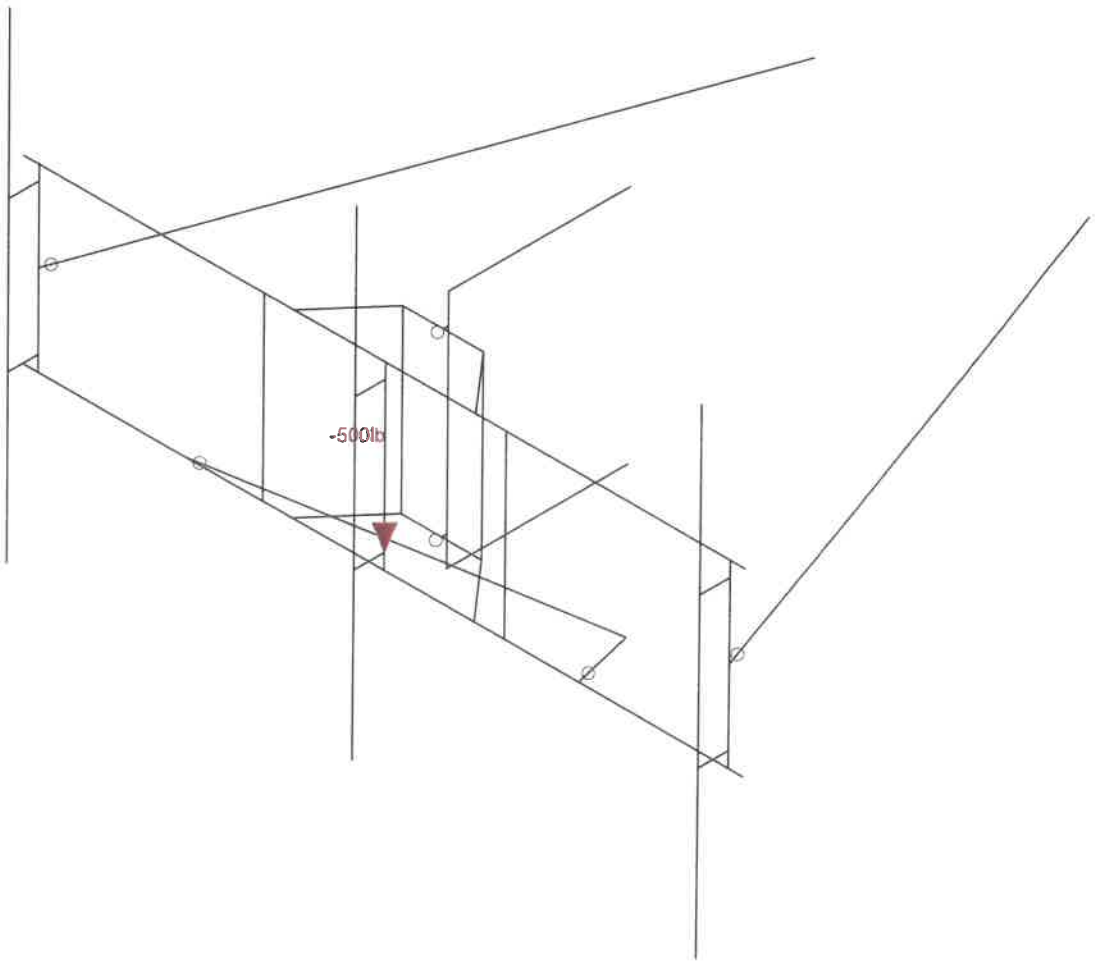




Loads: BLC 34, Maintenance Load 1
Envelope Only Solution

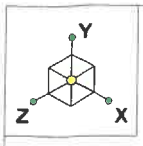
Infinigy Engineering, PLLC.	CTL02029	Maintenance Load 1
TM		Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d

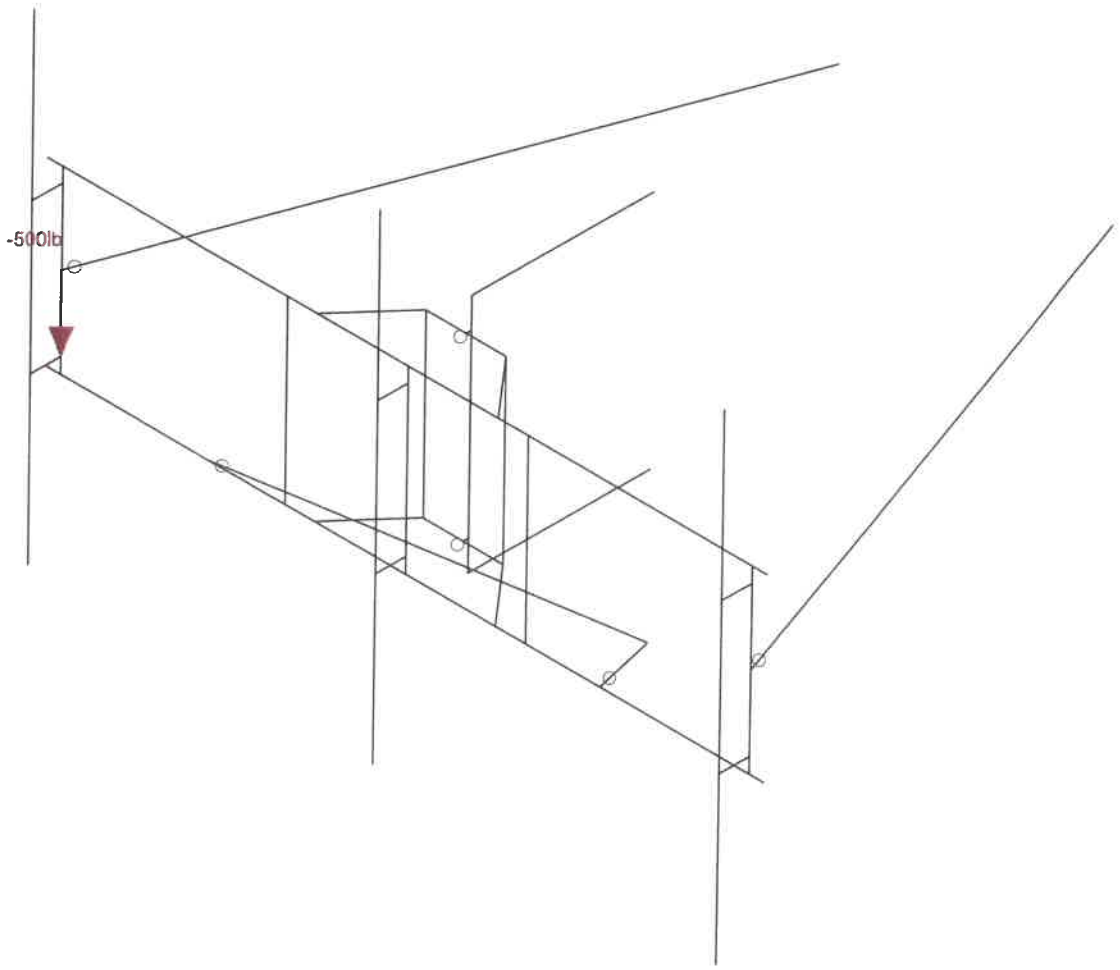




Loads: BLC 35, Maintenance Load 2
Envelope Only Solution

Infinigy Engineering, PLLC.	CTL02029	Maintenance Load 2
TM		Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d





Loads: BLC 36, Maintenance Load 3
Envelope Only Solution

Infinigy Engineering, PLLC.		Maintenance Load 3
TM	CTL02029	Jan 20, 2020 at 8:52 AM
1106-A0001-B		CTL02029_Mod_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	Smartlink
Carrier:	AT&T Mobility
Engineer:	Thomas Marr

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Category:	1	
Site Class:	D - Stiff Soil	
Ground Elevation:	299	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Sector Frame	
Num Sectors:	3	
Centerline AGL:	188.0	ft
Tower Height AGL:	187.0	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Crest Height:	N/A	ft
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	0.99	*Rev H Only
Rooftop Speed-Up (K_s):	1.00	*Rev H Only
Topographic Factor (K_{zt}):	1.00	
Gust Effect Factor (G_h):	1.0	

CODE STANDARDS		
Building Code:	2018 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	135	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	103.79	psf
Round Pressure:	62.27	psf
Ice Wind Pressure:	8.54	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.17	g
1-Second Accel. (S_1):	0.06	g
Short-Period Design (S_{DS}):	0.18	
1-Second Design (S_{D1}):	0.10	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

INFINIGY

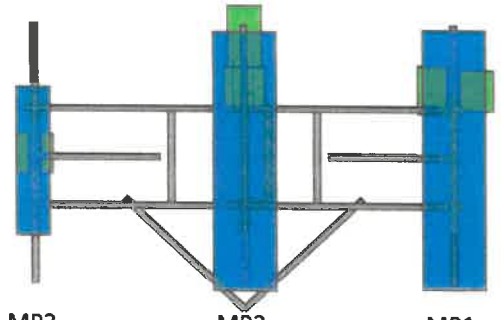
FROM ZERO TO INFINIGY

the solutions are endless

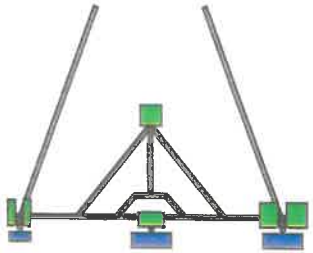
Infinigy Load Calculator V2.1.3

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.3

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
CCI ANTENNAS DMP65R-BU8DA	188.0	3	0.90	51.89	17.87	8.12	834.67	379.35	95.70	8.73	MP1
CCI ANTENNAS DMP65R-BU8DA	188.0	3	0.90	51.89	17.87	8.12	834.67	379.35	95.70	8.73	MP2
POWERWAVE TECHNOLOGIES 7770.00	188.0	3	0.90	51.89	5.51	2.93	257.27	136.76	35.00	3.19	MP3
ERICSSON 4449 B5/B12	188.0	3	0.90	51.89	1.97	1.41	91.89	65.77	71.00	6.48	MP1
ERICSSON 8843 B2/B66A	188.0	3	0.90	51.89	1.64	1.35	76.55	63.21	72.00	6.57	MP1
ERICSSON B14 4478	188.0	3	0.90	51.89	1.84	1.06	86.05	49.45	59.90	5.46	MP2
POWERWAVE TECHNOLOGIES LGP 17201	188.0	3	0.90	51.89	1.67	0.47	77.90	21.81	31.00	2.83	MP3
POWERWAVE TECHNOLOGIES LGP 17201	188.0	3	0.90	51.89	1.67	0.47	77.90	21.81	31.00	2.83	MP3
RAYCAP DC6-48-60-18-8F	188.0	2	0.90	51.89	2.90	2.90	135.48	135.48	32.80	2.99	M22

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5		90	2" Pipe	Beam	None	A53 Gr. B	Typical
2	M2	N2	N6			2" Pipe	Beam	None	A53 Gr. B	Typical
3	M3	N21	N22		90	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
4	M4	N15	N21		90	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
5	M5	N17	N22		180	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
6	M6	N18	N24		270	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
7	M7	N16	N23			L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
8	M8	N23	N21		90	1.25" Pipe	Beam	None	A53 Gr. B	Typical
9	M9	N24	N22			1.25" Pipe	Beam	None	A53 Gr. B	Typical
10	M10	N23	N24			L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
11	M11	N12	N11			2" Pipe	Beam	None	A53 Gr. B	Typical
12	M12	N14	N13			2" Pipe	Beam	None	A53 Gr. B	Typical
13	M13	N27	N30			RIGID	None	None	RIGID	Typical
14	M14	N25	N29			RIGID	None	None	RIGID	Typical
15	M15	N26	N32			RIGID	None	None	RIGID	Typical
16	M16	N28	N33			RIGID	None	None	RIGID	Typical
17	M17	N43	N45			RIGID	None	None	RIGID	Typical
18	M18	N44	N46			RIGID	None	None	RIGID	Typical
19	M19	N36	N35			2" Pipe	Beam	None	A53 Gr. B	Typical
20	M20	N19	N41			RIGID	None	None	RIGID	Typical
21	M21	N39	N53			2" Pipe	Beam	None	A53 Gr. B	Typical
22	M22	N35	N37			Standoff Arms	Beam	None	A53 Gr. B	Typical
23	M23	N20	N42			RIGID	None	None	RIGID	Typical
24	M24	N36	N38			Standoff Arms	Beam	None	A53 Gr. B	Typical
25	M25	N8	N7			2" Pipe	Beam	None	A53 Gr. B	Typical
26	M26	N9	N10			2" Pipe	Beam	None	A53 Gr. B	Typical
27	M27	N4	N3			2" Pipe	Beam	None	A53 Gr. B	Typical
28	MP1	N48	N51			2" Pipe	Beam	None	A53 Gr. B	Typical
29	MP2	N49	N52			2" Pipe	Beam	None	A53 Gr. B	Typical
30	MP3	N47	N50			2" Pipe	Beam	None	A53 Gr. B	Typical
31	M31	N55	N57			L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
32	M32	N55	N56			L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
33	M33	N59	N58			2" Pipe	Beam	None	A53 Gr. B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		8	38	0
3	Total General		8	38	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2.5x2.5x3	8	236.2	.06
7	A53 Gr. B	HSS3X3X3	2	72	.039
8	A53 Gr. B	PIPE_1.25	2	72	.013
9	A53 Gr. B	PIPE_2.0	13	1044	.302
10	Total HR Steel		25	1424.2	.414

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Self Weight	DL		-1			12			
2	Wind Load AZI 0	WLZ					24			
3	Wind Load AZI 30	None					24			
4	Wind Load AZI 60	None					24			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
5	Wind Load AZI 90	WLX					24			
6	Wind Load AZI 120	None					24			
7	Wind Load AZI 150	None					24			
8	Wind Load AZI 180	None					24			
9	Wind Load AZI 210	None					24			
10	Wind Load AZI 240	None					24			
11	Wind Load AZI 270	None					24			
12	Wind Load AZI 300	None					24			
13	Wind Load AZI 330	None					24			
14	Distr. Wind Load Z	WLZ						33		
15	Distr. Wind Load X	WLX						33		
16	Ice Weight	OL1					12	33		
17	Ice Wind Load AZI 0	OL2					24			
18	Ice Wind Load AZI 30	None					24			
19	Ice Wind Load AZI 60	None					24			
20	Ice Wind Load AZI 90	OL3					24			
21	Ice Wind Load AZI 120	None					24			
22	Ice Wind Load AZI 150	None					24			
23	Ice Wind Load AZI 180	None					24			
24	Ice Wind Load AZI 210	None					24			
25	Ice Wind Load AZI 240	None					24			
26	Ice Wind Load AZI 270	None					24			
27	Ice Wind Load AZI 300	None					24			
28	Ice Wind Load AZI 330	None					24			
29	Distr. Ice Wind Load Z	OL2						33		
30	Distr. Ice Wind Load X	OL3						33		
31	Seismic Load Z	ELZ			-.091		12			
32	Seismic Load X	ELX	-.091				12			
33	Service Live Loads	LL				2				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	10	1	14	-.5	15	-.866												
11	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	12	1	14	.5	15	-.866												
13	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI ..	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI ..	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI ..	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI ..	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI ..	Yes	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + 1WL AZI ..	Yes	Y		1	.9	8	1	14	-1	15													

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
21	0.9DL + 1WL AZI ...	Yes	Y		1	.9	9	1	14	-.866	15	-.5										
22	0.9DL + 1WL AZI ...	Yes	Y		1	.9	10	1	14	-.5	15	-.866										
23	0.9DL + 1WL AZI ...	Yes	Y		1	.9	11	1	14		15	-1										
24	0.9DL + 1WL AZI ...	Yes	Y		1	.9	12	1	14	.5	15	-.866										
25	0.9DL + 1WL AZI ...	Yes	Y		1	.9	13	1	14	.866	15	-.5										
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1														
27	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	17	1	29	1	30									
28	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5								
29	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866								
30	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	20	1	29		30	1								
31	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866								
32	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	22	1	29	-.866	30	.5								
33	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	23	1	29	-1	30									
34	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	24	1	29	-.866	30	-.5								
35	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.866								
36	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	26	1	29		30	-1								
37	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.866								
38	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5								
39	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	1	32													
40	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	.866	32	.5												
41	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	.5	32	.866												
42	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31		32	1												
43	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	-.5	32	.866												
44	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	-.866	32	.5												
45	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	-1	32													
46	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	-.866	32	-.5												
47	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	-.5	32	-.866												
48	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31		32	-1												
49	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	.5	32	-.866												
50	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.236	31	.866	32	-.5												
51	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	1	32													
52	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	.866	32	.5												
53	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	.5	32	.866												
54	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31		32	1												
55	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	-.5	32	.866												
56	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	-.866	32	.5												
57	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	-1	32													
58	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	-.866	32	-.5												
59	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	-.5	32	-.866												
60	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31		32	-1												
61	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	.5	32	-.866												
62	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.864	31	.866	32	-.5												
63	1.0DL + 1.5LL + 1...	Yes	Y		1	1	2	.198	14	.198	15		33	1.5								
64	1.0DL + 1.5LL + 1...	Yes	Y		1	1	3	.198	14	.171	15	.099	33	1.5								
65	1.0DL + 1.5LL + 1...	Yes	Y		1	1	4	.198	14	.099	15	.171	33	1.5								
66	1.0DL + 1.5LL + 1...	Yes	Y		1	1	5	.198	14		15	.198	33	1.5								
67	1.0DL + 1.5LL + 1...	Yes	Y		1	1	6	.198	14	-.099	15	.171	33	1.5								
68	1.0DL + 1.5LL + 1...	Yes	Y		1	1	7	.198	14	-.171	15	.099	33	1.5								
69	1.0DL + 1.5LL + 1...	Yes	Y		1	1	8	.198	14	-.198	15		33	1.5								
70	1.0DL + 1.5LL + 1...	Yes	Y		1	1	9	.198	14	-.171	15	-.099	33	1.5								
71	1.0DL + 1.5LL + 1...	Yes	Y		1	1	10	.198	14	-.099	15	-.171	33	1.5								
72	1.0DL + 1.5LL + 1...	Yes	Y		1	1	11	.198	14		15	-.198	33	1.5								
73	1.0DL + 1.5LL + 1...	Yes	Y		1	1	12	.198	14	.099	15	-.171	33	1.5								
74	1.0DL + 1.5LL + 1...	Yes	Y		1	1	13	.198	14	.171	15	-.099	33	1.5								
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5														
76	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	2	.049	14	.049	15									
77	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	3	.049	14	.043	15	.025								

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
78	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	4	.049	14	.025	15	.043										
79	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	5	.049	14		15	.049										
80	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	6	.049	14	-.025	15	.043										
81	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	7	.049	14	-.043	15	.025										
82	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	8	.049	14	-.049	15											
83	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	9	.049	14	-.043	15	-.025										
84	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	10	.049	14	-.025	15	-.043										
85	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	11	.049	14		15	-.049										
86	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	12	.049	14	.025	15	-.043										
87	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	13	.049	14	.043	15	-.025										
88	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	2	.049	14	.049	15											
89	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	3	.049	14	.043	15	.025										
90	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	4	.049	14	.025	15	.043										
91	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	5	.049	14		15	.049										
92	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	6	.049	14	-.025	15	.043										
93	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	7	.049	14	-.043	15	.025										
94	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	8	.049	14	-.049	15											
95	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	9	.049	14	-.043	15	-.025										
96	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	10	.049	14	-.025	15	-.043										
97	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	11	.049	14		15	-.049										
98	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	12	.049	14	.025	15	-.043										
99	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	13	.049	14	.043	15	-.025										
100	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	2	.049	14	.049	15											
101	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	3	.049	14	.043	15	.025										
102	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	4	.049	14	.025	15	.043										
103	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	5	.049	14		15	.049										
104	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	6	.049	14	-.025	15	.043										
105	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	7	.049	14	-.043	15	.025										
106	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	8	.049	14	-.049	15											
107	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	9	.049	14	-.043	15	-.025										
108	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	10	.049	14	-.025	15	-.043										
109	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	11	.049	14		15	-.049										
110	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	12	.049	14	.025	15	-.043										

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	N37	max	1281.926	18	752.151	33	713.4	14	-.116	14	3.507	18	.143	80
2		min	-1487.637	12	4.926	14	-1113.925	8	-1.374	33	-4.1	12	-.098	110
3	N38	max	949.026	18	393.165	27	559.383	14	-.301	51	2.783	18	.256	12
4		min	-967.628	12	24.449	20	-1365.229	69	-1.017	27	-2.887	12	-.187	17
5	N53	max	393.809	14	48.815	33	1101.698	25	0	110	0	110	0	110
6		min	-489.347	8	13.465	25	-1367.323	8	0	1	0	1	0	1
7	N55	max	844.352	79	1675.822	75	2242.19	75	0	110	0	110	0	110
8		min	-530.417	109	340.274	20	304.911	20	0	1	0	1	0	1
9	N59	max	235.609	9	47.063	33	639.685	15	0	110	0	110	0	110
10		min	-198.802	15	14.828	15	-750.542	9	0	1	0	1	0	1
11	Totals:	max	2586.819	5	2636.063	34	3827.293	2						
12		min	-2586.818	23	809.778	52	-3827.293	20						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M.....		Eqn
1	M22	HSS3X3X3	.887	36	11	.101	36	z	12	56576...	59535	5.171	5.171	...	H1-1b
2	MP1	PIPE_2.0	.827	63	8	.091	63		14	14916...	32130	1.872	1.872	...	H1-1a
3	MP2	PIPE_2.0	.737	63	20	.075	63		8	14916...	32130	1.872	1.872	...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
4	M24	HSS3X3X3	.640	36	12	.118	36	z	12	56576...	59535	5.171	5.171	...	H1-1b
5	M25	PIPE_2.0	.634	0	75	.227	0		4	30698...	32130	1.872	1.872	...	H1-1b
6	M6	L2.5x2.5x3	.625	0	73	.072	15....	y	71	27874...	29192.4	.873	1.972	...	H2-1
7	M2	PIPE_2.0	.623	111	78	.287	96		81	31533...	32130	1.872	1.872	...	H1-1b
8	M7	L2.5x2.5x3	.610	0	65	.070	15....	z	67	27874...	29192.4	.873	1.972	...	H2-1
9	M27	PIPE_2.0	.550	0	75	.104	3		71	30698...	32130	1.872	1.872	...	H1-1b
10	M10	L2.5x2.5x3	.481	8	7	.238	8	z	69	27833...	29192.4	.873	1.972	...	H2-1
11	M1	PIPE_2.0	.470	141	75	.240	96		82	27144...	32130	1.872	1.872	...	H1-1b
12	M3	L2.5x2.5x3	.453	8	9	.180	8	z	36	27833...	29192.4	.873	1.972	...	H2-1
13	M19	PIPE_2.0	.352	48	33	.193	48		10	32033...	32130	1.872	1.872	...	H1-1b
14	M5	L2.5x2.5x3	.348	0	12	.064	15....	y	84	27874...	29192.4	.873	1.972	...	H2-1
15	M12	PIPE_2.0	.329	36	75	.204	3		81	30698...	32130	1.872	1.872	...	H1-1b
16	M11	PIPE_2.0	.292	36	67	.172	0		110	30698...	32130	1.872	1.872	...	H1-1b
17	M26	PIPE_2.0	.280	33	6	.186	0		6	30698...	32130	1.872	1.872	...	H1-1b
18	M4	L2.5x2.5x3	.276	0	4	.052	15....	z	102	27874...	29192.4	.873	1.972	...	H2-1
19	M9	PIPE_1.25	.245	36	83	.087	36		81	17899...	19687.5	.801	.801	...	H1-1b
20	M32	L2.5x2.5x3	.234	37.403	34	.018	71....	y	9	9169....	29192.4	.873	1.527	...	H2-1
21	MP3	PIPE_2.0	.216	63	75	.059	33		64	14916...	32130	1.872	1.872	...	H1-1b
22	M31	L2.5x2.5x3	.209	33.662	10	.016	71....	y	67	9169....	29192.4	.873	1.526	...	H2-1
23	M8	PIPE_1.25	.201	36	104	.066	0		81	17899...	19687.5	.801	.801	...	H1-1b
24	M21	PIPE_2.0	.119	120	14	.006	0		11	9836....	32130	1.872	1.872	...	H1-1..
25	M33	PIPE_2.0	.097	60	4	.006	120		11	9836....	32130	1.872	1.872	...	H1-1b

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	L2.5"x2.5"x3/16"	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	.901	.535	.535	.011
2	1.5" Pipe	PIPE_1.5	Beam	None	A53 Gr. B	Typical	.749	.293	.293	.586
3	1.25" Pipe	PIPE_1.25	Beam	None	A53 Gr. B	Typical	.625	.184	.184	.368
4	2" Pipe	PIPE_2.0	Beam	None	A53 Gr. B	Typical	1.02	.627	.627	1.25
5	Standoff Arms	HSS3X3X3	Beam	None	A53 Gr. B	Typical	1.89	2.46	2.46	4.03
6	Pipe_2.5	PIPE_2.5	Beam	None	A53 Gr. B	Typical	1.61	1.45	1.45	2.89

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	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						Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None
19	M19						Yes				None
20	M20		BenPIN				Yes	** NA **			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...
21	M21	BenPIN					Yes	Default			None
22	M22						Yes				None
23	M23		BenPIN				Yes	** NA **			None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	MP1						Yes				None
29	MP2						Yes				None
30	MP3						Yes				None
31	M31		BenPIN				Yes	Default			None
32	M32		BenPIN				Yes	Default			None
33	M33		BenPIN				Yes	Default			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[i...	Kyy	Kzz	Cb	Functi...
1	M1	2" Pipe	144	Segment	Segment	Segment	Segment	Segment				Lateral
2	M2	2" Pipe	144	Segment	Segment	Segment	Segment	Segment				Lateral
3	M3	L2.5"x2.5"x3/16"	16			Lbyy			.65	.65		Lateral
4	M4	L2.5"x2.5"x3/16"	15.146			Lbyy			.65	.65		Lateral
5	M5	L2.5"x2.5"x3/16"	15.146			Lbyy			.65	.65		Lateral
6	M6	L2.5"x2.5"x3/16"	15.146			Lbyy			.65	.65		Lateral
7	M7	L2.5"x2.5"x3/16"	15.146			Lbyy			.65	.65		Lateral
8	M8	1.25" Pipe	36			Lbyy			.65	.65		Lateral
9	M9	1.25" Pipe	36			Lbyy			.65	.65		Lateral
10	M10	L2.5"x2.5"x3/16"	16						.65	.65		Lateral
11	M11	2" Pipe	36			Lbyy			.65	.65		Lateral
12	M12	2" Pipe	36			Lbyy			.65	.65		Lateral
13	M19	2" Pipe	48	Segment	Segment	Segment	Segment	Segment				Lateral
14	M21	2" Pipe	120			Lbyy						Lateral
15	M22	Standoff Arms	36			Lbyy						Lateral
16	M24	Standoff Arms	36			Lbyy						Lateral
17	M25	2" Pipe	36			Lbyy			.65	.65		Lateral
18	M26	2" Pipe	36			Lbyy			.65	.65		Lateral
19	M27	2" Pipe	36			Lbyy			.65	.65		Lateral
20	MP1	2" Pipe	96			Lbyy						Lateral
21	MP2	2" Pipe	96			Lbyy						Lateral
22	MP3	2" Pipe	96			Lbyy						Lateral
23	M31	L2.5"x2.5"x3/16"	71.813			Lbyy						Lateral
24	M32	L2.5"x2.5"x3/16"	71.813			Lbyy						Lateral
25	M33	2" Pipe	120			Lbyy						Lateral

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	Y	-47.85	0
2	MP1	Y	-47.85	96
3	MP2	Y	-47.85	0
4	MP2	Y	-47.85	96
5	MP3	Y	-17.5	21
6	MP3	Y	-17.5	69
7	MP1	Y	-71	72
8	MP1	Y	-72	72
9	MP2	Y	-59.9	72
10	MP3	Y	-31	48

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
11	MP3	Y	-31	48
12	M22	Y	-32.8	18

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-417.33	0
3	MP1	X	0	96
4	MP1	Z	-417.33	96
5	MP2	X	0	0
6	MP2	Z	-417.33	0
7	MP2	X	0	96
8	MP2	Z	-417.33	96
9	MP3	X	0	21
10	MP3	Z	-128.64	21
11	MP3	X	0	69
12	MP3	Z	-128.64	69
13	MP1	X	0	72
14	MP1	Z	-91.89	72
15	MP1	X	0	72
16	MP1	Z	-76.55	72
17	MP2	X	0	72
18	MP2	Z	-86.05	72
19	MP3	X	0	48
20	MP3	Z	-77.9	48
21	MP3	X	0	48
22	MP3	Z	-77.9	48
23	M22	X	0	18
24	M22	Z	-135.48	18

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-180.21	0
2	MP1	Z	-312.13	0
3	MP1	X	-180.21	96
4	MP1	Z	-312.13	96
5	MP2	X	-180.21	0
6	MP2	Z	-312.13	0
7	MP2	X	-180.21	96
8	MP2	Z	-312.13	96
9	MP3	X	-56.79	21
10	MP3	Z	-98.36	21
11	MP3	X	-56.79	69
12	MP3	Z	-98.36	69
13	MP1	X	-42.68	72
14	MP1	Z	-73.92	72
15	MP1	X	-36.61	72
16	MP1	Z	-63.41	72
17	MP2	X	-38.45	72
18	MP2	Z	-66.6	72
19	MP3	X	-31.94	48
20	MP3	Z	-55.32	48
21	MP3	X	-31.94	48
22	MP3	Z	-55.32	48
23	M22	X	-67.74	18
24	M22	Z	-117.33	18

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-213.55	0
2	MP1	Z	-123.29	0
3	MP1	X	-213.55	96
4	MP1	Z	-123.29	96
5	MP2	X	-213.55	0
6	MP2	Z	-123.29	0
7	MP2	X	-213.55	96
8	MP2	Z	-123.29	96
9	MP3	X	-72.27	21
10	MP3	Z	-41.72	21
11	MP3	X	-72.27	69
12	MP3	Z	-41.72	69
13	MP1	X	-62.61	72
14	MP1	Z	-36.15	72
15	MP1	X	-57.63	72
16	MP1	Z	-33.27	72
17	MP2	X	-50.75	72
18	MP2	Z	-29.3	72
19	MP3	X	-31.03	48
20	MP3	Z	-17.92	48
21	MP3	X	-31.03	48
22	MP3	Z	-17.92	48
23	M22	X	-117.33	18
24	M22	Z	-67.74	18

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-189.67	0
2	MP1	Z	0	0
3	MP1	X	-189.67	96
4	MP1	Z	0	96
5	MP2	X	-189.67	0
6	MP2	Z	0	0
7	MP2	X	-189.67	96
8	MP2	Z	0	96
9	MP3	X	-68.38	21
10	MP3	Z	0	21
11	MP3	X	-68.38	69
12	MP3	Z	0	69
13	MP1	X	-65.77	72
14	MP1	Z	0	72
15	MP1	X	-63.21	72
16	MP1	Z	0	72
17	MP2	X	-49.45	72
18	MP2	Z	0	72
19	MP3	X	-21.81	48
20	MP3	Z	0	48
21	MP3	X	-21.81	48
22	MP3	Z	0	48
23	M22	X	-135.48	18
24	M22	Z	0	18

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-213.55	0
2	MP1	Z	123.29	0

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
3	MP1	X	-213.55	96
4	MP1	Z	123.29	96
5	MP2	X	-213.55	0
6	MP2	Z	123.29	0
7	MP2	X	-213.55	96
8	MP2	Z	123.29	96
9	MP3	X	-72.27	21
10	MP3	Z	41.72	21
11	MP3	X	-72.27	69
12	MP3	Z	41.72	69
13	MP1	X	-62.61	72
14	MP1	Z	36.15	72
15	MP1	X	-57.63	72
16	MP1	Z	33.27	72
17	MP2	X	-50.75	72
18	MP2	Z	29.3	72
19	MP3	X	-31.03	48
20	MP3	Z	17.92	48
21	MP3	X	-31.03	48
22	MP3	Z	17.92	48
23	M22	X	-117.33	18
24	M22	Z	67.74	18

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-180.21	0
2	MP1	Z	312.13	0
3	MP1	X	-180.21	96
4	MP1	Z	312.13	96
5	MP2	X	-180.21	0
6	MP2	Z	312.13	0
7	MP2	X	-180.21	96
8	MP2	Z	312.13	96
9	MP3	X	-56.79	21
10	MP3	Z	98.36	21
11	MP3	X	-56.79	69
12	MP3	Z	98.36	69
13	MP1	X	-42.68	72
14	MP1	Z	73.92	72
15	MP1	X	-36.61	72
16	MP1	Z	63.41	72
17	MP2	X	-38.45	72
18	MP2	Z	66.6	72
19	MP3	X	-31.94	48
20	MP3	Z	55.32	48
21	MP3	X	-31.94	48
22	MP3	Z	55.32	48
23	M22	X	-67.74	18
24	M22	Z	117.33	18

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	417.33	0
3	MP1	X	0	96
4	MP1	Z	417.33	96

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
5	MP2	X	0	0
6	MP2	Z	417.33	0
7	MP2	X	0	96
8	MP2	Z	417.33	96
9	MP3	X	0	21
10	MP3	Z	128.64	21
11	MP3	X	0	69
12	MP3	Z	128.64	69
13	MP1	X	0	72
14	MP1	Z	91.89	72
15	MP1	X	0	72
16	MP1	Z	76.55	72
17	MP2	X	0	72
18	MP2	Z	86.05	72
19	MP3	X	0	48
20	MP3	Z	77.9	48
21	MP3	X	0	48
22	MP3	Z	77.9	48
23	M22	X	0	18
24	M22	Z	135.48	18

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	180.21	0
2	MP1	Z	312.13	0
3	MP1	X	180.21	96
4	MP1	Z	312.13	96
5	MP2	X	180.21	0
6	MP2	Z	312.13	0
7	MP2	X	180.21	96
8	MP2	Z	312.13	96
9	MP3	X	56.79	21
10	MP3	Z	98.36	21
11	MP3	X	56.79	69
12	MP3	Z	98.36	69
13	MP1	X	42.68	72
14	MP1	Z	73.92	72
15	MP1	X	36.61	72
16	MP1	Z	63.41	72
17	MP2	X	38.45	72
18	MP2	Z	66.6	72
19	MP3	X	31.94	48
20	MP3	Z	55.32	48
21	MP3	X	31.94	48
22	MP3	Z	55.32	48
23	M22	X	67.74	18
24	M22	Z	117.33	18

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	213.55	0
2	MP1	Z	123.29	0
3	MP1	X	213.55	96
4	MP1	Z	123.29	96
5	MP2	X	213.55	0
6	MP2	Z	123.29	0

Member Point Loads (BLC 10 : Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
7	MP2	X	213.55	96
8	MP2	Z	123.29	96
9	MP3	X	72.27	21
10	MP3	Z	41.72	21
11	MP3	X	72.27	69
12	MP3	Z	41.72	69
13	MP1	X	62.61	72
14	MP1	Z	36.15	72
15	MP1	X	57.63	72
16	MP1	Z	33.27	72
17	MP2	X	50.75	72
18	MP2	Z	29.3	72
19	MP3	X	31.03	48
20	MP3	Z	17.92	48
21	MP3	X	31.03	48
22	MP3	Z	17.92	48
23	M22	X	117.33	18
24	M22	Z	67.74	18

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	189.67	0
2	MP1	Z	0	0
3	MP1	X	189.67	96
4	MP1	Z	0	96
5	MP2	X	189.67	0
6	MP2	Z	0	0
7	MP2	X	189.67	96
8	MP2	Z	0	96
9	MP3	X	68.38	21
10	MP3	Z	0	21
11	MP3	X	68.38	69
12	MP3	Z	0	69
13	MP1	X	65.77	72
14	MP1	Z	0	72
15	MP1	X	63.21	72
16	MP1	Z	0	72
17	MP2	X	49.45	72
18	MP2	Z	0	72
19	MP3	X	21.81	48
20	MP3	Z	0	48
21	MP3	X	21.81	48
22	MP3	Z	0	48
23	M22	X	135.48	18
24	M22	Z	0	18

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	213.55	0
2	MP1	Z	-123.29	0
3	MP1	X	213.55	96
4	MP1	Z	-123.29	96
5	MP2	X	213.55	0
6	MP2	Z	-123.29	0
7	MP2	X	213.55	96
8	MP2	Z	-123.29	96

Member Point Loads (BLC 12 : Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
9	MP3	X	72.27	21
10	MP3	Z	-41.72	21
11	MP3	X	72.27	69
12	MP3	Z	-41.72	69
13	MP1	X	62.61	72
14	MP1	Z	-36.15	72
15	MP1	X	57.63	72
16	MP1	Z	-33.27	72
17	MP2	X	50.75	72
18	MP2	Z	-29.3	72
19	MP3	X	31.03	48
20	MP3	Z	-17.92	48
21	MP3	X	31.03	48
22	MP3	Z	-17.92	48
23	M22	X	117.33	18
24	M22	Z	-67.74	18

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	180.21	0
2	MP1	Z	-312.13	0
3	MP1	X	180.21	96
4	MP1	Z	-312.13	96
5	MP2	X	180.21	0
6	MP2	Z	-312.13	0
7	MP2	X	180.21	96
8	MP2	Z	-312.13	96
9	MP3	X	56.79	21
10	MP3	Z	-98.36	21
11	MP3	X	56.79	69
12	MP3	Z	-98.36	69
13	MP1	X	42.68	72
14	MP1	Z	-73.92	72
15	MP1	X	36.61	72
16	MP1	Z	-63.41	72
17	MP2	X	38.45	72
18	MP2	Z	-66.6	72
19	MP3	X	31.94	48
20	MP3	Z	-55.32	48
21	MP3	X	31.94	48
22	MP3	Z	-55.32	48
23	M22	X	67.74	18
24	M22	Z	-117.33	18

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	Y	-122.932	0
2	MP1	Y	-122.932	96
3	MP2	Y	-122.932	0
4	MP2	Y	-122.932	96
5	MP3	Y	-42.795	21
6	MP3	Y	-42.795	69
7	MP1	Y	-48.726	72
8	MP1	Y	-46.392	72
9	MP2	Y	-42.152	72
10	MP3	Y	-29.827	48

Member Point Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
11	MP3	Y	-29.827	48
12	M22	Y	-72.575	18

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-27.23	0
3	MP1	X	0	96
4	MP1	Z	-27.23	96
5	MP2	X	0	0
6	MP2	Z	-27.23	0
7	MP2	X	0	96
8	MP2	Z	-27.23	96
9	MP3	X	0	21
10	MP3	Z	-10.37	21
11	MP3	X	0	69
12	MP3	Z	-10.37	69
13	MP1	X	0	72
14	MP1	Z	-7.4	72
15	MP1	X	0	72
16	MP1	Z	-6.31	72
17	MP2	X	0	72
18	MP2	Z	-6.94	72
19	MP3	X	0	48
20	MP3	Z	-6.26	48
21	MP3	X	0	48
22	MP3	Z	-6.26	48
23	M22	X	0	18
24	M22	Z	-11.35	18

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-12.4	0
2	MP1	Z	-21.48	0
3	MP1	X	-12.4	96
4	MP1	Z	-21.48	96
5	MP2	X	-12.4	0
6	MP2	Z	-21.48	0
7	MP2	X	-12.4	96
8	MP2	Z	-21.48	96
9	MP3	X	-4.85	21
10	MP3	Z	-8.4	21
11	MP3	X	-4.85	69
12	MP3	Z	-8.4	69
13	MP1	X	-3.58	72
14	MP1	Z	-6.2	72
15	MP1	X	-3.09	72
16	MP1	Z	-5.35	72
17	MP2	X	-3.29	72
18	MP2	Z	-5.7	72
19	MP3	X	-2.75	48
20	MP3	Z	-4.76	48
21	MP3	X	-2.75	48
22	MP3	Z	-4.76	48
23	M22	X	-5.68	18
24	M22	Z	-9.83	18

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-17.27	0
2	MP1	Z	-9.97	0
3	MP1	X	-17.27	96
4	MP1	Z	-9.97	96
5	MP2	X	-17.27	0
6	MP2	Z	-9.97	0
7	MP2	X	-17.27	96
8	MP2	Z	-9.97	96
9	MP3	X	-7.24	21
10	MP3	Z	-4.18	21
11	MP3	X	-7.24	69
12	MP3	Z	-4.18	69
13	MP1	X	-5.77	72
14	MP1	Z	-3.33	72
15	MP1	X	-5.14	72
16	MP1	Z	-2.97	72
17	MP2	X	-5.08	72
18	MP2	Z	-2.93	72
19	MP3	X	-3.44	48
20	MP3	Z	-1.98	48
21	MP3	X	-3.44	48
22	MP3	Z	-1.98	48
23	M22	X	-9.83	18
24	M22	Z	-5.68	18

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-17.51	0
2	MP1	Z	0	0
3	MP1	X	-17.51	96
4	MP1	Z	0	96
5	MP2	X	-17.51	0
6	MP2	Z	0	0
7	MP2	X	-17.51	96
8	MP2	Z	0	96
9	MP3	X	-7.7	21
10	MP3	Z	0	21
11	MP3	X	-7.7	69
12	MP3	Z	0	69
13	MP1	X	-6.42	72
14	MP1	Z	0	72
15	MP1	X	-5.81	72
16	MP1	Z	0	72
17	MP2	X	-5.51	72
18	MP2	Z	0	72
19	MP3	X	-3.2	48
20	MP3	Z	0	48
21	MP3	X	-3.2	48
22	MP3	Z	0	48
23	M22	X	-11.35	18
24	M22	Z	0	18

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-17.27	0
2	MP1	Z	9.97	0

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
3	MP1	X	-17.27	96
4	MP1	Z	9.97	96
5	MP2	X	-17.27	0
6	MP2	Z	9.97	0
7	MP2	X	-17.27	96
8	MP2	Z	9.97	96
9	MP3	X	-7.24	21
10	MP3	Z	4.18	21
11	MP3	X	-7.24	69
12	MP3	Z	4.18	69
13	MP1	X	-5.77	72
14	MP1	Z	3.33	72
15	MP1	X	-5.14	72
16	MP1	Z	2.97	72
17	MP2	X	-5.08	72
18	MP2	Z	2.93	72
19	MP3	X	-3.44	48
20	MP3	Z	1.98	48
21	MP3	X	-3.44	48
22	MP3	Z	1.98	48
23	M22	X	-9.83	18
24	M22	Z	5.68	18

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-12.4	0
2	MP1	Z	21.48	0
3	MP1	X	-12.4	96
4	MP1	Z	21.48	96
5	MP2	X	-12.4	0
6	MP2	Z	21.48	0
7	MP2	X	-12.4	96
8	MP2	Z	21.48	96
9	MP3	X	-4.85	21
10	MP3	Z	8.4	21
11	MP3	X	-4.85	69
12	MP3	Z	8.4	69
13	MP1	X	-3.58	72
14	MP1	Z	6.2	72
15	MP1	X	-3.09	72
16	MP1	Z	5.35	72
17	MP2	X	-3.29	72
18	MP2	Z	5.7	72
19	MP3	X	-2.75	48
20	MP3	Z	4.76	48
21	MP3	X	-2.75	48
22	MP3	Z	4.76	48
23	M22	X	-5.68	18
24	M22	Z	9.83	18

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	27.23	0
3	MP1	X	0	96
4	MP1	Z	27.23	96

Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
5	MP2	X	0	0
6	MP2	Z	27.23	0
7	MP2	X	0	96
8	MP2	Z	27.23	96
9	MP3	X	0	21
10	MP3	Z	10.37	21
11	MP3	X	0	69
12	MP3	Z	10.37	69
13	MP1	X	0	72
14	MP1	Z	7.4	72
15	MP1	X	0	72
16	MP1	Z	6.31	72
17	MP2	X	0	72
18	MP2	Z	6.94	72
19	MP3	X	0	48
20	MP3	Z	6.26	48
21	MP3	X	0	48
22	MP3	Z	6.26	48
23	M22	X	0	18
24	M22	Z	11.35	18

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	12.4	0
2	MP1	Z	21.48	0
3	MP1	X	12.4	96
4	MP1	Z	21.48	96
5	MP2	X	12.4	0
6	MP2	Z	21.48	0
7	MP2	X	12.4	96
8	MP2	Z	21.48	96
9	MP3	X	4.85	21
10	MP3	Z	8.4	21
11	MP3	X	4.85	69
12	MP3	Z	8.4	69
13	MP1	X	3.58	72
14	MP1	Z	6.2	72
15	MP1	X	3.09	72
16	MP1	Z	5.35	72
17	MP2	X	3.29	72
18	MP2	Z	5.7	72
19	MP3	X	2.75	48
20	MP3	Z	4.76	48
21	MP3	X	2.75	48
22	MP3	Z	4.76	48
23	M22	X	5.68	18
24	M22	Z	9.83	18

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	17.27	0
2	MP1	Z	9.97	0
3	MP1	X	17.27	96
4	MP1	Z	9.97	96
5	MP2	X	17.27	0
6	MP2	Z	9.97	0

Member Point Loads (BLC 25 : Ice Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
7	MP2	X	17.27	96
8	MP2	Z	9.97	96
9	MP3	X	7.24	21
10	MP3	Z	4.18	21
11	MP3	X	7.24	69
12	MP3	Z	4.18	69
13	MP1	X	5.77	72
14	MP1	Z	3.33	72
15	MP1	X	5.14	72
16	MP1	Z	2.97	72
17	MP2	X	5.08	72
18	MP2	Z	2.93	72
19	MP3	X	3.44	48
20	MP3	Z	1.98	48
21	MP3	X	3.44	48
22	MP3	Z	1.98	48
23	M22	X	9.83	18
24	M22	Z	5.68	18

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	17.51	0
2	MP1	Z	0	0
3	MP1	X	17.51	96
4	MP1	Z	0	96
5	MP2	X	17.51	0
6	MP2	Z	0	0
7	MP2	X	17.51	96
8	MP2	Z	0	96
9	MP3	X	7.7	21
10	MP3	Z	0	21
11	MP3	X	7.7	69
12	MP3	Z	0	69
13	MP1	X	6.42	72
14	MP1	Z	0	72
15	MP1	X	5.81	72
16	MP1	Z	0	72
17	MP2	X	5.51	72
18	MP2	Z	0	72
19	MP3	X	3.2	48
20	MP3	Z	0	48
21	MP3	X	3.2	48
22	MP3	Z	0	48
23	M22	X	11.35	18
24	M22	Z	0	18

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	17.27	0
2	MP1	Z	-9.97	0
3	MP1	X	17.27	96
4	MP1	Z	-9.97	96
5	MP2	X	17.27	0
6	MP2	Z	-9.97	0
7	MP2	X	17.27	96
8	MP2	Z	-9.97	96

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
9	MP3	X	7.24	21
10	MP3	Z	-4.18	21
11	MP3	X	7.24	69
12	MP3	Z	-4.18	69
13	MP1	X	5.77	72
14	MP1	Z	-3.33	72
15	MP1	X	5.14	72
16	MP1	Z	-2.97	72
17	MP2	X	5.08	72
18	MP2	Z	-2.93	72
19	MP3	X	3.44	48
20	MP3	Z	-1.98	48
21	MP3	X	3.44	48
22	MP3	Z	-1.98	48
23	M22	X	9.83	18
24	M22	Z	-5.68	18

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	12.4	0
2	MP1	Z	-21.48	0
3	MP1	X	12.4	96
4	MP1	Z	-21.48	96
5	MP2	X	12.4	0
6	MP2	Z	-21.48	0
7	MP2	X	12.4	96
8	MP2	Z	-21.48	96
9	MP3	X	4.85	21
10	MP3	Z	-8.4	21
11	MP3	X	4.85	69
12	MP3	Z	-8.4	69
13	MP1	X	3.58	72
14	MP1	Z	-6.2	72
15	MP1	X	3.09	72
16	MP1	Z	-5.35	72
17	MP2	X	3.29	72
18	MP2	Z	-5.7	72
19	MP3	X	2.75	48
20	MP3	Z	-4.76	48
21	MP3	X	2.75	48
22	MP3	Z	-4.76	48
23	M22	X	5.68	18
24	M22	Z	-9.83	18

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	Z	-4.364	0
2	MP1	Z	-4.364	96
3	MP2	Z	-4.364	0
4	MP2	Z	-4.364	96
5	MP3	Z	-1.596	21
6	MP3	Z	-1.596	69
7	MP1	Z	-6.475	72
8	MP1	Z	-6.566	72
9	MP2	Z	-5.463	72
10	MP3	Z	-2.827	48

Member Point Loads (BLC 31 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
11	MP3	Z	-2.827	48
12	M22	Z	-2.991	18

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP1	X	-4.364	0
2	MP1	X	-4.364	96
3	MP2	X	-4.364	0
4	MP2	X	-4.364	96
5	MP3	X	-1.596	21
6	MP3	X	-1.596	69
7	MP1	X	-6.475	72
8	MP1	X	-6.566	72
9	MP2	X	-5.463	72
10	MP3	X	-2.827	48
11	MP3	X	-2.827	48
12	M22	X	-2.991	18

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
1	M1	SZ	-62.273	-62.273	0	%100
2	M2	SZ	-62.273	-62.273	0	%100
3	M3	SZ	-103.789	-103.789	0	%100
4	M4	SZ	-103.789	-103.789	0	%100
5	M5	SZ	-103.789	-103.789	0	%100
6	M6	SZ	-103.789	-103.789	0	%100
7	M7	SZ	-103.789	-103.789	0	%100
8	M8	SZ	-62.273	-62.273	0	%100
9	M9	SZ	-62.273	-62.273	0	%100
10	M10	SZ	-103.789	-103.789	0	%100
11	M11	SZ	-62.273	-62.273	0	%100
12	M12	SZ	-62.273	-62.273	0	%100
13	M13	SZ	0	0	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	-62.273	-62.273	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	-62.273	-62.273	0	%100
22	M22	SZ	-103.789	-103.789	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	-103.789	-103.789	0	%100
25	M25	SZ	-62.273	-62.273	0	%100
26	M26	SZ	-62.273	-62.273	0	%100
27	M27	SZ	-62.273	-62.273	0	%100
28	MP1	SZ	-62.273	-62.273	0	%100
29	MP2	SZ	-62.273	-62.273	0	%100
30	MP3	SZ	-62.273	-62.273	0	%100
31	M31	SZ	-103.789	-103.789	0	%100
32	M32	SZ	-103.789	-103.789	0	%100
33	M33	SZ	-62.273	-62.273	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
1	M1	SX	-62.273	-62.273	0	%100
2	M2	SX	-62.273	-62.273	0	%100
3	M3	SX	-103.789	-103.789	0	%100
4	M4	SX	-103.789	-103.789	0	%100
5	M5	SX	-103.789	-103.789	0	%100
6	M6	SX	-103.789	-103.789	0	%100
7	M7	SX	-103.789	-103.789	0	%100
8	M8	SX	-62.273	-62.273	0	%100
9	M9	SX	-62.273	-62.273	0	%100
10	M10	SX	-103.789	-103.789	0	%100
11	M11	SX	-62.273	-62.273	0	%100
12	M12	SX	-62.273	-62.273	0	%100
13	M13	SX	0	0	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	-62.273	-62.273	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	-62.273	-62.273	0	%100
22	M22	SX	-103.789	-103.789	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	-103.789	-103.789	0	%100
25	M25	SX	-62.273	-62.273	0	%100
26	M26	SX	-62.273	-62.273	0	%100
27	M27	SX	-62.273	-62.273	0	%100
28	MP1	SX	-62.273	-62.273	0	%100
29	MP2	SX	-62.273	-62.273	0	%100
30	MP3	SX	-62.273	-62.273	0	%100
31	M31	SX	-103.789	-103.789	0	%100
32	M32	SX	-103.789	-103.789	0	%100
33	M33	SX	-62.273	-62.273	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
1	M1	Y	-5.183	-5.183	0	%100
2	M2	Y	-5.183	-5.183	0	%100
3	M3	Y	-6.871	-6.871	0	%100
4	M4	Y	-6.871	-6.871	0	%100
5	M5	Y	-6.871	-6.871	0	%100
6	M6	Y	-6.871	-6.871	0	%100
7	M7	Y	-6.871	-6.871	0	%100
8	M8	Y	-4.144	-4.144	0	%100
9	M9	Y	-4.144	-4.144	0	%100
10	M10	Y	-6.871	-6.871	0	%100
11	M11	Y	-5.183	-5.183	0	%100
12	M12	Y	-5.183	-5.183	0	%100
13	M13	Y	-1.73	-1.73	0	%100
14	M14	Y	-1.73	-1.73	0	%100
15	M15	Y	-1.73	-1.73	0	%100
16	M16	Y	-1.73	-1.73	0	%100
17	M17	Y	-1.73	-1.73	0	%100
18	M18	Y	-1.73	-1.73	0	%100
19	M19	Y	-5.183	-5.183	0	%100
20	M20	Y	-1.73	-1.73	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
21	M21	Y	-5.183	-5.183	0	%100
22	M22	Y	-7.899	-7.899	0	%100
23	M23	Y	-1.73	-1.73	0	%100
24	M24	Y	-7.899	-7.899	0	%100
25	M25	Y	-5.183	-5.183	0	%100
26	M26	Y	-5.183	-5.183	0	%100
27	M27	Y	-5.183	-5.183	0	%100
28	MP1	Y	-5.183	-5.183	0	%100
29	MP2	Y	-5.183	-5.183	0	%100
30	MP3	Y	-5.183	-5.183	0	%100
31	M31	Y	-6.871	-6.871	0	%100
32	M32	Y	-6.871	-6.871	0	%100
33	M33	Y	-5.183	-5.183	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
1	M1	SZ	-17.103	-17.103	0	%100
2	M2	SZ	-17.103	-17.103	0	%100
3	M3	SZ	-14.293	-14.293	0	%100
4	M4	SZ	-14.293	-14.293	0	%100
5	M5	SZ	-14.293	-14.293	0	%100
6	M6	SZ	-14.293	-14.293	0	%100
7	M7	SZ	-14.293	-14.293	0	%100
8	M8	SZ	-20.79	-20.79	0	%100
9	M9	SZ	-20.79	-20.79	0	%100
10	M10	SZ	-14.293	-14.293	0	%100
11	M11	SZ	-17.103	-17.103	0	%100
12	M12	SZ	-17.103	-17.103	0	%100
13	M13	SZ	0	0	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	-17.103	-17.103	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	-17.103	-17.103	0	%100
22	M22	SZ	-13.334	-13.334	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	-13.334	-13.334	0	%100
25	M25	SZ	-17.103	-17.103	0	%100
26	M26	SZ	-17.103	-17.103	0	%100
27	M27	SZ	-17.103	-17.103	0	%100
28	MP1	SZ	-17.103	-17.103	0	%100
29	MP2	SZ	-17.103	-17.103	0	%100
30	MP3	SZ	-17.103	-17.103	0	%100
31	M31	SZ	-14.293	-14.293	0	%100
32	M32	SZ	-14.293	-14.293	0	%100
33	M33	SZ	-17.103	-17.103	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in,...
1	M1	SX	-17.103	-17.103	0	%100
2	M2	SX	-17.103	-17.103	0	%100
3	M3	SX	-14.293	-14.293	0	%100
4	M4	SX	-14.293	-14.293	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
5	M5	SX	-14.293	-14.293	0	%100
6	M6	SX	-14.293	-14.293	0	%100
7	M7	SX	-14.293	-14.293	0	%100
8	M8	SX	-20.79	-20.79	0	%100
9	M9	SX	-20.79	-20.79	0	%100
10	M10	SX	-14.293	-14.293	0	%100
11	M11	SX	-17.103	-17.103	0	%100
12	M12	SX	-17.103	-17.103	0	%100
13	M13	SX	0	0	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	-17.103	-17.103	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	-17.103	-17.103	0	%100
22	M22	SX	-13.334	-13.334	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	-13.334	-13.334	0	%100
25	M25	SX	-17.103	-17.103	0	%100
26	M26	SX	-17.103	-17.103	0	%100
27	M27	SX	-17.103	-17.103	0	%100
28	MP1	SX	-17.103	-17.103	0	%100
29	MP2	SX	-17.103	-17.103	0	%100
30	MP3	SX	-17.103	-17.103	0	%100
31	M31	SX	-14.293	-14.293	0	%100
32	M32	SX	-14.293	-14.293	0	%100
33	M33	SX	-17.103	-17.103	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
No Data to Print ...						

Plate Surface Loads

Plate Label	Direction	Magnitude[psf,F]
No Data to Print ...		

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

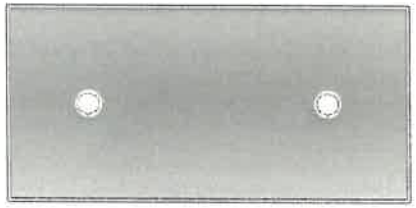
Bolt Calculation Tool, V1.1

PROJECT DATA	
Site Name:	Bozrah CDT Tower
Site Number:	CTL02029
Job Code:	1106-A0001-B

APPLIED LOADS		
Bolt Tension:	0.00	lbs
Bolt Shear:	773.28	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A307	-
# of Bolts:	2	-
Threads Excluded?	No	-

BOLT CHECK	
Tensile Strength	10170.07
Shear Strength	6212.62
Tensile Usage	0.0%
Shear Usage	12.4%
Interaction Check	1.5%
Result	Pass



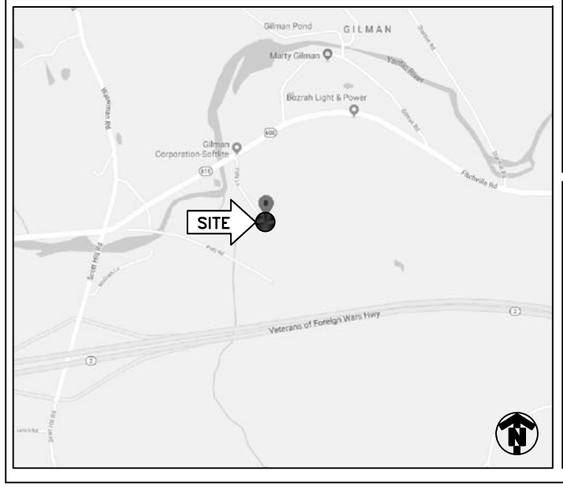
SHEET INDEX

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I-90 WEST/MASSACHUETTS TURNPIKE. HEAD NORTHEAST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I-90 EAST/MASSPIKE WEST/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 WEST/MASSACHUETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 WEST/MASSACHUETTS TURNPIKE. FOLLOW I-90 WEST/MASSACHUETTS TURNPIKE AND I-395 SOUTH TO SCOTT HILL ROAD IN NEW LONDON COUNTY. TAKE EXIT 22 FROM CT-2 WEST. MERGE ONTO I-90 WEST/MASSACHUETTS TURNPIKE. TAKE EXIT 10 TOWARD MA-12 NORTH/AUBURN/WORCESTER. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-395 SOUTH/US-20 EAST/NORWICH CT AND MERGE ONTO I-395 SOUTH. TAKE EXIT 14 TOWARD CT-2 WEST/CT-32 NORTH/HARDFORD/COLCHESTER. TURN RIGHT ONTO WEST TOWN STREET. CONTINUE ONTO FITCHVILLE ROAD/FRANKLIN TURNPIKE/NORWICH-COLCHESTER TURNPIKE. TURN LEFT TO MERGE ONTO CT-2 WEST TOWARD HARTFORD. TAKE EXIT 22 TOWARD LEBANON/GILMAN. CONTINUE ON SCOTT HILL ROAD. TAKE STATE HWY 616 TO POLY LN IN BOZRAH. TURN RIGHT ONTO SCOTT HILL ROAD. TURN RIGHT ONTO STATE HWY 616. TURN RIGHT ONTO POLLY LN.

LOCATION MAP



at&t

PROJECT

LTE 2C/3C/4C/5C/RETROFIT

SITE NAME

BOZRAH CDT TOWER

CELL SITE ID

CTL02029

FA SITE NUMBER

10035235

PACE ID

MRCTB041844/MRCTB041452/MRCTB041553
MRCTB041634/MRCTB041418

SITE ADDRESS

3 POLLY LANE
BOZRAH, CT 06334

STRUCTURE TYPE

GUYED

PROJECT TEAM

smartlink

PROJECT MANAGER

INFINIGY

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

ENGINEER

SCOPE OF WORK (PER LTE RFDS, DATED 06/07/2019 V1.00):

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.

TOWER
- REMOVE (6) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS-11 B12
- INSTALL (3) B14 4478
- INSTALL (3) 4449 B5/B12
- INSTALL (3) 8843 B2/B66A
- INSTALL (1) DC6 SQUID W/ (1) FIBER AND (2) DC CABLES
- CONTRACTOR TO ROTATE EXISTING SECTOR FRAME MOUNTS FOR LTE AZIMUTHS

GROUND
- SWAP DUS WITH 6630
- ADD XMU
- ADD IDLe CABLE
- HOME RUN FOR UMTS RETS

PROJECT SUMMARY

SITE NAME:	BOZRAH CDT TOWER	
CELL SITE ID:	CTL02029	
FA SITE #:	10035235	
SITE ADDRESS:	3 POLLY LANE BOZRAH, CT 06334	
COUNTY:	NEW LONDON	
SITE COORDINATES: LATITUDE: LONGITUDE:	 41.5742419° N 72.2004161° W	 (NAD 83) (NAD 83)
RAD CENTER	±188'	(AGL)
LANDLORD:	MS. MICHAEL ASHLEY CULBERT VICE PRESIDENT OF SITE DEVELOPMENT EVEREST INFRASTRUCTURE PARTNERS MOBILE: 781-820-9120 EMAIL: MICHAEL.CULBERT@EVERESTINFRASTRUCTURE.COM	
APPLICANT:	AT&T MOBILITY 550 COCHITUATE RD. FRAMINGHAM, MA 01701	
CLIENT REPRESENTATIVE:	SMARTLINK, LLC 85 RANGEWAY RD., BUILDING 3, SUITE 102 NORTH BILLERICA, MA 01862	
CONTACT:	EDWARD WEISSMAN (917)528-1857	
ENGINEER:	INFINIGY 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205	
CONTACT:	ALEX WELLER (518) 690-0790	
BUILDING CODE:	2018 CT STATE BUILDING CODE 2015 INTERNATIONAL BUILDING CODE ANSI/TIA-222 G 2015 INTERNATIONAL PLUMBING CODE 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE 2017 NFPA 70	
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)	

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

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STATE OF CONNECTICUT
JOHN STEVENS
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Project Number: 499-006

Project Title:
BOZRAH CDT TOWER
CTL02029
FA# 10035235
3 POLLY LANE
BOZRAH, CT 06334

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/22/20
CD

Drawing Title
TITLE PAGE

Drawing Number
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
D. AND NFPA 101 (LIFE SAFETY CODE).
E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).

1.2 DEFINITIONS:
A: WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B: COMPANY: AT&T CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D: CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E: THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.

1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.7 NOTICE TO PROCEED:
A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.

2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

5.1 TESTS AND INSPECTIONS:
A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.

C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.

D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.

E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.

G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.

A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.

B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.

C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.

E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.

F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.

G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
----------	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
OR ⊗	GROUND ROD
OR ⊠	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
G	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES
# / #	REPRESENTS DETAIL NUMBER / REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

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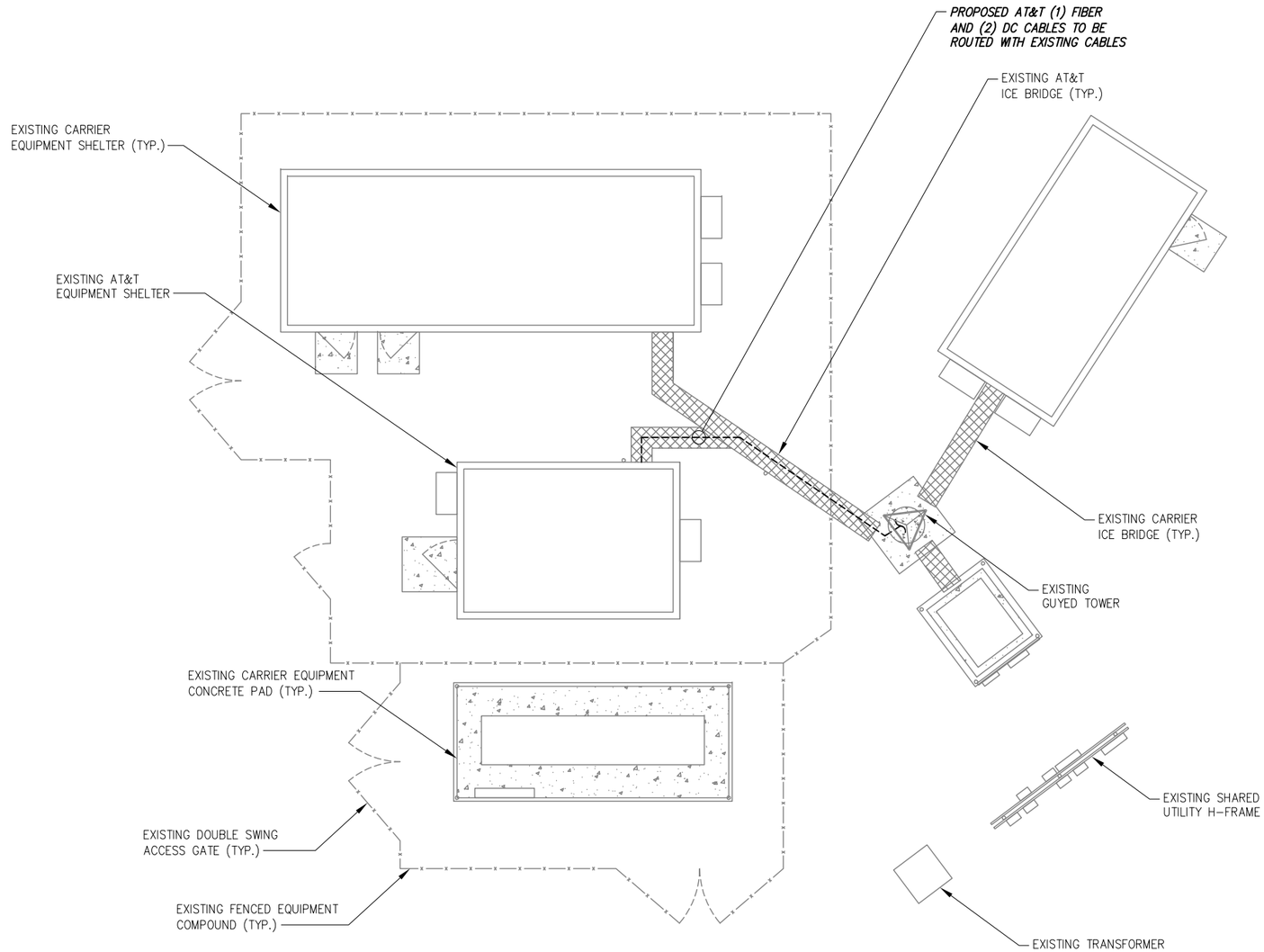
CTL02029
FA# 10035235
3 POLLY LANE
BIZRAH, CT 06334

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/22/20
CD

Drawing Title
GENERAL NOTES

Drawing Number
C1



TRUE NORTH

1 / -- SITE PLAN
SCALE: AS NOTED

GRAPHIC SCALE:
10' 5' 0 5' 10'
SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"

BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

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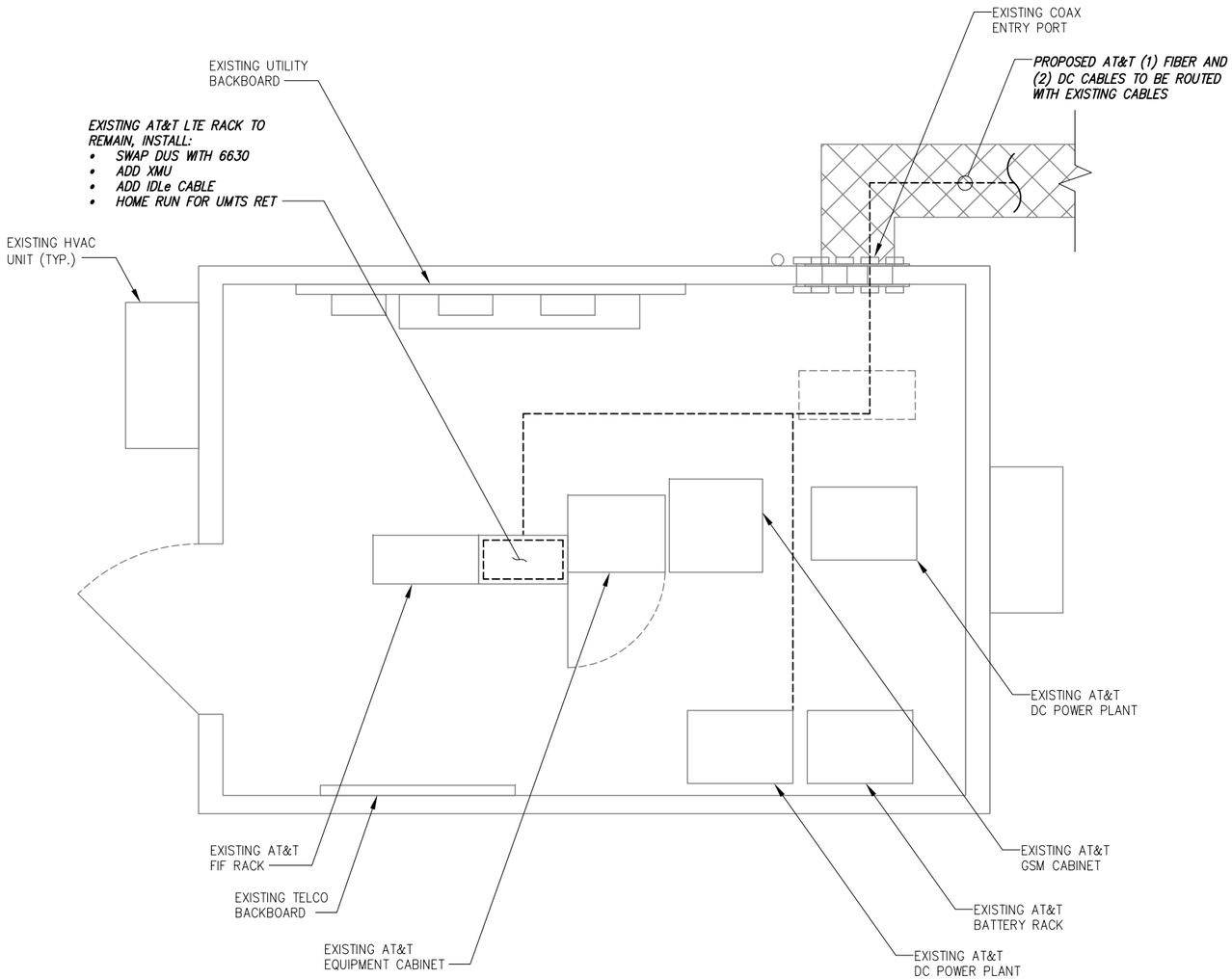
Drawing Title
OVERALL SITE PLAN

Drawing Number
C2



TRUE NORTH

2 ENLARGED EQUIPMENT PLAN
SCALE: AS NOTED

GRAPHIC SCALE:

3' 1'-6" 0 1'-6" 3'

SCALE (11x17): 1" = 3'-0"
SCALE (22x34): 1" = 1'-6"

BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

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Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/22/20

CD

Drawing Title

ENLARGED SITE PLAN

Drawing Number

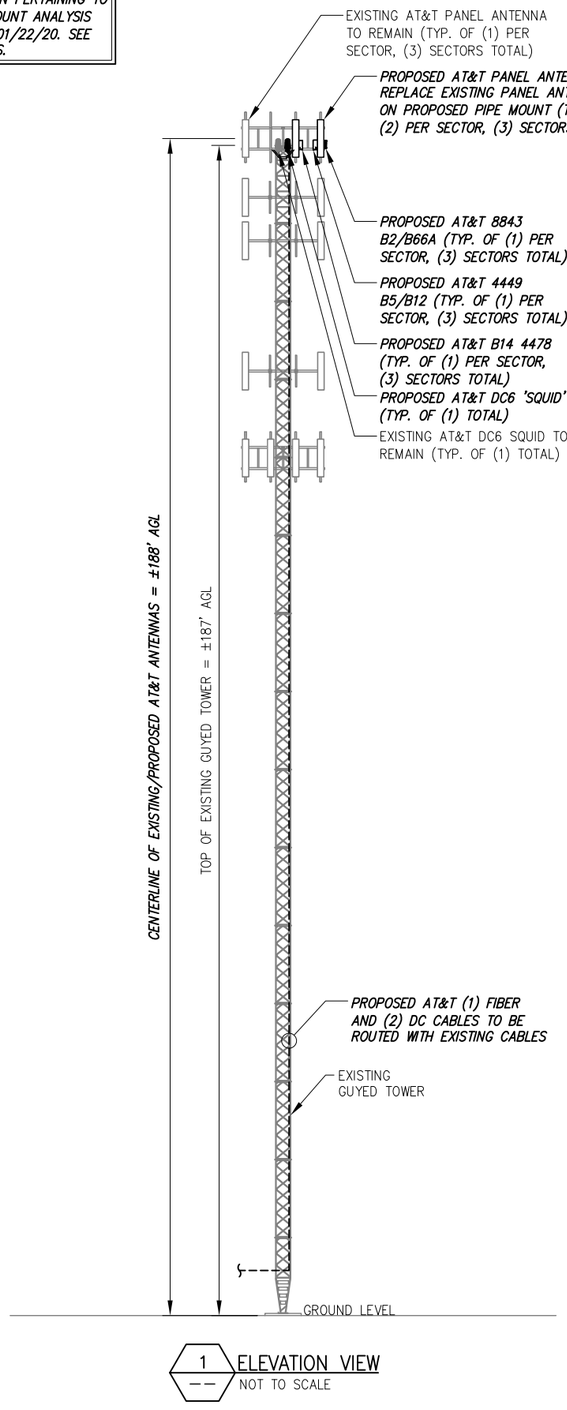
C2A

NOTE:

- *INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*
- *FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'POST MOD MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY DATED 01/22/20. SEE SHEETS S1-S2 FOR MODIFICATION DETAILS.*

NOTE:

- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS



1 / -- ELEVATION VIEW
NOT TO SCALE

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 06/07/19, V 1.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/ DIPLEXER	RRUS	AZIMUTH	ANTENNA ℄ HEIGHT	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A-1	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU8DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*10°*	*±188'*	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	(1) (E) DC6 'SQUID' *(1) (P) DC6 'SQUID'*
	A-2	*(P) LTE 700/AWS*	*CCI DMP65R-BU8DA*	--	*(1) (P) B14 4478*	*10°*	*±188'*	SEE A-1 FOR CABLE INFORMATION	--	
	A-3	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	--	
	A-4	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP17201	--	143°	±188'	(2) (E) 1-5/8" COAX CABLES	±222'	
BETA	B-1	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU8DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*120°*	*±188'*	*(2) (P) DC CABLES*	--	
	B-2	*(P) LTE 700/AWS*	*CCI DMP65R-BU8DA*	--	*(1) (P) B14 4478*	*120°*	*±188'*	SEE A-1 FOR CABLE INFORMATION	--	
	B-3	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	--	
	B-4	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP17201	--	263°	±188'	(2) (E) 1-5/8" COAX CABLES	±222'	
GAMMA	G-1	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU8DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*235°*	*±188'*	SEE A-1 FOR CABLE INFORMATION	--	
	G-2	*(P) LTE 700/AWS*	*CCI DMP65R-BU8DA*	--	*(1) (P) B14 4478*	*235°*	*±188'*	SEE A-1 FOR CABLE INFORMATION	--	
	G-3	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	--	
	G-4	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP17201	--	23°	±188'	(2) (E) 1-5/8" COAX CABLES	±222'	

2 / -- AT&T ANTENNA SCHEDULE
NOT TO SCALE

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Drawn: BMM Date: 09/13/19
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Checked: AJD Date: 09/13/19

Project Number: 499-006

Project Title:

BOZRAH CDT TOWER
CTL02029
FA# 10035235
3 POLLY LANE
BIZRAH, CT 06334

Prepared For: smartlink

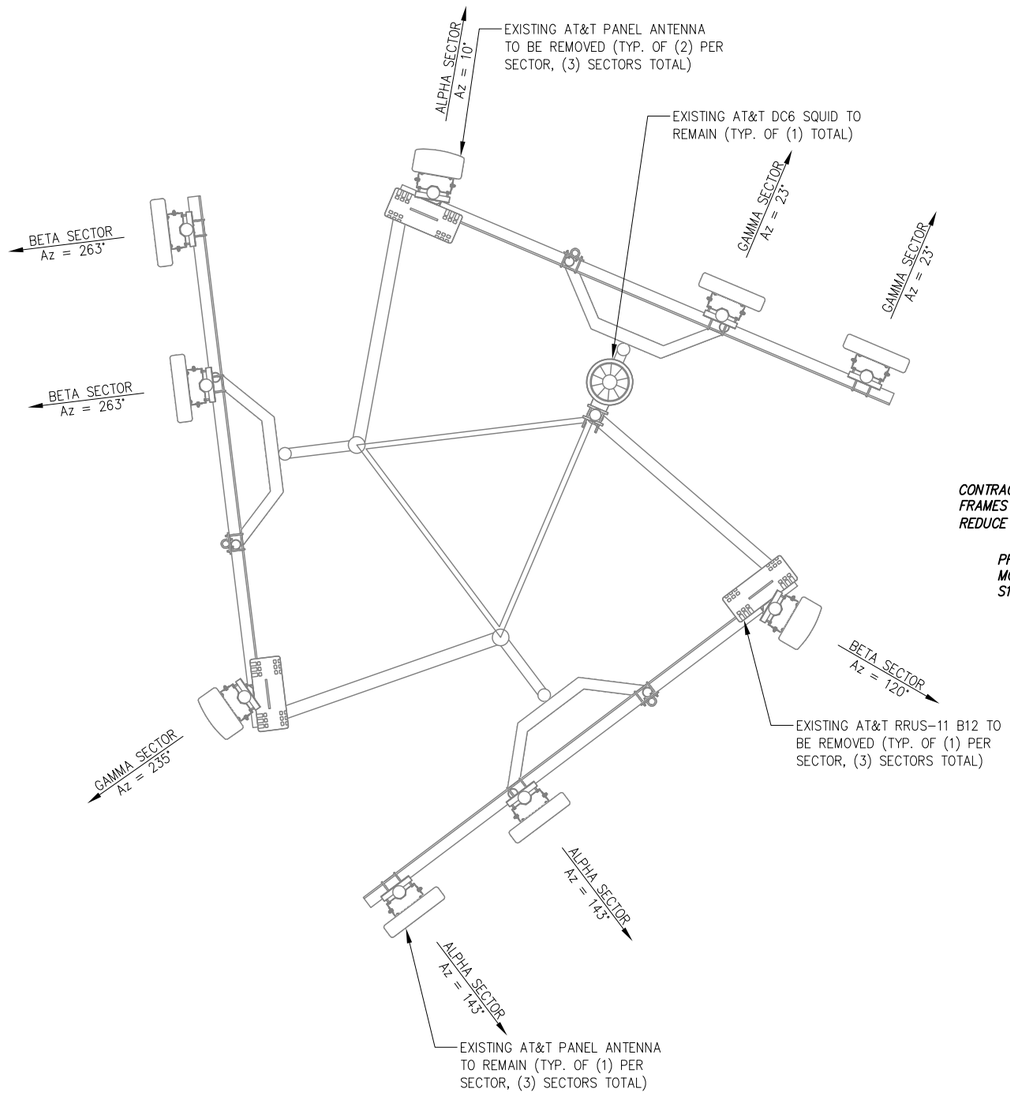
Drawing Scale: AS NOTED
Date: 01/22/20
CD

Drawing Title
ELEVATION VIEW

Drawing Number
C3

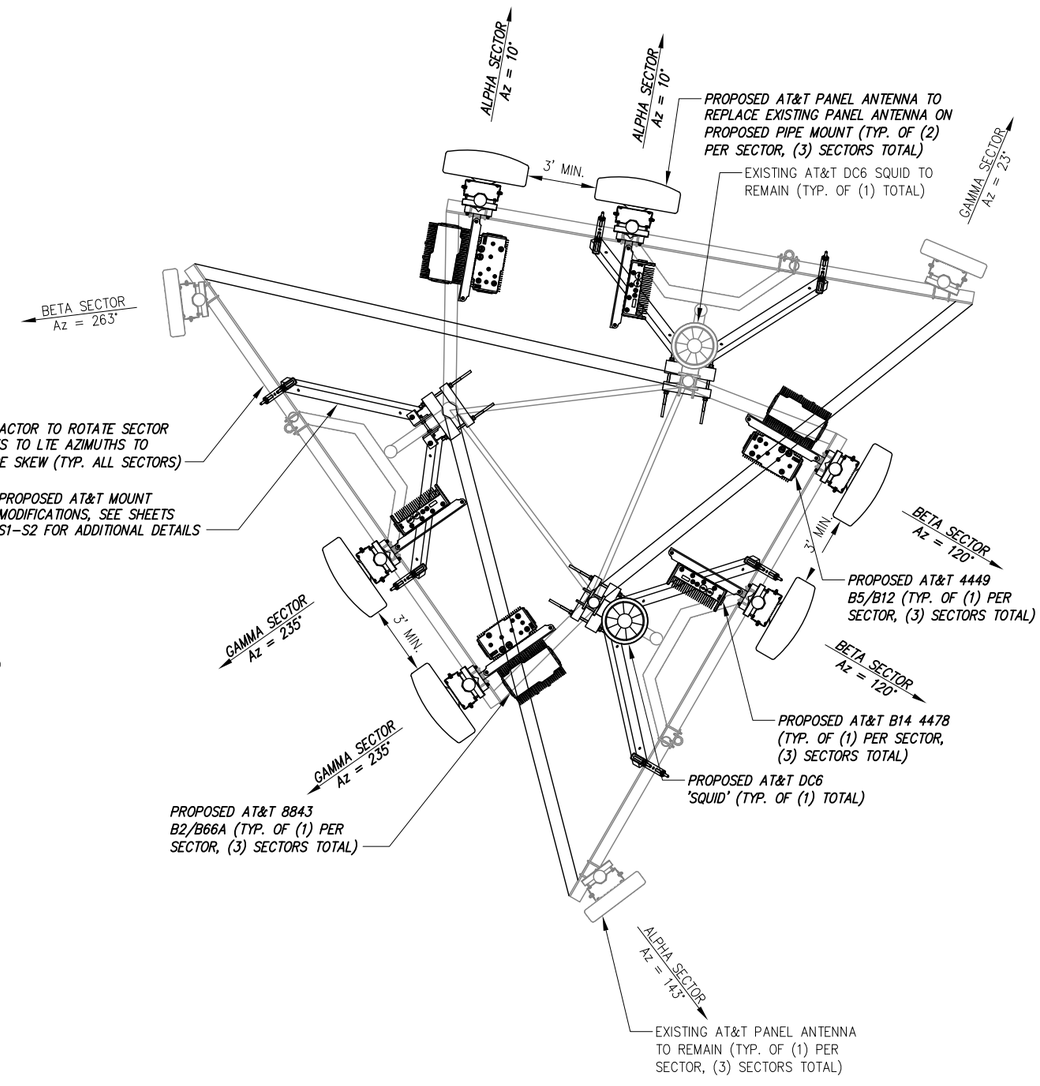
NOTE:
- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS

NOTE:
- *INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*
- *FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'POST MOD MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY DATED 01/22/20. SEE SHEETS S1-S2 FOR MODIFICATION DETAILS.*



TRUE NORTH

1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE



TRUE NORTH

2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

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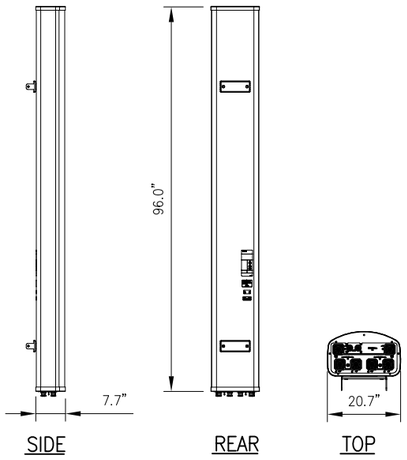
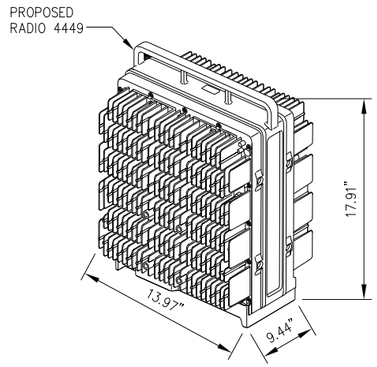
Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4



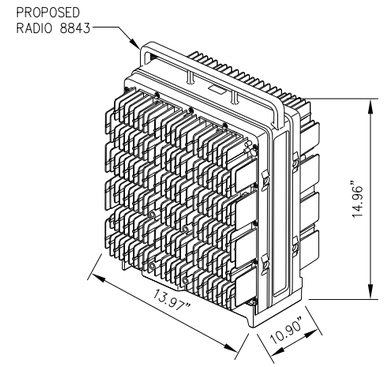
CCI MODEL NO.:	DMP65R-BU8DA
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.0"x20.7"x7.7"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	95.7 LBS
CONNECTOR:	7-16 DIN FEMALE

1 ANTENNA DETAIL
-- NOT TO SCALE



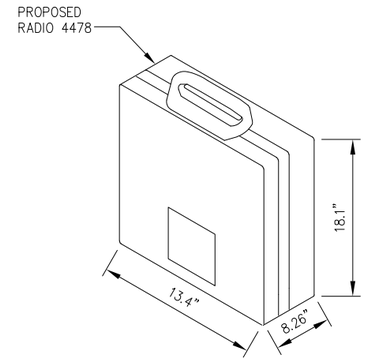
RADIO 4449 SPECIFICATIONS
- HxWxD, (INCHES) : 17.91"x13.97"x9.44"
- WEIGHT (LBS) : 70.54
- COLOR : GRAY

2 ERICSSON RADIO 4449 DETAIL
-- NOT TO SCALE



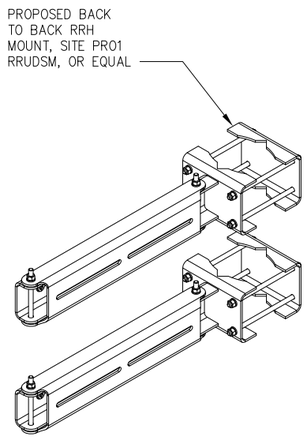
RADIO 8843 SPECIFICATIONS
- HxWxD, (INCHES) : 14.96"x13.97"x10.90"
- WEIGHT (LBS) : 71.87
- COLOR : GRAY

3 ERICSSON RADIO 8843 DETAIL
-- NOT TO SCALE

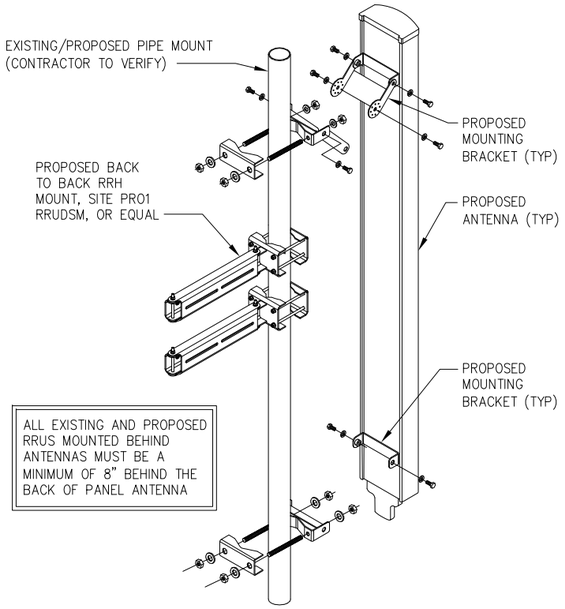


RADIO 4478-B14 SPECIFICATIONS
- HxWxD, (INCHES) : 18.1"x13.4"x8.26"
- WEIGHT (LBS) : 59.5
- COLOR : GRAY
- MOUNTING BRACKET: SXK1250244/1

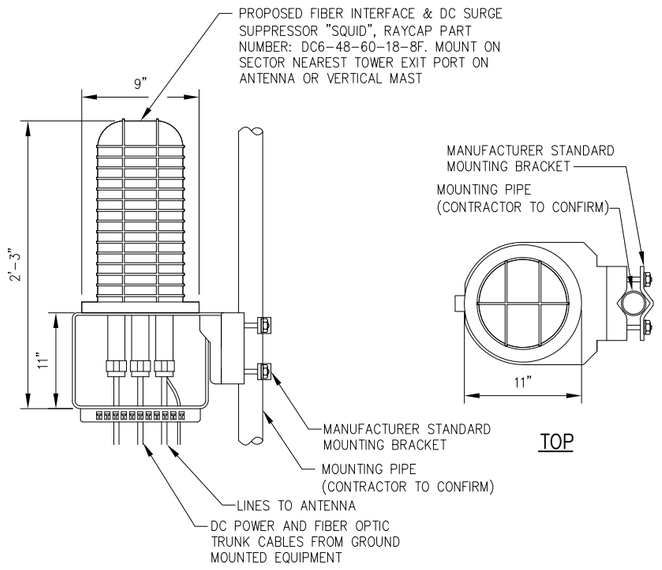
4 ERICSSON RADIO 4478-B14 DETAIL
-- NOT TO SCALE



5 BACK TO BACK PIPE MOUNT DETAIL
-- NOT TO SCALE



6 ANTENNA MOUNTING DETAIL
-- NOT TO SCALE



7 SQUID DETAIL
-- NOT TO SCALE

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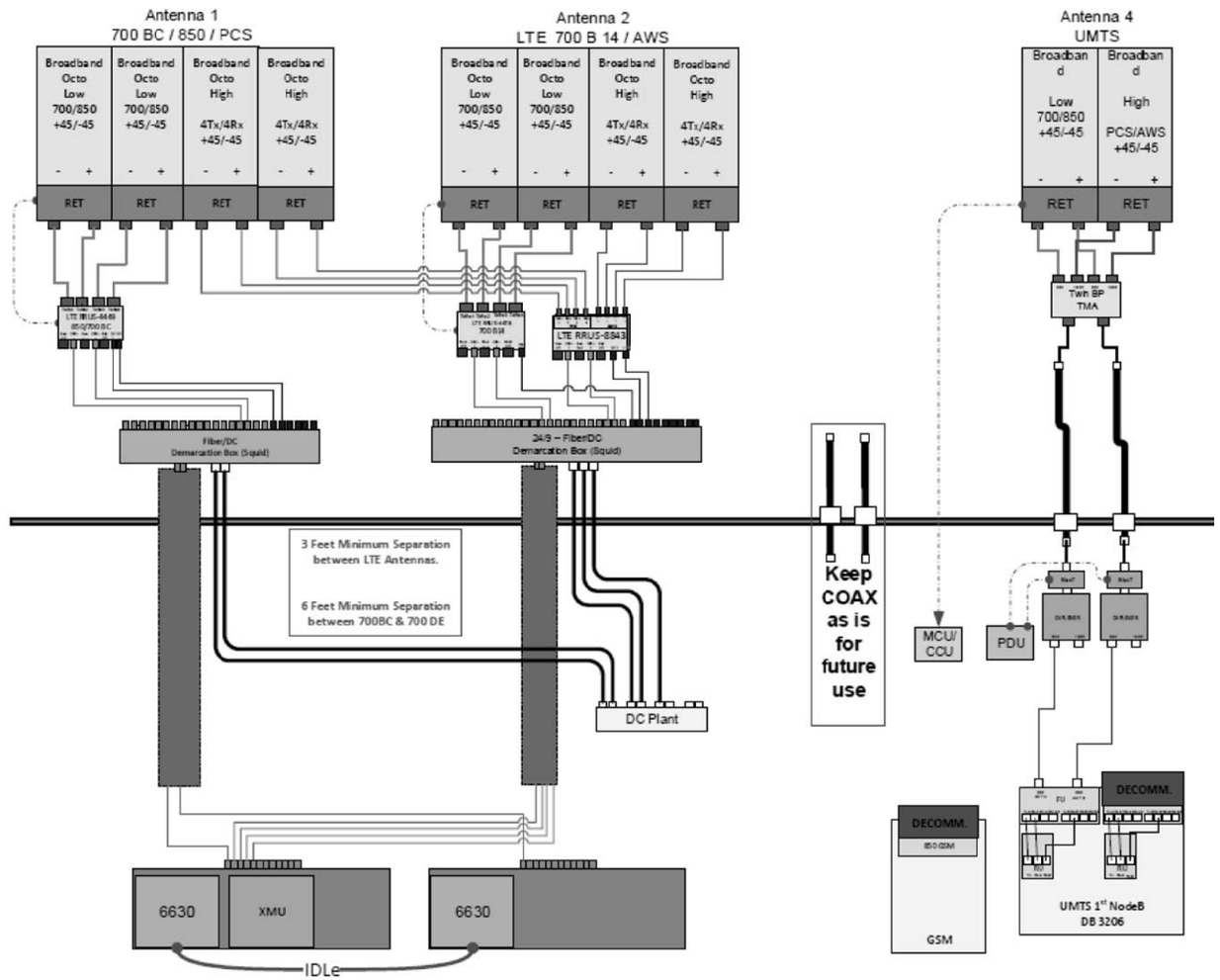
Drawing Title
EQUIPMENT DETAILS

Drawing Number
C5



ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
NOT TO SCALE

*BASED ON LTE RFDS, DATED 06/07/2019, V1.00

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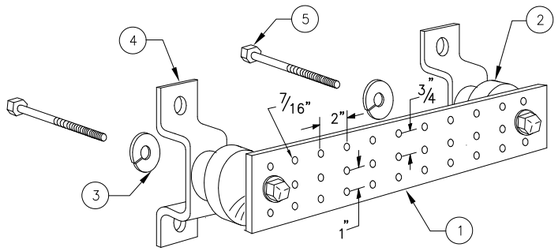
Drawing Title
PLUMBING DIAGRAM

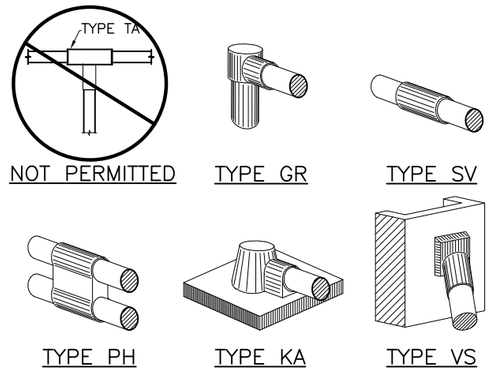
Drawing Number
C6



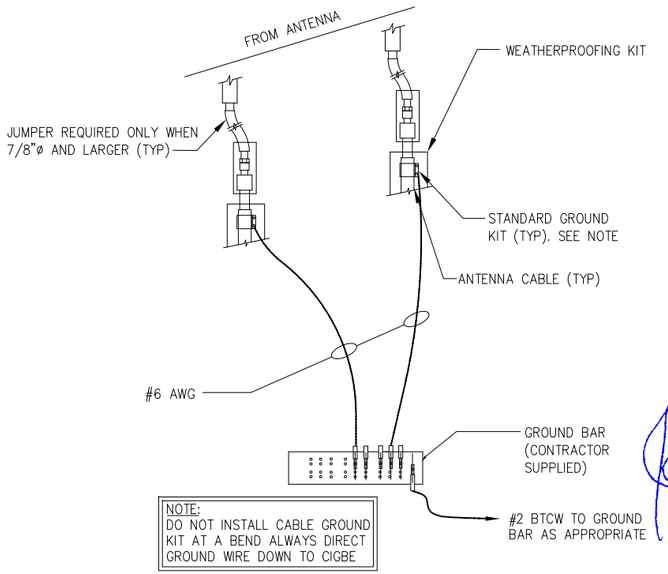
LEGEND

1 – SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2 – INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
3 – 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
4 – WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
5 – 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
6 – GROUND BAR SHALL BE SIZED TO ACCOMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
7 – GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
8 – GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
9 – HARDWARE DIAMETER SHALL BE MINIMUM 3/8"

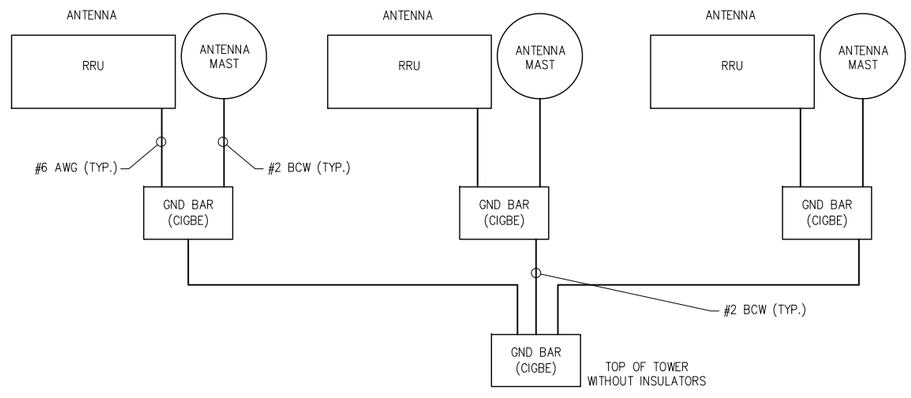
1 — GROUND BAR
NOT TO SCALE



2 — CADWELDS (TYPICAL)
NOT TO SCALE



3 — CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS
NOT TO SCALE



4 — SCHEMATIC DIAGRAM GROUNDING SYSTEM
NOT TO SCALE

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BIZRAH, CT 06334

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Drawing Title
GROUNDING DETAILS

Drawing Number
C7

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA–222 STANDARD, AWWA–D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA–1019–A–2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325–X. Fu=120 KSI, U.N.O.
   - U–BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT–TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE – HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE – HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE – RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"–20 LOW CARBON STEEL COPPER–FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI–318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE

SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8–16 UNC	8 FT–LBS	4 FT–LBS
1/2–13 UNC	18 FT–LBS	8 FT–LBS
5/8–11 UNC	35 FT–LBS	16 FT–LBS
3/4–10 UNC	50 FT–LBS	24 FT–LBS
1–8 UNC	110 FT–LBS	50 FT–LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

	RANGE	RECOMMENDED
EDGE DISTANCE – CL* BOLT TO END	2.0–4.0	3.0
EDGE DISTANCE – CL* BOLT TO SIDE	1.5–3.5	2.5
BOLT PITCH – CL* TO CL*	4.0–5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR–LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR–LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F–1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

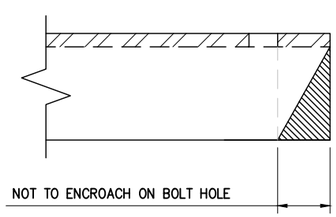
TOWER PLUMB & TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN–OF–THE–NUT" METHOD.
   c. MECHANICAL AND EPOXIED ANCHORAGES.
   d. FIBER REINFORCED POLYMER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



INFINIGY ENGINEERING PLLC
1033 WATERVLIET SHAKER RD
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Office # (518) 690-0790
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at&t

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
29460
LICENSED PROFESSIONAL ENGINEER
01–22–2020

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	LAM	01/22/20

Drawn: LAM Date: 01/22/20
Designed: TM Date: 01/22/20
Checked: TM Date: 01/22/20

Project Number: 1106–A0001–B

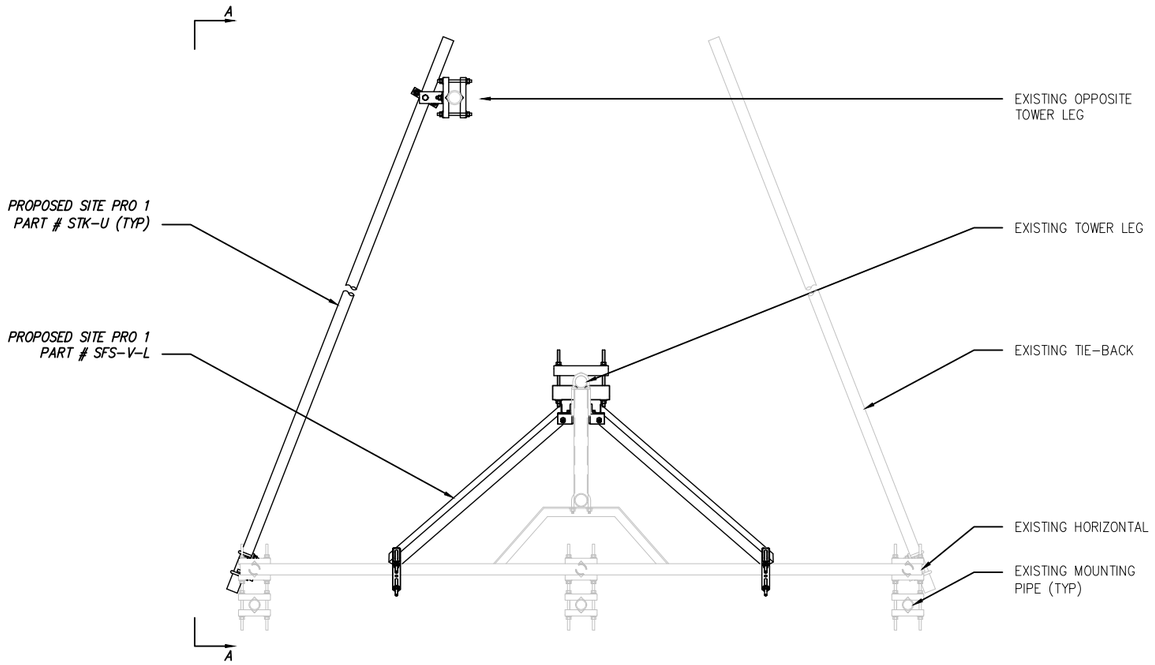
Project Title:
BOZRAH CDT TOWER
FA # 10035235
CTL02029
3 POLLY LANE
BOZRAH, CT 06334

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/22/20
0

Drawing Title
GENERAL NOTES

Drawing Number
S1

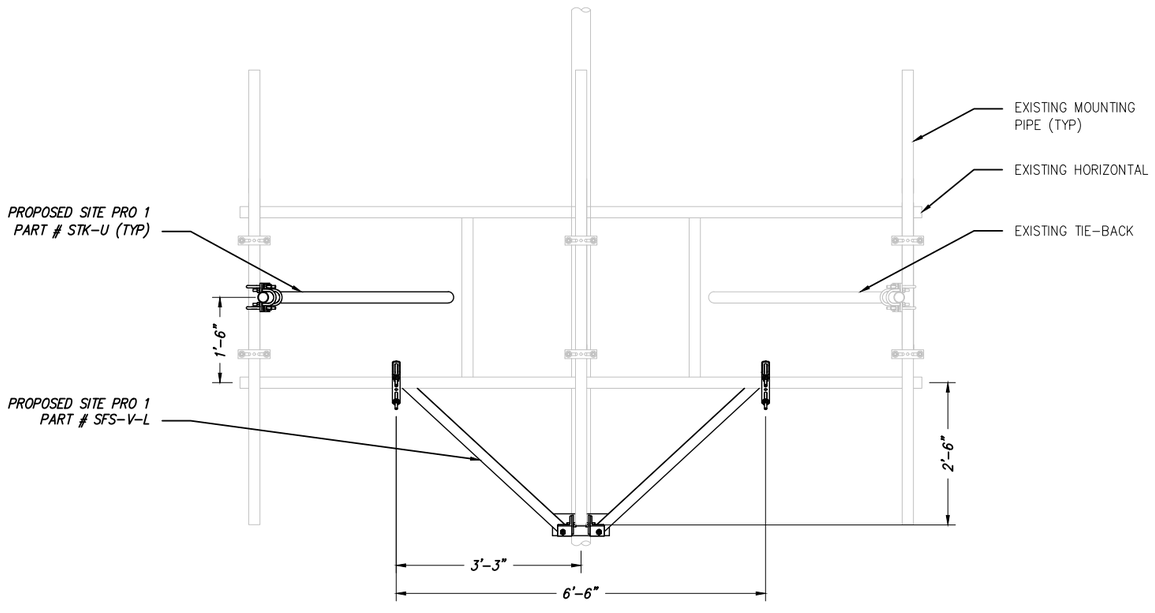


1 PLAN VIEW
SCALE: NOT TO SCALE

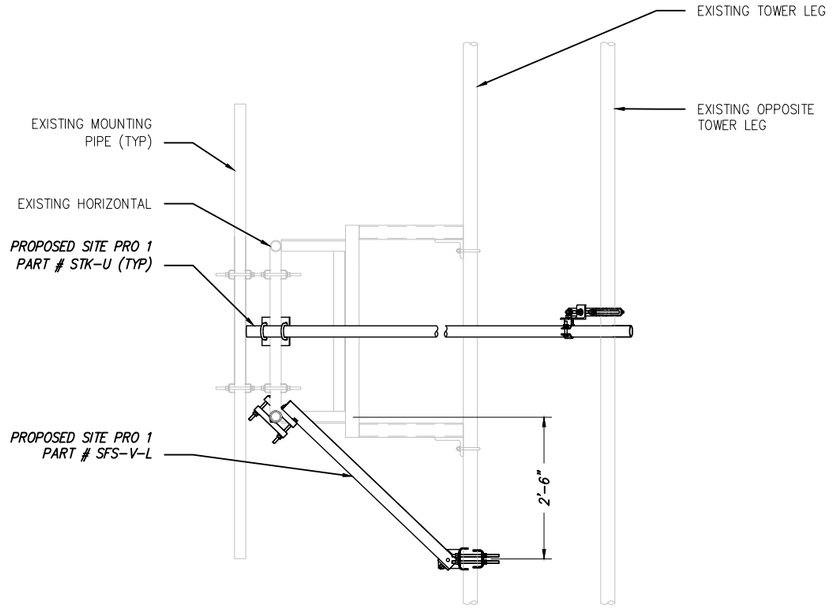
NOTES:
1. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, EXCEPT IF OTHERWISE NOTED.

3. PROPOSED STK-U TO BE ATTACHED TO OPPOSITE TOWER LEG.



2 ELEVATION VIEW
SCALE: NOT TO SCALE



3 SECTION A – A
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
JOSEPH R. JOHNSON
29460
LICENSED PROFESSIONAL ENGINEER
01-22-2020

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BOZRAH CDT TOWER
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3 POLLY LANE
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Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/22/20
0

Drawing Title
MODIFICATION DETAILS

Drawing Number
S2

MODIFIED 187' GUYED TOWER

SITE; BOZRAH POLLY LANE

BOZRAH, CONNECTICUT 06429
NEW LONDON COUNTY
LAT: 41° 34' 27.51"; LONG: -72° 12' 01.41"

PJF PAUL J. FORD & COMPANY
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Phone 614.221.6679 www.pauljford.com

EVEREST INFRASTRUCTURE PARTNERS
1435 BEDFORD AVENUE SUITE 108 PITTSBURG, PA 15219
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PROJECT CONTACTS

CLIENT:
EVEREST INFRASTRUCTURE PARTNERS
CONTACT: MICHAEL CULBERT AT
MICHAEL.CULBERT@EVERESTINFRASTRUCTURE.COM
PH: (781) 820-9120

ENGINEER OF RECORD:
PJFTELECOM@PAULJFORD.COM

WIND DESIGN DATA	
REFERENCE STANDARD	ANSI/TIA-222-G-2-2009
LOCAL CODE	2018 CONNECTICUT BUILDING CODE (2015 IBC)
ULTIMATE WIND SPEED (3-SECOND GUST)	135 MPH
CONVERTED NOMINAL WIND SPEED (3-SECOND GUST)	104 MPH
ICE THICKNESS	0.75 IN
ICE WIND SPEED	50 MPH
SERVICE WIND SPEED	60 MPH
RISK CATEGORY	II
EXPOSURE CATEGORY	B
MAXIMUM TOPOGRAPHIC FACTOR, K_{ZT}	1.0

SHEET INDEX	
SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
MI-1	MI CHECKLIST AND NOTES
N-1	NOTES
N-2	NOTES
S-1	TOWER ELEVATION
S-2	BASE FOUNDATION REINFORCING

TOWER MANUFACTURER: FRED A NUDD CORPORATION
TOWER MANUFACTURER #: 02-8869-1
FOUNDATION MAPPING: TEP PROJECT #080004.46E

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM PAUL J. FORD & COMPANY TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. FOR REQUESTED QUALIFIED ENGINEERING SERVICES, PLEASE CONTACT PJFMOD@PAULJFORD.COM.

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
No. PEN 22731
LICENSED PROFESSIONAL ENGINEER
03.13.2020

REV	DATE	DESCRIPTION
1	03-12-2020	NO CHANGE

SITE; BOZRAH POLLY LANE
BOZRAH, CONNECTICUT
MODIFIED 187' GUYED TOWER

PROJECT No:	00019-0431.002.8800
DRAWN BY:	RMK
DESIGNED BY:	ADP
CHECKED BY:	JPJ
DATE:	3-09-2020

TITLE SHEET

T-1

00019-0431.002 R1.DWG

POST-MODIFICATION CHECKLIST

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
		PRE-CONSTRUCTION
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT
NA	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE THE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT. SEE SHOP DRAWING NOTES.
NA	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	FABRICATOR CERTIFIED WELD INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE TESTING AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL WITH A YIELD STRENGTH GREATER THAN 36 KSI AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	FABRICATOR NDE INSPECTION	A VISUAL OBSERVATION OF A PORTION OF THE EXISTING STRUCTURE (AS NOTED ON THESE DRAWINGS) IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)	A VISUAL OBSERVATION OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
		CONSTRUCTION
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	POST INSTALLED ANCHOR ROD VERIFICATION	ANCHOR ROD INSTALLATION SHALL INCLUDE VERIFICATION BY LETTER AND PHOTOGRAPHIC DOCUMENTATION.
NA	BASE PLATE GROUT VERIFICATION	A LETTER FROM THE GENERAL CONTRACTOR SHALL BE PROVIDED TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS INSTALLED IN ACCORDANCE WITH INDUSTRY STANDARD FOR INCLUSION IN THE MI REPORT.
NA	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT. PRE, DURING AND POST WELD INSPECTION IS REQUIRED.
NA	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED FOR FIELD PUNCHED/DRILLED HOLES.
NA	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY GUY CABLE FOR INCLUSION IN THE MI REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD DUE TO FIELD CONDITIONS.
NA	MAGNI 565 COATING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY MAGNI 565 COATING WAS APPLIED IN ACCORDANCE PER ASTM F1136.
NA	MICROPILE / ROCK ANCHOR	THE GENERAL CONTRACTOR SHALL PROVIDE INSTALLER'S DRILLING AND INSTALLATION LOGS AND QA/QC DOCUMENTATION TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
		POST-CONSTRUCTION
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
NA	POST INSTALLED ANCHOR ROD PULL TESTING	POST INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH INDUSTRY STANDARD AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
NA	POST INSTALLED MICROPILE / ROCK ANCHOR TESTING	POST INSTALLED ANCHORS SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH SPECIFICATION STATED ON MICROPILE/ROCK ANCHOR NOTES.

NOTE: X DENOTES A DOCUMENT NEEDED FROM THE CONTRACTOR FOR THE MI REPORT
NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

MODIFICATION INSPECTION NOTES:

GENERAL
THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY.

MI INSPECTOR
THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO THE OWNER.

GENERAL CONTRACTOR
THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH INDUSTRY STANDARD.

RECOMMENDATIONS
THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLE 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI
IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, THE TOWER OWNER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF THE TOWER OWNER CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MI'S
IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH THE EOR TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH OWNER'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

PHOTOGRAPHS
BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE COORDINATE WITH THE MI.

SHOP DRAWINGS
EOR APPROVED SHOP DRAWINGS CAN BE PROVIDED AS AN ADDITIONAL SCOPE OF SERVICE. IF REQUIRED, PLEASE CONTACT PJF FOR ADDITIONAL INFORMATION.

REV	DATE	DESCRIPTION
1	03-12-2020	NO CHANGE

PJF PAUL J. FORD & COMPANY
250 E Broad St. Ste 600 · Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

EVEREST INFRASTRUCTURE PARTNERS
1435 BEDFORD AVENUE SUITE 108 PITTSBURG, PA 15219
PH: (781) 780-9120

SITE; BOZRAH POLLY LANE
BOZRAH, CONNECTICUT
MODIFIED 187' GUYED TOWER

PROJECT No:	00019-0431.002.8800
DRAWN BY:	RMK
DESIGNED BY:	ADP
CHECKED BY:	JPJ
DATE:	3-09-2020

MI CHECKLIST AND NOTES

MI-1

00019-0431.002 R1.DWG

GENERAL NOTES:

1. THIS TOWER MODIFICATION DRAWING IS BASED UPON A STRUCTURAL ANALYSIS PERFORMED BY PAUL J. FORD AND COMPANY DATED 3-09-2020.

2. PAUL J. FORD AND COMPANY HAS NOT PERFORMED A FIELD VISIT TO VERIFY THE EXISTING TOWER MEMBER SIZES AND DIMENSIONS. THE MODIFICATIONS SHOWN ON THESE PAGES WERE DEVELOPED USING INFORMATION PROVIDED TO US BY EVEREST INFRASTRUCTURE PARTNERS.

3. THE CONTRACTOR IS EXPECTED TO PERFORM A SITE VISIT BEFORE FABRICATING ANY MATERIAL. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT AS REPRESENTED ON THESE DRAWINGS, PAUL J. FORD AND COMPANY SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE STRUCTURAL SIGNIFICANCE OF THE DEVIATION.

4. THE CONTRACTOR MUST BE EXPERIENCED IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED ON THESE DRAWINGS. BY ACCEPTANCE OF THIS PROJECT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED TO DO THIS WORK IN THE JURISDICTION IN WHICH THE WORK IS TO BE PERFORMED.

5. THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.

6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS AND PRECAUTIONS IN CONNECTION WITH THE WORK.

7. INSPECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH LOCAL BUILDING CODES.

CONSTRUCTION NOTES:

1. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION)

2. ANY GALVANIZED SURFACE THAT IS SCRATCHED OR DAMAGED DUE TO THE CONTRACTORS EFFORTS, SHALL BE REPAIRED WITH A COLD GALVANIZING COMPOUND CONFORMING TO ASTM A780.

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SITE; BOZRAH POLLY LANE
BOZRAH, CONNECTICUT
MODIFIED 187' GUYED TOWER

PROJECT No:	00019-0431.002.8800
DRAWN BY:	RMK
DESIGNED BY:	ADP
CHECKED BY:	JPJ
DATE:	3-09-2020

NOTES

N-1

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
No. PEN 22731
LICENSED PROFESSIONAL ENGINEER
03.13.2020

REV	DATE	DESCRIPTION
1	03-12-2020	NO CHANGE

00019-0431.002 R1.DWG

GEOTECHNICAL AND SOIL NOTES:

1. THIS FOUNDATION DESIGN WAS BASED ON GEOTECHNICAL INVESTIGATION REPORT NO. 080004.46E BY TOWER ENGINEERING PROFESSIONALS DATED AUGUST 24, 2009. THE CONTRACTOR SHALL REVIEW AND FOLLOW ALL RECOMMENDATIONS FOR CONSTRUCTION AND SOIL VERIFICATION AS LISTED IN THE GEOTECHNICAL REPORT. IF THE CONTRACTOR DISCOVERS ANY SUBSURFACE CONDITIONS THAT ARE NOT AS REPRESENTED IN THE GEOTECHNICAL REPORT, THE GEOTECHNICAL ENGINEER AND PAUL J. FORD AND COMPANY SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.

2. THE MATERIAL BELOW THE FOUNDATION SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER TO ACHIEVE ADEQUATE DESIGN CAPACITY.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318 (LATEST EDITION) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE" ACI 301 (LATEST EDITION).

2. CONCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
   A. 28 DAY COMPRESSIVE STRENGTH: 4500 PSI (MINIMUM)
   B. WATER CEMENT RATIO: 0.45 (MAXIMUM). CEMENT SHALL CONFORM TO ASTM C150. WATER SHALL BE CLEAN AND FREE FROM OILS, ACIDS, ALKALIS, AND ORGANIC MATERIALS. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE
   C. DENSITY: 150 PCF (MINIMUM)
   D. MAX COARSE AGGREGATE SIZE SHALL BE 3/4"
   E. AIR ENTRAINMENT: 6% ± 1.5%
   F. CONCRETE SHALL BE PROPORTIONED AND PRODUCED TO HAVE A SLUMP OF NOT MORE THAN 4" ± 1" OR 8" ± 1" FOR CONCRETE WITH VERIFIED SLUMP OF 2" TO 4" BEFORE ADDING HIGH-RANGE WATER-REDUCING ADMIXTURE OR PLASTICIZING ADMIXTURE.
   G. FLY ASH OR OTHER POZZOLANS CONFORMING TO ASTM C618 SHALL NOT EXCEED 25% OF CEMENTITIOUS MATERIALS BY WEIGHT.
   H. ADMIXTURES SHALL NOT CONTAIN CHLORIDE IONS UNLESS APPROVED BY THE ENGINEER OF RECORD.

3. WATER SHALL BE REMOVED FROM OPEN EXCAVATION PRIOR TO CONCRETE PLACEMENT. THE WATER MUST NOT BE ALLOWED TO WASH THE CEMENT FROM THE AGGREGATE.

4. CONCRETE SHALL BE POURED MONOLITHICALLY.

5. CONCRETE SHALL BE PLACED WITHIN 24 HOURS OF EXCAVATION INSPECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXPOSED EXCAVATIONS PRIOR TO CONCRETE PLACEMENT.

6. SAWCUTING OF THE SLAB IS PROHIBITED.

7. THE TOP OF THE CONCRETE SHALL BE SLOPED (APPROXIMATELY 1/8" PER FOOT) TO DRAIN. THE EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" BY 3/4" MINIMUM.

8. HOT WEATHER CONCRETE PLACEMENT SHALL COMPLY WITH ACI 305R. COLD WEATHER CONCRETE PLACEMENT SHALL COMPLY WITH ACI 306.1.

9. ALL CONCRETE SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION EQUIPMENT. VIBRATORS SHALL NOT BE USED TO TRANSPORT CONCRETE.

10. THE CONTRACTOR SHALL ASSIST TESTING AGENCY IN MAKING A MINIMUM OF (2) TEST CYLINDERS PER TEST. CONCRETE TESTS SHALL BE CONDUCTED FROM A MINIMUM OF (5) RANDOMLY SELECTED TRUCKLOADS PER DAY. IF FEWER THAN (5) TRUCKLOADS OF CONCRETE ARE USED, A TEST SHALL BE CONDUCTED FROM EACH TRUCKLOAD. TESTING AGENCY SHALL PERFORM STRENGTH TESTS IN ACCORDANCE WITH ACI 318.

CONCRETE REINFORCING STEEL NOTES:

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60 UNLESS NOTED OTHERWISE.

2. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES, UNLESS OTHERWISE NOTED.

3. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE IN ACCORDANCE WITH ACI 318 (LATEST EDITION) FOR HORIZONTAL MAT REINFORCING STEEL.

4. REINFORCING STEEL SHALL BE DETAILED, FABRICATED, BENT AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE AND ACI 315 (LATEST EDITION).

5. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC., NECESSARY TO SUPPORT REINFORCING STEEL. CHAIRS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL.

6. WELDING OF REINFORCING AND EMBEDMENTS IS PROHIBITED.

GENERAL FOUNDATION NOTES:

1. THE ADHESIVE EPOXY SHALL BE "HILTI HY 200" OR APPROVED EQUAL. THE CONTRACTOR SHALL FOLLOW ALL REBAR AND EPOXY MANUFACTURER RECOMMENDATIONS REGARDING HANDLING OF REBAR, EPOXY, ACCEPTABLE AMBIENT TEMPERATURE RANGE DURING INSTALLATION, PROPER PLACEMENT OF EPOXY INTO THE HOLE, ETC. THE HAMMER DRILLED HOLES IN THE CONCRETE SHALL BE CLEAN AND DRY, AND OTHERWISE PROPERLY PREPARED ACCORDING TO THE EPOXY MANUFACTURERS' INSTRUCTIONS, PRIOR TO PLACEMENT OF REBAR AND EPOXY.

2. IF DURING DRILLING EXISTING REBAR MATERIAL IS ENCOUNTERED, RELOCATE HOLE AND GROUT FILL IMPEDED HOLE WITH 5000 PSI NON-SHRINK GROUT. THE CONTRACTOR SHALL CONTACT PAUL J. FORD AND COMPANY TO DETERMINE THE SIGNIFICANCE IN DEVIATION.

3. ALL INTERFACES BETWEEN NEW AND EXISTING CONCRETE SHALL BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROX. 1/4" AND APPLY BONDING AGENT PRIOR TO PLACING NEW CONCRETE. BONDING AGENT SHALL BE "SIKA ARMATEC 110 EPOCEM" BY SIKA OR APPROVED EQUAL. THE BONDING AGENT SHALL BE USED IN ACCORDANCE WITH THE MANUFACTUER'S RECOMMENDATIONS.

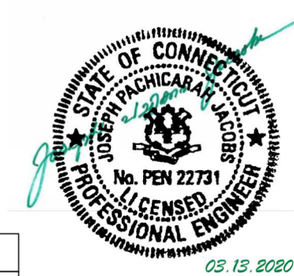
4. MODIFICATIONS TO THE EXISTING FOUNDATION AT THE BASE OF THE TOWER REQUIRE ADDITIONAL CONCRETE TO ENLARGE THE PLAN DIMENSION OF THE FOUNDATION. EXISTING GROUND RODS SHALL NOT BE EMBEDDED INTO THE NEW CONCRETE. NEW GROUND RODS MAY BE REQUIRED.

5. IF, DURING THE COURSE OF A FOUNDATION MODIFICATION, THE CONTRACTOR ENCOUNTERS EXISTING CONDUIT LOCATED WITHIN THE CONFINES OF THE EXISTING OR PROPOSED FOUNDATION CONCRETE, AND THIS CONDUIT IS NOT IN A LOCATION THAT IS SPECIFIED WITHIN THESE DESIGN DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY CONTACT PAUL J. FORD AND COMPANY FOR GUIDANCE BEFORE PROCEEDING WITH THE INSTALLATION OF THE PROPOSED FOUNDATION MODIFICATIONS. IF CONDUIT IS TO BE INSTALLED THROUGH THE EXISTING FOUNDATION OR PROPOSED FOUNDATION MODIFICATIONS AND HASN'T BEEN SPECIFIED WITHIN THESE DESIGN DRAWINGS THEN THE CONTRACTOR SHALL IMMEDIATELY CONTACT PAUL J. FORD AND COMPANY FOR GUIDANCE PRIOR TO PROCEEDING WITH THE INSTALLATION OF THE PROPOSED FOUNDATION MODIFICATIONS.

6. THE FOUNDATION DESIGN HAS BEEN DEVELOPED IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRINCIPLES AND PRACTICES WITHIN THE LIMITS OF THE SUBSURFACE DATA OBTAINED.

7. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. THE FOUNDATION CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL BUILDING OFFICIALS FOR ANY INSPECTIONS THAT MAY BE REQUIRED.

REV	DATE	DESCRIPTION
1	03-12-2020	NO CHANGE



PJF PAUL J. FORD & COMPANY
250 E Broad St. Ste 600 · Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

EVEREST INFRASTRUCTURE PARTNERS
1435 BEDFORD AVENUE SUITE 108 PITTSBURG, PA 15219
PH: (781) 780-9120

SITE; BOZRAH POLLY LANE
BOZRAH, CONNECTICUT
MODIFIED 187' GUYED TOWER

PROJECT No:	00019-0431.002.8800
DRAWN BY:	RMK
DESIGNED BY:	ADP
CHECKED BY:	JPJ
DATE:	3-09-2020

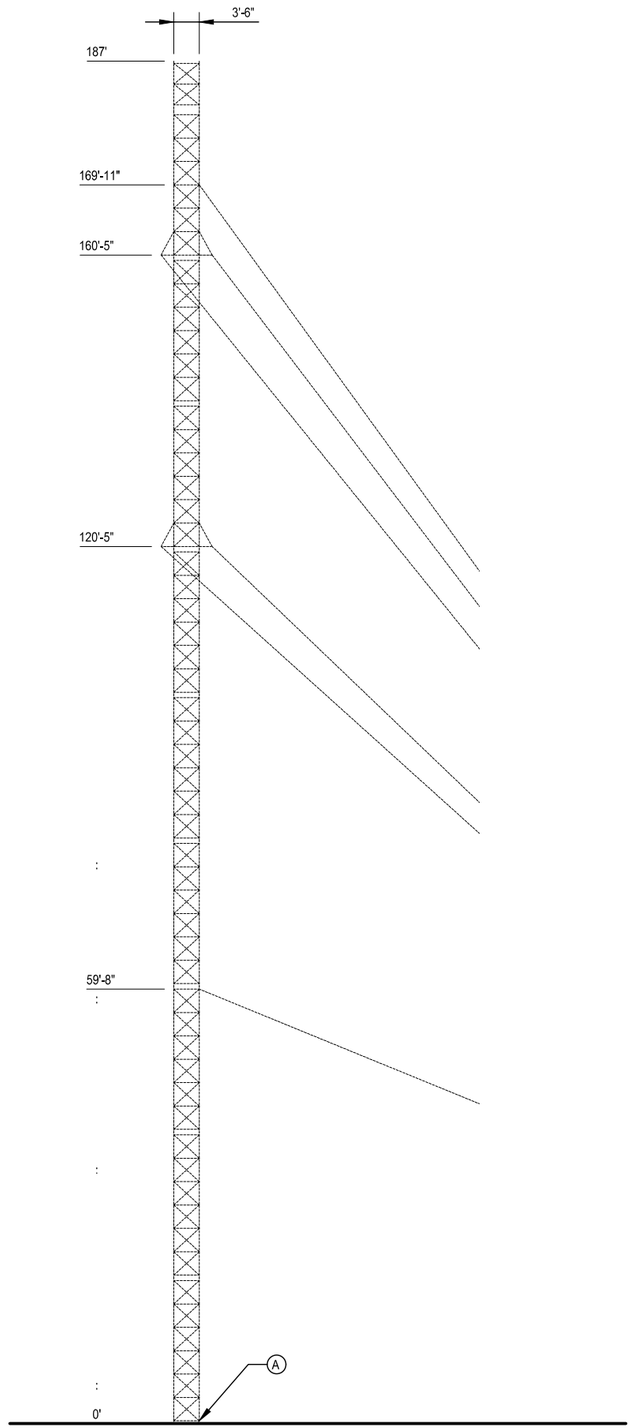
NOTES

N-2

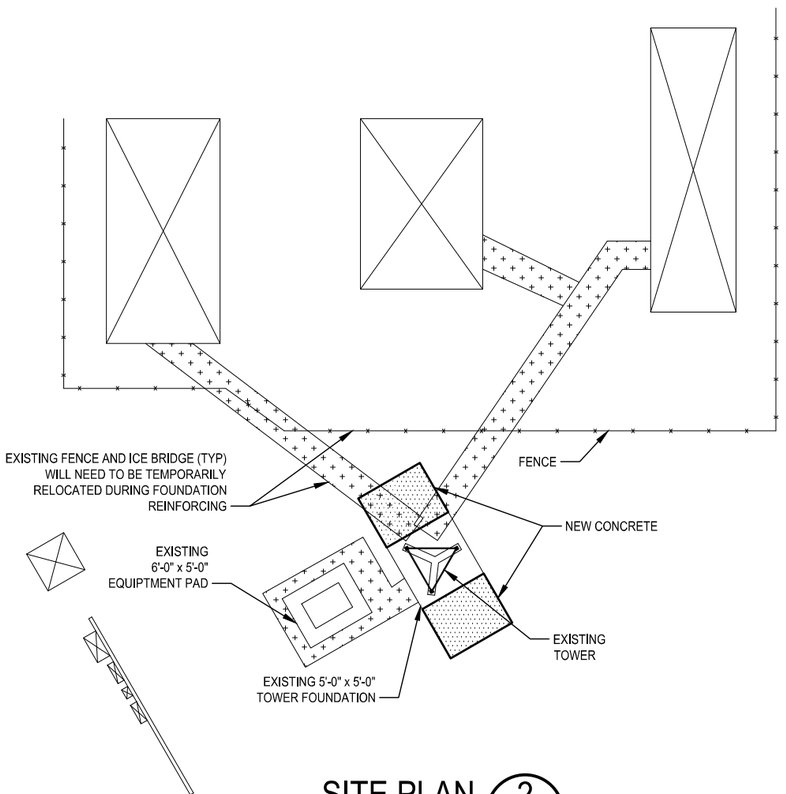
00019-0431.002 R1.DWG

TOWER MODIFICATION SCHEDULE

	ELEVATION	TOWER MODIFICATION DESCRIPTION	REFERENCE SHEETS
Ⓐ	BASE	ADD CONCRETE TO EXISTING BASE FOUNDATION	S-2



TOWER ELEVATION



SITE PLAN 2 / S-1

REV	DATE	DESCRIPTION
1	03-12-2020	NO CHANGE

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TOWER ELEVATION

S-1

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
No. PEN 22731
LICENSED PROFESSIONAL ENGINEER
03.13.2020

00019-0431.002 R1.DWG

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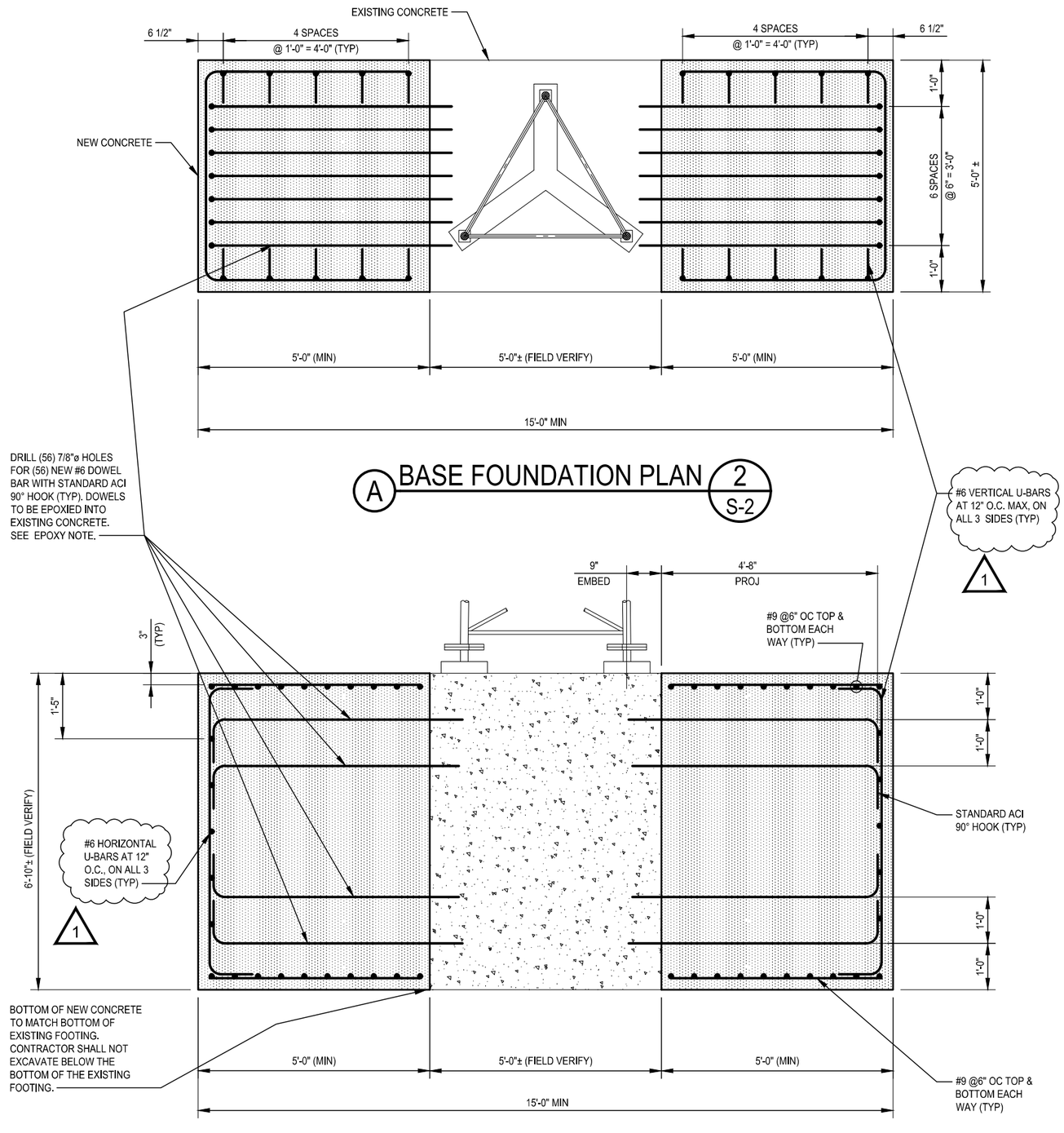

A BASE FOUNDATION PLAN 2 / S-2

A BASE FOUNDATION REINFORCING 1 / S-2

REV	DATE	DESCRIPTION
1	03-12-2020	ADDED VERTICAL AND HORIZONTAL BARS

SITE; BOZRAH POLLY LANE
BOZRAH, CONNECTICUT
MODIFIED 187' GUYED TOWER

PROJECT No:	00019-0431.002.8800
DRAWN BY:	RMK
DESIGNED BY:	ADP
CHECKED BY:	JPJ
DATE:	3-09-2020

BASE FOUNDATION REINFORCING

S-2

STATE OF CONNECTICUT
JOSEPH PACHIGARAH JACOBS
No. PEN 22731
LICENSED PROFESSIONAL ENGINEER
03.13.2020

00019-0431.002 R1.DWG