February 2, 2021

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:	**2 Hinckley Hill Road, Norwich, CT 06365**
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 115-feet on an existing 150'-foot Self Support Tower, owned by , Everest Infrastructure Partners, at 100 Summer Street, Suite 1600, Boston, MA 02110. AT&T now intends to add one (1) 8' CCI DMP65R-BU8DA Panel Antennas, installed in position [4]. In addition, AT&T intends to remove three (3) Remote Radio Units add one (1) RRUS-E2 B29 and one (1) RRUS-4449 B2/B12 in positions [2+4], all sectors, for a total of six (6) new RRUs. AT&T is also proposing to add three (3) Raycap Squids with one (1) new fiber line and two (2) new DC Power Cables to their equipment configuration. All of the changes will take place on a new antenna mount. This modification/proposal includes B2, B5, and B12 hardware that is both 4G(LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

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. § 16-5I0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Richard Shuck – Town Zoning Enforcement Officer, City of Norwich, CT at 100 Broadway, Norwich, CT 06360 and Peter A. Nystrom – Mayor, City of Norwich, CT at 100 Broadway, Norwich, CT 06360. A copy of this letter is being sent to the property owner 17 Mile Real Estate LLC at 69 Harry Street, Conshohocken, PA 19428, as well as a copy to the tower owner, Everest Infrastructure Partners, at 100 Summer Street, Suite 1600, Boston, MA 02110.

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

- **EM-AT&T-104-020509 -** AT&T Wireless notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road, Norwich, Connecticut. (filing stated Preston, but was incorrect, actual location is Norwich)
- **EM-AT&T-104-020509 -** AT&T Wireless notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road, Norwich, Connecticut.
- **EM-CING-104-080709 –** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road, Norwich, Connecticut.
- **EM-CING-104-121114 –** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road, Norwich, Connecticut.
- **EM-AT&T-104-170103 -** AT&T notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road, Norwich, Connecticut
- **EM-AT&T-104-180328 -** AT&T notice of intent to modify an existing telecommunications facility located at 2 Hinckley Hill Road Rear, Norwich, 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 115-foot level of the 150-foot Self Support 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,

Kristina Cottone

CC w/enclosures:
Richard Shuck – Town Zoning Enforcement Officer, City of Norwich, CT
Peter A. Nystrom – Mayor, City of Norwich, CT
17 Mile Real Estate LLC- Property Owner
Everest Infrastructure Partners – Tower Owner

FILE COPY

CITY OF NORWICH
CONNECTICUT

CERTIFIED MAIL
#Z149574215

SITE PLAN APPROVAL

Date: Sept. 22, 1999

Site Development Plan #805 - Cordless Data Transfer, Inc.; construction of 140-ft. wireless communications tower & equipment pad.

Name: Cordless Data Transfer, Inc.
Box 363
17 Ridgewood Drive
Marlborough, CT 06447

Location: in the Town of Norwich off 2 Hinckley Hill, Preston.

The final plan of Site Development Plan # 805 as referenced above was considered at the regular meeting of the Commission on the City Plan held on Sept. 21, 1999.

After careful consideration the Commission voted unanimously to approve the site plan.

A coastal site plan review was not required in accordance with Chapter 444 of the Connecticut General Statutes. After careful consideration the Commission on the City Plan voted n/a to n/a the coastal site plan application.

The approval of the above referenced site plan is subject to the following conditions and/or modifications:

1. Bond in the amount of $25,000.00 for site work shall be posted prior to endorsement of the plan;
2. Bond in the amount of $12,000.00 for removal of the facility in the event it is abandoned shall be posted prior to endorsement of the plan;
3. Pursuant to Sec. 7.5.6(a) of the Zoning Regulations, the fifty (50) foot buffer around the tower shall be provided in perpetuity and noted on the plan prior to endorsement of the plan;
4. The Memorandum of Management Agreement shall be filed with the City Clerk prior to endorsement of the plan.

Please provide the following plans, bond, and deeds to the Planning Department, 23 Union Street, within 60 days after the date of approval.

1. Two sets of mylars and six sets of prints of the final site plan; one set of the mylars shall be produced by one of the following processes: wash-off photographic polyester film; fixed line photographic polyester film; original ink drawing on polyester film or linen. All modifications of approval shall be incorporated into the final plan.

2. All R.O.W. and/or easement deeds associated with the site plan.

3. Post a passbook or surety bond with the Commission on the City Plan in a form acceptable to the Corporation Counsel and in the amount approved by the Director of Public Works.

The Chairperson of the Commission on the City Plan must endorse the site plans prior to filing the approved plans with the City Clerk and prior to the issuance of a zoning compliance permit and a building permit.

The Planning Department will contact you after the site plan has been endorsed by the chairperson. You are responsible for filing the plan with the City Clerk within 90 days after approval by the Commission; provided acceptable plans and bond are submitted by the applicant. If an acceptable plan is not filed with the clerk within the 90 day period, the Commission's approval is invalid.

CHANGES TO THE APPROVED PLAN: All site activities shall be constructed in accordance with the approved plans, specifications and documents of record. Any change to the plans must be approved by the Commission on the City Plan.

EROSION AND SEDIMENT CONTROL: The erosion and sediment control measures shall be installed in accordance with the Connecticut Guidelines for Erosion and Sediment Control; such measures shall be installed prior to site disturbance. Additional erosion and sediment control measures shall be provided if determined to be necessary by a representative of the Planning Department or Public Works Department.

PRE-CONSTRUCTION CONFERENCE: It is the responsibility of the permittee or the contractor to schedule a pre-construction conference with the Planning Department for the purpose of inspecting the installation of the erosion and sediment control measures, and Public Works to set up an inspection schedule for road, drainage and sidewalk construction. City Hall telephone number: Planning Department, (860) 823-3766; Public Works Department, (860) 823-3798.

PUBLIC UTILITIES: Contact the Department of Public Utilities for an inspection of the sewer, water, electric and gas lines installation.

TIME PERIODS: Site plan approval is valid for one year, however, an extension to such approval may be granted by the Commission. In addition, all construction in the approved site plan must be completed within 5 years, based on Section 8.3.i of the Connecticut General Statutes.

CONSTRUCTION REQUIREMENTS: The following conditions shall be a requirement of the approval:

1. Unsuitable material in the pavement areas must be removed and replaced with suitable material as directed by the City Road Inspector.

2. If blasting is required for construction, a pre-blast survey shall be conducted prior to blasting. Contact the Fire Marshal, telephone (860) 887-2780.

ZONING PERMIT: After the plan has been filed, a zoning permit can be applied for through the zoning enforcement officer: telephone (860) 823-3766.

BUILDING PERMIT: For any building construction, please submit building plans and separate application to the building inspector.

CERTIFICATE OF COMPLIANCE will be issued after all parking, sidewalks, recreation area (for multi-family development) and public safety concerns are addressed in accordance with the approved site plan.

CERTIFICATE OF OCCUPANCY is issued by the building inspector. Certificate of Compliance must be obtained prior to the issuance of a Certificate of Occupancy.

AS-BUILT DRAWING may be required by the Commission prior to the final release of the bond.

Congratulations on the successful completion of your application.

Peter W. Davis
Planning Director

cc-Director of Public Works
-City Engineer
-Building Inspector
-John F. Bilda, Engineer, Public Utilities Dept.

Memorandum of Management Agreement

This memorandum evidences that a Management Agreement was made and entered into by a written Agreement dated July 1, 1997 by and between Mr. James C. Irwin and Mrs. LaVerne G. Irwin, jointly, as individuals (Owners) and owners of property located in the City of Norwich, Connecticut located on assessors map # 27 Block 1 lot 6A, and Cordless Data Transfer, Incorporated, a Connecticut corporation (CDT) maintaining an office at 17 Ridgewood Drive Marlborough, Connecticut 06447.

Such Agreement provides in part that Owners grant CDT unrestricted access to the proposed tower site on the property for the installation, operation and maintenance of driveways, electric and telephone service and the tower structure and equipment and facilities located thereon.

The term of this agreement is for a period of five years with three five year, automatic extension periods at the option of the Owners.

CDT and the Owners hereby acknowledge that the City of Norwich has a rule or regulation requiring that the tower structure be removed should it become abandoned or cease to be used as a licensed communications facility. Should the tower become abandoned and it is not removed as per the City's regulations, then, the Owners and CDT grant to the City of Norwich permission to enter the property and remove the tower structure.

Complete copies of this Management Agreement are on file at the office of Cordless Data Transfer, Inc. at 17 Ridgewood Drive, Marlborough, Connecticut 06447.

In witness whereof the parties have executed this Memorandum as of the date below.

Cordless Data Transfer, Inc. (CDT)

Robert J. Francis, President

9/15/99
Date

James C. Irwin

James C. Irwin

15 Sept 1999
Date

LaVerne G. Irwin

LaVerne G. Irwin

15 Sept 1999
Date

APPROVED AS TO FORM
And Legality On 10/20/99
Corporation Counsel
City of Norwich, Conn.

RECEIVED FOR RECORD AT NORWICH, CONN.
ON 10-20-99 AT 4:15 P M.
Attest Beverly C. Muldoon, Town Clerk

294593

Received for Record in Norwich, CT
Oct 20 1999 at 4:15 PM, and
Recorded in Norwich Land Records in
Vol 1463 at Page 219
Beverly C. MacDonald Town Clerk

My neighbor - Lot 10 - Frances

Bd 10 -

2 HINCKLEY HILL RD REAR

Location	2 HINCKLEY HILL RD REAR	**Mblu**	119/ 1/ 1/ 1/
Acct#	0052410001	**Owner**	17 MILE REAL ESTATE LLC
Assessment	$847,500	**Appraisal**	$1,210,700
PID	5166	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,043,100	$167,600	$1,210,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$730,200	$117,300	$847,500

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	17 MILE REAL ESTATE LLC	**Sale Price**	$1,803,750
Address	69 HARRY ST CONSHOHOCKEN, PA 19428	**Certificate**	
		Book & Page	3118/0239
		Sale Date	04/30/2019
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
17 MILE REAL ESTATE LLC	$1,803,750		3118/0239	00	04/30/2019
IRWIN LAVERNE G	$0		3118/0227	1S	04/30/2019
IRWIN JAMES C +	$0		2379/0094	1A	05/08/2007
IRWIN JAMES C + LAVERENE G	$0		0532/0280	1A	05/01/1980

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplace (s)	
Whirlpool	
FPLG Gas	
FPLW Wood	
FPO	
Usrfld 107	
park	

Building Photo

(http://images.vgsi.com/photos/NorwichCTPhotos//\00\01\40\66.jpg)

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	
Usrfld 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	431V
Description	TEL REL TW M-00
Zone	R40
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	3.59
Frontage	0
Depth	0
Assessed Value	$117,300
Appraised Value	$167,600

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD4	Shed Comm. Wd.			128.00 S.F.	$1,300	1
SHD5	Shed Comm Mas			360.00 S.F.	$4,500	1
TWR	CELL TOWER			150.00 UNITS	$101,300	1
MSC5	ARRAYS			4.00 UNIT	$936,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,043,100	$167,600	$1,210,700
2018	$1,043,100	$167,600	$1,210,700
2017	$107,429	$170,714	$278,143

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$730,200	$117,300	$847,500
2018	$730,200	$117,300	$847,500

2017	$75,200	$119,500	$194,700

INFINIGY

Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Norwich SE

Site FA: 10071188

USID: 24530

2 Hinckley Hill Road, Preston, CT 6365

Latitude: Longitude: 72-03-48.23604 W

Structure Type: Self Support Tower

Report Date: September 28, 2020

Status: AT&T will be compliant with FCC rules on RF Exposure.

Table of Contents

1. Executive Summary:

Smartlink on behalf of AT&T has contracted Infinigy Solutions, LLC to determine whether the site Norwich SE located at 2 Hinckley Hill Road in Preston, 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.**

AT&T, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0174
	% Exposure	2.50 %
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0188
	% Exposure	0.53 %

2. Site Summary:

Site Information	
Site Name: Norwich SE	
Site Address: 2 Hinckley Hill Road, Preston, CT 6365	
Site Type: Self Support Tower	
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

Install a Yellow Caution 2B sign.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Antenna Gain	Operating Frequency/Technology	Rad Ctr (Ft)	Total ERP Power (Watts)
1	Alpha	AT&T	Powerwave	7770	11.46	850 MHz UMTS	117	293
2	Alpha	AT&T	CCI	OPA-65R-LCUU-H6	10.86	700 MHz LTE	118	1476
3a	Alpha	AT&T	KMW	EPBQ-654L8H6-B	12.36	700 MHz LTE	118	2951
3b	Alpha	AT&T	KMW	EPBQ-654L8H6-B	15.36	2100 MHz LTE	118	5070
3c	Alpha	AT&T	KMW	EPBQ-654L8H6-B	15.66	2300 MHz LTE	118	1285
4a	Alpha	AT&T	CCI	DMP65R-BU6DA	11.86	700 MHz LTE	118	1476
4b	Alpha	AT&T	CCI	DMP65R-BU6DA	12.46	850 MHz LTE	118	1000
4d	Alpha	AT&T	CCI	DMP65R-BU6DA	14.76	1900 MHz LTE	118	4842
5	Beta	AT&T	Powerwave	7770	12.46	850 MHz 5G	118	1000
6	Beta	AT&T	CCI	OPA-65R-LCUU-H6	11.46	850 MHz UMTS	117	293
7a	Beta	AT&T	KMW	EPBQ-654L8H6-B	10.86	700 MHz LTE	118	1476
7b	Beta	AT&T	KMW	EPBQ-654L8H6-B	12.36	700 MHz LTE	118	2951
7c	Beta	AT&T	KMW	EPBQ-654L8H6-B	15.36	2100 MHz LTE	118	5070
8a	Beta	AT&T	CCI	DMP65R-BU6DA	15.66	2300 MHz LTE	118	1285
8b	Beta	AT&T	CCI	DMP65R-BU6DA	11.86	700 MHz LTE	118	1476
8c	Beta	AT&T	CCI	DMP65R-BU6DA	12.46	850 MHz LTE	118	1000
8d	Beta	AT&T	CCI	DMP65R-BU6DA	14.76	1900 MHz LTE	118	4842
9	Gamma	AT&T	Powerwave	7770	12.46	850 MHz 5G	118	1000
10	Gamma	AT&T	CCI	OPA-65R-LCUU-H6	11.46	850 MHz UMTS	117	293
11a	Gamma	AT&T	KMW	EPBQ-654L8H6-B	10.86	700 MHz LTE	118	1476
11b	Gamma	AT&T	KMW	EPBQ-654L8H6-B	12.36	700 MHz LTE	118	2951
11c	Gamma	AT&T	KMW	EPBQ-654L8H6-B	15.36	2100 MHz LTE	118	5070
12b	Gamma	AT&T	CCI	DMP65R-BU6DA	15.66	2300 MHz LTE	118	1285
12b	Gamma	AT&T	CCI	DMP65R-BU6DA	11.86	700 MHz LTE	118	1476
12c	Gamma	AT&T	CCI	DMP65R-BU6DA	12.46	850 MHz LTE	118	1000

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.

AT&T Exposure Analysis By Band

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0066**
	% Exposure	**1.32%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0066**
	% Exposure	**0.29%**

AT&T 850 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	**0.19%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0011**
	% Exposure	**0.04%**

AT&T 850 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0003**
	% Exposure	**0.06%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0003**
	% Exposure	**0.01%**

AT&T 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0036**
	% Exposure	**0.36%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0036**
	% Exposure	**0.07%**

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0057**
	% Exposure	**0.57%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0057**
	% Exposure	**0.11%**

AT&T 2300 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0014**
	% Exposure	**0.14%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0014**
	% Exposure	**0.03%**

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

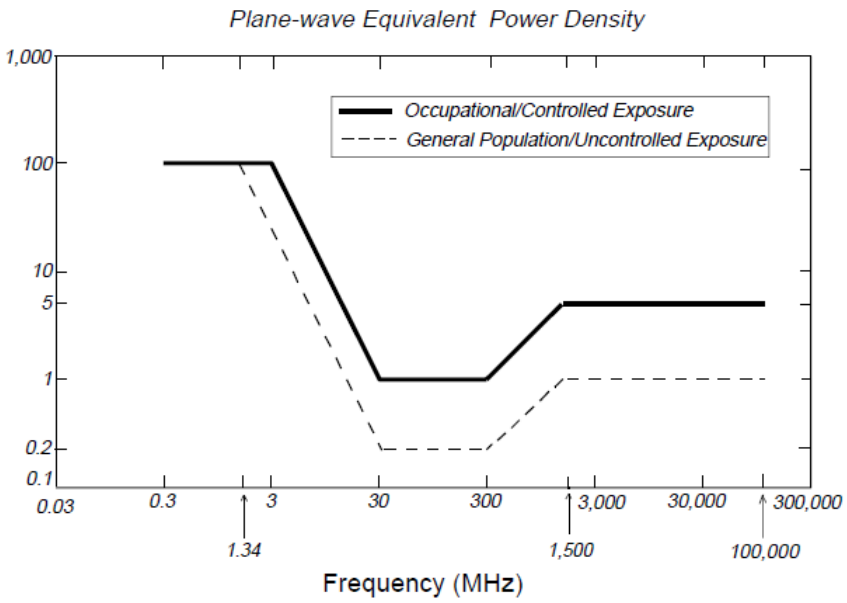
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(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.

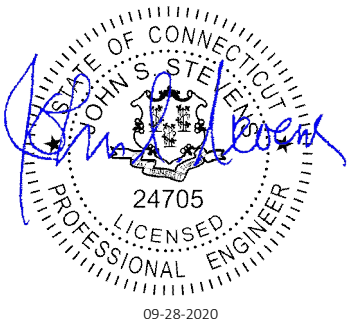
8. Preparer Certification

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 *9/28/2020*

Signature Date



PAUL J. FORD & COMPANY

Report Date: January 27, 2021

Client: Smartlink, LLC
85 Rangeway Road
Billerica, MA 01862
Attn: Kristina Cottone
kristina.cottone@smartlinkgroup.com

Structure: Existing 150-ft Self Support Tower
Site Name: Norwich CDT
Site Reference #: CTL05468
Site Address: 2 Hinckley Hill Rd
City, County, State: Preston, New London County, CT
Latitude, Longitude: 41.514848°, -72.061688°

PJF Project: A80620-0021.001.8700 R1

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

Analysis Criteria:

This analysis utilizes an ultimate 3-second gust wind speed of 135 mph (converted to an equivalent 105 mph nominal 3-second gust wind speed per Section 1609.3.1 for use with TIA-222 G) as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Proposed Appurtenance Loads:

The structure was analyzed with the proposed loading configuration shown in Table 1 combined with the other considered equipment shown in Table 2 of this report.

Summary of Analysis Results:

Existing Structure: Pass – 82.5%
Existing Foundation: Pass - 63.9%

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and Smartlink, LLC. 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

Anna Trudo, E.I.
Structural Designer
atrudo@pauljford.com

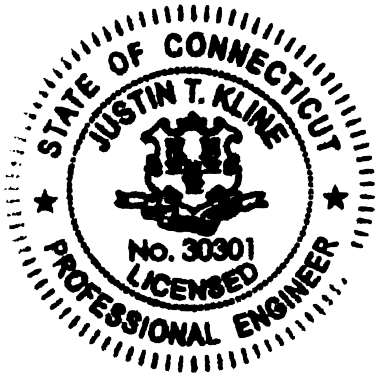


TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Self Support tower designed by Fred A Nudd Corporation in July of 1999. All tower geometry and foundation information were taken from a previous structural analysis by Fred Nudd Corp dated 6/11/2018.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Risk Category:	II
Wind Speed:	105 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)
115.0	115.0	2	cci antennas	DMP65R-BU6D w/ Mount Pipe	6 8 2	1-1/4 DC cable Fiber
		1	cci antennas	DMP65R-BU8D w/ Mount Pipe		
		2	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe		
		1	cci antennas	OPA-65R-LCUU-H8 w/ Mount Pipe		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 32 B66A		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS E2 B29		
		2	kmw communications	EPBQ-654L8H6-L2 w/ Mount Pipe		
		1	kmw communications	EPBQ-654L8H8-L2 w/ Mount Pipe		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		4	raycap	DC6-48-60-18-8F		
		3	tower mounts	Site Pro 1 VFA12-HD		

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)
150.0	150.0	3	ericsson	4449	6 2	1-5/8 1-1/4
		3	ericsson	AIR 32 B2A B66AA w/ Mount Pipe		
		3	ericsson	KRY 112		
		3	rfs celwave	APXVAA24_43-U-A20 w/ Mount Pipe		
		1	tower mounts	Sector Mount [SM 802-3]		
140.0	140.0	6	alcatel lucent	RRH 2x50 - 2300	4	1-1/4
		3	alcatel lucent	RRH 8x200-25		
		6	alcatel lucent	RRU 4x45 RRH		
		3	commscope	DT465B-2XR w/ Mount Pipe		
		3	rfs celwave	APXV9ERR18-C-A20 w/ Mount Pipe		
		1	tower mounts	Sector Mount [SM 802-3]		
127.5	127.5	3	commscope	BSAMNT-SBS-2-2 (Mount Bracket)	12 1	1-5/8 Hybrid
		6	commscope	JAHH-65B-R3B w/ Mount Pipe		
		6	rfs celwave	APL868013 w/ Mount Pipe		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	rfs celwave	FDJ85020Q7-S1		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Sector Mount [SM 802-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Source
Tower Structural Analysis	Nudd Corp #118-23067 dated 6/11/2018	on file

3.1) Analysis Method

tnxTower (version 8.0.7.5), 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 were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) All tower geometry and foundation information were taken from a previous structural analysis by Fred Nudd Corp dated 6/11/2018.
4) The antenna feedlines are assumed to be placed as indicated in Appendix B.

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 (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
T1	150 - 140	Leg	Pipe 2.875" x 0.203" (2.5 STD)	2	-9296	82352	11.3	Pass
T2	140 - 120	Leg	Pipe 2.875" x 0.203" (2.5 STD)	21	-44448	62849	70.7	Pass
T3	120 - 100	Leg	Pipe 4.5" x 0.237" (4 STD)	46	-92147	138323	66.6	Pass
T4	100 - 80	Leg	Pipe 5.563" x 0.258" (5 STD)	73	-131814	184369	71.5	Pass
T5	80 - 60	Leg	Pipe 6.625" x 0.280" (6 STD)	94	-169240	248502	68.1	Pass
T6	60 - 40	Leg	Pipe 8.625" x 0.322" (8 STD)	115	-204675	387837	52.8	Pass
T7	40 - 20	Leg	Pipe 8.625" x 0.50" (8 XS)	136	-236205	550137	42.9	Pass
T8	20 - 0	Leg	Pipe 8.625" x 0.50" (8 XS)	151	-268118	550137	48.7	Pass
T1	150 - 140	Diagonal	L 1.5 x 1.5 x 3/16	9	-2280	6096	37.4 38.2 (b)	Pass
T2	140 - 120	Diagonal	L 2 x 2 x 3/16	24	-5924	12216	48.5 77.8 (b)	Pass
T3	120 - 100	Diagonal	L 2 x 2 x 3/16	53	-6181	9453	65.4 82.5 (b)	Pass
T4	100 - 80	Diagonal	L 2.5 x 2.5 x 3/16	80	-6574	11448	57.4 71.5 (b)	Pass
T5	80 - 60	Diagonal	L 3 x 3 x 3/16	101	-6834	14985	45.6 71.2 (b)	Pass
T6	60 - 40	Diagonal	L 3 x 3 x 3/16	122	-7455	11963	62.3 76.1 (b)	Pass
T7	40 - 20	Diagonal	L 3.5 x 3.5 x 1/4	143	-8223	16716	49.2 56.9 (b)	Pass
T8	20 - 0	Diagonal	L 3.5 x 3.5 x 1/4	158	-8826	13815	63.9	Pass
T1	150 - 140	Top Girt	L 3 x 3 x 1/4	6	-652	23047	2.8 8.2 (b)	Pass
							Summary	
						Leg (T4)	71.5	Pass
						Diagonal (T3)	82.5	Pass
						Top Girt (T1)	8.2	Pass
						Bolt Checks	82.5	Pass
						Rating =	82.5	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	-	66.3	Pass
1	Base Foundation Soil Interaction	-	63.9	Pass

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

Structure Rating (max from all components) =	82.5%

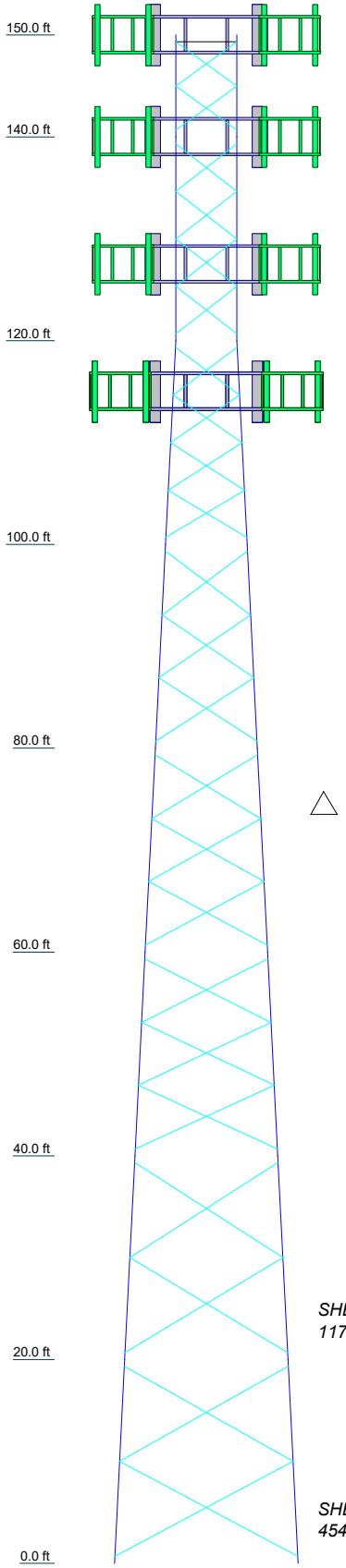
4.1) Recommendations

The tower and its foundation(s) have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section		T1	T2	T3	T4	T5	T6	T7	T8	
Legs			Pipe 2.875" x 0.203" (2.5 STD)	Pipe 4.5" x 0.237" (4 STD)	Pipe 5.563" x 0.258" (5 STD)	Pipe 6.625" x 0.280" (6 STD)	Pipe 8.625" x 0.322" (8 STD)	Pipe 8.625" x 0.50" (8 XS)		
Leg Grade					A500M-54					
Diagonals		A	L 2 x 2 x 3/16		L 2.5 x 2.5 x 3/16	L 3 x 3 x 3/16		L 3.5 x 3.5 x 1/4		
Diagonal Grade					A36					
Top Girts		L 3 x 3 x 1/4			N.A.					
Face Width (ft)	18	6	8		10	12		14	16	
# Panels @ (ft)		2 @ 4.33333	8 @ 4.66667		9 @ 6.22222			4 @ 9.33333		
Weight (lb)	17909.5	463.5	870.9	1254.8	1632.6	2183.8	2948.0	4212.4	4343.5	



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L 1.5 x 1.5 x 3/16		

MATERIAL STRENGTH

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

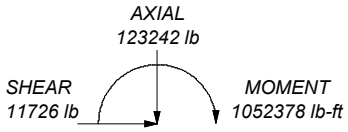
TOWER DESIGN NOTES

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 105 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: 82.5%

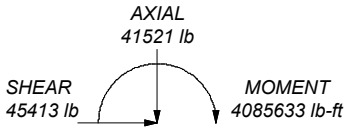
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 275933 lb
SHEAR: 27889 lb

UPLIFT: -243383 lb
SHEAR: 25088 lb



TORQUE 7218 lb-ft
50 mph WIND - 0.750 in ICE



TORQUE 18894 lb-ft
REACTIONS - 105 mph WIND

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
Phone: 614-221-6679
FAX:

Job: ***150-ft Norwich, CT S/S Tower***		
Project: ***PJF 80620-0021.001.8700***		
Client: Smartlink	Drawn by: Anna Trudo	App'd:
Code: TIA-222-G	Date: 01/27/21	Scale: NTS
Path: G:\TOWER\806_SmartLink\2020\80620-0021_Preston_CT\80620-0021.001.8700_SA\tnx\80620-0021.001.8700.eri		Dwg No. E-1

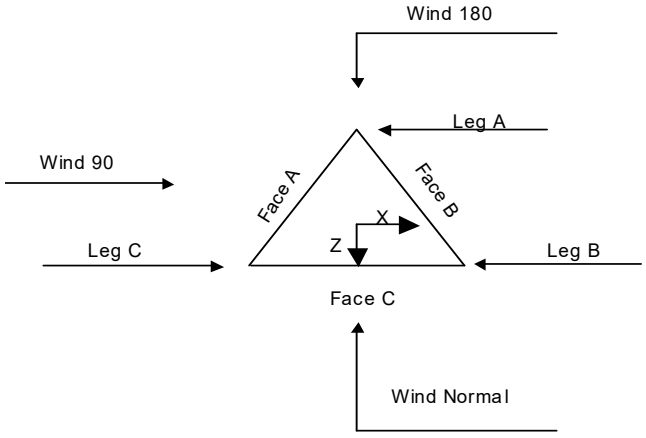
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150.00 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 6.00 ft at the top and 18.00 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) ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
3) Basic wind speed of 105 mph.
4) Structure Class II.
5) Exposure Category B.
6) Topographic Category 1.
7) Crest Height 0.00 ft.
8) Nominal ice thickness of 0.750 in.
9) Ice thickness is considered to increase with height.
10) Ice density of 56 pcf.
11) A wind speed of 50 mph is used in combination with ice.
12) Temperature drop of 50 °F.
13) Deflections calculated using a wind speed of 60 mph.
14) Pressures are calculated at each section.
15) Stress ratio used in tower member design is 1.
16) 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



Triangular Tower

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	150.00-140.00			6.00	1	10.00
T2	140.00-120.00			6.00	1	20.00
T3	120.00-100.00			6.00	1	20.00
T4	100.00-80.00			8.00	1	20.00
T5	80.00-60.00			10.00	1	20.00
T6	60.00-40.00			12.00	1	20.00
T7	40.00-20.00			14.00	1	20.00
T8	20.00-0.00			16.00	1	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	150.00-140.00	4.33	X Brace	No	No	8.000	8.000
T2	140.00-120.00	4.67	X Brace	No	No	8.000	8.000
T3	120.00-100.00	4.67	X Brace	No	No	8.000	8.000
T4	100.00-80.00	6.22	X Brace	No	No	8.000	8.000
T5	80.00-60.00	6.22	X Brace	No	No	8.000	8.000
T6	60.00-40.00	6.22	X Brace	No	No	8.000	8.000
T7	40.00-20.00	9.33	X Brace	No	No	8.000	8.000
T8	20.00-0.00	9.33	X Brace	No	No	8.000	8.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150.00-140.00	Pipe	Pipe 2.875" x 0.203" (2.5 STD)	A500M-54 (54 ksi)	Single Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T2 140.00-120.00	Pipe	Pipe 2.875" x 0.203" (2.5 STD)	A500M-54 (54 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T3 120.00-100.00	Pipe	Pipe 4.5" x 0.237" (4 STD)	A500M-54 (54 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T4 100.00-80.00	Pipe	Pipe 5.563" x 0.258" (5 STD)	A500M-54 (54 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T5 80.00-60.00	Pipe	Pipe 6.625" x 0.280" (6 STD)	A500M-54 (54 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T6 60.00-40.00	Pipe	Pipe 8.625" x 0.322" (8 STD)	A500M-54 (54 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T7 40.00-20.00	Pipe	Pipe 8.625" x 0.50" (8 XS)	A500M-54 (54 ksi)	Single Angle	L 3.5 x 3.5 x 1/4	A36 (36 ksi)
T8 20.00-0.00	Pipe	Pipe 8.625" x 0.50" (8 XS)	A500M-54 (54 ksi)	Single Angle	L 3.5 x 3.5 x 1/4	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 150.00-140.00	Single Angle	L 3 x 3 x 1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	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 150.00-140.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T2 140.00-120.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T3 120.00-100.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T4 100.00-80.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T5 80.00-60.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T6 60.00-40.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T7 40.00-20.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000
T8 20.00-0.00	0.00	0.000	A36 (36 ksi)	1.03	1	1.1	0.000	0.000	36.000

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 150.00-140.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 140.00-120.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 120.00-100.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 100.00-80.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 80.00-60.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 60.00-40.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 40.00-20.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 20.00-0.00	Yes	No	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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 150.00-140.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 140.00-120.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 120.00-100.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 100.00-80.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 80.00-60.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 60.00-40.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 40.00-20.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 20.00-0.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1 150.00-140.00	Flange	0.750 A325N	4	0.500 A325N	1	0.500 A325N	1	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 140.00-120.00	Flange	1.000 A325N	4	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 120.00-100.00	Flange	1.000 A325N	6	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

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.*
T4 100.00-80.00	Flange	1.000 A325N	8	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T5 80.00-60.00	Flange	1.250 A325N	8	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T6 60.00-40.00	Flange	1.250 A325N	8	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T7 40.00-20.00	Flange	1.250 A325N	8	0.750 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T8 20.00-0.00	Flange	1.500 A325N	0	0.750 A325N	1	0.000 A325N	0	0.625 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

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*
Safety Line 3/8	C	No	No	Ar (CaAa)	150.00 - 0.00	0.000	-0.5	1	1	0.375	0.375		0.22
1.5" flat Cable Ladder Rail	C	No	No	Af (CaAa)	150.00 - 0.00	0.000	-0.25	2	2	30.000 1.500	1.500		1.80
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	150.00 - 0.00	0.000	-0.25	6	6	1.980	1.980		0.82
AVA6-50(1-1/4") **	C	No	No	Ar (CaAa)	150.00 - 0.00	0.000	-0.25	2	2	1.560	1.560		0.45
1.5" flat Cable Ladder Rail	A	No	No	Af (CaAa)	140.00 - 0.00	0.000	-0.25	2	2	30.000 1.500	1.500		1.80
AVA6-50(1-1/4") **	A	No	No	Ar (CaAa)	140.00 - 0.00	0.000	-0.25	4	4	1.560	1.560		0.45
1.5" flat Cable Ladder Rail	B	No	No	Af (CaAa)	127.50 - 0.00	0.000	-0.25	2	2	30.000 1.500	1.500		1.80
LDF7-50A(1-5/8") **	B	No	No	Ar (CaAa)	127.50 - 0.00	0.000	-0.25	13	13	1.000 1.980	1.980		0.82
1.5" flat Cable Ladder Rail	C	No	No	Af (CaAa)	115.00 - 0.00	0.000	0.25	2	2	30.000 1.500	1.500		1.80
AVA6-50(1-1/4")	C	No	No	Ar (CaAa)	115.00 - 0.00	0.000	0.25	6	6	1.560	1.560		0.45
DC (3/4")	C	No	No	Ar (CaAa)	115.00 - 0.00	0.000	0.25	2	2	1.090	0.750		0.33
DC (3/4")	C	No	No	Ar (CaAa)	115.00 - 0.00	0.000	0.25	6	6	1.090	0.001		0.33
Fiber (3/8")	C	No	No	Ar (CaAa)	115.00 - 0.00	0.000	0.25	2	1	1.090	0.001		0.33
3" (Nominal) Conduit	C	No	No	Ar (CaAa)	115.00 - 0.00	0.000	0.25	1	1	3.500	3.500		1.49

Discrete Tower Loads

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* *lb*
Sector Mount [SM 802-3]	C	None		0.000	150.00	No Ice	25.34	25.34	930
						1/2" Ice	33.44	33.44	1388
						1" Ice	41.56	41.56	1977
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	A	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	186 322 469
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	B	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	186 322 469
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	C	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	186 322 469
RRUS 4449 B71/B12	A	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.57 1.73 1.90	75 95 117
RRUS 4449 B71/B12	B	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.57 1.73 1.90	75 95 117
RRUS 4449 B71/B12	C	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.57 1.73 1.90	75 95 117
AIR 32 B66AA B2P w/ Mount Pipe	A	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	7.09 7.56 8.02	6.37 7.23 7.97	129 193 263
AIR 32 B66AA B2P w/ Mount Pipe	B	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	7.09 7.56 8.02	6.37 7.23 7.97	129 193 263
AIR 32 B66AA B2P w/ Mount Pipe	C	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	7.09 7.56 8.02	6.37 7.23 7.97	129 193 263
KRY 112 144/2	A	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	10 14 19
KRY 112 144/2	B	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	10 14 19
KRY 112 144/2	C	From Leg	4.00 0 0	0.000	150.00	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	10 14 19
**									
Sector Mount [SM 802-3]	C	None		0.000	140.00	No Ice	25.34	25.34	930
						1/2" Ice	33.44	33.44	1388
						1" Ice	41.56	41.56	1977
DT465B-2XR_TIA w/ Mount Pipe	A	From Leg	4.00 0 0	0.000	140.00	No Ice 1/2" Ice 1" Ice	9.34 9.91 10.44	7.63 8.82 9.72	84 160 245
DT465B-2XR_TIA w/ Mount Pipe	B	From Leg	4.00 0 0	0.000	140.00	No Ice 1/2" Ice 1" Ice	9.34 9.91 10.44	7.63 8.82 9.72	84 160 245

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert*	*Azimuth Adjustment*	*Placement*		*C_AA_A Front*	*C_AA_A Side*	*Weight*
			ft	*°*	*ft*		*ft^2*	*ft^2*	*lb*
			ft						
			ft						
DT465B-2XR_TIA w/ Mount Pipe	C	From Leg	4.00	0.000	140.00	No Ice	9.34	7.63	84
			0			1/2" Ice	9.91	8.82	160
			0			1" Ice	10.44	9.72	245
TD-RRH8x20-25	A	From Leg	4.00	0.000	140.00	No Ice	4.05	1.53	70
			0			1/2" Ice	4.30	1.71	97
			0			1" Ice	4.56	1.90	128
TD-RRH8x20-25	B	From Leg	4.00	0.000	140.00	No Ice	4.05	1.53	70
			0			1/2" Ice	4.30	1.71	97
			0			1" Ice	4.56	1.90	128
TD-RRH8x20-25	C	From Leg	4.00	0.000	140.00	No Ice	4.05	1.53	70
			0			1/2" Ice	4.30	1.71	97
			0			1" Ice	4.56	1.90	128
(2) 1900 MHz 4x45W RRH	A	From Leg	4.00	0.000	140.00	No Ice	2.32	2.24	60
			0			1/2" Ice	2.53	2.44	83
			0			1" Ice	2.74	2.65	110
(2) 1900 MHz 4x45W RRH	B	From Leg	4.00	0.000	140.00	No Ice	2.32	2.24	60
			0			1/2" Ice	2.53	2.44	83
			0			1" Ice	2.74	2.65	110
(2) 1900 MHz 4x45W RRH	C	From Leg	4.00	0.000	140.00	No Ice	2.32	2.24	60
			0			1/2" Ice	2.53	2.44	83
			0			1" Ice	2.74	2.65	110
APXV9ERR18-C-A20_TIA w/ Mount Pipe	A	From Leg	4.00	0.000	140.00	No Ice	8.26	7.47	95
			0			1/2" Ice	8.82	8.66	166
			0			1" Ice	9.35	9.56	244
APXV9ERR18-C-A20_TIA w/ Mount Pipe	B	From Leg	4.00	0.000	140.00	No Ice	8.26	7.47	95
			0			1/2" Ice	8.82	8.66	166
			0			1" Ice	9.35	9.56	244
APXV9ERR18-C-A20_TIA w/ Mount Pipe	C	From Leg	4.00	0.000	140.00	No Ice	8.26	7.47	95
			0			1/2" Ice	8.82	8.66	166
			0			1" Ice	9.35	9.56	244
(2) RRH2X50-800	A	From Leg	4.00	0.000	140.00	No Ice	1.70	1.28	53
			0			1/2" Ice	1.86	1.43	70
			0			1" Ice	2.03	1.58	90
(2) RRH2X50-800	B	From Leg	4.00	0.000	140.00	No Ice	1.70	1.28	53
			0			1/2" Ice	1.86	1.43	70
			0			1" Ice	2.03	1.58	90
(2) RRH2X50-800	C	From Leg	4.00	0.000	140.00	No Ice	1.70	1.28	53
			0			1/2" Ice	1.86	1.43	70
			0			1" Ice	2.03	1.58	90
**									
Sector Mount [SM 802-3]	C	None		0.000	127.50	No Ice	25.34	25.34	930
						1/2" Ice	33.44	33.44	1388
						1" Ice	41.56	41.56	1977
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.000	127.50	No Ice	5.50	4.38	96
			0			1/2" Ice	5.97	4.84	169
			0			1" Ice	6.45	5.30	254
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.000	127.50	No Ice	5.50	4.38	96
			0			1/2" Ice	5.97	4.84	169
			0			1" Ice	6.45	5.30	254

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert*	*Azimuth Adjustment*	*Placement*		*C_AA_A Front*	*C_AA_A Side*	*Weight*
			ft	*°*	*ft*		*ft^2*	*ft^2*	*lb*
			ft						
			ft						
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.000	127.50	No Ice	5.50	4.38	96
			0			1/2" Ice	5.97	4.84	169
			0			1" Ice	6.45	5.30	254
BSAMNT-SBS-2-2 (Mount Bracket)	A	From Leg	4.00	0.000	127.50	No Ice	0.00	0.00	67
			0			1/2" Ice	0.00	0.00	88
			0			1" Ice	0.00	0.00	108
BSAMNT-SBS-2-2 (Mount Bracket)	B	From Leg	4.00	0.000	127.50	No Ice	0.00	0.00	67
			0			1/2" Ice	0.00	0.00	88
			0			1" Ice	0.00	0.00	108
BSAMNT-SBS-2-2 (Mount Bracket)	C	From Leg	4.00	0.000	127.50	No Ice	0.00	0.00	67
			0			1/2" Ice	0.00	0.00	88
			0			1" Ice	0.00	0.00	108
RFV01U-D1A	A	From Leg	4.00	0.000	127.50	No Ice	1.88	1.25	84
			0			1/2" Ice	2.05	1.39	103
			0			1" Ice	2.22	1.54	124
RFV01U-D1A	B	From Leg	4.00	0.000	127.50	No Ice	1.88	1.25	84
			0			1/2" Ice	2.05	1.39	103
			0			1" Ice	2.22	1.54	124
RFV01U-D1A	C	From Leg	4.00	0.000	127.50	No Ice	1.88	1.25	84
			0			1/2" Ice	2.05	1.39	103
			0			1" Ice	2.22	1.54	124
RFV01U-D2A	A	From Leg	4.00	0.000	127.50	No Ice	1.88	1.01	70
			0			1/2" Ice	2.05	1.14	87
			0			1" Ice	2.22	1.28	106
RFV01U-D2A	B	From Leg	4.00	0.000	127.50	No Ice	1.88	1.01	70
			0			1/2" Ice	2.05	1.14	87
			0			1" Ice	2.22	1.28	106
RFV01U-D2A	C	From Leg	4.00	0.000	127.50	No Ice	1.88	1.01	70
			0			1/2" Ice	2.05	1.14	87
			0			1" Ice	2.22	1.28	106
FDJ85020Q7-S1	A	From Leg	4.00	0.000	127.50	No Ice	0.96	0.36	24
			0			1/2" Ice	1.09	0.43	33
			0			1" Ice	1.24	0.52	45
FDJ85020Q7-S1	B	From Leg	4.00	0.000	127.50	No Ice	0.96	0.36	24
			0			1/2" Ice	1.09	0.43	33
			0			1" Ice	1.24	0.52	45
FDJ85020Q7-S1	C	From Leg	4.00	0.000	127.50	No Ice	0.96	0.36	24
			0			1/2" Ice	1.09	0.43	33
			0			1" Ice	1.24	0.52	45
(2) APL868013 w/ Mount Pipe	A	From Leg	4.00	0.000	127.50	No Ice	2.63	4.13	30
			0			1/2" Ice	3.07	4.60	64
			0			1" Ice	3.53	5.09	106
(2) APL868013 w/ Mount Pipe	B	From Leg	4.00	0.000	127.50	No Ice	2.63	4.13	30
			0			1/2" Ice	3.07	4.60	64
			0			1" Ice	3.53	5.09	106
(2) APL868013 w/ Mount Pipe	C	From Leg	4.00	0.000	127.50	No Ice	2.63	4.13	30
			0			1/2" Ice	3.07	4.60	64
			0			1" Ice	3.53	5.09	106
DB-T1-6Z-8AB-0Z	C	From Leg	4.00	0.000	127.50	No Ice	4.80	2.00	44

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* *lb*
			0			1/2"	5.07	2.19	80
			0			Ice	5.35	2.39	120
						1" Ice			
**									
Site Pro 1 VFA12-HD	A	From Leg	2.00	0.000	115.00	No Ice	13.20	9.20	658
			0			1/2"	19.50	14.60	804
			0			Ice	25.80	19.50	1015
						1" Ice			
Site Pro 1 VFA12-HD	B	From Leg	2.00	0.000	115.00	No Ice	13.20	9.20	658
			0			1/2"	19.50	14.60	804
			0			Ice	25.80	19.50	1015
						1" Ice			
Site Pro 1 VFA12-HD	C	From Leg	2.00	0.000	115.00	No Ice	13.20	9.20	658
			0			1/2"	19.50	14.60	804
			0			Ice	25.80	19.50	1015
						1" Ice			
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.000	115.00	No Ice	5.75	4.25	55
			0			1/2"	6.18	5.01	103
			0			Ice	6.61	5.71	157
						1" Ice			
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.000	115.00	No Ice	5.75	4.25	55
			0			1/2"	6.18	5.01	103
			0			Ice	6.61	5.71	157
						1" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.000	115.00	No Ice	5.75	4.25	55
			0			1/2"	6.18	5.01	103
			0			Ice	6.61	5.71	157
						1" Ice			
OPA-65R-LCUU-H8 w/ Mount Pipe	A	From Leg	4.00	0.000	115.00	No Ice	11.93	8.06	103
			0			1/2"	12.88	8.96	191
			0			Ice	13.84	9.89	292
						1" Ice			
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.00	0.000	115.00	No Ice	9.19	6.21	106
			0			1/2"	9.94	6.93	175
			0			Ice	10.71	7.66	256
						1" Ice			
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.000	115.00	No Ice	9.19	6.21	106
			0			1/2"	9.94	6.93	175
			0			Ice	10.71	7.66	256
						1" Ice			
EPBQ-654L8H8-L2 w/ Mount Pipe	A	From Leg	4.00	0.000	115.00	No Ice	14.86	6.25	119
			0			1/2"	15.72	7.02	228
			0			Ice	16.59	7.80	351
						1" Ice			
EPBQ-654L8H6-L2 w/ Mount Pipe	B	From Leg	4.00	0.000	115.00	No Ice	11.09	4.69	110
			0			1/2"	11.77	5.28	194
			0			Ice	12.46	5.89	291
						1" Ice			
EPBQ-654L8H6-L2 w/ Mount Pipe	C	From Leg	4.00	0.000	115.00	No Ice	11.09	4.69	110
			0			1/2"	11.77	5.28	194
			0			Ice	12.46	5.89	291
						1" Ice			
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.00	0.000	115.00	No Ice	15.89	7.89	139
			0			1/2"	16.81	8.74	252
			0			Ice	17.76	9.60	380
						1" Ice			
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.00	0.000	115.00	No Ice	11.96	5.97	115
			0			1/2"	12.70	6.63	201
			0			Ice	13.46	7.30	298
						1" Ice			
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.00	0.000	115.00	No Ice	11.96	5.97	115
			0			1/2"	12.70	6.63	201
			0			Ice	13.46	7.30	298
						1" Ice			
RRUS E2 B29	A	From Leg	4.00	0.000	115.00	No Ice	3.15	1.29	60

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert*	*Azimuth Adjustment*	*Placement*		C_AA_A *Front*	C_AA_A *Side*	*Weight*
			ft	°	*ft*		ft^2	ft^2	*lb*
			0			1/2" Ice	3.36	1.44	83
			0			1" Ice	3.59	1.60	110
RRUS E2 B29	B	From Leg	4.00	0.000	115.00	No Ice	3.15	1.29	60
			0			1/2" Ice	3.36	1.44	83
			0			1" Ice	3.59	1.60	110
RRUS E2 B29	C	From Leg	4.00	0.000	115.00	No Ice	3.15	1.29	60
			0			1/2" Ice	3.36	1.44	83
			0			1" Ice	3.59	1.60	110
RRUS 4449 B5/B12	A	From Leg	4.00	0.000	115.00	No Ice	1.97	1.41	71
			0			1/2" Ice	2.14	1.56	90
			0			1" Ice	2.33	1.73	111
RRUS 4449 B5/B12	B	From Leg	4.00	0.000	115.00	No Ice	1.97	1.41	71
			0			1/2" Ice	2.14	1.56	90
			0			1" Ice	2.33	1.73	111
RRUS 4449 B5/B12	C	From Leg	4.00	0.000	115.00	No Ice	1.97	1.41	71
			0			1/2" Ice	2.14	1.56	90
			0			1" Ice	2.33	1.73	111
RRUS 4478 B14	A	From Leg	4.00	0.000	115.00	No Ice	2.02	1.25	59
			0			1/2" Ice	2.20	1.40	77
			0			1" Ice	2.39	1.55	97
RRUS 4478 B14	B	From Leg	4.00	0.000	115.00	No Ice	2.02	1.25	59
			0			1/2" Ice	2.20	1.40	77
			0			1" Ice	2.39	1.55	97
RRUS 4478 B14	C	From Leg	4.00	0.000	115.00	No Ice	2.02	1.25	59
			0			1/2" Ice	2.20	1.40	77
			0			1" Ice	2.39	1.55	97
RRUS 32 B66A	A	From Leg	4.00	0.000	115.00	No Ice	2.86	1.78	55
			0			1/2" Ice	3.09	1.97	77
			0			1" Ice	3.32	2.17	103
RRUS 32 B66A	B	From Leg	4.00	0.000	115.00	No Ice	2.86	1.78	55
			0			1/2" Ice	3.09	1.97	77
			0			1" Ice	3.32	2.17	103
RRUS 32 B66A	C	From Leg	4.00	0.000	115.00	No Ice	2.86	1.78	55
			0			1/2" Ice	3.09	1.97	77
			0			1" Ice	3.32	2.17	103
RRUS 32 B30	A	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0			1/2" Ice	2.96	1.86	74
			0			1" Ice	3.19	2.05	98
RRUS 32 B30	B	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0			1/2" Ice	2.96	1.86	74
			0			1" Ice	3.19	2.05	98
RRUS 32 B30	C	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0			1/2" Ice	2.96	1.86	74
			0			1" Ice	3.19	2.05	98
RRUS 32 B2	A	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0			1/2" Ice	2.96	1.86	74
			0			1" Ice	3.19	2.05	98
RRUS 32 B2	B	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0				2.96	1.86	74

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft²*	*C_AA_A Side* *ft²*	*Weight* *lb*
			0			1/2" Ice	3.19	2.05	98
						1" Ice			
RRUS 32 B2	C	From Leg	4.00	0.000	115.00	No Ice	2.74	1.67	53
			0			1/2" Ice	2.96	1.86	74
			0			1" Ice	3.19	2.05	98
(2) DC6-48-60-18-8F	A	From Leg	0.00	0.000	115.00	No Ice	1.21	1.21	33
			0			1/2" Ice	1.89	1.89	55
			0			1" Ice	2.11	2.11	80
DC6-48-60-18-8F	B	From Leg	0.00	0.000	115.00	No Ice	1.21	1.21	33
			0			1/2" Ice	1.89	1.89	55
			0			1" Ice	2.11	2.11	80
DC6-48-60-18-8F	C	From Leg	0.00	0.000	115.00	No Ice	1.21	1.21	33
			0			1/2" Ice	1.89	1.89	55
			0			1" Ice	2.11	2.11	80
7070.00	A	From Leg	4.00	0.000	115.00	No Ice	0.27	0.12	6
			0			1/2" Ice	0.39	0.18	13
			0			1" Ice	0.52	0.24	23
7070.00	B	From Leg	4.00	0.000	115.00	No Ice	0.27	0.12	6
			0			1/2" Ice	0.39	0.18	13
			0			1" Ice	0.52	0.24	23
7070.00	C	From Leg	4.00	0.000	115.00	No Ice	0.27	0.12	6
			0			1/2" Ice	0.39	0.18	13
			0			1" Ice	0.52	0.24	23
(2) LGP21401	A	From Leg	4.00	0.000	115.00	No Ice	1.10	0.35	14
			0			1/2" Ice	1.24	0.44	21
			0			1" Ice	1.38	0.54	30
(2) LGP21401	B	From Leg	4.00	0.000	115.00	No Ice	1.10	0.35	14
			0			1/2" Ice	1.24	0.44	21
			0			1" Ice	1.38	0.54	30
(2) LGP21401	C	From Leg	4.00	0.000	115.00	No Ice	1.10	0.35	14
			0			1/2" Ice	1.24	0.44	21
			0			1" Ice	1.38	0.54	30
**									

Force Totals

Load Case	*Vertical Forces* *lb*	*Sum of Forces X* *lb*	*Sum of Forces Z* *lb*	*Sum of Overturning Moments, M_x* *lb-ft*	*Sum of Overturning Moments, M_z* *lb-ft*	*Sum of Torques* *lb-ft*
Leg Weight	11143					
Bracing Weight	6767					
Total Member Self-Weight	17909			1876	628	
Total Weight	34601			1876	628	
Wind 0 deg - No Ice		21	-27649	-2504955	-2044	-632
Wind 30 deg - No Ice		13737	-23825	-2156662	-1243760	5221
Wind 60 deg - No Ice		23568	-13650	-1238419	-2139087	-230

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 90 deg - No Ice		24998	-21	-795	-2303107	-9395
Wind 120 deg - No Ice		23315	13480	1228603	-2120930	5989
Wind 150 deg - No Ice		12489	21706	2018152	-1158540	11808
Wind 180 deg - No Ice		-21	26501	2429497	3299	632
Wind 210 deg - No Ice		-13737	23825	2160414	1245015	-5221
Wind 240 deg - No Ice		-24562	14224	1281775	2208939	230
Wind 270 deg - No Ice		-24998	21	4547	2304363	9395
Wind 300 deg - No Ice		-22321	-12906	-1185247	2053588	-5989
Wind 330 deg - No Ice		-12489	-21706	-2014400	1159795	-11808
Member Ice	23777					
Total Weight Ice	116322			26253	4463	
Wind 0 deg - Ice		5	-11726	-1014280	3800	-1038
Wind 30 deg - Ice		5749	-9964	-858638	-506074	3124
Wind 60 deg - Ice		9671	-5593	-472926	-858199	488
Wind 90 deg - Ice		10279	-5	25590	-926999	-481
Wind 120 deg - Ice		9235	5336	507630	-828691	5567
Wind 150 deg - Ice		5391	9354	871194	-482242	7218
Wind 180 deg - Ice		-5	11504	1051989	5127	1038
Wind 210 deg - Ice		-5749	9964	911145	515000	-3124
Wind 240 deg - Ice		-9864	5704	532832	879941	-488
Wind 270 deg - Ice		-10279	5	26917	935926	481
Wind 300 deg - Ice		-9043	-5225	-447725	824802	-5567
Wind 330 deg - Ice		-5391	-9354	-818688	491169	-7218
Total Weight	34601			1876	628	
Wind 0 deg - Service		7	-9028	-818752	-588	-206
Wind 30 deg - Service		4485	-7780	-705023	-406046	1705
Wind 60 deg - Service		7696	-4457	-405189	-698398	-75
Wind 90 deg - Service		8162	-7	-1067	-751956	-3068
Wind 120 deg - Service		7613	4402	400369	-692469	1956
Wind 150 deg - Service		4078	7088	658181	-378219	3856
Wind 180 deg - Service		-7	8653	792498	1157	206
Wind 210 deg - Service		-4485	7780	704634	406615	-1705
Wind 240 deg - Service		-8020	4644	417732	721366	75
Wind 270 deg - Service		-8162	7	678	752524	3068
Wind 300 deg - Service		-7289	-4214	-387827	670639	-1956
Wind 330 deg - Service		-4078	-7088	-658570	378788	-3856

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice

Comb. No.	Description
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	275933	24146	-13955
	Max. H_x	18	275933	24146	-13955
	Max. H_z	7	-243383	-21718	12558
	Min. Vert	7	-243383	-21718	12558
	Min. H_x	7	-243383	-21718	12558
	Min. H_z	18	275933	24146	-13955
Leg B	Max. Vert	10	265409	-23162	-13017
	Max. H_x	23	-233006	20736	11622
	Max. H_z	23	-233006	20736	11622
	Min. Vert	23	-233006	20736	11622
	Min. H_x	10	265409	-23162	-13017
	Min. H_z	10	265409	-23162	-13017
Leg A	Max. Vert	2	270997	-35	27227
	Max. H_x	21	9998	3362	729
	Max. H_z	2	270997	-35	27227
	Min. Vert	15	-238899	33	-24435
	Min. H_x	8	13970	-3364	1021
	Min. H_z	15	-238899	33	-24435

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	34601	0	0	1876	628	0
1.2 Dead+1.6 Wind 0 deg - No Ice	41521	34	-44238	-4008679	-3521	-1011
0.9 Dead+1.6 Wind 0 deg - No Ice	31141	34	-44238	-4009242	-3709	-1011

Load Combination	*Vertical*	*Shear$_x$*	*Shear$_z$*	*Overturning Moment, M$_x$*	*Overturning Moment, M$_z$*	*Torque*
	lb	*lb*	*lb*	*lb-ft*	*lb-ft*	*lb-ft*
1.2 Dead+1.6 Wind 30 deg - No Ice	41521	21979	-38120	-3451411	-1990267	8353
0.9 Dead+1.6 Wind 30 deg - No Ice	31141	21979	-38120	-3451974	-1990455	8353
1.2 Dead+1.6 Wind 60 deg - No Ice	41521	37708	-21840	-1982221	-3422790	-368
0.9 Dead+1.6 Wind 60 deg - No Ice	31141	37708	-21840	-1982783	-3422979	-368
1.2 Dead+1.6 Wind 90 deg - No Ice	41521	39996	-34	-2023	-3685223	-15031
0.9 Dead+1.6 Wind 90 deg - No Ice	31141	39996	-34	-2586	-3685412	-15031
1.2 Dead+1.6 Wind 120 deg - No Ice	41521	37304	21568	1965015	-3393740	9583
0.9 Dead+1.6 Wind 120 deg - No Ice	31141	37304	21568	1964453	-3393929	9583
1.2 Dead+1.6 Wind 150 deg - No Ice	41521	19983	34730	3228293	-1853915	18894
0.9 Dead+1.6 Wind 150 deg - No Ice	31141	19983	34730	3227730	-1854104	18894
1.2 Dead+1.6 Wind 180 deg - No Ice	41521	-34	42401	3886446	5027	1011
0.9 Dead+1.6 Wind 180 deg - No Ice	31141	-34	42401	3885883	4839	1011
1.2 Dead+1.6 Wind 210 deg - No Ice	41521	-21979	38120	3455913	1991773	-8353
0.9 Dead+1.6 Wind 210 deg - No Ice	31141	-21979	38120	3455350	1991585	-8353
1.2 Dead+1.6 Wind 240 deg - No Ice	41521	-39299	22758	2050090	3534053	368
0.9 Dead+1.6 Wind 240 deg - No Ice	31141	-39299	22758	2049528	3533864	368
1.2 Dead+1.6 Wind 270 deg - No Ice	41521	-39996	34	6525	3686730	15031
0.9 Dead+1.6 Wind 270 deg - No Ice	31141	-39996	34	5962	3686542	15031
1.2 Dead+1.6 Wind 300 deg - No Ice	41521	-35714	-20649	-1897146	3285491	-9583
0.9 Dead+1.6 Wind 300 deg - No Ice	31141	-35714	-20649	-1897708	3285303	-9583
1.2 Dead+1.6 Wind 330 deg - No Ice	41521	-19983	-34730	-3223791	1855422	-18894
0.9 Dead+1.6 Wind 330 deg - No Ice	31141	-19983	-34730	-3224354	1855233	-18894
1.2 Dead+1.0 Ice+1.0 Temp	123242	0	0	26630	4589	0
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	123242	5	-11726	-1013904	3925	-1038
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	123242	5749	-9964	-858262	-505948	3124
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	123242	9671	-5593	-472550	-858073	489
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	123242	10279	-5	25966	-926873	-481
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	123242	9235	5336	508007	-828565	5567
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	123242	5391	9354	871571	-482116	7218
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	123242	-5	11504	1052365	5253	1038
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	123242	-5749	9964	911521	515126	-3124
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	123242	-9864	5704	533208	880067	-489
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	123242	-10279	5	27293	936051	481
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	123242	-9043	-5225	-447349	824928	-5567
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	123242	-5391	-9354	-818312	491294	-7218

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 0 deg - Service	34601	7	-9028	-816681	-245	-206
Dead+Wind 30 deg - Service	34601	4485	-7780	-702953	-405703	1705
Dead+Wind 60 deg - Service	34601	7696	-4457	-403118	-698055	-75
Dead+Wind 90 deg - Service	34601	8162	-7	1004	-751612	-3068
Dead+Wind 120 deg - Service	34601	7613	4402	402440	-692126	1956
Dead+Wind 150 deg - Service	34601	4078	7088	660252	-377876	3856
Dead+Wind 180 deg - Service	34601	-7	8653	794569	1500	206
Dead+Wind 210 deg - Service	34601	-4485	7780	706705	406958	-1705
Dead+Wind 240 deg - Service	34601	-8020	4644	419802	721709	75
Dead+Wind 270 deg - Service	34601	-8162	7	2748	752868	3068
Dead+Wind 300 deg - Service	34601	-7289	-4214	-385756	670982	-1956
Dead+Wind 330 deg - Service	34601	-4078	-7088	-656500	379131	-3856

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	150 - 140	3.11	47	0.203	0.016
T2	140 - 120	2.66	47	0.200	0.015
T3	120 - 100	1.83	47	0.165	0.013
T4	100 - 80	1.18	47	0.124	0.011
T5	80 - 60	0.70	47	0.086	0.009
T6	60 - 40	0.38	47	0.053	0.006
T7	40 - 20	0.17	47	0.030	0.003
T8	20 - 0	0.06	47	0.015	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.00	Sector Mount [SM 802-3]	47	3.11	0.203	0.016	131062
140.00	Sector Mount [SM 802-3]	47	2.66	0.200	0.015	66275
127.50	Sector Mount [SM 802-3]	47	2.13	0.181	0.013	31482
115.00	Site Pro 1 VFA12-HD	47	1.65	0.154	0.012	24715

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	150 - 140	15.24	18	0.992	0.077
T2	140 - 120	13.04	18	0.979	0.071
T3	120 - 100	8.98	18	0.807	0.063
T4	100 - 80	5.77	18	0.609	0.053
T5	80 - 60	3.43	18	0.420	0.042
T6	60 - 40	1.86	18	0.259	0.030
T7	40 - 20	0.85	18	0.149	0.017

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T8	20 - 0	0.27	18	0.075	0.008

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Sector Mount [SM 802-3]	18	15.24	0.992	0.077	27167
140.00	Sector Mount [SM 802-3]	18	13.04	0.979	0.071	13724
127.50	Sector Mount [SM 802-3]	18	10.42	0.885	0.064	6442
115.00	Site Pro 1 VFA12-HD	18	8.09	0.755	0.061	5040

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	150	Leg	A325N	0.750	4	1843	29821	0.062 ✔	1	Bolt Tension
		Diagonal	A325N	0.500	1	2281	5966	0.382 ✔	1	Member Block Shear
		Top Girt	A325N	0.500	1	652	7952	0.082 ✔	1	Bolt Shear
T2	140	Leg	A325N	1.000	4	10993	53014	0.207 ✔	1	Bolt Tension
		Diagonal	A325N	0.625	1	5833	7495	0.778 ✔	1	Member Block Shear
T3	120	Leg	A325N	1.000	6	14312	53014	0.270 ✔	1	Bolt Tension
		Diagonal	A325N	0.625	1	6186	7495	0.825 ✔	1	Member Block Shear
T4	100	Leg	A325N	1.000	8	15476	53014	0.292 ✔	1	Bolt Tension
		Diagonal	A325N	0.625	1	6815	9534	0.715 ✔	1	Member Block Shear
T5	80	Leg	A325N	1.250	8	19669	82835	0.237 ✔	1	Bolt Tension
		Diagonal	A325N	0.625	1	6973	9788	0.712 ✔	1	Member Bearing
T6	60	Leg	A325N	1.250	8	23565	82835	0.284 ✔	1	Bolt Tension
		Diagonal	A325N	0.625	1	7450	9788	0.761 ✔	1	Member Bearing
T7	40	Leg	A325N	1.250	8	27167	82835	0.328 ✔	1	Bolt Tension
		Diagonal	A325N	0.750	1	8169	14355	0.569 ✔	1	Member Bearing
T8	20	Diagonal	A325N	0.750	1	8707	14355	0.607 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	Pipe 2.875" x 0.203" (2.5 STD)	10.00	0.67	8.4 K=1.00	1.704	-9296	82352	0.113 [1] ✔
T2	140 - 120	Pipe 2.875" x 0.203" (2.5 STD)	20.00	4.67	59.1 K=1.00	1.704	-44448	62849	0.707 [1] ✔
T3	120 - 100	Pipe 4.5" x 0.237" (4 STD)	20.03	4.67	37.2 K=1.00	3.174	-92147	138323	0.666 [1] ✔
T4	100 - 80	Pipe 5.563" x 0.258" (5 STD)	20.03	6.23	39.8 K=1.00	4.300	-131814	184369	0.715 [1] ✔
T5	80 - 60	Pipe 6.625" x 0.280" (6 STD)	20.03	6.23	33.3 K=1.00	5.581	-169240	248502	0.681 [1] ✔
T6	60 - 40	Pipe 8.625" x 0.322" (8 STD)	20.03	6.23	25.5 K=1.00	8.399	-204675	387837	0.528 [1] ✔
T7	40 - 20	Pipe 8.625" x 0.50" (8 XS)	20.03	9.35	39.0 K=1.00	12.763	-236205	550137	0.429 [1] ✔
T8	20 - 0	Pipe 8.625" x 0.50" (8 XS)	20.03	9.35	39.0 K=1.00	12.763	-268118	550137	0.487 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	L 1.5 x 1.5 x 3/16	7.40	3.42	139.8 K=1.00	0.527	-2280	6096	0.374 [1] ✔
T2	140 - 120	L 2 x 2 x 3/16	7.60	3.51	110.3 K=1.03	0.715	-5924	12216	0.485 [1] ✔
T3	120 - 100	L 2 x 2 x 3/16	9.00	4.28	130.5 K=1.00	0.715	-6181	9453	0.654 [1] ✔
T4	100 - 80	L 2.5 x 2.5 x 3/16	11.46	5.50	133.4 K=1.00	0.902	-6574	11448	0.574 [1] ✔
T5	80 - 60	L 3 x 3 x 3/16	13.18	6.32	127.2 K=1.00	1.090	-6834	14985	0.456 [1] ✔
T6	60 - 40	L 3 x 3 x 3/16	14.98	7.13	143.5 K=1.00	1.090	-7455	11963	0.623 [1] ✔
T7	40 - 20	L 3.5 x 3.5 x 1/4	18.07	8.74	151.1 K=1.00	1.690	-8223	16716	0.492 [1] ✔
T8	20 - 0	L 3.5 x 3.5 x 1/4	19.81	9.61	166.2 K=1.00	1.690	-8826	13815	0.639 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	L 3 x 3 x 1/4	6.00	5.49	115.6 K=1.04	1.438	-652	23047	0.028 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg 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	lb	lb	
T1	150 - 140	Pipe 2.875" x 0.203" (2.5 STD)	10.00	0.67	8.4	1.704	7370	82817	0.089 [1] ✔
T2	140 - 120	Pipe 2.875" x 0.203" (2.5 STD)	20.00	0.67	8.4	1.704	43974	82817	0.531 [1] ✔
T3	120 - 100	Pipe 4.5" x 0.237" (4 STD)	20.03	0.67	5.3	3.174	85872	154259	0.557 [1] ✔
T4	100 - 80	Pipe 5.563" x 0.258" (5 STD)	20.03	0.67	4.3	4.300	123807	208974	0.592 [1] ✔
T5	80 - 60	Pipe 6.625" x 0.280" (6 STD)	20.03	0.67	3.6	5.581	157351	271254	0.580 [1] ✔
T6	60 - 40	Pipe 8.625" x 0.322" (8 STD)	20.03	0.67	2.7	8.399	188516	408204	0.462 [1] ✔
T7	40 - 20	Pipe 8.625" x 0.50" (8 XS)	20.03	0.67	2.8	12.763	217334	620268	0.350 [1] ✔
T8	20 - 0	Pipe 8.625" x 0.50" (8 XS)	20.03	0.67	2.8	12.763	244453	620268	0.394 [1] ✔

[1] P_u / ϕP_n controls

Diagonal 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	lb	lb	
T1	150 - 140	L 1.5 x 1.5 x 3/16	7.40	3.42	93.4	0.308	2281	13381	0.170 [1] ✔
T2	140 - 120	L 2 x 2 x 3/16	7.60	3.51	71.0	0.431	5833	18739	0.311 [1] ✔
T3	120 - 100	L 2 x 2 x 3/16	9.00	4.28	86.0	0.431	6186	18739	0.330 [1] ✔
T4	100 - 80	L 2.5 x 2.5 x 3/16	10.44	5.00	79.1	0.571	6815	24840	0.274 [1] ✔
T5	80 - 60	L 3 x 3 x 3/16	12.10	5.78	75.6	0.712	6973	30968	0.225 [1] ✔
T6	60 - 40	L 3 x 3 x 3/16	14.98	7.13	92.8	0.712	7450	30968	0.241 [1] ✔
T7	40 - 20	L 3.5 x 3.5 x 1/4	18.07	8.74	97.8	1.103	8169	48000	0.170 [1] ✔
T8	20 - 0	L 3.5 x 3.5 x 1/4	19.81	9.61	107.4	1.103	8707	48000	0.181 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	L 3 x 3 x 1/4	6.00	5.49	74.3	0.961	633	41801	0.015 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

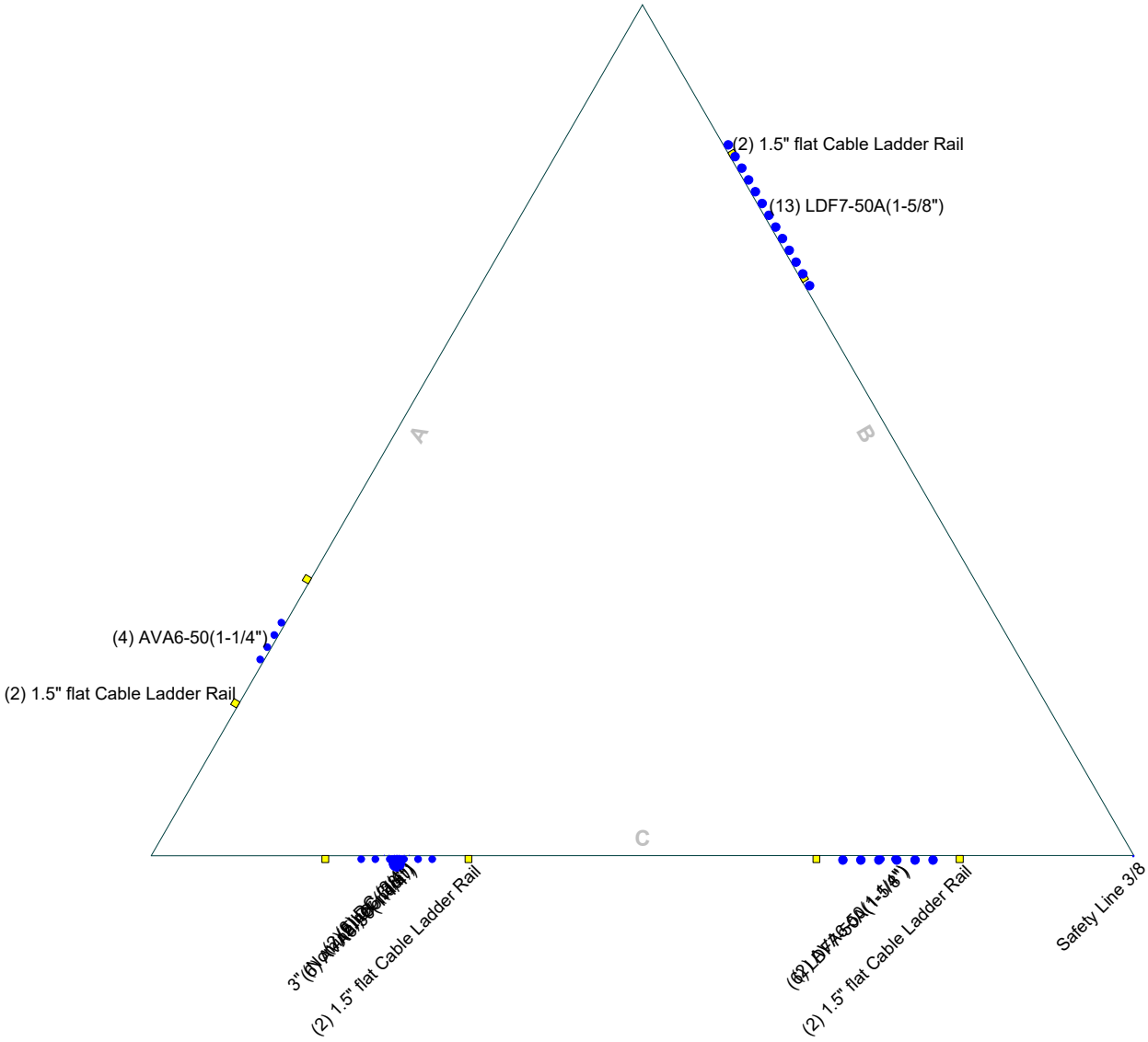
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	150 - 140	Leg	Pipe 2.875" x 0.203" (2.5 STD)	2	-9296	82352	11.3	Pass
T2	140 - 120	Leg	Pipe 2.875" x 0.203" (2.5 STD)	21	-44448	62849	70.7	Pass
T3	120 - 100	Leg	Pipe 4.5" x 0.237" (4 STD)	46	-92147	138323	66.6	Pass
T4	100 - 80	Leg	Pipe 5.563" x 0.258" (5 STD)	73	-131814	184369	71.5	Pass
T5	80 - 60	Leg	Pipe 6.625" x 0.280" (6 STD)	94	-169240	248502	68.1	Pass
T6	60 - 40	Leg	Pipe 8.625" x 0.322" (8 STD)	115	-204675	387837	52.8	Pass
T7	40 - 20	Leg	Pipe 8.625" x 0.50" (8 XS)	136	-236205	550137	42.9	Pass
T8	20 - 0	Leg	Pipe 8.625" x 0.50" (8 XS)	151	-268118	550137	48.7	Pass
T1	150 - 140	Diagonal	L 1.5 x 1.5 x 3/16	9	-2280	6096	37.4 38.2 (b)	Pass
T2	140 - 120	Diagonal	L 2 x 2 x 3/16	24	-5924	12216	48.5 77.8 (b)	Pass
T3	120 - 100	Diagonal	L 2 x 2 x 3/16	53	-6181	9453	65.4 82.5 (b)	Pass
T4	100 - 80	Diagonal	L 2.5 x 2.5 x 3/16	80	-6574	11448	57.4 71.5 (b)	Pass
T5	80 - 60	Diagonal	L 3 x 3 x 3/16	101	-6834	14985	45.6 71.2 (b)	Pass
T6	60 - 40	Diagonal	L 3 x 3 x 3/16	122	-7455	11963	62.3 76.1 (b)	Pass
T7	40 - 20	Diagonal	L 3.5 x 3.5 x 1/4	143	-8223	16716	49.2 56.9 (b)	Pass
T8	20 - 0	Diagonal	L 3.5 x 3.5 x 1/4	158	-8826	13815	63.9	Pass
T1	150 - 140	Top Girt	L 3 x 3 x 1/4	6	-652	23047	2.8 8.2 (b)	Pass
							Summary	
							Leg (T4) 71.5	Pass
							Diagonal (T3) 82.5	Pass
							Top Girt (T1) 8.2	Pass
							Bolt Checks 82.5	Pass
							RATING = 82.5	**Pass**

APPENDIX B

BASE LEVEL DRAWING

Feed Line Plan

Round Flat App In Face App Out Face



Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
Phone: 614-221-6679
FAX:

Job: ***150-ft Norwich, CT S/S Tower***			
Project: ***PJF 80620-0021.001.8700***			
Client: Smartlink	Drawn by: Anna Trudo	App'd:	
Code: TIA-222-G	Date: 01/27/21	Scale: NTS	
Path: G:\TOWER\806_SmartLink\2020\80620-0021_Preston_CT\80620-0021.001.8700_SA\mx\80620-0021.001.8700.ei		Dwg No. E-7	

APPENDIX C

ADDITIONAL CALCULATIONS

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

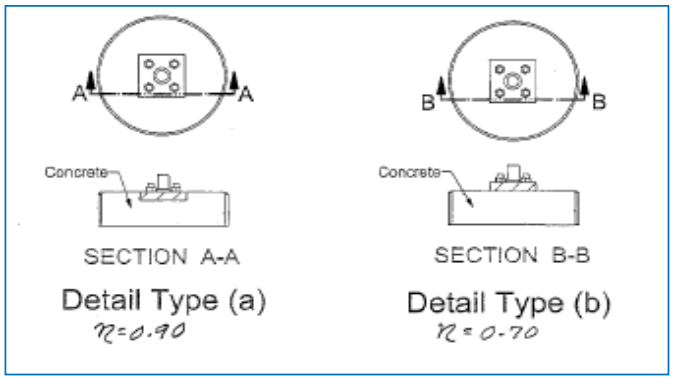
Self-Support Tower Anchor Rod Capacity - TIA-G

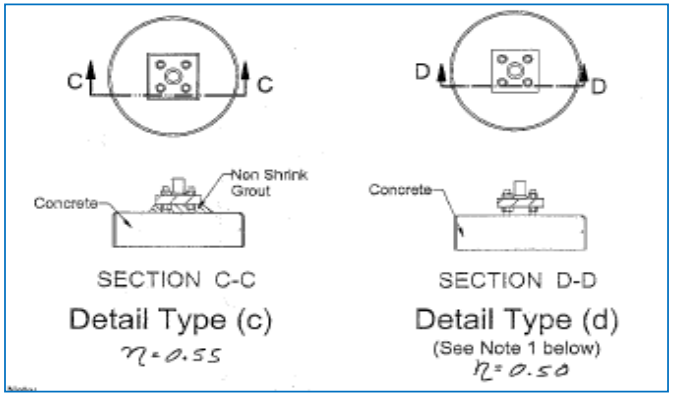
Loads

Compression :	275.9	kips	Tension :	243.4	kips	Code:	TIA-G
Comp. Shear :	27.9	kips	Ten.Shear :	25.1	kips	Maximum Ratio:	1.00

Existing Anchor Rods

Anchor Rod Condition (n) :	0.5				
Anchor Rod ø :	1 1/2	in	l_{ar} :	1.5	inches
Anchor Rod Quantity :	8		Comp. M_u :	27.20	k-in
Anchor Rod Grade :	F1554 Gr. 36				
F_y :	36	ksi	ϕ_v :	0.75	
F_u :	58	ksi	ϕ_f :	0.90	
Threads per Inch	6		$\phi_v R_{nv}$:	276.74	kips
Net Tensile Area	1.41	in^2	$\phi_f R_{nm}$:	97.44	k-in
ϕ_t :	0.80				
$\phi_t R_{nt}$:	521.63	kip			
Anchor Rod Ratio :	0.663				





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

Job Number: 80620-0021.001.8700
Site Number: CTL06458
Site Name: Norwich, CT
By: AKT
Date: 1/27/2021

Version 1.3a, Effective 07/03/2019

DRILLED PIER STEEL ANALYSIS - STEEL CALCULATIONS - TIA-222-G

BASED ON ACI 318-05, SECTIONS 9 & 10 (ASSUMING TIE REINFORCEMENT)

ROCK ANCHOR CHECK - TOWER COMPRESSION LEG

Factored Internal Loads from Analysis

Reference Standard =	TIA-222-G	
ACI Code =	ACI 318-05	
Maximum Ratio =	100.0%	
Axial Load, Pu =	275.9	kips, (+Comp, -Tension)
Moment, Mu =	120.0	k-ft (Must be Positive)
Depth to Analysis Section =	3.80	ft, from Grade

Factored Internal Loads

Load Factor =	1.0	
Axial Load, Pu = ΦPn =	275.9	kips
Moment, Mu =	120.0	k-ft

Drilled Pier Geometry and Concrete Specifications

Diameter =	42	in
fc' =	0.416	ksi
εc =	0.003	in/in
β1 =	0.85	
Ag =	1385.4	in^2
Height Above Grade =	0.5	ft
Depth Below Grade =	3.8	ft

Nominal Axial Load and Moment

ΦPn(max) =	488.4	kips
ΦPn(min) =	-406.4	kips
ΦPn =	275.9	kips
Φ =	0.650	
ΦMn (Resultant) =	204.7	k-ft
at θ =	180.00	degrees
NA Depth =	28.05	in

Rebar Size and Specifications

	Existing	Bar Circle 2	
Bar Size =	#10		
Override Bar Diameter =			in
Bar Diameter =	1.2700	0.0000	in
Bar Area =	1.2700	0.0000	in^2
Effective Bar Area =	1.2700	0.0000	in^2
Number Bars =	5		
Spacing =	Symmetric		
fy =	71.1111111		ksi
Es =	29000	29000	ksi
εy =	0.00245	0.00000	in/in
Tie Size =	#4		
Clear Cover to Ties =	6.865		in
Bar Circle =	26		in
Adjust =	18.0000		
% of Area Effective =	100.0%	100.0%	
Include in Calcs =	Yes	Yes	
Bar Circle Valid =	Yes	No	

AXIAL RATIO = 56.5% OK

MOMENT RATIO = 58.6% OK

Minimum Required Steel

Seismic Design Category =	D		
As(min) =	3.90	sq in	ACI Section 10.5.1 & 10.5.3
As =	6.35	sq in	
Stl Area Reduction Factor =	1.00		

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

Job Number: 80620-0021.001.8700
Site Number: CTL06458
Site Name: Norwich, CT
By: AKT
Date: 1/27/2021

Version 1.3a, Effective 07/03/2019

DRILLED PIER STEEL ANALYSIS - STEEL CALCULATIONS - TIA-222-G

BASED ON ACI 318-05, SECTIONS 9 & 10 (ASSUMING TIE REINFORCEMENT)

ROCK ANCHOR CHECK - TOWER UPLIFT LEG

Factored Internal Loads from Analysis

Reference Standard =	TIA-222-G	
ACI Code =	ACI 318-05	
Maximum Ratio =	100.0%	
Axial Load, Pu =	-243.4	kips, (+Comp, -Tension)
Moment, Mu =	107.9	k-ft (Must be Positive)
Depth to Analysis Section =	3.80	ft, from Grade

Factored Internal Loads

Load Factor =	1.0	
Axial Load, Pu = ΦPn =	-243.4	kips
Moment, Mu =	107.9	k-ft

Drilled Pier Geometry and Concrete Specifications

Diameter =	42	in
fc' =	0.416	ksi
εc =	0.003	in/in
β1 =	0.85	
Ag =	1385.4	in^2
Height Above Grade =	0.5	ft
Depth Below Grade =	3.8	ft

Nominal Axial Load and Moment

ΦPn(max) =	488.4	kips
ΦPn(min) =	-406.4	kips
ΦPn =	-243.4	kips
Φ =	0.900	
ΦMn (Resultant) =	168.7	k-ft
at θ =	0.00	degrees
NA Depth =	8.40	in

Rebar Size and Specifications

	Existing	Bar Circle 2	
Bar Size =	#10		
Override Bar Diameter =			in
Bar Diameter =	1.2700	0.0000	in
Bar Area =	1.2700	0.0000	in^2
Effective Bar Area =	1.2700	0.0000	in^2
Number Bars =	5		
Spacing =	Symmetric		
fy =	71.1111111		ksi
Es =	29000	29000	ksi
εy =	0.00245	0.00000	in/in
Tie Size =	#4		
Clear Cover to Ties =	6.865		in
Bar Circle =	26		in
Adjust =	18.0000		
% of Area Effective =	100.0%	100.0%	
Include in Calcs =	Yes	Yes	
Bar Circle Valid =	Yes	No	

AXIAL RATIO = 59.9% OK

MOMENT RATIO = 63.9% OK

Minimum Required Steel

Seismic Design Category =	D		
As(min) =	3.90	sq in	ACI Section 10.5.1 & 10.5.3
As =	6.35	sq in	
Stl Area Reduction Factor =	1.00		

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) The structural integrity of the existing tower foundation can only be verified if exact foundation sizes and soil conditions are known. Paul J. Ford and Company will not accept any responsibility for the adequacy of the existing foundations unless the foundation sizes and a soils report are provided.

5) 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.

6) 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.

7) 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

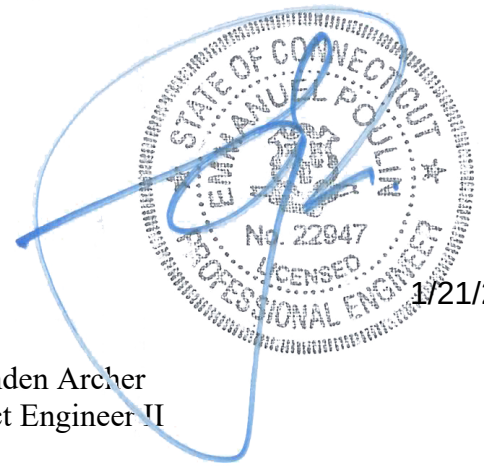
the solutions are endless

Mount Analysis Report

January 21, 2021

Site Name	Norwich SE
Site Number	CTL05468
FA Number	10071188
PTN Number	2051A0V461/ 2051A0V5CX/ 2051A0V4KB
PACE Number	MRCTB046629/ MRCTB046525/ MRCTB046975
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T
Site Location	2 Hinckley Hill Road Preston, CT 06365 New London County 41º 30' 49.3" N NAD83 72º 03' 48.2" W NAD83
Mount Centerline EL.	115.0 ft
Mount Type	Sector Frame
Mount Specifications	Site Pro 1 VFA12-WLL-30120
CSR	**52.0%**
Overall Result	**Pass**
Note	**Install (2) proposed tieback members at each mount spanning to adjacent tower legs at each sector.**

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



1/21/21

Brenden Archer
Project Engineer II

Contents

Introduction

Infinigy Engineering has been requested to perform a mount analysis on the proposed AT&T 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

As-Built Construction Drawings	CENTEK Engineering, Site No. CT5468, dated November 14, 2017
Proposed Loading	AT&T RFDS Application ID No. 3719935, dated March 27, 2020
Previous Mount Analysis	CENTEK Engineering, Site No. CT5468, dated April 17, 2018
Structural Analysis Report	Fred A. Nudd Corporation, Job No. 1176-23243.6, dated February 20, 2018
Mount Specifications	Site Pro 1, Part No. VFA12-HD, dated January 25, 2017

Analysis Code Requirements

Wind Speed	125 mph (3-Second Gust, V_{ULT})
Wind Speed w/ ice	50 mph (3-Second Gust, V_{ASD}) w/ 1" ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC
Risk Category	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0.0 ft.
Spectral Response	S_s = 0.193 g / S_1 = 0.054 g
Site Class	D-Stiff Soil (Assumed)
HSML	293.0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the proposed mount meets the specified TIA code requirements. The proposed mounts and connections are therefore deemed adequate to support the final loading configuration 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:

Brenden Archer
Project Engineer II | **INFINIGY**
1033 Watervliet Shaker Rd, Albany, NY 12205
(518) 690 - 0790
barcher@infinigy.com | www.infinigy.com

Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
115.0	115.0	8.0	3	POWERWAVE 7770	AT&T
		4.0	1	CCI OPA-65R-LCUU-H8	
		4.0	2	CCI OPA-65R-LCUU-H6	
		12.0	1	KMW EPBQ-654L8H8-L2	
		12.0	2	KMW EPBQ-654L8H6-L2	
		0.0	1	CCI DMP65R-BU8DA	
		0.0	2	CCI DMP65R-BU6DA	
		2.5	3	ERICSSON RRUS E2 B29	
		12.0	3	ERICSSON RRUS 4478 B14	
		12.0	3	ERICSSON RRUS 32 B66A	
		12.0	3	ERICSSON RRUS 32 B30	
		0.0	3	ERICSSON RRUS 4449 B5/B12	
		0.0	3	ERICSSON RRUS 32 B2	
		8.0	6	POWERWAVE LGP21401	
		--	4	RAYCAP DC6-48-60-18-8F**	

***Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower**

**** Raycap assumed to be installed directly on tower**

Mount Usages

Mount Pipe	43.2%	Pass
Standoff	52.0%	Pass
Horizontal	41.3%	Pass
Tieback	14.4%	Pass
RATING =	**52.0%**	**Pass**

Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	30,101.4	13,645.9	45.3%
Max Shear (lbs.)	19,880.4	2,634.0	13.2%
Combined Tension/Shear	--	--	22.0%

***(1) 3/4" A325 anchor bolt, (1) per mount to tower connection.**

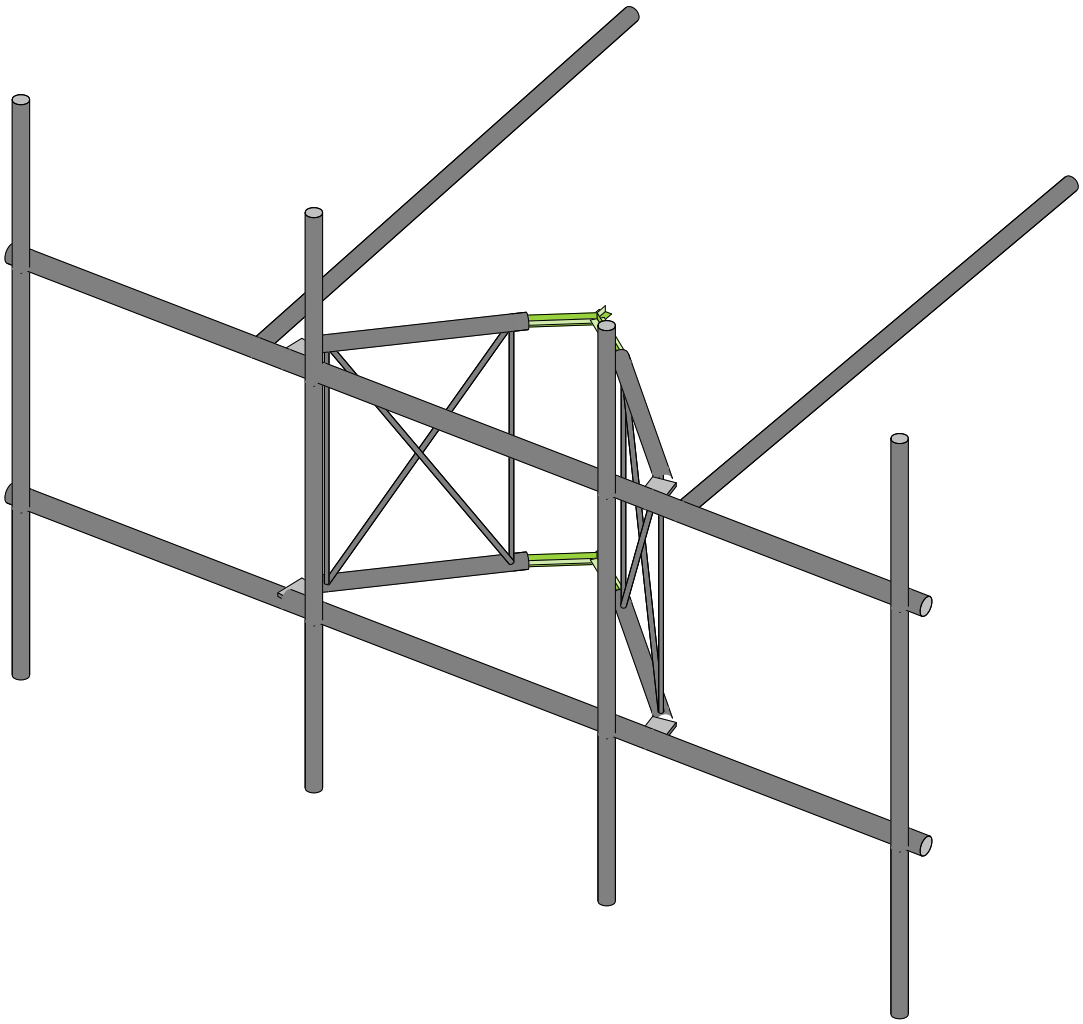
- Anchor reactions are acceptable per rigorous structural analysis.

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.

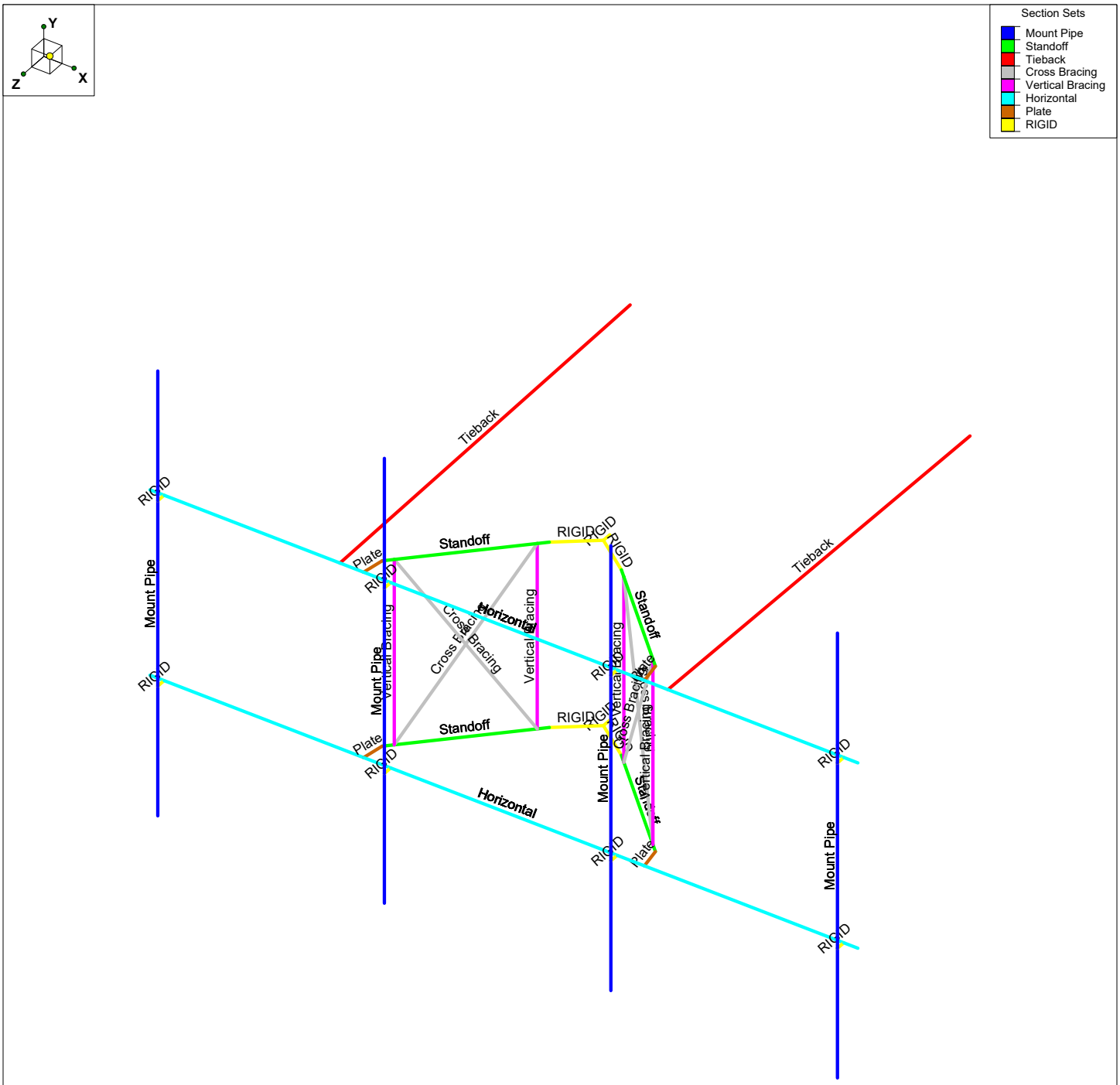
Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions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



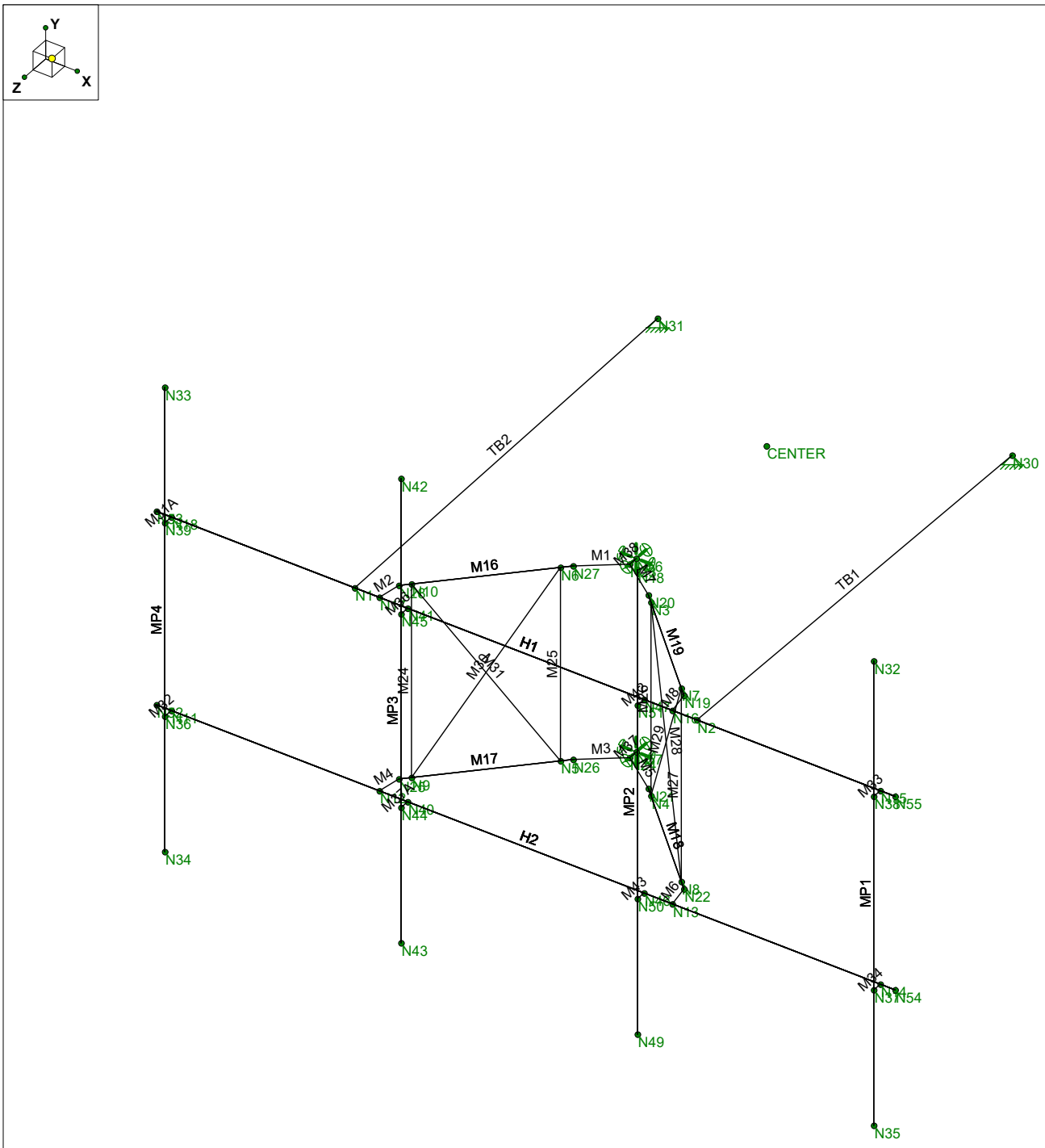
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:44 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



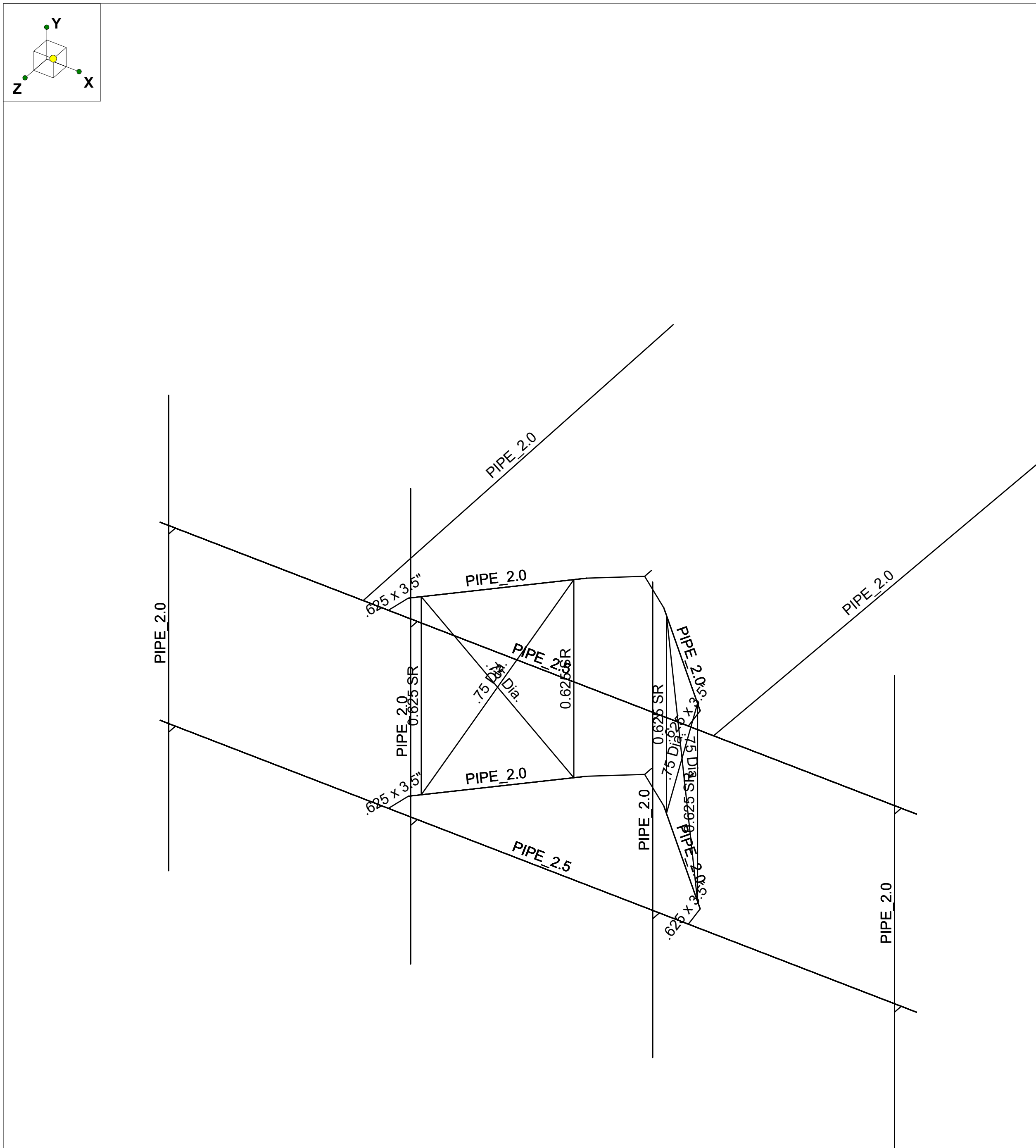
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:44 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Envelope Only Solution

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:44 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Envelope Only Solution

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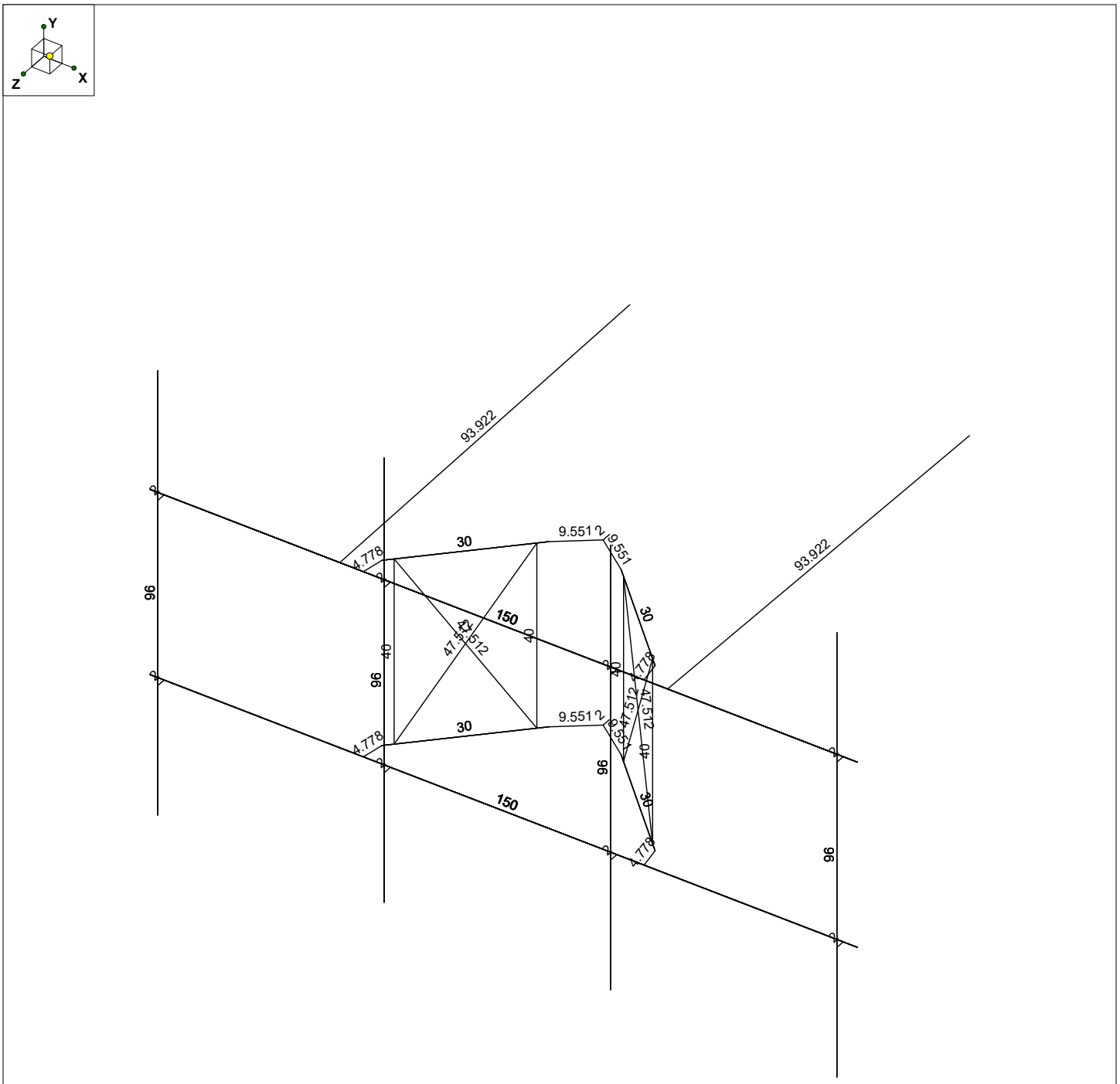
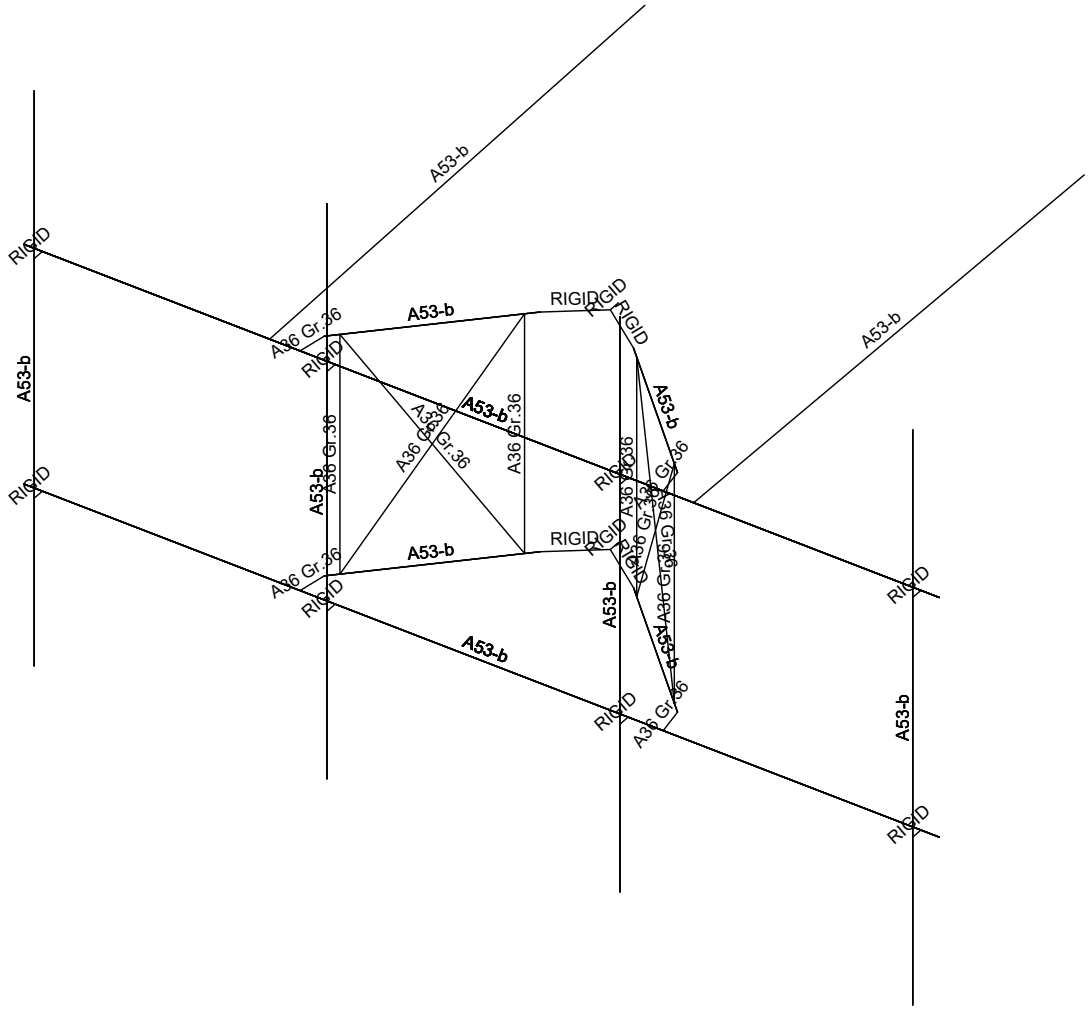


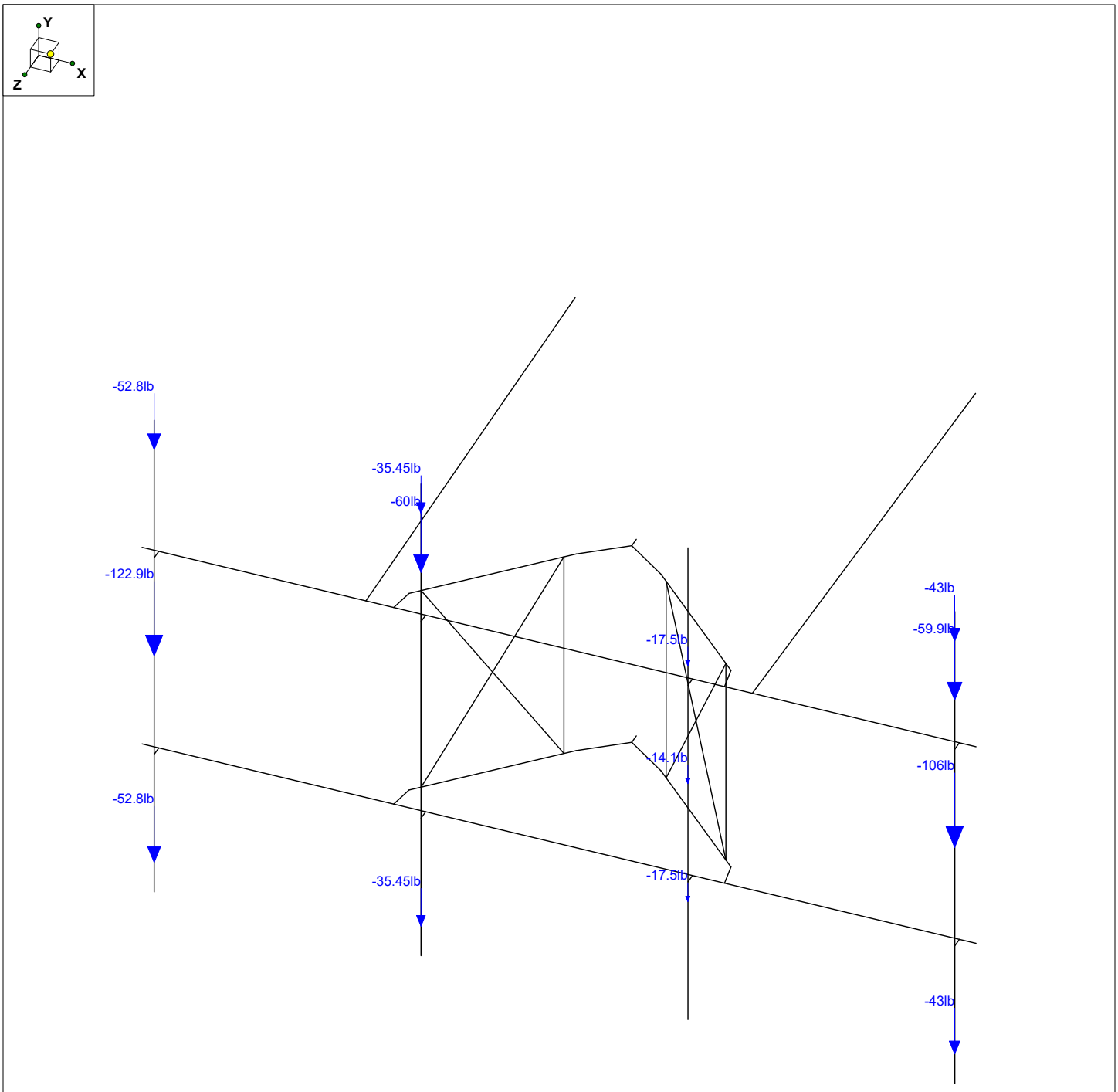
Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:45 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



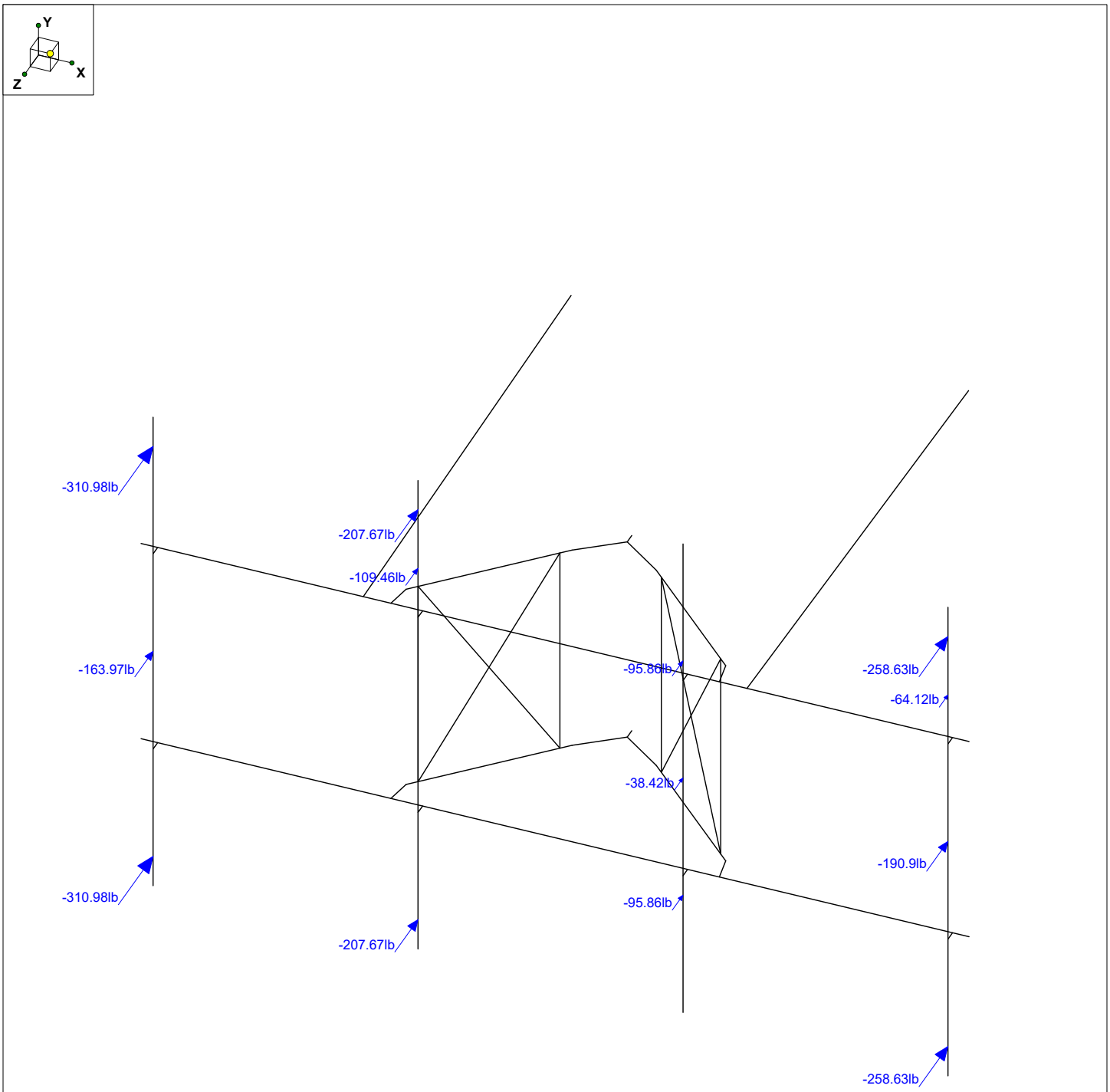
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:45 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



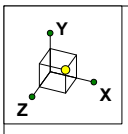
Loads: BLC 1, Self Weight

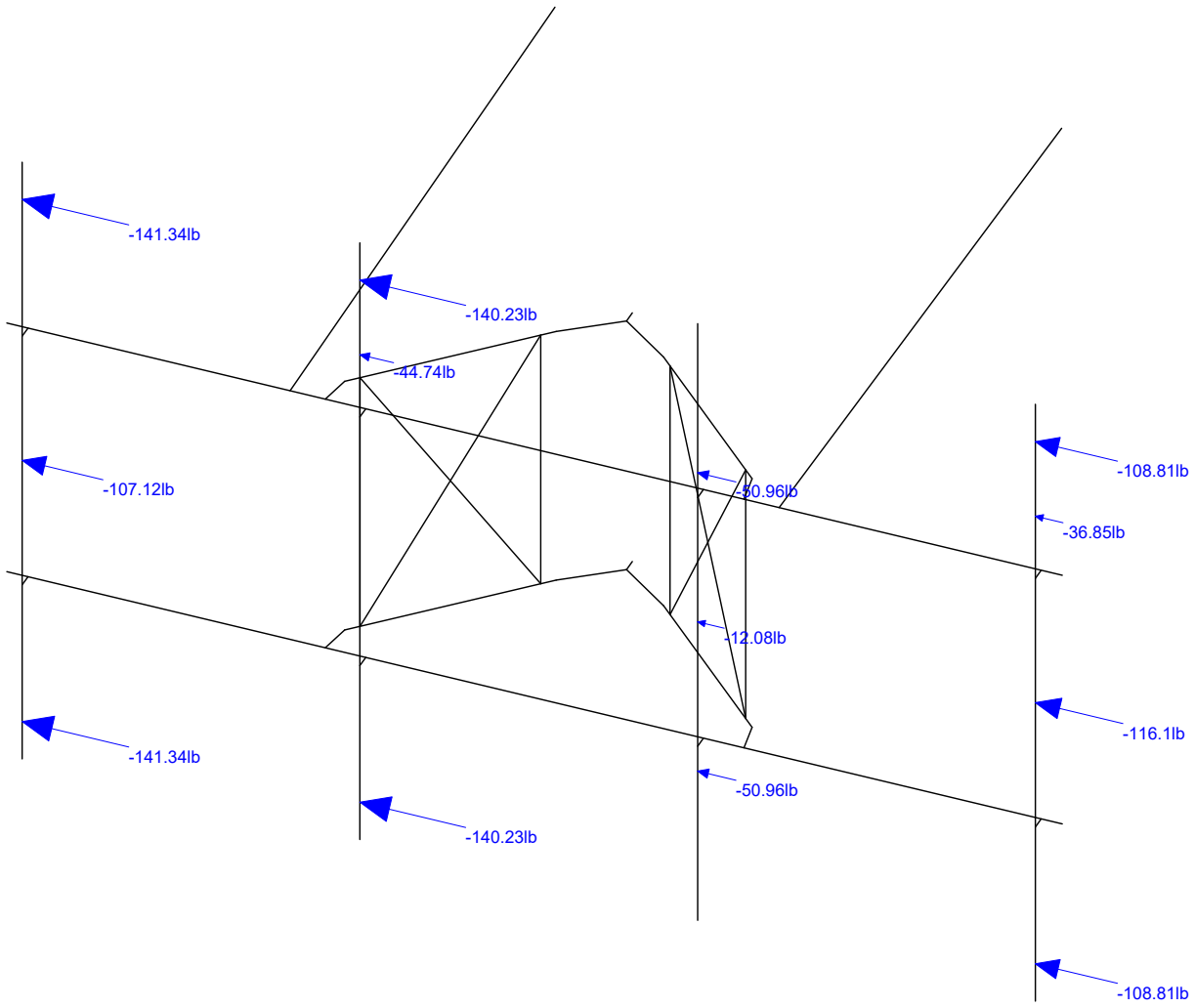
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:51 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Loads: BLC 2, Wind Load AZI 0

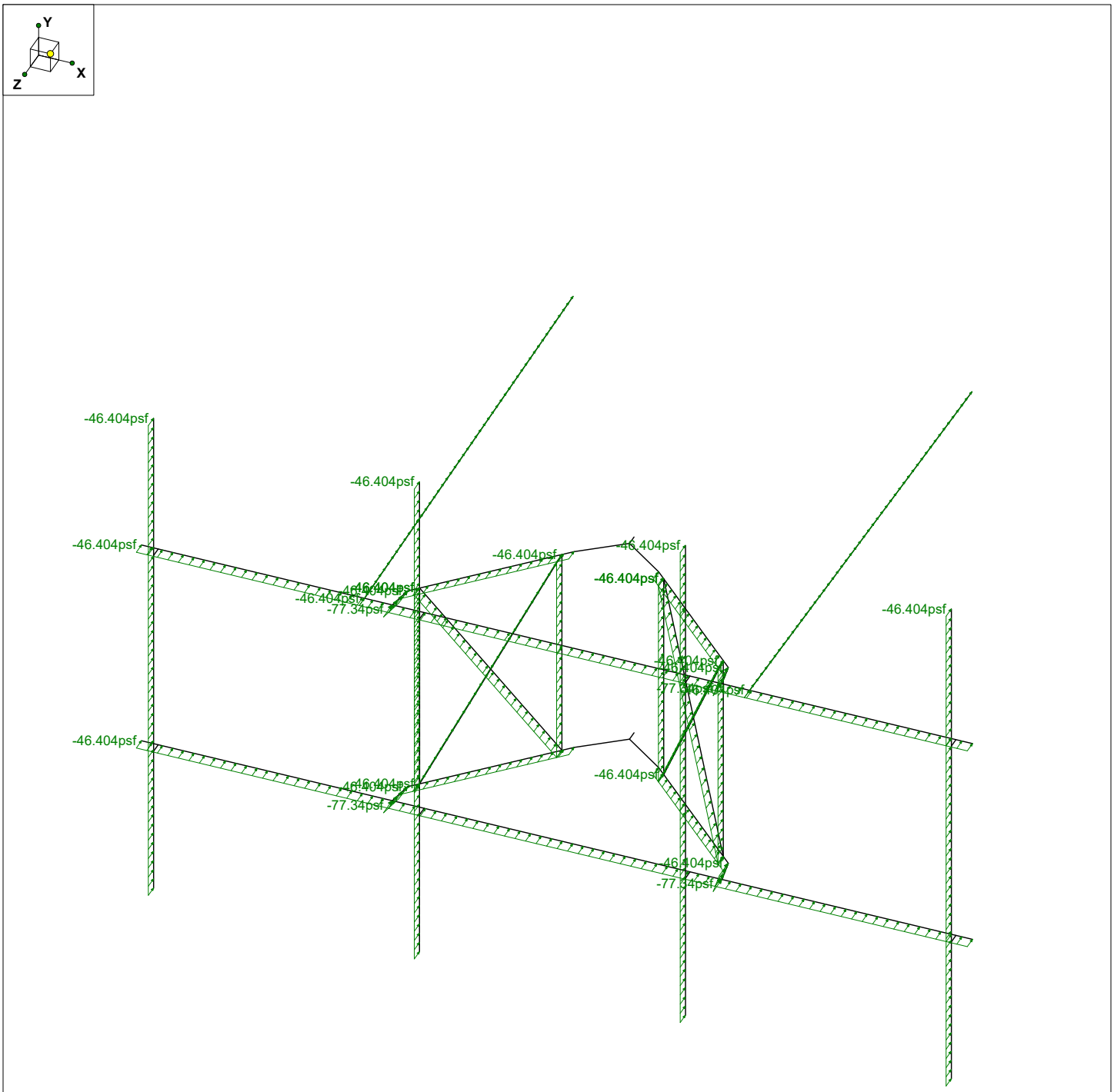
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:51 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d





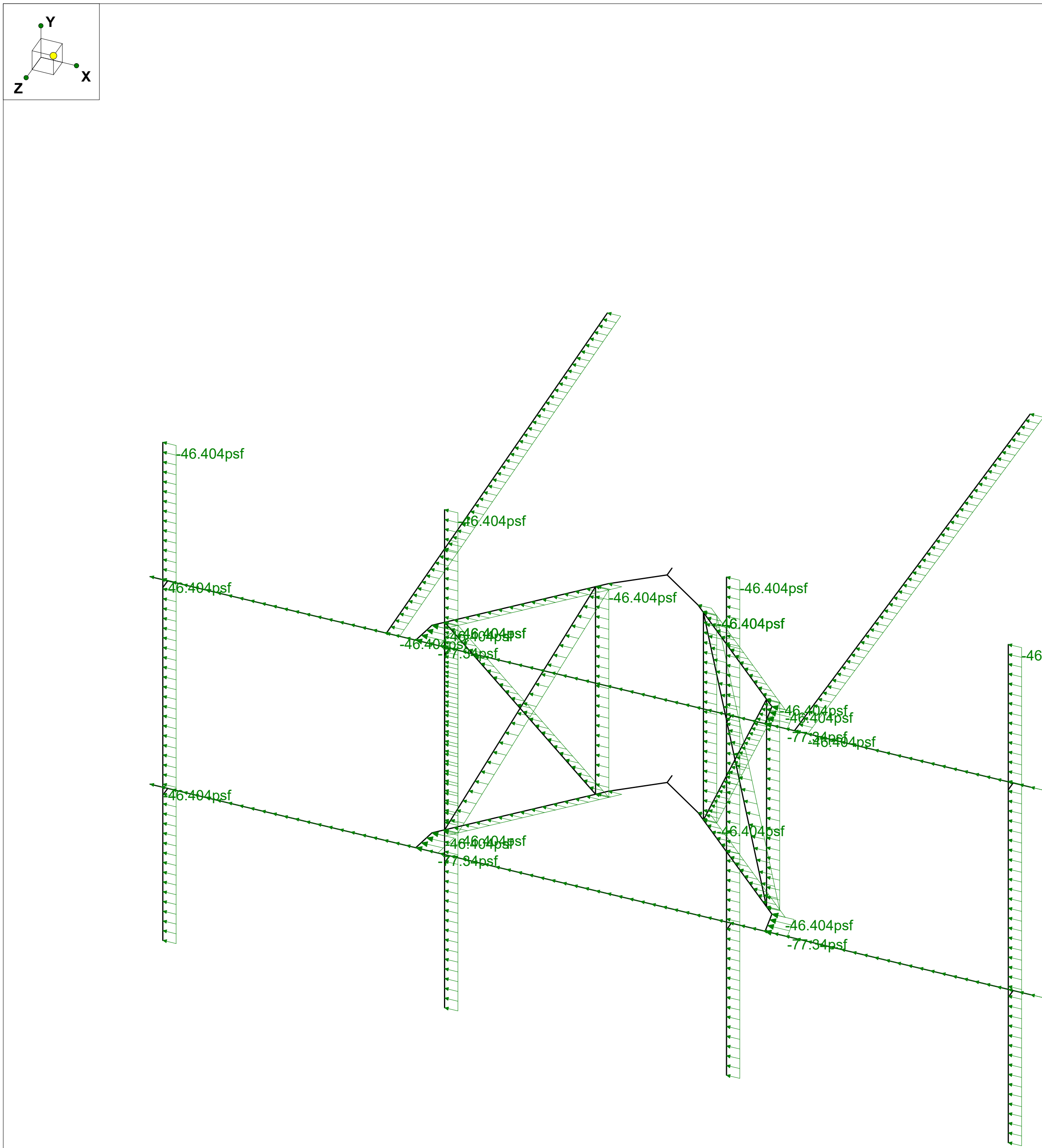
Loads: BLC 5, Wind Load AZI 90

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:51 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



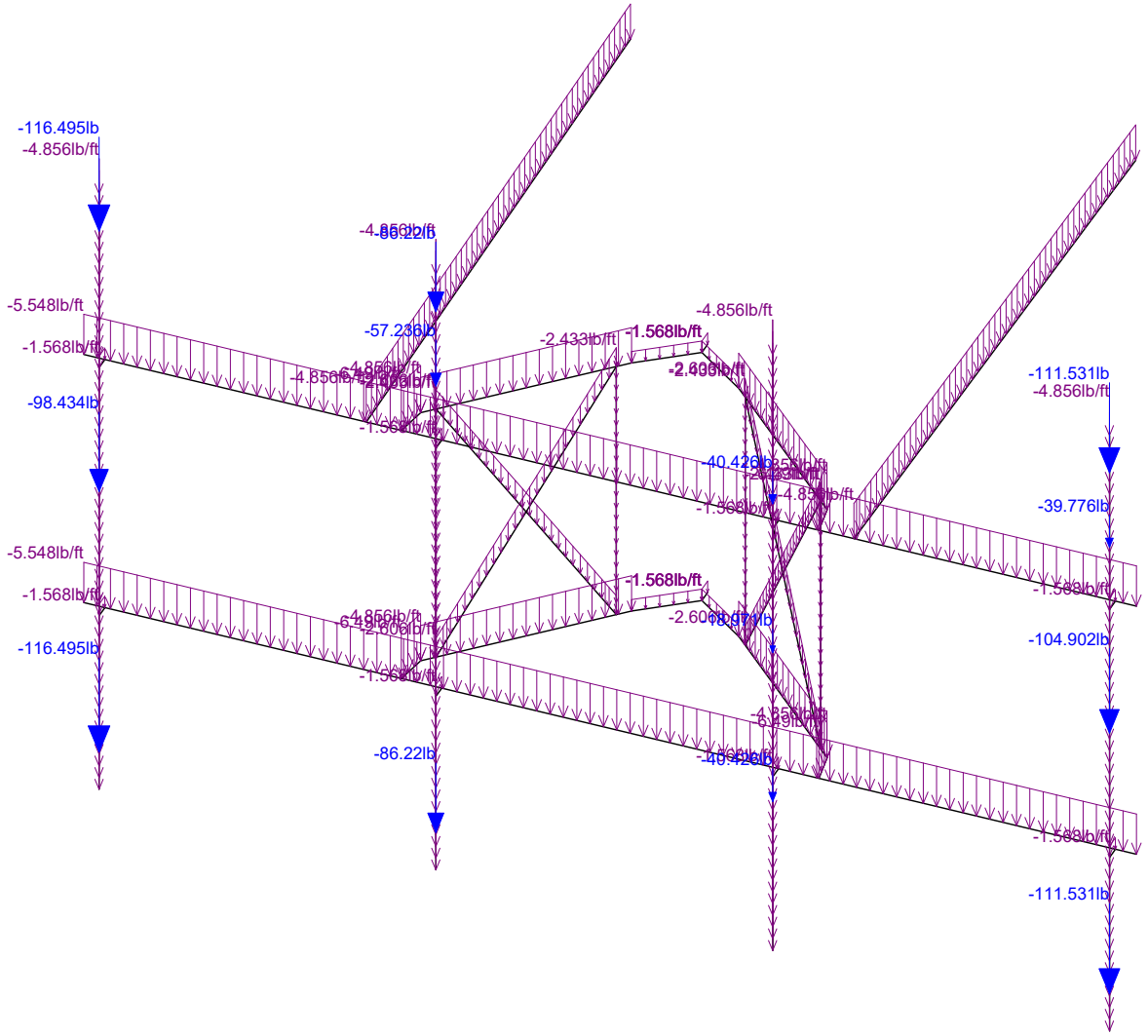
Loads: BLC 14, Distr. Wind Load Z

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:51 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



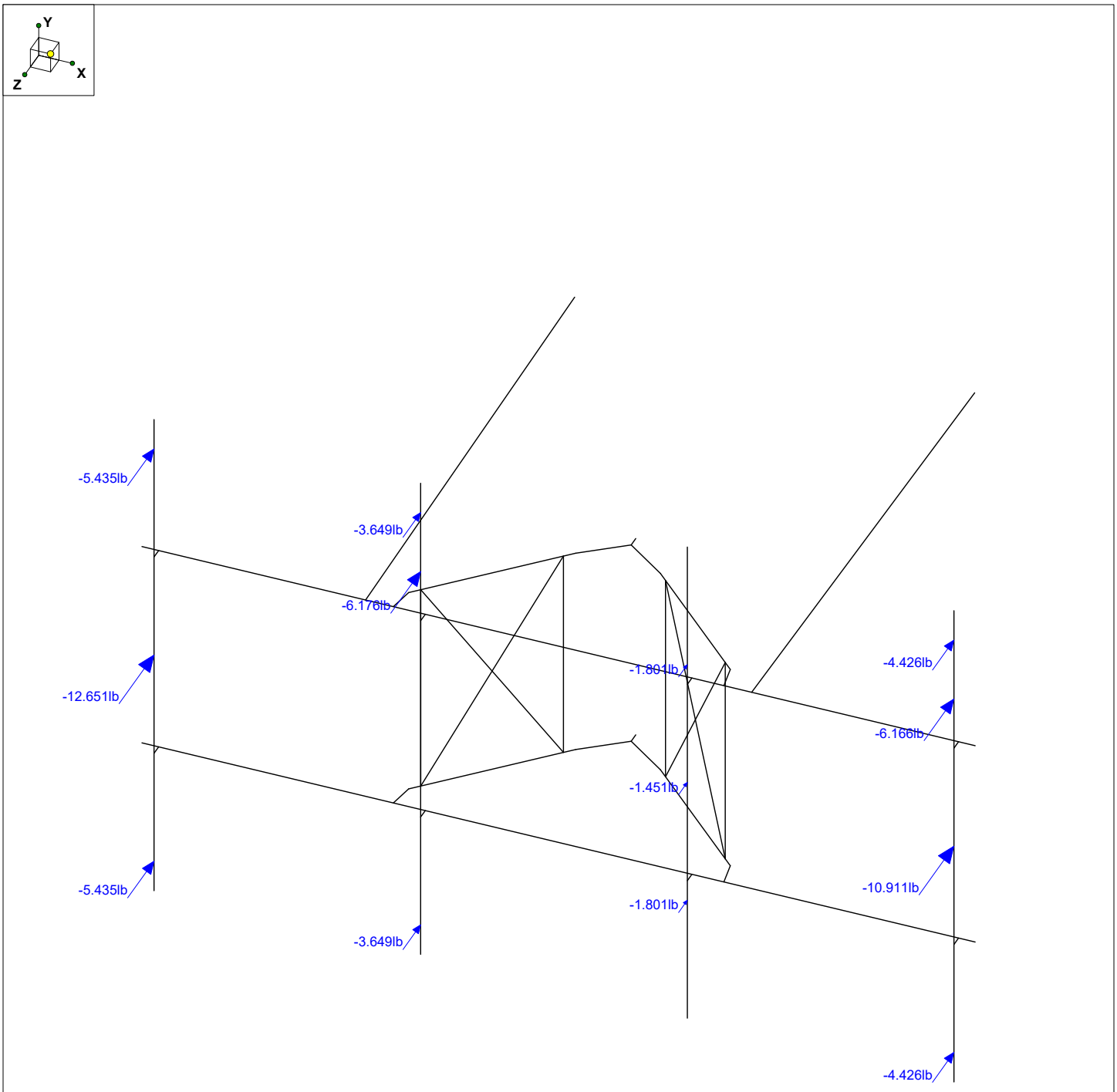
Loads: BLC 15, Distr. Wind Load X

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



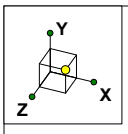
Loads: BLC 16, Ice Weight

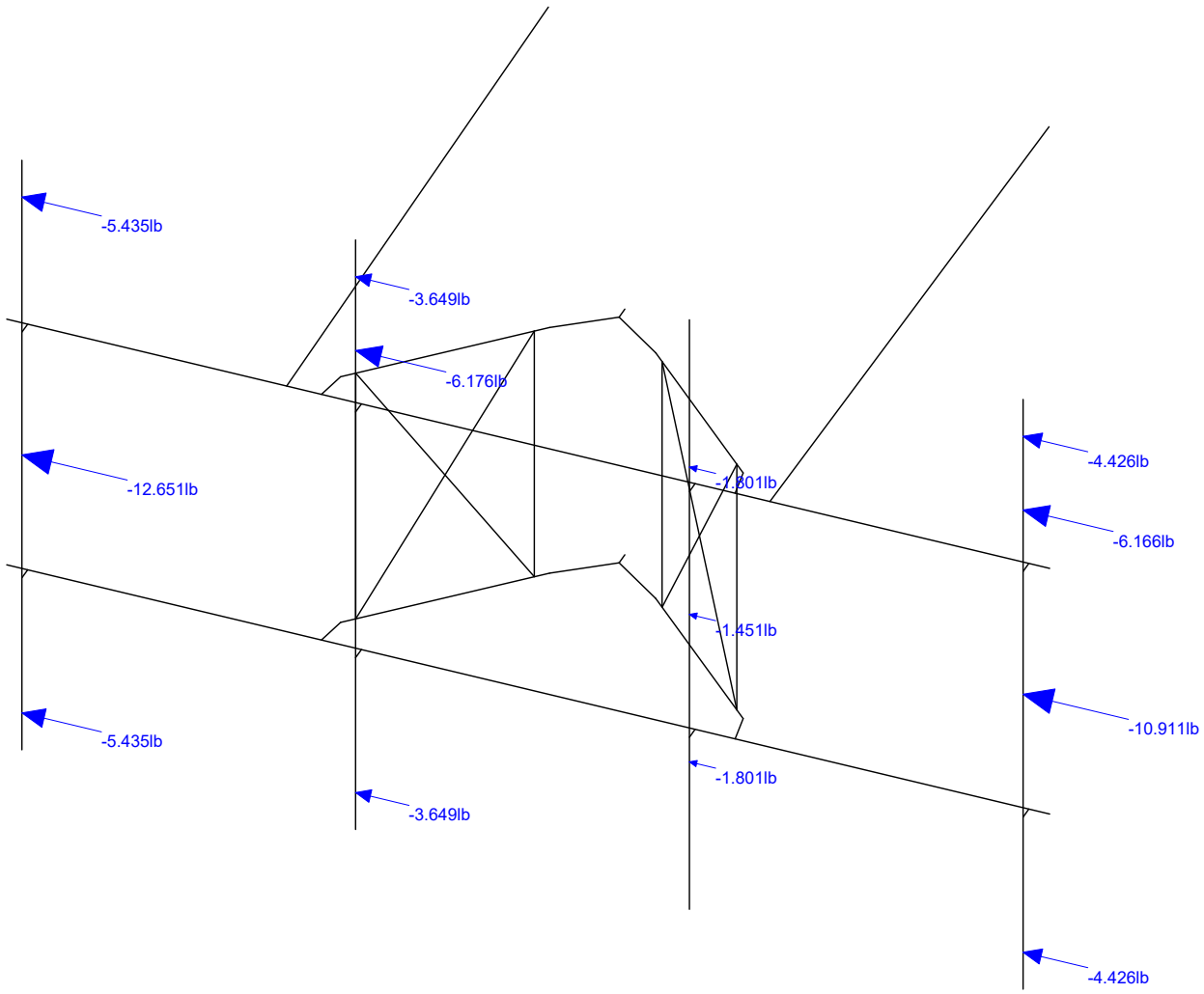
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Loads: BLC 31, Seismic Load Z

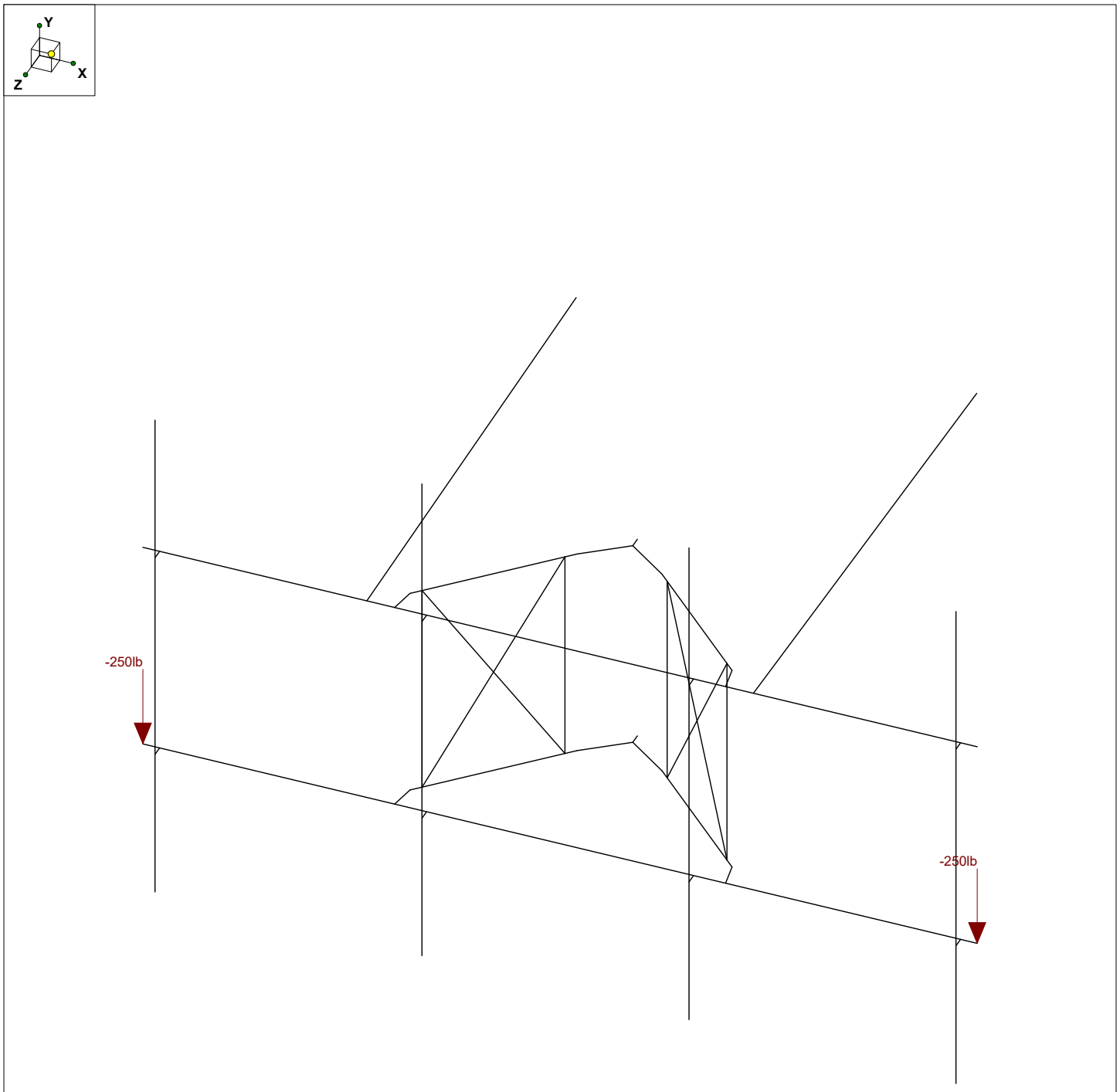
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d





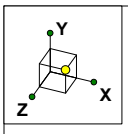
Loads: BLC 32, Seismic Load X

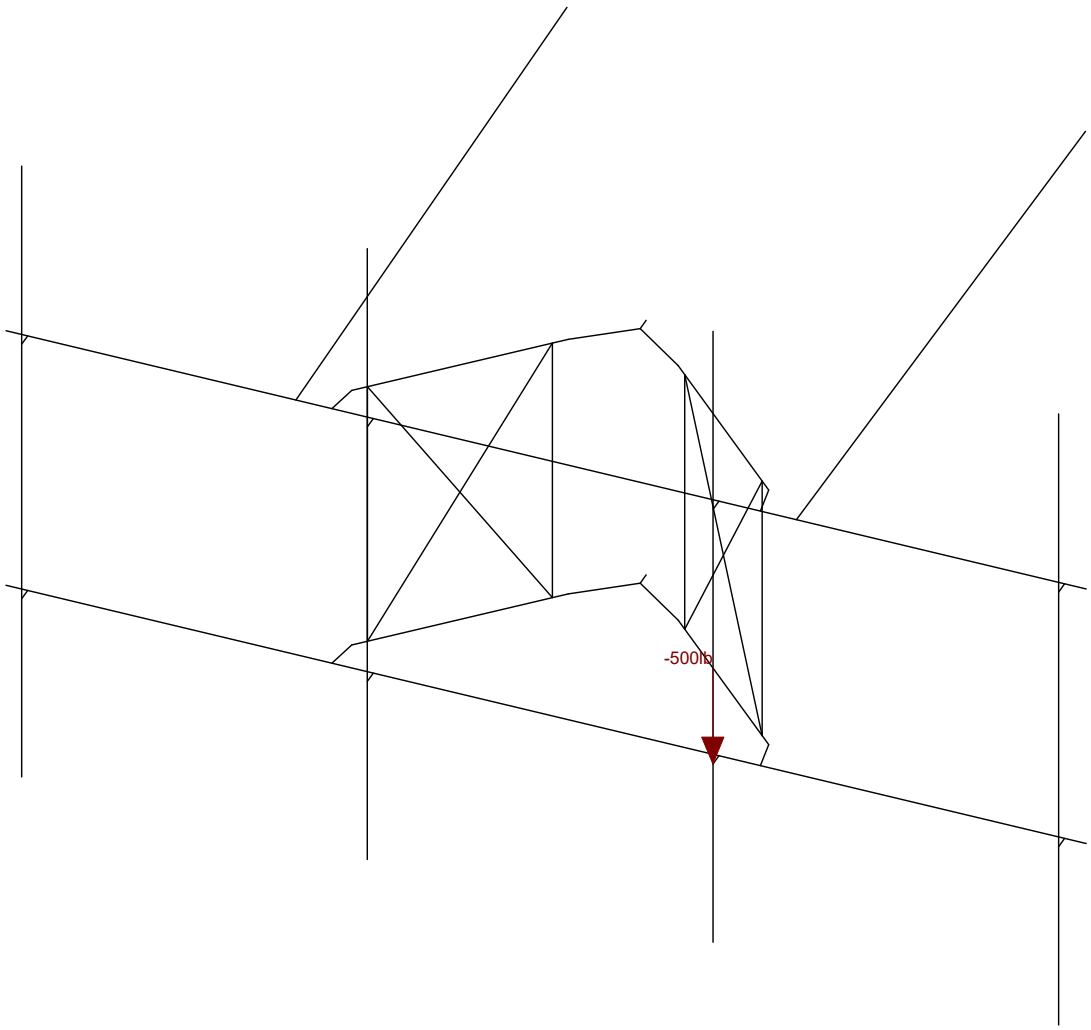
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Loads: BLC 33, Service Live Loads

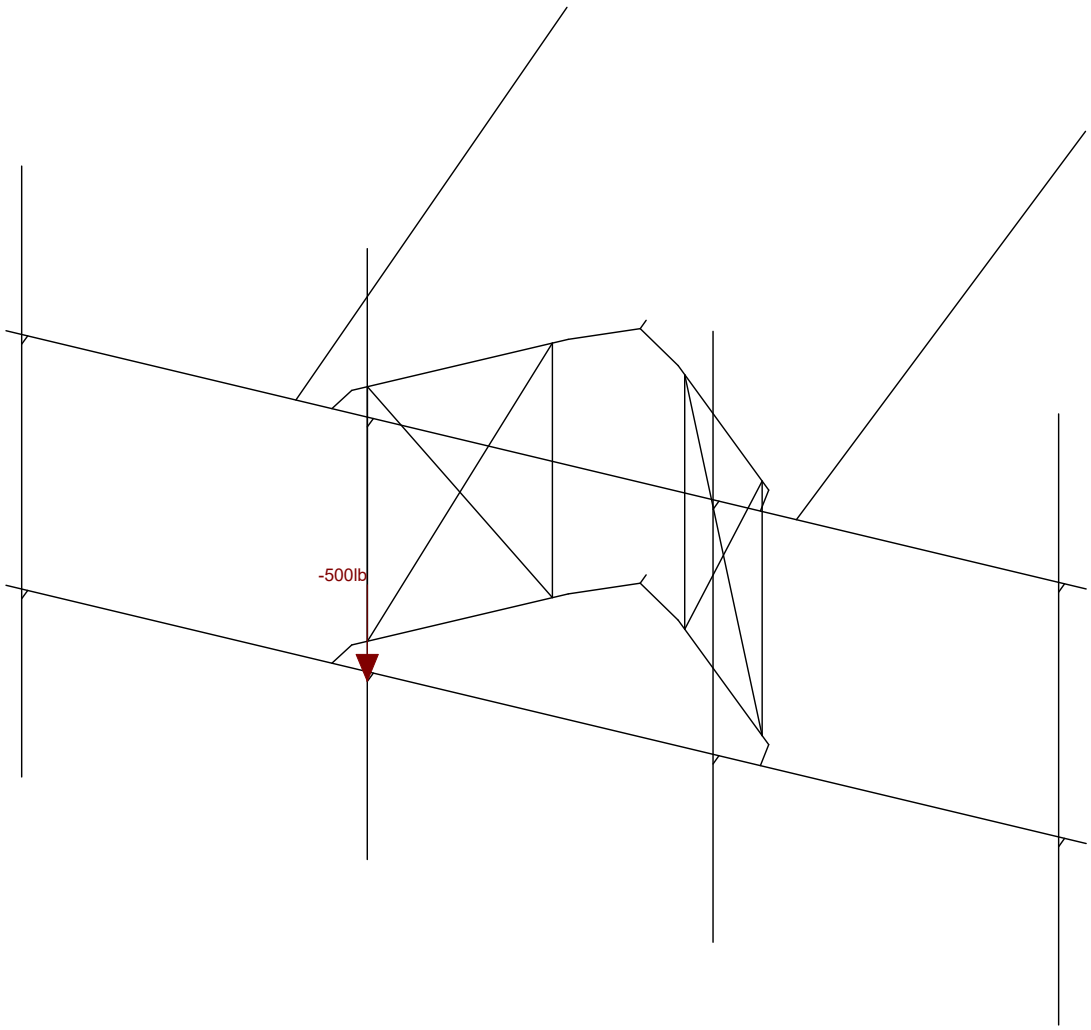
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:53 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d





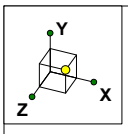
Loads: BLC 37, Maintenance Load 4

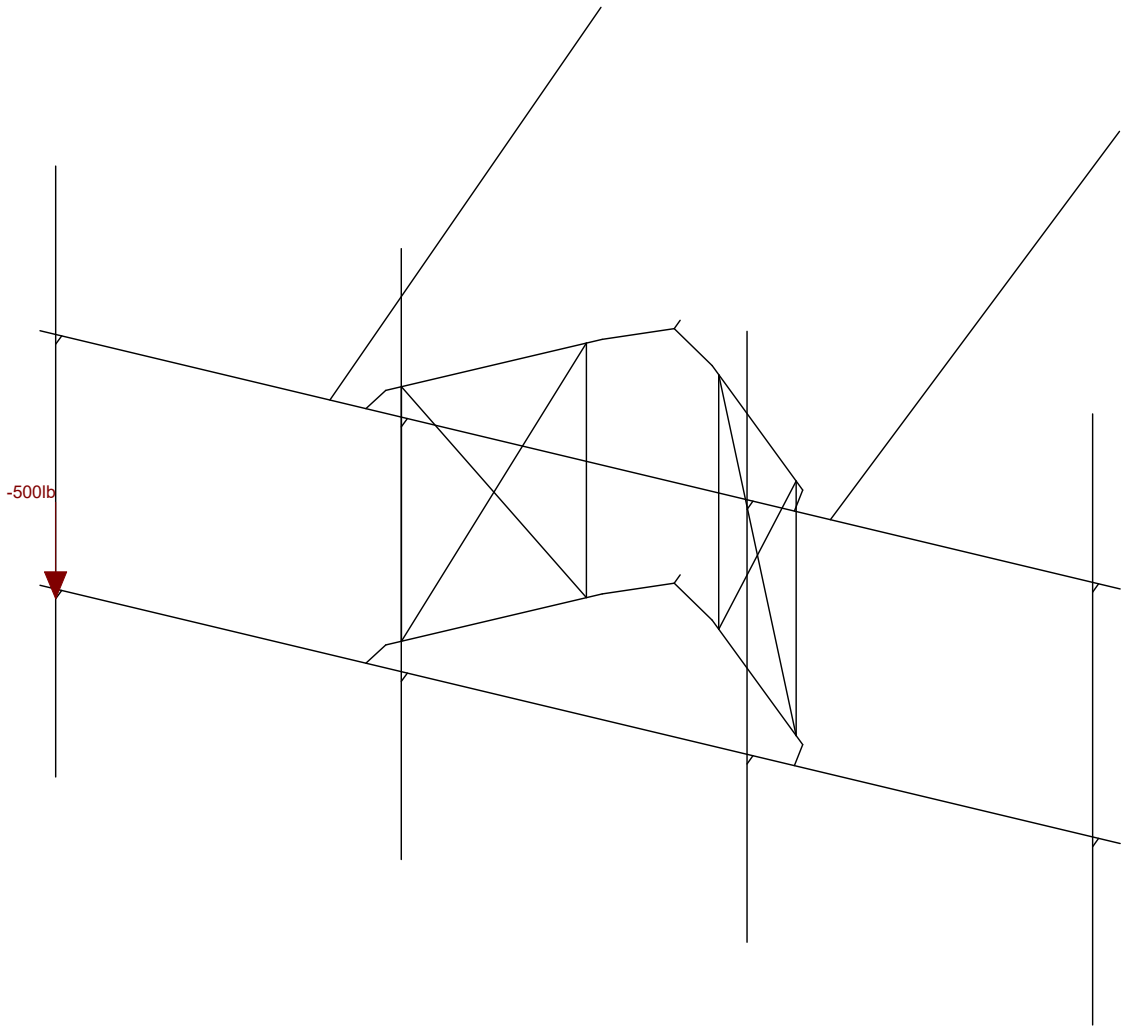
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Loads: BLC 36, Maintenance Load 3

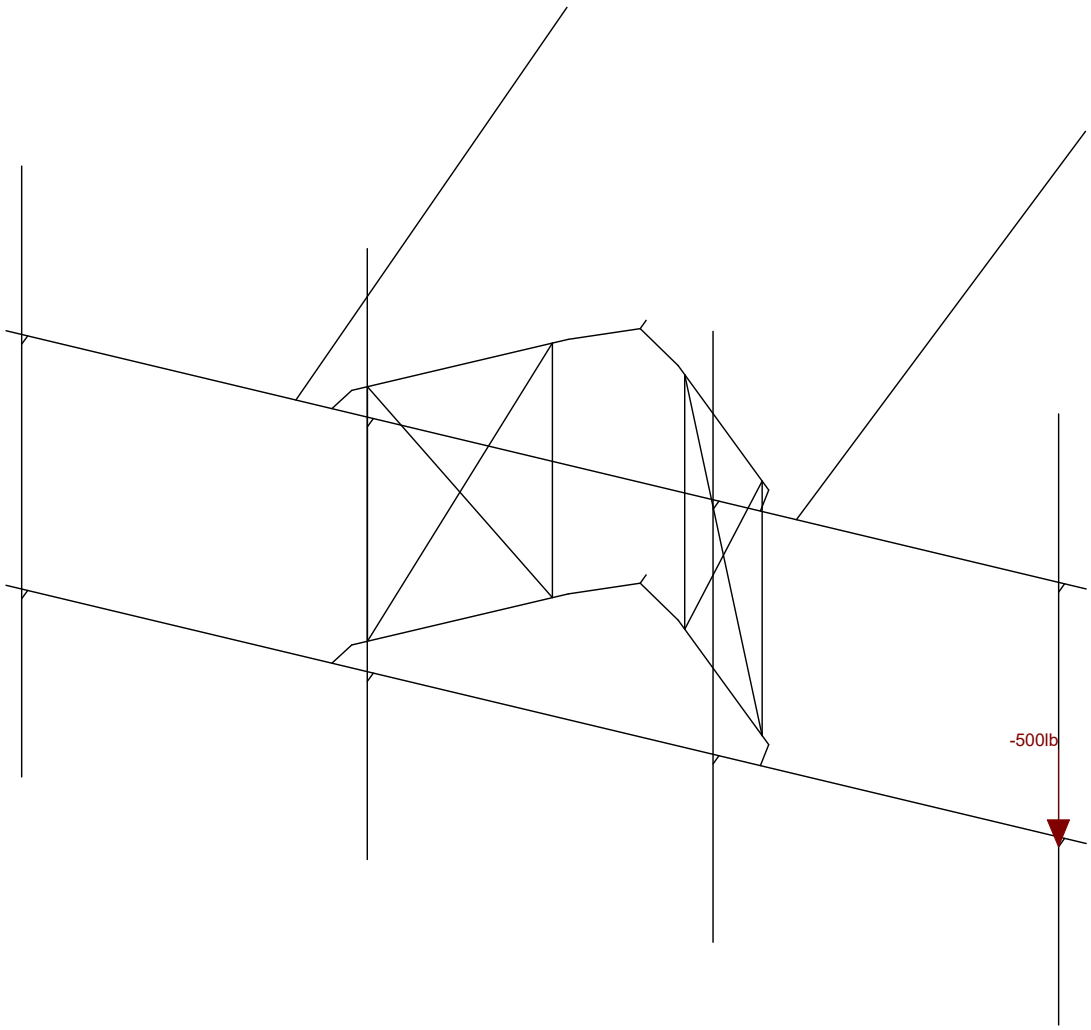
Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d





Loads: BLC 35, Maintenance Load 2

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d



Loads: BLC 34, Maintenance Load 1

Infinigy Engineering, PLLC	CTL05468	Final Configuration
BDA		June 3, 2020 at 10:52 AM
1106-A0001-B		VFA12-HD_CTL05468_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	Smartlink
Carrier:	AT&T
Engineer:	Brenden Archer

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	293.3	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Sector Frame	
Num Sectors:	3	
Centerline AGL:	115.0	ft
Tower Height AGL:	150.0	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	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}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	77.34	psf
Round Pressure:	46.40	psf
Ice Wind Pressure:	7.42	psf

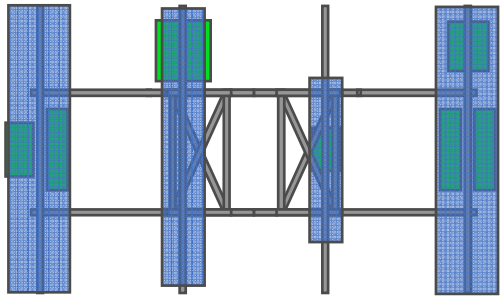
SEISMIC DATA		
Short-Period Accel. (S_s):	0.19	g
1-Second Accel. (S_1):	0.05	g
Short-Period Design (S_{DS}):	0.21	
1-Second Design (S_{D1}):	0.09	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

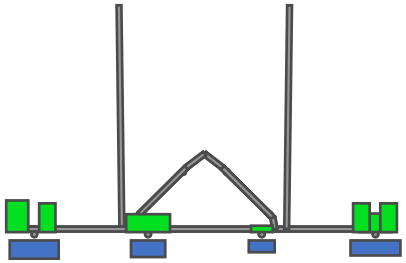
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.4

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)
POWERWAVE TECHNOLOGIES 7770	115.0	3	0.90	38.67	5.51	2.93	191.71	101.91	35.00	3.60	MP2
CCI ANTENNAS OPA-65R-LCUU-H8	115.0	1	0.90	38.67	11.93	8.06	415.34	280.46	70.90	7.30	MP3
CCI ANTENNAS OPA-65R-LCUU-H6	115.0	2	0.90	38.67	9.19	6.21	319.67	216.29	63.50	6.54	Leg/Flush
MW COMMUNICATIONS EPBQ-654L8H8-	115.0	1	0.90	38.67	14.86	6.25	517.26	217.63	86.00	8.85	MP1
MW COMMUNICATIONS EPBQ-654L8H6-	115.0	2	0.90	38.67	11.09	4.69	386.11	163.38	83.80	8.63	Leg/Flush
CCI ANTENNAS DMP65R-BU8DA	115.0	1	0.90	38.67	17.87	8.12	621.97	282.68	105.60	10.87	MP4
CCI ANTENNAS DMP65R-BU6DA	115.0	2	0.90	38.67	12.71	5.62	442.33	195.43	89.30	9.19	Leg/Flush
ERICSSON TME-RRUS E2 B29	115.0	3	0.90	38.67	3.15	1.29	109.46	44.74	60.00	6.18	MP3
ERICSSON TME-RRUS 4478 B14	115.0	3	0.90	38.67	1.84	1.06	64.12	36.85	59.90	6.17	MP1
ERICSSON TME-RRUS 32 B66A	115.0	3	0.90	38.67	2.74	1.67	95.45	58.05	53.00	5.46	MP1
ERICSSON TME-RRUS 32 B30	115.0	3	0.90	38.67	2.74	1.67	95.45	58.05	53.00	5.46	MP1
ERICSSON TME-RADIO 4449	115.0	3	0.90	38.67	1.98	1.41	68.91	49.07	70.00	7.21	MP4
ERICSSON TME-RRUS 32 B2	115.0	3	0.90	38.67	2.73	1.67	95.06	58.05	52.90	5.45	MP4
WERWAVE TECHNOLOGIES TME-LGP21	115.0	6	0.90	38.67	1.10	0.35	38.42	12.08	14.10	1.45	MP2
RAYCAP TME-DC6-48-60-18-8F	115.0	3	0.90	38.67	2.90	2.90	100.95	100.95	32.80	3.38	Leg/Flush
RAYCAP TME-DC6-48-60-18-8F	115.0	1	0.90	38.67	2.90	2.90	100.95	100.95	32.80	3.38	Leg/Flush

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N23	N27		90	RIGID	None	None	RIGID	Typical
2	M3	N24	N26		90	RIGID	None	None	RIGID	Typical
3	M5	N24	N21		90	RIGID	None	None	RIGID	Typical
4	M7	N23	N20		90	RIGID	None	None	RIGID	Typical
5	M2	N17	N28		90	Plate	Beam	None	A36 Gr.36	Typical
6	M4	N12	N25		90	Plate	Beam	None	A36 Gr.36	Typical
7	M6	N13	N22		90	Plate	Beam	None	A36 Gr.36	Typical
8	M8	N16	N19		90	Plate	Beam	None	A36 Gr.36	Typical
9	MP1	N32	N35			Mount Pipe	Beam	Pipe	A53-b	Typical
10	MP4	N33	N34			Mount Pipe	Beam	Pipe	A53-b	Typical
11	TB1	N2	N30			Tieback	Beam	Pipe	A53-b	Typical
12	H1	N53	N55			Horizontal	Beam	Pipe	A53-b	Typical
13	H2	N52	N54			Horizontal	Beam	Pipe	A53-b	Typical
14	M16	N28	N27			Standoff	Beam	Pipe	A53-b	Typical
15	M17	N25	N26			Standoff	Beam	Pipe	A53-b	Typical
16	M18	N22	N21			Standoff	Beam	Pipe	A53-b	Typical
17	M19	N19	N20			Standoff	Beam	Pipe	A53-b	Typical
18	M24	N10	N9			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
19	M25	N6	N5			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
20	M26	N3	N4			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
21	M27	N7	N8			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
22	M28	N3	N8			Cross Bracing	Beam	BAR	A36 Gr.36	Typical
23	M29	N4	N7			Cross Bracing	Beam	BAR	A36 Gr.36	Typical
24	M30	N9	N6			Cross Bracing	Beam	BAR	A36 Gr.36	Typical
25	M31	N10	N5			Cross Bracing	Beam	BAR	A36 Gr.36	Typical
26	TB2	N1	N31			Tieback	Beam	Pipe	A53-b	Typical
27	M31A	N39	N18			RIGID	None	None	RIGID	Typical
28	M32	N36	N11			RIGID	None	None	RIGID	Typical
29	M33	N38	N15			RIGID	None	None	RIGID	Typical
30	M34	N37	N14			RIGID	None	None	RIGID	Typical
31	MP3	N42	N43			Mount Pipe	Beam	Pipe	A53-b	Typical
32	M36	N45	N41			RIGID	None	None	RIGID	Typical
33	M37A	N44	N40			RIGID	None	None	RIGID	Typical
34	MP2	N48	N49			Mount Pipe	Beam	Pipe	A53-b	Typical
35	M42	N51	N47			RIGID	None	None	RIGID	Typical
36	M43	N50	N46			RIGID	None	None	RIGID	Typical
37	M37	N23	N56			RIGID	None	None	RIGID	Typical
38	M38	N24	N57			RIGID	None	None	RIGID	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		14	58.2	0
3	Total General		14	58.2	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	.625 x 3.5"	4	19.1	11.856
7	A36 Gr.36	.75 Dia.	4	190	23.808
8	A36 Gr.36	0.625 SR	4	160	13.919
9	A53-b	PIPE_2.0	10	691.8	200.106
10	A53-b	PIPE_2.5	2	300	136.962
11	Total HR Steel		24	1361	386.652

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			15			
2	Wind Load AZI 0	WLZ					30			
3	Wind Load AZI 30	None					30			
4	Wind Load AZI 60	None					30			
5	Wind Load AZI 90	WLX					30			
6	Wind Load AZI 120	None					30			
7	Wind Load AZI 150	None					30			
8	Wind Load AZI 180	None					30			
9	Wind Load AZI 210	None					30			
10	Wind Load AZI 240	None					30			
11	Wind Load AZI 270	None					30			
12	Wind Load AZI 300	None					30			
13	Wind Load AZI 330	None					30			
14	Distr. Wind Load Z	WLZ						38		
15	Distr. Wind Load X	WLX						38		
16	Ice Weight	OL1					15	38		
17	Ice Wind Load AZI 0	OL2					30			
18	Ice Wind Load AZI 30	None					30			
19	Ice Wind Load AZI 60	None					30			
20	Ice Wind Load AZI 90	OL3					30			
21	Ice Wind Load AZI 120	None					30			
22	Ice Wind Load AZI 150	None					30			
23	Ice Wind Load AZI 180	None					30			
24	Ice Wind Load AZI 210	None					30			
25	Ice Wind Load AZI 240	None					30			
26	Ice Wind Load AZI 270	None					30			
27	Ice Wind Load AZI 300	None					30			
28	Ice Wind Load AZI 330	None					30			
29	Distr. Ice Wind Load Z	OL2						38		
30	Distr. Ice Wind Load X	OL3						38		
31	Seismic Load Z	ELZ			-.103		15			
32	Seismic Load X	ELX	-.103				15			
33	Service Live Loads	LL				2				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				

Load Combinations

	Description	S...	PD...	S...	B...	Fact...	BLC	Fact...	BLC	Fact...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...												
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...												
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15													

Load Combinations (Continued)

	Description	S...	PD...	S...	B...	Fact...	BLC	Fact...	BLC	Fact...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.866	15	-.5												
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...												
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...												
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30												
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5											
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866											
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1											
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866											
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5											
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30												
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5											
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...											
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1											
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...											
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5											
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.241	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.241	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.241	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.241	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Y...	Y		1	1.241	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Y...	Y		1	1.241	31	-.866	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Y...	Y		1	1.241	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Y...	Y		1	1.241	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Y...	Y		1	1.241	31	-.5	32	-.866														
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Y...	Y		1	1.241	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Y...	Y		1	1.241	31	.5	32	-.866														
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Y...	Y		1	1.241	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.859	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.859	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.859	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.859	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Y...	Y		1	.859	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Y...	Y		1	.859	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Y...	Y		1	.859	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Y...	Y		1	.859	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Y...	Y		1	.859	31	-.5	32	-.866														
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Y...	Y		1	.859	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Y...	Y		1	.859	31	.5	32	-.866														
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Y...	Y		1	.859	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	2	.23	14	.23	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	3	.23	14	.2	15	.115	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	4	.23	14	.115	15	.2	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	5	.23	14		15	.23	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	6	.23	14	-.115	15	.2	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	7	.23	14	-.2	15	.115	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	8	.23	14	-.23	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	9	.23	14	-.2	15	-.1...	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	10	.23	14	-.115	15	-.2	33	1.5										

Load Combinations (Continued)

	Description	S...	PD...	S...	B...	Fact...	BLC	Fact...	BLC	Fact...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	11	.23	14		15	-.23	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	12	.23	14	.115	15	-.2	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL (60 m...	Y...	Y		1	1	13	.23	14	.2	15	-.1...	33	1.5										
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	2	.058	14	.058	15											
77	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029										
78	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05										
79	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	5	.058	14		15	.058										
80	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	6	.058	14	-.0...	15	.05										
81	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029										
82	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	8	.058	14	-.0...	15											
83	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.0...										
84	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	10	.058	14	-.0...	15	-.05										
85	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	11	.058	14		15	-.0...										
86	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05										
87	1.2DL + 1.5LM-MP1 + 1SWL (3...	Y...	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.0...										
88	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	2	.058	14	.058	15											
89	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029										
90	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05										
91	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	5	.058	14		15	.058										
92	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	6	.058	14	-.0...	15	.05										
93	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029										
94	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	8	.058	14	-.0...	15											
95	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.0...										
96	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	10	.058	14	-.0...	15	-.05										
97	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	11	.058	14		15	-.0...										
98	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05										
99	1.2DL + 1.5LM-MP2 + 1SWL (3...	Y...	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.0...										
100	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	2	.058	14	.058	15											
101	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029										
102	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05										
103	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	5	.058	14		15	.058										
104	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	6	.058	14	-.0...	15	.05										
105	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029										
106	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	8	.058	14	-.0...	15											
107	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.0...										
108	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	10	.058	14	-.0...	15	-.05										
109	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	11	.058	14		15	-.0...										
110	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05										
111	1.2DL + 1.5LM-MP3 + 1SWL (3...	Y...	Y		1	1.2	36	1.5	13	.058	14	.05	15	-.0...										
112	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	2	.058	14	.058	15											
113	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	3	.058	14	.05	15	.029										
114	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	4	.058	14	.029	15	.05										
115	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	5	.058	14		15	.058										
116	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	6	.058	14	-.0...	15	.05										
117	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	7	.058	14	-.05	15	.029										
118	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	8	.058	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	9	.058	14	-.05	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	10	.058	14	-.0...	15	-.05										
121	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	11	.058	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1SWL (3...	Y...	Y		1	1.2	37	1.5	12	.058	14	.029	15	-.05										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N30	max	37.575	5	28.455	29	1688.608	25	0	122	0	122	0	122
2		min	-37.364	23	-1.268	21	-1724.189	7	0	1	0	1	0	1
3	N31	max	37.291	17	27.573	38	1890.416	15	0	122	0	122	0	122
4		min	-37.734	11	-4.339	19	-1926.062	9	0	1	0	1	0	1
5	N56	max	1098.778	4	2654.284	33	946.184	20	-609.737	14	0	122	1059.654	78
6		min	-1089.327	22	812.185	14	-2203.413	2	-1993.255	34	0	1	-1086.006	96
7	N57	max	1061.12	80	106.394	27	2156.904	2	66.488	20	0	122	54.181	7
8		min	-1071.694	98	-30.994	20	-838.384	20	-94.961	2	0	1	-51.439	25
9	Totals:	max	1748.391	16	2795.41	31	3018.116	14						
10		min	-1748.391	22	899.229	60	-3018.116	8						

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

	Member	Shape	Code Che...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*P...	phi*M...	phi*M.....		Eqn
1	M4	.625 x 3.5"	.520	0	8	.172	4.778	y	99	69777.888	70875	922.8...	5167....	...	H1-1b
2	MP1	PIPE_2.0	.432	30.316	84	.059	30.316		83	23233.265	32130	1871....	1871....	...	H1-1b
3	MP4	PIPE_2.0	.423	65.684	99	.058	30.316		89	23233.265	32130	1871....	1871....	...	H1-1b
4	H1	PIPE_2.5	.413	39.474	8	.112	106.579		13	29547.045	50715	3596....	3596....	...	H1-1b
5	H2	PIPE_2.5	.411	43.421	2	.098	43.421		8	29547.045	50715	3596....	3596....	...	H1-1b
6	M2	.625 x 3.5"	.385	0	2	.167	4.778	y	92	69777.888	70875	922.8...	5167....	...	H1-1b
7	M6	.625 x 3.5"	.371	0	8	.176	4.778	y	77	69777.888	70875	922.8...	5167....	...	H1-1b
8	M18	PIPE_2.0	.332	0	8	.094	1.579		81	31128.673	32130	1871....	1871....	...	H1-1b
9	M17	PIPE_2.0	.331	0	8	.107	1.579		8	31128.673	32130	1871....	1871....	...	H1-1b
10	M8	.625 x 3.5"	.303	0	3	.172	0	y	78	69777.888	70875	922.8...	5167....	...	H1-1b
11	M19	PIPE_2.0	.303	0	2	.188	30		78	31128.673	32130	1871....	1871....	...	H1-1b
12	M16	PIPE_2.0	.292	0	2	.188	30		96	31128.673	32130	1871....	1871....	...	H1-1b
13	M24	0.625 SR	.280	40	99	.011	0		4	4378.243	9940....	103.5...	103.5...	...	H1-1a
14	M27	0.625 SR	.275	40	77	.010	40		4	4378.243	9940....	103.5...	103.5...	1	H1-1a
15	MP3	PIPE_2.0	.265	27.789	8	.068	30.316		4	23233.265	32130	1871....	1871....	...	H1-1b
16	MP2	PIPE_2.0	.217	30.316	10	.061	30.316		10	23233.265	32130	1871....	1871....	...	H1-1b
17	TB2	PIPE_2.0	.144	0	14	.005	0		5	20079.895	32130	1871....	1871....	...	H1-1b
18	TB1	PIPE_2.0	.141	0	14	.005	0		12	20079.895	32130	1871....	1871....	...	H1-1b
19	M30	.75 Dia.	.132	0	98	.013	47.512		9	3679.003	1431...	178.9...	178.9...	...	H1-1b
20	M28	.75 Dia.	.131	47.512	78	.011	0		7	3679.003	1431...	178.9...	178.9...	...	H1-1b
21	M25	0.625 SR	.047	40	95	.012	0		4	4378.243	9940....	103.5...	103.5...	1	H1-...
22	M26	0.625 SR	.046	40	80	.012	40		4	4378.243	9940....	103.5...	103.5...	...	H1-...
23	M29	.75 Dia.	.000	0	122	.000	0		122	3679.003	1431...	178.9...	178.9...	1	H1-1a
24	M31	.75 Dia.	.000	0	122	.000	0		122	3679.003	1431...	178.9...	178.9...	1	H1-1a

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE_2.0	Beam	Pipe	A53-b	Typical	1.02	.627	.627	1.25
2	Standoff	PIPE_2.0	Beam	Pipe	A53-b	Typical	1.02	.627	.627	1.25
3	Tieback	PIPE_2.0	Beam	Pipe	A53-b	Typical	1.02	.627	.627	1.25
4	Cross Bracing	.75 Dia.	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
5	Vertical Bracing	0.625 SR	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
6	Horizontal	PIPE_2.5	Beam	Pipe	A53-b	Typical	1.61	1.45	1.45	2.89
7	Plate	.625 x 3.5"	Beam	None	A36 Gr.36	Typical	2.188	.071	2.233	.253

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	** NA **			None
2	M3						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...
3	M5						Yes	** NA **			None
4	M7						Yes	** NA **			None
5	M2						Yes				None
6	M4						Yes				None
7	M6						Yes				None
8	M8						Yes				None
9	MP1						Yes				None
10	MP4						Yes				None
11	TB1						Yes				None
12	H1						Yes				None
13	H2						Yes				None
14	M16						Yes				None
15	M17						Yes				None
16	M18						Yes				None
17	M19						Yes				None
18	M24						Yes				None
19	M25						Yes				None
20	M26						Yes				None
21	M27						Yes				None
22	M28						Yes				None
23	M29					Tension ...	Yes				None
24	M30						Yes				None
25	M31					Tension ...	Yes				None
26	TB2						Yes				None
27	M31A						Yes	** NA **			None
28	M32						Yes	** NA **			None
29	M33						Yes	** NA **			None
30	M34						Yes	** NA **			None
31	MP3						Yes				None
32	M36						Yes	** NA **			None
33	M37A						Yes	** NA **			None
34	MP2						Yes				None
35	M42						Yes	** NA **			None
36	M43						Yes	** NA **			None
37	M37						Yes	** NA **			None
38	M38						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M2	Plate	4.778			Lbyy			.65	.65		Lateral
2	M4	Plate	4.778			Lbyy			.65	.65		Lateral
3	M6	Plate	4.778			Lbyy			.65	.65		Lateral
4	M8	Plate	4.778			Lbyy			.65	.65		Lateral
5	MP1	Mount Pipe	96			Lbyy			.65	.65		Lateral
6	MP4	Mount Pipe	96			Lbyy			.65	.65		Lateral
7	TB1	Tieback	93.922			Lbyy			.8	.8		Lateral
8	H1	Horizontal	150			Lbyy			.65	.65		Lateral
9	H2	Horizontal	150			Lbyy			.65	.65		Lateral
10	M16	Standoff	30			Lbyy			.65	.65		Lateral
11	M17	Standoff	30			Lbyy			.65	.65		Lateral
12	M18	Standoff	30			Lbyy			.65	.65		Lateral
13	M19	Standoff	30			Lbyy			.65	.65		Lateral
14	M24	Vertical Bra...	40	30	30	Lbyy			.65	.65		Lateral
15	M25	Vertical Bra...	40	30	30	Lbyy			.65	.65		Lateral
16	M26	Vertical Bra...	40	30	30	Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
17	M27	Vertical Bra...	40	30	30	Lbyy			.65	.65		Lateral
18	M28	Cross Braci...	47.512			Lbyy			.65	.65		Lateral
19	M29	Cross Braci...	47.512			Lbyy			.65	.65		Lateral
20	M30	Cross Braci...	47.512			Lbyy			.65	.65		Lateral
21	M31	Cross Braci...	47.512			Lbyy			.65	.65		Lateral
22	TB2	Tieback	93.922			Lbyy			.8	.8		Lateral
23	MP3	Mount Pipe	96			Lbyy			.65	.65		Lateral
24	MP2	Mount Pipe	96			Lbyy			.65	.65		Lateral

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*i...
1	N52	L	Y	-250
2	N54	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*i...
1	N37	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*i...
1	N36	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*i...
1	N44	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*i...
1	N50	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-17.5	24
2	MP2	Y	-17.5	72
3	MP3	Y	-35.45	6
4	MP3	Y	-35.45	90
5	MP1	Y	-43	6
6	MP1	Y	-43	90
7	MP4	Y	-52.8	6
8	MP4	Y	-52.8	90
9	MP3	Y	-60	18
10	MP1	Y	-59.9	18
11	MP1	Y	-53	48
12	MP1	Y	-53	48
13	MP4	Y	-70	48
14	MP4	Y	-52.9	48
15	MP2	Y	-14.1	48

Member Point Loads (BLC 2 : Wind Load AZI_0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP2	Z	-95.86	24
3	MP2	X	0	72
4	MP2	Z	-95.86	72
5	MP3	X	0	6
6	MP3	Z	-207.67	6
7	MP3	X	0	90
8	MP3	Z	-207.67	90
9	MP1	X	0	6
10	MP1	Z	-258.63	6
11	MP1	X	0	90
12	MP1	Z	-258.63	90
13	MP4	X	0	6
14	MP4	Z	-310.98	6
15	MP4	X	0	90
16	MP4	Z	-310.98	90
17	MP3	X	0	18
18	MP3	Z	-109.46	18
19	MP1	X	0	18
20	MP1	Z	-64.12	18
21	MP1	X	0	48
22	MP1	Z	-95.45	48
23	MP1	X	0	48
24	MP1	Z	-95.45	48
25	MP4	X	0	48
26	MP4	Z	-68.91	48
27	MP4	X	0	48
28	MP4	Z	-95.06	48
29	MP2	X	0	48
30	MP2	Z	-38.42	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-42.32	24
2	MP2	Z	-73.29	24
3	MP2	X	-42.32	72
4	MP2	Z	-73.29	72
5	MP3	X	-95.4	6
6	MP3	Z	-165.25	6
7	MP3	X	-95.4	90
8	MP3	Z	-165.25	90
9	MP1	X	-110.59	6
10	MP1	Z	-191.54	6
11	MP1	X	-110.59	90
12	MP1	Z	-191.54	90
13	MP4	X	-134.29	6
14	MP4	Z	-232.59	6
15	MP4	X	-134.29	90
16	MP4	Z	-232.59	90
17	MP3	X	-46.64	18
18	MP3	Z	-80.78	18
19	MP1	X	-28.65	18
20	MP1	Z	-49.63	18
21	MP1	X	-43.05	48
22	MP1	Z	-74.57	48
23	MP1	X	-43.05	48
24	MP1	Z	-74.57	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
25	MP4	X	-31.98	48
26	MP4	Z	-55.38	48
27	MP4	X	-42.9	48
28	MP4	Z	-74.31	48
29	MP2	X	-15.92	48
30	MP2	Z	-27.57	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-53.85	24
2	MP2	Z	-31.09	24
3	MP2	X	-53.85	72
4	MP2	Z	-31.09	72
5	MP3	X	-136.05	6
6	MP3	Z	-78.55	6
7	MP3	X	-136.05	90
8	MP3	Z	-78.55	90
9	MP1	X	-126.67	6
10	MP1	Z	-73.13	6
11	MP1	X	-126.67	90
12	MP1	Z	-73.13	90
13	MP4	X	-159.13	6
14	MP4	Z	-91.87	6
15	MP4	X	-159.13	90
16	MP4	Z	-91.87	90
17	MP3	X	-52.75	18
18	MP3	Z	-30.46	18
19	MP1	X	-37.82	18
20	MP1	Z	-21.83	18
21	MP1	X	-58.37	48
22	MP1	Z	-33.7	48
23	MP1	X	-58.37	48
24	MP1	Z	-33.7	48
25	MP4	X	-46.79	48
26	MP4	Z	-27.02	48
27	MP4	X	-58.29	48
28	MP4	Z	-33.65	48
29	MP2	X	-16.17	48
30	MP2	Z	-9.33	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-50.96	24
2	MP2	Z	0	24
3	MP2	X	-50.96	72
4	MP2	Z	0	72
5	MP3	X	-140.23	6
6	MP3	Z	0	6
7	MP3	X	-140.23	90
8	MP3	Z	0	90
9	MP1	X	-108.81	6
10	MP1	Z	0	6
11	MP1	X	-108.81	90
12	MP1	Z	0	90
13	MP4	X	-141.34	6
14	MP4	Z	0	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	X	-141.34	90
16	MP4	Z	0	90
17	MP3	X	-44.74	18
18	MP3	Z	0	18
19	MP1	X	-36.85	18
20	MP1	Z	0	18
21	MP1	X	-58.05	48
22	MP1	Z	0	48
23	MP1	X	-58.05	48
24	MP1	Z	0	48
25	MP4	X	-49.07	48
26	MP4	Z	0	48
27	MP4	X	-58.05	48
28	MP4	Z	0	48
29	MP2	X	-12.08	48
30	MP2	Z	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-53.85	24
2	MP2	Z	31.09	24
3	MP2	X	-53.85	72
4	MP2	Z	31.09	72
5	MP3	X	-136.05	6
6	MP3	Z	78.55	6
7	MP3	X	-136.05	90
8	MP3	Z	78.55	90
9	MP1	X	-126.67	6
10	MP1	Z	73.13	6
11	MP1	X	-126.67	90
12	MP1	Z	73.13	90
13	MP4	X	-159.13	6
14	MP4	Z	91.87	6
15	MP4	X	-159.13	90
16	MP4	Z	91.87	90
17	MP3	X	-52.75	18
18	MP3	Z	30.46	18
19	MP1	X	-37.82	18
20	MP1	Z	21.83	18
21	MP1	X	-58.37	48
22	MP1	Z	33.7	48
23	MP1	X	-58.37	48
24	MP1	Z	33.7	48
25	MP4	X	-46.79	48
26	MP4	Z	27.02	48
27	MP4	X	-58.29	48
28	MP4	Z	33.65	48
29	MP2	X	-16.17	48
30	MP2	Z	9.33	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-42.32	24
2	MP2	Z	73.29	24
3	MP2	X	-42.32	72
4	MP2	Z	73.29	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP3	X	-95.4	6
6	MP3	Z	165.25	6
7	MP3	X	-95.4	90
8	MP3	Z	165.25	90
9	MP1	X	-110.59	6
10	MP1	Z	191.54	6
11	MP1	X	-110.59	90
12	MP1	Z	191.54	90
13	MP4	X	-134.29	6
14	MP4	Z	232.59	6
15	MP4	X	-134.29	90
16	MP4	Z	232.59	90
17	MP3	X	-46.64	18
18	MP3	Z	80.78	18
19	MP1	X	-28.65	18
20	MP1	Z	49.63	18
21	MP1	X	-43.05	48
22	MP1	Z	74.57	48
23	MP1	X	-43.05	48
24	MP1	Z	74.57	48
25	MP4	X	-31.98	48
26	MP4	Z	55.38	48
27	MP4	X	-42.9	48
28	MP4	Z	74.31	48
29	MP2	X	-15.92	48
30	MP2	Z	27.57	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	24
2	MP2	Z	95.86	24
3	MP2	X	0	72
4	MP2	Z	95.86	72
5	MP3	X	0	6
6	MP3	Z	207.67	6
7	MP3	X	0	90
8	MP3	Z	207.67	90
9	MP1	X	0	6
10	MP1	Z	258.63	6
11	MP1	X	0	90
12	MP1	Z	258.63	90
13	MP4	X	0	6
14	MP4	Z	310.98	6
15	MP4	X	0	90
16	MP4	Z	310.98	90
17	MP3	X	0	18
18	MP3	Z	109.46	18
19	MP1	X	0	18
20	MP1	Z	64.12	18
21	MP1	X	0	48
22	MP1	Z	95.45	48
23	MP1	X	0	48
24	MP1	Z	95.45	48
25	MP4	X	0	48
26	MP4	Z	68.91	48
27	MP4	X	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP4	Z	95.06	48
29	MP2	X	0	48
30	MP2	Z	38.42	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	42.32	24
2	MP2	Z	73.29	24
3	MP2	X	42.32	72
4	MP2	Z	73.29	72
5	MP3	X	95.4	6
6	MP3	Z	165.25	6
7	MP3	X	95.4	90
8	MP3	Z	165.25	90
9	MP1	X	110.59	6
10	MP1	Z	191.54	6
11	MP1	X	110.59	90
12	MP1	Z	191.54	90
13	MP4	X	134.29	6
14	MP4	Z	232.59	6
15	MP4	X	134.29	90
16	MP4	Z	232.59	90
17	MP3	X	46.64	18
18	MP3	Z	80.78	18
19	MP1	X	28.65	18
20	MP1	Z	49.63	18
21	MP1	X	43.05	48
22	MP1	Z	74.57	48
23	MP1	X	43.05	48
24	MP1	Z	74.57	48
25	MP4	X	31.98	48
26	MP4	Z	55.38	48
27	MP4	X	42.9	48
28	MP4	Z	74.31	48
29	MP2	X	15.92	48
30	MP2	Z	27.57	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	53.85	24
2	MP2	Z	31.09	24
3	MP2	X	53.85	72
4	MP2	Z	31.09	72
5	MP3	X	136.05	6
6	MP3	Z	78.55	6
7	MP3	X	136.05	90
8	MP3	Z	78.55	90
9	MP1	X	126.67	6
10	MP1	Z	73.13	6
11	MP1	X	126.67	90
12	MP1	Z	73.13	90
13	MP4	X	159.13	6
14	MP4	Z	91.87	6
15	MP4	X	159.13	90
16	MP4	Z	91.87	90
17	MP3	X	52.75	18

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP3	Z	30.46	18
19	MP1	X	37.82	18
20	MP1	Z	21.83	18
21	MP1	X	58.37	48
22	MP1	Z	33.7	48
23	MP1	X	58.37	48
24	MP1	Z	33.7	48
25	MP4	X	46.79	48
26	MP4	Z	27.02	48
27	MP4	X	58.29	48
28	MP4	Z	33.65	48
29	MP2	X	16.17	48
30	MP2	Z	9.33	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	50.96	24
2	MP2	Z	0	24
3	MP2	X	50.96	72
4	MP2	Z	0	72
5	MP3	X	140.23	6
6	MP3	Z	0	6
7	MP3	X	140.23	90
8	MP3	Z	0	90
9	MP1	X	108.81	6
10	MP1	Z	0	6
11	MP1	X	108.81	90
12	MP1	Z	0	90
13	MP4	X	141.34	6
14	MP4	Z	0	6
15	MP4	X	141.34	90
16	MP4	Z	0	90
17	MP3	X	44.74	18
18	MP3	Z	0	18
19	MP1	X	36.85	18
20	MP1	Z	0	18
21	MP1	X	58.05	48
22	MP1	Z	0	48
23	MP1	X	58.05	48
24	MP1	Z	0	48
25	MP4	X	49.07	48
26	MP4	Z	0	48
27	MP4	X	58.05	48
28	MP4	Z	0	48
29	MP2	X	12.08	48
30	MP2	Z	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	53.85	24
2	MP2	Z	-31.09	24
3	MP2	X	53.85	72
4	MP2	Z	-31.09	72
5	MP3	X	136.05	6
6	MP3	Z	-78.55	6
7	MP3	X	136.05	90

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP3	Z	-78.55	90
9	MP1	X	126.67	6
10	MP1	Z	-73.13	6
11	MP1	X	126.67	90
12	MP1	Z	-73.13	90
13	MP4	X	159.13	6
14	MP4	Z	-91.87	6
15	MP4	X	159.13	90
16	MP4	Z	-91.87	90
17	MP3	X	52.75	18
18	MP3	Z	-30.46	18
19	MP1	X	37.82	18
20	MP1	Z	-21.83	18
21	MP1	X	58.37	48
22	MP1	Z	-33.7	48
23	MP1	X	58.37	48
24	MP1	Z	-33.7	48
25	MP4	X	46.79	48
26	MP4	Z	-27.02	48
27	MP4	X	58.29	48
28	MP4	Z	-33.65	48
29	MP2	X	16.17	48
30	MP2	Z	-9.33	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	42.32	24
2	MP2	Z	-73.29	24
3	MP2	X	42.32	72
4	MP2	Z	-73.29	72
5	MP3	X	95.4	6
6	MP3	Z	-165.25	6
7	MP3	X	95.4	90
8	MP3	Z	-165.25	90
9	MP1	X	110.59	6
10	MP1	Z	-191.54	6
11	MP1	X	110.59	90
12	MP1	Z	-191.54	90
13	MP4	X	134.29	6
14	MP4	Z	-232.59	6
15	MP4	X	134.29	90
16	MP4	Z	-232.59	90
17	MP3	X	46.64	18
18	MP3	Z	-80.78	18
19	MP1	X	28.65	18
20	MP1	Z	-49.63	18
21	MP1	X	43.05	48
22	MP1	Z	-74.57	48
23	MP1	X	43.05	48
24	MP1	Z	-74.57	48
25	MP4	X	31.98	48
26	MP4	Z	-55.38	48
27	MP4	X	42.9	48
28	MP4	Z	-74.31	48
29	MP2	X	15.92	48
30	MP2	Z	-27.57	48

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-40.426	24
2	MP2	Y	-40.426	72
3	MP3	Y	-86.22	6
4	MP3	Y	-86.22	90
5	MP1	Y	-111.531	6
6	MP1	Y	-111.531	90
7	MP4	Y	-116.495	6
8	MP4	Y	-116.495	90
9	MP3	Y	-57.236	18
10	MP1	Y	-39.776	18
11	MP1	Y	-52.451	48
12	MP1	Y	-52.451	48
13	MP4	Y	-46.117	48
14	MP4	Y	-52.317	48
15	MP2	Y	-18.971	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	24
2	MP2	Z	-9.25	24
3	MP2	X	0	72
4	MP2	Z	-9.25	72
5	MP3	X	0	6
6	MP3	Z	-18.32	6
7	MP3	X	0	90
8	MP3	Z	-18.32	90
9	MP1	X	0	6
10	MP1	Z	-23.8	6
11	MP1	X	0	90
12	MP1	Z	-23.8	90
13	MP4	X	0	6
14	MP4	Z	-23.54	6
15	MP4	X	0	90
16	MP4	Z	-23.54	90
17	MP3	X	0	18
18	MP3	Z	-9.1	18
19	MP1	X	0	18
20	MP1	Z	-6.18	18
21	MP1	X	0	48
22	MP1	Z	-9.27	48
23	MP1	X	0	48
24	MP1	Z	-9.27	48
25	MP4	X	0	48
26	MP4	Z	-6.63	48
27	MP4	X	0	48
28	MP4	Z	-9.26	48
29	MP2	X	0	48
30	MP2	Z	-4.67	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-4.29	24
2	MP2	Z	-7.43	24
3	MP2	X	-4.29	72
4	MP2	Z	-7.43	72
5	MP3	X	-8.72	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP3	Z	-15.11	6
7	MP3	X	-8.72	90
8	MP3	Z	-15.11	90
9	MP1	X	-10.75	6
10	MP1	Z	-18.62	6
11	MP1	X	-10.75	90
12	MP1	Z	-18.62	90
13	MP4	X	-10.79	6
14	MP4	Z	-18.7	6
15	MP4	X	-10.79	90
16	MP4	Z	-18.7	90
17	MP3	X	-4.14	18
18	MP3	Z	-7.18	18
19	MP1	X	-2.93	18
20	MP1	Z	-5.07	18
21	MP1	X	-4.42	48
22	MP1	Z	-7.66	48
23	MP1	X	-4.42	48
24	MP1	Z	-7.66	48
25	MP4	X	-3.2	48
26	MP4	Z	-5.54	48
27	MP4	X	-4.42	48
28	MP4	Z	-7.65	48
29	MP2	X	-2.03	48
30	MP2	Z	-3.52	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.29	24
2	MP2	Z	-3.63	24
3	MP2	X	-6.29	72
4	MP2	Z	-3.63	72
5	MP3	X	-13.6	6
6	MP3	Z	-7.85	6
7	MP3	X	-13.6	90
8	MP3	Z	-7.85	90
9	MP1	X	-14.66	6
10	MP1	Z	-8.46	6
11	MP1	X	-14.66	90
12	MP1	Z	-8.46	90
13	MP4	X	-15.32	6
14	MP4	Z	-8.84	6
15	MP4	X	-15.32	90
16	MP4	Z	-8.84	90
17	MP3	X	-5.77	18
18	MP3	Z	-3.33	18
19	MP1	X	-4.52	18
20	MP1	Z	-2.61	18
21	MP1	X	-6.91	48
22	MP1	Z	-3.99	48
23	MP1	X	-6.91	48
24	MP1	Z	-3.99	48
25	MP4	X	-5.16	48
26	MP4	Z	-2.98	48
27	MP4	X	-6.91	48
28	MP4	Z	-3.99	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
29	MP2	X	-2.48	48
30	MP2	Z	-1.43	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.59	24
2	MP2	Z	0	24
3	MP2	X	-6.59	72
4	MP2	Z	0	72
5	MP3	X	-14.84	6
6	MP3	Z	0	6
7	MP3	X	-14.84	90
8	MP3	Z	0	90
9	MP1	X	-14.64	6
10	MP1	Z	0	6
11	MP1	X	-14.64	90
12	MP1	Z	0	90
13	MP4	X	-15.73	6
14	MP4	Z	0	6
15	MP4	X	-15.73	90
16	MP4	Z	0	90
17	MP3	X	-5.85	18
18	MP3	Z	0	18
19	MP1	X	-4.89	18
20	MP1	Z	0	18
21	MP1	X	-7.55	48
22	MP1	Z	0	48
23	MP1	X	-7.55	48
24	MP1	Z	0	48
25	MP4	X	-5.73	48
26	MP4	Z	0	48
27	MP4	X	-7.55	48
28	MP4	Z	0	48
29	MP2	X	-2.26	48
30	MP2	Z	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.29	24
2	MP2	Z	3.63	24
3	MP2	X	-6.29	72
4	MP2	Z	3.63	72
5	MP3	X	-13.6	6
6	MP3	Z	7.85	6
7	MP3	X	-13.6	90
8	MP3	Z	7.85	90
9	MP1	X	-14.66	6
10	MP1	Z	8.46	6
11	MP1	X	-14.66	90
12	MP1	Z	8.46	90
13	MP4	X	-15.32	6
14	MP4	Z	8.84	6
15	MP4	X	-15.32	90
16	MP4	Z	8.84	90
17	MP3	X	-5.77	18
18	MP3	Z	3.33	18

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP1	X	-4.52	18
20	MP1	Z	2.61	18
21	MP1	X	-6.91	48
22	MP1	Z	3.99	48
23	MP1	X	-6.91	48
24	MP1	Z	3.99	48
25	MP4	X	-5.16	48
26	MP4	Z	2.98	48
27	MP4	X	-6.91	48
28	MP4	Z	3.99	48
29	MP2	X	-2.48	48
30	MP2	Z	1.43	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-4.29	24
2	MP2	Z	7.43	24
3	MP2	X	-4.29	72
4	MP2	Z	7.43	72
5	MP3	X	-8.72	6
6	MP3	Z	15.11	6
7	MP3	X	-8.72	90
8	MP3	Z	15.11	90
9	MP1	X	-10.75	6
10	MP1	Z	18.62	6
11	MP1	X	-10.75	90
12	MP1	Z	18.62	90
13	MP4	X	-10.79	6
14	MP4	Z	18.7	6
15	MP4	X	-10.79	90
16	MP4	Z	18.7	90
17	MP3	X	-4.14	18
18	MP3	Z	7.18	18
19	MP1	X	-2.93	18
20	MP1	Z	5.07	18
21	MP1	X	-4.42	48
22	MP1	Z	7.66	48
23	MP1	X	-4.42	48
24	MP1	Z	7.66	48
25	MP4	X	-3.2	48
26	MP4	Z	5.54	48
27	MP4	X	-4.42	48
28	MP4	Z	7.65	48
29	MP2	X	-2.03	48
30	MP2	Z	3.52	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	24
2	MP2	Z	9.25	24
3	MP2	X	0	72
4	MP2	Z	9.25	72
5	MP3	X	0	6
6	MP3	Z	18.32	6
7	MP3	X	0	90
8	MP3	Z	18.32	90

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP1	X	0	6
10	MP1	Z	23.8	6
11	MP1	X	0	90
12	MP1	Z	23.8	90
13	MP4	X	0	6
14	MP4	Z	23.54	6
15	MP4	X	0	90
16	MP4	Z	23.54	90
17	MP3	X	0	18
18	MP3	Z	9.1	18
19	MP1	X	0	18
20	MP1	Z	6.18	18
21	MP1	X	0	48
22	MP1	Z	9.27	48
23	MP1	X	0	48
24	MP1	Z	9.27	48
25	MP4	X	0	48
26	MP4	Z	6.63	48
27	MP4	X	0	48
28	MP4	Z	9.26	48
29	MP2	X	0	48
30	MP2	Z	4.67	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	4.29	24
2	MP2	Z	7.43	24
3	MP2	X	4.29	72
4	MP2	Z	7.43	72
5	MP3	X	8.72	6
6	MP3	Z	15.11	6
7	MP3	X	8.72	90
8	MP3	Z	15.11	90
9	MP1	X	10.75	6
10	MP1	Z	18.62	6
11	MP1	X	10.75	90
12	MP1	Z	18.62	90
13	MP4	X	10.79	6
14	MP4	Z	18.7	6
15	MP4	X	10.79	90
16	MP4	Z	18.7	90
17	MP3	X	4.14	18
18	MP3	Z	7.18	18
19	MP1	X	2.93	18
20	MP1	Z	5.07	18
21	MP1	X	4.42	48
22	MP1	Z	7.66	48
23	MP1	X	4.42	48
24	MP1	Z	7.66	48
25	MP4	X	3.2	48
26	MP4	Z	5.54	48
27	MP4	X	4.42	48
28	MP4	Z	7.65	48
29	MP2	X	2.03	48
30	MP2	Z	3.52	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.29	24
2	MP2	Z	3.63	24
3	MP2	X	6.29	72
4	MP2	Z	3.63	72
5	MP3	X	13.6	6
6	MP3	Z	7.85	6
7	MP3	X	13.6	90
8	MP3	Z	7.85	90
9	MP1	X	14.66	6
10	MP1	Z	8.46	6
11	MP1	X	14.66	90
12	MP1	Z	8.46	90
13	MP4	X	15.32	6
14	MP4	Z	8.84	6
15	MP4	X	15.32	90
16	MP4	Z	8.84	90
17	MP3	X	5.77	18
18	MP3	Z	3.33	18
19	MP1	X	4.52	18
20	MP1	Z	2.61	18
21	MP1	X	6.91	48
22	MP1	Z	3.99	48
23	MP1	X	6.91	48
24	MP1	Z	3.99	48
25	MP4	X	5.16	48
26	MP4	Z	2.98	48
27	MP4	X	6.91	48
28	MP4	Z	3.99	48
29	MP2	X	2.48	48
30	MP2	Z	1.43	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.59	24
2	MP2	Z	0	24
3	MP2	X	6.59	72
4	MP2	Z	0	72
5	MP3	X	14.84	6
6	MP3	Z	0	6
7	MP3	X	14.84	90
8	MP3	Z	0	90
9	MP1	X	14.64	6
10	MP1	Z	0	6
11	MP1	X	14.64	90
12	MP1	Z	0	90
13	MP4	X	15.73	6
14	MP4	Z	0	6
15	MP4	X	15.73	90
16	MP4	Z	0	90
17	MP3	X	5.85	18
18	MP3	Z	0	18
19	MP1	X	4.89	18
20	MP1	Z	0	18
21	MP1	X	7.55	48
22	MP1	Z	0	48
23	MP1	X	7.55	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
24	MP1	Z	0	48
25	MP4	X	5.73	48
26	MP4	Z	0	48
27	MP4	X	7.55	48
28	MP4	Z	0	48
29	MP2	X	2.26	48
30	MP2	Z	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.29	24
2	MP2	Z	-3.63	24
3	MP2	X	6.29	72
4	MP2	Z	-3.63	72
5	MP3	X	13.6	6
6	MP3	Z	-7.85	6
7	MP3	X	13.6	90
8	MP3	Z	-7.85	90
9	MP1	X	14.66	6
10	MP1	Z	-8.46	6
11	MP1	X	14.66	90
12	MP1	Z	-8.46	90
13	MP4	X	15.32	6
14	MP4	Z	-8.84	6
15	MP4	X	15.32	90
16	MP4	Z	-8.84	90
17	MP3	X	5.77	18
18	MP3	Z	-3.33	18
19	MP1	X	4.52	18
20	MP1	Z	-2.61	18
21	MP1	X	6.91	48
22	MP1	Z	-3.99	48
23	MP1	X	6.91	48
24	MP1	Z	-3.99	48
25	MP4	X	5.16	48
26	MP4	Z	-2.98	48
27	MP4	X	6.91	48
28	MP4	Z	-3.99	48
29	MP2	X	2.48	48
30	MP2	Z	-1.43	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	4.29	24
2	MP2	Z	-7.43	24
3	MP2	X	4.29	72
4	MP2	Z	-7.43	72
5	MP3	X	8.72	6
6	MP3	Z	-15.11	6
7	MP3	X	8.72	90
8	MP3	Z	-15.11	90
9	MP1	X	10.75	6
10	MP1	Z	-18.62	6
11	MP1	X	10.75	90
12	MP1	Z	-18.62	90
13	MP4	X	10.79	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	-18.7	6
15	MP4	X	10.79	90
16	MP4	Z	-18.7	90
17	MP3	X	4.14	18
18	MP3	Z	-7.18	18
19	MP1	X	2.93	18
20	MP1	Z	-5.07	18
21	MP1	X	4.42	48
22	MP1	Z	-7.66	48
23	MP1	X	4.42	48
24	MP1	Z	-7.66	48
25	MP4	X	3.2	48
26	MP4	Z	-5.54	48
27	MP4	X	4.42	48
28	MP4	Z	-7.65	48
29	MP2	X	2.03	48
30	MP2	Z	-3.52	48

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Z	-1.801	24
2	MP2	Z	-1.801	72
3	MP3	Z	-3.649	6
4	MP3	Z	-3.649	90
5	MP1	Z	-4.426	6
6	MP1	Z	-4.426	90
7	MP4	Z	-5.435	6
8	MP4	Z	-5.435	90
9	MP3	Z	-6.176	18
10	MP1	Z	-6.166	18
11	MP1	Z	-5.455	48
12	MP1	Z	-5.455	48
13	MP4	Z	-7.205	48
14	MP4	Z	-5.445	48
15	MP2	Z	-1.451	48

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-1.801	24
2	MP2	X	-1.801	72
3	MP3	X	-3.649	6
4	MP3	X	-3.649	90
5	MP1	X	-4.426	6
6	MP1	X	-4.426	90
7	MP4	X	-5.435	6
8	MP4	X	-5.435	90
9	MP3	X	-6.176	18
10	MP1	X	-6.166	18
11	MP1	X	-5.455	48
12	MP1	X	-5.455	48
13	MP4	X	-7.205	48
14	MP4	X	-5.445	48
15	MP2	X	-1.451	48

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
1	M1	SZ	0	0	0	%100
2	M3	SZ	0	0	0	%100
3	M5	SZ	0	0	0	%100
4	M7	SZ	0	0	0	%100
5	M2	SZ	-77.34	-77.34	0	%100
6	M4	SZ	-77.34	-77.34	0	%100
7	M6	SZ	-77.34	-77.34	0	%100
8	M8	SZ	-77.34	-77.34	0	%100
9	MP1	SZ	-46.404	-46.404	0	%100
10	MP4	SZ	-46.404	-46.404	0	%100
11	TB1	SZ	-46.404	-46.404	0	%100
12	H1	SZ	-46.404	-46.404	0	%100
13	H2	SZ	-46.404	-46.404	0	%100
14	M16	SZ	-46.404	-46.404	0	%100
15	M17	SZ	-46.404	-46.404	0	%100
16	M18	SZ	-46.404	-46.404	0	%100
17	M19	SZ	-46.404	-46.404	0	%100
18	M24	SZ	-46.404	-46.404	0	%100
19	M25	SZ	-46.404	-46.404	0	%100
20	M26	SZ	-46.404	-46.404	0	%100
21	M27	SZ	-46.404	-46.404	0	%100
22	M28	SZ	-46.404	-46.404	0	%100
23	M29	SZ	-46.404	-46.404	0	%100
24	M30	SZ	-46.404	-46.404	0	%100
25	M31	SZ	-46.404	-46.404	0	%100
26	TB2	SZ	-46.404	-46.404	0	%100
27	M31A	SZ	0	0	0	%100
28	M32	SZ	0	0	0	%100
29	M33	SZ	0	0	0	%100
30	M34	SZ	0	0	0	%100
31	MP3	SZ	-46.404	-46.404	0	%100
32	M36	SZ	0	0	0	%100
33	M37A	SZ	0	0	0	%100
34	MP2	SZ	-46.404	-46.404	0	%100
35	M42	SZ	0	0	0	%100
36	M43	SZ	0	0	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
1	M1	SX	0	0	0	%100
2	M3	SX	0	0	0	%100
3	M5	SX	0	0	0	%100
4	M7	SX	0	0	0	%100
5	M2	SX	-77.34	-77.34	0	%100
6	M4	SX	-77.34	-77.34	0	%100
7	M6	SX	-77.34	-77.34	0	%100
8	M8	SX	-77.34	-77.34	0	%100
9	MP1	SX	-46.404	-46.404	0	%100
10	MP4	SX	-46.404	-46.404	0	%100
11	TB1	SX	-46.404	-46.404	0	%100
12	H1	SX	-46.404	-46.404	0	%100
13	H2	SX	-46.404	-46.404	0	%100
14	M16	SX	-46.404	-46.404	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
15	M17	SX	-46.404	-46.404	0	%100
16	M18	SX	-46.404	-46.404	0	%100
17	M19	SX	-46.404	-46.404	0	%100
18	M24	SX	-46.404	-46.404	0	%100
19	M25	SX	-46.404	-46.404	0	%100
20	M26	SX	-46.404	-46.404	0	%100
21	M27	SX	-46.404	-46.404	0	%100
22	M28	SX	-46.404	-46.404	0	%100
23	M29	SX	-46.404	-46.404	0	%100
24	M30	SX	-46.404	-46.404	0	%100
25	M31	SX	-46.404	-46.404	0	%100
26	TB2	SX	-46.404	-46.404	0	%100
27	M31A	SX	0	0	0	%100
28	M32	SX	0	0	0	%100
29	M33	SX	0	0	0	%100
30	M34	SX	0	0	0	%100
31	MP3	SX	-46.404	-46.404	0	%100
32	M36	SX	0	0	0	%100
33	M37A	SX	0	0	0	%100
34	MP2	SX	-46.404	-46.404	0	%100
35	M42	SX	0	0	0	%100
36	M43	SX	0	0	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
1	M1	Y	-1.568	-1.568	0	%100
2	M3	Y	-1.568	-1.568	0	%100
3	M5	Y	-1.568	-1.568	0	%100
4	M7	Y	-1.568	-1.568	0	%100
5	M2	Y	-6.49	-6.49	0	%100
6	M4	Y	-6.49	-6.49	0	%100
7	M6	Y	-6.49	-6.49	0	%100
8	M8	Y	-6.49	-6.49	0	%100
9	MP1	Y	-4.856	-4.856	0	%100
10	MP4	Y	-4.856	-4.856	0	%100
11	TB1	Y	-4.856	-4.856	0	%100
12	H1	Y	-5.548	-5.548	0	%100
13	H2	Y	-5.548	-5.548	0	%100
14	M16	Y	-4.856	-4.856	0	%100
15	M17	Y	-4.856	-4.856	0	%100
16	M18	Y	-4.856	-4.856	0	%100
17	M19	Y	-4.856	-4.856	0	%100
18	M24	Y	-2.433	-2.433	0	%100
19	M25	Y	-2.433	-2.433	0	%100
20	M26	Y	-2.433	-2.433	0	%100
21	M27	Y	-2.433	-2.433	0	%100
22	M28	Y	-2.606	-2.606	0	%100
23	M29	Y	-2.606	-2.606	0	%100
24	M30	Y	-2.606	-2.606	0	%100
25	M31	Y	-2.606	-2.606	0	%100
26	TB2	Y	-4.856	-4.856	0	%100
27	M31A	Y	-1.568	-1.568	0	%100
28	M32	Y	-1.568	-1.568	0	%100
29	M33	Y	-1.568	-1.568	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
30	M34	Y	-1.568	-1.568	0	%100
31	MP3	Y	-4.856	-4.856	0	%100
32	M36	Y	-1.568	-1.568	0	%100
33	M37A	Y	-1.568	-1.568	0	%100
34	MP2	Y	-4.856	-4.856	0	%100
35	M42	Y	-1.568	-1.568	0	%100
36	M43	Y	-1.568	-1.568	0	%100
37	M37	Y	-1.568	-1.568	0	%100
38	M38	Y	-1.568	-1.568	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
1	M1	SZ	0	0	0	%100
2	M3	SZ	0	0	0	%100
3	M5	SZ	0	0	0	%100
4	M7	SZ	0	0	0	%100
5	M2	SZ	-12.157	-12.157	0	%100
6	M4	SZ	-12.157	-12.157	0	%100
7	M6	SZ	-12.157	-12.157	0	%100
8	M8	SZ	-12.157	-12.157	0	%100
9	MP1	SZ	-14.508	-14.508	0	%100
10	MP4	SZ	-14.508	-14.508	0	%100
11	TB1	SZ	-14.508	-14.508	0	%100
12	H1	SZ	-13.276	-13.276	0	%100
13	H2	SZ	-13.276	-13.276	0	%100
14	M16	SZ	-14.508	-14.508	0	%100
15	M17	SZ	-14.508	-14.508	0	%100
16	M18	SZ	-14.508	-14.508	0	%100
17	M19	SZ	-14.508	-14.508	0	%100
18	M24	SZ	-34.343	-34.343	0	%100
19	M25	SZ	-34.343	-34.343	0	%100
20	M26	SZ	-34.343	-34.343	0	%100
21	M27	SZ	-34.343	-34.343	0	%100
22	M28	SZ	-29.856	-29.856	0	%100
23	M29	SZ	-29.856	-29.856	0	%100
24	M30	SZ	-29.856	-29.856	0	%100
25	M31	SZ	-29.856	-29.856	0	%100
26	TB2	SZ	-14.508	-14.508	0	%100
27	M31A	SZ	0	0	0	%100
28	M32	SZ	0	0	0	%100
29	M33	SZ	0	0	0	%100
30	M34	SZ	0	0	0	%100
31	MP3	SZ	-14.508	-14.508	0	%100
32	M36	SZ	0	0	0	%100
33	M37A	SZ	0	0	0	%100
34	MP2	SZ	-14.508	-14.508	0	%100
35	M42	SZ	0	0	0	%100
36	M43	SZ	0	0	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
1	M1	SX	0	0	0	%100
2	M3	SX	0	0	0	%100
3	M5	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Locatio...	End Location[...
4	M7	SX	0	0	0	%100
5	M2	SX	-12.157	-12.157	0	%100
6	M4	SX	-12.157	-12.157	0	%100
7	M6	SX	-12.157	-12.157	0	%100
8	M8	SX	-12.157	-12.157	0	%100
9	MP1	SX	-14.508	-14.508	0	%100
10	MP4	SX	-14.508	-14.508	0	%100
11	TB1	SX	-14.508	-14.508	0	%100
12	H1	SX	-13.276	-13.276	0	%100
13	H2	SX	-13.276	-13.276	0	%100
14	M16	SX	-14.508	-14.508	0	%100
15	M17	SX	-14.508	-14.508	0	%100
16	M18	SX	-14.508	-14.508	0	%100
17	M19	SX	-14.508	-14.508	0	%100
18	M24	SX	-34.343	-34.343	0	%100
19	M25	SX	-34.343	-34.343	0	%100
20	M26	SX	-34.343	-34.343	0	%100
21	M27	SX	-34.343	-34.343	0	%100
22	M28	SX	-29.856	-29.856	0	%100
23	M29	SX	-29.856	-29.856	0	%100
24	M30	SX	-29.856	-29.856	0	%100
25	M31	SX	-29.856	-29.856	0	%100
26	TB2	SX	-14.508	-14.508	0	%100
27	M31A	SX	0	0	0	%100
28	M32	SX	0	0	0	%100
29	M33	SX	0	0	0	%100
30	M34	SX	0	0	0	%100
31	MP3	SX	-14.508	-14.508	0	%100
32	M36	SX	0	0	0	%100
33	M37A	SX	0	0	0	%100
34	MP2	SX	-14.508	-14.508	0	%100
35	M42	SX	0	0	0	%100
36	M43	SX	0	0	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100

Member Area Loads

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

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

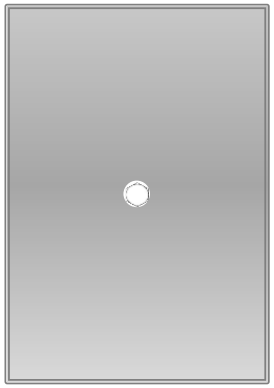
Bolt Calculation Tool, V1.4

PROJECT DATA	
Site Name:	Norwich SE
Site Number:	CTL05468
Job Code:	1106-A0001-B
Connection Description:	Pipe to Tower Leg

APPLIED LOADS		
Bolt Tension:	13645.94	lbs
Bolt Shear:	2633.99	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.75	in
Bolt Grade:	A325	-
# of Bolts:	1	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	30101.39	
Shear Strength	19880.39	
Tensile Usage	45.3%	
Shear Usage	13.2%	
Interaction Check	0.22	***≤1.05***
Result	Pass	



Mount Analysis and Mapping Checklist

Mount Detail	Both
Mount Type	Heavy Duty Sector Frame
Mount Model Number	Site Pro 1 VFA12-HD
If RT, then how is it attached	
If WT, then how is it attached	
Result of previous mount analysis or PE opinion letter	Pass

Inspector (Mapping)
(Vendor name)
(Inspector name)
(Contact phone)
(Contact email)

Mount Mapping Detail	Both
Material condition (discoloration, cracks, pitting)	
Mfg. drawing, cutsheet, spec. available?	
Date of previous mount mapping	
Searched prior OEM for material?	
Photos of installation available?	
Original tower drawings show mounts?	
Searched for previous mapping?	
Is latest mod design (dwgs) available?	
Is the latest structural analysis available?	

Project Detail	Both
Market	New England
PACE Project ID	MRCTB046975
Site Name	Norwich SE
City, State	Preston, CT
RFDS Version Number	1
Initiative (list mult., if applicable)	WCS
Tower Owner	
SA Vendor	
A&E firm (for structural analysis)	
A&E firm (for mapping, if different)	
Last amendment date or last site visit	

Site Information	Both
Original Lease Date	
FA Code	
Tower Type	Self Support Tower
Tower Height (Ft)	150
AT&T Rad Center # 1	115
AT&T Rad Center # 2	

Note: For each table in this form, note whether the information applies to "Mapping" only, or "Both" mount analysis and mapping. Equipment detail is for "Mapping" but is not labeled. Sketches are only required for mapping.

Measurements and Deliverables on sketches	Mapping
Pipe / Angle dimenions and lengths	
bolt diameters and lengths	
U-Bolt diameters and lengths	
Steel Grade if indicated	
welds :length and sizes	
appurtenance relative locations	
Grounding Condition	

Equipment Detail Alpha Sector	Model Number for Ant, MW, RRU, TMA, Squid / Size of Coax, DC-Fiber Trunks & Jumpers	Height / COAX-DC-Fiber Trunk & Jumper Lengths in feet	Approx Az	mount position location
Antennas	0	0	0	0
MW	0	0	0	0
RRU	0	0	0	0
TMA	0	0	0	0
Coax	0	0	0	0
RET (not imbedded in antenna)	0	0	0	0
DC Cable	0	0	0	0
Fiber Cable	0	0	0	0
Squid	0	0	0	0
Equipment Detail Beta Sector				
Antennas	0	0	0	0
MW	0	0	0	0
RRU	0	0	0	0
TMA	0	0	0	0
Coax	0	0	0	0
RET (not imbedded in antenna)	0	0	0	0
DC Cable	0	0	0	0
Fiber Cable	0	0	0	0
Squid	0	0	0	0
Equipment Detail Gamma Sector				
Antennas	0	0	0	0
MW	0	0	0	0
RRU	0	0	0	0
TMA	0	0	0	0
Coax	0	0	0	0
RET (not imbedded in antenna)	0	0	0	0
DC Cable	0	0	0	0
Fiber Cable	0	0	0	0
Squid	0	0	0	0

Comments

AT&T TARP Mount Program AMSS Form								
INPUT FIELDS							OUTPUT FIELDS	
BASIC WINDFSPEED (mph)	**Radial Ice (in)**	**Height (ft)**	**Exposure Category**	**Class**	**TOPO Category**	**Number of Mount Pipes / Sector**	Allowable EPA / pipe (ft sq)	Allowable Weight / Pipe (lbf)
							NOTE : Specify how many pipes are being considered per face for each EPA/WT pair	
97	1"	115	B	II	1	4	*26*	*1,550*

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Friday, February 5, 2021 10:12 AM
To: Kristina Cottone
Subject: FedEx Shipment 772809556298: Your package has been delivered

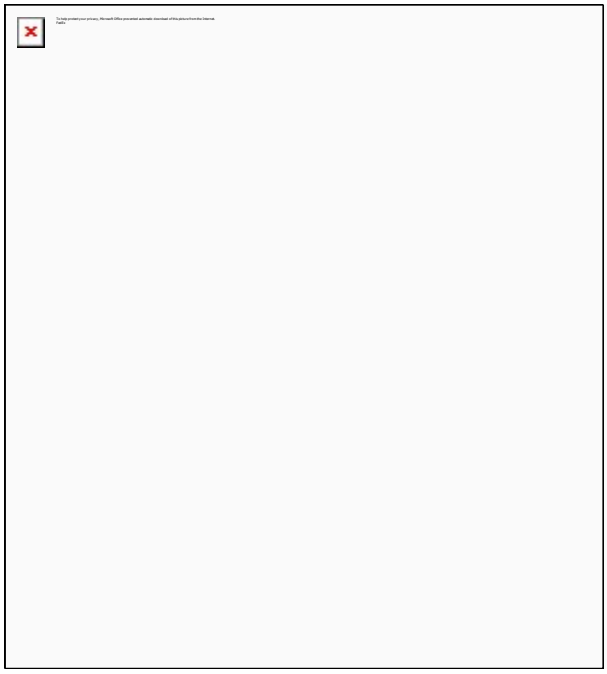
Hi. Your package was delivered Fri, 02/05/2021 at 10:08am.

Delivered to 100 BROADWAY, Norwich, CT 06360
Received by FFOURNIER

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	772809556298
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	City of Norwich ATTN: Mayor Peter A. Nystrom

	100 Broadway NORWICH, CT, US, 06360
REFERENCE	CTL05468 - Norwich
SHIP DATE	Thu 2/04/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	NORWICH, CT, US, 06360
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Friday, February 5, 2021 10:12 AM
To: Kristina Cottone
Subject: FedEx Shipment 772809519580: Your package has been delivered

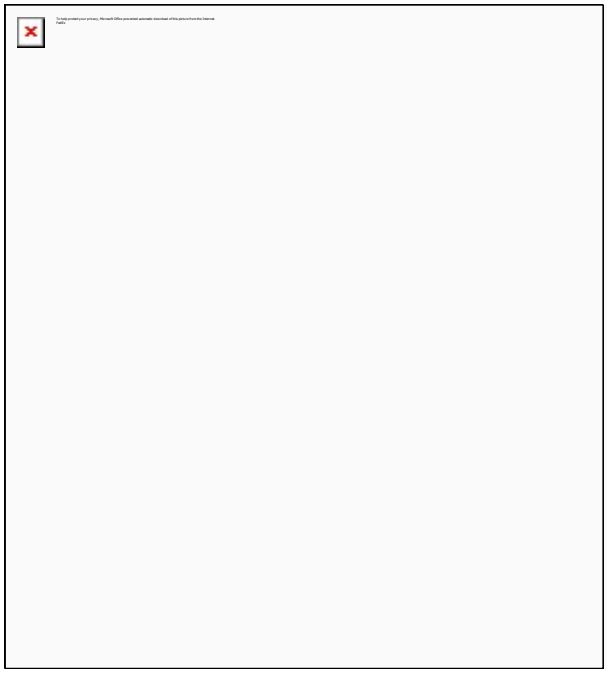
Hi. Your package was delivered Fri, 02/05/2021 at 10:08am.

Delivered to 100 BROADWAY, Norwich, CT 06360
Received by FFOURNIER

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	772809519580
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	City of Norwich ATTN: Zoning Department Richard S.

	100 Broadway NORWICH, CT, US, 06360
REFERENCE	CTL05468 - Norwich
SHIP DATE	Thu 2/04/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	NORWICH, CT, US, 06360
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Monday, February 8, 2021 10:55 AM
To: Kristina Cottone
Subject: FedEx Shipment 772809620565: Your package has been delivered

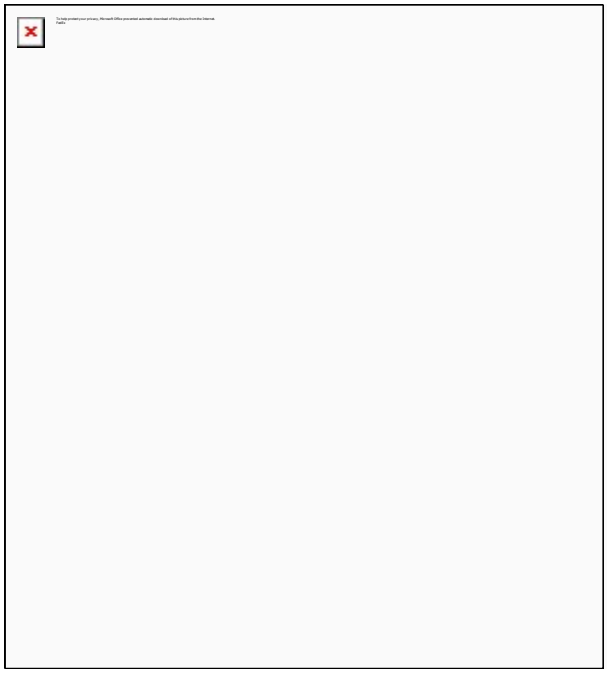
Hi. Your package was delivered Mon, 02/08/2021 at 10:54am.

Delivered to
Received by Signature Not Req

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	772809620565
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	17 Mile Real Estate LLC ATTN: Property Owner - Cell Tower

	69 Harry Street CONSHOHOCKEN, PA, US, 19428
REFERENCE	CTL05468 - Norwich
SHIP DATE	Thu 2/04/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	CONSHOHOCKEN, PA, US, 19428
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



FOLLOW FEDEX

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All weights are estimated.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Friday, February 5, 2021 9:39 AM
To: Kristina Cottone
Subject: FedEx Shipment 772809593134: Your package has been delivered

Hi. Your package was delivered Fri, 02/05/2021 at 9:37am.

Delivered to
Received by Signature on File

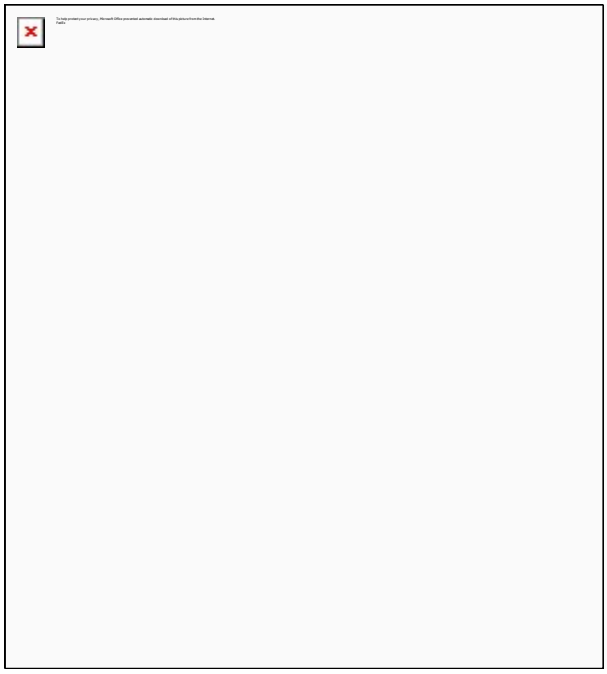
OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 772809593134

FROM
Smartlink LLC
85 Rangeway Road
Building 3 Suite 102
NORTH BILLERICA, MA, US, 01862

TO
Everest Infrastructure
ATTN: Michael Ashley Culbert
100 Summer Street

	Suite 1600 BOSTON, MA, US, 02110
REFERENCE	CTL05468 - Norwich
SHIP DATE	Thu 2/04/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	BOSTON, MA, US, 02110
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

SHEET INDEX

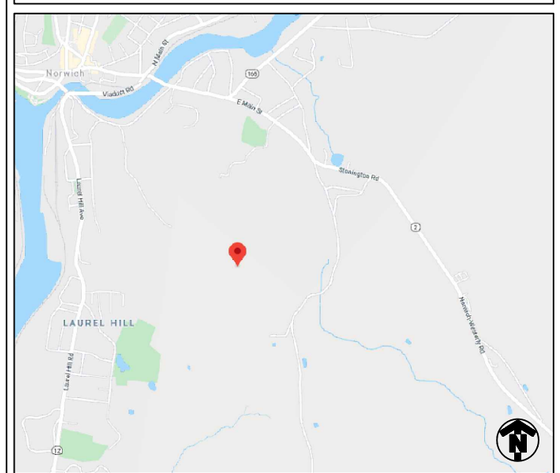
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL SITE PLAN
C2A	ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I-90 WEST/MASSACHUETTS TURNPIKE. HEAD NORTHWEST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT 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 GRISWOLD EXPY IN GRISWOLD. TAKE EXIT 22 FROM I-395 SOUTH. 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 22 FOR CT-138 TOWARD CT-164/JEWETT CITY/GRISWOLD. TAKE CT-164 SOUTH AND CT-165 WEST TO MIDDLE ROAD IN PRESTON. CONTINUE STRAIGHT ONTO GRISWOLD EXPY. TURN LEFT ONTO CT-164 SOUTH. TURN RIGHT ONTO CT-165 WEST. TURN LEFT ONTO PALMER STREET. TURN LEFT TO STAY ON PALMER STREET. SLIGHT RIGHT ONTO PALMER STREET EXT. CONTINUE ONTO MIDDLE ROAD.

LOCATION MAP



at&t

PROJECT

LTE 6C/5G NR/RETROFIT

SITE NAME

NORWICH SE

CELL SITE ID

CTL05468

FA SITE NUMBER

10071188

PACE ID

MRCTB046629/MRCTB046525/MRCTB046975

SITE ADDRESS

2 HINCKLEY HILL ROAD
PRESTON, CT 06365

STRUCTURE TYPE

SELF SUPPORT

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 03/27/2020 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
- INSTALL (3) PANEL ANTENNAS
- REMOVE (3) RRUS-11 B12
- INSTALL (3) 4449 B5/B12
- INSTALL (3) RRUS-E2 B29
- INSTALL (1) DC6 'SQUID' W/(2) DC CABLE
- REPLACE (3) EXISTING ANTENNA SECTOR FRAME MOUNTS

GROUND
- ADD 6630
- ADD IDLe CABLE
- REMOVE (1) XMU
- REPLACE EXISTING BREAKER PANEL
- INSTALL NEW FLEX CABINET
- INSTALL NEW FLEX 16 DOOR CABINET UPGRADE KIT
- INSTALL NEW DC12

PROJECT SUMMARY

SITE NAME:	NORWICH SE	
CELL SITE ID:	CTL05468	
FA SITE #:	10071188	
SITE ADDRESS:	2 HINCKLEY HILL ROAD PRESTON, CT 06365	
COUNTY:	NEW LONDON	
SITE COORDINATES: LATITUDE:	41.5136919° N	(NAD 83)
LONGITUDE:	72.0633989° W	(NAD 83)
RAD CENTER	±115'	(AGL)
TOWER OWNER:	EIP COMMUNICATIONS I, LLC TWO ALLEGHENY CENTER NOVA TOWER 2, SUITE 703 PITTSBURGH, PA 15212 PHONE#: (844) 547-0547	
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:	SHARON KEEFE (978) 930-3918	
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
CHRISTOPHER J. WARREN
No. 23544
1/25/21
LICENSED
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Project Number: 499-006

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PRESTON, CT 06365

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Drawing Scale: AS NOTED
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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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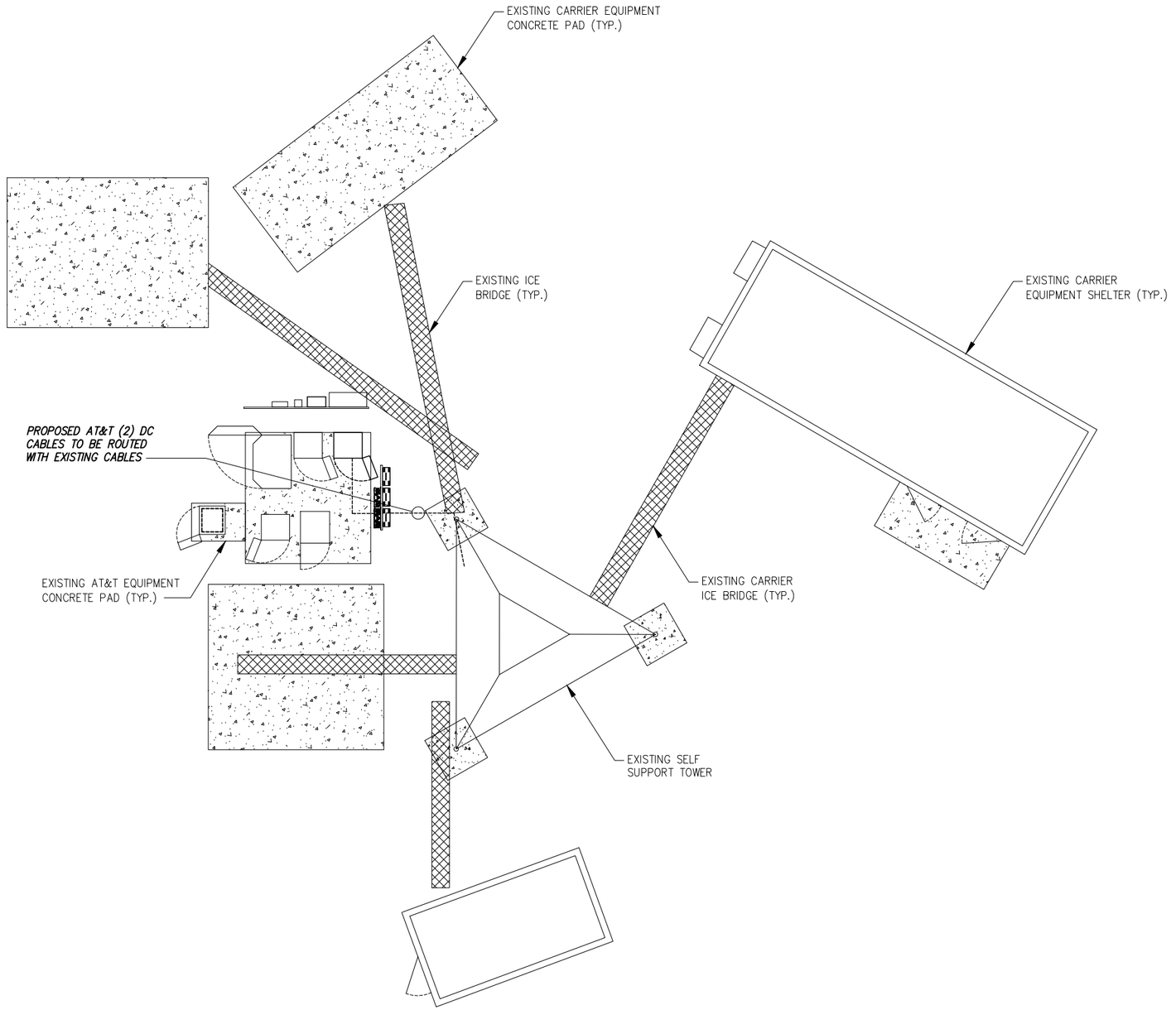
Drawing Number
C1



1 SITE PLAN
SCALE: AS NOTED

TRUE NORTH

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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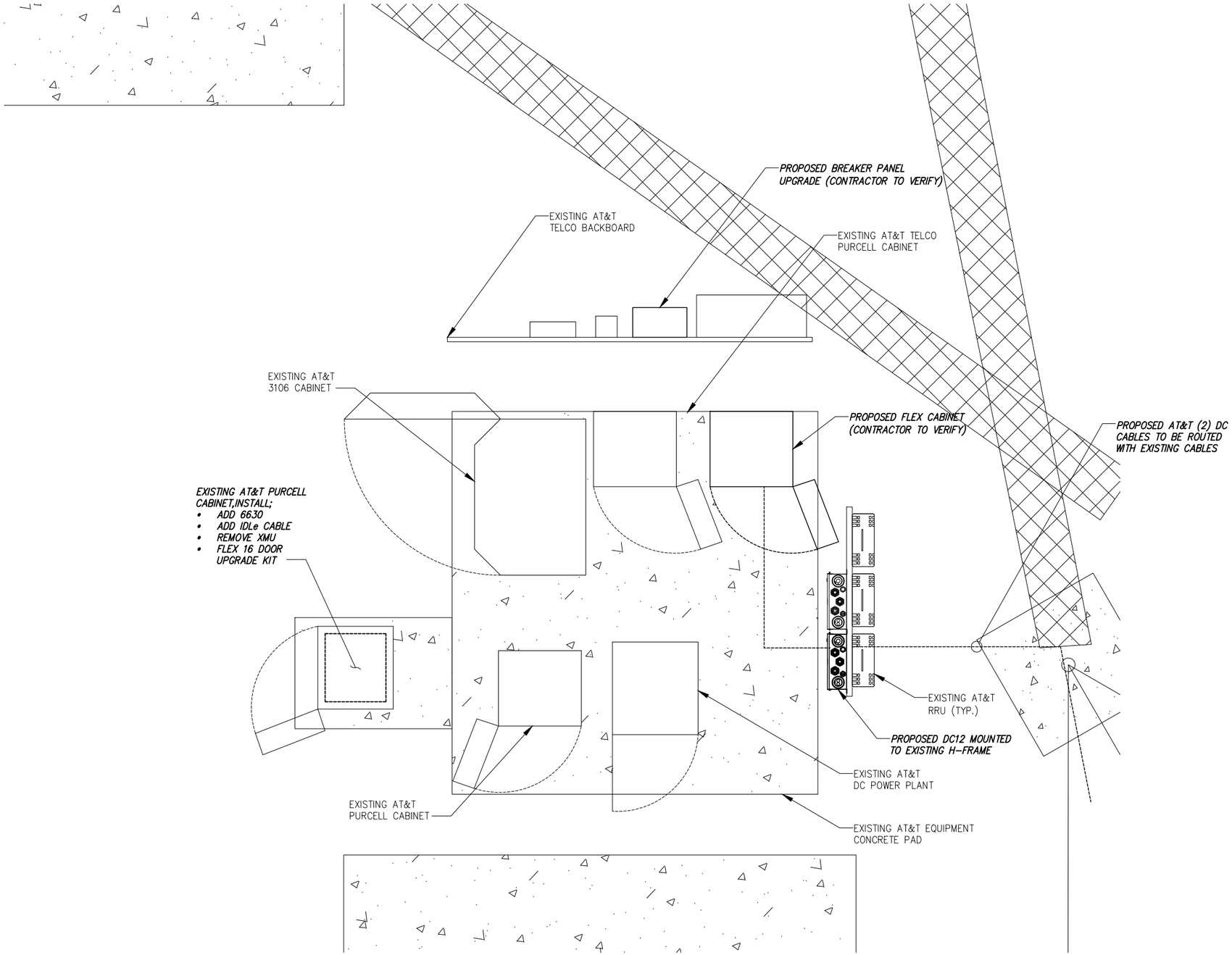
Drawing Title
OVERALL SITE PLAN

Drawing Number
C2



TRUE NORTH

1 ENLARGED SITE PLAN
SCALE: AS NOTED

GRAPHIC SCALE:

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

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

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Drawing Title

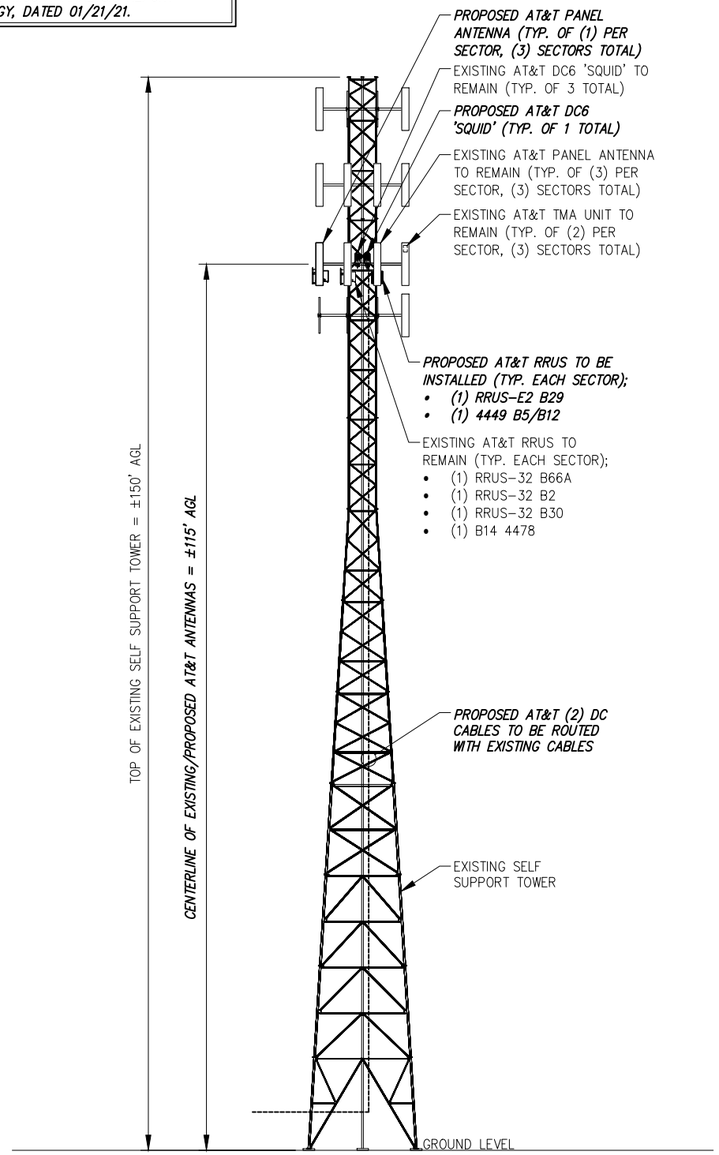
ENLARGED SITE PLAN

Drawing Number

C2A

NOTE:
- *INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*
- *FOR STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 01/21/21.*

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 03/27/20, 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	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	0°	±115'	(4) (E) 1-1/4" COAX CABLES	±140'	(2) (E) DC/FIBER 'SQUID' (1) (E) DC ONLY 'SQUID' *(1) (P) DC ONLY 'SQUID'*
	A-2	(E) LTE 700	CCI OPA-65R-LCUU-H8	--	*(1) (P) RRUS-E2 B29*	15°	±115'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-3	(E) LTE 700/AWS /WCS	KMW EPBQ-654L8H8-L2	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A (1) (E) RRUS-32 B30	15°	±115'	(2) (E) DC CABLES	--	
	A-4	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU8DA*	--	(1) (E) RRUS-32 B2 *(1) (P) 4449 B5/B12*	*15°*	*±115'*	SEE A-2 FOR CABLE INFORMATION	--	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	120°	±115'	(4) (E) 1-1/4" COAX CABLES	±140'	
	B-2	(E) LTE 700	CCI OPA-65R-LCUU-H6	--	*(1) (P) RRUS-E2 B29*	135°	±115'	*(2) (P) DC CABLES*	--	
	B-3	(E) LTE 700/AWS /WCS	KMW EPBQ-654L8H6-L2	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A (1) (E) RRUS-32 B30	135°	±115'	SEE A-2 FOR CABLE INFORMATION	--	
	B-4	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU6DA*	--	(1) (E) RRUS-32 B2 *(1) (P) 4449 B5/B12*	*135°*	*±115'*	SEE A-2 FOR CABLE INFORMATION	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	240°	±115'	(4) (E) 1-1/4" COAX CABLES	±140'	
	G-2	(E) LTE 700	CCI OPA-65R-LCUU-H6	--	*(1) (P) RRUS-E2 B29*	245°	±115'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	G-3	(E) LTE 700/AWS /WCS	KMW EPBQ-654L8H6-L2	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A (1) (E) RRUS-32 B30	245°	±115'	SEE A-2 FOR CABLE INFORMATION	--	
	G-4	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU6DA*	--	(1) (E) RRUS-32 B2 *(1) (P) 4449 B5/B12*	*245°*	*±115'*	SEE A-2 FOR CABLE INFORMATION	--	

2 AT&T ANTENNA SCHEDULE
NOT TO SCALE

INFINIGY
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STATE OF CONNECTICUT
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No. 23544
1/25/21
LICENSED PROFESSIONAL ENGINEER

No.	Submittal / Revision	App'd	Date
3	REVISED FOR PERMIT	BMM	01/21/21
2	REVISED FOR PERMIT	BMM	09/11/20
1	ISSUED FOR PERMIT	BMM	08/18/20
0	ISSUED FOR REVIEW	BMM	07/23/20

Drawn: BMM Date: 07/23/20
Designed: ASW Date: 07/23/20
Checked: ASW Date: 07/23/20

Project Number: 499-006

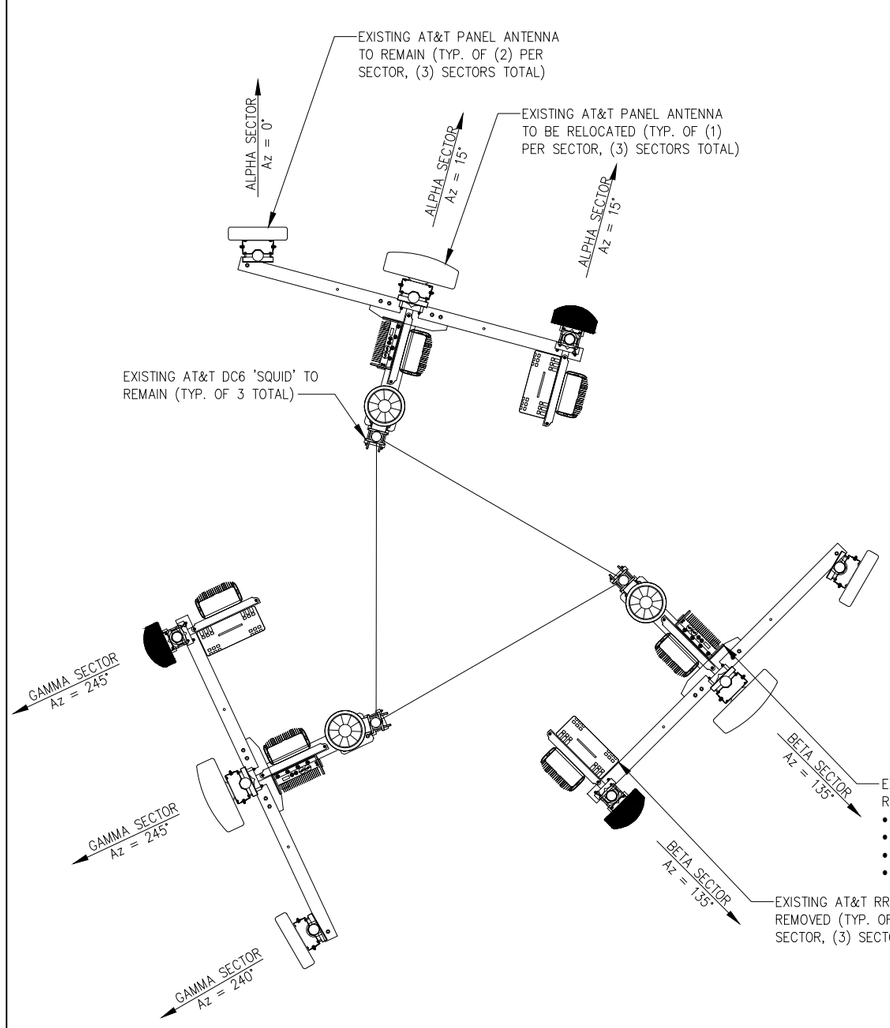
Project Title:
NORWICH SE
CTL05468
FA# 10071188
2 HINCKLEY HILL ROAD
PRESTON, CT 06365

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/21/21
CD

Drawing Title
ELEVATION VIEW

Drawing Number
C3

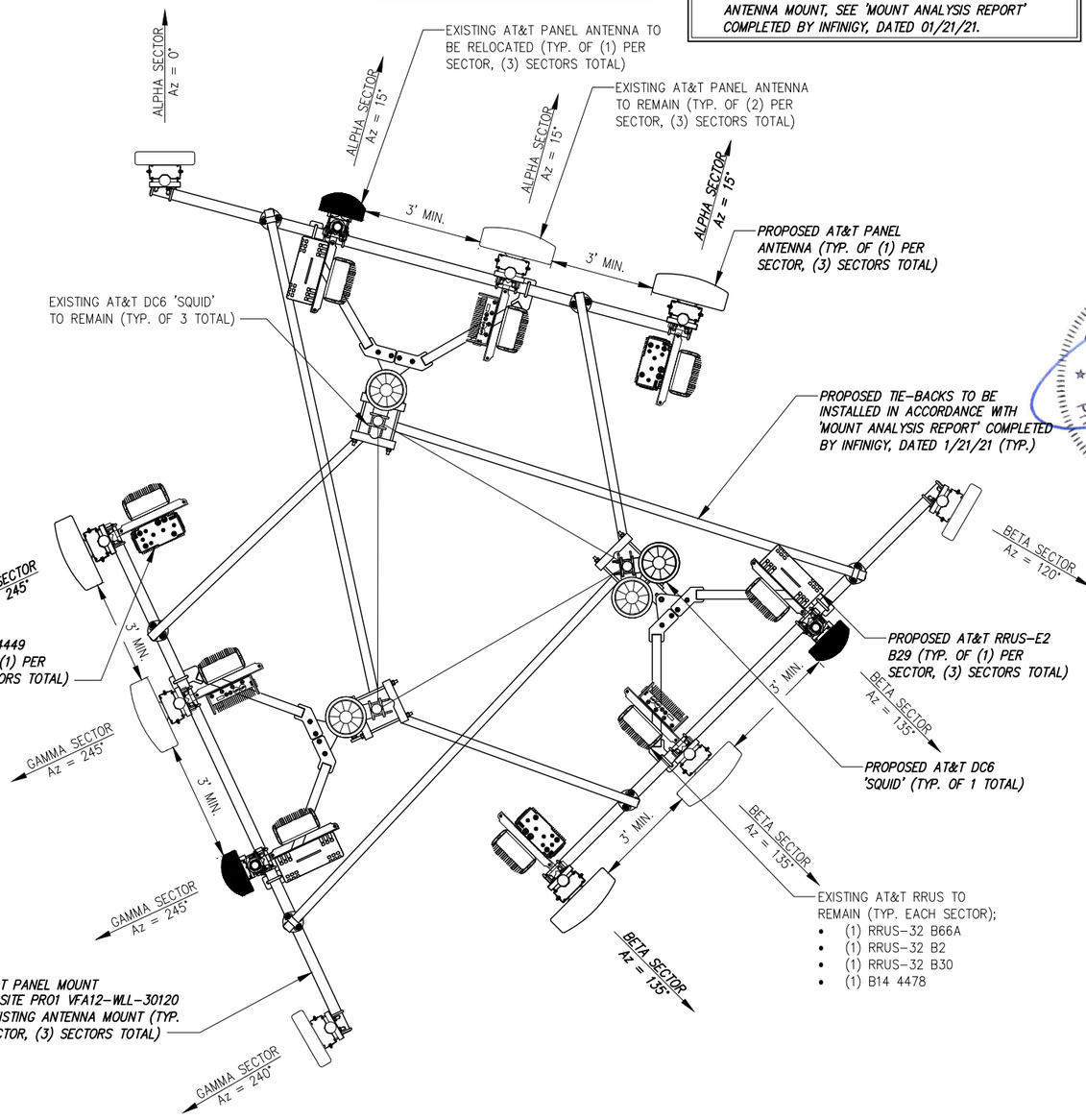


1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE

TRUE NORTH

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 EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*
- *FOR STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 01/21/21.*



2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

TRUE NORTH

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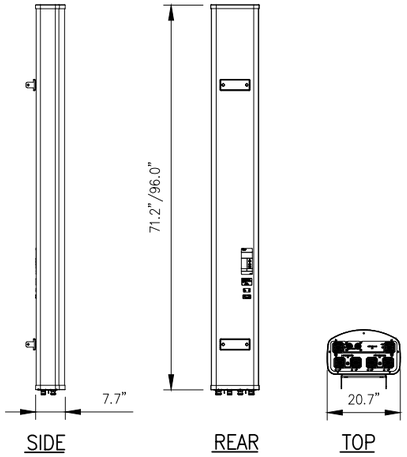
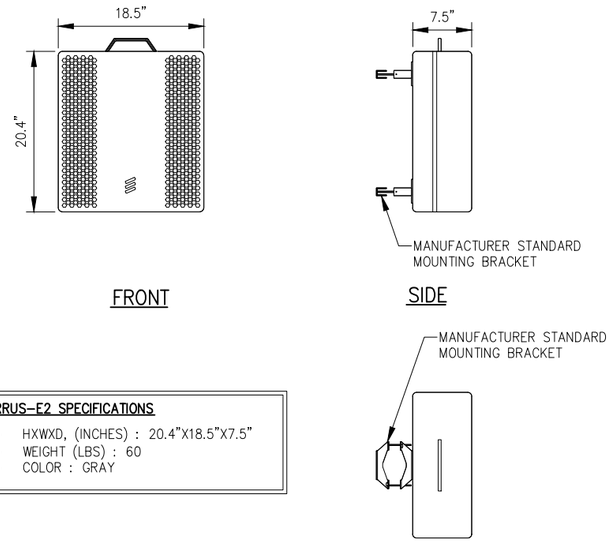
Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4



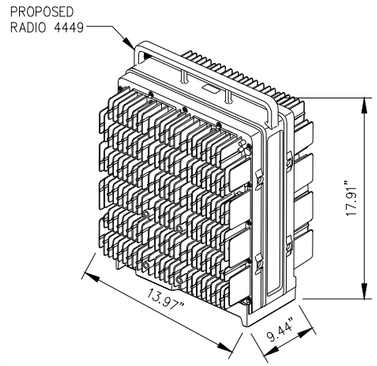
CCI MODEL NO.:	DMP65R-BU6DA/DAMP65-BU8DA
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	71.2"x20.7"x7.7"/96.0"x20.7"x7.7"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	79.4 LBS/95.7 LBS
CONNECTOR:	7-16 DIN FEMALE

1 ANTENNA DETAIL
NOT TO SCALE



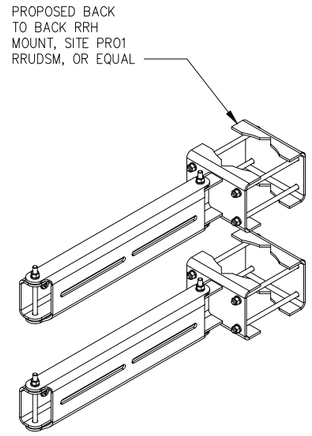
RRUS-E2 SPECIFICATIONS
- HXWXD, (INCHES) : 20.4"X18.5"X7.5"
- WEIGHT (LBS) : 60
- COLOR : GRAY

2 ERICSSON RRUS-E2 B29 MOUNTING DETAIL
NOT TO SCALE

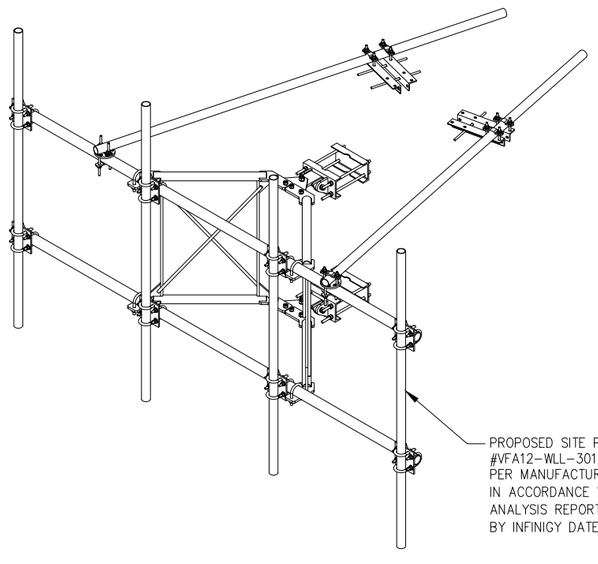


RADIO 4449 SPECIFICATIONS
- HxWxD, (INCHES) : 17.91"x13.97"x9.44"
- WEIGHT (LBS) : 70.54
- COLOR : GRAY

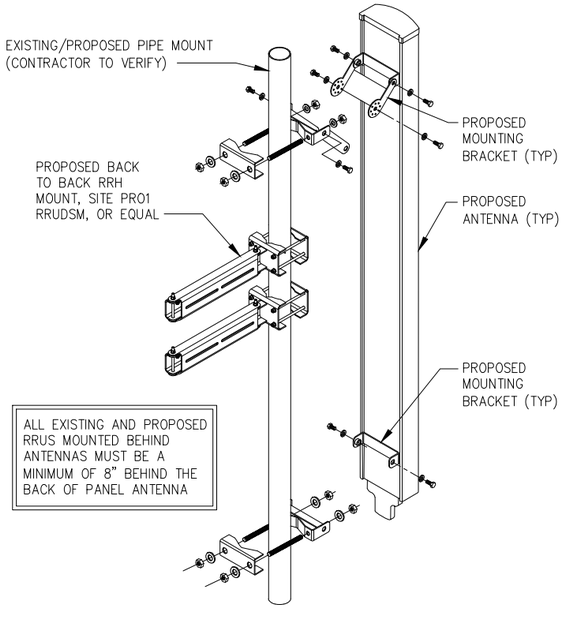
3 ERICSSON RADIO 4449 DETAIL
NOT TO SCALE



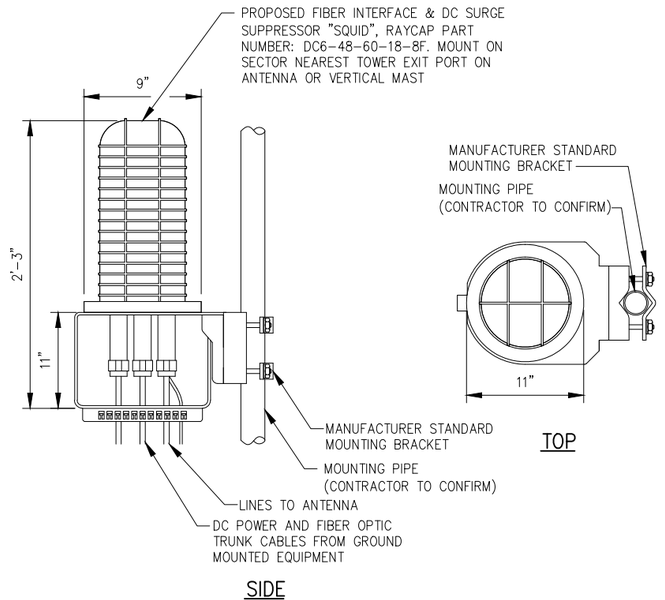
4 BACK TO BACK PIPE MOUNT DETAIL
NOT TO SCALE



5 ANTENNA MOUNT DETAIL
NOT TO SCALE



6 ANTENNA MOUNTING DETAIL
NOT TO SCALE



7 SQUID DETAIL
NOT TO SCALE

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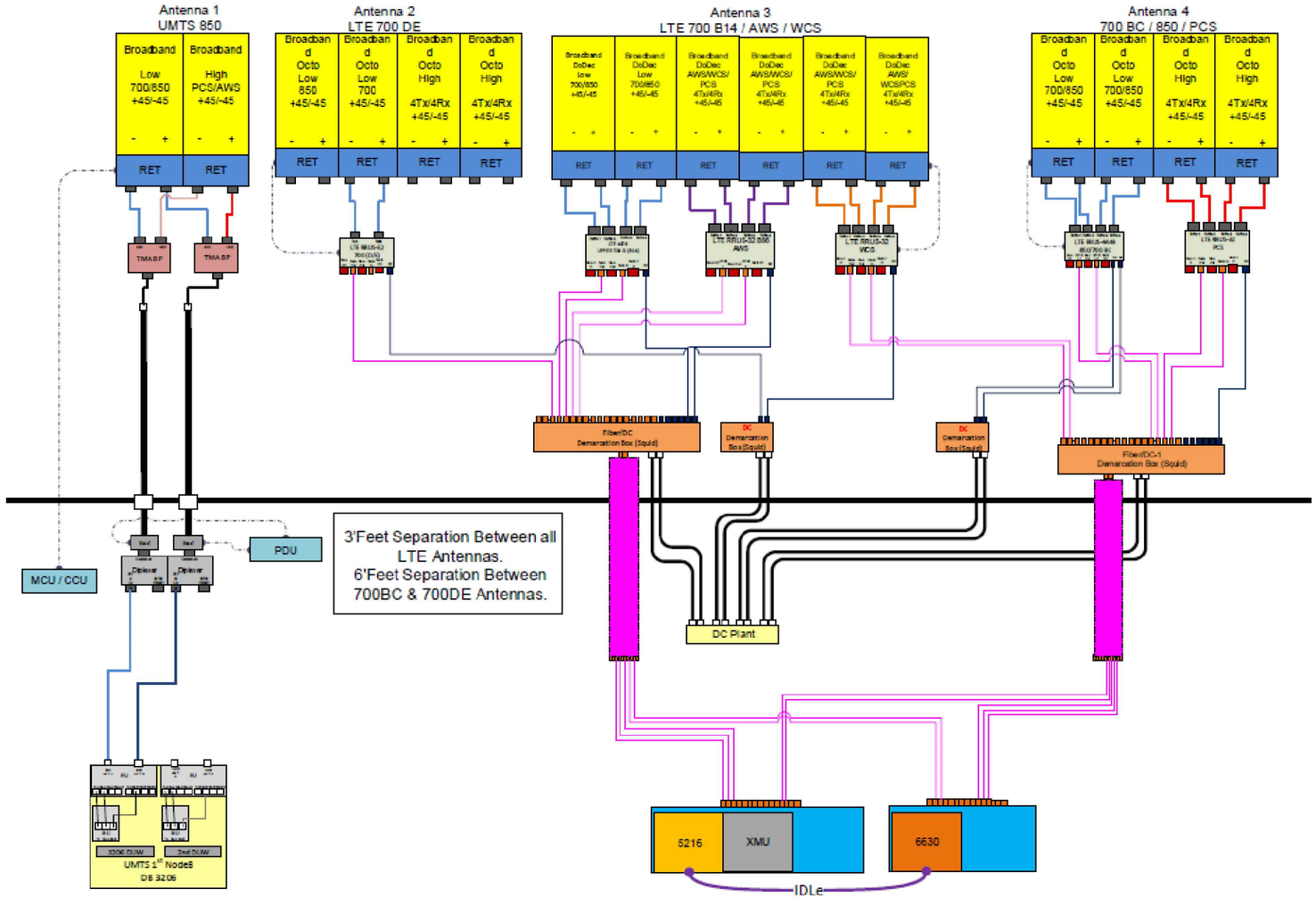
Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/21/21
CD

Drawing Title
EQUIPMENT DETAILS

Drawing Number
C5



ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
NOT TO SCALE

*BASED ON LTE RFDS, DATED 03/27/2020, V1.00

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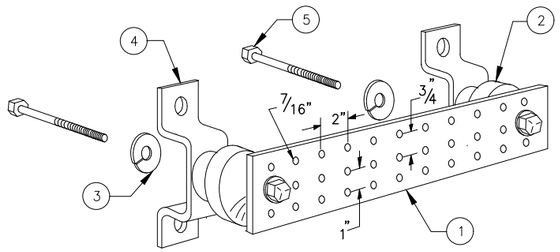
Drawing Title
PLUMBING DIAGRAM

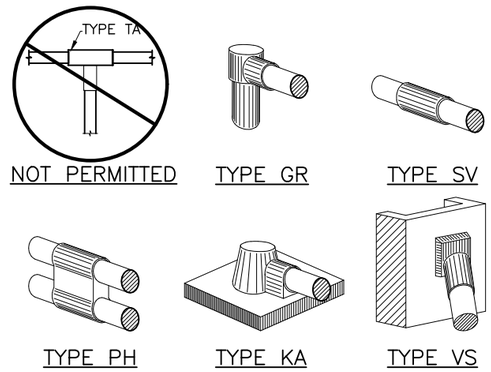
Drawing Number
C6



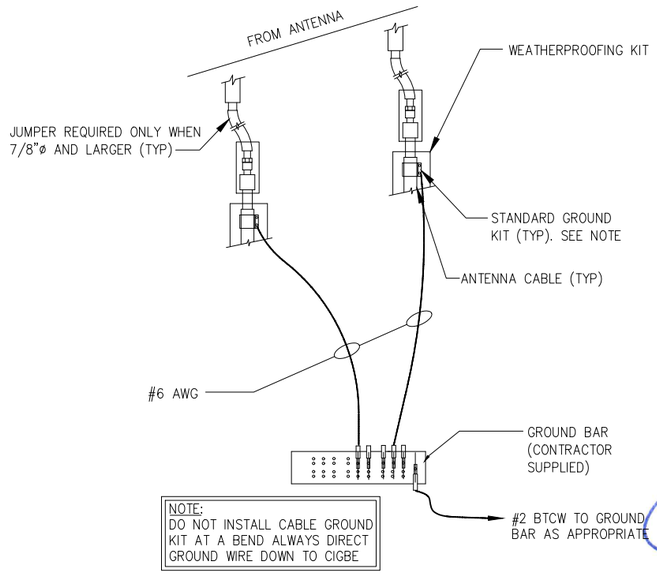
LEGEND

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"

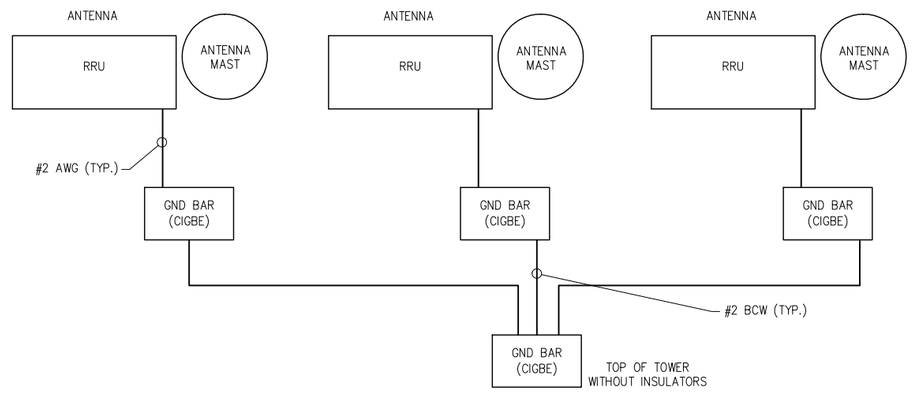
1 GROUND BAR
NOT TO SCALE



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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CD

Drawing Title
GROUNDING DETAILS

Drawing Number
C7