September 2, 2020

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

Re:	**Notice of Exempt Modification – Antenna and RRU Add**
Property Address:	**324 Montevideo Road, Avon, CT 06001**
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 twelve (12) wireless telecommunication antennas at an antenna center line height of 70-feet on an existing 80-foot lattice tower, owned by Talcott Mountain Science Center for Student Involvement at 324 Montevideo Road, Avon, CT 06001. AT&T now intends to remove three (3) 8' SBNH-1D6565C Andrew Panel Antennas, each currently installed in position [3], and swap these for three (3) 8' CCI DMP65R-BU8DA Panel Antennas, each to be installed in position [1], all sectors. In addition, AT&T intends to remove (9) RRUS, add one (1) RRUS-4449 B5/B12, (1) RRUS-32 B2, and (1) RRUS-E2 B29, in positions [1+4], all sectors, for a total of nine (9) new RRUS. AT&T is also proposing to add (1) Raycap Squid, as well as (2) DC Power Cables to their equipment configuration. All of the changes will take place on the existing antenna mount.

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

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5l0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Raymond Steadward – Town Building Official, Town of Avon, CT at 60 West Main Street (RT 44), Avon, CT 06001 and Brandon Robertson – Town Manager, Town of Avon, CT at 60 West Main Street (RT 44), Avon, CT 06001. A copy of this letter is being sent to the property owner, Talcott Mountain Science Center for Student Involvement at 324 Montevideo Road, Avon, CT 06001.

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

- **TS-CING-004-130627–** New Cingular Wireless PCS, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 324 Montevideo Road, Avon, Connecticut.
- **EM-AT&T-004-160128 -** AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 324 Montevideo Road, Avon, Connecticut
- **EM-AT&T-004-170619** - AT&T notice of intent to modify an existing telecommunications facility located at 324 Montevideo Road, Avon, Connecticut.
- **EM-AT&T-004-180226** - AT&T notice of intent to modify an existing telecommunications facility located at 324 Montevideo Road, Avon, Connecticut.
- **EM-AT&T-004-180425** – AT&T notice of intent to modify an existing telecommunications facility located at 324 Montevideo Road, Avon, 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 70-foot level of the 80-foot lattice tower.

2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

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

Sincerely,

Kristina Cottone

CC w/enclosures:
Raymond Steadward – Town Building Official, Town of Avon, CT
Brandon Robertson – Town Manager, Town of Avon, CT
Talcott Mountain Science Center for Student Involvement – Property Owner

An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for cellular telephone antennas and associated equipment in the Town of Bloomfield, Connecticut.	:	Docket No. 107 Connecticut Siting Council 6 July 1989

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council finds that the effects associated with the construction, operation, and maintenance of a cellular telephone facility at the proposed Bloomfield site, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not significant either alone or cumulatively with other effects, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS), be issued to Metro Mobile CTS Hartford, Inc., for the construction, operation, and maintenance of a cellular telephone site and associated equipment at the proposed Bloomfield site in Bloomfield, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The cellular antennas shall be located on the existing tower no higher than necessary to provide the proposed service, and in no event shall they be attached higher than the 59-foot level of the tower.

2. The facility shall be constructed in accordance with the State of Connecticut Basic Building Code.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall include detailed plans for relocation of the proposed building within the leased portion of the parcel to reduce the amount of existing vegetation to be removed, erosion and sediment control, and landscaping at the proposed site. The eastern red cedars shall not be removed without consultation with the Talcott Mountain Science Center for Student Involvement, Inc.

4. The Certificate Holder shall erect a fence, if requested to do so by the Talcott Mountain Science Center for Student Involvement, Inc., and construct a crushed stone accessway to the building.

5. The Certificate Holder shall comply with any future radio frequency (RF) standard, promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in this Decision and Order shall be brought into compliance with such standards.

6. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years after the completion of any appeal to this Decision and Order.

Pursuant to Section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below. A notice of issuance shall be published in the Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with section 16-50j-17 of the Regulations of State Agencies.

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket No. 107 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 6th day of July, 1989.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Absent
Commissioner Peter Boucher Designee: Robert A. Pulito	Yes
Commissioner Leslie Carothers Designee: Brian Emerick	Yes
Mortimer A. Gelston	Yes
Harry E. Covey	Yes
Daniel P. Lynch, Jr.	Yes
Paulann H. Sheets	Yes
William H. Smith	Absent
Colin C. Tait	Yes

DBAX

Administrative Information

Owner name: TALCOTT MTN SCIENCE CTR FOR
Second name: STUDENT INVOLVEMENT
Address: MONTEVIDEO ROAD
City/state: AVON CT Zip: 06001

Location Information

Map: 009 Clerk map:
Lot: 3180324 Neigh.: Zone: RU2A Vol: 89 Page: 486

Assessments

Assmt category	Qty	Amount
Resident Land	2.00	280,000
Resident Excess	.05	260

Exemptions

Exempt	Cat	Amount

Last sale

Sale date: 30-Jun-1975
Sale price:
Sale valid:

Values

Mkt value :
Cost value: 400,371

Summary

Total assessments	280,260
Total exemptions	
Net assessment	280,260

Utilities

Water	None
Sewer	None
Gas	None

Sales ratios

Cost/sale :
Mkt/sale :
Assmt/sale:

Land Information

Type	Use	Acres/SqFt	Rate	Total	Infl Fact	Value	70% Value
PRIM	11	2.000	400,000	400,000		400,000	280,000
Primary Site		87,120					
RES	12	.050	7,500	375		375	263
Residual		2,178					
		2.050 acres		Total land value		400,375	280,263

No sketch for this property

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5.16AC VOL116 PAGE 825

INFINIGY

Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Avon Mountain Hill Road

Site FA: 10141394

USID: 139386

324 Montevideo Road, Avon, CT 06001

Latitude: 41.811970 Longitude: -72.7987670

Structure Type: Self Support Tower

Report Date: May 22, 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 Avon Mountain Hill Road located at 324 Montevideo Road in Avon, 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 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)	0.0529
	% Exposure	7.23%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0529
	% Exposure	1.51%

2. Site Summary:

Site Information	
Site Name: Avon Mountain Hill Road	
Site Address: 324 Montevideo Road, Avon, CT 06001	
Site Type: Self Support Tower	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes (If not already installed)
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 2 sign at the base of the tower if none currently exists.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency/Technology	Rad Ctr (Ft)	Total ERP Power (Watts)
1a	Alpha	AT&T	CCI	DMP65R-BU8D-850	850	70	1000
1b	Alpha	AT&T	CCI	DMP65R-BU8D-700	700	70	1476
1c	Alpha	AT&T	CCI	DMP65R-BU8D-1900	1900	70	4842
1d	Alpha	AT&T	CCI	DMP65R-BU8D-850	850	70	500
2a	Alpha	AT&T	CCI	OPA-65R-LCUU-H8-850	850	70	1000
2b	Alpha	AT&T	CCI	OPA-65R-LCUU-H8-2300	2300	70	1285
3a	Alpha	AT&T	Kathrein-Scala	800-10966K-700	700	70	2951
3b	Alpha	AT&T	Kathrein-Scala	800-10966K-2300	2100	70	5070
4a	Alpha	AT&T	CCI	TPA-65R-LCUUUU-H8-700	700	70	1476
4b	Alpha	AT&T	CCI	TPA-65R-LCUUUU-H8-1900	1900	70	4842
5a	Beta	AT&T	CCI	DMP65R-BU8D-850	850	70	1000
5b	Beta	AT&T	CCI	DMP65R-BU8D-700	700	70	1476
5c	Beta	AT&T	CCI	DMP65R-BU8D-1900	1900	70	4842
5d	Beta	AT&T	CCI	DMP65R-BU8D-850	850	70	500
6a	Beta	AT&T	CCI	OPA-65R-LCUU-H8-850	850	70	1000
6b	Beta	AT&T	CCI	OPA-65R-LCUU-H8-2300	2300	70	1285
7a	Beta	AT&T	Kathrein-Scala	800-10966K-700	700	70	2951
7b	Beta	AT&T	Kathrein-Scala	800-10966K-2300	2100	70	5070

6. RF Guidelines

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

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

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

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

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

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

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

Attachment 1: AT&T Exposure Analysis Per 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)	**0.0151**
	% Exposure	**3.02%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0151**
	% Exposure	**0.66%**

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)	**0.0026**
	% Exposure	**0.43%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.09%**

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)	**0.0026**
	% Exposure	**0.43%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.09%**

AT&T 850 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0013**
	% Exposure	**0.21%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0013**
	% Exposure	**0.05%**

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)	**0.0206**
	% Exposure	**2.06%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0206**
	% Exposure	**0.41%**

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)	**0.0086**
	% Exposure	**0.86%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0086**
	% Exposure	**0.17283%**

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)	**0.0022**
	% Exposure	**0.22%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0022**
	% Exposure	**0.04%**

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

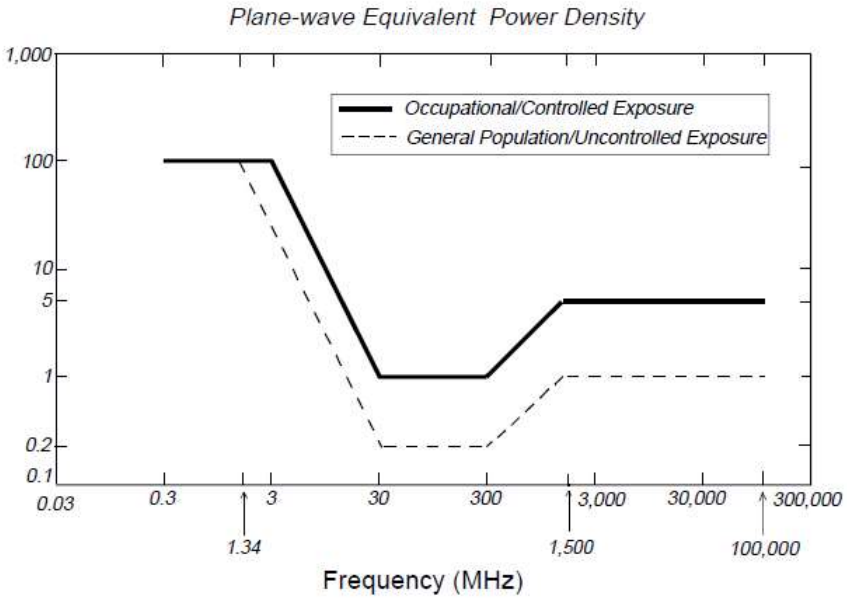
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(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.

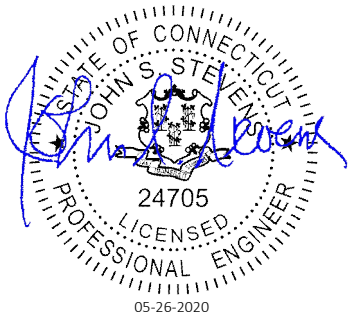
Appendix B: Preparer Certification

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

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

Timothy A. Harris *5/22/2020*

Signature Date



INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

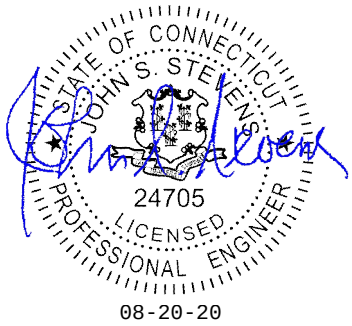
Structural Analysis Report

August 20, 2020

AT&T Site Name	AVON-MONTEVIDEO ROAD
AT&T Site ID:	CTL01330
AT&T FA #:	10141394
AT&T PACE ID:	MRCTB045381, MRCTB045327, MRCTB045308, MRCTB045326
AT&T PTN #:	2051A0SWFQ, 2051A0SRNC, 2051A0SRMF, 2051A0SRM2
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T Mobility
Site Location	324 Montevideo Road Avon, CT 06001 Hartford County 41° 48’ 42.4692” N NAD83 -72° 47’ 55.5612” W NAD83
Structural Type	60.0’ Self Support
Structural Usage Ratio	**93.8%**
Overall Result	**Pass**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements with the loading modifications listed below. The tower and foundations are therefore deemed adequate to support the existing and proposed loading configuration as listed in this report.

- Reinforce tower legs from 0.0’ – 19.5’



Jackson Shearer
Project Engineer I

Contents

Introduction

Infinigy Engineering has been requested to perform a structural analysis on the existing self support tower. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The tower was analyzed using tnxTower version 8.0.4.0 analysis software.

Supporting Documentation

Construction Drawings	Infinigy Engineering, PLLC, Site ID: CTL01330, dated April 13, 2020
Construction Drawings	Maser Consulting Connecticut, Site Name: Avon-Montevideo Road, dated July 6, 2018
Proposed Loading	AT&T RFDS ID: 3541606, RFDS Name: CT1330, dated July 20, 2020
Mount Mapping Report	Infinigy Engineering, PLLC, AT&T Site No. CTL01330, dated March 27, 2020
Tower Modification Mapping Report	Infinigy Engineering, Site No. CTL01330, Dated May 15, 2020
Structural Analysis Report	Maser Consulting Connecticut, MC Project No. 17963018A, dated April 3, 2018

Analysis Code Requirements

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.5” ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC / 2018 Connecticut State Building Code
Risk Category	II
Exposure Category	B
Topographic Category	5
Topographic Factor Procedure	Method 2
Topographic Feature	Ridge
Calculated Crest Height	775 ft.
Spectral Response	S_s = 0.181 g / S_1 = 0.064 g
Site Class	D - Stiff Soil (Assumed)*
HMSL	914.5 ft.

*Presumptive soil parameters were considered in this analysis as specified in Annex F of ANSI/TIA-222-H

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the modified structure meets the specified TIA code requirements. The tower and foundations are therefore deemed adequate to support the existing and proposed loading as listed in this report.

Anchor bolt information was not made available in the provided documents. The size and quantities should be verified prior to installation of the proposed equipment.

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:

Jackson Shearer
Project Engineer I | INFINIGY
1517 Old Apex Rd., Cary, NC 27513
(518) 690-0790 | jshearer@infinigy.com | www.infinigy.com

Existing & Reserved Loading

RAD Center (ft)	Mount Center (ft)		Appurtenance	Mount Type	Coax & Lines	Carrier
70.0	70.0	3	Commscope SBNH-1D6565C	(3) Sector Frames	(4) 2" Conduit (3) Fiber Cable (8) DC Cable	AT&T Mobility
		3	CCI TPA-65R-LUCUUUU-H8			
		3	CCI OPA-65R-LCUU-H8			
		3	Kathrein 800-10966			
		6	Ericsson RRUS-11 B5			
		3	Ericsson RRUS-11 B2			
		3	Ericsson RRUS-11 B12			
		3	Ericsson RRUS 32 B30			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 32 B66A			
		3	Raycap DC6-48-60-18-8F			
		1	Raycap DC6-48-60-0-8F			
	68.5	1	18.0 ft. Doppler			--
55.0	55.0	3	Amphenol LPA-80063-6CF-EDIN-5	(2) Sector Frames	(12) 1-5/8" (2) HB114-1-08U-4-M5J	Verizon
		1	Amphenol BXA-70063-6CF-EDIN-X			
		4	Commscope SBNHH-1D65B			
		1	RFS APX75-866514			
		3	Alcatel Lucent RRH 2x60			
		3	Alcatel Lucent RRH 2x60			
51.0	51.0	2	Raycap RHSDC-3315-PF-48	Direct		

To Be Removed Loading

RAD Center (ft)	Mount Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
70.0	70.0	3	Commscope SBNH-1D6565C	--	--	AT&T Mobility
		3	CCI OPA-65R-LCUU-H8			
		3	Ericsson RRUS-11 B5			
		3	Ericsson RRUS-11 B2			
		3	Ericsson RRUS-11 B12			

Proposed Loading

RAD Center (ft)	Mount Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
70.0	70.0	3	CCI DMP65R-BU8DA	--	(1) Y-Cable	AT&T Mobility
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS 32 B2			
		3	Ericsson Radio 4449 B5/B12			

Final Configuration

RAD Center (ft)	Mount Center (ft)		Appurtenance	Mount Type	Coax & Lines	Carrier
70.0	70.0	3	CCI DMP65R-BU8DA	(3) Sector Frames	(4) 2" Conduit (3) Fiber Cable (8) DC Cables (1) Y-Cable	AT&T Mobility
		3	CCI TPA-65R-LUCUUUU-H8			
		3	CCI OPA-65R-LCUU-H8			
		3	Kathrein 800-10966			
		3	Ericsson RRUS-11 B5			
		3	Ericsson RRUS 32 B30			
		6	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 32 B66A			
		3	Ericsson RRUS E2 B29			
		3	Ericsson Radio 4449 B5/B12			
		3	Raycap DC6-48-60-18-8F			
		1	Raycap DC6-48-60-0-8F			
	68.5	1	18.0 ft. Doppler			--
55.0	55.0	3	Amphenol LPA-80063-6CF-EDIN-5	(2) Sector Frames	(12) 1-5/8" (2) HB114-1-08U-4-M5J	Verizon
		1	Amphenol BXA-70063-6CF-EDIN-X			
		4	Commscope SBNHH-1D65B			
		1	RFS APX75-866514			
		3	Alcatel Lucent RRH 2x60			
		3	Alcatel Lucent RRH 2x60			
51.0	51.0	2	Raycap RHSDC-3315-PF-48	Direct		

Structure Usages

	Summary	
Leg	93.8	Pass
Diagonal	84.9	Pass
Horizontal	58.7	Pass
Top Girt	22.9	Pass
Redund Horz 1 Bracing (T5)	8.4	Pass
Redund Diag 1 Bracing (T5)	9.4	Pass
Bolt Checks	84.9	Pass
RATING =	**93.8**	**Pass**

***See conclusion for additional information.**

Foundation Reactions

Reaction Data	Wind Analysis Reactions	Ice Analysis Reactions
Leg Compression (kip)	101.0	
Leg Uplift (kip)	91.0	
Leg Shear (kip)	11.0	
Global Axial (kip)	19.0	54.0
Global Shear (kip)	19.0	2.0
Global Moment (kip-ft)	812.0	118.0

Tower base reactions are acceptable when compared to the allowable reactions listed in the previous analysis by Maser Consulting Connecticut, MC Project No. 17963018A, dated April 3, 2018. These reactions are assumed to be accurate and applicable to the site.

Deflection, Twist, and Sway

Antenna Elevation (ft)	Deflection (in)	Twist (°)	Sway (°)
70.0	1.349	0.116	0.164

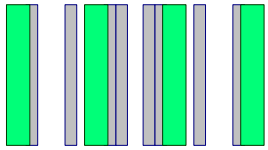
*Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.
*Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.
*Per ANSI/TIA-222-H Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.
*It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-H Annex D or other appropriate microwave signal degradation limits based on the provided values above.

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.



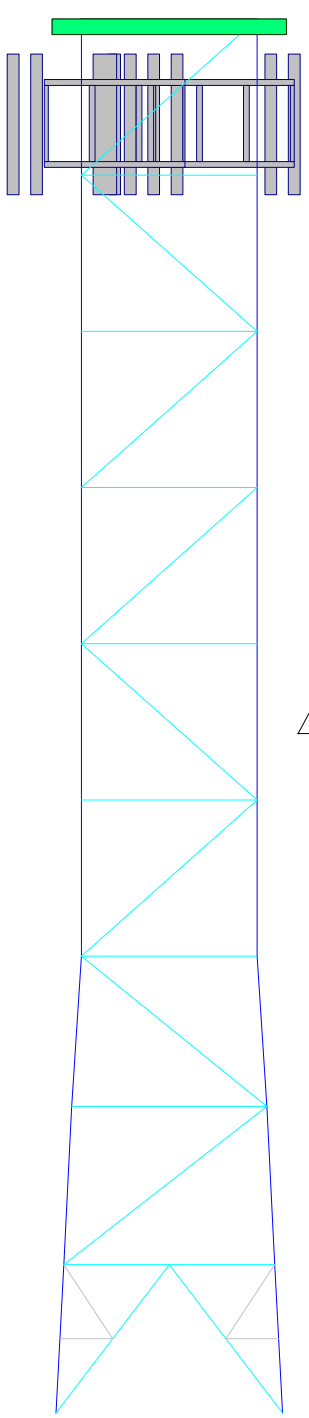
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi
A53-B-35	35 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 30 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 5 with Crest Height of 775.00 ft
7. TOWER RATING: 93.8%

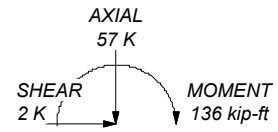
Section	T1	T2	T3	T4	T5		
Legs	ROHN 3.5 STD		ROHN 3.5" STD + 4" Sch. 40 Pipe				
Leg Grade		A572-50					
Diagonals		P2.5x.203			L3x3x3/16		
Diagonal Grade		A53-B-35			A36		
Top Girts	L3x5x1/4		N.A.				
Horizontals	L2 1/2x2 1/2x1/4	L3x3x3/8		L3x3x1/4	2L2x2x3/16		
Red. Horizontals		N.A.			L2x2x3/16		
Red. Diagonals		N.A.			L2x2x3/16		
Face Width (ft)	7.58333			8.28077	9.02179		9.70833
# Panels @ (ft)		6 @ 6.66667		1 @ 6.4	1 @ 6.8	1 @ 6.3	
Weight (K)	1.4	1.6	0.5	0.5	0.6		4.5



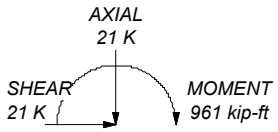
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 119 K
SHEAR: 13 K

UPLIFT: -107 K
SHEAR: 12 K



TORQUE 2 kip-ft
30 mph WIND - 1.5000 in ICE



TORQUE 30 kip-ft
REACTIONS - 120 mph WIND

Infinigy Engineering LLC
1517 Old Apex Road
Cary, NC 27513
Phone: (518)-690-0790
FAX:

Job:	***CTL01330, Avon-Montevideo Road***		
Project:	***1106-A0001-B***		
Client: Smartlink	Drawn by: Jackson Shearer	App'd:	
Code: TIA-222-H	Date: 08/20/20	Scale: NTS	
Path: C:\Users\jshearer\Desktop\CTL1330\TNX or RISA\CTL01330 - Copy.eri		Dwg No. E-1	

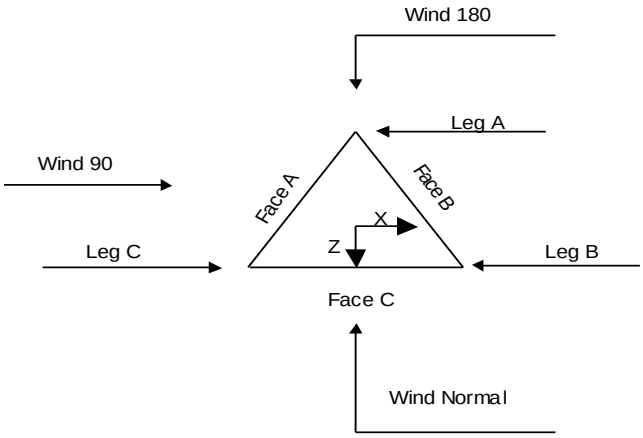
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 59.50 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 7.58 ft at the top and 9.71 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category B.
Crest Height: 775.00 ft.
Rigorous Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Feature: Continuous Ridge.
Slope Distance L: 3932.00 ft.
Distance from Crest x: 914.51 ft.
Horizontal Distance Downwind: No.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design is 1.
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-H Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H 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 ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	59.50-39.50			7.58	1	20.00
T2	39.50-19.50			7.58	1	20.00
T3	19.50-13.10			7.58	1	6.40
T4	13.10-6.30			8.28	1	6.80
T5	6.30-0.00			9.02	1	6.30

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	59.50-39.50	6.67	K Brace Left	No	Yes	0.0000	0.0000
T2	39.50-19.50	6.67	K Brace Left	No	Yes	0.0000	0.0000
T3	19.50-13.10	6.40	K Brace Right	No	Yes	0.0000	0.0000
T4	13.10-6.30	6.80	K Brace Left	No	Yes	0.0000	0.0000
T5	6.30-0.00	6.30	K1 Down	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 59.50-39.50	Pipe	ROHN 3.5 STD	A572-50 (50 ksi)	Pipe	P2.5x.203	A53-B-35 (35 ksi)
T2 39.50-19.50	Arbitrary Shape	ROHN 3.5" STD + 4" Sch. 40 Pipe	A572-50 (50 ksi)	Pipe	P2.5x.203	A53-B-35 (35 ksi)
T3 19.50-13.10	Arbitrary Shape	ROHN 3.5" STD + 4" Sch. 40 Pipe	A572-50 (50 ksi)	Pipe	P2.5x.203	A53-B-35 (35 ksi)
T4 13.10-6.30	Arbitrary Shape	ROHN 3.5" STD + 4" Sch. 40 Pipe	A572-50 (50 ksi)	Pipe	P2.5x.203	A53-B-35 (35 ksi)
T5 6.30-0.00	Arbitrary Shape	ROHN 3.5" STD + 4" Sch. 40 Pipe	A572-50 (50 ksi)	Single Angle	L3x3x3/16	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 59.50-39.50	Single Angle	L3x5x1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 59.50-39.50	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T2 39.50-19.50	None	Flat Bar		A36 (36 ksi)	Single Angle	L3x3x3/8	A572-50 (50 ksi)
T3 19.50-13.10	None	Flat Bar		A36 (36 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T4 13.10-6.30	None	Flat Bar		A36 (36 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T5 6.30-0.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade	Redundant Type	Redundant Size	K Factor

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T5 6.30-0.00	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1

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 59.50-39.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 39.50-19.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 19.50-13.10	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 13.10-6.30	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 6.30-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	No	No	1	1	1	1	1	1	1	1
59.50-39.50				1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1
39.50-19.50				1	1	1	1	1	1	1
T3	No	No	0.5	1	1	1	1	1	1	1
19.50-13.10				1	1	1	1	1	1	1
T4 13.10-6.30	No	No	0.5	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 6.30-0.00	No	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		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 59.50-39.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 39.50-19.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 19.50-13.10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 13.10-6.30	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 6.30-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 59.50-39.50	Flange	0.8750 A325N	4	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0
T2 39.50-19.50	Flange	0.8750 A325N	4	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	1	0.6250 A325N	0
T3 19.50-13.10	Flange	0.7500 A325N	0	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0
T4 13.10-6.30	Flange	0.7500 A325N	0	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0
T5 6.30-0.00	Flange	0.7500 A325N	0	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1	0.6250 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
***													
Climbing Ladder (Flat)	C	No	No	Af (CaAa)	59.50 - 0.00	-5.0000	-0.25	1	1	3.8400	3.8400		4.81
Safety Line 3/8	C	No	No	Ar (CaAa)	59.50 - 0.00	-5.0000	-0.25	1	1	0.3750	0.3750		0.22
Feedline Ladder (Af)	A	No	No	Af (CaAa)	55.00 - 0.00	0.0000	-0.25	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	B	No	No	Af (CaAa)	59.50 - 0.00	0.0000	0	1	1	3.0000	3.0000		8.40
***													
LDF7-50A(1 5/8")	A	No	No	Ar (CaAa)	55.00 - 0.00	0.0000	-0.25	12	6	1.6250 1.0000	1.9800		0.82
HB114-1-08U4-M5J(1 1/4")	A	No	No	Ar (CaAa)	55.00 - 0.00	0.0000	-0.13	2	2	1.2500 1.0000	1.5400		1.08
***													
2" Rigid Conduit	B	No	No	Ar (CaAa)	59.50 - 0.00	0.0000	0	4	4	2.0000 1.0000	2.0000		2.80
Fiber Cable	B	No	No	Ar (CaAa)	59.50 - 0.00	0.0000	0	3	3	0.8670	0.8670		0.25

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
DC Cable	B	No	No	Ar (CaAa)	59.50 - 0.00	0.0000	0	8	8	1.0000 0.7350 1.0000	0.7350		0.49
Y Cable	B	No	No	Ar (CaAa)	59.50 - 0.00	0.0000	0	1	1	0.0000	0.4880		0.20
***													

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
***								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	59.50-39.50	A	0.000	0.000	49.352	0.000	0.32
		B	0.000	0.000	43.938	0.000	0.49
		C	0.000	0.000	13.550	0.000	0.10
T2	39.50-19.50	A	0.000	0.000	63.680	0.000	0.41
		B	0.000	0.000	43.938	0.000	0.49
		C	0.000	0.000	13.550	0.000	0.10
T3	19.50-13.10	A	0.000	0.000	20.378	0.000	0.13
		B	0.000	0.000	14.060	0.000	0.16
		C	0.000	0.000	4.336	0.000	0.03
T4	13.10-6.30	A	0.000	0.000	21.651	0.000	0.14
		B	0.000	0.000	14.939	0.000	0.17
		C	0.000	0.000	4.607	0.000	0.03
T5	6.30-0.00	A	0.000	0.000	20.059	0.000	0.13
		B	0.000	0.000	13.840	0.000	0.15
		C	0.000	0.000	4.268	0.000	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	59.50-39.50	A	1.619	0.000	0.000	77.866	0.000	1.55
		B		0.000	0.000	127.526	0.000	1.95
		C		0.000	0.000	26.504	0.000	0.45
T2	39.50-19.50	A	1.546	0.000	0.000	99.203	0.000	1.94
		B		0.000	0.000	125.532	0.000	1.87
		C		0.000	0.000	25.916	0.000	0.43
T3	19.50-13.10	A	1.462	0.000	0.000	31.283	0.000	0.60

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	39.444	0.000	0.57
		C		0.000	0.000	8.079	0.000	0.13
T4	13.10-6.30	A	1.391	0.000	0.000	32.820	0.000	0.62
		B		0.000	0.000	41.253	0.000	0.59
		C		0.000	0.000	8.389	0.000	0.13
T5	6.30-0.00	A	1.245	0.000	0.000	29.618	0.000	0.54
		B		0.000	0.000	36.984	0.000	0.50
		C		0.000	0.000	7.405	0.000	0.11

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	59.50-39.50	0.6471	-1.1136	2.9693	-2.3980
T2	39.50-19.50	-1.1541	-0.7118	1.1248	-2.0457
T3	19.50-13.10	-1.1799	-0.6993	1.0942	-2.0852
T4	13.10-6.30	-1.2498	-0.6829	1.1206	-2.1832
T5	6.30-0.00	-1.0125	-0.5525	0.8562	-1.9726

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Climbing Ladder (Flat)	39.50 - 59.50	0.6000	0.6000
T1	3	Safety Line 3/8	39.50 - 59.50	0.6000	0.6000
T1	4	Feedline Ladder (Af)	39.50 - 55.00	0.6000	0.6000
T1	5	Feedline Ladder (Af)	39.50 - 59.50	0.6000	0.6000
T1	7	LDF7-50A(1 5/8")	39.50 - 55.00	0.6000	0.6000
T1	8	HB114-1-08U4-M5J(1 1/4")	39.50 - 55.00	0.6000	0.6000
T1	10	2" Rigid Conduit	39.50 - 59.50	0.6000	0.6000
T1	11	Fiber Cable	39.50 - 59.50	0.6000	0.6000
T1	12	DC Cable	39.50 - 59.50	0.6000	0.6000
T1	14	Y Cable	39.50 - 59.50	1.0000	1.0000
T2	2	Climbing Ladder (Flat)	19.50 - 39.50	0.6000	0.6000
T2	3	Safety Line 3/8	19.50 - 39.50	0.6000	0.6000
T2	4	Feedline Ladder (Af)	19.50 - 39.50	0.6000	0.6000
T2	5	Feedline Ladder (Af)	19.50 - 39.50	0.6000	0.6000
T2	7	LDF7-50A(1 5/8")	19.50 - 39.50	0.6000	0.6000
T2	8	HB114-1-08U4-M5J(1 1/4")	19.50 - 39.50	0.6000	0.6000
T2	10	2" Rigid Conduit	19.50 - 39.50	0.6000	0.6000
T2	11	Fiber Cable	19.50 - 39.50	0.6000	0.6000
T2	12	DC Cable	19.50 - 39.50	0.6000	0.6000
T2	14	Y Cable	19.50 - 39.50	1.0000	1.0000
T3	2	Climbing Ladder (Flat)	13.10 - 19.50	0.6000	0.6000
T3	3	Safety Line 3/8	13.10 - 19.50	0.6000	0.6000
T3	4	Feedline Ladder (Af)	13.10 - 19.50	0.6000	0.6000
T3	5	Feedline Ladder (Af)	13.10 - 19.50	0.6000	0.6000
T3	7	LDF7-50A(1 5/8")	13.10 - 19.50	0.6000	0.6000
T3	8	HB114-1-08U4-M5J(1 1/4")	13.10 - 19.50	0.6000	0.6000
T3	10	2" Rigid Conduit	13.10 - 19.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	11	Fiber Cable	13.10 - 19.50	0.6000	0.6000
T3	12	DC Cable	13.10 - 19.50	0.6000	0.6000
T3	14	Y Cable	13.10 - 19.50	1.0000	1.0000
T4	2	Climbing Ladder (Flat)	6.30 - 13.10	0.6000	0.6000
T4	3	Safety Line 3/8	6.30 - 13.10	0.6000	0.6000
T4	4	Feedline Ladder (Af)	6.30 - 13.10	0.6000	0.6000
T4	5	Feedline Ladder (Af)	6.30 - 13.10	0.6000	0.6000
T4	7	LDF7-50A(1 5/8")	6.30 - 13.10	0.6000	0.6000
T4	8	HB114-1-08U4-M5J(1 1/4")	6.30 - 13.10	0.6000	0.6000
T4	10	2" Rigid Conduit	6.30 - 13.10	0.6000	0.6000
T4	11	Fiber Cable	6.30 - 13.10	0.6000	0.6000
T4	12	DC Cable	6.30 - 13.10	0.6000	0.6000
T4	14	Y Cable	6.30 - 13.10	1.0000	1.0000
T5	2	Climbing Ladder (Flat)	0.00 - 6.30	0.6000	0.6000
T5	3	Safety Line 3/8	0.00 - 6.30	0.6000	0.6000
T5	4	Feedline Ladder (Af)	0.00 - 6.30	0.6000	0.6000
T5	5	Feedline Ladder (Af)	0.00 - 6.30	0.6000	0.6000
T5	7	LDF7-50A(1 5/8")	0.00 - 6.30	0.6000	0.6000
T5	8	HB114-1-08U4-M5J(1 1/4")	0.00 - 6.30	0.6000	0.6000
T5	10	2" Rigid Conduit	0.00 - 6.30	0.6000	0.6000
T5	11	Fiber Cable	0.00 - 6.30	0.6000	0.6000
T5	12	DC Cable	0.00 - 6.30	0.6000	0.6000
T5	14	Y Cable	0.00 - 6.30	1.0000	1.0000

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 K
***									
Sector Mount	B	From Face	0.50 0.00 0.00	0.000	55.00	No Ice 1/2" Ice 1" Ice 2" Ice	17.06 22.64 28.13 39.06	4.95 7.48 10.09 15.55	0.36 0.51 0.70 1.21
Sector Mount	A	From Face	0.50 0.00 0.00	0.000	55.00	No Ice 1/2" Ice 1" Ice 2" Ice	17.06 22.64 28.13 39.06	4.95 7.48 10.09 15.55	0.36 0.51 0.70 1.21
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	B	From Face	0.50 6.00 0.00	0.000	55.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	B	From Face	0.50 -6.00 0.00	0.000	55.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	A	From Face	0.50 -8.75 0.00	0.000	55.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
SBNHH-1D65B w/ Mount	B	From Face	0.50	0.000	55.00	No Ice	4.09	3.30	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			4.00			1/2" Ice	4.49	3.68	0.13
			0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	B	From Face	0.50	0.000	55.00	No Ice	4.09	3.30	0.07
			-4.00			1/2" Ice	4.49	3.68	0.13
			0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	A	From Face	0.50	0.000	55.00	No Ice	4.09	3.30	0.07
			-6.75			1/2" Ice	4.49	3.68	0.13
			0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	A	From Face	0.50	0.000	55.00	No Ice	4.09	3.30	0.07
			1.25			1/2" Ice	4.49	3.68	0.13
			0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
APX75-866514-CT0 w/ Mount Pipe	A	From Face	0.50	0.000	55.00	No Ice	9.78	5.80	0.07
			0.00			1/2" Ice	10.69	6.66	0.14
			0.00			1" Ice	11.61	7.53	0.21
						2" Ice	13.51	9.34	0.40
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	A	From Leg	0.50	0.000	55.00	No Ice	7.81	5.80	0.04
			-2.75			1/2" Ice	8.36	6.95	0.10
			0.00			1" Ice	8.87	7.82	0.17
						2" Ice	9.93	9.60	0.34
(2) RHSDC-3315-PF-48	C	From Leg	0.50	0.000	51.00	No Ice	3.36	2.19	0.03
			0.00			1/2" Ice	3.60	2.39	0.06
			0.00			1" Ice	3.84	2.61	0.09
						2" Ice	4.34	3.05	0.17
***									
DMP65R-BU8D w/ Mount Pipe	A	From Face	0.00	0.000	59.50	No Ice	18.11	10.26	0.13
			0.00			1/2" Ice	18.84	11.78	0.25
			10.50			1" Ice	19.59	13.33	0.38
						2" Ice	21.01	15.67	0.68
DMP65R-BU8D w/ Mount Pipe	B	From Face	0.00	0.000	59.50	No Ice	18.11	10.26	0.13
			0.00			1/2" Ice	18.84	11.78	0.25
			10.50			1" Ice	19.59	13.33	0.38
						2" Ice	21.01	15.67	0.68
DMP65R-BU8D w/ Mount Pipe	C	From Face	0.00	0.000	59.50	No Ice	18.11	10.26	0.13
			0.00			1/2" Ice	18.84	11.78	0.25
			10.50			1" Ice	19.59	13.33	0.38
						2" Ice	21.01	15.67	0.68
80010966	A	From Face	0.00	0.000	59.50	No Ice	14.59	5.04	0.13
			0.00			1/2" Ice	15.46	5.81	0.22
			10.50			1" Ice	16.35	6.59	0.32
						2" Ice	18.16	8.21	0.54
80010966	B	From Face	0.00	0.000	59.50	No Ice	14.59	5.04	0.13
			0.00			1/2" Ice	15.46	5.81	0.22
			10.50			1" Ice	16.35	6.59	0.32
						2" Ice	18.16	8.21	0.54
80010966	C	From Face	0.00	0.000	59.50	No Ice	14.59	5.04	0.13
			0.00			1/2" Ice	15.46	5.81	0.22
			10.50			1" Ice	16.35	6.59	0.32
						2" Ice	18.16	8.21	0.54
TPA-65R-LCUUUU-H8	A	From Face	0.00	0.000	59.50	No Ice	11.87	7.02	0.08
			0.00			1/2" Ice	12.82	7.91	0.16
			10.50			1" Ice	13.77	8.82	0.25
						2" Ice	15.74	10.68	0.45
TPA-65R-LCUUUU-H8	B	From Face	0.00	0.000	59.50	No Ice	11.87	7.02	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	12.82	7.91	0.16
			10.50			1" Ice	13.77	8.82	0.25
						2" Ice	15.74	10.68	0.45
TPA-65R-LCUUUU-H8	C	From Face	0.00	0.000	59.50	No Ice	11.87	7.02	0.08
			0.00			1/2" Ice	12.82	7.91	0.16
			10.50			1" Ice	13.77	8.82	0.25
						2" Ice	15.74	10.68	0.45
RADIO 4449 B5/B12	A	From Face	0.00	0.000	59.50	No Ice	1.64	1.30	0.07
			0.00			1/2" Ice	1.80	1.45	0.09
			10.50			1" Ice	1.97	1.60	0.11
						2" Ice	2.33	1.92	0.16
RADIO 4449 B5/B12	B	From Face	0.00	0.000	59.50	No Ice	1.64	1.30	0.07
			0.00			1/2" Ice	1.80	1.45	0.09
			10.50			1" Ice	1.97	1.60	0.11
						2" Ice	2.33	1.92	0.16
RADIO 4449 B5/B12	C	From Face	0.00	0.000	59.50	No Ice	1.64	1.30	0.07
			0.00			1/2" Ice	1.80	1.45	0.09
			10.50			1" Ice	1.97	1.60	0.11
						2" Ice	2.33	1.92	0.16
DC6-48-60-18-8F	A	From Face	0.00	0.000	59.50	No Ice	0.79	0.79	0.02
			0.00			1/2" Ice	1.27	1.27	0.04
			10.50			1" Ice	1.45	1.45	0.05
						2" Ice	1.83	1.83	0.10
DC6-48-60-0-8F	A	From Face	0.00	0.000	59.50	No Ice	0.92	0.92	0.03
			0.00			1/2" Ice	1.46	1.46	0.05
			10.50			1" Ice	1.64	1.64	0.07
						2" Ice	2.04	2.04	0.12
DC6-48-60-18-8F	B	From Face	0.00	0.000	59.50	No Ice	0.79	0.79	0.02
			0.00			1/2" Ice	1.27	1.27	0.04
			10.50			1" Ice	1.45	1.45	0.05
						2" Ice	1.83	1.83	0.10
DC6-48-60-18-8F	C	From Face	0.00	0.000	59.50	No Ice	0.79	0.79	0.02
			0.00			1/2" Ice	1.27	1.27	0.04
			10.50			1" Ice	1.45	1.45	0.05
						2" Ice	1.83	1.83	0.10
RRUS 32 B2	A	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B2	B	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B2	C	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS E2 B29	A	From Face	0.00	0.000	59.50	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08
			10.50			1" Ice	3.59	1.60	0.11
						2" Ice	4.07	1.95	0.17
RRUS E2 B29	B	From Face	0.00	0.000	59.50	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08
			10.50			1" Ice	3.59	1.60	0.11
						2" Ice	4.07	1.95	0.17
RRUS E2 B29	C	From Face	0.00	0.000	59.50	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			10.50			1" Ice	3.59	1.60	0.11
						2" Ice	4.07	1.95	0.17
RADIO 4478	A	From Face	0.00	0.000	59.50	No Ice	1.63	1.00	0.06
			0.00			1/2" Ice	1.78	1.13	0.07
			10.50			1" Ice	1.95	1.27	0.09
						2" Ice	2.31	1.57	0.14
RADIO 4478	B	From Face	0.00	0.000	59.50	No Ice	1.63	1.00	0.06
			0.00			1/2" Ice	1.78	1.13	0.07
			10.50			1" Ice	1.95	1.27	0.09
						2" Ice	2.31	1.57	0.14
RADIO 4478	C	From Face	0.00	0.000	59.50	No Ice	1.63	1.00	0.06
			0.00			1/2" Ice	1.78	1.13	0.07
			10.50			1" Ice	1.95	1.27	0.09
						2" Ice	2.31	1.57	0.14
RRUS 32 B66A	A	From Face	0.00	0.000	59.50	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.09	1.97	0.08
			10.50			1" Ice	3.32	2.17	0.10
						2" Ice	3.81	2.59	0.16
RRUS 32 B66A	B	From Face	0.00	0.000	59.50	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.09	1.97	0.08
			10.50			1" Ice	3.32	2.17	0.10
						2" Ice	3.81	2.59	0.16
RRUS 32 B66A	C	From Face	0.00	0.000	59.50	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.09	1.97	0.08
			10.50			1" Ice	3.32	2.17	0.10
						2" Ice	3.81	2.59	0.16
RRUS 11 B5	A	From Face	0.00	0.000	59.50	No Ice	2.78	1.19	0.05
			0.00			1/2" Ice	2.99	1.33	0.07
			10.50			1" Ice	3.21	1.49	0.10
						2" Ice	3.66	1.83	0.15
RRUS 11 B5	B	From Face	0.00	0.000	59.50	No Ice	2.78	1.19	0.05
			0.00			1/2" Ice	2.99	1.33	0.07
			10.50			1" Ice	3.21	1.49	0.10
						2" Ice	3.66	1.83	0.15
RRUS 11 B5	C	From Face	0.00	0.000	59.50	No Ice	2.78	1.19	0.05
			0.00			1/2" Ice	2.99	1.33	0.07
			10.50			1" Ice	3.21	1.49	0.10
						2" Ice	3.66	1.83	0.15
RRUS 32 B2	A	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B2	B	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B2	C	From Face	0.00	0.000	59.50	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			10.50			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B30	A	From Face	0.00	0.000	59.50	No Ice	2.69	1.57	0.06
			0.00			1/2" Ice	2.91	1.76	0.08
			10.50			1" Ice	3.14	1.95	0.10
						2" Ice	3.61	2.35	0.16
RRUS 32 B30	B	From Face	0.00	0.000	59.50	No Ice	2.69	1.57	0.06
			0.00			1/2" Ice	2.91	1.76	0.08
			10.50			1" Ice	3.14	1.95	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	3.61	2.35	0.16
RRUS 32 B30	C	From Face	0.00 0.00 10.50	0.000	59.50	No Ice 1/2" Ice 1" Ice 2" Ice	2.69 2.91 3.14 3.61	1.57 1.76 1.95 2.35	0.06 0.08 0.10 0.16
Andrew 10' Platform	C	None		0.000	59.50	No Ice 1/2" Ice 1" Ice 2" Ice	54.00 72.00 90.00 126.00	54.00 72.00 90.00 126.00	2.20 3.30 4.40 6.60
18ft. Dia. Doppler	C	From Leg	0.00 0.00 9.00	0.000	59.50	No Ice 1/2" Ice 1" Ice 2" Ice	127.00 127.80 128.60 130.20	127.00 127.80 128.60 130.20	2.00 4.00 6.00 10.00
***									
L3x3 Mod (8')	A	From Face	0.00 0.00 0.00	0.000	9.70	No Ice 1/2" Ice 1" Ice 2" Ice	1.60 1.98 2.36 3.15	0.07 0.11 0.16 0.27	0.06 0.07 0.09 0.15
L3x3 Mod (8')	B	From Face	0.00 0.00 0.00	0.000	9.70	No Ice 1/2" Ice 1" Ice 2" Ice	1.60 1.98 2.36 3.15	0.07 0.11 0.16 0.27	0.06 0.07 0.09 0.15
L3x3 Mod (8')	C	From Face	0.00 0.00 0.00	0.000	9.70	No Ice 1/2" Ice 1" Ice 2" Ice	1.60 1.98 2.36 3.15	0.07 0.11 0.16 0.27	0.06 0.07 0.09 0.15
****									
(2) Schrofftech AF000047A-RRU (Direct Air Cooling System w/ Dual Fans)	A	From Face	0.00 0.00 0.00	0.000	59.50	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.20 0.00 0.00 0.00
***									
4.5" OD x 0.237" Half Pipe Leg Reinforcement	C	From Leg	0.00 0.00 0.00	0.000	39.08 - 0.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.59 1.59 1.59 1.59	1.59 1.59 1.59 1.59	0.42 0.50 0.58 0.73
4.5" OD x 0.237" Half Pipe Leg Reinforcement	A	From Leg	0.00 0.00 0.00	0.000	39.08 - 0.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.59 1.59 1.59 1.59	1.59 1.59 1.59 1.59	0.42 0.50 0.58 0.73
4.5" OD x 0.237" Half Pipe Leg Reinforcement	B	From Leg	0.00 0.00 0.00	0.000	39.08 - 0.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.59 1.59 1.59 1.59	1.59 1.59 1.59 1.59	0.42 0.50 0.58 0.73

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 59.50-39.50	49.50	0.808	42	158.333	A	4.833	20.272	13.333	53.11	49.352	0.000
					B	4.833	20.272		53.11	43.938	0.000
					C	4.833	20.272		53.11	13.550	0.000
T2 39.50-19.50	29.50	0.7	37	159.167	A	5.406	21.898	15.000	54.94	63.680	0.000
					B	5.406	21.898		54.94	43.938	0.000
					C	5.406	21.898		54.94	13.550	0.000
T3 19.50-13.10	16.30	0.7	38	53.169	A	1.802	7.136	4.809	53.81	20.378	0.000
					B	1.802	7.136		53.81	14.060	0.000
					C	1.802	7.136		53.81	4.336	0.000
T4 13.10-6.30	9.70	0.7	38	61.382	A	1.976	7.633	5.110	53.18	21.651	0.000
					B	1.976	7.633		53.18	14.939	0.000
					C	1.976	7.633		53.18	4.607	0.000
T5 6.30-0.00	3.15	0.7	38	61.366	A	7.101	4.734	4.734	40.00	20.059	0.000
					B	7.101	4.734		40.00	13.840	0.000
					C	7.101	4.734		40.00	4.268	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 59.50-39.50	49.50	0.808	3	1.6193	163.731	A	4.833	44.752	24.128	48.66	77.866	0.000
						B	4.833	44.752		48.66	127.526	0.000
						C	4.833	44.752		48.66	26.504	0.000
T2 39.50-19.50	29.50	0.7	2	1.5458	164.319	A	5.406	45.193	25.305	50.01	99.203	0.000
						B	5.406	45.193		50.01	125.532	0.000
						C	5.406	45.193		50.01	25.916	0.000
T3 19.50-13.10	16.30	0.7	2	1.4620	54.730	A	1.802	14.385	7.935	49.02	31.283	0.000
						B	1.802	14.385		49.02	39.444	0.000
						C	1.802	14.385		49.02	8.079	0.000
T4 13.10-6.30	9.70	0.7	2	1.3906	62.961	A	1.976	15.063	8.268	48.52	32.820	0.000
						B	1.976	15.063		48.52	41.253	0.000
						C	1.976	15.063		48.52	8.389	0.000
T5 6.30-0.00	3.15	0.7	2	1.2449	62.675	A	7.101	14.607	7.354	33.88	29.618	0.000
						B	7.101	14.607		33.88	36.984	0.000
						C	7.101	14.607		33.88	7.405	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 59.50-39.50	49.50	0.808	11	158.333	A	4.833	20.272	13.333	53.11	49.352	0.000
					B	4.833	20.272		53.11	43.938	0.000
					C	4.833	20.272		53.11	13.550	0.000
T2 39.50-19.50	29.50	0.7	10	159.167	A	5.406	21.898	15.000	54.94	63.680	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					B	5.406	21.898		54.94	43.938	0.000
					C	5.406	21.898		54.94	13.550	0.000
T3 19.50-13.10	16.30	0.7	10	53.169	A	1.802	7.136	4.809	53.81	20.378	0.000
					B	1.802	7.136		53.81	14.060	0.000
					C	1.802	7.136		53.81	4.336	0.000
T4 13.10-6.30	9.70	0.7	10	61.382	A	1.976	7.633	5.110	53.18	21.651	0.000
					B	1.976	7.633		53.18	14.939	0.000
					C	1.976	7.633		53.18	4.607	0.000
T5 6.30-0.00	3.15	0.7	10	61.366	A	7.101	4.734	4.734	40.00	20.059	0.000
					B	7.101	4.734		40.00	13.840	0.000
					C	7.101	4.734		40.00	4.268	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	42	1	1	15.922	3.56	178.19	A
59.50-39.50			B	0.159	2.74		1	1	15.922			
			C	0.159	2.74		1	1	15.922			
T2	1.00	1.56	A	0.172	2.694	37	1	1	17.277	3.49	174.39	A
39.50-19.50			B	0.172	2.694		1	1	17.277			
			C	0.172	2.694		1	1	17.277			
T3	0.32	0.46	A	0.168	2.706	38	1	1	5.664	1.14	178.36	A
19.50-13.10			B	0.168	2.706		1	1	5.664			
			C	0.168	2.706		1	1	5.664			
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	38	1	1	6.088	1.23	181.38	A
			B	0.157	2.748		1	1	6.088			
			C	0.157	2.748		1	1	6.088			
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	38	1	1	9.625	1.46	232.26	A
			B	0.193	2.62		1	1	9.625			
			C	0.193	2.62		1	1	9.625			
Sum Weight:	2.88	4.51						OTM	314.48 kip-ft	10.89		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	42	0.8	1	14.955	3.47	173.42	B
59.50-39.50			B	0.159	2.74		0.8	1	14.955			
			C	0.159	2.74		0.8	1	14.955			
T2	1.00	1.56	A	0.172	2.694	37	0.8	1	16.196	3.40	169.77	B
39.50-19.50			B	0.172	2.694		0.8	1	16.196			
			C	0.172	2.694		0.8	1	16.196			
T3	0.32	0.46	A	0.168	2.706	38	0.8	1	5.304	1.11	173.47	B
19.50-13.10			B	0.168	2.706		0.8	1	5.304			
			C	0.168	2.706		0.8	1	5.304			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	38	0.8	1	5.693	1.20	176.24	B
			B	0.157	2.748		0.8	1	5.693			
			C	0.157	2.748		0.8	1	5.693			
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	38	0.8	1	8.205	1.34	213.14	B
			B	0.193	2.62		0.8	1	8.205			
			C	0.193	2.62		0.8	1	8.205			
Sum Weight:	2.88	4.51						OTM	305.80 kip-ft	10.52		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	42	0.85	1	15.197	3.55	177.32	C
59.50-39.50			B	0.159	2.74		0.85	1	15.197			
			C	0.159	2.74		0.85	1	15.197			
T2	1.00	1.56	A	0.172	2.694	37	0.85	1	16.466	3.44	171.82	C
39.50-19.50			B	0.172	2.694		0.85	1	16.466			
			C	0.172	2.694		0.85	1	16.466			
T3	0.32	0.46	A	0.168	2.706	38	0.85	1	5.394	1.12	175.61	C
19.50-13.10			B	0.168	2.706		0.85	1	5.394			
			C	0.168	2.706		0.85	1	5.394			
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	38	0.85	1	5.792	1.21	178.44	C
			B	0.157	2.748		0.85	1	5.792			
			C	0.157	2.748		0.85	1	5.792			
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	38	0.85	1	8.560	1.38	218.84	C
			B	0.193	2.62		0.85	1	8.560			
			C	0.193	2.62		0.85	1	8.560			
Sum Weight:	2.88	4.51						OTM	311.35 kip-ft	10.70		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	3.95	3.68	A	0.303	2.288	3	1	1	31.676	0.43	21.46	B
59.50-39.50			B	0.303	2.288		1	1	31.676			
			C	0.303	2.288		1	1	31.676			
T2	4.24	3.58	A	0.308	2.275	2	1	1	32.587	0.39	19.60	B
39.50-19.50			B	0.308	2.275		1	1	32.587			
			C	0.308	2.275		1	1	32.587			
T3	1.30	1.09	A	0.296	2.307	2	1	1	10.398	0.13	19.63	B
19.50-13.10			B	0.296	2.307		1	1	10.398			
			C	0.296	2.307		1	1	10.398			
T4 13.10-6.30	1.34	1.13	A	0.271	2.377	2	1	1	10.869	0.13	19.61	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			B	0.271	2.377		1	1	10.869			
			C	0.271	2.377		1	1	10.869			
T5 6.30-0.00	1.15	1.54	A	0.346	2.18	2	1	1	16.080	0.14	22.84	B
			B	0.346	2.18		1	1	16.080			
			C	0.346	2.18		1	1	16.080			
Sum Weight:	11.98	11.02						OTM	36.60 kip-ft	1.22		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	3.95	3.68	A	0.303	2.288	3	0.8	1	30.709	0.42	21.21	C
59.50-39.50			B	0.303	2.288		0.8	1	30.709			
			C	0.303	2.288		0.8	1	30.709			
T2	4.24	3.58	A	0.308	2.275	2	0.8	1	31.506	0.39	19.35	C
39.50-19.50			B	0.308	2.275		0.8	1	31.506			
			C	0.308	2.275		0.8	1	31.506			
T3	1.30	1.09	A	0.296	2.307	2	0.8	1	10.038	0.12	19.37	C
19.50-13.10			B	0.296	2.307		0.8	1	10.038			
			C	0.296	2.307		0.8	1	10.038			
T4 13.10-6.30	1.34	1.13	A	0.271	2.377	2	0.8	1	10.474	0.13	19.34	C
			B	0.271	2.377		0.8	1	10.474			
			C	0.271	2.377		0.8	1	10.474			
T5 6.30-0.00	1.15	1.54	A	0.346	2.18	2	0.8	1	14.660	0.14	21.84	C
			B	0.346	2.18		0.8	1	14.660			
			C	0.346	2.18		0.8	1	14.660			
Sum Weight:	11.98	11.02						OTM	36.14 kip-ft	1.20		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	3.95	3.68	A	0.303	2.288	3	0.85	1	30.951	0.43	21.35	C
59.50-39.50			B	0.303	2.288		0.85	1	30.951			
			C	0.303	2.288		0.85	1	30.951			
T2	4.24	3.58	A	0.308	2.275	2	0.85	1	31.776	0.40	19.78	C
39.50-19.50			B	0.308	2.275		0.85	1	31.776			
			C	0.308	2.275		0.85	1	31.776			
T3	1.30	1.09	A	0.296	2.307	2	0.85	1	10.128	0.13	19.81	C
19.50-13.10			B	0.296	2.307		0.85	1	10.128			
			C	0.296	2.307		0.85	1	10.128			
T4 13.10-6.30	1.34	1.13	A	0.271	2.377	2	0.85	1	10.573	0.13	19.78	C
			B	0.271	2.377		0.85	1	10.573			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.271	2.377		0.85	1	10.573			
T5 6.30-0.00	1.15	1.54	A	0.346	2.18	2	0.85	1	15.015	0.14	22.47	C
			B	0.346	2.18		0.85	1	15.015			
			C	0.346	2.18		0.85	1	15.015			
Sum Weight:	11.98	11.02						OTM	36.62 kip-ft	1.23		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	11	1	1	15.922	0.94	46.89	A
59.50-39.50			B	0.159	2.74		1	1	15.922			
			C	0.159	2.74		1	1	15.922			
T2	1.00	1.56	A	0.172	2.694	10	1	1	17.277	0.92	45.89	A
39.50-19.50			B	0.172	2.694		1	1	17.277			
			C	0.172	2.694		1	1	17.277			
T3	0.32	0.46	A	0.168	2.706	10	1	1	5.664	0.30	46.94	A
19.50-13.10			B	0.168	2.706		1	1	5.664			
			C	0.168	2.706		1	1	5.664			
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	10	1	1	6.088	0.32	47.73	A
			B	0.157	2.748		1	1	6.088			
			C	0.157	2.748		1	1	6.088			
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	10	1	1	9.625	0.39	61.12	A
			B	0.193	2.62		1	1	9.625			
			C	0.193	2.62		1	1	9.625			
Sum Weight:	2.88	4.51						OTM	82.76 kip-ft	2.87		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	11	0.8	1	14.955	0.91	45.64	B
59.50-39.50			B	0.159	2.74		0.8	1	14.955			
			C	0.159	2.74		0.8	1	14.955			
T2	1.00	1.56	A	0.172	2.694	10	0.8	1	16.196	0.89	44.68	B
39.50-19.50			B	0.172	2.694		0.8	1	16.196			
			C	0.172	2.694		0.8	1	16.196			
T3	0.32	0.46	A	0.168	2.706	10	0.8	1	5.304	0.29	45.65	B
19.50-13.10			B	0.168	2.706		0.8	1	5.304			
			C	0.168	2.706		0.8	1	5.304			
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	10	0.8	1	5.693	0.32	46.38	B
			B	0.157	2.748		0.8	1	5.693			
			C	0.157	2.748		0.8	1	5.693			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	10	0.8	1	8.205	0.35	56.09	B
			B	0.193	2.62		0.8	1	8.205			
			C	0.193	2.62		0.8	1	8.205			
Sum Weight:	2.88	4.51						OTM	80.47 kip-ft	2.77		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.91	1.41	A	0.159	2.74	11	0.85	1	15.197	0.93	46.66	C
59.50-39.50			B	0.159	2.74		0.85	1	15.197			
			C	0.159	2.74		0.85	1	15.197			
T2	1.00	1.56	A	0.172	2.694	10	0.85	1	16.466	0.90	45.22	C
39.50-19.50			B	0.172	2.694		0.85	1	16.466			
			C	0.172	2.694		0.85	1	16.466			
T3	0.32	0.46	A	0.168	2.706	10	0.85	1	5.394	0.30	46.21	C
19.50-13.10			B	0.168	2.706		0.85	1	5.394			
			C	0.168	2.706		0.85	1	5.394			
T4 13.10-6.30	0.34	0.50	A	0.157	2.748	10	0.85	1	5.792	0.32	46.96	C
			B	0.157	2.748		0.85	1	5.792			
			C	0.157	2.748		0.85	1	5.792			
T5 6.30-0.00	0.31	0.57	A	0.193	2.62	10	0.85	1	8.560	0.36	57.59	C
			B	0.193	2.62		0.85	1	8.560			
			C	0.193	2.62		0.85	1	8.560			
Sum Weight:	2.88	4.51						OTM	81.94 kip-ft	2.82		

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft²	C_AA_C Side ft²
Sector Mount	60.000	0.36	2.33	-1.34	55.00	0.833	44	17.06	4.95
Sector Mount	300.000	0.36	-2.33	-1.34	55.00	0.833	44	17.06	4.95
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.05	5.33	3.85	55.00	0.833	44	9.97	10.25
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.05	-0.67	-6.54	55.00	0.833	44	9.97	10.25
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	300.000	0.05	-6.70	6.23	55.00	0.833	44	9.97	10.25
SBNHH-1D65B w/ Mount Pipe	60.000	0.07	4.33	2.12	55.00	0.833	44	4.09	3.30
SBNHH-1D65B w/ Mount Pipe	60.000	0.07	0.33	-4.81	55.00	0.833	44	4.09	3.30
SBNHH-1D65B w/ Mount Pipe	300.000	0.07	-5.70	4.50	55.00	0.833	44	4.09	3.30

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
SBNHH-1D65B w/ Mount Pipe	300.000	0.07	-1.70	-2.43	55.00	0.833	44	4.09	3.30
APX75-866514-CT0 w/ Mount Pipe	300.000	0.07	-2.33	-1.34	55.00	0.833	44	9.78	5.80
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	0.000	0.04	-2.75	-4.88	55.00	0.833	44	7.81	5.80
RHSDC-3315-PF-48	240.000	0.06	-4.22	2.44	51.00	0.815	43	6.73	4.38
DMP65R-BU8D w/ Mount Pipe	300.000	0.13	-1.90	-1.09	70.00	0.892	46	18.11	10.26
DMP65R-BU8D w/ Mount Pipe	60.000	0.13	1.90	-1.09	70.00	0.892	46	18.11	10.26
DMP65R-BU8D w/ Mount Pipe	180.000	0.13	0.00	2.19	70.00	0.892	46	18.11	10.26
80010966	300.000	0.13	-1.90	-1.09	70.00	0.892	46	14.59	5.04
80010966	60.000	0.13	1.90	-1.09	70.00	0.892	46	14.59	5.04
80010966	180.000	0.13	0.00	2.19	70.00	0.892	46	14.59	5.04
TPA-65R-LCUUUU-H8	300.000	0.08	-1.90	-1.09	70.00	0.892	46	11.87	7.02
TPA-65R-LCUUUU-H8	60.000	0.08	1.90	-1.09	70.00	0.892	46	11.87	7.02
TPA-65R-LCUUUU-H8	180.000	0.08	0.00	2.19	70.00	0.892	46	11.87	7.02
RADIO 4449 B5/B12	300.000	0.07	-1.90	-1.09	70.00	0.892	46	1.64	1.30
RADIO 4449 B5/B12	60.000	0.07	1.90	-1.09	70.00	0.892	46	1.64	1.30
RADIO 4449 B5/B12	180.000	0.07	0.00	2.19	70.00	0.892	46	1.64	1.30
DC6-48-60-18-8F	300.000	0.02	-1.90	-1.09	70.00	0.892	46	0.79	0.79
DC6-48-60-0-8F	300.000	0.03	-1.90	-1.09	70.00	0.892	46	0.92	0.92
DC6-48-60-18-8F	60.000	0.02	1.90	-1.09	70.00	0.892	46	0.79	0.79
DC6-48-60-18-8F	180.000	0.02	0.00	2.19	70.00	0.892	46	0.79	0.79
RRUS 32 B2	300.000	0.05	-1.90	-1.09	70.00	0.892	46	2.73	1.67
RRUS 32 B2	60.000	0.05	1.90	-1.09	70.00	0.892	46	2.73	1.67
RRUS 32 B2	180.000	0.05	0.00	2.19	70.00	0.892	46	2.73	1.67
RRUS E2 B29	300.000	0.06	-1.90	-1.09	70.00	0.892	46	3.15	1.29
RRUS E2 B29	60.000	0.06	1.90	-1.09	70.00	0.892	46	3.15	1.29
RRUS E2 B29	180.000	0.06	0.00	2.19	70.00	0.892	46	3.15	1.29
RADIO 4478	300.000	0.06	-1.90	-1.09	70.00	0.892	46	1.63	1.00
RADIO 4478	60.000	0.06	1.90	-1.09	70.00	0.892	46	1.63	1.00
RADIO 4478	180.000	0.06	0.00	2.19	70.00	0.892	46	1.63	1.00
RRUS 32 B66A	300.000	0.06	-1.90	-1.09	70.00	0.892	46	2.86	1.78
RRUS 32 B66A	60.000	0.06	1.90	-1.09	70.00	0.892	46	2.86	1.78
RRUS 32 B66A	180.000	0.06	0.00	2.19	70.00	0.892	46	2.86	1.78
RRUS 11 B5	300.000	0.05	-1.90	-1.09	70.00	0.892	46	2.78	1.19
RRUS 11 B5	60.000	0.05	1.90	-1.09	70.00	0.892	46	2.78	1.19
RRUS 11 B5	180.000	0.05	0.00	2.19	70.00	0.892	46	2.78	1.19
RRUS 32 B2	300.000	0.05	-1.90	-1.09	70.00	0.892	46	2.73	1.67
RRUS 32 B2	60.000	0.05	1.90	-1.09	70.00	0.892	46	2.73	1.67
RRUS 32 B2	180.000	0.05	0.00	2.19	70.00	0.892	46	2.73	1.67
RRUS 32 B30	300.000	0.06	-1.90	-1.09	70.00	0.892	46	2.69	1.57
RRUS 32 B30	60.000	0.06	1.90	-1.09	70.00	0.892	46	2.69	1.57
RRUS 32 B30	180.000	0.06	0.00	2.19	70.00	0.892	46	2.69	1.57
Andrew 10' Platform	0.000	2.20	0.00	0.00	59.50	0.852	44	54.00	54.00
18ft. Dia. Doppler	240.000	2.00	-3.79	2.19	68.50	0.887	46	127.00	127.00
L3x3 Mod (8')	300.000	0.06	-2.16	-1.25	9.70	0.700	38	1.60	0.07
L3x3 Mod (8')	60.000	0.06	2.16	-1.25	9.70	0.700	38	1.60	0.07
L3x3 Mod (8')	180.000	0.06	0.00	2.50	9.70	0.700	38	1.60	0.07
Schrofftech AF000047A-RRU (Direct Air Cooling System w/ Dual Fans)	300.000	0.40	-1.90	-1.09	59.50	0.852	44	0.00	0.00
4.5" OD x 0.237" Half Pipe Leg Reinforcement	240.000	0.42	-4.32	2.50	19.54	0.700	38	1.59	1.59
4.5" OD x 0.237" Half Pipe Leg Reinforcement	0.000	0.42	0.00	-4.99	19.54	0.700	38	1.59	1.59
4.5" OD x 0.237" Half	120.000	0.42	4.32	2.50	19.54	0.700	38	1.59	1.59

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Pipe Leg Reinforcement	Sum Weight:	9.84							

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Sector Mount	60.000	1.03	2.33	-1.34	55.00	0.833	3	35.09	13.56	1.6364
Sector Mount	300.000	1.03	-2.33	-1.34	55.00	0.833	3	35.09	13.56	1.6364
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.40	5.33	3.85	55.00	0.833	3	11.77	13.47	1.6364
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.40	-0.67	-6.54	55.00	0.833	3	11.77	13.47	1.6364
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	300.000	0.40	-6.70	6.23	55.00	0.833	3	11.77	13.47	1.6364
SBNHH-1D65B w/ Mount Pipe	60.000	0.32	4.33	2.12	55.00	0.833	3	5.42	4.58	1.6364
SBNHH-1D65B w/ Mount Pipe	60.000	0.32	0.33	-4.81	55.00	0.833	3	5.42	4.58	1.6364
SBNHH-1D65B w/ Mount Pipe	300.000	0.32	-5.70	4.50	55.00	0.833	3	5.42	4.58	1.6364
SBNHH-1D65B w/ Mount Pipe	300.000	0.32	-1.70	-2.43	55.00	0.833	3	5.42	4.58	1.6364
APX75-866514-CT0 w/ Mount Pipe	300.000	0.33	-2.33	-1.34	55.00	0.833	3	12.82	8.68	1.6364
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	0.000	0.28	-2.75	-4.88	55.00	0.833	3	9.54	8.95	1.6364
RHSDC-3315-PF-48	240.000	0.28	-4.22	2.44	51.00	0.815	3	8.31	5.76	1.6241
DMP65R-BU8D w/ Mount Pipe	300.000	0.58	-1.90	-1.09	70.00	0.892	3	20.55	14.91	1.6764
DMP65R-BU8D w/ Mount Pipe	60.000	0.58	1.90	-1.09	70.00	0.892	3	20.55	14.91	1.6764
DMP65R-BU8D w/ Mount Pipe	180.000	0.58	0.00	2.19	70.00	0.892	3	20.55	14.91	1.6764
80010966	300.000	0.47	-1.90	-1.09	70.00	0.892	3	17.57	7.69	1.6764
80010966	60.000	0.47	1.90	-1.09	70.00	0.892	3	17.57	7.69	1.6764
80010966	180.000	0.47	0.00	2.19	70.00	0.892	3	17.57	7.69	1.6764
TPA-65R-LCUUUU-H8	300.000	0.38	-1.90	-1.09	70.00	0.892	3	15.10	10.08	1.6764
TPA-65R-LCUUUU-H8	60.000	0.38	1.90	-1.09	70.00	0.892	3	15.10	10.08	1.6764
TPA-65R-LCUUUU-H8	180.000	0.38	0.00	2.19	70.00	0.892	3	15.10	10.08	1.6764
RADIO 4449 B5/B12	300.000	0.14	-1.90	-1.09	70.00	0.892	3	2.21	1.82	1.6764
RADIO 4449 B5/B12	60.000	0.14	1.90	-1.09	70.00	0.892	3	2.21	1.82	1.6764
RADIO 4449 B5/B12	180.000	0.14	0.00	2.19	70.00	0.892	3	2.21	1.82	1.6764
DC6-48-60-18-8F	300.000	0.08	-1.90	-1.09	70.00	0.892	3	1.71	1.71	1.6764
DC6-48-60-0-8F	300.000	0.10	-1.90	-1.09	70.00	0.892	3	1.91	1.91	1.6764
DC6-48-60-18-8F	60.000	0.08	1.90	-1.09	70.00	0.892	3	1.71	1.71	1.6764
DC6-48-60-18-8F	180.000	0.08	0.00	2.19	70.00	0.892	3	1.71	1.71	1.6764
RRUS 32 B2	300.000	0.14	-1.90	-1.09	70.00	0.892	3	3.51	2.33	1.6764
RRUS 32 B2	60.000	0.14	1.90	-1.09	70.00	0.892	3	3.51	2.33	1.6764
RRUS 32 B2	180.000	0.14	0.00	2.19	70.00	0.892	3	3.51	2.33	1.6764
RRUS E2 B29	300.000	0.15	-1.90	-1.09	70.00	0.892	3	3.91	1.84	1.6764
RRUS E2 B29	60.000	0.15	1.90	-1.09	70.00	0.892	3	3.91	1.84	1.6764
RRUS E2 B29	180.000	0.15	0.00	2.19	70.00	0.892	3	3.91	1.84	1.6764
RADIO 4478	300.000	0.12	-1.90	-1.09	70.00	0.892	3	2.19	1.47	1.6764
RADIO 4478	60.000	0.12	1.90	-1.09	70.00	0.892	3	2.19	1.47	1.6764
RADIO 4478	180.000	0.12	0.00	2.19	70.00	0.892	3	2.19	1.47	1.6764

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
RRUS 32 B66A	300.000	0.14	-1.90	-1.09	70.00	0.892	3	3.65	2.45	1.6764
RRUS 32 B66A	60.000	0.14	1.90	-1.09	70.00	0.892	3	3.65	2.45	1.6764
RRUS 32 B66A	180.000	0.14	0.00	2.19	70.00	0.892	3	3.65	2.45	1.6764
RRUS 11 B5	300.000	0.13	-1.90	-1.09	70.00	0.892	3	3.51	1.72	1.6764
RRUS 11 B5	60.000	0.13	1.90	-1.09	70.00	0.892	3	3.51	1.72	1.6764
RRUS 11 B5	180.000	0.13	0.00	2.19	70.00	0.892	3	3.51	1.72	1.6764
RRUS 32 B2	300.000	0.14	-1.90	-1.09	70.00	0.892	3	3.51	2.33	1.6764
RRUS 32 B2	60.000	0.14	1.90	-1.09	70.00	0.892	3	3.51	2.33	1.6764
RRUS 32 B2	180.000	0.14	0.00	2.19	70.00	0.892	3	3.51	2.33	1.6764
RRUS 32 B30	300.000	0.14	-1.90	-1.09	70.00	0.892	3	3.46	2.22	1.6764
RRUS 32 B30	60.000	0.14	1.90	-1.09	70.00	0.892	3	3.46	2.22	1.6764
RRUS 32 B30	180.000	0.14	0.00	2.19	70.00	0.892	3	3.46	2.22	1.6764
Andrew 10' Platform	0.000	5.83	0.00	0.00	59.50	0.852	3	113.38	113.38	1.6493
18ft. Dia. Doppler	240.000	8.69	-3.79	2.19	68.50	0.887	3	129.68	129.68	1.6727
L3x3 Mod (8')	300.000	0.11	-2.16	-1.25	9.70	0.700	2	2.67	0.20	1.3906
L3x3 Mod (8')	60.000	0.11	2.16	-1.25	9.70	0.700	2	2.67	0.20	1.3906
L3x3 Mod (8')	180.000	0.11	0.00	2.50	9.70	0.700	2	2.67	0.20	1.3906
Schrofftech AF000047A-RRU (Direct Air Cooling System w/ Dual Fans)	300.000	0.00	-1.90	-1.09	59.50	0.852	3	0.00	0.00	1.6493
4.5" OD x 0.237" Half Pipe Leg Reinforcement	240.000	0.65	-4.32	2.50	19.54	0.700	2	1.59	1.59	1.4834
4.5" OD x 0.237" Half Pipe Leg Reinforcement	0.000	0.65	0.00	-4.99	19.54	0.700	2	1.59	1.59	1.4834
4.5" OD x 0.237" Half Pipe Leg Reinforcement	120.000	0.65	4.32	2.50	19.54	0.700	2	1.59	1.59	1.4834
	Sum Weight:	30.23								

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Sector Mount	60.000	0.36	2.33	-1.34	55.00	0.833	11	17.06	4.95
Sector Mount	300.000	0.36	-2.33	-1.34	55.00	0.833	11	17.06	4.95
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.05	5.33	3.85	55.00	0.833	11	9.97	10.25
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	60.000	0.05	-0.67	-6.54	55.00	0.833	11	9.97	10.25
LPA-80063-6CF-EDIN-5 w/ Mount Pipe	300.000	0.05	-6.70	6.23	55.00	0.833	11	9.97	10.25
SBNHH-1D65B w/ Mount Pipe	60.000	0.07	4.33	2.12	55.00	0.833	11	4.09	3.30
SBNHH-1D65B w/ Mount Pipe	60.000	0.07	0.33	-4.81	55.00	0.833	11	4.09	3.30
SBNHH-1D65B w/ Mount Pipe	300.000	0.07	-5.70	4.50	55.00	0.833	11	4.09	3.30
SBNHH-1D65B w/ Mount Pipe	300.000	0.07	-1.70	-2.43	55.00	0.833	11	4.09	3.30
APX75-866514-CT0 w/ Mount Pipe	300.000	0.07	-2.33	-1.34	55.00	0.833	11	9.78	5.80
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	0.000	0.04	-2.75	-4.88	55.00	0.833	11	7.81	5.80
RHSDC-3315-PF-48	240.000	0.06	-4.22	2.44	51.00	0.815	11	6.73	4.38
DMP65R-BU8D w/ Mount Pipe	300.000	0.13	-1.90	-1.09	70.00	0.892	12	18.11	10.26

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
DMP65R-BU8D w/ Mount Pipe	60.000	0.13	1.90	-1.09	70.00	0.892	12	18.11	10.26
DMP65R-BU8D w/ Mount Pipe	180.000	0.13	0.00	2.19	70.00	0.892	12	18.11	10.26
80010966	300.000	0.13	-1.90	-1.09	70.00	0.892	12	14.59	5.04
80010966	60.000	0.13	1.90	-1.09	70.00	0.892	12	14.59	5.04
80010966	180.000	0.13	0.00	2.19	70.00	0.892	12	14.59	5.04
TPA-65R-LCUUUU-H8	300.000	0.08	-1.90	-1.09	70.00	0.892	12	11.87	7.02
TPA-65R-LCUUUU-H8	60.000	0.08	1.90	-1.09	70.00	0.892	12	11.87	7.02
TPA-65R-LCUUUU-H8	180.000	0.08	0.00	2.19	70.00	0.892	12	11.87	7.02
RADIO 4449 B5/B12	300.000	0.07	-1.90	-1.09	70.00	0.892	12	1.64	1.30
RADIO 4449 B5/B12	60.000	0.07	1.90	-1.09	70.00	0.892	12	1.64	1.30
RADIO 4449 B5/B12	180.000	0.07	0.00	2.19	70.00	0.892	12	1.64	1.30
DC6-48-60-18-8F	300.000	0.02	-1.90	-1.09	70.00	0.892	12	0.79	0.79
DC6-48-60-0-8F	300.000	0.03	-1.90	-1.09	70.00	0.892	12	0.92	0.92
DC6-48-60-18-8F	60.000	0.02	1.90	-1.09	70.00	0.892	12	0.79	0.79
DC6-48-60-18-8F	180.000	0.02	0.00	2.19	70.00	0.892	12	0.79	0.79
RRUS 32 B2	300.000	0.05	-1.90	-1.09	70.00	0.892	12	2.73	1.67
RRUS 32 B2	60.000	0.05	1.90	-1.09	70.00	0.892	12	2.73	1.67
RRUS 32 B2	180.000	0.05	0.00	2.19	70.00	0.892	12	2.73	1.67
RRUS E2 B29	300.000	0.06	-1.90	-1.09	70.00	0.892	12	3.15	1.29
RRUS E2 B29	60.000	0.06	1.90	-1.09	70.00	0.892	12	3.15	1.29
RRUS E2 B29	180.000	0.06	0.00	2.19	70.00	0.892	12	3.15	1.29
RADIO 4478	300.000	0.06	-1.90	-1.09	70.00	0.892	12	1.63	1.00
RADIO 4478	60.000	0.06	1.90	-1.09	70.00	0.892	12	1.63	1.00
RADIO 4478	180.000	0.06	0.00	2.19	70.00	0.892	12	1.63	1.00
RRUS 32 B66A	300.000	0.06	-1.90	-1.09	70.00	0.892	12	2.86	1.78
RRUS 32 B66A	60.000	0.06	1.90	-1.09	70.00	0.892	12	2.86	1.78
RRUS 32 B66A	180.000	0.06	0.00	2.19	70.00	0.892	12	2.86	1.78
RRUS 11 B5	300.000	0.05	-1.90	-1.09	70.00	0.892	12	2.78	1.19
RRUS 11 B5	60.000	0.05	1.90	-1.09	70.00	0.892	12	2.78	1.19
RRUS 11 B5	180.000	0.05	0.00	2.19	70.00	0.892	12	2.78	1.19
RRUS 32 B2	300.000	0.05	-1.90	-1.09	70.00	0.892	12	2.73	1.67
RRUS 32 B2	60.000	0.05	1.90	-1.09	70.00	0.892	12	2.73	1.67
RRUS 32 B2	180.000	0.05	0.00	2.19	70.00	0.892	12	2.73	1.67
RRUS 32 B30	300.000	0.06	-1.90	-1.09	70.00	0.892	12	2.69	1.57
RRUS 32 B30	60.000	0.06	1.90	-1.09	70.00	0.892	12	2.69	1.57
RRUS 32 B30	180.000	0.06	0.00	2.19	70.00	0.892	12	2.69	1.57
Andrew 10' Platform	0.000	2.20	0.00	0.00	59.50	0.852	12	54.00	54.00
18ft. Dia. Doppler	240.000	2.00	-3.79	2.19	68.50	0.887	12	127.00	127.00
L3x3 Mod (8')	300.000	0.06	-2.16	-1.25	9.70	0.700	10	1.60	0.07
L3x3 Mod (8')	60.000	0.06	2.16	-1.25	9.70	0.700	10	1.60	0.07
L3x3 Mod (8')	180.000	0.06	0.00	2.50	9.70	0.700	10	1.60	0.07
Schrofftech AF000047A-RRU (Direct Air Cooling System w/ Dual Fans)	300.000	0.40	-1.90	-1.09	59.50	0.852	12	0.00	0.00
4.5" OD x 0.237" Half Pipe Leg Reinforcement	240.000	0.42	-4.32	2.50	19.54	0.700	10	1.59	1.59
4.5" OD x 0.237" Half Pipe Leg Reinforcement	0.000	0.42	0.00	-4.99	19.54	0.700	10	1.59	1.59
4.5" OD x 0.237" Half Pipe Leg Reinforcement	120.000	0.42	4.32	2.50	19.54	0.700	10	1.59	1.59
	Sum Weight:	9.84							

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	1.63					
Bracing Weight	2.88					
Total Member Self-Weight	4.51			2.17	9.07	
Total Weight	17.22			2.17	9.07	
Wind 0 deg - No Ice		-0.03	-19.34	-881.13	10.76	-22.03
Wind 30 deg - No Ice		9.68	-16.37	-753.46	-439.34	-11.97
Wind 60 deg - No Ice		17.23	-9.69	-440.81	-782.61	-2.27
Wind 90 deg - No Ice		21.07	0.03	3.86	-938.73	10.02
Wind 120 deg - No Ice		18.42	10.41	465.97	-815.30	22.57
Wind 150 deg - No Ice		9.85	16.61	763.44	-444.54	29.48
Wind 180 deg - No Ice		0.03	18.97	876.79	7.39	22.03
Wind 210 deg - No Ice		-9.68	16.37	757.81	457.48	11.97
Wind 240 deg - No Ice		-17.56	9.88	449.49	808.27	2.27
Wind 270 deg - No Ice		-21.07	-0.03	0.49	956.87	-10.02
Wind 300 deg - No Ice		-18.10	-10.23	-457.29	825.92	-22.57
Wind 330 deg - No Ice		-9.85	-16.61	-759.10	462.68	-29.48
Member Ice	6.51					
Total Weight Ice	53.23			13.96	40.01	
Wind 0 deg - Ice		-0.00	-1.90	-68.88	40.19	-1.27
Wind 30 deg - Ice		1.00	-1.70	-59.61	-3.69	-0.62
Wind 60 deg - Ice		1.82	-1.03	-29.82	-38.30	-0.20
Wind 90 deg - Ice		2.13	0.00	14.14	-51.00	0.38
Wind 120 deg - Ice		1.79	1.01	57.18	-36.97	1.27
Wind 150 deg - Ice		0.98	1.65	85.81	-2.90	1.70
Wind 180 deg - Ice		0.00	1.88	96.35	39.84	1.27
Wind 210 deg - Ice		-1.00	1.70	87.53	83.72	0.62
Wind 240 deg - Ice		-1.84	1.04	57.97	118.72	0.20
Wind 270 deg - Ice		-2.13	-0.00	13.79	131.03	-0.38
Wind 300 deg - Ice		-1.77	-1.00	-29.02	116.61	-1.27
Wind 330 deg - Ice		-0.98	-1.65	-57.89	82.93	-1.70
Total Weight	17.22			2.17	9.07	
Wind 0 deg - Service		-0.01	-5.09	-229.52	9.66	-5.80
Wind 30 deg - Service		2.55	-4.31	-195.92	-108.79	-3.15
Wind 60 deg - Service		4.54	-2.55	-113.65	-199.12	-0.60
Wind 90 deg - Service		5.54	0.01	3.37	-240.21	2.64
Wind 120 deg - Service		4.85	2.74	124.98	-207.73	5.94
Wind 150 deg - Service		2.59	4.37	203.26	-110.16	7.76
Wind 180 deg - Service		0.01	4.99	233.09	8.77	5.80
Wind 210 deg - Service		-2.55	4.31	201.78	127.22	3.15
Wind 240 deg - Service		-4.62	2.60	120.65	219.53	0.60
Wind 270 deg - Service		-5.54	-0.01	2.48	258.63	-2.64
Wind 300 deg - Service		-4.76	-2.69	-117.98	224.17	-5.94
Wind 330 deg - Service		-2.59	-4.37	-197.41	128.59	-7.76

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice

Comb. No.	Description
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 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 Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	59.5 - 39.5	Leg	Max Tension	23	34.71	-0.09	0.04
			Max. Compression	10	-40.01	-0.24	-0.12
			Max. Mx	8	-2.00	1.08	0.06
			Max. My	2	4.94	0.12	-1.02
			Max. Vy	20	3.10	0.00	0.00
			Max. Vx	14	-3.89	0.00	0.00
		Diagonal	Max Tension	10	14.28	0.00	0.00
			Max. Compression	22	-14.22	0.00	0.00
			Max. Mx	36	1.12	0.15	0.00
			Max. My	10	3.90	0.00	-0.00
			Max. Vy	36	-0.06	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	14	1.53	0.00	0.00
			Max. Compression	3	-1.51	0.00	0.00
			Max. Mx	27	0.30	-0.11	0.00
			Max. My	12	0.58	0.00	0.00
			Max. Vy	27	0.06	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Top Girt	Max Tension	22	4.70	0.00	0.00
			Max. Compression	10	-4.60	0.00	0.00
			Max. Mx	28	0.31	-0.16	0.00
			Max. My	12	1.08	0.00	0.00
			Max. Vy	28	0.09	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T2	39.5 - 19.5	Leg	Max Tension	23	78.53	-0.34	-0.42
			Max. Compression	10	-86.39	0.64	-0.89
			Max. Mx	20	-72.09	0.88	-0.41
			Max. My	8	-77.03	0.24	-1.07
			Max. Vy	18	0.20	-0.87	-0.41
			Max. Vx	8	0.25	0.24	-1.07
		Diagonal	Max Tension	10	16.86	0.00	0.00
			Max. Compression	20	-16.88	0.00	0.00
			Max. Mx	34	1.27	0.15	0.00
			Max. My	10	4.20	0.00	-0.00
			Max. Vy	34	-0.06	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	22	11.11	0.00	0.00
			Max. Compression	10	-11.16	0.00	0.00
			Max. Mx	29	0.28	-0.14	0.00
			Max. My	12	4.65	0.00	0.00
			Max. Vy	29	0.07	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T3	19.5 - 13.1	Leg	Max Tension	23	85.39	-0.63	0.61
			Max. Compression	18	-97.01	0.62	0.87
			Max. Mx	20	-89.72	0.88	-0.41
			Max. My	8	-82.22	0.24	-1.07
			Max. Vy	20	-0.21	-0.65	-0.79
			Max. Vx	8	-0.29	0.24	-1.07
		Diagonal	Max Tension	23	11.03	0.00	0.00
			Max. Compression	10	-11.48	0.00	0.00
			Max. Mx	36	0.17	0.15	0.00
			Max. My	12	-9.51	0.00	-0.00
			Max. Vy	36	-0.06	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
		Horizontal	Max Tension	23	2.26	0.00	0.00
			Max. Compression	18	-2.87	0.00	0.00
			Max. Mx	26	0.25	-0.12	0.00
			Max. My	38	0.37	0.00	0.00
			Max. Vy	26	0.06	0.00	0.00
			Max. Vx	38	0.00	0.00	0.00
T4	13.1 - 6.3	Leg	Max Tension	23	98.37	-0.59	-0.60
			Max. Compression	10	-108.42	-0.39	-0.78
			Max. Mx	22	-54.46	0.87	0.25
			Max. My	14	-58.73	-0.57	-1.50
			Max. Vy	24	0.26	0.84	0.56
			Max. Vx	14	0.33	-0.57	-1.50
		Diagonal	Max Tension	10	10.66	0.00	0.00
			Max. Compression	22	-10.33	0.00	0.00
			Max. Mx	34	0.31	0.17	0.00
			Max. My	10	3.89	0.00	-0.00
			Max. Vy	34	-0.06	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Horizontal	Max Tension	10	1.88	0.00	0.00
			Max. Compression	10	-1.88	0.00	0.00
			Max. Mx	38	0.40	-0.13	0.00
			Max. My	36	0.55	0.00	0.00
			Max. Vy	38	0.06	0.00	0.00
			Max. Vx	36	-0.00	0.00	0.00
T5	6.3 - 0	Leg	Max Tension	23	98.23	0.18	0.58
			Max. Compression	10	-109.28	3.18	0.33
			Max. Mx	18	-108.50	3.18	0.10
			Max. My	14	-55.77	-0.57	-1.50
			Max. Vy	18	-1.17	3.18	0.10
			Max. Vx	12	-0.72	-0.47	-1.47
		Diagonal	Max Tension	23	7.97	0.21	-0.00
			Max. Compression	10	-8.06	0.00	0.00
			Max. Mx	10	-2.40	-0.25	0.01
			Max. My	2	-6.73	-0.20	0.01
			Max. Vy	10	-0.07	0.00	0.00
			Max. Vx	35	-0.00	0.00	0.00
		Horizontal	Max Tension	23	8.15	0.01	-0.01
			Max. Compression	10	-8.86	-0.06	-0.02
			Max. Mx	22	2.51	-0.09	-0.01
			Max. My	10	-1.90	-0.06	-0.02
			Max. Vy	37	-0.04	-0.05	-0.01
			Max. Vx	12	0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	10	1.90	0.00	0.00
			Max. Compression	10	-1.90	0.00	0.00
			Max. Mx	28	0.42	-0.01	0.00
			Max. My	35	0.58	0.00	0.00
			Max. Vy	28	0.01	0.00	0.00
			Max. Vx	35	-0.00	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	10	1.59	0.00	0.00
			Max. Compression	10	-1.59	0.00	0.00
			Max. Mx	35	0.49	-0.01	0.00
			Max. My	32	0.34	0.00	0.00
			Max. Vy	35	0.01	0.00	0.00
			Max. Vx	32	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	117.33	10.55	-6.19
	Max. H_x	18	117.33	10.55	-6.19
	Max. H_z	5	-85.10	-7.35	5.93
	Min. Vert	7	-101.86	-9.68	5.68
	Min. H_x	9	-91.46	-9.70	3.80
	Min. H_z	16	99.52	8.09	-6.31
Leg B	Max. Vert	10	118.62	-11.68	-5.24
	Max. H_x	23	-107.10	10.88	4.75
	Max. H_z	23	-107.10	10.88	4.75
	Min. Vert	23	-107.10	10.88	4.75
	Min. H_x	10	118.62	-11.68	-5.24
	Min. H_z	10	118.62	-11.68	-5.24
Leg A	Max. Vert	2	111.87	-1.35	11.75

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_x	19	-48.31	1.61	-5.44
	Max. H_z	2	111.87	-1.35	11.75
	Min. Vert	15	-99.20	1.36	-10.78
	Min. H_x	6	59.38	-1.57	6.18
	Min. H_z	15	-99.20	1.36	-10.78

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	17.22	0.00	0.00	2.19	9.14	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	20.66	-0.03	-19.34	-882.65	12.58	-22.12
0.9 Dead+1.0 Wind 0 deg - No Ice	15.50	-0.03	-19.34	-882.04	9.80	-22.10
1.2 Dead+1.0 Wind 30 deg - No Ice	20.66	9.68	-16.37	-754.83	-438.60	-12.05
0.9 Dead+1.0 Wind 30 deg - No Ice	15.50	9.68	-16.37	-754.41	-440.72	-12.03
1.2 Dead+1.0 Wind 60 deg - No Ice	20.66	17.23	-9.69	-441.37	-782.57	-2.31
0.9 Dead+1.0 Wind 60 deg - No Ice	15.50	17.23	-9.69	-441.40	-784.20	-2.30
1.2 Dead+1.0 Wind 90 deg - No Ice	20.66	21.07	0.03	4.26	-938.71	10.04
0.9 Dead+1.0 Wind 90 deg - No Ice	15.50	21.07	0.03	3.59	-940.13	10.03
1.2 Dead+1.0 Wind 120 deg - No Ice	20.66	18.42	10.41	467.15	-815.00	22.64
0.9 Dead+1.0 Wind 120 deg - No Ice	15.50	18.42	10.41	465.82	-816.59	22.62
1.2 Dead+1.0 Wind 150 deg - No Ice	20.66	9.85	16.61	765.60	-443.92	29.56
0.9 Dead+1.0 Wind 150 deg - No Ice	15.50	9.85	16.61	763.84	-446.02	29.54
1.2 Dead+1.0 Wind 180 deg - No Ice	20.66	0.03	18.97	879.41	9.08	22.11
0.9 Dead+1.0 Wind 180 deg - No Ice	15.50	0.03	18.97	877.48	6.33	22.08
1.2 Dead+1.0 Wind 210 deg - No Ice	20.66	-9.68	16.37	760.18	460.40	12.03
0.9 Dead+1.0 Wind 210 deg - No Ice	15.50	-9.68	16.37	758.42	457.00	12.01
1.2 Dead+1.0 Wind 240 deg - No Ice	20.66	-17.56	9.88	450.91	811.87	2.28
0.9 Dead+1.0 Wind 240 deg - No Ice	15.50	-17.56	9.88	449.60	807.97	2.28
1.2 Dead+1.0 Wind 270 deg - No Ice	20.66	-21.07	-0.03	0.88	960.68	-10.05
0.9 Dead+1.0 Wind 270 deg - No Ice	15.50	-21.07	-0.03	0.22	956.57	-10.05
1.2 Dead+1.0 Wind 300 deg - No Ice	20.66	-18.10	-10.23	-457.87	829.48	-22.64
0.9 Dead+1.0 Wind 300 deg - No Ice	15.50	-18.10	-10.23	-457.88	825.55	-22.63
1.2 Dead+1.0 Wind 330 deg -	20.66	-9.85	-16.61	-760.52	465.58	-29.57

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice						
0.9 Dead+1.0 Wind 330 deg - No Ice	15.50	-9.85	-16.61	-760.08	462.16	-29.54
1.2 Dead+1.0 Ice+1.0 Temp	56.67	-0.00	0.00	14.83	42.84	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	56.67	-0.00	-1.90	-69.01	43.02	-1.30
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	56.67	1.00	-1.70	-59.61	-1.39	-0.64
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	56.67	1.82	-1.03	-29.45	-36.39	-0.21
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	56.67	2.13	0.00	15.01	-49.23	0.40
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	56.67	1.79	1.01	58.56	-35.06	1.30
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	56.67	0.98	1.65	87.56	-0.61	1.73
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	56.67	0.00	1.88	98.23	42.65	1.30
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	56.67	-1.00	1.70	89.29	87.06	0.64
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	56.67	-1.84	1.04	59.35	122.45	0.21
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	56.67	-2.13	-0.00	14.66	134.90	-0.40
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	56.67	-1.77	-1.00	-28.67	120.34	-1.30
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	56.67	-0.98	-1.65	-57.89	86.29	-1.73
Dead+Wind 0 deg - Service	17.22	-0.01	-5.09	-230.56	9.58	-5.82
Dead+Wind 30 deg - Service	17.22	2.55	-4.31	-196.96	-109.05	-3.17
Dead+Wind 60 deg - Service	17.22	4.54	-2.55	-114.54	-199.50	-0.60
Dead+Wind 90 deg - Service	17.22	5.54	0.01	2.64	-240.55	2.64
Dead+Wind 120 deg - Service	17.22	4.85	2.74	124.34	-208.01	5.96
Dead+Wind 150 deg - Service	17.22	2.59	4.37	202.80	-110.43	7.78
Dead+Wind 180 deg - Service	17.22	0.01	4.99	232.71	8.67	5.82
Dead+Wind 210 deg - Service	17.22	-2.55	4.31	201.35	127.31	3.16
Dead+Wind 240 deg - Service	17.22	-4.62	2.60	120.04	219.70	0.60
Dead+Wind 270 deg - Service	17.22	-5.54	-0.01	1.74	258.83	-2.64
Dead+Wind 300 deg - Service	17.22	-4.76	-2.69	-118.86	224.34	-5.96
Dead+Wind 330 deg - Service	17.22	-2.59	-4.37	-198.43	128.68	-7.78

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-17.22	0.00	0.00	17.22	0.00	0.000%
2	-0.03	-20.66	-19.34	0.03	20.66	19.34	0.000%
3	-0.03	-15.50	-19.34	0.03	15.50	19.34	0.000%
4	9.68	-20.66	-16.37	-9.68	20.66	16.37	0.000%
5	9.68	-15.50	-16.37	-9.68	15.50	16.37	0.000%
6	17.23	-20.66	-9.69	-17.23	20.66	9.69	0.000%
7	17.23	-15.50	-9.69	-17.23	15.50	9.69	0.000%
8	21.07	-20.66	0.03	-21.07	20.66	-0.03	0.000%
9	21.07	-15.50	0.03	-21.07	15.50	-0.03	0.000%
10	18.42	-20.66	10.41	-18.42	20.66	-10.41	0.000%
11	18.42	-15.50	10.41	-18.42	15.50	-10.41	0.000%
12	9.85	-20.66	16.61	-9.85	20.66	-16.61	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
13	9.85	-15.50	16.61	-9.85	15.50	-16.61	0.000%
14	0.03	-20.66	18.97	-0.03	20.66	-18.97	0.000%
15	0.03	-15.50	18.97	-0.03	15.50	-18.97	0.000%
16	-9.68	-20.66	16.37	9.68	20.66	-16.37	0.000%
17	-9.68	-15.50	16.37	9.68	15.50	-16.37	0.000%
18	-17.56	-20.66	9.88	17.56	20.66	-9.88	0.000%
19	-17.56	-15.50	9.88	17.56	15.50	-9.88	0.000%
20	-21.07	-20.66	-0.03	21.07	20.66	0.03	0.000%
21	-21.07	-15.50	-0.03	21.07	15.50	0.03	0.000%
22	-18.10	-20.66	-10.23	18.10	20.66	10.23	0.000%
23	-18.10	-15.50	-10.23	18.10	15.50	10.23	0.000%
24	-9.85	-20.66	-16.61	9.85	20.66	16.61	0.000%
25	-9.85	-15.50	-16.61	9.85	15.50	16.61	0.000%
26	0.00	-56.67	0.00	0.00	56.67	-0.00	0.000%
27	-0.00	-56.67	-1.90	0.00	56.67	1.90	0.000%
28	1.00	-56.67	-1.70	-1.00	56.67	1.70	0.000%
29	1.82	-56.67	-1.03	-1.82	56.67	1.03	0.000%
30	2.13	-56.67	0.00	-2.13	56.67	-0.00	0.000%
31	1.79	-56.67	1.01	-1.79	56.67	-1.01	0.000%
32	0.98	-56.67	1.65	-0.98	56.67	-1.65	0.000%
33	0.00	-56.67	1.88	-0.00	56.67	-1.88	0.000%
34	-1.00	-56.67	1.70	1.00	56.67	-1.70	0.000%
35	-1.84	-56.67	1.04	1.84	56.67	-1.04	0.000%
36	-2.13	-56.67	-0.00	2.13	56.67	0.00	0.000%
37	-1.77	-56.67	-1.00	1.77	56.67	1.00	0.000%
38	-0.98	-56.67	-1.65	0.98	56.67	1.65	0.000%
39	-0.01	-17.22	-5.09	0.01	17.22	5.09	0.000%
40	2.55	-17.22	-4.31	-2.55	17.22	4.31	0.000%
41	4.54	-17.22	-2.55	-4.54	17.22	2.55	0.000%
42	5.54	-17.22	0.01	-5.54	17.22	-0.01	0.000%
43	4.85	-17.22	2.74	-4.85	17.22	-2.74	0.000%
44	2.59	-17.22	4.37	-2.59	17.22	-4.37	0.000%
45	0.01	-17.22	4.99	-0.01	17.22	-4.99	0.000%
46	-2.55	-17.22	4.31	2.55	17.22	-4.31	0.000%
47	-4.62	-17.22	2.60	4.62	17.22	-2.60	0.000%
48	-5.54	-17.22	-0.01	5.54	17.22	0.01	0.000%
49	-4.76	-17.22	-2.69	4.76	17.22	2.69	0.000%
50	-2.59	-17.22	-4.37	2.59	17.22	4.37	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001

14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000001
17	Yes	4	0.00000001	0.00000001
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	59.5 - 39.5	1.349	48	0.164	0.116
T2	39.5 - 19.5	0.674	48	0.140	0.075
T3	19.5 - 13.1	0.164	48	0.079	0.030
T4	13.1 - 6.3	0.072	48	0.053	0.027
T5	6.3 - 0	0.009	42	0.025	0.008

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
59.50	DMP65R-BU8D w/ Mount Pipe	48	1.349	0.164	0.116	134760
55.00	Sector Mount	48	1.192	0.160	0.108	134760

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
51.00	(2) RHSDC-3315-PF-48	48	1.054	0.156	0.101	79270
39.08	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.661	0.139	0.074	31421
33.50	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.493	0.126	0.058	21173
27.92	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.343	0.109	0.047	15734
22.33	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.217	0.090	0.037	12628
16.75	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.121	0.068	0.029	14839
11.17	4.5" OD x 0.237" Half Pipe Leg Reinforcement	48	0.049	0.045	0.022	13641
9.70	L3x3 Mod (8')	48	0.034	0.039	0.018	11096
5.58	4.5" OD x 0.237" Half Pipe Leg Reinforcement	42	0.006	0.022	0.008	9525
0.00	4.5" OD x 0.237" Half Pipe Leg Reinforcement	0	0.000	0.000	0.000	10114

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	59.5 - 39.5	4.938	20	0.591	0.405
T2	39.5 - 19.5	2.484	20	0.510	0.265
T3	19.5 - 13.1	0.611	20	0.290	0.113
T4	13.1 - 6.3	0.268	20	0.194	0.082
T5	6.3 - 0	0.034	10	0.092	0.032

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
59.50	DMP65R-BU8D w/ Mount Pipe	20	4.938	0.591	0.405	39884
55.00	Sector Mount	20	4.369	0.579	0.376	39884
51.00	(2) RHSDC-3315-PF-48	20	3.867	0.567	0.349	23461
39.08	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	2.437	0.507	0.261	9184
33.50	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	1.823	0.460	0.214	5979
27.92	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	1.272	0.401	0.174	4356
22.33	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	0.807	0.330	0.135	3456
16.75	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	0.449	0.249	0.100	4043
11.17	4.5" OD x 0.237" Half Pipe Leg Reinforcement	20	0.184	0.165	0.068	3703
9.70	L3x3 Mod (8')	20	0.128	0.143	0.057	3010
5.58	4.5" OD x 0.237" Half Pipe Leg	10	0.023	0.082	0.029	2582

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
0.00	Reinforcement 4.5" OD x 0.237" Half Pipe Leg Reinforcement	0	0.000	0.000	0.000	2742

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	59.5	Leg	A325N	0.8750	4	8.68	41.56	0.209 ✔	1	Bolt Tension
		Horizontal	A325N	0.5000	1	1.53	8.84	0.173 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.35	10.26	0.229 ✔	1	Member Block Shear
T2	39.5	Leg	A325N	0.8750	4	19.63	41.56	0.472 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	16.88	19.88	0.849 ✔	1	Bolt Shear
		Horizontal	A325N	0.7500	1	11.16	19.88	0.561 ✔	1	Bolt Shear
T3	19.5	Diagonal	A325N	0.7500	1	11.48	19.88	0.577 ✔	1	Bolt Shear
		Horizontal	A325N	0.5000	1	2.87	8.84	0.325 ✔	1	Bolt Shear
T4	13.1	Diagonal	A325N	0.7500	1	10.66	19.88	0.536 ✔	1	Bolt Shear
		Horizontal	A325N	0.5000	1	1.88	8.84	0.213 ✔	1	Bolt Shear
T5	6.3	Diagonal	A325N	0.7500	1	7.97	9.46	0.842 ✔	1	Member Bearing
		Horizontal	A325N	0.5000	1	8.15	13.89	0.587 ✔	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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	ROHN 3.5 STD	20.00	6.67	59.8 K=1.00	2.6795	-40.01	92.80	0.431 [1] ✔
T2	39.5 - 19.5	ROHN 3.5" STD + 4" Sch. 40 Pipe	20.00	6.67	45.7 K=1.00	2.6800	-86.39	103.52	0.835 [1] ✔
T3	19.5 - 13.1	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.41	6.41	22.0 K=0.50	2.6800	-97.01	116.41	0.833 [1] ✔
T4	13.1 - 6.3	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.81	6.81	23.4 K=0.50	2.6800	-108.42	115.88	0.936 [1] ✔
T5	6.3 - 0	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.31	3.16	21.6 K=1.00	2.6800	-109.28	116.54	0.938 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	P2.5x.203	10.10	9.65	122.3 K=1.00	1.7040	-14.22	24.97	0.569 [1] ✔
T2	39.5 - 19.5	P2.5x.203	10.10	9.60	121.6 K=1.00	1.7040	-16.88	25.19	0.670 [1] ✔
T3	19.5 - 13.1	P2.5x.203	10.19	9.71	123.0 K=1.00	1.7040	-11.48	24.74	0.464 [1] ✔
T4	13.1 - 6.3	P2.5x.203	11.01	10.53	133.4 K=1.00	1.7040	-10.33	21.60	0.478 [1] ✔
T5	6.3 - 0	L3x3x3/16	7.96	7.65	97.7 K=1.00	1.0900	-8.06	26.91	0.299 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	L2 1/2x2 1/2x1/4	7.58	7.25	177.2 K=1.00	1.1900	-1.51	10.85	0.139 [1] ✔
T2	39.5 - 19.5	L3x3x3/8	7.58	7.21	147.4 K=1.00	2.1100	-11.16	27.81	0.401 [1] ✔
T3	19.5 - 13.1	L3x3x1/4	7.58	7.21	146.1 K=1.00	1.4400	-2.87	19.31	0.149 [1] ✔
T4	13.1 - 6.3	L3x3x1/4	8.28	7.91	160.3 K=1.00	1.4400	-1.88	16.05	0.117 [1] ✔
T5	6.3 - 0	2L2x2x3/16	9.02	6.49	92.6 K=1.00	1.4300	-8.86	44.70	0.198 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	L3x5x1/4	7.58	7.25	131.2 K=1.00	1.9400	-4.60	31.27	0.147 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	6.3 - 0	L2x2x3/16	2.26	2.07	63.0 K=1.00	0.7150	-1.90	22.53	0.084 [1] ✔

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	6.3 - 0	L2x2x3/16	3.78	3.44	104.7 K=1.00	0.7150	-1.59	16.86	0.094 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	ROHN 3.5 STD	20.00	6.67	59.8	2.6795	34.71	120.58	0.288 [1] ✔
T2	39.5 - 19.5	ROHN 3.5" STD + 4" Sch. 40 Pipe	20.00	6.67	45.7	2.6800	78.53	120.60	0.651 [1] ✔
T3	19.5 - 13.1	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.41	6.41	44.0	2.6800	85.39	120.60	0.708 [1] ✔
T4	13.1 - 6.3	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.81	6.81	46.7	2.6800	98.37	120.60	0.816 [1] ✔
T5	6.3 - 0	ROHN 3.5" STD + 4" Sch. 40 Pipe	6.31	3.16	21.6	2.6800	98.23	120.60	0.814 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	P2.5x.203	10.10	9.65	122.3	1.7040	14.28	53.68	0.266 [1] ✔
T2	39.5 - 19.5	P2.5x.203	10.10	9.60	121.6	1.7040	16.86	53.68	0.314 [1] ✔
T3	19.5 - 13.1	P2.5x.203	10.19	9.71	123.0	1.7040	11.03	53.68	0.205 [1] ✔
T4	13.1 - 6.3	P2.5x.203	11.01	10.53	133.4	1.7040	10.66	53.68	0.199 [1] ✔
T5	6.3 - 0	L3x3x3/16	7.96	7.65	97.7	0.6945	7.97	30.21	0.264 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	L2 1/2x2 1/2x1/4	7.58	7.25	113.1	0.7753	1.53	37.80	0.040 [1] ✔
T2	39.5 - 19.5	L3x3x3/8	7.58	7.21	94.7	1.3364	11.11	65.15	0.170 [1] ✔
T3	19.5 - 13.1	L3x3x1/4	7.58	7.21	93.0	0.9628	2.26	46.94	0.048 [1] ✔
T4	13.1 - 6.3	L3x3x1/4	8.28	7.91	102.0	0.9628	1.88	46.94	0.040 [1] ✔
T5	6.3 - 0	2L2x2x3/16	9.02	6.49	92.6	0.8967	8.15	43.72	0.186 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	59.5 - 39.5	L3x5x1/4	7.58	7.25	101.0	1.3144	4.70	57.18	0.082 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	6.3 - 0	L2x2x3/16	2.26	2.07	40.2	0.7150	1.90	23.17	0.082 [1] ✔

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	6.3 - 0	L2x2x3/16	3.78	3.44	66.9	0.7150	1.59	23.17	0.069 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	59.5 - 39.5	Leg	ROHN 3.5 STD	2	-40.01	92.80	43.1	Pass
T2	39.5 - 19.5	Leg	ROHN 3.5" STD + 4" Sch. 40 Pipe	23	-86.39	103.52	83.5	Pass
T3	19.5 - 13.1	Leg	ROHN 3.5" STD + 4" Sch. 40 Pipe	43	-97.01	116.41	83.3	Pass
T4	13.1 - 6.3	Leg	ROHN 3.5" STD + 4" Sch. 40 Pipe	53	-108.42	115.88	93.6	Pass
T5	6.3 - 0	Leg	ROHN 3.5" STD + 4" Sch. 40 Pipe	62	-109.28	116.54	93.8	Pass
T1	59.5 - 39.5	Diagonal	P2.5x.203	7	-14.22	24.97	56.9	Pass
T2	39.5 - 19.5	Diagonal	P2.5x.203	28	-16.88	25.19	67.0 84.9 (b)	Pass
T3	19.5 - 13.1	Diagonal	P2.5x.203	49	-11.48	24.74	46.4 57.7 (b)	Pass
T4	13.1 - 6.3	Diagonal	P2.5x.203	58	-10.33	21.60	47.8 53.6 (b)	Pass
T5	6.3 - 0	Diagonal	L3x3x3/16	68	-8.06	26.91	29.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	59.5 - 39.5	Horizontal	L2 1/2x2 1/2x1/4	18	-1.51	10.85	84.2 (b) 13.9	Pass
T2	39.5 - 19.5	Horizontal	L3x3x3/8	25	-11.16	27.81	17.3 (b) 40.1	Pass
T3	19.5 - 13.1	Horizontal	L3x3x1/4	48	-2.87	19.31	56.1 (b) 14.9	Pass
T4	13.1 - 6.3	Horizontal	L3x3x1/4	55	-1.88	16.05	32.5 (b) 11.7	Pass
T5	6.3 - 0	Horizontal	2L2x2x3/16	64	-8.86	44.70	21.3 (b) 19.8	Pass
T1	59.5 - 39.5	Top Girt	L3x5x1/4	4	-4.60	31.27	58.7 (b) 14.7	Pass
T5	6.3 - 0	Redund Horz 1 Bracing	L2x2x3/16	69	-1.90	22.53	22.9 (b) 8.4	Pass
T5	6.3 - 0	Redund Diag 1 Bracing	L2x2x3/16	70	-1.59	16.86	9.4	Pass
							Summary	
						Leg (T5)	93.8	Pass
						Diagonal (T2)	84.9	Pass
						Horizontal (T5)	58.7	Pass
						Top Girt (T1)	22.9	Pass
						Redund Horz 1 Bracing (T5)	8.4	Pass
						Redund Diag 1 Bracing (T5)	9.4	Pass
						Bolt Checks	84.9	Pass
						RATING =	**93.8**	**Pass**

TOWER MODIFICATION DRAWINGS

PREPARED BY:

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

at&t

smartlink

CTL01330
AVON-MONTEVIDEO ROAD
324 MONTEVIDEO ROAD
AVON, CT 06001

08/05/20

INFINIGY JOB # 1106-A0001-B

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GENERAL NOTES:

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STEEL CONSTRUCTION NOTES:

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

CONCRETE CONSTRUCTION NOTES:

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

FIBER REINFORCED POLYMER (FRP) NOTES:

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

INSTALLATION TORQUE TABLE

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

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

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

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

WOOD CONSTRUCTION NOTES:

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

MASONRY CONSTRUCTION NOTES:

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

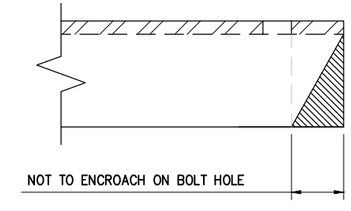
TOWER PLUMB & TENSION NOTES:

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

SPECIAL INSPECTIONS NOTES:

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

MAXIMUM ALLOWABLE ANGLE CLIP



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STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
08-20-20

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	WJD	08/05/20

Drawn: WJD Date: 08/05/20
Designed: BD Date: 08/05/20
Checked: BD Date: 08/05/20

Project Number: 1106-A0001-B

Project Title:
AVON - MONTEVIDEO ROAD
CTL01330
FA# 10141394
324 MONTEVIDEO ROAD
AVON, CT 06001

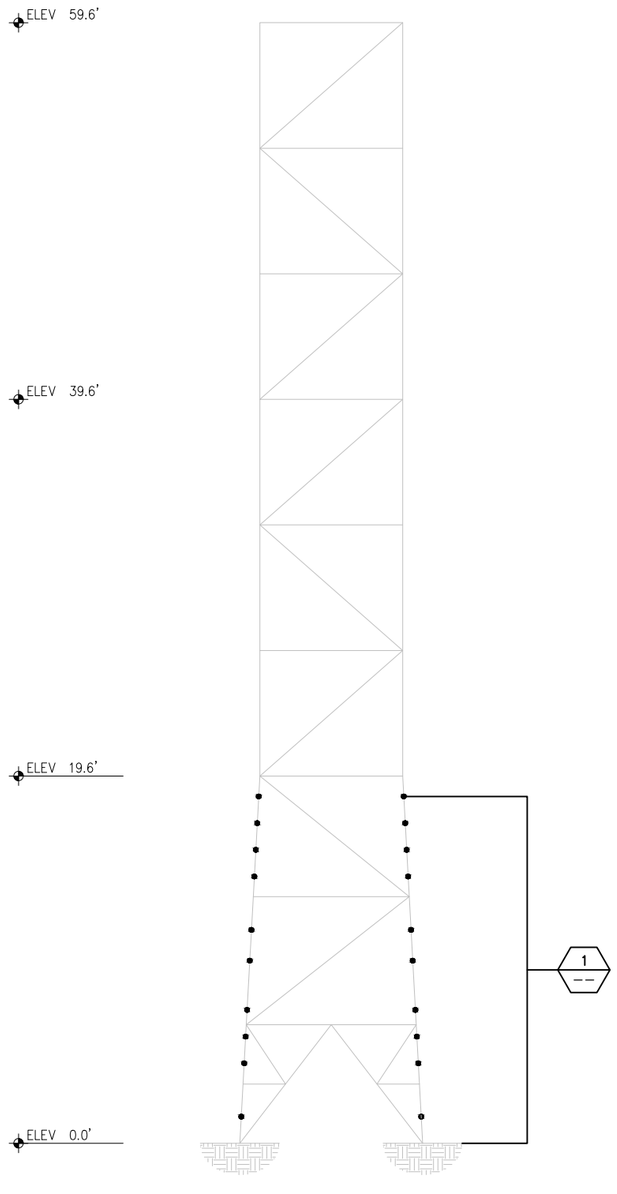
Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 08/05/20
0

Drawing Title
GENERAL NOTES

Drawing Number
S2

MODIFICATION SCOPE			
NO.	ELEV.	DESCRIPTION	SHEET NO.
1	0.0'± TO 19.1'±	PROPOSED LEG MODIFICATION INSTALLATION.	S4



1 -- TOWER ELEVATION

SCALE: NOT TO SCALE

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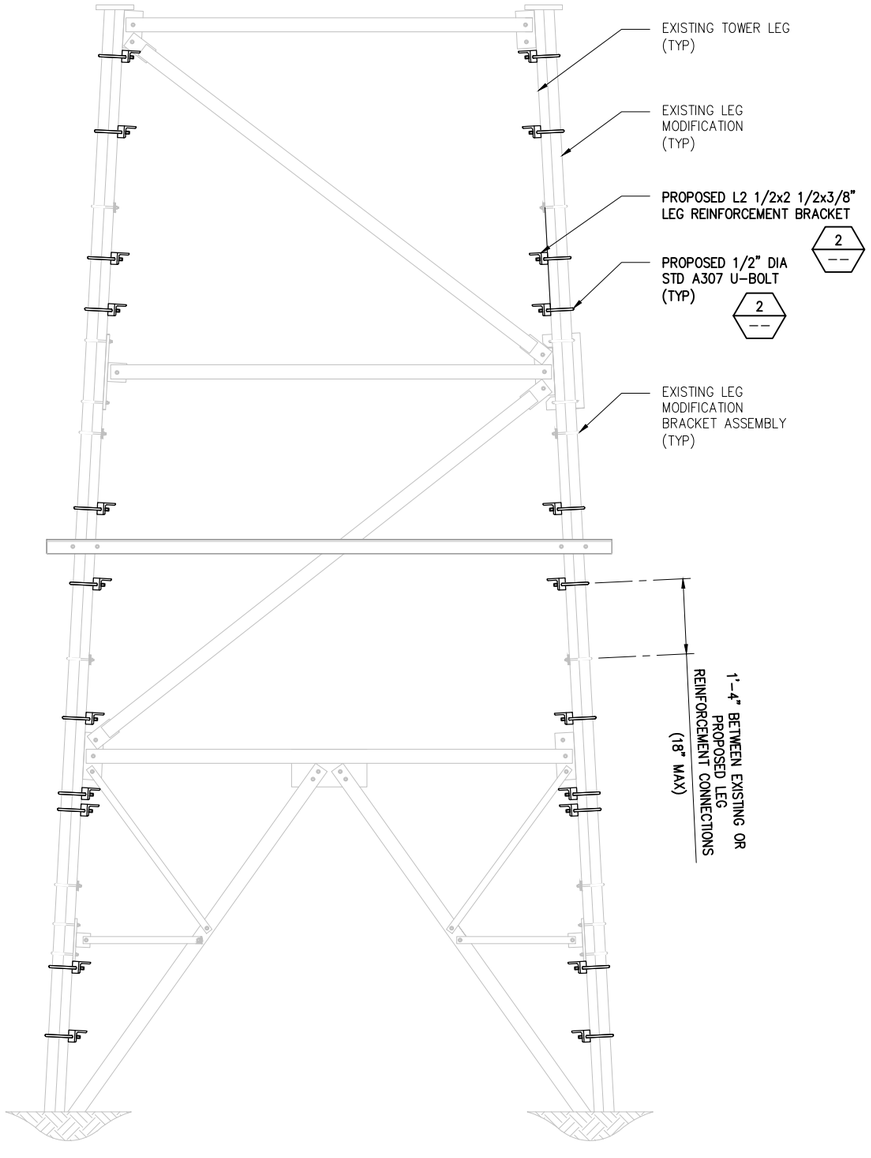
Drawing Title
TOWER ELEVATION

Drawing Number
S3



1 ELEVATION VIEW
SCALE: NOT TO SCALE

NOTES:

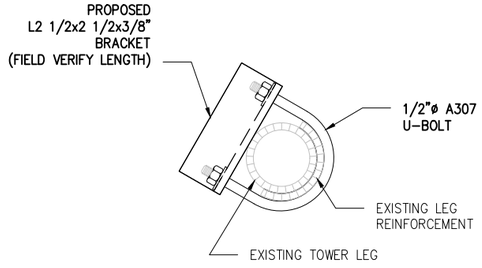
1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.

3. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES, AND CUT & DRILL ON SITE AS NECESSARY.

4. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

5. ALL PROPOSED ANGLES TO BE ASTM A36, UNLESS OTHERWISE NOTED.



3 LEG CONNECTION (W/ LEG REINF.)
SCALE: NOT TO SCALE

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Drawing Title
LEG MODIFICATION DETAILS

Drawing Number
S4

TOWER MODIFICATION DRAWINGS

PREPARED BY:

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

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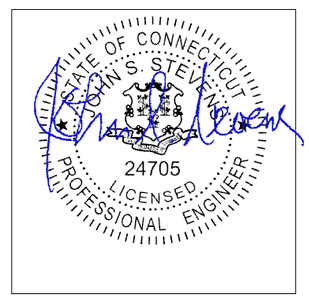
06/17/20

INFINIGY JOB # 1106-A0001-B



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   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

CONCRETE CONSTRUCTION NOTES:

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

FIBER REINFORCED POLYMER (FRP) NOTES:

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

INSTALLATION TORQUE TABLE

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

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

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

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

WOOD CONSTRUCTION NOTES:

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

MASONRY CONSTRUCTION NOTES:

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

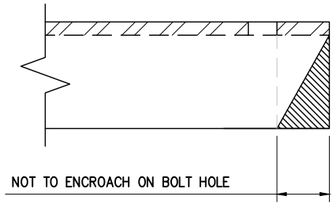
TOWER PLUMB & TENSION NOTES:

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

SPECIAL INSPECTIONS NOTES:

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

MAXIMUM ALLOWABLE ANGLE CLIP



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STATE OF CONNECTICUT
THOMAS S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	WJD	06/17/20

Drawn: WJD Date: 06/17/20
Designed: BD Date: 06/17/20
Checked: BD Date: 06/17/20

Project Number: 1106-A0001-B

Project Title:
AVON - MONTEVIDEO ROAD
CTL01330
FA# 10141394
324 MONTEVIDEO ROAD
AVON, CT 06001

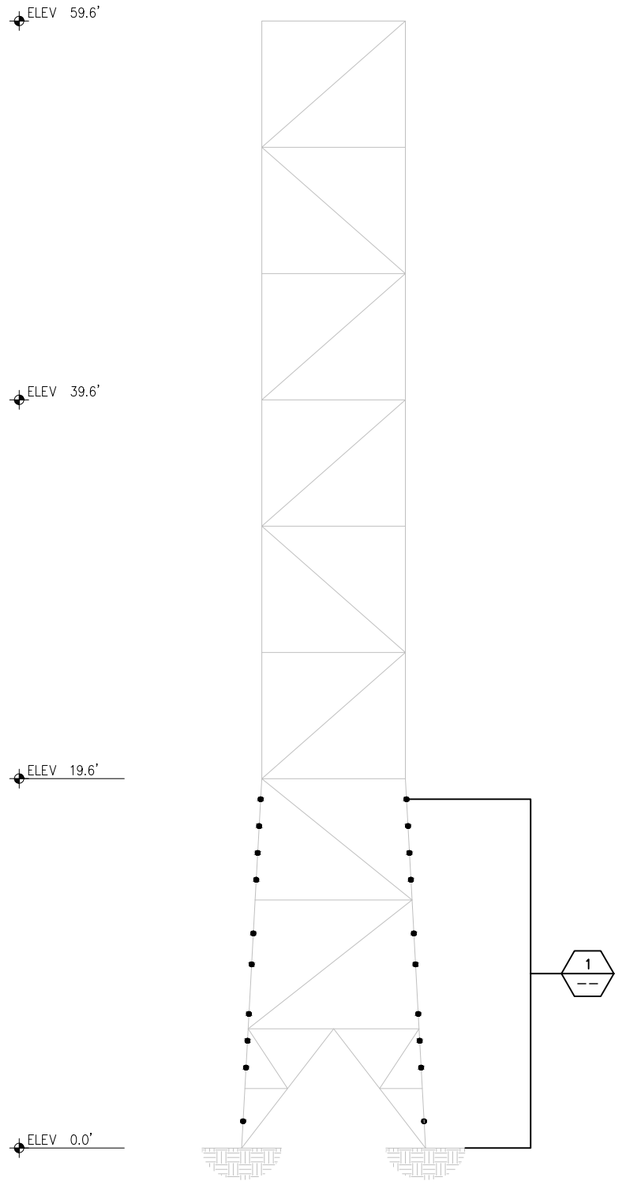
Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 06/17/20
0

Drawing Title
GENERAL NOTES

Drawing Number
S2

MODIFICATION SCOPE			
NO.	ELEV.	DESCRIPTION	SHEET NO.
1	0.0'± TO 19.1'±	PROPOSED LEG MODIFICATION INSTALLATION.	S4



1 -- TOWER ELEVATION
SCALE: NOT TO SCALE

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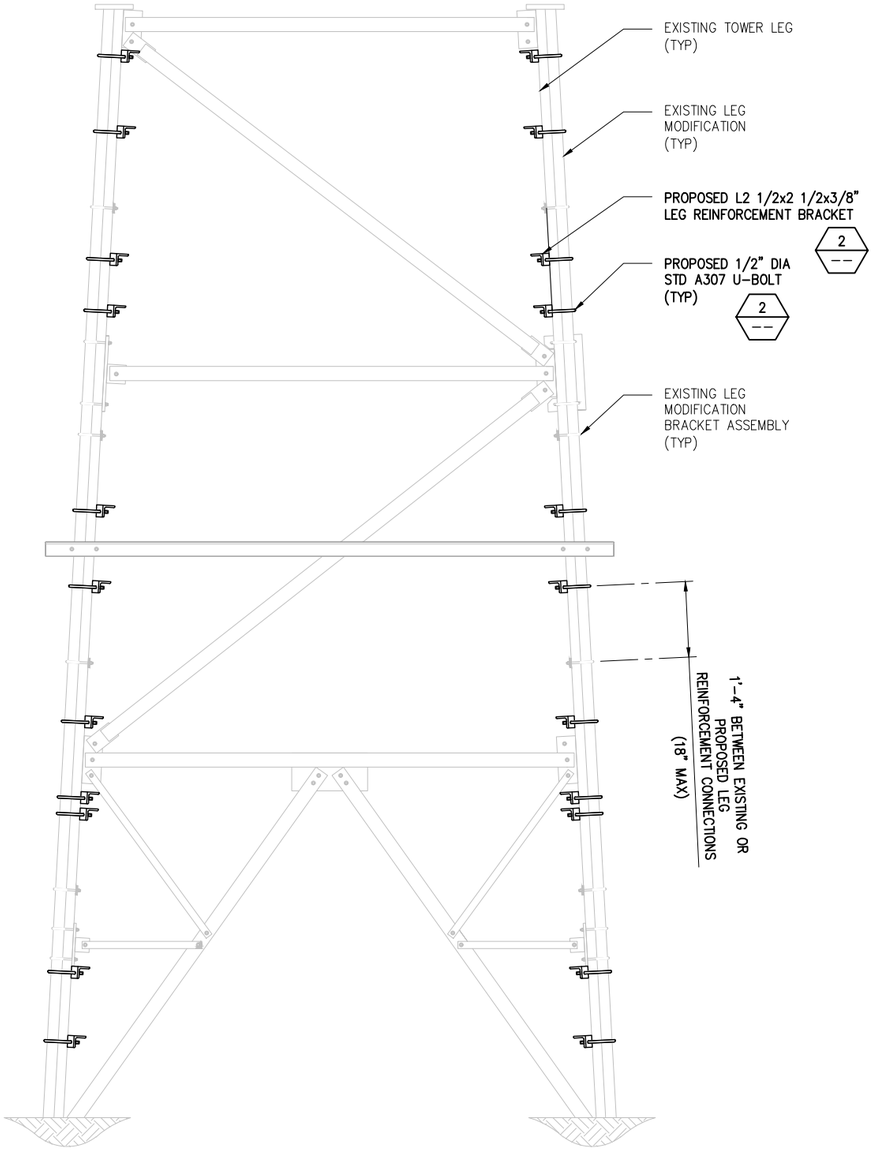
AVON, CT 06001

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 06/17/20
0

Drawing Title
TOWER ELEVATION

Drawing Number
S3



1 ELEVATION VIEW
SCALE: NOT TO SCALE

NOTES:

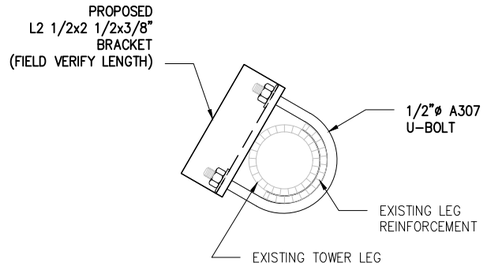
1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.

3. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES, AND CUT & DRILL ON SITE AS NECESSARY.

4. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

5. ALL PROPOSED ANGLES TO BE ASTM A36, UNLESS OTHERWISE NOTED.



3 LEG CONNECTION (W/ LEG REINF.)
SCALE: NOT TO SCALE

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1106-A0001-B

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AVON -
MONTEVIDEO ROAD
CTL01330
FA# 10141394
324 MONTEVIDEO ROAD
AVON, CT 06001

Prepared For:
smartlink

Drawing Scale:
AS NOTED
Date:
06/17/20
0

Drawing Title
LEG MODIFICATION DETAILS

Drawing Number
S4

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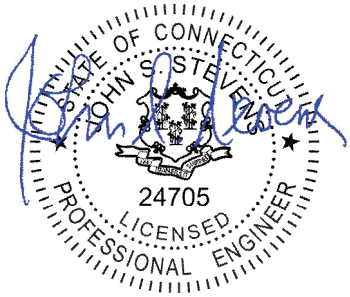
Mount Analysis Report

October 20, 2020

AT&T Mobility Site Name	Avon-Montevideo Road
AT&T Mobility Site Number	CTL01330
AT&T Mobility FA Number	10141394
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T Mobility
Site Location	324 Montevideo Road Avon, CT 6001 Hartford County 41.811797 N NAD83 72.798767 W NAD83
Mount Centerline EL.	70.0 ft
Mount Type	Tri-Sector Frame
Structural Usage Ratio	**72.7%**
Overall Result	**Pass**

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



October 20, 2020

Mark Iakovenko
Project Engineer I

Contents

Introduction

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

Supporting Documentation

Construction Drawings	Infinigy Engineering, PLLC, Site ID: CTL01330, dated September 1, 2020
RFDS	AT&T Mobility RFDS ID #4059662, dated July 20, 2020
Previous Mount Analysis	Structural Analysis Report #CTL01330, dated August 06, 2020
Site Photos	Infinigy Engineering Mapping Photos, dated March 14, 2020
Mapping Report	CTL01330, dated March 27, 2020

Analysis Code Requirements

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ Ice	50 mph (3 Second Gust) w/ 1.5" Ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC/ 2018 Connecticut State Building Code
Risk Category	II
Exposure Category	B
Topographic Factor Procedure	Method 2
Topographic Feature	Ridge
Crest Height (H)	775 ft
Spectral Response	S_s = 0.181 g, S_1 = 0.064 g
Site Class	D - Stiff Soil (Assumed)
HMSL	914.51 ft.

Conclusion

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

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

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Final Configuration Loading

Mount CL (ft)	Vert. O/S (ft)	Rad. HT (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
70.0	0.0	70.0	9.8	3	CCI ANTENNAS DMP65R-BU8DA	AT&T Mobility
			5.3	3	KATHREIN 800-10966	
			0.6	3	CCI ANTENNAS TPA-65R-LCUUUU-H8	
			2.0	4	RAYCAP DC6-48-60-0-8F**	
			1.5	3	ERICSSON RADIO 4449 B5/12	
			4.0	6	ERICSSON RRUS 32 B2	
			6.5	3	ERICSSON RRUS 11 B5	
			8.8	3	ERICSSON RRUS 32 B30	
			1.5	3	ERICSSON RRUS 4478 B14	
			4.0	3	ERICSSON RRUS 32 B66A	
			6.5	3	ERICSSON RRUS E2 B29	

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

Structure Usages

Frame Rail	40.8%	Pass
Corner Pipes	72.7%	Pass
Mount Pipes	18.8%	Pass
Unistruts	61.4%	Pass
Pipe Posts	28.5%	Pass
Max Usage	**72.7%**	**Pass**

Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	15,050.70	414.84	2.8%
Max Shear (lbs.)	9,940.20	47.71	0.5%
Unity Check	-	-	0.00
***Assumed (4) 0.75" A307 Bolts.**			

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.

Program Inputs

PROJECT INFORMATION	
Client:	Smartlink
Carrier:	AT&T Mobility
Engineer:	Mark Iakovenko

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 2	
Site Class:	D - Stiff Soil	
Ground Elevation:	914.51	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	70.0	ft
Tower Height AGL:	60.0	ft

TOPOGRAPHIC DATA		
Topo Feature:	Ridge	
Slope Distance:	3932.0	ft
Crest Distance:	0.0	ft
Crest Height:	775.0	ft

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	0.97	*Rev H Only
Rooftop Speed-Up (K_s):	1.00	*Rev H Only
Topographic Factor (K_{zt}):	2.13	
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}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Flat Pressure:	129.01	psf
Round Pressure:	77.40	psf
Ice Wind Pressure:	13.44	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.18	g
1-Second Accel. (S_1):	0.06	g
Short-Period Design (S_{DS}):	0.19	
1-Second Design (S_{D1}):	0.10	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

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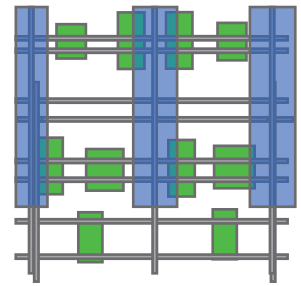
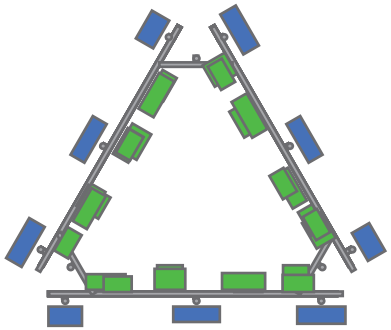
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



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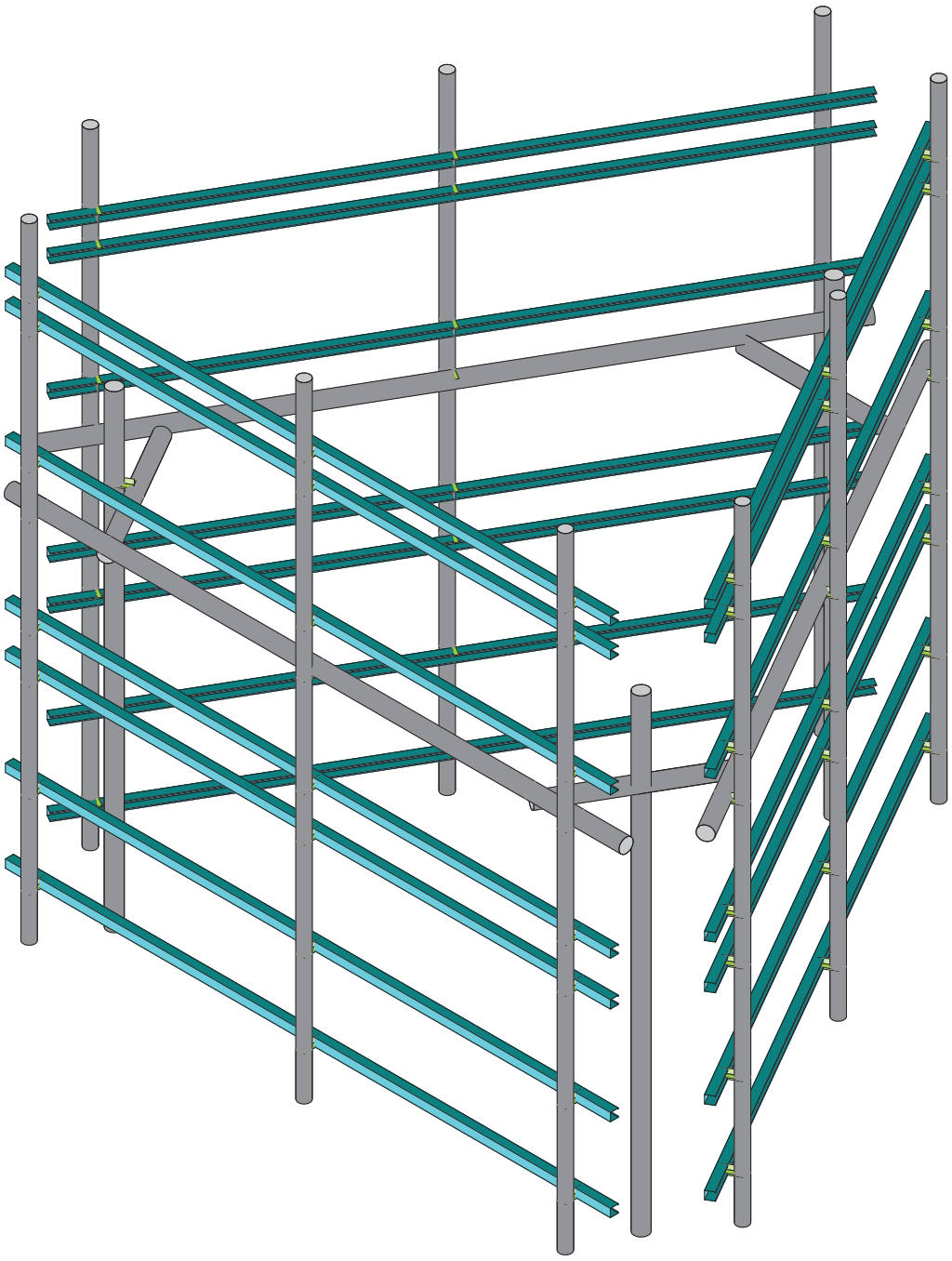
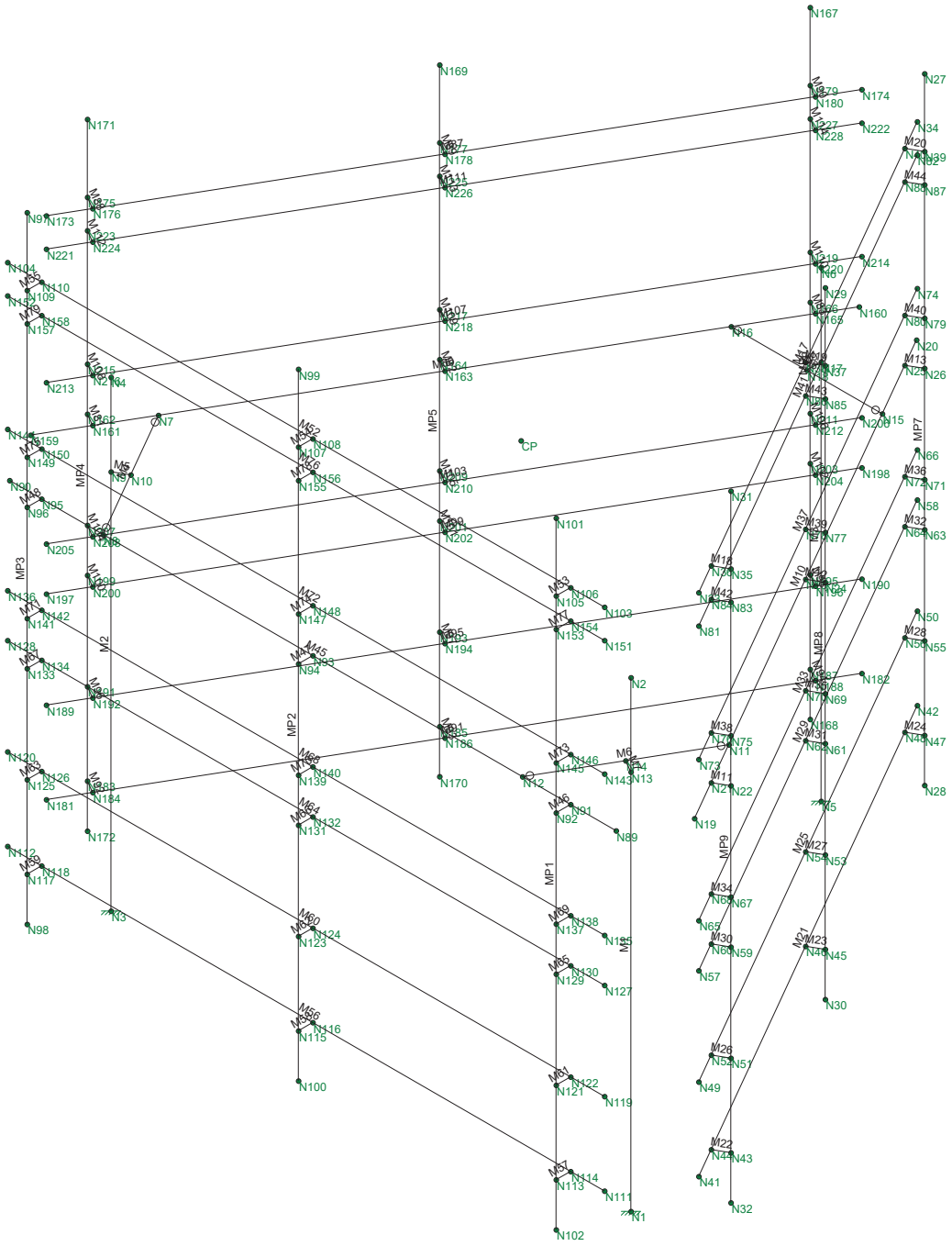
Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION

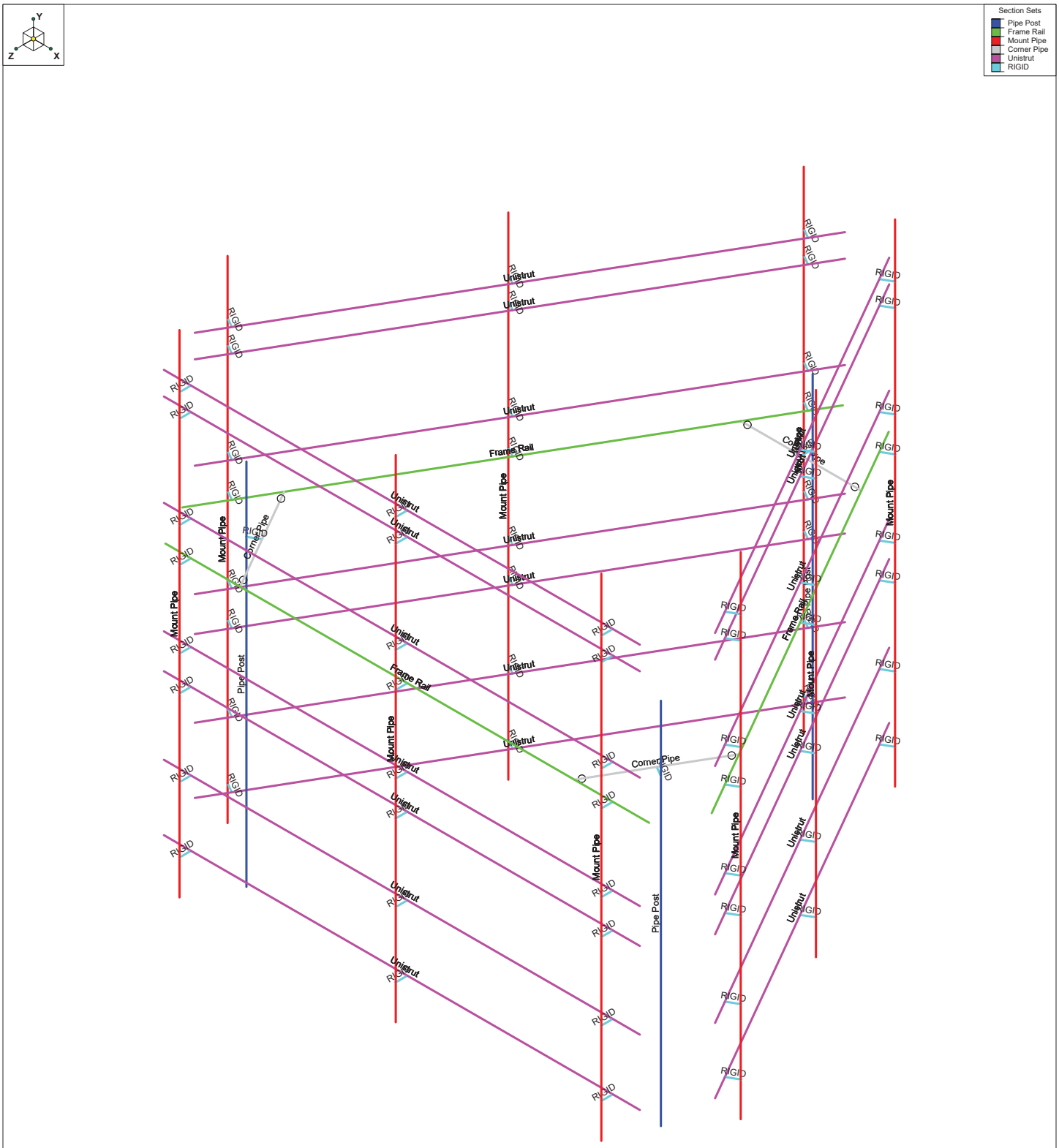
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
CCI ANTENNAS DMP65R-BU8DA	70.0	3	0.90	64.50	17.87	8.12	1037.46	471.52	105.60	10.19	MP1
KATHREIN 800-10966	70.0	3	0.90	64.50	17.36	7.50	1007.97	435.39	125.70	12.13	MP2
CCI ANTENNAS TPA-65R-LCUUUU-H8	70.0	3	0.90	64.50	11.85	8.99	687.87	521.82	81.60	7.88	MP3
RAYCAP TME-DC6-48-60-0-8F	70.0	3	0.90	64.50	2.20	2.20	127.72	127.72	32.80	3.17	M60
ERICSSON RADIO 4449 B5/12	70.0	3	0.90	64.50	1.98	1.41	114.94	81.85	70.00	6.76	M52
ERICSSON TME-RRUS 32 B2	70.0	3	0.90	64.50	2.73	1.67	158.56	96.84	52.90	5.11	M52
ERICSSON TME-RRUS 11 B5	70.0	3	0.90	64.50	2.83	1.18	164.48	68.62	50.70	4.89	M52
ERICSSON TME-RRUS 32 B30	70.0	3	0.90	64.50	2.74	1.67	159.22	96.84	53.00	5.12	M52
ERICSSON TME-RRUS 4478 B14	70.0	3	0.90	64.50	1.84	1.06	106.96	61.46	59.90	5.78	M68
ERICSSON TME-RRUS 32 B66A	70.0	3	0.90	64.50	2.74	1.67	159.22	96.84	53.00	5.12	M68
ERICSSON TME-RRUS E2 B29	70.0	3	0.90	64.50	3.15	1.29	182.58	74.62	60.00	5.79	M68
ERICSSON TME-RRUS 32 B2	70.0	3	0.90	64.50	2.73	1.67	158.56	96.84	52.90	5.11	M68
RAYCAP TME-DC6-48-60-0-8F	70.0	1	0.90	64.50	2.20	2.20	127.72	127.72	32.80	3.17	M60



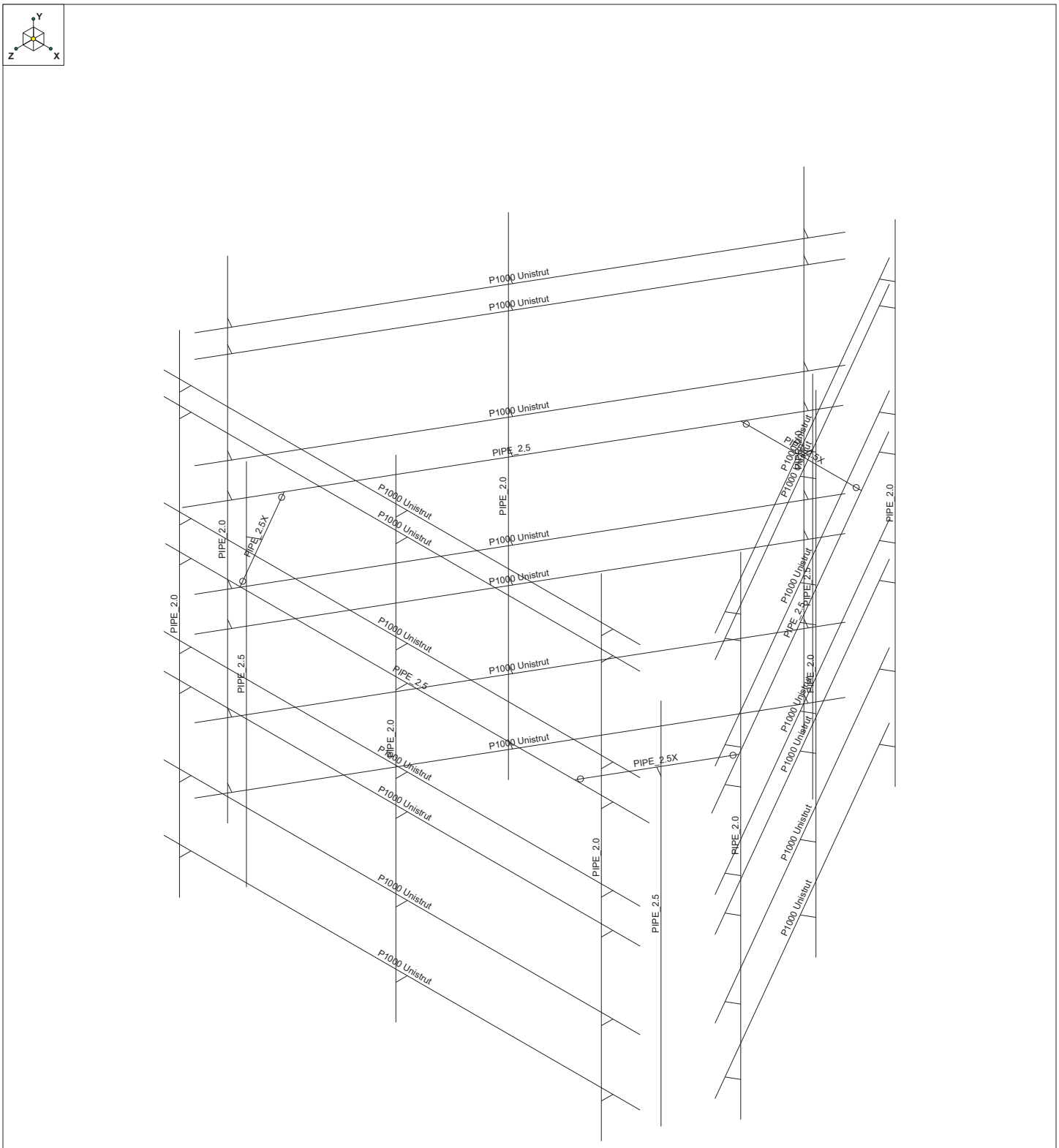
Infinigy Engineering, PLLC	CTL01330	Render
Mark Iakovenko		Oct 20, 2020 at 10:40 AM
1106-A0001-B		CTL01330_loaded.r3d



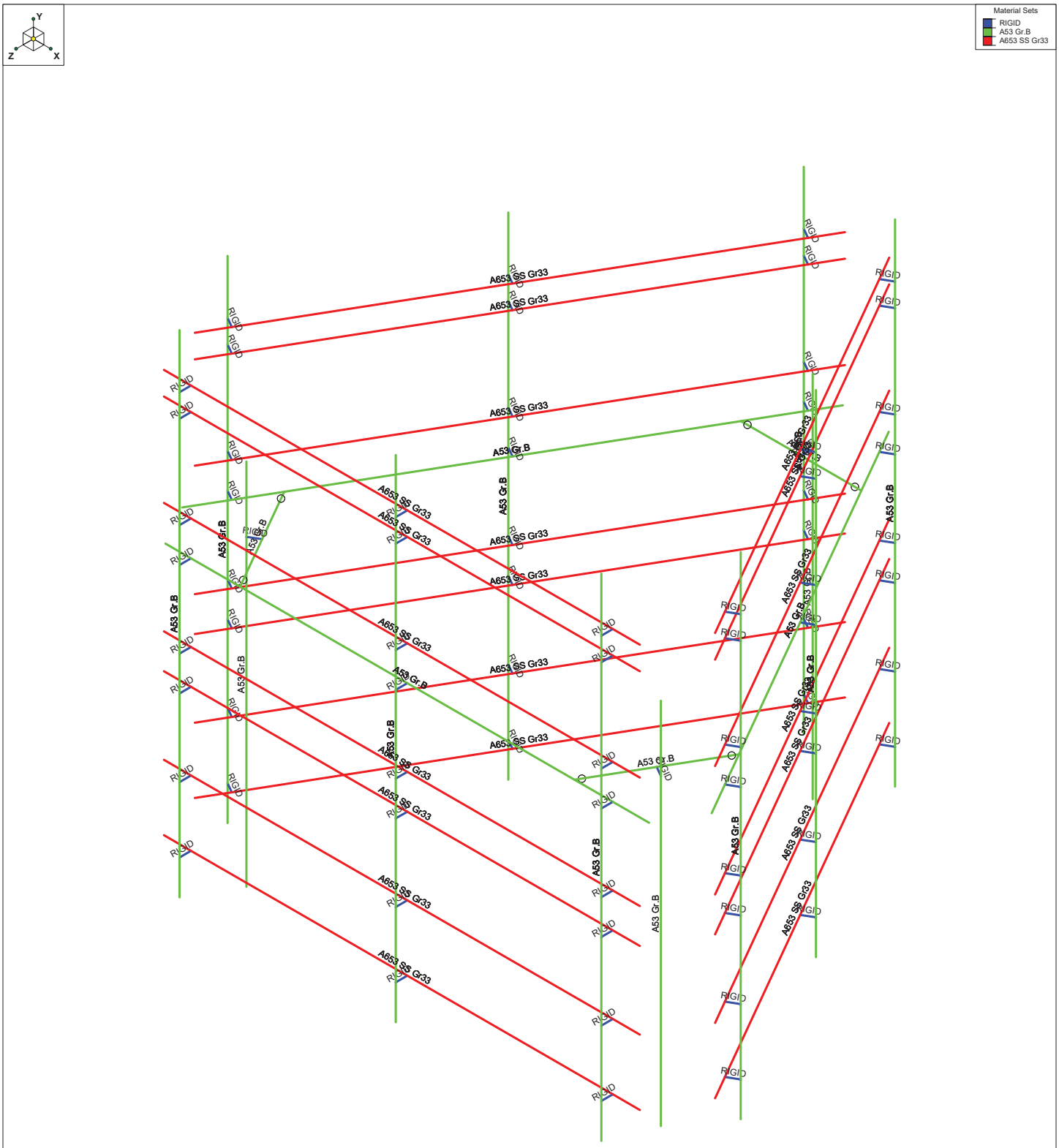
Infinigy Engineering, PLLC	CTL01330	Wire Frame
Mark Iakovenko		Oct 20, 2020 at 10:40 AM
1106-A0001-B		CTL01330_loaded.r3d



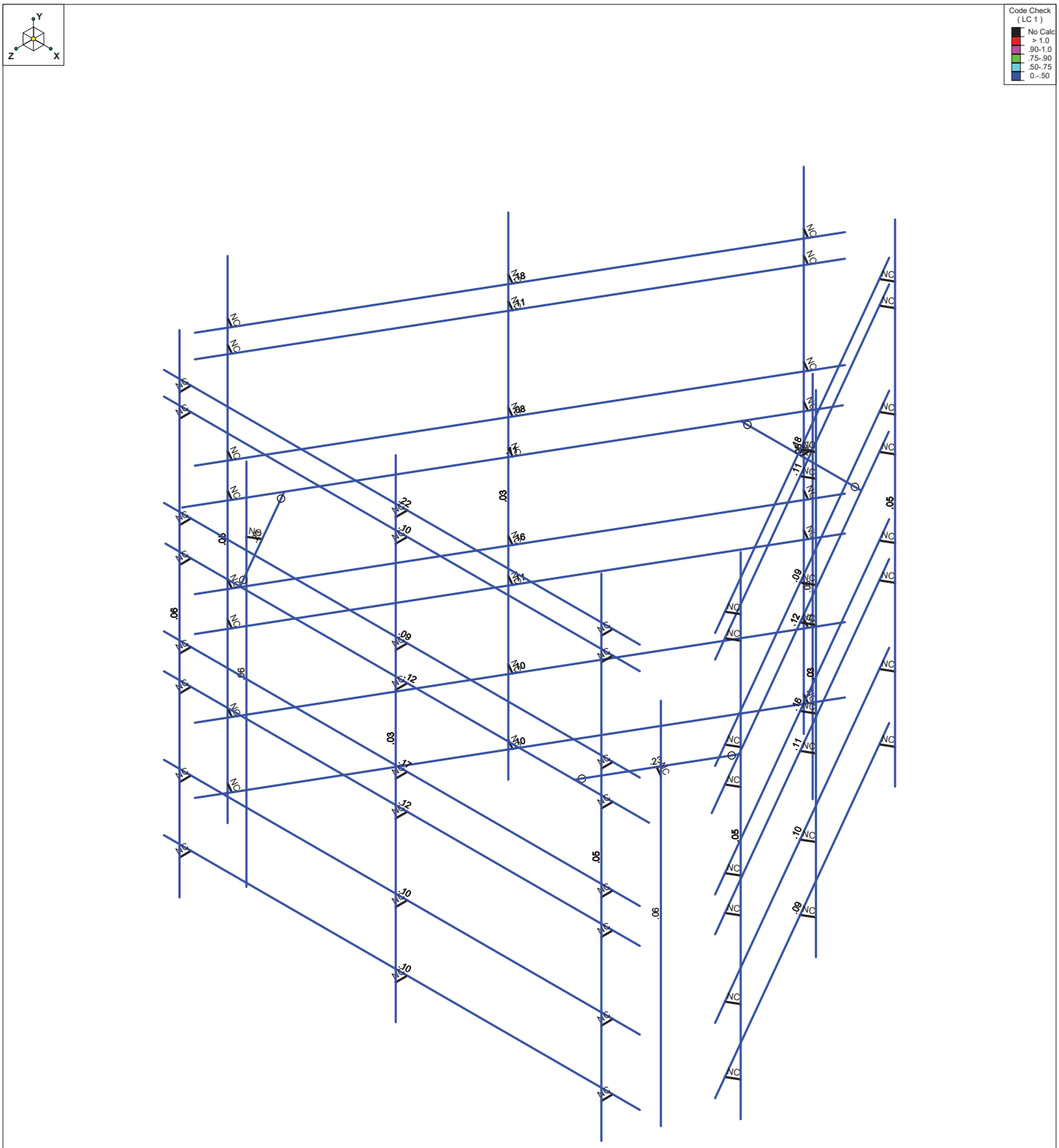
Infinigy Engineering, PLLC	CTL01330	Section Sets
Mark Iakovenko		Oct 20, 2020 at 10:41 AM
1106-A0001-B		CTL01330_loaded.r3d



Infinigy Engineering, PLLC	CTL01330	Member Shapes
Mark Iakovenko		Oct 20, 2020 at 10:41 AM
1106-A0001-B		CTL01330_loaded.r3d

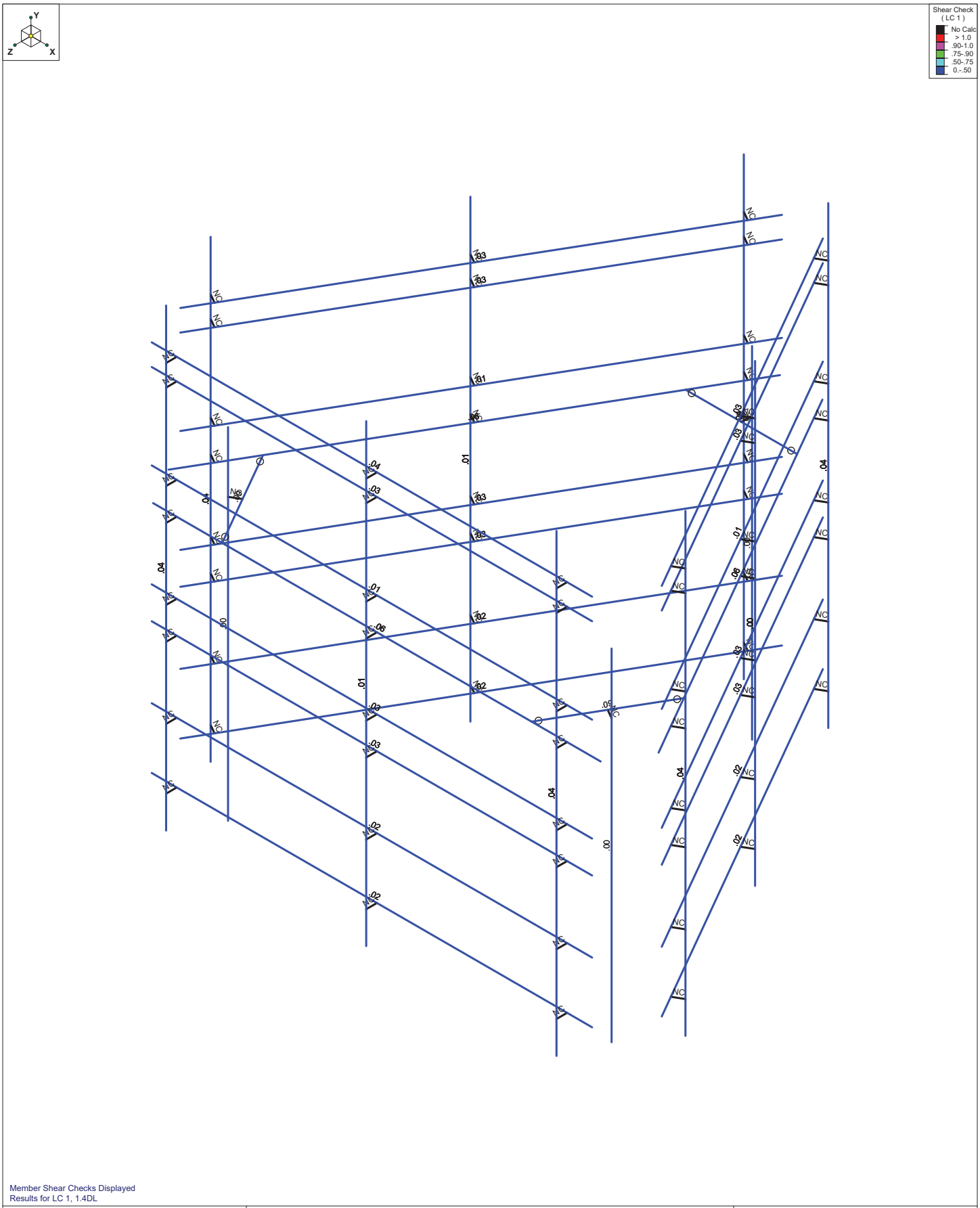


Infinigy Engineering, PLLC		Material Sets
Mark Iakovenko	CTL01330	Oct 20, 2020 at 10:42 AM
1106-A0001-B		CTL01330_loaded.r3d



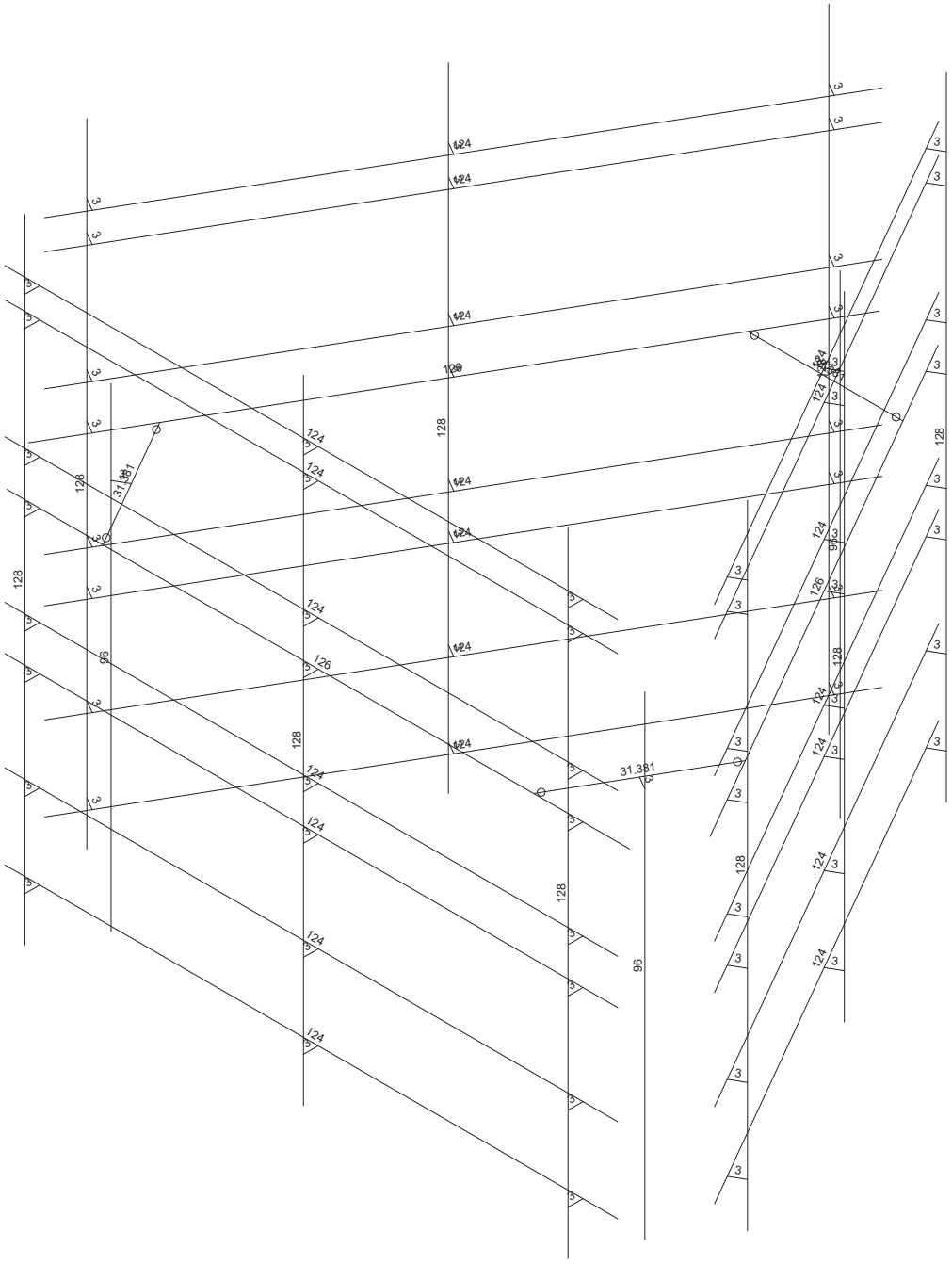
Member Code Checks Displayed
Results for LC 1, 1.4DL

Infinigy Engineering, PLLC	CTL01330	Unity (bending)
Mark Iakovenko		Oct 20, 2020 at 10:42 AM
1106-A0001-B		CTL01330_loaded.r3d



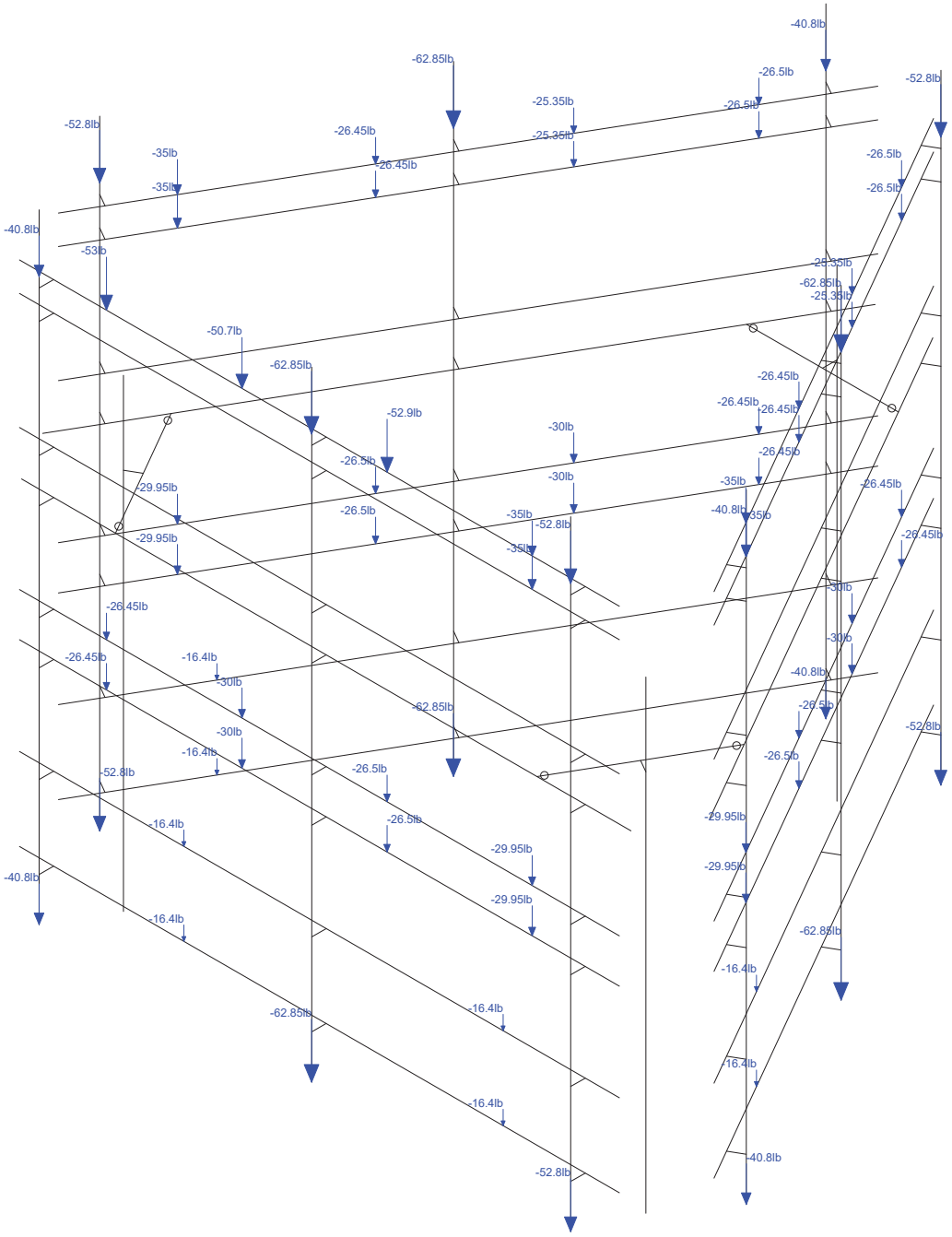
Member Shear Checks Displayed
Results for LC 1, 1.4DL

Infinigy Engineering, PLLC	CTL01330	Shear
Mark Iakovenko		Oct 20, 2020 at 10:42 AM
1106-A0001-B		CTL01330_loaded.r3d



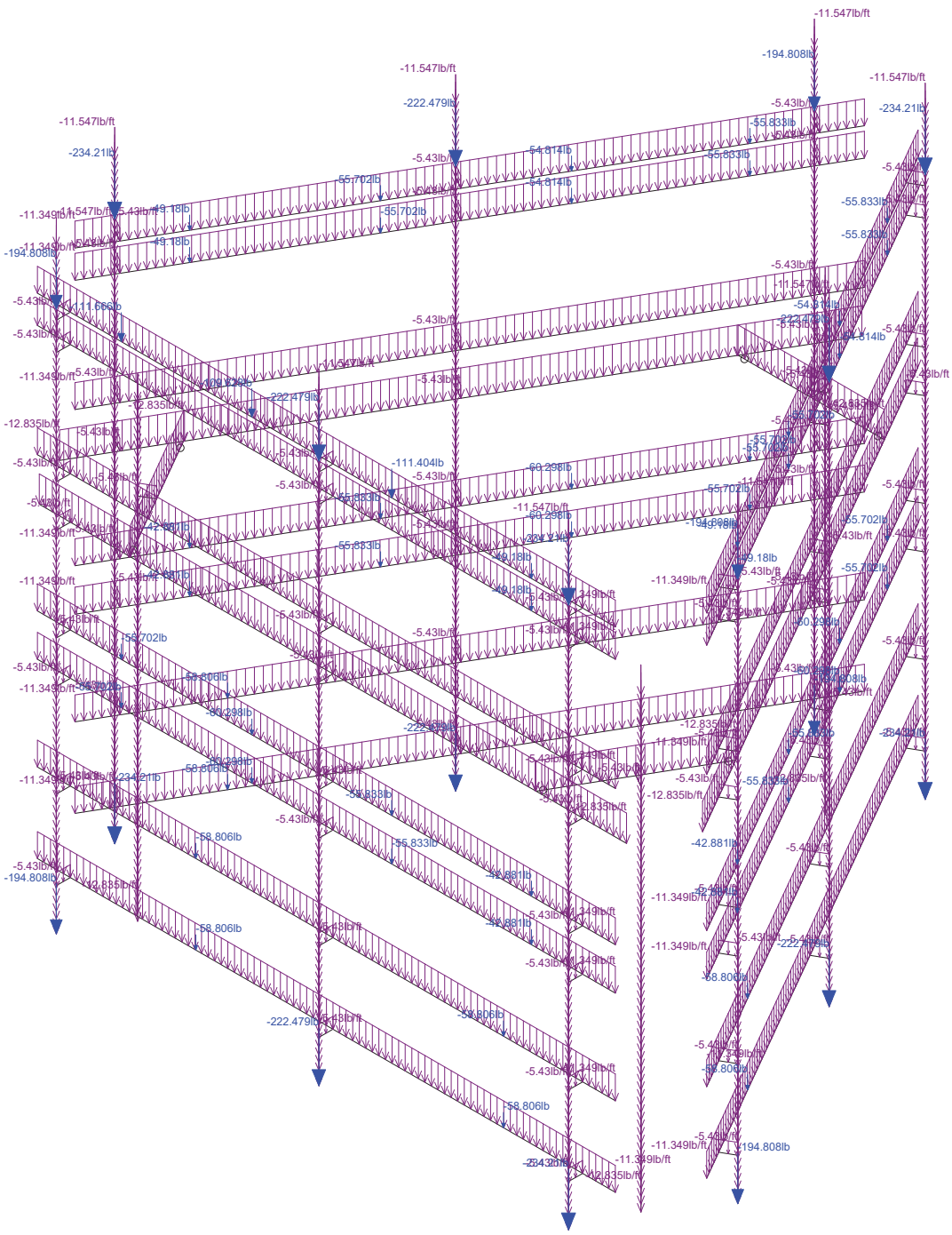
Member Length (in) Displayed

Infinigy Engineering, PLLC	CTL01330	Member Lengths
Mark Iakovenko		Oct 20, 2020 at 10:43 AM
1106-A0001-B		CTL01330_loaded.r3d



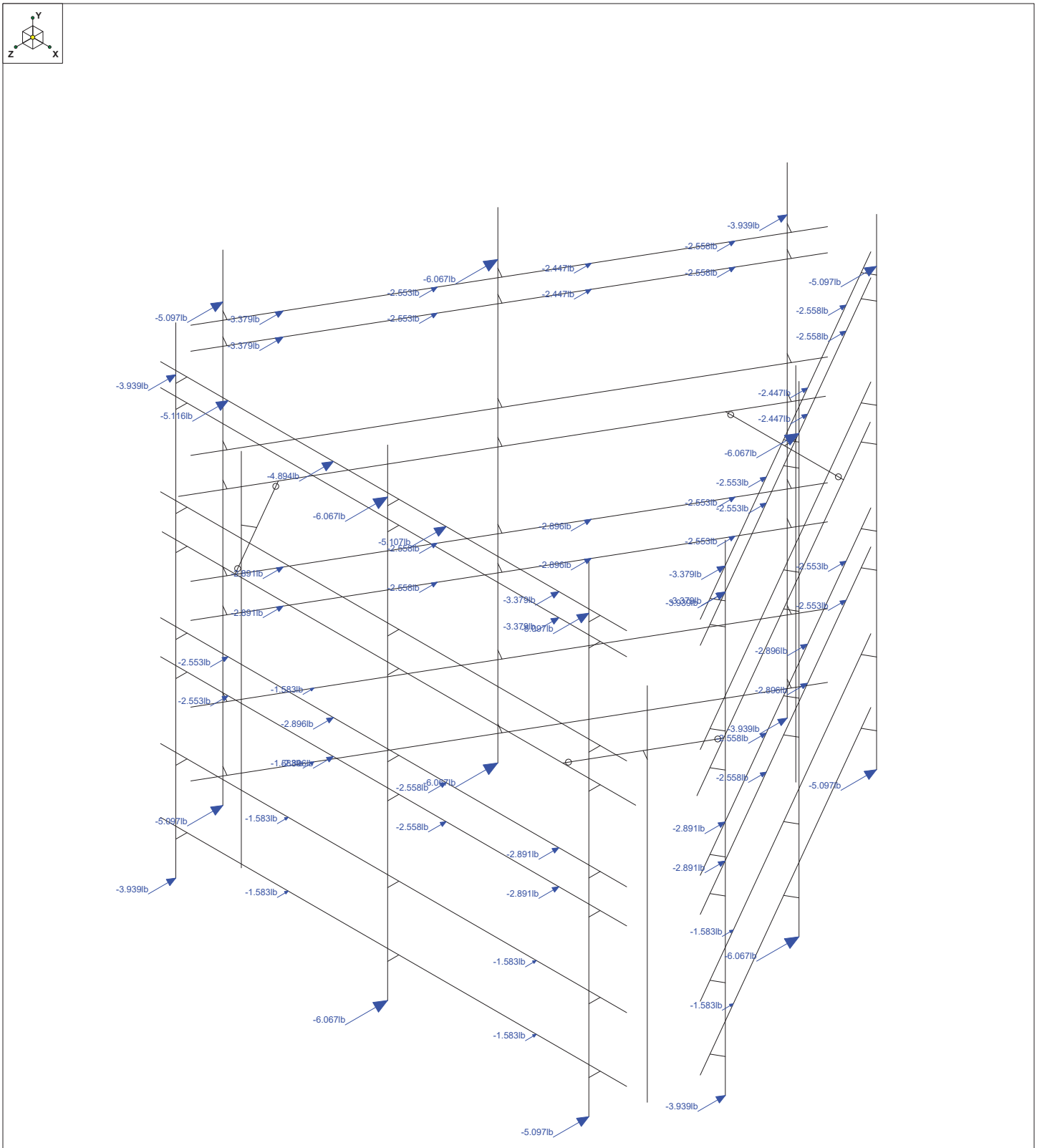
Loads: BLC 1, Self Weight

Infinigy Engineering, PLLC	CTL01330	Self Weight
Mark Iakovenko		Oct 20, 2020 at 10:43 AM
1106-A0001-B		CTL01330_loaded.r3d



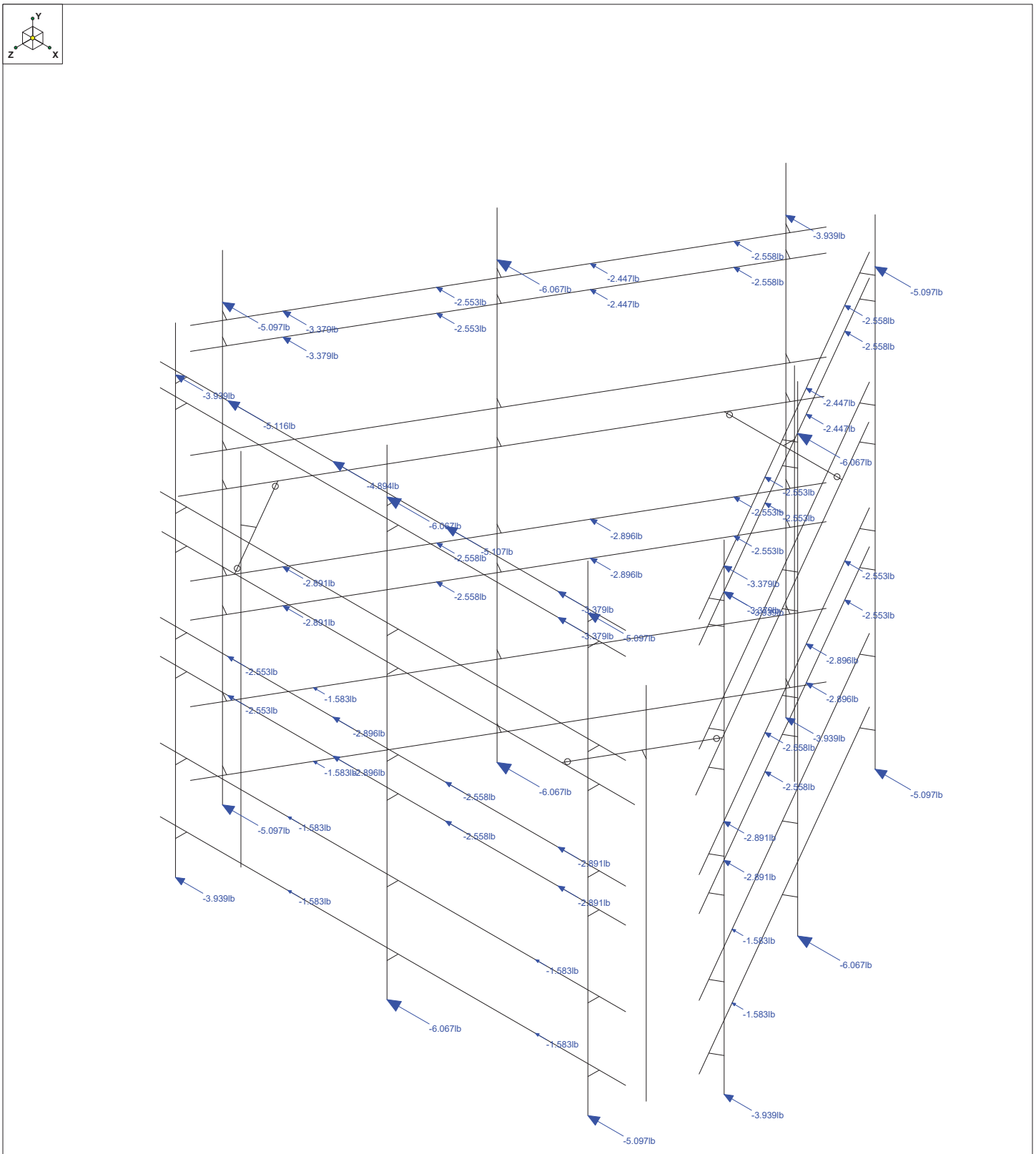
Loads: OL1 - Other Load 1

Infinigy Engineering, PLLC	CTL01330	Ice Load
Mark Iakovenko		Oct 20, 2020 at 10:44 AM
1106-A0001-B		CTL01330_loaded.r3d



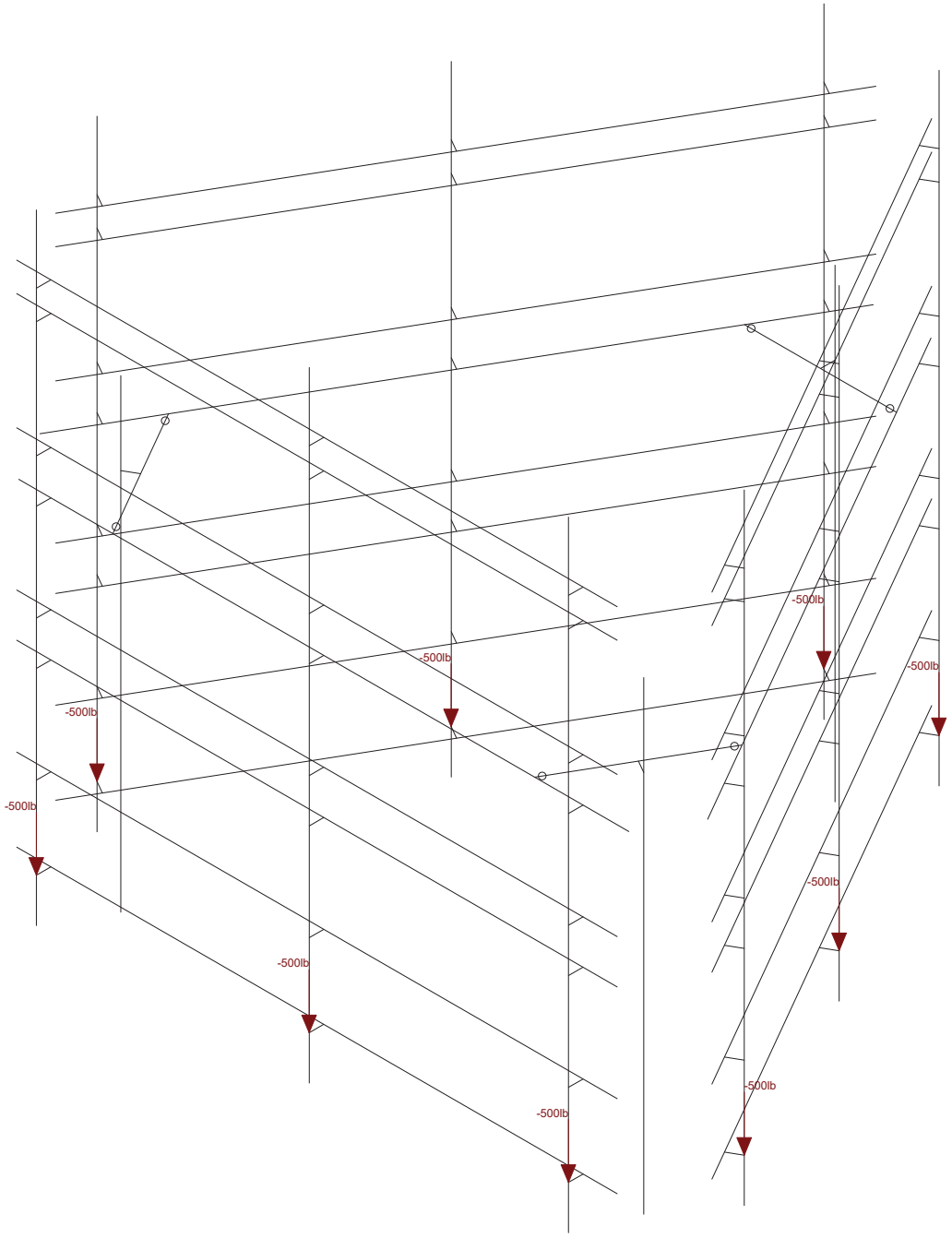
Loads: BLC 31, Seismic Load Z

Infinigy Engineering, PLLC	CTL01330	Seismic Load 0
Mark Iakovenko		Oct 20, 2020 at 10:44 AM
1106-A0001-B		CTL01330_loaded.r3d



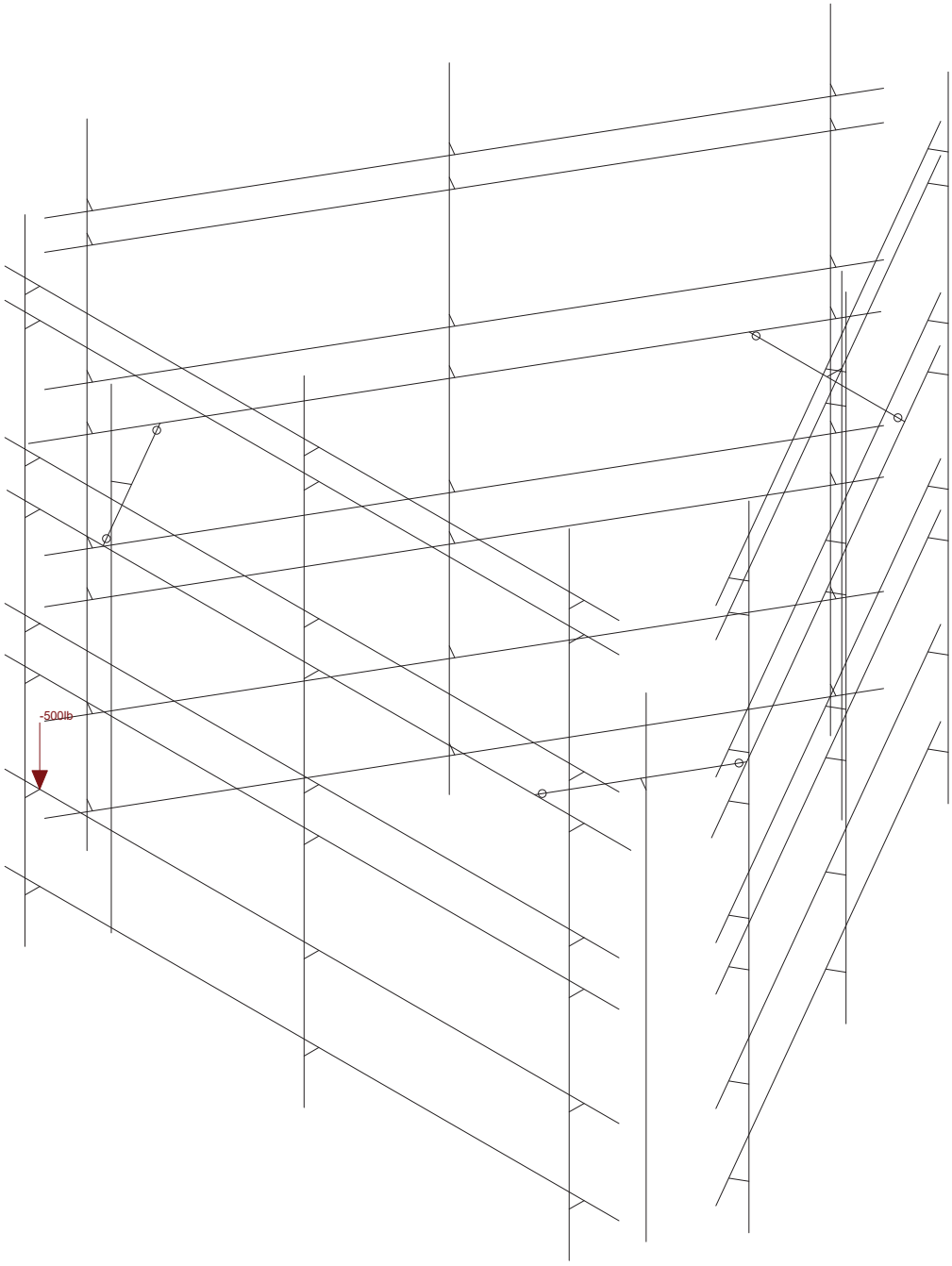
Loads: BLC 32, Seismic Load X

Infinigy Engineering, PLLC	CTL01330	Seismic Load 90
Mark Iakovenko		Oct 20, 2020 at 10:44 AM
1106-A0001-B		CTL01330_loaded.r3d



Loads: LL - Live Load

Infinigy Engineering, PLLC	CTL01330	Meintenance Load
Mark Iakovenko		Oct 20, 2020 at 10:45 AM
1106-A0001-B		CTL01330_loaded.r3d



Loads: BLC 33, Service Live Loads

Infinigy Engineering, PLLC	CTL01330	Service Load
Mark Iakovenko		Oct 20, 2020 at 10:45 AM
1106-A0001-B		CTL01330_loaded.r3d

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			Pipe Post	Column	Pipe	A53 Gr.B	Typical
2	M2	N3	N4			Pipe Post	Column	Pipe	A53 Gr.B	Typical
3	M3	N5	N6			Pipe Post	Column	Pipe	A53 Gr.B	Typical
4	M4	N7	N8			Corner Pipe	Beam	Pipe	A53 Gr.B	Typical
5	M5	N9	N10			RIGID	None	None	RIGID	Typical
6	M6	N11	N12			Corner Pipe	Beam	Pipe	A53 Gr.B	Typical
7	M7	N13	N14			RIGID	None	None	RIGID	Typical
8	M8	N15	N16			Corner Pipe	Beam	Pipe	A53 Gr.B	Typical
9	M9	N17	N18			RIGID	None	None	RIGID	Typical
10	M10	N19	N20			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
11	M11	N21	N22			RIGID	None	None	RIGID	Typical
12	M12	N23	N24			RIGID	None	None	RIGID	Typical
13	M13	N25	N26			RIGID	None	None	RIGID	Typical
14	MP7	N27	N28			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
15	MP8	N29	N30			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
16	MP9	N31	N32			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
17	M17	N33	N34			Unistrut	Beam	CS	A653 SS ...	Typical
18	M18	N35	N36			RIGID	None	None	RIGID	Typical
19	M19	N37	N38			RIGID	None	None	RIGID	Typical
20	M20	N39	N40			RIGID	None	None	RIGID	Typical
21	M21	N41	N42			Unistrut	Beam	CS	A653 SS ...	Typical
22	M22	N43	N44			RIGID	None	None	RIGID	Typical
23	M23	N45	N46			RIGID	None	None	RIGID	Typical
24	M24	N47	N48			RIGID	None	None	RIGID	Typical
25	M25	N49	N50			Unistrut	Beam	CS	A653 SS ...	Typical
26	M26	N51	N52			RIGID	None	None	RIGID	Typical
27	M27	N53	N54			RIGID	None	None	RIGID	Typical
28	M28	N55	N56			RIGID	None	None	RIGID	Typical
29	M29	N57	N58			Unistrut	Beam	CS	A653 SS ...	Typical
30	M30	N59	N60			RIGID	None	None	RIGID	Typical
31	M31	N61	N62			RIGID	None	None	RIGID	Typical
32	M32	N63	N64			RIGID	None	None	RIGID	Typical
33	M33	N65	N66			Unistrut	Beam	CS	A653 SS ...	Typical
34	M34	N67	N68			RIGID	None	None	RIGID	Typical
35	M35	N69	N70			RIGID	None	None	RIGID	Typical
36	M36	N71	N72			RIGID	None	None	RIGID	Typical
37	M37	N73	N74			Unistrut	Beam	CS	A653 SS ...	Typical
38	M38	N75	N76			RIGID	None	None	RIGID	Typical
39	M39	N77	N78			RIGID	None	None	RIGID	Typical
40	M40	N79	N80			RIGID	None	None	RIGID	Typical
41	M41	N81	N82			Unistrut	Beam	CS	A653 SS ...	Typical
42	M42	N83	N84			RIGID	None	None	RIGID	Typical
43	M43	N85	N86			RIGID	None	None	RIGID	Typical
44	M44	N87	N88			RIGID	None	None	RIGID	Typical
45	M45	N89	N90			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
46	M46	N91	N92			RIGID	None	None	RIGID	Typical
47	M47	N93	N94			RIGID	None	None	RIGID	Typical
48	M48	N95	N96			RIGID	None	None	RIGID	Typical
49	MP3	N97	N98			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
50	MP2	N99	N100			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
51	MP1	N101	N102			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
52	M52	N103	N104			Unistrut	Beam	CS	A653 SS ...	Typical
53	M53	N105	N106			RIGID	None	None	RIGID	Typical
54	M54	N107	N108			RIGID	None	None	RIGID	Typical
55	M55	N109	N110			RIGID	None	None	RIGID	Typical
56	M56	N111	N112			Unistrut	Beam	CS	A653 SS ...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M57	N113	N114			RIGID	None	None	RIGID	Typical
58	M58	N115	N116			RIGID	None	None	RIGID	Typical
59	M59	N117	N118			RIGID	None	None	RIGID	Typical
60	M60	N119	N120			Unistrut	Beam	CS	A653 SS ...	Typical
61	M61	N121	N122			RIGID	None	None	RIGID	Typical
62	M62	N123	N124			RIGID	None	None	RIGID	Typical
63	M63	N125	N126			RIGID	None	None	RIGID	Typical
64	M64	N127	N128			Unistrut	Beam	CS	A653 SS ...	Typical
65	M65	N129	N130			RIGID	None	None	RIGID	Typical
66	M66	N131	N132			RIGID	None	None	RIGID	Typical
67	M67	N133	N134			RIGID	None	None	RIGID	Typical
68	M68	N135	N136			Unistrut	Beam	CS	A653 SS ...	Typical
69	M69	N137	N138			RIGID	None	None	RIGID	Typical
70	M70	N139	N140			RIGID	None	None	RIGID	Typical
71	M71	N141	N142			RIGID	None	None	RIGID	Typical
72	M72	N143	N144			Unistrut	Beam	CS	A653 SS ...	Typical
73	M73	N145	N146			RIGID	None	None	RIGID	Typical
74	M74	N147	N148			RIGID	None	None	RIGID	Typical
75	M75	N149	N150			RIGID	None	None	RIGID	Typical
76	M76	N151	N152			Unistrut	Beam	CS	A653 SS ...	Typical
77	M77	N153	N154			RIGID	None	None	RIGID	Typical
78	M78	N155	N156			RIGID	None	None	RIGID	Typical
79	M79	N157	N158			RIGID	None	None	RIGID	Typical
80	M80	N159	N160			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
81	M81	N161	N162			RIGID	None	None	RIGID	Typical
82	M82	N163	N164			RIGID	None	None	RIGID	Typical
83	M83	N165	N166			RIGID	None	None	RIGID	Typical
84	MP6	N167	N168			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
85	MP5	N169	N170			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
86	MP4	N171	N172			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
87	M87	N173	N174			Unistrut	Beam	CS	A653 SS ...	Typical
88	M88	N175	N176			RIGID	None	None	RIGID	Typical
89	M89	N177	N178			RIGID	None	None	RIGID	Typical
90	M90	N179	N180			RIGID	None	None	RIGID	Typical
91	M91	N181	N182			Unistrut	Beam	CS	A653 SS ...	Typical
92	M92	N183	N184			RIGID	None	None	RIGID	Typical
93	M93	N185	N186			RIGID	None	None	RIGID	Typical
94	M94	N187	N188			RIGID	None	None	RIGID	Typical
95	M95	N189	N190			Unistrut	Beam	CS	A653 SS ...	Typical
96	M96	N191	N192			RIGID	None	None	RIGID	Typical
97	M97	N193	N194			RIGID	None	None	RIGID	Typical
98	M98	N195	N196			RIGID	None	None	RIGID	Typical
99	M99	N197	N198			Unistrut	Beam	CS	A653 SS ...	Typical
100	M100	N199	N200			RIGID	None	None	RIGID	Typical
101	M101	N201	N202			RIGID	None	None	RIGID	Typical
102	M102	N203	N204			RIGID	None	None	RIGID	Typical
103	M103	N205	N206			Unistrut	Beam	CS	A653 SS ...	Typical
104	M104	N207	N208			RIGID	None	None	RIGID	Typical
105	M105	N209	N210			RIGID	None	None	RIGID	Typical
106	M106	N211	N212			RIGID	None	None	RIGID	Typical
107	M107	N213	N214			Unistrut	Beam	CS	A653 SS ...	Typical
108	M108	N215	N216			RIGID	None	None	RIGID	Typical
109	M109	N217	N218			RIGID	None	None	RIGID	Typical
110	M110	N219	N220			RIGID	None	None	RIGID	Typical
111	M111	N221	N222			Unistrut	Beam	CS	A653 SS ...	Typical
112	M112	N223	N224			RIGID	None	None	RIGID	Typical
113	M113	N225	N226			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
114	M114	N227	N228			RIGID	None	None	RIGID	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		75	225	0
3	Total General		75	225	0
4					
5	Hot Rolled Steel				
6	A53 Gr.B	PIPE_2.0	9	1152	333.2
7	A53 Gr.B	PIPE_2.5	6	666	304.055
8	A53 Gr.B	PIPE_2.5X	3	94.1	56.061
9	Total HR Steel		18	1912.1	693.316
10					
11	Cold Formed Steel				
12	A653 SS Gr33	P1000 Unistrut	21	2604	411.477
13	Total CF Steel		21	2604	411.477

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Member)	Surface(...
1	Self Weight	DL		-1			74			
2	Wind Load AZI 0	WLZ								
3	Wind Load AZI 30	None								
4	Wind Load AZI 60	None								
5	Wind Load AZI 90	WLX								
6	Wind Load AZI 120	None								
7	Wind Load AZI 150	None								
8	Wind Load AZI 180	None								
9	Wind Load AZI 210	None								
10	Wind Load AZI 240	None								
11	Wind Load AZI 270	None								
12	Wind Load AZI 300	None								
13	Wind Load AZI 330	None								
14	Distr. Wind Load Z	WLZ								
15	Distr. Wind Load X	WLX								
16	Ice Weight	OL1					74	114		
17	Ice Wind Load AZI 0	OL2								
18	Ice Wind Load AZI 30	None								
19	Ice Wind Load AZI 60	None								
20	Ice Wind Load AZI 90	OL3								
21	Ice Wind Load AZI 120	None								
22	Ice Wind Load AZI 150	None								
23	Ice Wind Load AZI 180	None								
24	Ice Wind Load AZI 210	None								
25	Ice Wind Load AZI 240	None								
26	Ice Wind Load AZI 270	None								
27	Ice Wind Load AZI 300	None								
28	Ice Wind Load AZI 330	None								
29	Distr. Ice Wind Load Z	OL2								
30	Distr. Ice Wind Load X	OL3								
31	Seismic Load Z	ELZ			-.097		74			
32	Seismic Load X	ELX	-.097				74			
33	Service Live Loads	LL								
34	Maintenance Load 1	LL				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Member)	Surface(...
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + 1WL AZI 180	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Yes	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.866												
11	1.2DL + 1WL AZI 270	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Yes	Y		1	1.2	12	1	14	.5	15	-.866												
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI 30	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1	14	-.866	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.866												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1	14	.5	15	-.866												
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y		1	1.2	16	1	22	1	29	-.866	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y		1	1.2	16	1	24	1	29	-.866	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.866										
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.866										
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E AZ...	Yes	Y		1	1.2...	31	-.866	32	.5														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
45	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31	-.5	32	-.866														
48	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31	.5	32	-.866														
50	(1.2 + 0.2Sds)DL + 1.0E AZ..	Yes	Y		1	1.2...	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	-.5	32	-.866														
60	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	.5	32	-.866														
62	(0.9 - 0.2Sds)DL + 1.0E AZI..	Yes	Y		1	.861	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	2	.25	14	.25	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	3	.25	14	.216	15	.125	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	4	.25	14	.125	15	.216	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	5	.25	14		15	.25	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	6	.25	14	-.125	15	.216	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	7	.25	14	-.216	15	.125	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	8	.25	14	-.25	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	9	.25	14	-.216	15	-.125	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	10	.25	14	-.125	15	-.216	33	1.5										
72	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	11	.25	14		15	-.25	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	12	.25	14	.125	15	-.216	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL (6..	Yes	Y		1	1	13	.25	14	.216	15	-.125	33	1.5										
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	2	.063	14	.063	15											
77	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031										
78	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054										
79	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	5	.063	14		15	.063										
80	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	6	.063	14	-.031	15	.054										
81	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	7	.063	14	-.054	15	.031										
82	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	8	.063	14	-.063	15											
83	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	9	.063	14	-.054	15	-.031										
84	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	10	.063	14	-.031	15	-.054										
85	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	11	.063	14		15	-.063										
86	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.054										
87	1.2DL + 1.5LM-MP1 + 1SW..	Yes	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.031										
88	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	2	.063	14	.063	15											
89	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031										
90	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054										
91	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	5	.063	14		15	.063										
92	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	6	.063	14	-.031	15	.054										
93	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	7	.063	14	-.054	15	.031										
94	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	8	.063	14	-.063	15											
95	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	9	.063	14	-.054	15	-.031										
96	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	10	.063	14	-.031	15	-.054										
97	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	11	.063	14		15	-.063										
98	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.054										
99	1.2DL + 1.5LM-MP2 + 1SW..	Yes	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.031										
100	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	2	.063	14	.063	15											
101	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
102	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054										
103	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	5	.063	14		15	.063										
104	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	6	.063	14	-.031	15	.054										
105	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	7	.063	14	-.054	15	.031										
106	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	8	.063	14	-.063	15											
107	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	9	.063	14	-.054	15	-.031										
108	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	10	.063	14	-.031	15	-.054										
109	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	11	.063	14		15	-.063										
110	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.054										
111	1.2DL + 1.5LM-MP3 + 1SW..	Yes	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.031										
112	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	2	.063	14	.063	15											
113	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031										
114	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054										
115	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	5	.063	14		15	.063										
116	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	6	.063	14	-.031	15	.054										
117	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	7	.063	14	-.054	15	.031										
118	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	8	.063	14	-.063	15											
119	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	9	.063	14	-.054	15	-.031										
120	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	10	.063	14	-.031	15	-.054										
121	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	11	.063	14		15	-.063										
122	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.054										
123	1.2DL + 1.5LM-MP4 + 1SW..	Yes	Y		1	1.2	37	1.5	13	.063	14	.054	15	-.031										
124	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	2	.063	14	.063	15											
125	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	3	.063	14	.054	15	.031										
126	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	4	.063	14	.031	15	.054										
127	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	5	.063	14		15	.063										
128	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	6	.063	14	-.031	15	.054										
129	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	7	.063	14	-.054	15	.031										
130	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	8	.063	14	-.063	15											
131	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	9	.063	14	-.054	15	-.031										
132	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	10	.063	14	-.031	15	-.054										
133	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	11	.063	14		15	-.063										
134	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	12	.063	14	.031	15	-.054										
135	1.2DL + 1.5LM-MP5 + 1SW..	Yes	Y		1	1.2	38	1.5	13	.063	14	.054	15	-.031										
136	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	2	.063	14	.063	15											
137	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	3	.063	14	.054	15	.031										
138	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	4	.063	14	.031	15	.054										
139	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	5	.063	14		15	.063										
140	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	6	.063	14	-.031	15	.054										
141	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	7	.063	14	-.054	15	.031										
142	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	8	.063	14	-.063	15											
143	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	9	.063	14	-.054	15	-.031										
144	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	10	.063	14	-.031	15	-.054										
145	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	11	.063	14		15	-.063										
146	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	12	.063	14	.031	15	-.054										
147	1.2DL + 1.5LM-MP6 + 1SW..	Yes	Y		1	1.2	39	1.5	13	.063	14	.054	15	-.031										
148	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	2	.063	14	.063	15											
149	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	3	.063	14	.054	15	.031										
150	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	4	.063	14	.031	15	.054										
151	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	5	.063	14		15	.063										
152	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	6	.063	14	-.031	15	.054										
153	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	7	.063	14	-.054	15	.031										
154	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	8	.063	14	-.063	15											
155	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	9	.063	14	-.054	15	-.031										
156	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	10	.063	14	-.031	15	-.054										
157	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	11	.063	14		15	-.063										
158	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	12	.063	14	.031	15	-.054										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
159	1.2DL + 1.5LM-MP7 + 1SW..	Yes	Y		1	1.2	40	1.5	13	.063	14	.054	15	-.031										
160	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	2	.063	14	.063	15											
161	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	3	.063	14	.054	15	.031										
162	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	4	.063	14	.031	15	.054										
163	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	5	.063	14		15	.063										
164	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	6	.063	14	-.031	15	.054										
165	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	7	.063	14	-.054	15	.031										
166	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	8	.063	14	-.063	15											
167	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	9	.063	14	-.054	15	-.031										
168	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	10	.063	14	-.031	15	-.054										
169	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	11	.063	14		15	-.063										
170	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	12	.063	14	.031	15	-.054										
171	1.2DL + 1.5LM-MP8 + 1SW..	Yes	Y		1	1.2	41	1.5	13	.063	14	.054	15	-.031										
172	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	2	.063	14	.063	15											
173	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	3	.063	14	.054	15	.031										
174	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	4	.063	14	.031	15	.054										
175	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	5	.063	14		15	.063										
176	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	6	.063	14	-.031	15	.054										
177	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	7	.063	14	-.054	15	.031										
178	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	8	.063	14	-.063	15											
179	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	9	.063	14	-.054	15	-.031										
180	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	10	.063	14	-.031	15	-.054										
181	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	11	.063	14		15	-.063										
182	1.2DL + 1.5LM-MP9 + 1SW..	Yes	Y		1	1.2	42	1.5	12	.063	14	.031	15	-.054										

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	N1	max	119.71	54	5197.842	38	92.551	52	450.052	51	185.839	111	564.146	48
2		min	-152.972	48	950.398	53	-107.792	46	-542.302	45	-193.678	136	-512.897	42
3	N3	max	153.028	42	5305.965	38	92.74	62	495.02	39	196.612	123	494.224	60
4		min	-120.444	60	953.211	61	-106.795	44	-484.775	45	-185.032	172	-599.057	42
5	N5	max	96.131	87	5181.413	38	167.8	39	590.765	39	190.656	159	483.118	48
6		min	-95.059	148	914.444	57	-137.447	57	-517.532	57	-192.69	76	-425.918	54
7	Totals:	max	341.008	42	15685.22	38	340.857	39						
8		min	-340.945	60	3042.307	60	-340.848	57						

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

	Member	Shape	Code ...	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M4	PIPE_2.5X	.727	15.691	38	.284	15.691		38	62432.4...	66150	4646.25	4646.25	1....	H1-1b
2	M6	PIPE_2.5X	.721	15.691	38	.282	15.691		38	62432.4...	66150	4646.25	4646.25	1....	H1-1b
3	M8	PIPE_2.5X	.715	15.691	38	.299	15.691		38	62432.4...	66150	4646.25	4646.25	1....	H1-1b
4	M10	PIPE_2.5	.408	107.625	38	.204	107.625		38	20573.2...	50715	3596.25	3596.25	1....	H1-1b
5	M45	PIPE_2.5	.396	107.625	38	.208	18.375		38	20573.2...	50715	3596.25	3596.25	1....	H1-1b
6	M80	PIPE_2.5	.379	107.625	38	.208	18.375		38	20573.2...	50715	3596.25	3596.25	1....	H1-1b
7	M3	PIPE_2.5	.285	79	87	.066	0		87	30038.4...	50715	3596.25	3596.25	1....	H1-1b
8	M1	PIPE_2.5	.282	79	147	.066	0		1...	30038.4...	50715	3596.25	3596.25	1....	H1-1b
9	M2	PIPE_2.5	.276	79	182	.067	0		1...	30038.4...	50715	3596.25	3596.25	1....	H1-1b
10	MP3	PIPE_2.0	.188	52	38	.122	14.667		38	8645.447	32130	1871.625	1871.625	2....	H1-1b
11	MP6	PIPE_2.0	.179	52	38	.115	14.667		38	8645.447	32130	1871.625	1871.625	2....	H1-1b
12	MP7	PIPE_2.0	.179	52	38	.112	14.667		38	8645.447	32130	1871.625	1871.625	2....	H1-1b
13	MP4	PIPE_2.0	.140	20	38	.107	14.667		38	8645.447	32130	1871.625	1871.625	1....	H1-1b
14	MP1	PIPE_2.0	.140	20	38	.111	14.667		38	8645.447	32130	1871.625	1871.625	2....	H1-1b
15	MP9	PIPE_2.0	.139	52	38	.110	14.667		38	8645.447	32130	1871.625	1871.625	1....	H1-1b
16	MP2	PIPE_2.0	.092	53.333	38	.053	44		1...	8645.447	32130	1871.625	1871.625	3....	H1-1b

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

	Member	Shape	Code ...	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
17	MP5	PIPE_2.0	.083	53.333	38	.053	44		87	8645.447	32130	1871.625	1871.625	1....	H1-1b
18	MP8	PIPE_2.0	.079	53.333	38	.049	44		1...	8645.447	32130	1871.625	1871.625	1....	H1-1b

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe Post	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	Frame Rail	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Corner Pipe	PIPE_2.5X	Beam	Pipe	A53 Gr.B	Typical	2.1	1.83	1.83	3.66

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	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4	BenPIN	BenPIN				Yes	Default	-y		None
5	M5						Yes	** NA **			None
6	M6	BenPIN	BenPIN				Yes	Default	-y		None
7	M7						Yes	** NA **			None
8	M8	BenPIN	BenPIN				Yes	Default	-y		None
9	M9						Yes	** NA **			None
10	M10						Yes	Default			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	MP7						Yes	** NA **			None
15	MP8						Yes	** NA **			None
16	MP9						Yes	** NA **			None
17	M17						Yes	Default			None
18	M18						Yes	** NA **			None
19	M19						Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	Default			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None
25	M25						Yes	Default			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None
29	M29						Yes	Default			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	Default			None
34	M34						Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes	Default			None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	Default			None
42	M42						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...
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	Default			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	MP3						Yes	** NA **			None
50	MP2						Yes	** NA **			None
51	MP1						Yes	** NA **			None
52	M52						Yes	Default			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	Default			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	Default			None
61	M61						Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63						Yes	** NA **			None
64	M64						Yes	Default			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes	Default			None
69	M69						Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	Default			None
73	M73						Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76						Yes	Default			None
77	M77						Yes	** NA **			None
78	M78						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80						Yes	Default			None
81	M81						Yes	** NA **			None
82	M82						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	MP6						Yes	** NA **			None
85	MP5						Yes	** NA **			None
86	MP4						Yes	** NA **			None
87	M87						Yes	Default			None
88	M88						Yes	** NA **			None
89	M89						Yes	** NA **			None
90	M90						Yes	** NA **			None
91	M91						Yes	Default			None
92	M92						Yes	** NA **			None
93	M93						Yes	** NA **			None
94	M94						Yes	** NA **			None
95	M95						Yes	Default			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	Default			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...
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	Default			None
104	M104						Yes	** NA **			None
105	M105						Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	Default			None
108	M108						Yes	** NA **			None
109	M109						Yes	** NA **			None
110	M110						Yes	** NA **			None
111	M111						Yes	Default			None
112	M112						Yes	** NA **			None
113	M113						Yes	** NA **			None
114	M114						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	M1	Pipe Post	96			Lbyy						Lateral
2	M2	Pipe Post	96			Lbyy						Lateral
3	M3	Pipe Post	96			Lbyy						Lateral
4	M4	Corner Pipe	31.381			Lbyy						Lateral
5	M6	Corner Pipe	31.381			Lbyy						Lateral
6	M8	Corner Pipe	31.381			Lbyy						Lateral
7	M10	Frame Rail	126			Lbyy						Lateral
8	MP7	Mount Pipe	128			Lbyy						Lateral
9	MP8	Mount Pipe	128			Lbyy						Lateral
10	MP9	Mount Pipe	128			Lbyy						Lateral
11	M45	Frame Rail	126			Lbyy						Lateral
12	MP3	Mount Pipe	128			Lbyy						Lateral
13	MP2	Mount Pipe	128			Lbyy						Lateral
14	MP1	Mount Pipe	128			Lbyy						Lateral
15	M80	Frame Rail	126			Lbyy						Lateral
16	MP6	Mount Pipe	128			Lbyy						Lateral
17	MP5	Mount Pipe	128			Lbyy						Lateral
18	MP4	Mount Pipe	128			Lbyy						Lateral

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N47	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^...
1	N45	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^...
1	N43	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^...
1	N117	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N115	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N113	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N187	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N185	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N183	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-52.8	128
2	MP1	Y	-52.8	12
3	MP2	Y	-62.85	128
4	MP2	Y	-62.85	12
5	MP3	Y	-40.8	128
6	MP3	Y	-40.8	12
7	M60	Y	-16.4	24
8	M56	Y	-16.4	24
9	M52	Y	-35	18
10	M76	Y	-35	18
11	M52	Y	-26.45	48
12	M52	Y	-26.45	48
13	M52	Y	-25.35	78
14	M52	Y	-25.35	78
15	M52	Y	-26.5	106
16	M52	Y	-26.5	106
17	M68	Y	-29.95	18
18	M64	Y	-29.95	18
19	M68	Y	-26.5	48
20	M64	Y	-26.5	48
21	M68	Y	-30	78
22	M64	Y	-30	78
23	M68	Y	-26.45	106
24	M64	Y	-26.45	106
25	M60	Y	-16.4	90
26	M56	Y	-16.4	90
27	MP4	Y	-52.8	128
28	MP4	Y	-52.8	12
29	MP5	Y	-62.85	128
30	MP5	Y	-62.85	12
31	MP6	Y	-40.8	128
32	MP6	Y	-40.8	12
33	M95	Y	-16.4	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
34	M91	Y	-16.4	24
35	M87	Y	-35	18
36	M111	Y	-35	18
37	M87	Y	-26.45	48
38	M111	Y	-26.45	48
39	M87	Y	-25.35	78
40	M111	Y	-25.35	78
41	M87	Y	-26.5	106
42	M111	Y	-26.5	106
43	M103	Y	-29.95	18
44	M99	Y	-29.95	18
45	M103	Y	-26.5	48
46	M99	Y	-26.5	48
47	M103	Y	-30	78
48	M99	Y	-30	78
49	M103	Y	-26.45	106
50	M99	Y	-26.45	106
51	MP7	Y	-52.8	128
52	MP7	Y	-52.8	12
53	MP8	Y	-62.85	128
54	MP8	Y	-62.85	12
55	MP9	Y	-40.8	128
56	MP9	Y	-40.8	12
57	M25	Y	-16.4	24
58	M21	Y	-16.4	24
59	M17	Y	-35	18
60	M41	Y	-35	18
61	M17	Y	-26.45	48
62	M41	Y	-26.45	48
63	M17	Y	-25.35	78
64	M41	Y	-25.35	78
65	M17	Y	-26.5	106
66	M41	Y	-26.5	106
67	M33	Y	-29.95	18
68	M29	Y	-29.95	18
69	M33	Y	-26.5	48
70	M29	Y	-26.5	48
71	M33	Y	-30	78
72	M29	Y	-30	78
73	M33	Y	-26.45	106
74	M29	Y	-26.45	106

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-234.21	128
2	MP1	Y	-234.21	12
3	MP2	Y	-222.479	128
4	MP2	Y	-222.479	12
5	MP3	Y	-194.808	128
6	MP3	Y	-194.808	12
7	M60	Y	-58.806	24
8	M56	Y	-58.806	24
9	M52	Y	-49.18	18
10	M76	Y	-49.18	18
11	M52	Y	-55.702	48
12	M52	Y	-55.702	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	M52	Y	-54.814	78
14	M52	Y	-54.814	78
15	M52	Y	-55.833	106
16	M52	Y	-55.833	106
17	M68	Y	-42.881	18
18	M64	Y	-42.881	18
19	M68	Y	-55.833	48
20	M64	Y	-55.833	48
21	M68	Y	-60.298	78
22	M64	Y	-60.298	78
23	M68	Y	-55.702	106
24	M64	Y	-55.702	106
25	M60	Y	-58.806	90
26	M56	Y	-58.806	90
27	MP4	Y	-234.21	128
28	MP4	Y	-234.21	12
29	MP5	Y	-222.479	128
30	MP5	Y	-222.479	12
31	MP6	Y	-194.808	128
32	MP6	Y	-194.808	12
33	M95	Y	-58.806	24
34	M91	Y	-58.806	24
35	M87	Y	-49.18	18
36	M111	Y	-49.18	18
37	M87	Y	-55.702	48
38	M111	Y	-55.702	48
39	M87	Y	-54.814	78
40	M111	Y	-54.814	78
41	M87	Y	-55.833	106
42	M111	Y	-55.833	106
43	M103	Y	-42.881	18
44	M99	Y	-42.881	18
45	M103	Y	-55.833	48
46	M99	Y	-55.833	48
47	M103	Y	-60.298	78
48	M99	Y	-60.298	78
49	M103	Y	-55.702	106
50	M99	Y	-55.702	106
51	MP7	Y	-234.21	128
52	MP7	Y	-234.21	12
53	MP8	Y	-222.479	128
54	MP8	Y	-222.479	12
55	MP9	Y	-194.808	128
56	MP9	Y	-194.808	12
57	M25	Y	-58.806	24
58	M21	Y	-58.806	24
59	M17	Y	-49.18	18
60	M41	Y	-49.18	18
61	M17	Y	-55.702	48
62	M41	Y	-55.702	48
63	M17	Y	-54.814	78
64	M41	Y	-54.814	78
65	M17	Y	-55.833	106
66	M41	Y	-55.833	106
67	M33	Y	-42.881	18
68	M29	Y	-42.881	18
69	M33	Y	-55.833	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
70	M29	Y	-55.833	48
71	M33	Y	-60.298	78
72	M29	Y	-60.298	78
73	M33	Y	-55.702	106
74	M29	Y	-55.702	106

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-5.097	128
2	MP1	Z	-5.097	12
3	MP2	Z	-6.067	128
4	MP2	Z	-6.067	12
5	MP3	Z	-3.939	128
6	MP3	Z	-3.939	12
7	M60	Z	-1.583	24
8	M56	Z	-1.583	24
9	M52	Z	-3.379	18
10	M76	Z	-3.379	18
11	M52	Z	-2.553	48
12	M52	Z	-2.553	48
13	M52	Z	-2.447	78
14	M52	Z	-2.447	78
15	M52	Z	-2.558	106
16	M52	Z	-2.558	106
17	M68	Z	-2.891	18
18	M64	Z	-2.891	18
19	M68	Z	-2.558	48
20	M64	Z	-2.558	48
21	M68	Z	-2.896	78
22	M64	Z	-2.896	78
23	M68	Z	-2.553	106
24	M64	Z	-2.553	106
25	M60	Z	-1.583	90
26	M56	Z	-1.583	90
27	MP4	Z	-5.097	128
28	MP4	Z	-5.097	12
29	MP5	Z	-6.067	128
30	MP5	Z	-6.067	12
31	MP6	Z	-3.939	128
32	MP6	Z	-3.939	12
33	M95	Z	-1.583	24
34	M91	Z	-1.583	24
35	M87	Z	-3.379	18
36	M111	Z	-3.379	18
37	M87	Z	-2.553	48
38	M111	Z	-2.553	48
39	M87	Z	-2.447	78
40	M111	Z	-2.447	78
41	M87	Z	-2.558	106
42	M111	Z	-2.558	106
43	M103	Z	-2.891	18
44	M99	Z	-2.891	18
45	M103	Z	-2.558	48
46	M99	Z	-2.558	48
47	M103	Z	-2.896	78
48	M99	Z	-2.896	78

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
49	M103	Z	-2.553	106
50	M99	Z	-2.553	106
51	MP7	Z	-5.097	128
52	MP7	Z	-5.097	12
53	MP8	Z	-6.067	128
54	MP8	Z	-6.067	12
55	MP9	Z	-3.939	128
56	MP9	Z	-3.939	12
57	M25	Z	-1.583	24
58	M21	Z	-1.583	24
59	M17	Z	-3.379	18
60	M41	Z	-3.379	18
61	M17	Z	-2.553	48
62	M41	Z	-2.553	48
63	M17	Z	-2.447	78
64	M41	Z	-2.447	78
65	M17	Z	-2.558	106
66	M41	Z	-2.558	106
67	M33	Z	-2.891	18
68	M29	Z	-2.891	18
69	M33	Z	-2.558	48
70	M29	Z	-2.558	48
71	M33	Z	-2.896	78
72	M29	Z	-2.896	78
73	M33	Z	-2.553	106
74	M29	Z	-2.553	106

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-5.097	128
2	MP1	X	-5.097	12
3	MP2	X	-6.067	128
4	MP2	X	-6.067	12
5	MP3	X	-3.939	128
6	MP3	X	-3.939	12
7	M60	X	-1.583	24
8	M56	X	-1.583	24
9	M52	X	-3.379	18
10	M76	X	-3.379	18
11	M52	X	-2.553	48
12	M52	X	-2.553	48
13	M52	X	-2.447	78
14	M52	X	-2.447	78
15	M52	X	-2.558	106
16	M52	X	-2.558	106
17	M68	X	-2.891	18
18	M64	X	-2.891	18
19	M68	X	-2.558	48
20	M64	X	-2.558	48
21	M68	X	-2.896	78
22	M64	X	-2.896	78
23	M68	X	-2.553	106
24	M64	X	-2.553	106
25	M60	X	-1.583	90
26	M56	X	-1.583	90
27	MP4	X	-5.097	128

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP4	X	-5.097	12
29	MP5	X	-6.067	128
30	MP5	X	-6.067	12
31	MP6	X	-3.939	128
32	MP6	X	-3.939	12
33	M95	X	-1.583	24
34	M91	X	-1.583	24
35	M87	X	-3.379	18
36	M111	X	-3.379	18
37	M87	X	-2.553	48
38	M111	X	-2.553	48
39	M87	X	-2.447	78
40	M111	X	-2.447	78
41	M87	X	-2.558	106
42	M111	X	-2.558	106
43	M103	X	-2.891	18
44	M99	X	-2.891	18
45	M103	X	-2.558	48
46	M99	X	-2.558	48
47	M103	X	-2.896	78
48	M99	X	-2.896	78
49	M103	X	-2.553	106
50	M99	X	-2.553	106
51	MP7	X	-5.097	128
52	MP7	X	-5.097	12
53	MP8	X	-6.067	128
54	MP8	X	-6.067	12
55	MP9	X	-3.939	128
56	MP9	X	-3.939	12
57	M25	X	-1.583	24
58	M21	X	-1.583	24
59	M17	X	-3.379	18
60	M41	X	-3.379	18
61	M17	X	-2.553	48
62	M41	X	-2.553	48
63	M17	X	-2.447	78
64	M41	X	-2.447	78
65	M17	X	-2.558	106
66	M41	X	-2.558	106
67	M33	X	-2.891	18
68	M29	X	-2.891	18
69	M33	X	-2.558	48
70	M29	X	-2.558	48
71	M33	X	-2.896	78
72	M29	X	-2.896	78
73	M33	X	-2.553	106
74	M29	X	-2.553	106

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-12.835	-12.835	0	%100
2	M2	Y	-12.835	-12.835	0	%100
3	M3	Y	-12.835	-12.835	0	%100
4	M4	Y	-12.835	-12.835	0	%100
5	M5	Y	-5.43	-5.43	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M6	Y	-12.835	-12.835	0	%100
7	M7	Y	-5.43	-5.43	0	%100
8	M8	Y	-12.835	-12.835	0	%100
9	M9	Y	-5.43	-5.43	0	%100
10	M10	Y	-12.835	-12.835	0	%100
11	M11	Y	-5.43	-5.43	0	%100
12	M12	Y	-5.43	-5.43	0	%100
13	M13	Y	-5.43	-5.43	0	%100
14	MP7	Y	-11.547	-11.547	0	%100
15	MP8	Y	-11.547	-11.547	0	%100
16	MP9	Y	-11.547	-11.547	0	%100
17	M17	Y	-11.349	-11.349	0	%100
18	M18	Y	-5.43	-5.43	0	%100
19	M19	Y	-5.43	-5.43	0	%100
20	M20	Y	-5.43	-5.43	0	%100
21	M21	Y	-11.349	-11.349	0	%100
22	M22	Y	-5.43	-5.43	0	%100
23	M23	Y	-5.43	-5.43	0	%100
24	M24	Y	-5.43	-5.43	0	%100
25	M25	Y	-11.349	-11.349	0	%100
26	M26	Y	-5.43	-5.43	0	%100
27	M27	Y	-5.43	-5.43	0	%100
28	M28	Y	-5.43	-5.43	0	%100
29	M29	Y	-11.349	-11.349	0	%100
30	M30	Y	-5.43	-5.43	0	%100
31	M31	Y	-5.43	-5.43	0	%100
32	M32	Y	-5.43	-5.43	0	%100
33	M33	Y	-11.349	-11.349	0	%100
34	M34	Y	-5.43	-5.43	0	%100
35	M35	Y	-5.43	-5.43	0	%100
36	M36	Y	-5.43	-5.43	0	%100
37	M37	Y	-11.349	-11.349	0	%100
38	M38	Y	-5.43	-5.43	0	%100
39	M39	Y	-5.43	-5.43	0	%100
40	M40	Y	-5.43	-5.43	0	%100
41	M41	Y	-11.349	-11.349	0	%100
42	M42	Y	-5.43	-5.43	0	%100
43	M43	Y	-5.43	-5.43	0	%100
44	M44	Y	-5.43	-5.43	0	%100
45	M45	Y	-12.835	-12.835	0	%100
46	M46	Y	-5.43	-5.43	0	%100
47	M47	Y	-5.43	-5.43	0	%100
48	M48	Y	-5.43	-5.43	0	%100
49	MP3	Y	-11.547	-11.547	0	%100
50	MP2	Y	-11.547	-11.547	0	%100
51	MP1	Y	-11.547	-11.547	0	%100
52	M52	Y	-11.349	-11.349	0	%100
53	M53	Y	-5.43	-5.43	0	%100
54	M54	Y	-5.43	-5.43	0	%100
55	M55	Y	-5.43	-5.43	0	%100
56	M56	Y	-11.349	-11.349	0	%100
57	M57	Y	-5.43	-5.43	0	%100
58	M58	Y	-5.43	-5.43	0	%100
59	M59	Y	-5.43	-5.43	0	%100
60	M60	Y	-11.349	-11.349	0	%100
61	M61	Y	-5.43	-5.43	0	%100
62	M62	Y	-5.43	-5.43	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
63	M63	Y	-5.43	-5.43	0	%100
64	M64	Y	-11.349	-11.349	0	%100
65	M65	Y	-5.43	-5.43	0	%100
66	M66	Y	-5.43	-5.43	0	%100
67	M67	Y	-5.43	-5.43	0	%100
68	M68	Y	-11.349	-11.349	0	%100
69	M69	Y	-5.43	-5.43	0	%100
70	M70	Y	-5.43	-5.43	0	%100
71	M71	Y	-5.43	-5.43	0	%100
72	M72	Y	-11.349	-11.349	0	%100
73	M73	Y	-5.43	-5.43	0	%100
74	M74	Y	-5.43	-5.43	0	%100
75	M75	Y	-5.43	-5.43	0	%100
76	M76	Y	-11.349	-11.349	0	%100
77	M77	Y	-5.43	-5.43	0	%100
78	M78	Y	-5.43	-5.43	0	%100
79	M79	Y	-5.43	-5.43	0	%100
80	M80	Y	-12.835	-12.835	0	%100
81	M81	Y	-5.43	-5.43	0	%100
82	M82	Y	-5.43	-5.43	0	%100
83	M83	Y	-5.43	-5.43	0	%100
84	MP6	Y	-11.547	-11.547	0	%100
85	MP5	Y	-11.547	-11.547	0	%100
86	MP4	Y	-11.547	-11.547	0	%100
87	M87	Y	-11.349	-11.349	0	%100
88	M88	Y	-5.43	-5.43	0	%100
89	M89	Y	-5.43	-5.43	0	%100
90	M90	Y	-5.43	-5.43	0	%100
91	M91	Y	-11.349	-11.349	0	%100
92	M92	Y	-5.43	-5.43	0	%100
93	M93	Y	-5.43	-5.43	0	%100
94	M94	Y	-5.43	-5.43	0	%100
95	M95	Y	-11.349	-11.349	0	%100
96	M96	Y	-5.43	-5.43	0	%100
97	M97	Y	-5.43	-5.43	0	%100
98	M98	Y	-5.43	-5.43	0	%100
99	M99	Y	-11.349	-11.349	0	%100
100	M100	Y	-5.43	-5.43	0	%100
101	M101	Y	-5.43	-5.43	0	%100
102	M102	Y	-5.43	-5.43	0	%100
103	M103	Y	-11.349	-11.349	0	%100
104	M104	Y	-5.43	-5.43	0	%100
105	M105	Y	-5.43	-5.43	0	%100
106	M106	Y	-5.43	-5.43	0	%100
107	M107	Y	-11.349	-11.349	0	%100
108	M108	Y	-5.43	-5.43	0	%100
109	M109	Y	-5.43	-5.43	0	%100
110	M110	Y	-5.43	-5.43	0	%100
111	M111	Y	-11.349	-11.349	0	%100
112	M112	Y	-5.43	-5.43	0	%100
113	M113	Y	-5.43	-5.43	0	%100
114	M114	Y	-5.43	-5.43	0	%100

Member Area Loads

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

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

	Mem...	Shape	Code Check	Loc.....	She...	Lo...	...	...	phi*P...	phi*T...	phi*...	phi*...	phi...	phi...	Cb	Eqn
1	M17	P100...	.520	116...	38	.075	11...	y	38	2425...	1655...	370....	711....	23...	47...	3.0...	H1.2...
2	M21	P100...	.311	7.75	38	.061	7.75	y	38	2425...	1655...	447....	711....	23...	47...	2.2...	H1.1...
3	M25	P100...	.317	7.75	38	.064	7.75	y	38	2425...	1655...	429....	701....	23...	47...	2.3...	H1.2...
4	M29	P100...	.330	116...	38	.080	11...	y	38	2425...	1655...	447....	711....	23...	47...	3.2...	H1.1...
5	M33	P100...	.481	116...	38	.079	11...	y	38	2425...	1655...	370....	711....	23...	47...	3.2...	H1.2...
6	M37	P100...	.280	116...	38	.040	11...	y	38	2425...	1655...	447....	711....	23...	47...	2.2...	H1.1...
7	M41	P100...	.318	116...	38	.077	11...	y	38	2425...	1655...	629....	711....	23...	47...	3.1...	H1.1...
8	M52	P100...	.614	116...	38	.116	11...	y	38	2425...	1655...	429....	711....	23...	47...	3.1...	H1.2...
9	M56	P100...	.314	116...	38	.061	7.75	y	38	2425...	1655...	629....	711....	23...	47...	2.48	H1.1...
10	M60	P100...	.335	116...	38	.065	7.75	y	38	2425...	1655...	370....	711....	23...	47...	2.6...	H1.2...
11	M64	P100...	.343	116...	38	.081	11...	y	38	2425...	1655...	447....	711....	23...	47...	3.2...	H1.1...
12	M68	P100...	.497	116...	38	.080	11...	y	38	2425...	1655...	429....	711....	23...	47...	3.1...	H1.2...
13	M72	P100...	.283	116...	38	.041	11...	y	38	2425...	1655...	629....	711....	23...	47...	2.2	H1.1...
14	M76	P100...	.286	7.75	38	.071	7.75	y	38	2425...	1655...	447....	711....	23...	47...	2.4...	H1.1...
15	M87	P100...	.503	116...	38	.075	11...	y	38	2425...	1655...	429....	711....	23...	47...	3.0...	H1.2...
16	M91	P100...	.310	7.75	38	.061	7.75	y	38	2425...	1655...	370....	698....	23...	47...	2.2...	H1.1...
17	M95	P100...	.324	7.75	38	.064	7.75	y	38	2425...	1655...	370....	701....	23...	47...	2.3...	H1.2...
18	M99	P100...	.334	116...	38	.080	11...	y	38	2425...	1655...	447....	711....	23...	47...	3.2...	H1.1...
19	M103	P100...	.481	116...	38	.080	11...	y	38	2425...	1655...	429....	711....	23...	47...	3.2...	H1.2...
20	M107	P100...	.274	116...	38	.040	11...	y	38	2425...	1655...	629....	711....	23...	47...	2.2...	H1.1...
21	M111	P100...	.315	116...	38	.077	11...	y	38	2425...	1655...	629....	711....	23...	47...	3.1...	H1.1...

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Unistrut	P1000 Unist...	Beam	CS	A653 SS Gr33	Typical	.557	.172	.234	.002

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[lb/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	490	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	490	50	65

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 1, 2020 2:39 PM
To: Kristina Cottone
Subject: FedEx Shipment 770793372536: Your package has been delivered

Hi. Your package was delivered Wed, 07/01/2020 at 2:35pm.

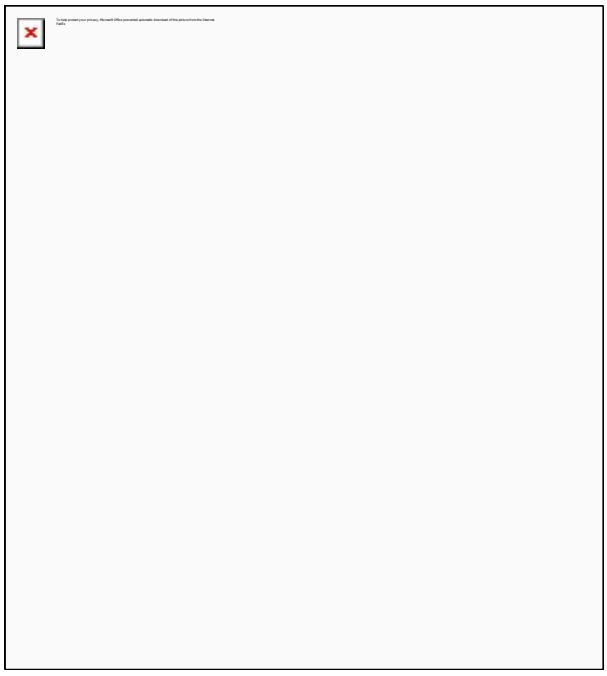
Delivered to 324 MONTEVIDEO RD, Avon, CT 06001
Given to customer.
No Signature Required

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 770793372536

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

TO	Jonathan Craig - Executive Director 324 Montevideo Road AVON, CT, US, 06001
REFERENCE	CTL01330 - Avon
SHIP DATE	Tue 6/30/2020 12:00 AM
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	AVON, CT, US, 06001
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 1, 2020 12:32 PM
To: Kristina Cottone
Subject: FedEx Shipment 770793246043: Your package has been delivered

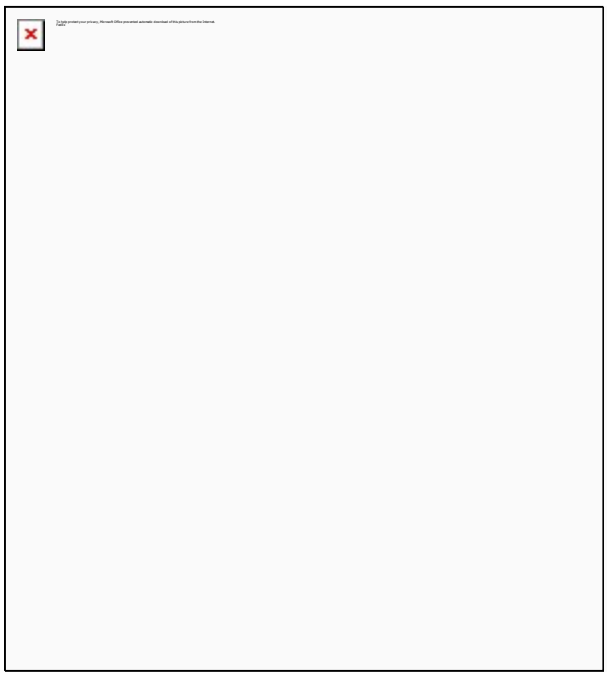
Hi. Your package was delivered Wed, 07/01/2020 at 12:30pm.

Delivered to 60 W MAIN ST, Avon, CT 06001
Received by KMANSON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	770793246043
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	ATTN: Building Department Raymond S 60 West Main Street AVON, CT, US, 06001

REFERENCE	CTL01330 - Avon
SHIP DATE	Tue 6/30/2020 12:00 AM
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	AVON, CT, US, 06001
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 1, 2020 12:32 PM
To: Kristina Cottone
Subject: FedEx Shipment 770793272772: Your package has been delivered

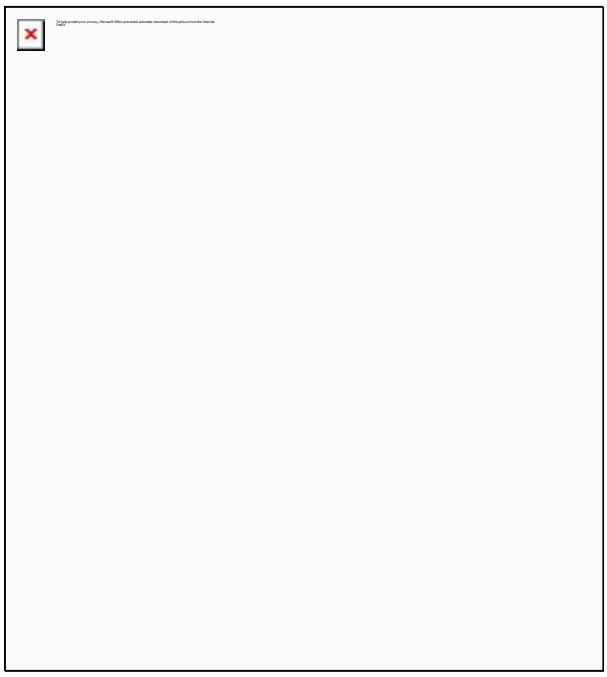
Hi. Your package was delivered Wed, 07/01/2020 at 12:30pm.

Delivered to 60 W MAIN ST, Avon, CT 06001
Received by KMANSON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	770793272772
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	ATTN: Town Manager Brandon R 60 West Main Street AVON, CT, US, 06001

REFERENCE	CTL01330 - Avon
SHIP DATE	Tue 6/30/2020 12:00 AM
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	AVON, CT, US, 06001
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL & ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS
S1–S4	MODIFICATION DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I–90 WEST/MASSACHUETTS TURNPIKE. HEAD NORTHEAST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I–90 EAST/MASSPIKE WEST/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I–90 WEST/MASSACHUETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I–90 WEST/MASSACHUETTS TURNPIKE. FOLLOW I–90 WEST/MASSACHUETTS TURNPIKE AND I–84 TO GARDEN STREET IN HARTFORD. TAKE EXIT 48 FROM I–84. MERGE ONTO I–90 WEST/MASSACHUETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I–84 TOWARD US–20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I–84. TAKE EXIT 48 TOWARD ASYLUM STREET. TAKE ASYLUM AVE, US–44 WEST AND MONTEVIDEO ROAD TO YOUR DESTINATION IN AVON. MERGE ONTO GARDEN STREET. TURN RIGHT ONTO ASYLUM AVE. TURN RIGHT ONTO TROUT BROOK DRIVE. TURN LEFT ONTO US–44 WEST/ALBANY AVE. TURN RIGHT ONTO PARSONS WAY. TURN LEFT ONTO OKOLICA LANE. TURN RIGHT ONTO MONTEVIDO ROAD. TURN RIGHT ONTO GIBRALTAR LANE. TURN RIGHT.

LOCATION MAP

PROJECT

LTE 7C/5G NR/RETROFIT

SITE NAME

AVON-MONTEVIDEO ROAD

CELL SITE ID

CTL01330

FA SITE NUMBER

10141394

PACE ID

MRCTB045381/MRCTB045327
MRCTB045308/MRCTB045326

SITE ADDRESS

324 MONTEVIDEO ROAD
AVON, CT 06001

STRUCTURE TYPE

LATTICE

PROJECT TEAM

PROJECT MANAGER

smartlink

ENGINEER

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

SCOPE OF WORK (PER LTE RFDS, DATED 07/20/2020, V2.00):

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

TOWER

- REMOVE (3) OPA–65R–LCUU–H8 PANEL ANTENNAS
- REMOVE (3) SBNH–1D6565C PANEL ANTENNAS
- INSTALL (3) PANEL ANTENNAS
- REMOVE (9) RRUS–11
- INSTALL (3) RRUS–32 B2
- INSTALL (3) 4449 B5/B12
- INSTALL (3) RRUS–E2 B29
- INSTALL TOWER MODIFICATIONS

GROUND

- ADD 6630 FOR 5G 850

PROJECT SUMMARY

SITE NAME:	AVON–MONTEVIDEO ROAD	
CELL SITE ID:	CTL01330	
FA SITE #:	10141394	
SITE ADDRESS:	324 MONTEVIDEO ROAD AVON, CT 06001	
COUNTY:	HARTFORD	
SITE COORDINATES: LATITUDE:	41.8117970° N	(NAD 83)
LONGITUDE:	72.7987670° W	(NAD 83)
ELEVATION:	±937'	(AMSL)
RAD CENTER	±70'	(AGL)
LANDLORD:	THE TALCOTT MOUNTAIN SCIENCE CENTER FOR STUDENT INVOLVEMENT, INC. 324 MONTEVIDEO ROAD AVON, CT 06001	
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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at&t

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
10-20-2020

No.	Submittal / Revision	App'd	Date
6	REVISED FOR PERMIT	BMM	10/20/20
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2	REVISED FOR PERMIT	BMM	06/29/20
1	ISSUED FOR PERMIT	BMM	06/24/20
0	ISSUED FOR REVIEW	BMM	04/13/20

Drawn: BMM Date: 04/13/20
Designed: ASW Date: 04/13/20
Checked: AJD Date: 04/13/20

Project Number: 499-006

Project Title: AVON - MONTEVIDEO ROAD
CTL01330
FA# 10141394
324 MONTEVIDEO ROAD
AVON, CT 06001

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 10/20/20
CD

Drawing Title: **TITLE PAGE**

Drawing Number: **T1**

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

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

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

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

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

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

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

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

PART 2 – EXECUTION

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

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

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

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

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

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

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

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

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

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

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

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

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

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

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

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

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

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

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

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

G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

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

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

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

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

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

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

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

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

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
----------	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
OR ⊗	GROUND ROD
OR ⊠	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
G	GROUND CONDUCTOR
DCP DCP	DC POWER AND FIBER OPTIC TRUNK CABLES
DC DC	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 Scale: AS NOTED
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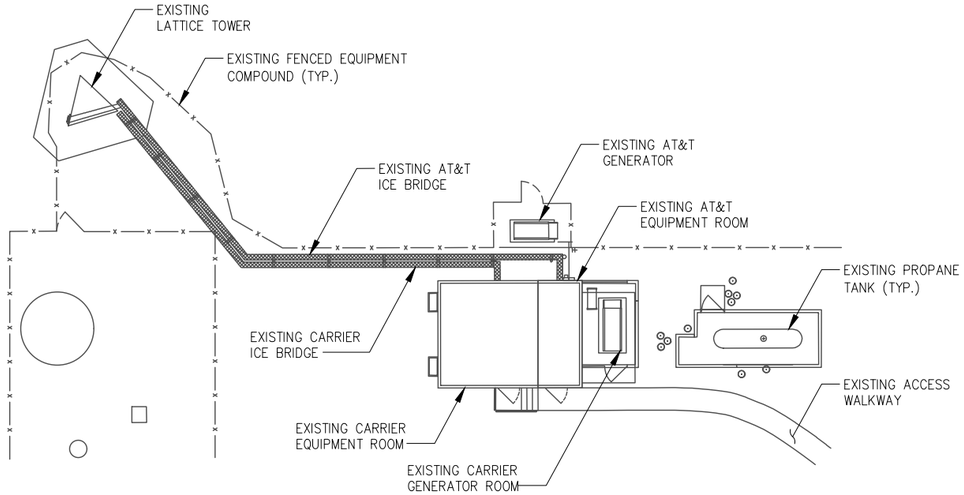
Drawing Title
GENERAL NOTES

Drawing Number
C1

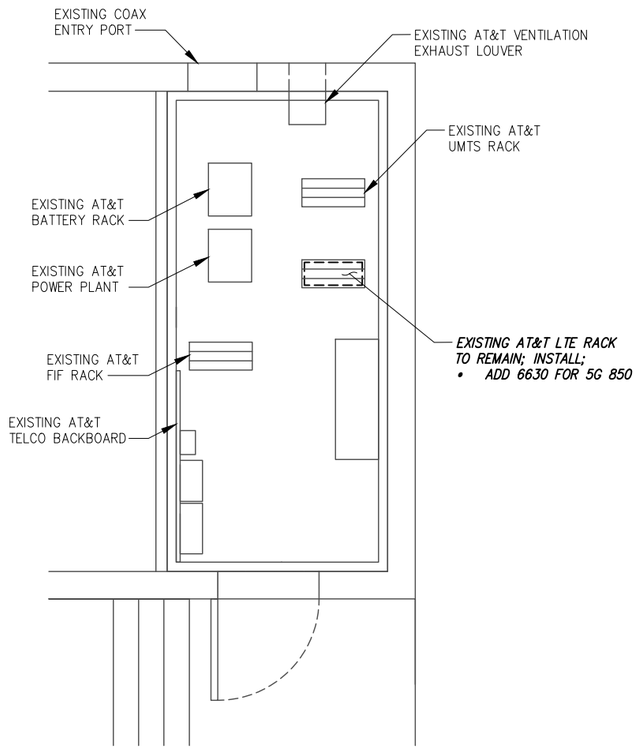


N

TRUE NORTH

1 OVERALL SITE PLAN
SCALE: AS NOTED

GRAPHIC SCALE:
30' 15' 0 15' 30'
SCALE (11x17): 1" = 30'-0"
SCALE (22x34): 1" = 15'-0"



N

TRUE NORTH

1 ENLARGED EQUIPMENT PLAN
SCALE: AS NOTED

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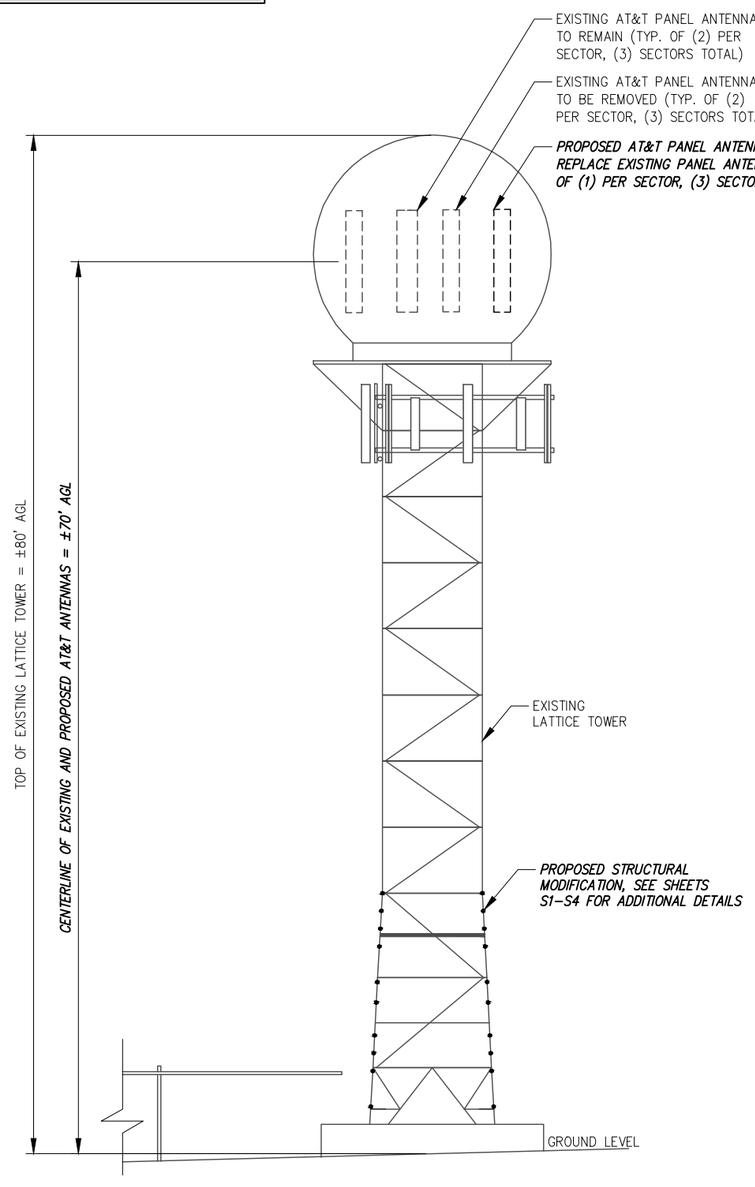
CD

Drawing Title
OVERALL & ENLARGED SITE PLAN

Drawing Number
C2

NOTE:
- 3 FEET SEPERATION BETWEEN LTE ANTENNAS
- 6 FEET MINIMUM SEPARATION BEWTWEEN 700BC & 700 DE



1 ELEVATION VIEW
NOT TO SCALE

NOTE:
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE TOWER, SEE 'STRUCTURAL ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 08/20/20. SEE SHEETS S1-S4 FOR ADDITIONAL MODIFICATION DETAILS.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY DATED 10/20/20.

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 07/20/20, V 2.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	REMOVED ANTENNA MANF/MODEL	FINAL ANTENNA MANF/MODEL	TMA/ DIPLEXER	RRUS	AZIMUTH	ANTENNA ℄ HEIGHT	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A-1	*(P) LTE 700/850/ 1900/5G 850*	CCI OPA-65R-LCUU-H8	*CCI DMP65R-BU8DA*	--	*(1) (P) RRUS-32 B2 (1) (P) 4449 B5/B12*	*90°*	*±70'*	SEE A-3 FOR FIBER INFORMATION	--	(3) (E) DC/FIBER 'SQUID' (1) (E) DC ONLY 'SQUID'
	A-2	--	ANDREW SBNH-1D6565C	--	--	--	--	--	--	--	
	A-3	(E) LTE 700/AWS	--	KATHREIN 800-10966	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A	90°	±70'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-4	(E) UMTS 850 LTE 700/ 1900/WCS	--	CCI TPA-65R-LCUUUU-H8	--	(1) (E) RRUS-32 B2 (1) (E) RRUS-11 B5 (1) (E) RRUS-32 B30 *(1) (P) RRUS-E2 B29*	90°	±70'	SEE A-3 FOR FIBER INFORMATION	--	
BETA	B-1	*(P) LTE 700/850/ 1900/5G 850*	CCI OPA-65R-LCUU-H8	*CCI DMP65R-BU8DA*	--	*(1) (P) RRUS-32 B2 (1) (P) 4449 B5/B12*	*210°*	*±70'*	SEE B-3 FOR FIBER INFORMATION	--	
	B-2	--	ANDREW SBNH-1D6565C	--	--	--	--	--	--	--	
	B-3	(E) LTE 700/AWS	--	KATHREIN 800-10966	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A	210°	±70'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	B-4	(E) UMTS 850 LTE 700/ 1900/WCS	--	CCI TPA-65R-LCUUUU-H8	--	(1) (E) RRUS-32 B2 (1) (E) RRUS-11 B5 (1) (E) RRUS-32 B30 *(1) (P) RRUS-E2 B29*	210°	±70'	SEE B-3 FOR FIBER INFORMATION	--	
GAMMA	G-1	*(P) LTE 700/850/ 1900/5G 850*	CCI OPA-65R-LCUU-H8	*CCI DMP65R-BU8DA*	--	*(1) (P) RRUS-32 B2 (1) (P) 4449 B5/B12*	*330°*	*±70'*	SEE G-3 FOR FIBER INFORMATION	--	
	G-2	--	ANDREW SBNH-1D6565C	--	--	--	--	--	--	--	
	G-3	(E) LTE 700/AWS	--	KATHREIN 800-10966	--	(1) (E) B14 4478 (1) (E) RRUS-32 B66A	330°	±70'	(2) (E) FIBER CABLE (4) (E) DC CABLES	--	
	G-4	(E) UMTS 850 LTE 700/ 1900/WCS	--	CCI TPA-65R-LCUUUU-H8	--	(1) (E) RRUS-32 B2 (1) (E) RRUS-11 B5 (1) (E) RRUS-32 B30 *(1) (P) RRUS-E2 B29*	330°	±70'	SEE G-3 FOR FIBER INFORMATION	--	

2 AT&T ANTENNA SCHEDULE
NOT TO SCALE

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

at&t

STATE OF CONNECTICUT JOHN S. STEVENS 24705 LICENSED PROFESSIONAL ENGINEER
10-20-2020

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0	ISSUED FOR REVIEW	BMM	04/13/20

Drawn: BMM Date: 04/13/20
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Checked: AJD Date: 04/13/20

Project Number: 499-006

Project Title:
AVON - MONTEVIDEO ROAD
CTL01330
FA# 10141394
324 MONTEVIDEO ROAD
AVON, CT 06001

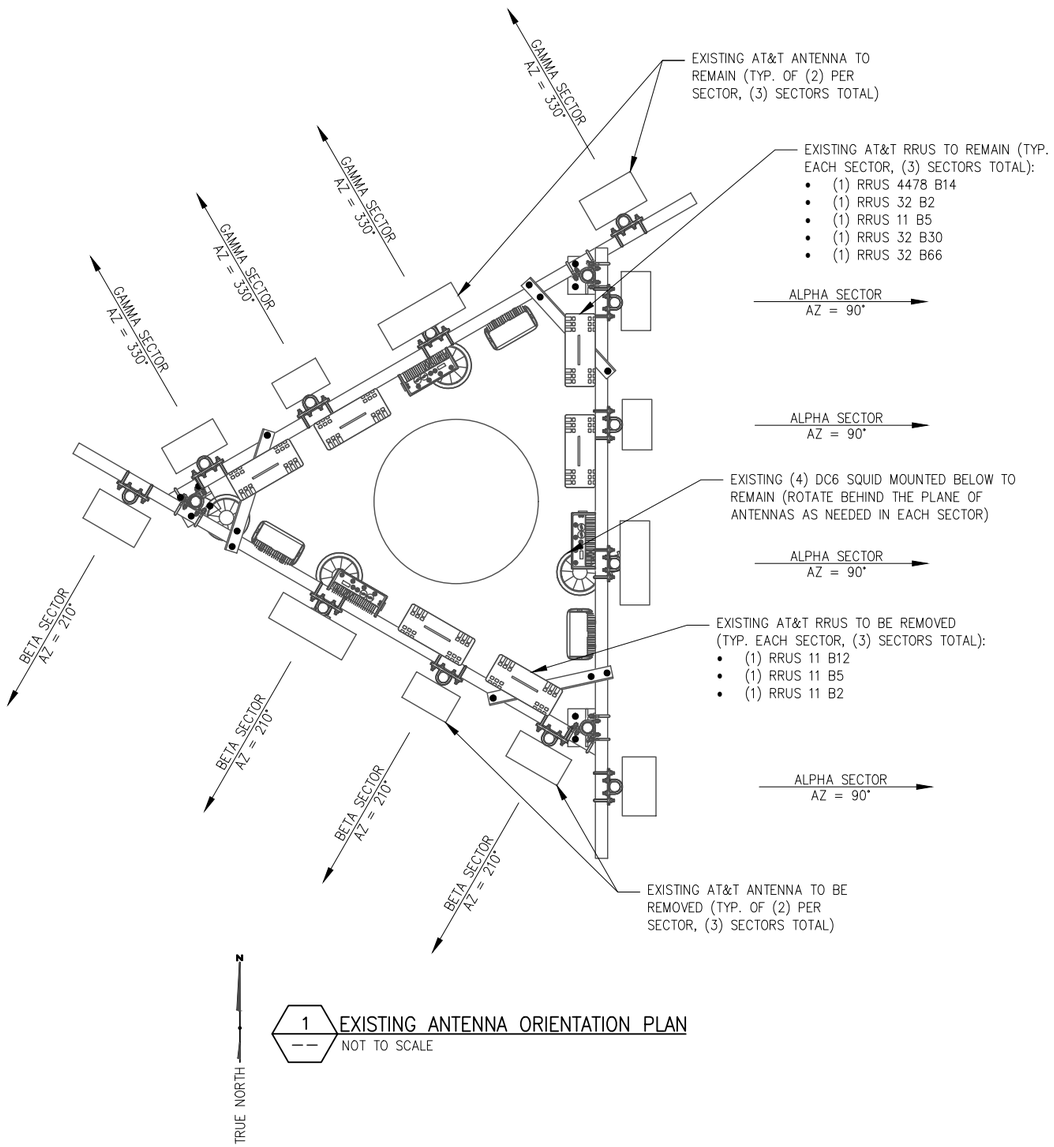
Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 10/20/20
CD

Drawing Title
ELEVATION VIEW

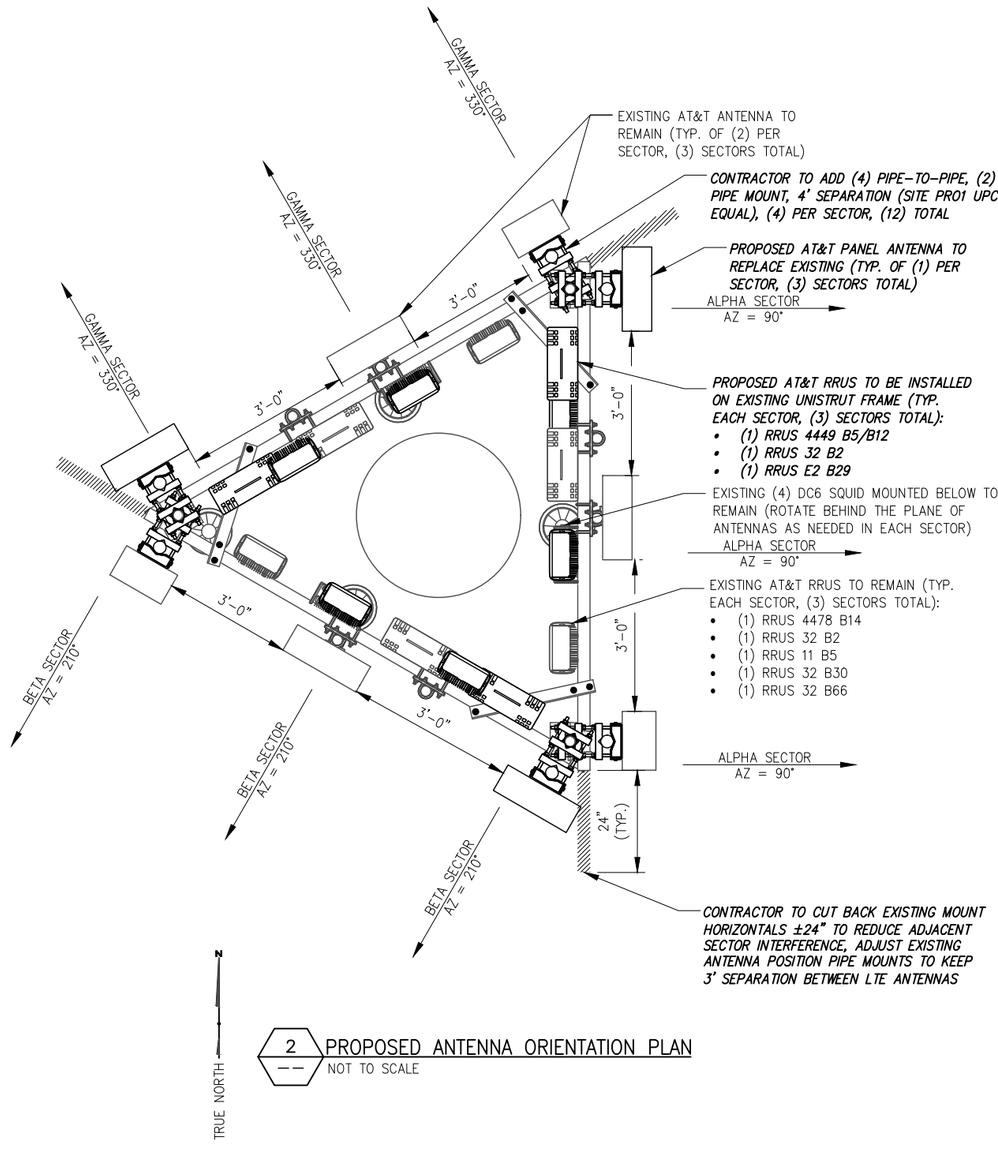
Drawing Number
C3

NOTE:
- 3 FEET SEPERATION BETWEEN LTE ANTENNAS
- 6 FEET MINIMUM SEPARATION BEWTWEEN 700BC & 700 DE



1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE

NOTE:
- *FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE TOWER, SEE 'STRUCTURAL ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 08/20/20. SEE SHEETS S1-S4 FOR ADDITIONAL MODIFICATION DETAILS.*
- *FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY DATED 10/20/20.*



2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

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Albany, NY 12205
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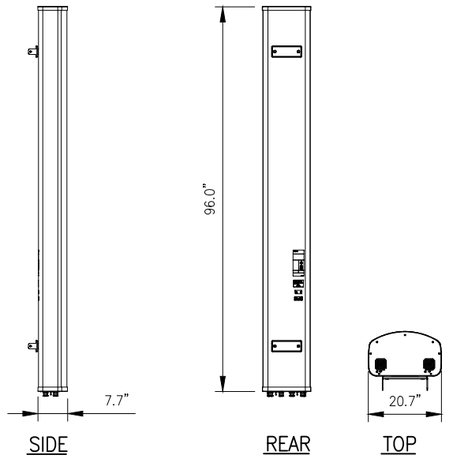
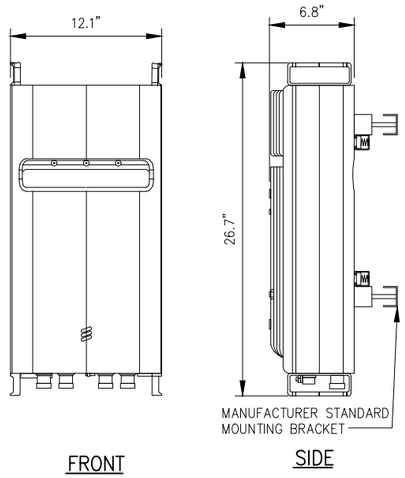
Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4



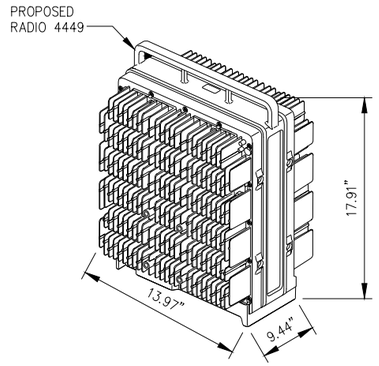
CCI MODEL NO.:	DMP65R-BU8DA
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	(96.0"x20.7"x7.7")
WEIGHT, W/ PRE-MOUNTED BRACKETS:	95.7 LBS
CONNECTOR:	7-16 DIN FEMALE

1 — ANTENNA DETAIL
NOT TO SCALE



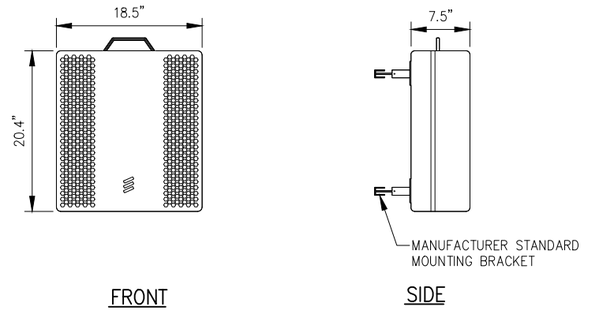
RRUS-32 B2 SPECIFICATIONS
- HxWxD, (INCHES) : 26.7"x12.1"x6.8"
- WEIGHT (LBS) : 50.8
- COLOR : GRAY

2 — ERICSSON RRUS-32 B2 DETAIL
NOT TO SCALE

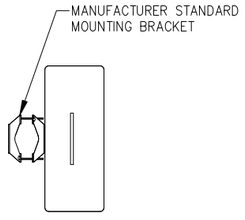


RADIO 4449 SPECIFICATIONS
- HxWxD, (INCHES) : 17.91"x13.97"x9.44"
- WEIGHT (LBS) : 70.54
- COLOR : GRAY

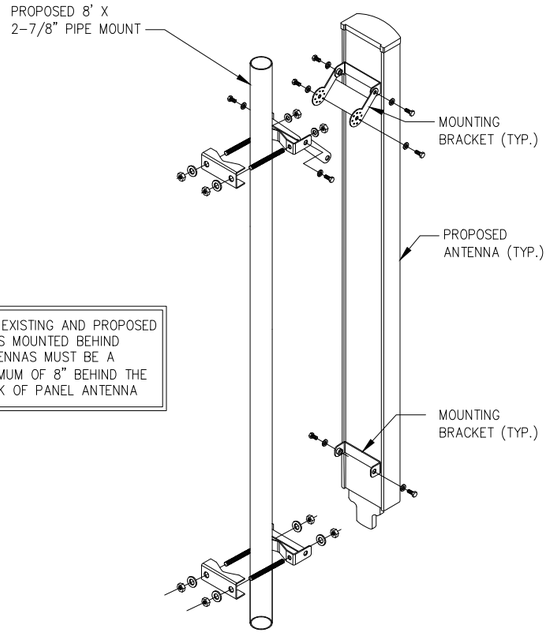
3 — ERICSSON RADIO 4449 DETAIL
NOT TO SCALE



RRUS-E2 B29 SPECIFICATIONS
- HXWXD, (INCHES) : 20.4"X18.5"X7.5"
- WEIGHT (LBS) : 60
- COLOR : GRAY



4 — ERICSSON RRUS-E2 B29 MOUNTING DETAIL
NOT TO SCALE



ALL EXISTING AND PROPOSED RRUS MOUNTED BEHIND ANTENNAS MUST BE A MINIMUM OF 8" BEHIND THE BACK OF PANEL ANTENNA

5 — ANTENNA MOUNTING DETAIL
NOT TO SCALE

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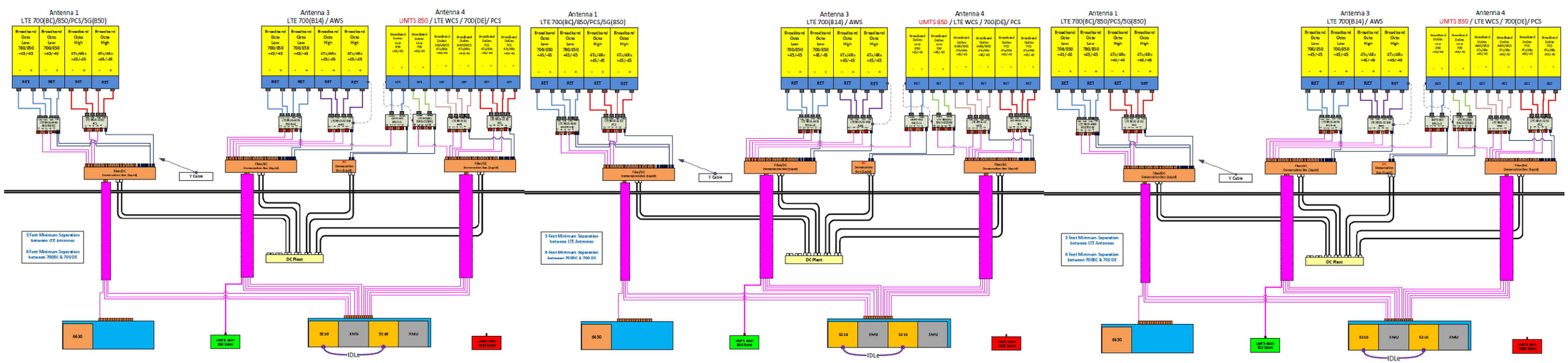
CD

Drawing Title
EQUIPMENT DETAILS

Drawing Number
C5



ALPHA SECTOR

BETA SECTOR

GAMMA SECTOR

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
NOT TO SCALE

*BASED ON LTE RFDS,
DATED 07/20/2020, V2.00

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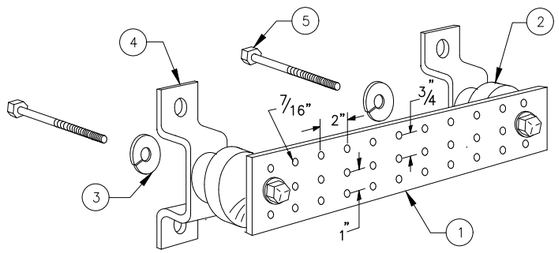
Drawing Title
PLUMBING DIAGRAM

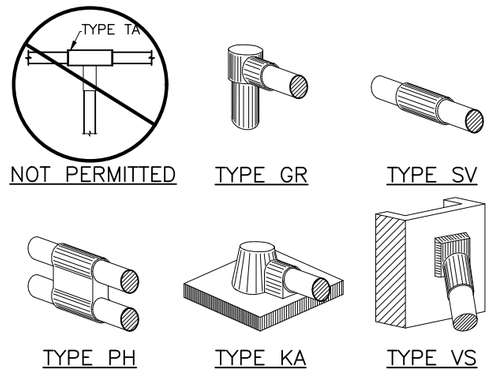
Drawing Number
C6



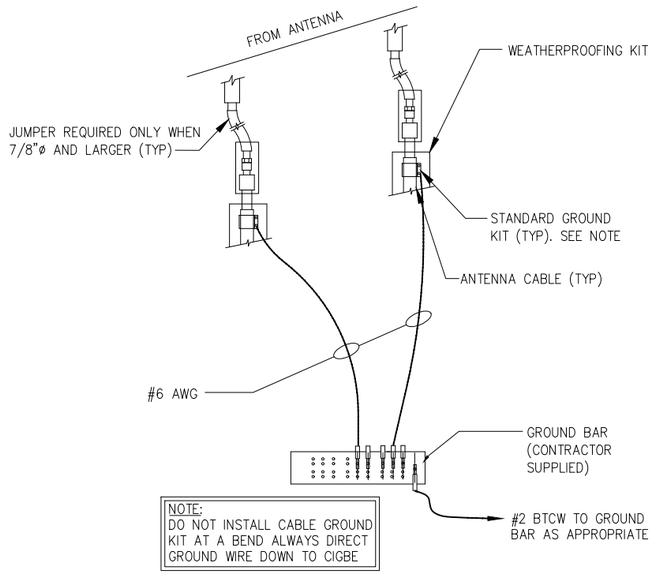
LEGEND

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"

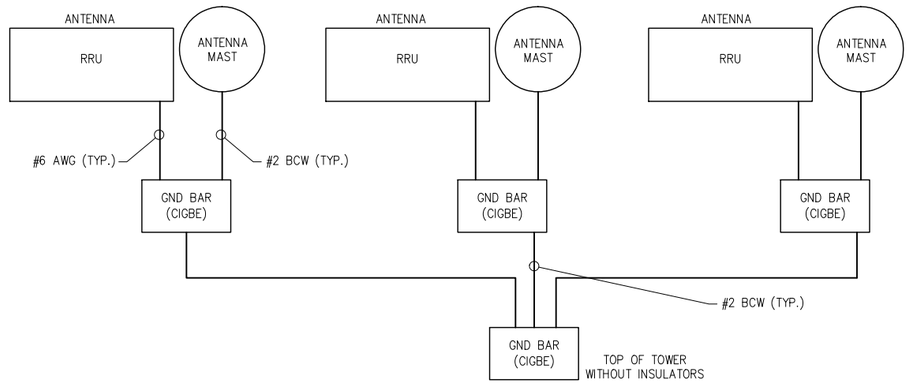
1 — GROUND BAR
NOT TO SCALE



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

INFINIGY
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Drawing Title
GROUNDING DETAILS

Drawing Number
C7