After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

September 1st 2022

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

RE: **Notice of Exempt Modification for AT&T Wireless**
Crown Site ID#876312; AT&T Site ID CTL02173
2755 State Street, Hamden, CT 06517
Latitude: 41.355464 / Longitude: -72.890314

Dear Ms. Bachman:

AT&T currently maintains (12) antennas at the 112-foot mounts on the existing 120-foot lattice Tower located at **2755 State Street, Hamden, CT.** The property is owned by Hamden Storage LLC, and the Tower by Crown Castle. AT&T now intends to replace six (9) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:

Tower:

REMOVE AND REPLACE
(3) CCI HPA-65R-BUU-H6 Antennas (**REMOVE**), (3) Ericsson – AIR6449 N77D (**REPLACE**), (3) Ericsson – AIR6419 N77G (antennas stacked) (**REPLACE**)
(3) Quintel QS66512-2 Antennas (**REMOVE**), (3) CCI DMP65R-BU6DA-K Antennas (**REPLACE**)
(3) Powerwave 7770 Antennas (**REMOVE**), (3) CCI TPA-65R-BU6DA-K Antennas (**REPLACE)**
(3) Powerwave LGP21401 TMAs (**REMOVE**)
(3) Commscope ATSBT-TOP-FF-4G Bias Tee TMAs (**REMOVE**)
(3) Ericsson RRUS 11 B12 Radios (**REMOVE**), (3) Ericsson 4449 B5/B12 Radios (**REPLACE**)
(6) Powerwave LGP13519 Diplexers (**REMOVE**)
(6) CCI TPX 0708219 Diplexers (**REMOVE**)
(6) 1 5/8" Coax cables (**REMOVE**), (3) 7/8" 6AWG DC Cables (**REPLACE**) (1) 3/8" 24 Pair Fiber Cables (**REPLACE)**
INSTALL
(3) Ericsson 4478 B14 Radios
(3) Ericsson 4426 B66 Radios
(3) Y Cables to dual band radios
(1) Raycap DC9-48-60-24-8C – EV Squid

CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

Ground:

Remove:

(3) ATSBT-Bottom-FF-4G Bias Tees
(3) Battery Strings
(1) Battery Rack

Install:

(1) 6648 W/ XCEDE Cable
(1) 6630 Module
(1) Battery Rack
(3) Battery Strings
(1) IDLe Cable
(9) Vertical Up-Converters
(4) Rectifiers in Existing PowerPlant
(1) Fiber Management Box

The facility was approved by the Town of Hamden Planning & Zoning Commission on April 8, 1997.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to Mayor Lauren Garrett, Erik Johnson, Acting Town Planner, and property owner, Hamden Storage, LLC.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

Sincerely,

Katie Adams
Crown Castle, Agent for AT&T
kadams@nbcllc.com
781-392-7547

cc:

Mayor Lauren Garrett
Town of Hamden
2750 Dixwell Avenue
Hamden, CT 06518

Erik Johnson, Acting Town Planner
Town of Hamden
3rd Floor, Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Hamden Storage LLC, Property Owner
228 Park Ave S
New York, NY 10003-1502

Katie Adams

From: TrackingUpdates@fedex.com
Sent: Friday, September 2, 2022 9:48 AM
To: Katie Adams
Subject: FedEx Shipment 777826630766: Your package has been delivered

Hi. Your package was delivered Fri, 09/02/2022 at 9:40am.

Delivered to 2750 DIXWELL AVE, HAMDEN, CT 06518

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	777826630766
FROM	NB+C 100 Apollo Drive Suite 303 CHELMSFORD, MA, US, 01824
TO	Town of Hamden Mayor Lauren Garrett 2750 Dixwell Avenue HAMDEN, CT, US, 06518
REFERENCE	100788 - CSC

Katie Adams

From: TrackingUpdates@fedex.com
Sent: Friday, September 2, 2022 9:48 AM
To: Katie Adams
Subject: FedEx Shipment 777826742604: Your package has been delivered

Hi. Your package was delivered Fri, 09/02/2022 at 9:40am.

Delivered to 2750 DIXWELL AVE, HAMDEN, CT 06518

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777826742604

FROM
NB+C
100 Apollo Drive
Suite 303
CHELMSFORD, MA, US, 01824

TO
Town of Hamden
Erik Johnson, Acting Town Planner
2750 Dixwell Avenue
3rd Floor, Government Center
HAMDEN, CT, US, 06518

Katie Adams

From: TrackingUpdates@fedex.com
Sent: Friday, September 2, 2022 10:28 AM
To: Katie Adams
Subject: FedEx Shipment 777828245727: Your package delivery has been updated

Hi. The scheduled delivery of your package has been updated to:

ON TIME

SCHEDULED DELIVERY

Tue 9/06/2022
estimated between 9:42am and 1:42pm

IN TRANSIT
NEW YORK, NY

MANAGE DELIVERY

TRACKING NUMBER 777828245727

FROM	NB+C 100 Apollo Drive Suite 303 CHELMSFORD, MA, US, 01824
TO	Hamden Storage LLC 228 Park Ave S NEW YORK, NY, US, 10003
REFERENCE	100788 - CSC
SHIPPER REFERENCE	100788 - CSC
SHIP DATE	Thu 9/01/2022 06:11 PM
PACKAGING TYPE	FedEx Pak
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	NEW YORK, NY, US, 10003
SPECIAL HANDLING	Deliver Weekday
STANDARD TRANSIT	Tue, 09/06/2022 by 4:30pm
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	2.00 LB
SERVICE TYPE	FedEx Standard Overnight

FOLLOW FEDEX

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:27 AM CDT 09/02/2022.

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 selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Exhibit A

Original Facility Approval

MINUTES: THE PLANNING AND ZONING COMMISSION, Town of Hamden, held a Public Hearing and Regular Meeting on Tuesday, April 8, 1997 at 7:30 p.m. in the Thornton Wilder Hall, Miller Library Complex. The following issues were discussed:

Mr. Roscow said the homes that would be impacted would be those in back of Mauro electric. Going up the street, each home blocks the view of the next. The antenna looks like a big osprey nest. The horizontal lines are much more objectionable. He does not see this as being objectionable. Mr. DeCaprio sees no objection. Mr. McDonough understands the concern of the neighbors regarding a tower park, but this is far from that. This is insignificant. Mr. Roscow said there is a moratorium, there are horizontal wires running everywhere. The only homes with a view would look down on the roof of Mauro Electric, which is more objectionable. Mr. Kops said the applicant has a copy of the recommended conditions of approval.

Mr. DeCaprio made a motion to approve Special Permit 96-800/CAM, subject to the following conditions. The proposal conforms to the basic site plan objectives specified in Section 844 of the Hamden Zoning Regulations. The application also meets the Special Permit Threshold Decision criteria specified in Section 826.The proposal should have no adverse impact on the health, safety and welfare of the surrounding area. The proposal is also consistent with all applicable goals and policies in Section 22a -92 of the General Statutes and contains sufficient safeguards to mitigate adverse impacts on both Coastal resources and future water dependent development activities.

1. The Special Permit must be recorded prior to the issuance of a zoning permit, and only after the conditions necessary for the zoning permit have been met.

2. Prior to the issuance of a zoning permit the applicant must:

   a. Provide revised plans listing all conditions of approval;
   b. Provide a bond in an amount approved by the Town Engineer and Town Planner;
   c. Obtain approval of an environmental assessment from the Federal Communications Commission, in accordance with the Environmental Policy Act of 1969.

3. The telecommunications facility must comply with all applicable Federal Communications Commission Radiofrequency Emissions Guidelines (FCC 96-326, adopted August 1, 1996, effective date January 1, 1997, as revised). At the end of each six month period, the applicant must submit to the Commission a report evaluating compliance, prepared by a qualified, independent company.

4. The tower/antenna must be designed to accommodate at least one additional carrier of personal services communications. The addition of any future carrier, however, will require the approval of the Planning and Zoning Commission.

TOWN OF HAMDEN

INTER-OFFICE MEMO

TO: Planning and Zoning Commission

FROM: Daniel W. Kops, Jr., Town Planner

RE: Special Permit #96-800/CAM
2755 State Street
Telecommunications Antenna

DATE: April 8, 1997

RECOMMENDED CONDITIONS OF APPROVAL

With the conditions noted below, the proposal conforms to the basic site plan objectives specified in Section 844 of the Hamden Zoning Regulations. The application also meets the Special Permit Threshold Decision criteria specified in Section 826. The proposal should have no adverse impact on the health, safety, and welfare of neighboring residents.

It is also consistent with all applicable goals and policies in Section 22a-92 of the General Statutes and contains sufficient safeguards to mitigate adverse impacts on both Coastal resources and future water dependent development activities. I therefore recommend approval of Special Permit/CAM #96-800 subject to the following conditions:

1. The Special Permit must be recorded prior to the issuance of a zoning permit, and only after the conditions necessary for the zoning permit have been met.

2. Prior to the issuance of a zoning permit the applicant must:

   a. Provide revised plans listing all conditions of approval;

   b. Provide a bond in an amount approved by the Town Engineer and Town Planner;

   c. Obtain approval of an environmental assessment from the Federal Communications Commission, in accordance with the Environmental Policy Act of 1969.

3. The telecommunications facility must comply with all applicable Federal Communications Commission Radiofrequency Emissions Guidelines (FCC 96-326, adopted August 1, 1996, effective date January 1, 1997, as revised). At the end of each six month period the applicant must submit to the Commission a report evaluating compliance, prepared by a qualified, independent company.

4. The tower/antenna must be designed to accommodate at least one additional carrier of personal services communications. The addition of any future carrier, however, will require the approval of the Planning and Zoning Commission.

5. All work must be completed by April 8, 2002, or the approval will be null and void.

DWK:tbm

Exhibit B

Property Card

Town of Hamden, CT

Property Listing Report

Map Block Lot	2332-008-00-0000	Building #	1	PID	20657	Account	

Property Information

Property Location	2755 STATE ST
Owner	HAMDEN STORAGE LLC
Co-Owner	na
Mailing Address	228 PARK AVE S NEW YORK NY 10003-1502
Land Use	3120 SELF STGE M96
Land Class	C
Zoning Code	T4
Census Tract	

Neighborhood	T
Acreage	3.03
Utilities	All Public
Lot Setting/Desc	Urban Level,Swampy
Book / Page	4847/0108
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built	1980
Building Desc.	SELF STGE M96
Building Style	Self Storage
Building Grade	C
Stories	1
Occupancy	51.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	Ind/Comm
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEILING ONLY
Rooms / Prtns	AVERAGE
Wall Height	
First Floor Use	NA
Foundation	NA

Report Created On 6/2/2022

Town of Hamden, CT

Property Listing Report | Map Block Lot 2332-008-00-0000 | Building # 1 | PID 20657 | Account

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		646310
Extras	6300	4410
Improvements		
Outbuildings	60800	42560
Land	550100	385070
Total	1540500	1078350

Outbuilding and Extra Features

Type	Description
PAVING-ASPHALT	48000 S.F.
SHED COM WOOD	192 S.F.
FENCE-6' CHAIN	1296 L.F.
HEAT, FORCED H/A	900 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	4800	4800
Slab	5700	0
Office	320	320
Apartment	580	580
Total Area	11400	5700

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
HAMDEN STORAGE LLC	4847/0108	2021-06-11	230010
HAMDEN STORAGE LLC	4847/0102	2021-06-11	1269990
DEBAJ LLC & AMODIO LOUIS G JR & FRANK E	4752/0276	2020-10-26	0
DEBAJ LLC AND AMODIO LOUIS G JR ET ALS	4752/0258	2020-10-26	0
DEBAJ LLC AND AMODIO ET ALS	4734/163-181	2020-09-03	0
DEBJAY LLC UND AND BANL OF AMERICA TRSTE	4690/0191	2020-04-15	0
AMODIO LOUIS G EST UND 1/2 INT &	4468/0127	2017-11-14	0
AMODIO LOUIS G EST UND 1/2 INT &	4468/0126	2017-11-14	0

Report Created On 6/2/2022

Town of Hamden, CT

Property Listing Report | Map Block Lot 2332-008-00-0000 | Building # 2 | PID 20657 | Account

Photo

Sketch

Primary Construction Details

Year Built	1980
Building Desc.	Ind/Comm
Building Style	Self Storage
Building Grade	C
Stories	1
Occupancy	51.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	SELF STGE M96
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	NONE
Ceiling / Wall	NONE
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	6150	6150
Slab	6150	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	12300	6150

Report Created On 6/2/2022

Town of Hamden, CT

Property Listing Report | Map Block Lot 2332-008-00-0000 | Building # 3 | PID 20657 | Account

Photo

Sketch

Primary Construction Details

Year Built	1980
Building Desc.	Ind/Comm
Building Style	Self Storage
Building Grade	C
Stories	1
Occupancy	62.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	SELF STGE M96
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	NONE
Ceiling / Wall	NONE
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	6400	6400
Slab	6400	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	12800	6400

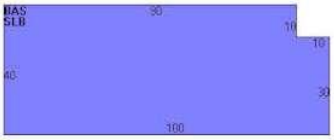
Report Created On 6/2/2022

Town of Hamden, CT

Property Listing Report | Map Block Lot 2332-008-00-0000 | Building # 4 | PID 20657 | Account

Photo

Sketch



Primary Construction Details

Year Built	1980
Building Desc.	Ind/Comm
Building Style	Self Storage
Building Grade	C
Stories	1
Occupancy	48.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	SELF STGE M96
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	NONE
Ceiling / Wall	NONE
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	3900	3900
Slab	3900	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	7800	3900

Report Created On 6/2/2022

Town of Hamden, CT

Property Listing Report | Map Block Lot 2332-008-00-0000 | Building # 5 | PID 20657 | Account

Photo

2332-008-00-0000 04/15/2015

Sketch

Primary Construction Details

Year Built	1980
Building Desc.	Ind/Comm
Building Style	Self Storage
Building Grade	C
Stories	1
Occupancy	98.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	SELF STGE M96
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	NONE
Ceiling / Wall	NONE
Rooms / Prtns	AVERAGE
Wall Height	9.00
First Floor Use	NA
Foundation	NA

Sub Areas

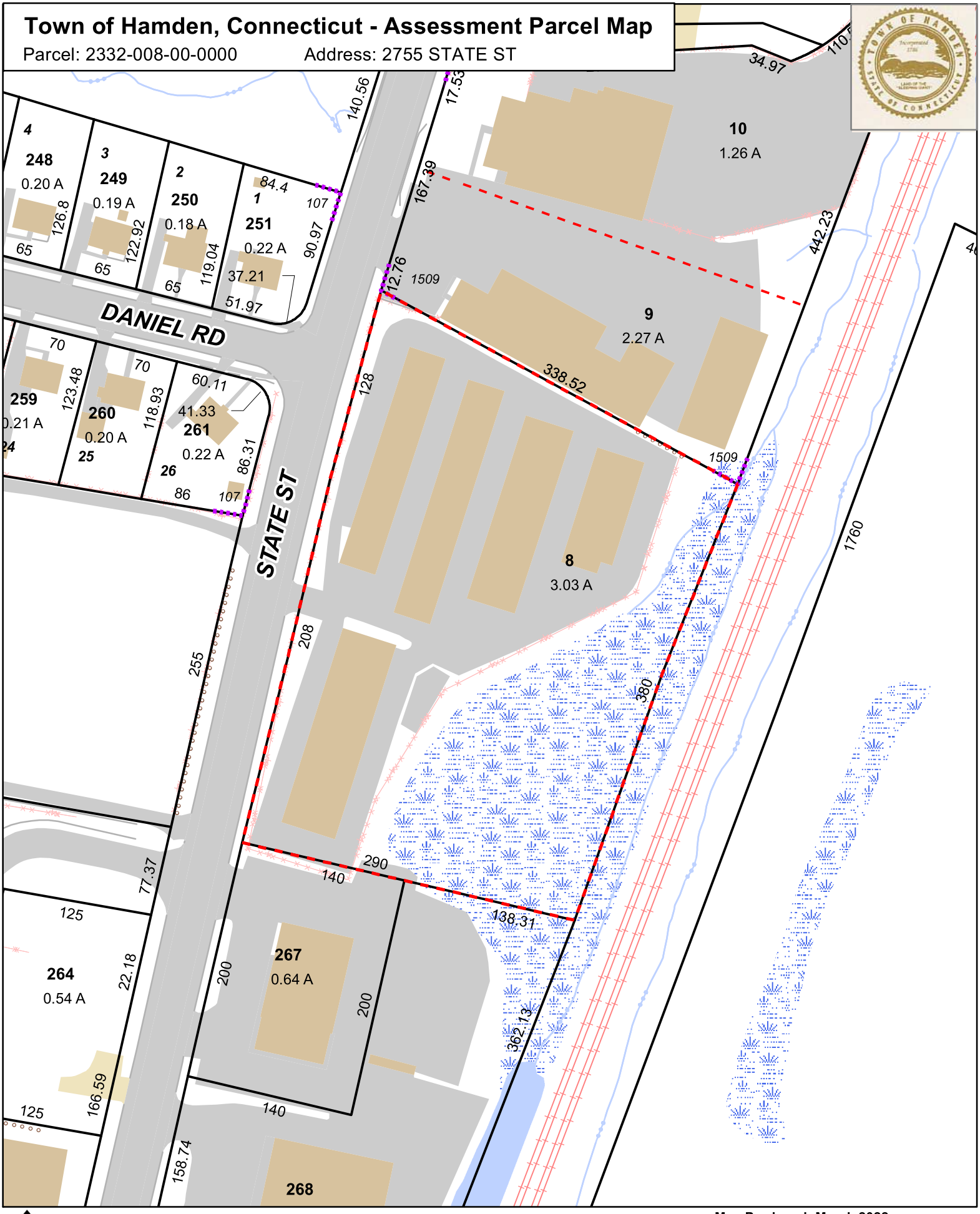
Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	7650	7650
Slab	7650	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	15300	7650

Report Created On 6/2/2022

Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 2332-008-00-0000 Address: 2755 STATE ST



N

Approximate Scale: 1 inch = 100 feet

0 50 100 150 200 Feet

Map Produced: March 2022

Exhibit C

Construction Drawings

AT&T

AT&T SITE NUMBER:	**CTL02173**
AT&T SITE NAME:	**HAMDEN SE**
AT&T FA CODE:	**10035219**
AT&T PACE NUMBER:	**MRCTB052184, MRCTB051060, MRCTB051341, MRCTB050969, MRCTB051337, MRCTB051310, MRCTB051541, MRCTB050906**
AT&T PROJECT:	**5G NR 1SR CBAND, BBU ADD, 5G NR 1DR-1, 4TX4RX SOFTWARE RETROFIT, LTE 4C, 5G NR 1SR, 5G NR 1SR CBAND, LTE 5C**
BUSINESS UNIT #:	**876312**
SITE ADDRESS:	**2755 STATE STREET HAMDEN, CT 06517**
COUNTY:	**NEW HAVEN**
SITE TYPE:	**SELF-SUPPORT TOWER**
TOWER HEIGHT:	**120'-0"**

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	MONTOWESE AMODIO SELF STORE
SITE ADDRESS:	2755 STATE STREET HAMDEN, CT 06517
COUNTY:	NEW HAVEN
MAP/PARCEL #:	2332-008-00-0000
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.355464°
LONGITUDE:	-72.890314°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	3'
CURRENT ZONING:	T4
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	HAMDEN STORAGE LLC 228 PARK AVE S NEW YORK, NY 10003
TOWER OWNER:	CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO. (203) 499-2000
TELCO PROVIDER:	LIGHT TOWER 855.91.FIBER

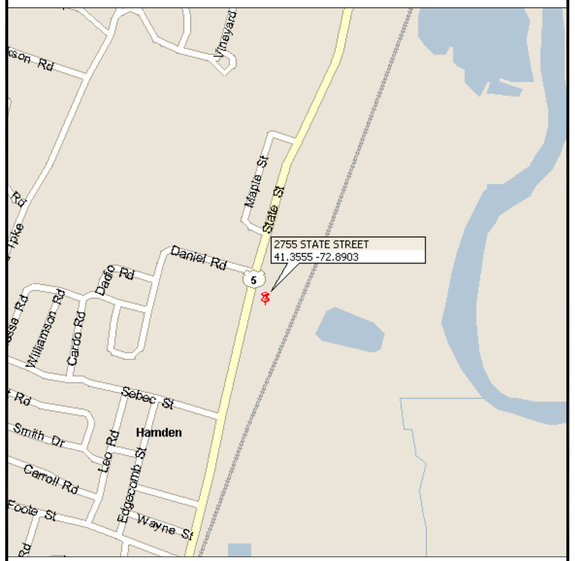
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT MOUNTING DETAILS
C-5	EQUIPMENT SPECS
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	MOUNT SPECS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277
	VERONICA CHAPMAN - PROJECT MANAGER VERONICA.CHAPMAN@CROWNCASTLE.COM
	JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM
	HEATHER MILLER - AES HEATHER.MILLER@CROWNCASTLE.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (3) POWERWAVE - 7770 ANTENNAS
- REMOVE (3) CCI - HPA-65R-BUU-H6 ANTENNAS
- REMOVE (3) QUINTEL - QS66512-2 ANTENNAS
- REMOVE (6) POWERWAVE TECH - LGP21401 TMAs
- REMOVE (3) COMMSCOPE - ATSBT-TOP-FF-4G BIAS TEE TMAs
- REMOVE (3) ERICSSON - RRUS-11 B12 RRUs
- REMOVE (6) POWERWAVE - LGP13519 DIPLEXERs
- REMOVE (6) CCI ANTENNAS - TPX-070821 DIPLEXERs
- REMOVE (6) COAX CABLES
- REMOVE (3) T-ARM MOUNT
- INSTALL MOUNT REPLACEMENT PER MOUNT

REPLACEMENT ANALYSIS REPORT BY INFINIGY DATED 3/1/22
- INSTALL (3) CCI - TPA-65R-BU6DA-K ANTENNAS
- INSTALL (6) ERICSSON - AIR6449 N77D(BELOW)+AIR6419 N77G(ABOVE) STACKED ANTENNAS
- INSTALL (3) CCI - DMP65R-BU6DA ANTENNAS
- INSTALL (3) ERICSSON - 4478 B14 RRUs
- INSTALL (3) ERICSSON - 4426 B66 RRUs
- INSTALL (3) ERICSSON - 4449 B5/B12 RRUs
- INSTALL (1) RAYCAP - DC9-48-60-24-8C-EV SQUID
- INSTALL (3) 6AWG DC CABLES
- INSTALL (1) 24 PAIR FIBER CABLE
- INSTALL (3) Y-CABLES

GROUND SCOPE OF WORK:
- REMOVE (3) ATSBT-BOTTOM-FF-4G BIAS TEE & (6) TPX-070821 DIPLEXERS FROM SHELTER
- REMOVE (3) BATTERY STRINGS
- REMOVE (1) BATTERY RACK
- INSTALL (1) BATTERY RACK
- INSTALL (3) BATTERY STRINGS
- INSTALL (4) RECTIFIERS
- INSTALL (1) 6648 WITH XCEDE
- INSTALL (1) 6630 (+IDLE)
- INSTALL (4) RECTIFIERS
- INSTALL (1) FIBER MANAGEMENT BOX (OUTSIDE SHELTER)

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: DATED:	CROWN CASTLE 3/11/22
MOUNT ANALYSIS: DATED:	INFINIGY ENGINEERING, PLLC 3/1/22
AC ELECTRICAL POWER DESIGN: DATED:	BY OTHERS
RFDS REVISION: DATED:	PRELIMINARY 8/7/21
ORDER ID:	556501
REVISION:	1

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T
SITE NUMBER: **CTL02173**

BU #: **876312**
MONTOWESE AMODIO SELF STORE

2755 STATE STREET
HAMDEN, CT 06517

EXISTING
120'-0" SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/25/22	JCO	PRELIMINARY REVIEW	MTJ
B	4/15/22	YX	PRELIMINARY REVIEW	MTJ
0	8/8/22	YX	CONSTRUCTION	MTJ

STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/8/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: T-1

REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
   THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: AT&T
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER....................40 ksi
   #5 BARS AND LARGER....................60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH....................3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   - #6 BARS AND LARGER....................2"
   - #5 BARS AND SMALLER....................1–1/2"

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   - SLAB AND WALLS....................3/4"
   - BEAMS AND COLUMNS....................1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   - 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   - 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE

SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

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AT&T
SITE NUMBER: **CTL02173**

BU #: **876312**
MONTOWESE AMODIO SELF STORE

2755 STATE STREET
HAMDEN, CT 06517

EXISTING
120'-0" SELF-SUPPORT TOWER

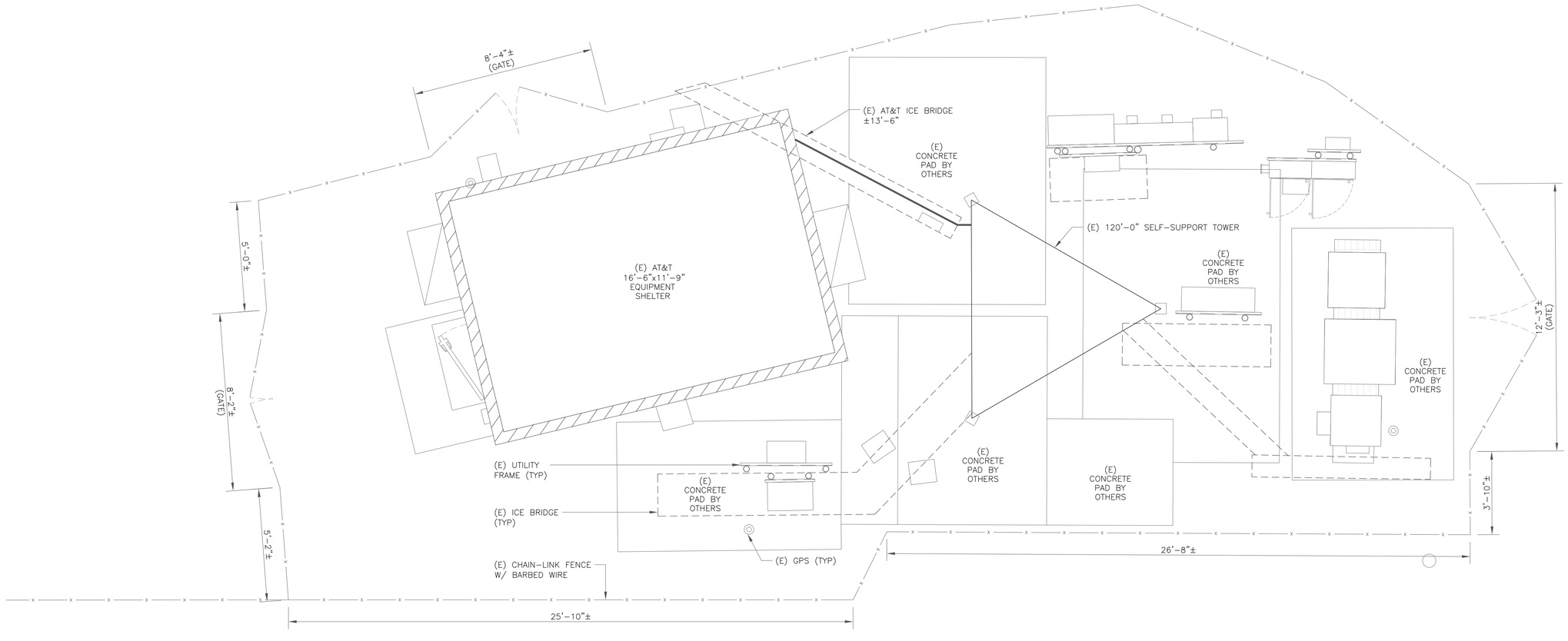
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/25/22	JCO	PRELIMINARY REVIEW	MTJ
B	4/15/22	YX	PRELIMINARY REVIEW	MTJ
0	8/8/22	YX	CONSTRUCTION	MTJ

STATE OF CONNECTICUT · CHAD TUTTLE · No. 23924 · LICENSED · PROFESSIONAL ENGINEER
8/8/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER:	REVISION:
T-2	0



1 SITE PLAN

SCALE: 2' 1' 0 2' 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)

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STATE OF CONNECTICUT
MICHAEL T. JANSEN
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/8/22

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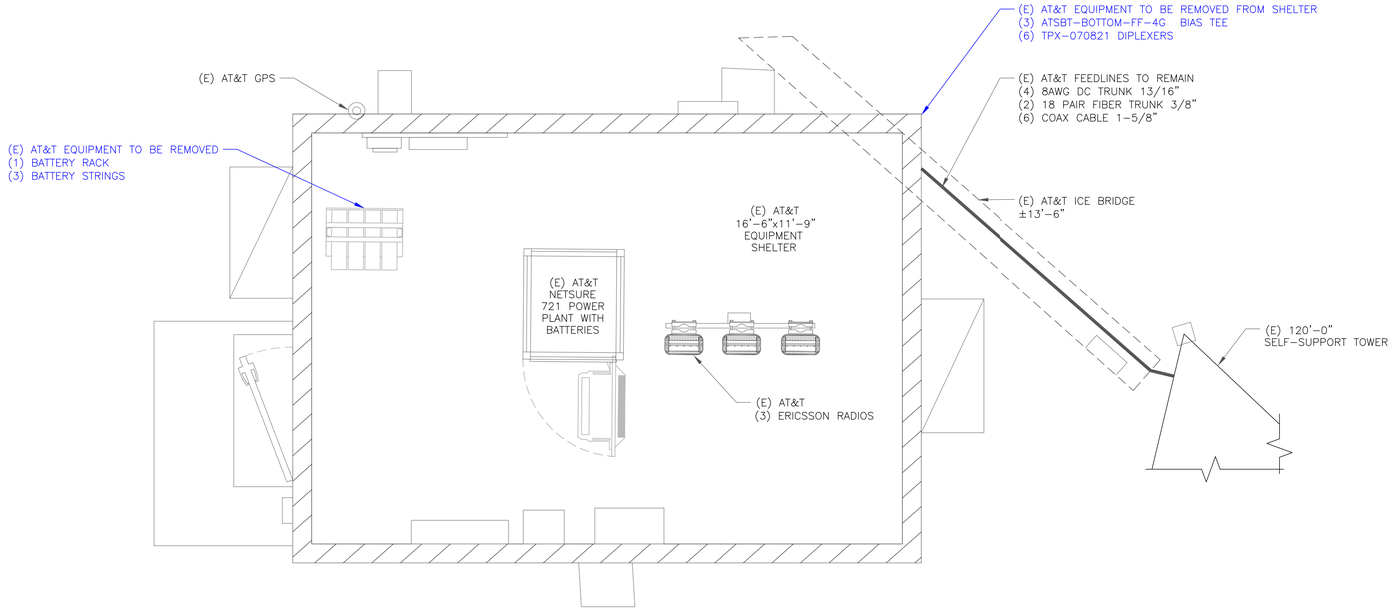
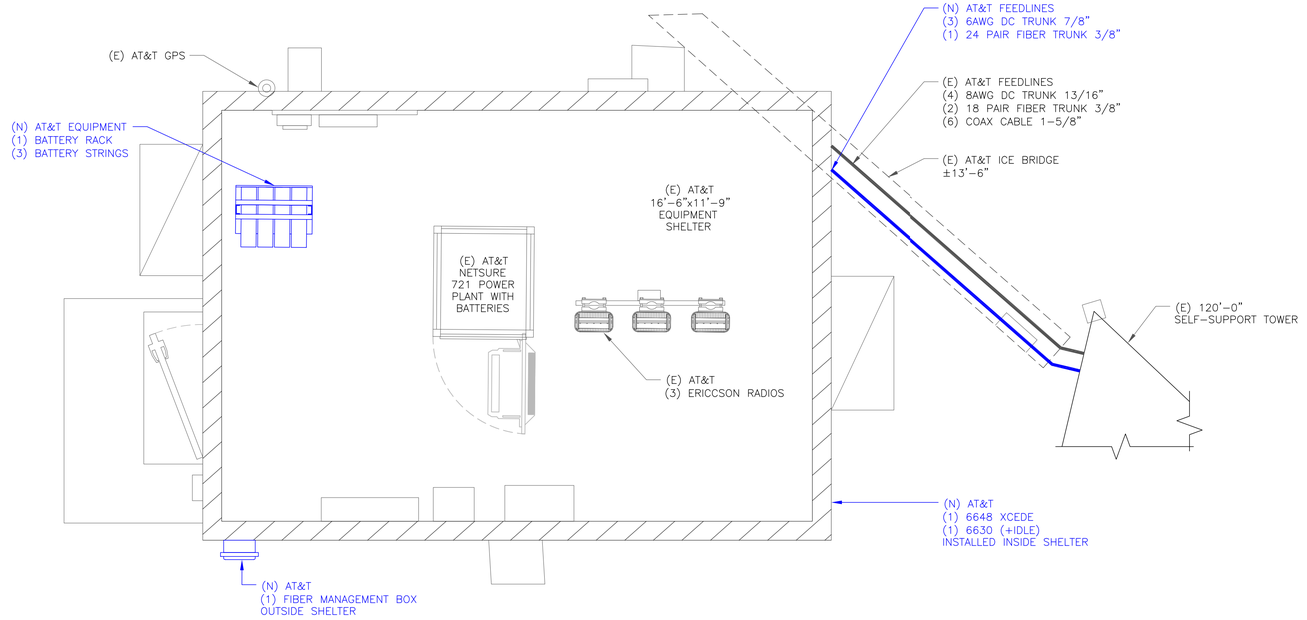
SHEET NUMBER: C-1.1

REVISION: 0



1 EXISTING EQUIPMENT PLAN

SCALE: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)



2 FINAL EQUIPMENT PLAN

SCALE: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

GROUND SCOPE OF WORK:

- REMOVE (3) ATSBT-BOTTOM-FF-4G BIAS TEE
- REMOVE (6) TPX-070821 DIPLEXERS
- INSTALL (1) 6673 FHG
- INSTALL (1) 6648 WITH XCEDE
- INSTALL (4) RECTIFIERS
- INSTALL (1) BATTERY RACK
- INSTALL (3) BATTERY STRINGS
- INSTALL (1) FIBER MANAGEMENT BOX (OUTSIDE SHELTER)

NOTE:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

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MONTOWESE AMODIO SELF STORE

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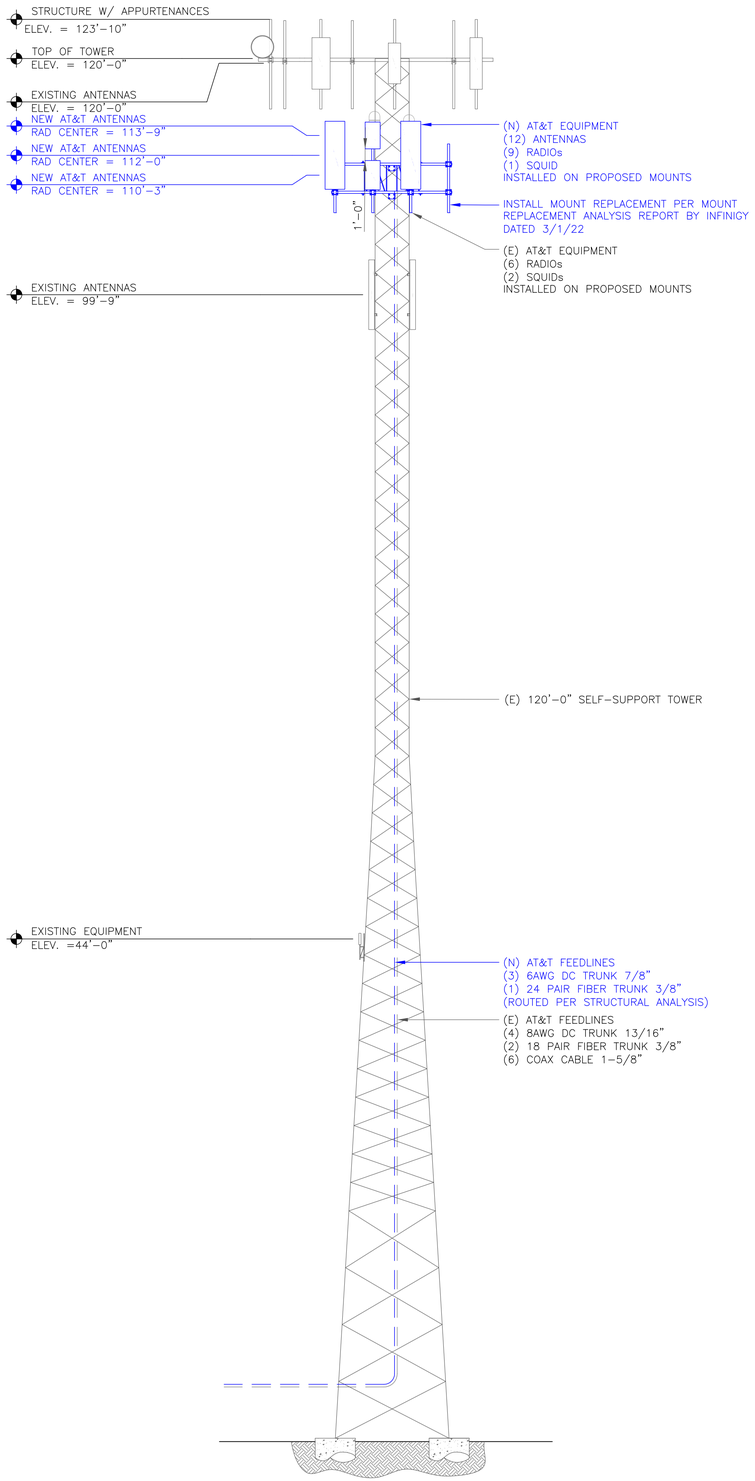
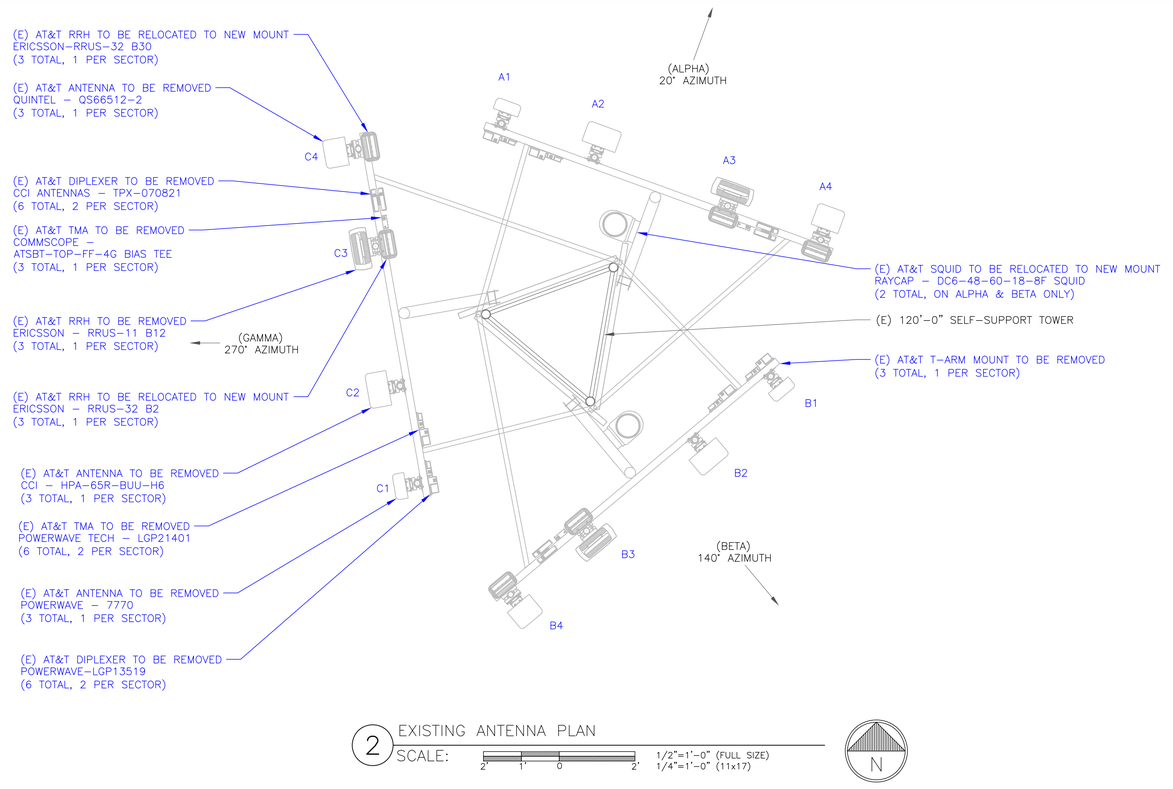
SHEET NUMBER: C-1.2

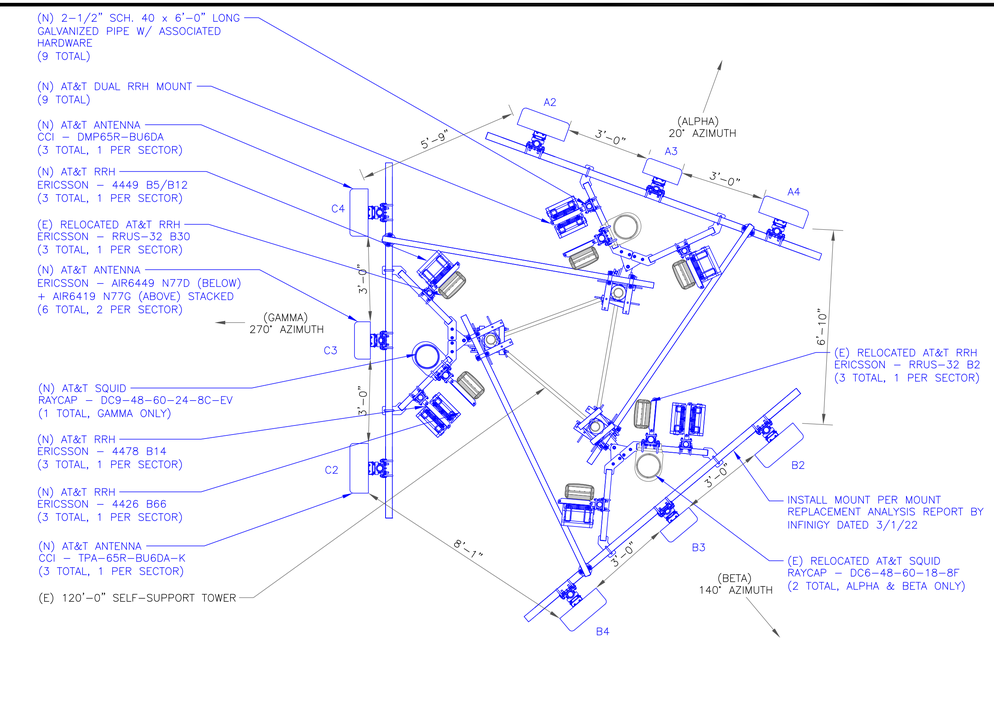
REVISION: 0



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)



3 FINAL ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

"LOOK UP" - CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700BC & 700DE ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.

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AT&T
SITE NUMBER: **CTL02173**

BU #: **876312**
MONTOWESE AMODIO SELF STORE

2755 STATE STREET
HAMDEN, CT 06517

EXISTING
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ISSUED FOR:

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B	4/15/22	YX	PRELIMINARY REVIEW	MTJ
0	8/8/22	YX	CONSTRUCTION	MTJ

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-2
REVISION: 0

NOTE: RFDS BEING USED
DATED 8/7/21 V
PRELIMINARY

FINAL ANTENNA AND FEEDLINE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL ON TOWER	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE
ALPHA SECTOR																		
A1	EMPTY MOUNT																	
A2	LTE/5G	NEW	20°	CCI – TPA-65R-BU6DA-K	112'-0"	0°	4°/4°/4°/ 2°/4°/2°	–	–	–	–	(1)(E) RAYCAP – DC6-48-60-18-8F SQUID	(2)(E) 8AWG DC TRUNK (13/16") (1)(E) 18 PAIR FIBER TRUNK (3/8")	(1) ERICSSON – RRUS-32 B2 (1) ERICSSON – 4478 B14 (1) ERICSSON – 4426 B66	TOWER	N	N	N
A3	5G CBAND/ 5G DOD	NEW	20°	ERICSSON – AIR6419 N77G	113'-9"	–	–	–	–	–	–			INTEGRATED WITHIN	TOWER	N	N	N
				ERICSSON – AIR6449 N77D	110'-3"	–	–	–	–	–	–							
A4	LTE/5G	NEW	20°	CCI – DMP65R-BU6DA	112'-0"	0°	4°/4°/2°	–	–	–	–			(1) ERICSSON – RRUS-32 B30 (1) ERICSSON – 4449 B5/B12 (1) Y-CABLE	TOWER	N	N	N
BETA SECTOR																		
B1	EMPTY MOUNT																	
B2	LTE/5G	NEW	140°	CCI – TPA-65R-BU6DA-K	112'-0"	0°	10°/6°/6°/ 3°/6°/3°	–	–	–	–	(1)(E) RAYCAP – DC6-48-60-18-8F SQUID	(2)(E) 8AWG DC TRUNK (13/16") (1)(E) 18 PAIR FIBER TRUNK (3/8")	(1) ERICSSON – RRUS-32 B2 (1) ERICSSON – 4478 B14 (1) ERICSSON – 4426 B66	TOWER	N	N	N
B3	5G CBAND/ 5G DOD	NEW	140°	ERICSSON – AIR6419 N77G	113'-9"	–	–	–	–	–	–			INTEGRATED WITHIN	TOWER	N	N	N
				ERICSSON – AIR6449 N77D	110'-3"	–	–	–	–	–	–							
B4	LTE/5G	NEW	140°	CCI – DMP65R-BU6DA	112'-0"	0°	10°/10°/3°	–	–	–	–			(1) ERICSSON – RRUS-32 B30 (1) ERICSSON – 4449 B5/B12 (1) Y-CABLE	TOWER	N	N	N
GAMMA SECTOR																		
C1	EMPTY MOUNT																	
C2	LTE/5G	NEW	270°	CCI – TPA-65R-BU6DA-K	112'-0"	0°	3°/3°/3°/ 3°/3°/3°	–	–	–	–	(1)(N) RAYCAP – DC9-48-60-24-8C -EV SQUID	(3)(N) 6AWG DC TRUNK (7/8") (1)(N) 24 PAIR FIBER TRUNK (3/8")	(1) ERICSSON – RRUS-32 B2 (1) ERICSSON – 4478 B14 (1) ERICSSON – 4426 B66	TOWER	N	N	N
C3	5G CBAND/ 5G DOD	NEW	270°	ERICSSON – AIR6419 N77G	113'-9"	–	–	–	–	–	–			INTEGRATED WITHIN	TOWER	N	N	N
				ERICSSON – AIR6449 N77D	110'-3"	–	–	–	–	–	–							
C4	LTE/5G	NEW	270°	CCI – DMP65R-BU6DA	112'-0"	0°	3°/3°/3°	–	–	–	–			(1) ERICSSON – RRUS-32 B30 (1) ERICSSON – 4449 B5/B12 (1) Y-CABLE	TOWER	N	N	N

NOTE: BLUE DENOTES NEW EQUIPMENT

UNUSED COAX	1-5/8"	162'-0"	6

1 FINAL ANTENNA AND FEEDLINE SCHEDULE
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/8/22

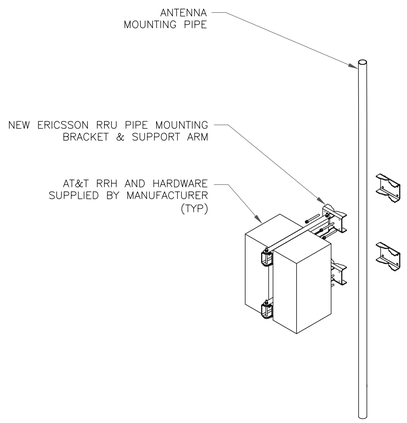
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-3

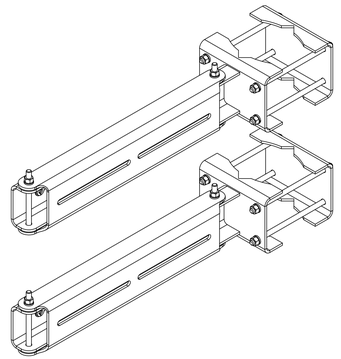
REVISION: 0

INSTALLER NOTES:

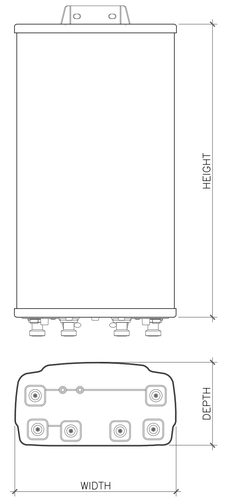
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



1 DUAL RRH MOUNTING DETAILS
SCALE: NOT TO SCALE



2 DUAL RRH MOUNT
SCALE: NOT TO SCALE



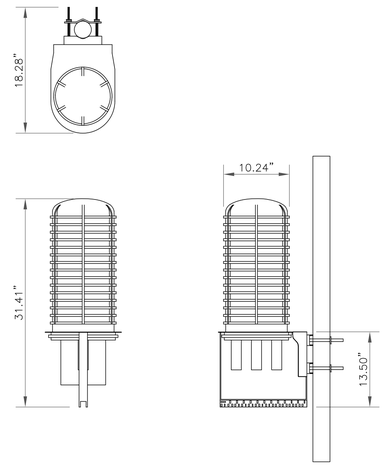
ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON	AIR 6449 B77D	30.63"	15.87"	10.55"	103.62 LBS

3 ANTENNA DETAIL
SCALE: NOT TO SCALE

RAYCAP
DC9-48-60-24-8C-EV

RAYCAP – DC9-48-60-24-8C-EV
SIZE: 10.24x31.40 IN.
WEIGHT: 26.2 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 330 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION



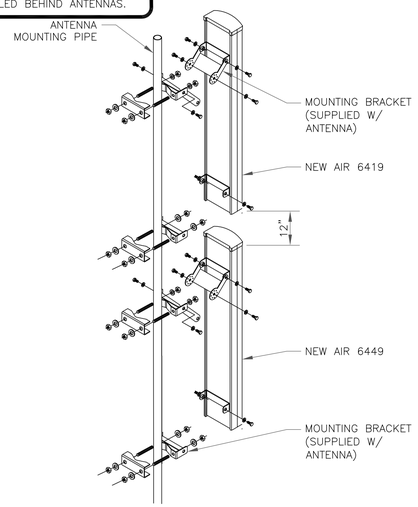
NOTES:

1. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

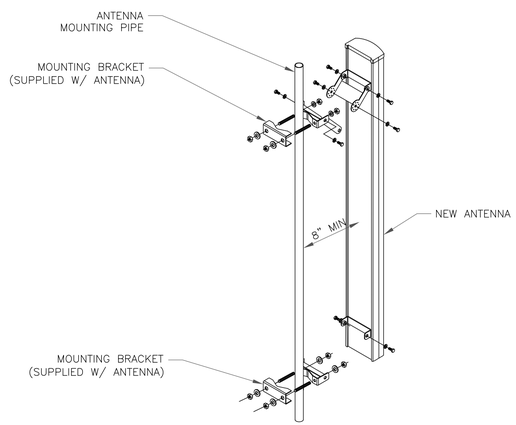
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
4. MAINTIAN 8" SEPERATION BETWEEN EQUIPMENT INSTALLED BEHIND ANTENNAS.



4 STACKED ANTENNA MOUNTING DETAILS
SCALE: NOT TO SCALE

INSTALLER NOTE:

1. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
2. MAINTIAN 8" SEPERATION BETWEEN EQUIPMENT INSTALLED BEHIND ANTENNAS.



5 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T
SITE NUMBER: **CTL02173**

BU #: **876312**
MONTOWESE AMODIO SELF STORE

2755 STATE STREET
HAMDEN, CT 06517

EXISTING
120'-0" SELF-SUPPORT TOWER

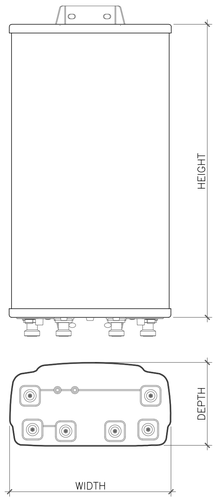
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/25/22	JCO	PRELIMINARY REVIEW	MTJ
B	4/15/22	YX	PRELIMINARY REVIEW	MTJ
0	8/8/22	YX	CONSTRUCTION	MTJ

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

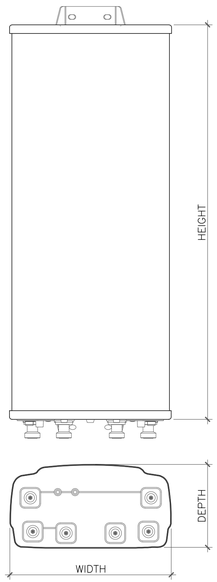
SHEET NUMBER: C-4

REVISION: 0



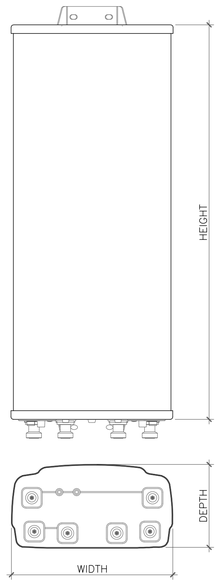
ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON	AIR6419 B77G	27.95"	15.75"	6.68"	66.2 LBS

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



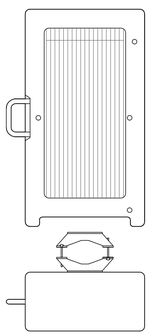
ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
CCI ANTENNAS	DMP65R-BU8D	96"	20.7"	7.7"	105.6 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



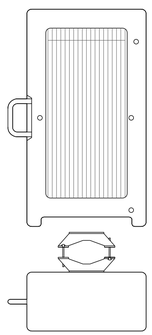
ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
CCI ANTENNAS	TPA65R-BU6DA	71.20"	20.7"	7.7"	69.00 LBS

3 ANTENNA DETAIL
SCALE: NOT TO SCALE



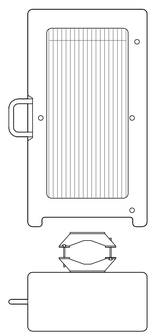
ERICSSON-RADIO 4478 B14
WEIGHT (FULLY EQUIPPED): 59.40 LBS
SIZE (HxWxD): 18.10x13.40x8.26 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

4 ERICSSON-RADIO 4478
SCALE: NOT TO SCALE



ERICSSON- RRUS 4426 B66
B66WEIGHT (FULLY EQUIPPED): 48.40 LBS
SIZE (HxWxD): 14.96x13.19x5.80 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

5 ERICSSON-RRUS 4426
SCALE: NOT TO SCALE



ERICSSON - 4449 B5/B12
WEIGHT (FULLY EQUIPPED): 71.00 LBS
SIZE (HxWxD): 17.90x13.19x9.44 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

6 ERICSSON -RRUS 4449 B5/B12
SCALE: NOT TO SCALE

AT&T
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AT&T
SITE NUMBER: **CTL02173**

BU #: **876312**
MONTOWESE AMODIO SELF STORE

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EXISTING
120'-0" SELF-SUPPORT TOWER

ISSUED FOR:

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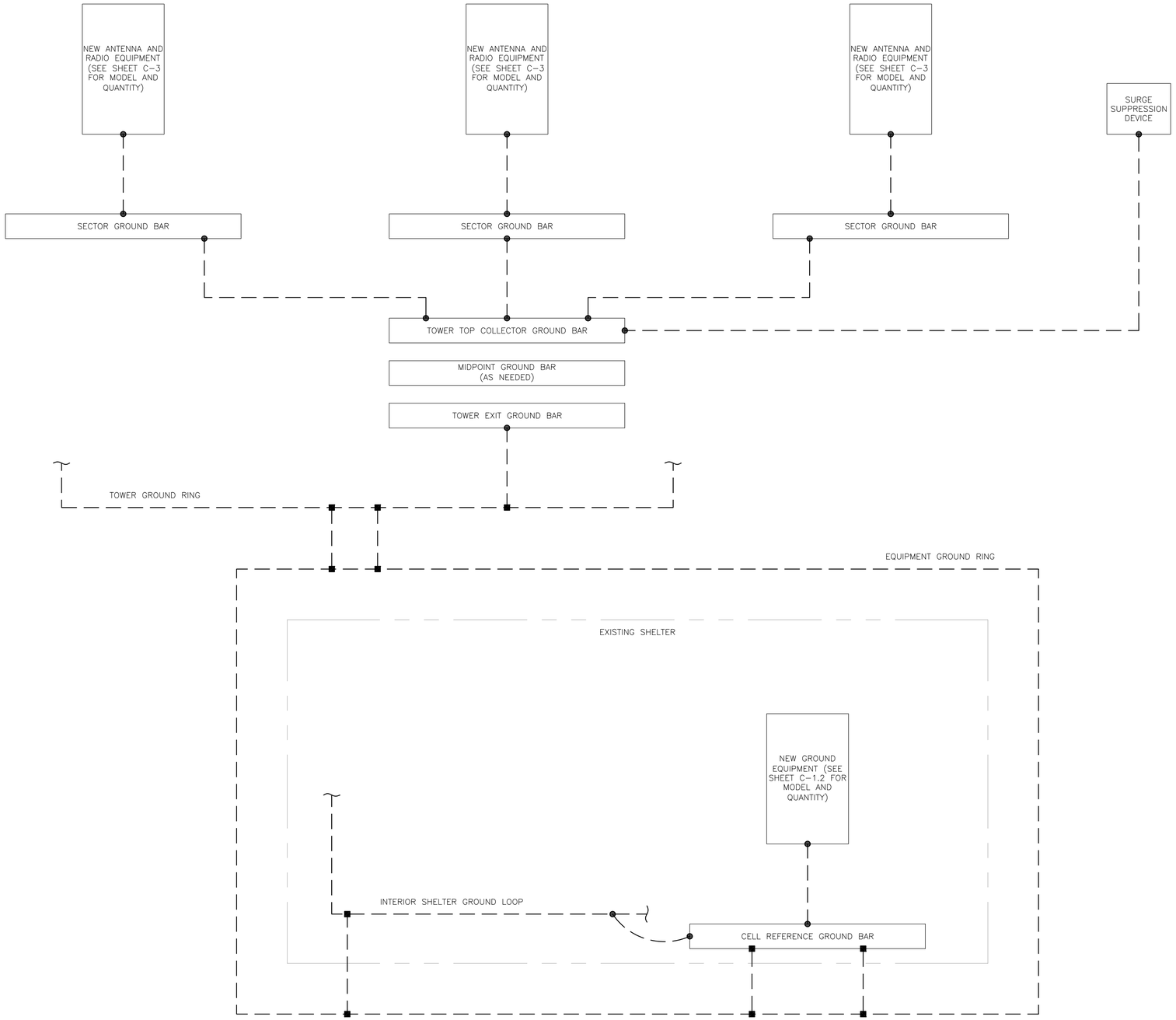
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-5

REVISION: 0



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- COPPER GROUND ROD
- GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

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EXISTING
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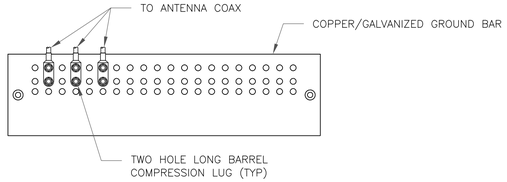
0	8/8/22	YX	CONSTRUCTION	MTJ

STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/8/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-1

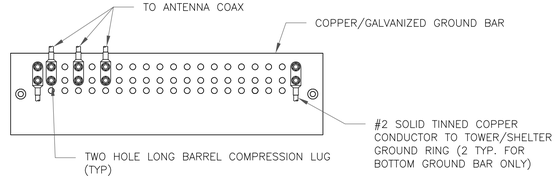
REVISION: 0



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

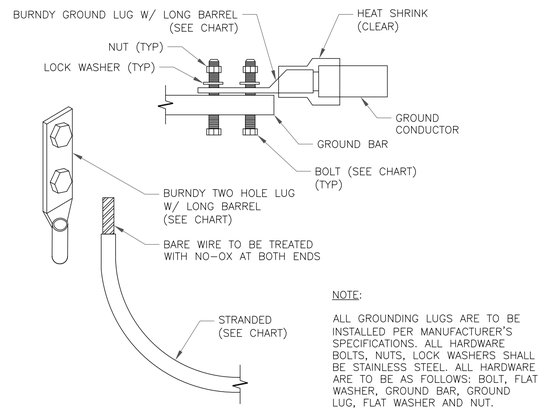


NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE

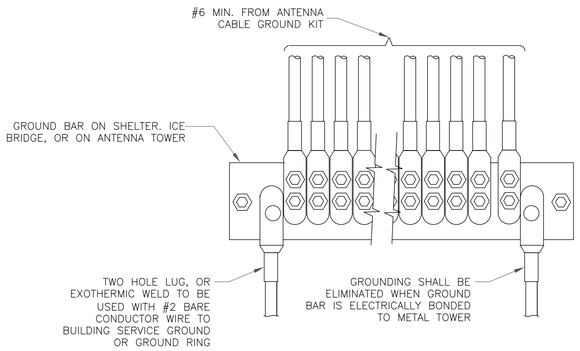
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



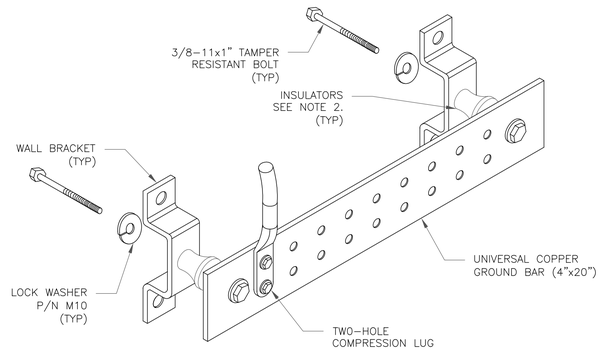
NOTE:

ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

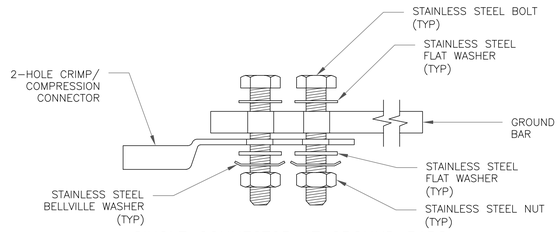


NOTES:

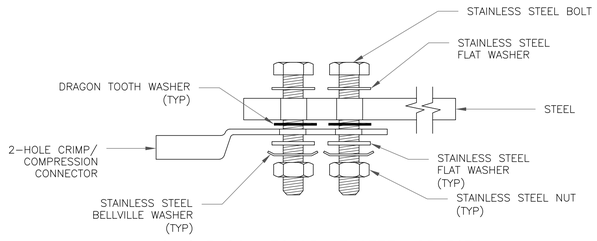
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

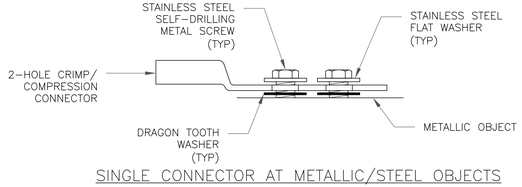
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

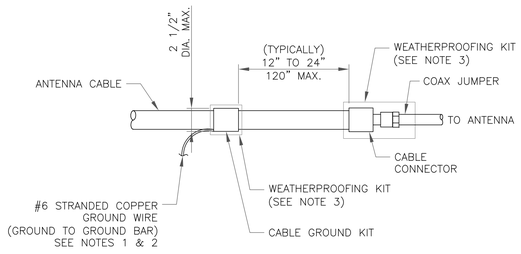


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

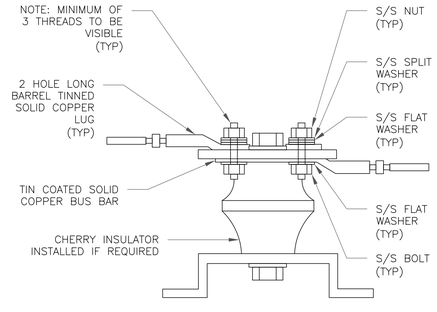
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-2

REVISION: 0

Antenna 1
Empty

Antenna 2
LTE 700 B14 / AWS / PCS

Broadband DoDec Low 700/850 +45/-45 - +
Broadband DoDec Low 700/850 +45/-45 - +
Broadband DoDec AWS/ WCS/ PCS 4Tx/4Rx +45/-45 - +
Broadband DoDec AWS/ WCS/ PCS 4Tx/4Rx +45/-45 - +
Broadband DoDec AWS/ WCS/ PCS 4Tx/4Rx +45/-45 - +
Broadband DoDec AWS/ WCS/ PCS 4Tx/4Rx +45/-45 - +
RET RET RET RET RET RET

LTE RRUS-32 PCS
LTE 4426 B66 AWS

Antenna 3
DoD + C band

AIR
DoD
+45/-45
- +

AIR
C-BAND
+45/-45
- +

Antenna 4
LTE 700 BC / 850 / WCS

Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
RET RET RET RET

LTE RRUS-4449 B5/B7 BC
LTE RRUS-32 WCS

Fiber/DC-1
Demarcation Box (Squid)

24/9 – Fiber/DC
Demarcation Box (Squid)

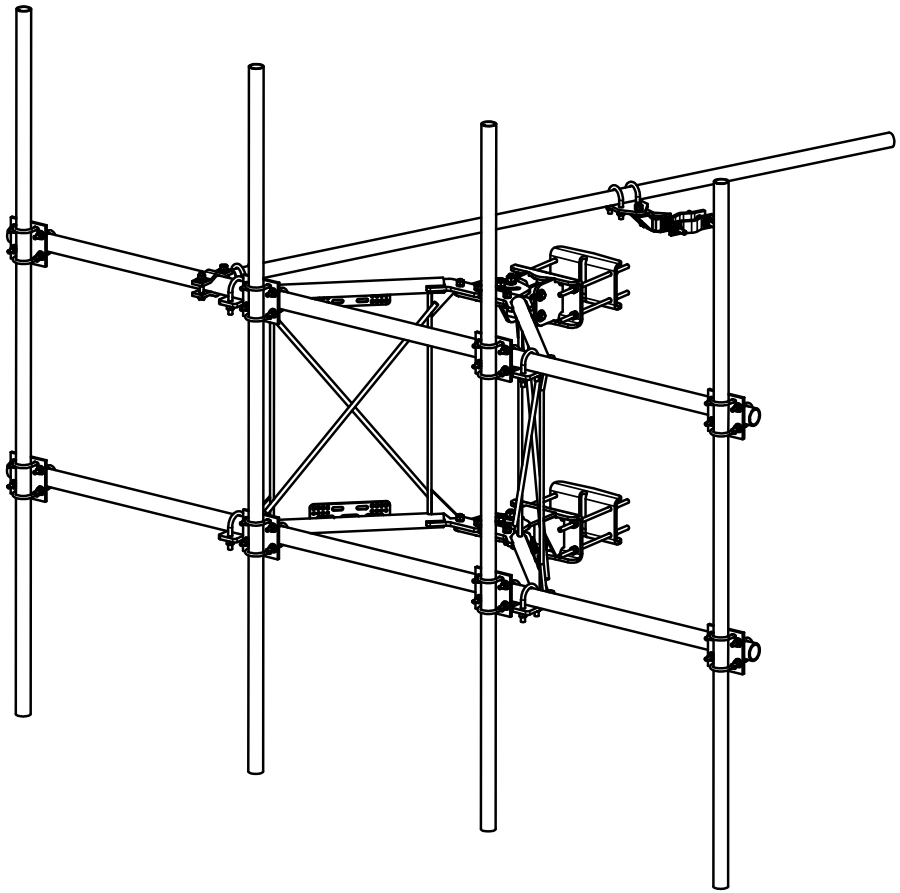
Fiber/DC-1
Demarcation Box (Squid)

DC Plant

- 3 Feet Minimum Separation between ALL Antennas
- 6 Feet Minimum Separation between 700BC & 700 DE
- 12" Vertical Separation between DoD and C Band Antenna.
- Use "Y Cable" for Dual band RRHs

5216
XMU
6630
6648

IDLe
Xcede



PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
5	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
6	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
7	2	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	11.74
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	2	X-TBCA	TIE BACK CLIP ANGLE		2.01	4.01
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	2	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	7.19
12	4	DCP	1/2" THICK, 5-3/4" CNTER TO CENTER CLAMP HALF	8 1/8 in	2.36	9.45
13	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
14	1	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	40.75
15	4	P2120	2-3/8" x 120" (2" SCH. 40) GALAVANIZED PIPE	120 in	38.81	155.25
16	4	A34212	3/4" x 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
17	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
18	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
19	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
20	8	G58R-18	5/8" x 18" THREADED ROD (HDG.)	18 in	0.40	3.19
21	2	G58R-12	5/8" x 12" THREADED ROD (HDG.)		1.05	2.09
22	2	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	1.39
23	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
24	4	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	4.00
25	2	G5807	5/8" x 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
26	1	G5806	5/8" x 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
27	4	G5804	5/8" x 4" HDG HEX BOLT GR5		0.44	1.78
28	8	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	2	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	0.54
30	15	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.06
31	50	G58LW	5/8" HDG LOCKWASHER		0.03	1.30
32	53	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	6.88
33	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
34	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
35	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
36	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
37	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	773.39

TOLERANCE NOTES

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ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	7/2/2018

REVISION HISTORY

DESCRIPTION: 12' 6" HEAVY DUTY V-FRAME ASSEMBLY W/ 1 STIFF ARM & MOUNT PIPES

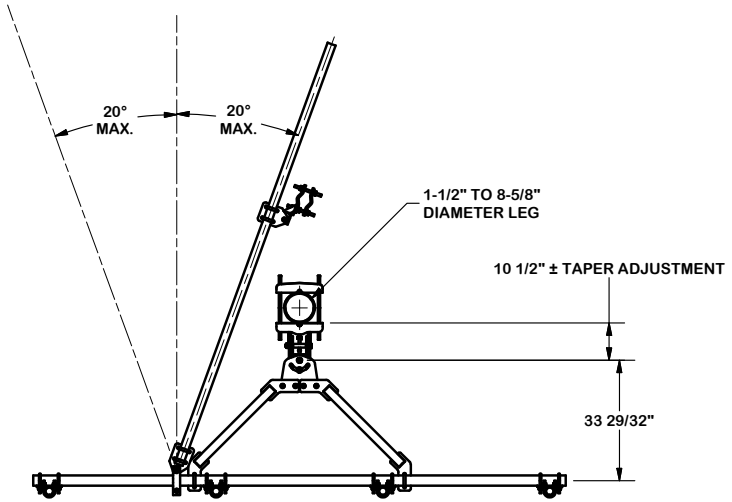
SITE PRO 1 — A valmont COMPANY

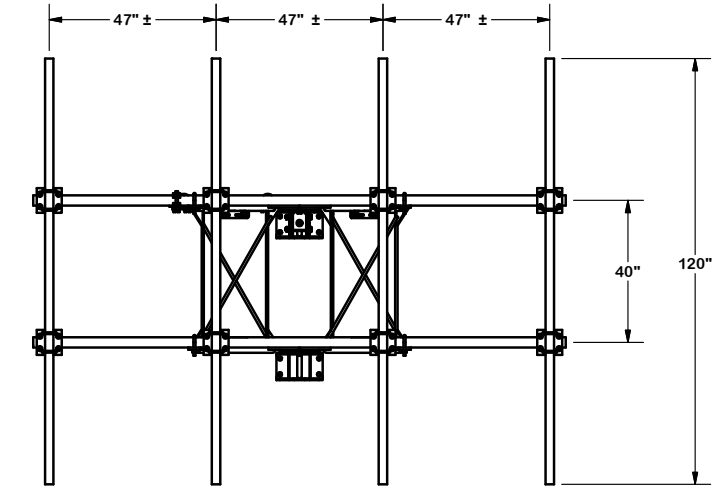
Engineering Support Team: 1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 7/3/2017		VFA12-H10-2120

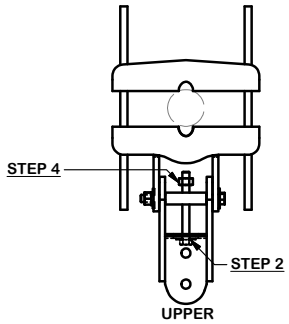
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

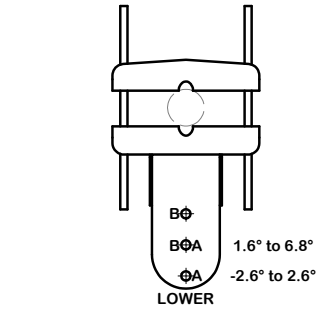


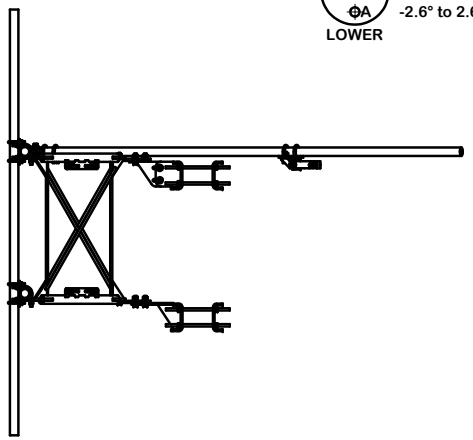


ANGLE CALIBRATING PROCEDURE:

1. MEASURE TOWER TAPER AND PICK LOWER BRACKET HOLE:
   - HOLE A = -2.6° TO 2.6°
   - HOLE B = 1.6° TO 6.8°
2. USE CALIBRATING BOLT TO ADJUST FRAME TO DESIRED TAPER
3. TORQUE LOCKING BOLTS TO 100 ft.-lbs.
4. ADVANCE LOCKING NUT TO POSITIONING PLATE, THEN TIGHTEN.







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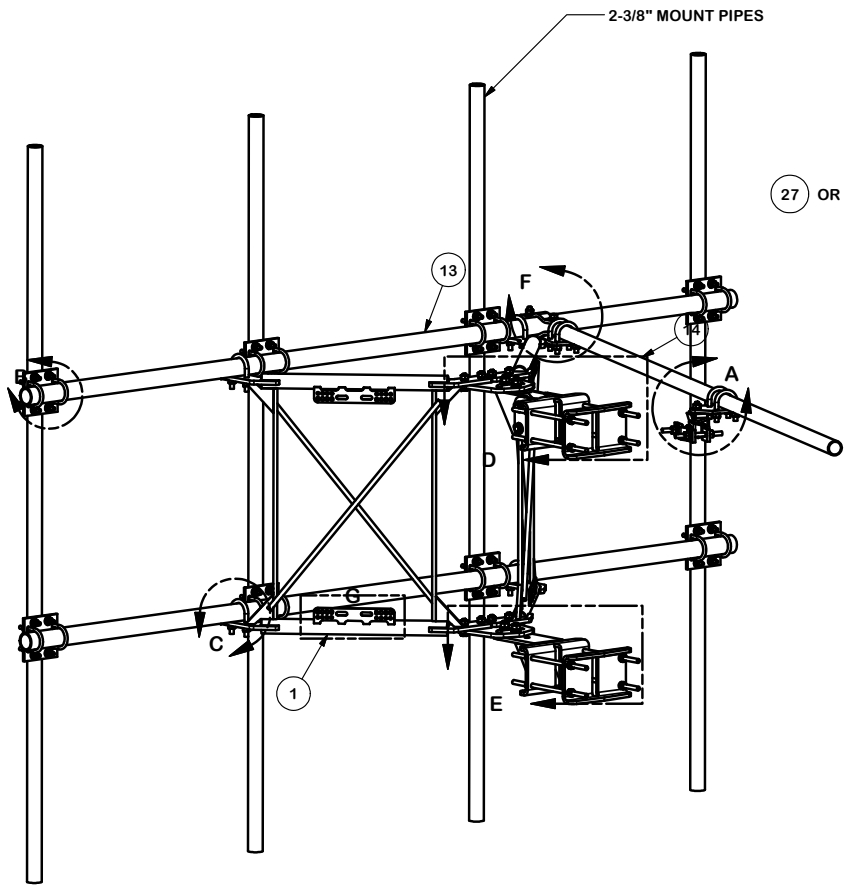
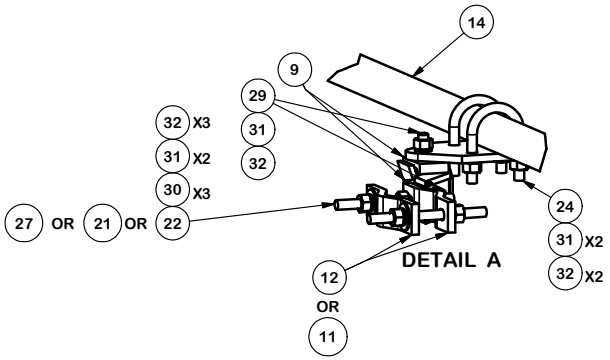
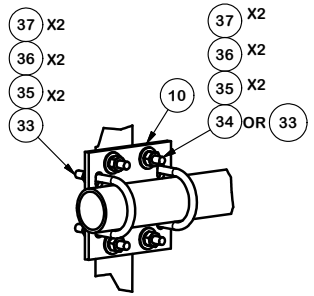
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120





DETAIL A



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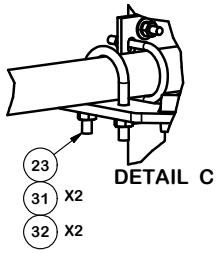

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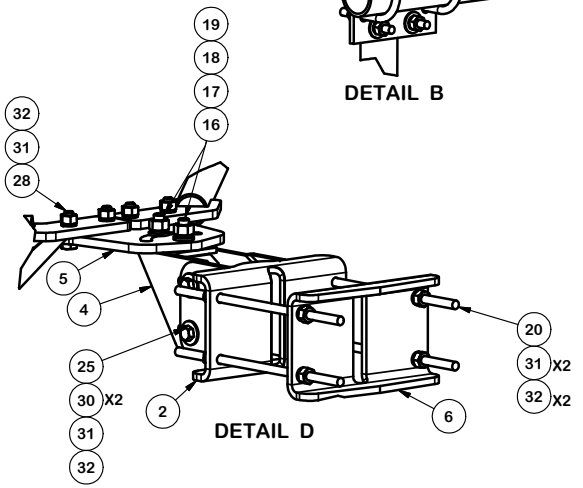

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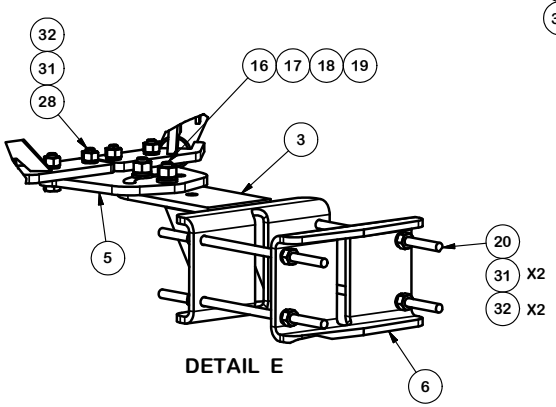

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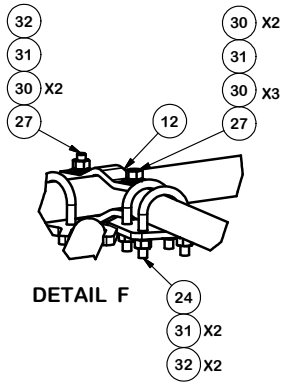
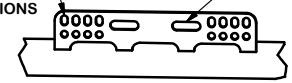


DETAIL F

REVIEW CARRIER STANDARDS FOR PROPER SURFACE PREPARTION AND ASSEMBLY OF ELECTRICAL CONNECTIONS

9/16" SLOTTED HOLE FOR EQUIPMENT PIPE U-BOLT



DETAIL G

TOLERANCE NOTES

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CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 7/3/2017		VFA12-H10-2120

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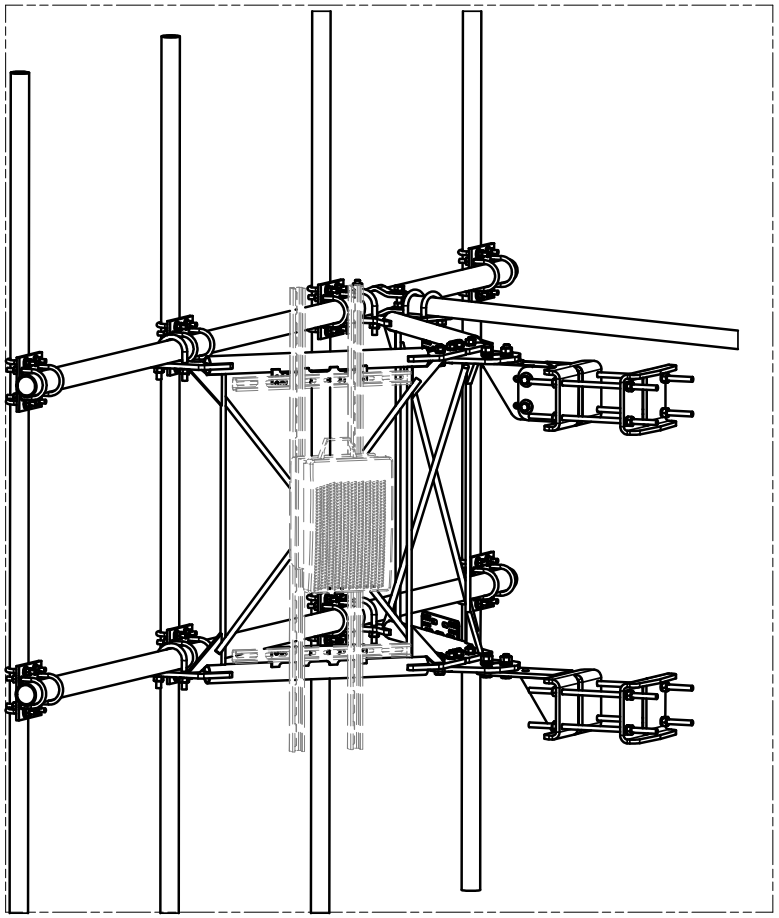
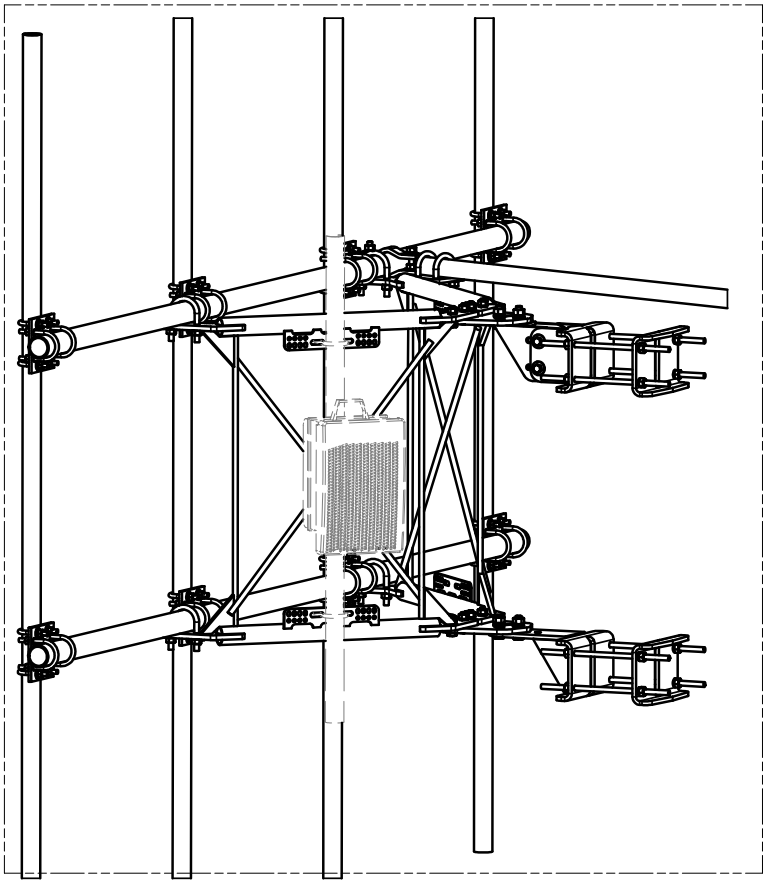
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX



UNISTRUT AND HARDWARE
SOLD SEPARATELY.

REQUIRES 3/8" HARDWARE



EQUIPMENT PIPE AND HARDWARE
SOLD SEPARATELY.

REQUIRES 1/2" HARDWARE
AND 2-3/8" TO 4-1/2" O.D. PIPE

TOLERANCE NOTES

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87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

Exhibit D

Structural Analysis Report

Date: **March 11, 2022**

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	CTL02173
	Site Name:	MONTOWESE AMODIO SELF STORE
	FA Number:	10035219
Crown Castle Designation:	**BU Number:**	876312
	Site Name:	MONTOWESE AMODIO SELF STORE
	JDE Job Number:	649407
	Work Order Number:	2018582
	Order Number:	556501 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	2018582
Site Data:	**2755 State Street, Hamden, NEW HAVEN County, CT**	
	Latitude *41° 21' 19.67"*, Longitude *-72° 53' 25.13"*	
	120 Foot - Self Support Tower	

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 93.1%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Melanie Atiles

Respectfully submitted by:

Maham Barimani, P.E.
Senior Project Engineer

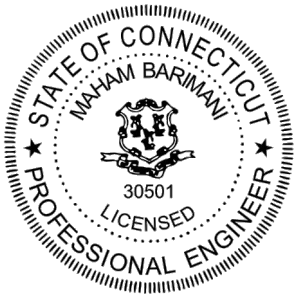


TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120 ft Self Support tower designed by PIROD MANUFACTURES INC. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	112.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe	2 4 3 6	3/8 13/16 7/8 1-5/8
		3	cci antennas	TPA65R-BU6D w/ Mount Pipe		
		3	ericsson	AIR 6419 B77G w/ Mount Pipe		
		3	ericsson	AIR 6449 N77 w/ Mount Pipe		
		3	ericsson	RADIO 4478 B14		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4426 B66		
		3	ericsson	RRUS 4449 B5/B12		
		2	raycap	DC6-48-60-18-8F		
		1	raycap	DC9-48-60-24-8C-EV		
	110.0	3	sitepro1	VFA12-H10-2120		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	122.0	3	dragonwave	A-ANT-23G-2-C	6 3 1 4	5/16 1/2 7/8 1-1/4
	120.0	3	alcatel lucent	1900MHz RRH (65MHz)		
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER		
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	TD-RRH8x20-25		
		3	powerwave technologies	P40-16-XLPP-RR-A w/ Mount Pipe		
		3	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 405-1]		
		3	tower mounts	Side Arm Mount [SO 301-1]		
	118.0	3	argus technologies	LLPX310R w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	samsung telecommunications	FDD_R6_RRH		
100.0	100.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MTC3975083 (3)		
44.0	46.0	1	trimble	BULLET III	1	1/2
	44.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1529742	CCISITES
4-POST-MODIFICATION INSPECTION	3241117	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1611716	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1611638	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2486404	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	120 - 117.667	Leg	1 1/2	2	-2.793	55.544	5.0	Pass
T2	117.667 - 110	Leg	1 1/2	13	-11.976	55.544	21.6	Pass
T3	110 - 90	Leg	1 3/4	44	-70.016	82.873	84.5	Pass
T4	90 - 70	Leg	2	108	-130.191	139.769	93.1	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-183.613	200.087	91.8	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-190.125	207.523	91.6	Pass
T7	50 - 40	Leg	Pirod 105245	256	-186.603	225.602	82.7	Pass
T8	40 - 20	Leg	Pirod 105217	265	-200.422	225.602	88.8	Pass
T9	20 - 0	Leg	Pirod 105217 w/ (2) 1.25 Tierod	280	-213.187	271.615	78.5	Pass
T1	120 - 117.667	Diagonal	3/4	8	-2.721	6.601	41.2	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.452	3.703	66.2	Pass
T3	110 - 90	Diagonal	3/4	52	-4.716	6.260	75.3	Pass
T4	90 - 70	Diagonal	7/8	120	-7.301	7.910	92.3	Pass
T5	70 - 52.6146	Diagonal	7/8	240	-6.762	9.652	70.1	Pass
T6	52.6146 - 50	Diagonal	7/8	252	-5.084	8.779	57.9	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	258	-6.474	18.455	35.1	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	277	-3.274	15.920	20.6	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	285	-5.108	11.522	44.3	Pass
T2	117.667 - 110	Horizontal	3/4	28	-0.242	4.584	5.3	Pass
T3	110 - 90	Horizontal	3/4	57	-1.263	3.647	34.6	Pass
T5	70 - 52.6146	Horizontal	7/8	199	-3.051	4.424	69.0	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-3.213	4.312	74.5	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	123	-3.043	35.300	8.6	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-1.777	5.649	31.4	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.243	8.492	2.9	Pass
T3	110 - 90	Top Girt	3/4	46	-1.596	4.612	34.6	Pass
T4	90 - 70	Top Girt	1	110	-2.361	5.467	43.2	Pass
T5	70 - 52.6146	Top Girt	1	191	-3.181	8.854	35.9	Pass
T2	117.667 - 110	Bottom Girt	7/8	20	-0.831	8.492	9.8	Pass
T3	110 - 90	Bottom Girt	3/4	48	-2.270	3.534	64.2	Pass
T4	90 - 70	Bottom Girt	1	112	-3.162	4.331	73.0	Pass
T6	52.6146 - 50	Bottom Girt	1	246	-3.351	7.225	46.4	Pass
							Summary	
						Leg (T4)	93.1	Pass
						Diagonal (T4)	92.3	Pass
						Horizontal (T6)	74.5	Pass
						Secondary Horizontal (T4)	8.6	Pass
						Top Girt (T4)	43.2	Pass
						Bottom Girt	73.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						(T4)		
						Bolt Checks	65.3	Pass
						Rating =	93.1	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	54.8	Pass
1	Base Foundation (Structure)	0	46.2	Pass
1	Base Foundation (Soil Interaction)	0	90.5	Pass

Structure Rating (max from all components) =	93.1%

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

4.1) Recommendations

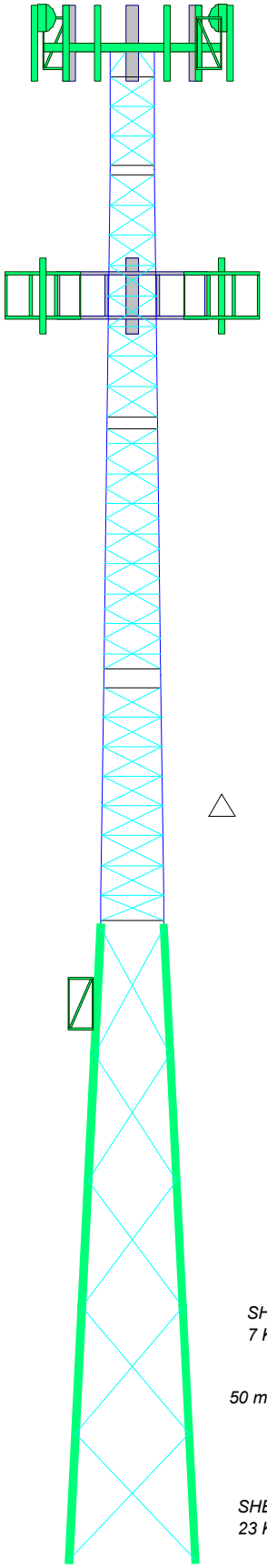
The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9
Legs	SR 1 1/2	SR 1 1/2	SR 1 3/4	SR 2	SR 2 1/2		Pirod 105245	Pirod 105217	Pirod 105217 w/ (2) 1.25 Tierod
Leg Grade	A572-50								
Diagonals	SR 5/8	SR 5/8	SR 3/4	SR 7/8	SR 7/8			L2 1/2x2 1/2x3/16	
Diagonal Grade	A572-50							A36	
Top Girts	SR 7/8	SR 7/8	SR 3/4	SR 1	N.A.			N.A.	
Bottom Girts	N.A.	SR 7/8	SR 3/4	SR 1	N.A.	SR 1		N.A.	
Horizontals	N.A.	N.A.	SR 3/4	N.A.	SR 7/8			N.A.	
Sec. Horizontals	N.A.	N.A.	N.A.	SR 1 1/4	N.A.			N.A.	
Face Width (ft)	10			4	4.5	4	6	8	
# Panels @ (ft)	3.5	4 @ 2.33333	8 @ 2.39583	8 @ 2.375	7 @ 2.34077	C		5 @ 10	
Weight (K)	0.1	0.3	0.9	1.6	1.4	0.2	1.2	2.3	2.9

120.0 ft
117.7 ft
110.0 ft
90.0 ft
70.0 ft
52.6 ft
50.0 ft
40.0 ft
20.0 ft
0.0 ft



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	SR 3/4	C	1 @ 2.03125
B	5x3/8		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 93.1%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 220 K
SHEAR: 17 K

UPLIFT: -196 K
SHEAR: 16 K

AXIAL 57 K
SHEAR 7 K
MOMENT 540 kip-ft
TORQUE 2 kip-ft
50 mph WIND - 1.000 in ICE

AXIAL 32 K
SHEAR 23 K
MOMENT 1824 kip-ft
TORQUE 6 kip-ft
REACTIONS - 120 mph WIND

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
The Pathway to Possible
Phone: (724) 416-2000
FAX:

Job: **BU# 876312**			
Project:			
Client: Crown Castle	Drawn by: MAtiles		App'd:
Code: TIA-222-H	Date: 03/11/22		Scale: NTS
Path: C:\Users\matiles\Desktop\Working from Home\876312\WO 2018582 - SA\Prod\876312.eri			Dwg No. E-1

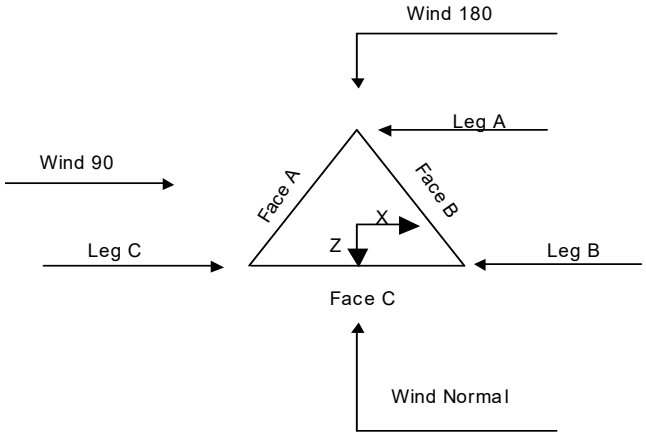
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 120.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 3.500 ft at the top and 10.000 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 7.000 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- 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	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	120.000-117.667			3.500	1	2.333
T2	117.667-110.000			3.500	1	7.667
T3	110.000-90.000			3.500	1	20.000
T4	90.000-70.000			4.000	1	20.000
T5	70.000-52.615			4.500	1	17.385
T6	52.615-50.000			4.944	1	2.615
T7	50.000-40.000			5.000	1	10.000
T8	40.000-20.000			6.000	1	20.000
T9	20.000-0.000			8.000	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	120.000-117.667	2.333	K Brace Down	No	Yes	0.000	0.000
T2	117.667-110.000	2.333	X Brace	No	Steps	4.000	4.000
T3	110.000-90.000	2.396	X Brace	No	Steps	5.000	5.000
T4	90.000-70.000	2.375	X Brace	No	Yes	6.000	6.000
T5	70.000-52.615	2.341	X Brace	No	Steps	12.000	0.000
T6	52.615-50.000	2.031	X Brace	No	Steps	0.000	7.000
T7	50.000-40.000	10.000	X Brace	No	No	0.000	0.000
T8	40.000-20.000	10.000	X Brace	No	No	0.000	0.000
T9	20.000-0.000	10.000	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.000-117.667	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 117.667-110.000	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T3 110.000-90.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 90.000-70.000	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T5 70.000-52.615	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 52.615-50.000	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T7 50.000-40.000	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 40.000-20.000	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T9 20.000-0.000	Truss Leg	Pirod 105217 w/ (2) 1.25 Tierod	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	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
T2 117.667-110.000	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 110.000-90.000	Solid Round	3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 90.000-70.000	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T5 70.000-52.615	Solid Round	1	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)
T6 52.615-50.000	Solid Round		A36 (36 ksi)	Solid Round	1	A572-50 (50 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 120.000-117.667	None	Flat Bar		A36 (36 ksi)	Flat Bar	5x3/8	A36 (36 ksi)
T2 117.667-110.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 110.000-90.000	None	Solid Round		A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T5 70.000-52.615	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 52.615-50.000	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T4 90.000-70.000	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 120.000-117.667	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T2 117.667-110.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T3 110.000-90.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T4 90.000-70.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T5 70.000-52.615	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T6 52.615-50.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T7 50.000-40.000	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 40.000-20.000	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 20.000-0.000	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

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 120.000-117.667	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 117.667-110.000	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 110.000-90.000	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 90.000-70.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T5 70.000-52.615	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 52.615-50.000	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 50.000-40.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 40.000-20.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 20.000-0.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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

Tower Section Geometry *(cont'd)*

	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
Tower Elevation ft	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T7 50.000-40.000	1	0.5	0.85	1	0.5	0.85
T8 40.000-20.000	1	0.5	0.85	1	0.5	0.85
T9 20.000-0.000	2.0447	0.5	0.85	1	0.5	0.85

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 120.000-117.667	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
T2 117.667-110.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
T3 110.000-90.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T4 90.000-70.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T5 70.000-52.615	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T6 52.615-50.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T7 50.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75
T8 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75
T9 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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 120.000-117.667	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 117.667-110.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 110.000-90.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 90.000-70.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 70.000-52.615	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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
T6 52.615-50.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 50.000-40.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 40.000-20.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 20.000-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		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 120.000-117.667	Sleeve DS	0.000 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T2 117.667-110.000	Sleeve DS	0.625 A325N	4	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T3 110.000-90.000	Sleeve DS	0.625 A325N	5	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T4 90.000-70.000	Sleeve DS	0.750 A325N	5	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T5 70.000-52.615	Sleeve DS	0.000 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T6 52.615-50.000	Flange	1.000 A325N	6	0.000 A325N	0 *	0.000 A325N	0 *	0.000 A325N	0 *	0.625 A325N	0	0.000 A325N	0 *	0.000 A325N	0 *
T7 50.000-40.000	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T8 40.000-20.000	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T9 20.000-0.000	Flange	1.000 A687	0	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0

* Out-of-plane partial restraint assumed

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 klf
HB114-1-0813U4-M5J(1-1/4)	B	No	No	Ar (CaAa)	120.000 - 0.000	-6.000	-0.4	4	2	1.000	1.540		0.001
LDF5-50A(7/8") *	B	No	No	Ar (CaAa)	120.000 - 0.000	-4.000	-0.34	4	4	1.000	1.090		0.000
2-1/4" Rigid Conduit	B	No	No	Ar (CaAa)	120.000 - 0.000	-6.000	-0.3	2	2	2.000	2.250		0.003
9207(5/16)	B	No	No	Ar (CaAa)	120.000 - 0.000	-6.000	-0.28	3	2	0.300	0.330		0.001
9207(5/16)	B	No	No	Ar (CaAa)	120.000 - 0.000	-6.000	-0.32	3	2	0.300	0.330		0.001
T-Brackets	B	No	No	Af (CaAa)	120.000 -	-4.000	-0.43	1	1	1.000	1.000		0.008

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 klf
(Af) *					0.000								
2-1/4" Rigid Conduit	C	No	No	Ar (CaAa)	110.000 - 0.000	-4.000	0.26	1	1	1.000	2.250		0.003
LDF7-50A(1-5/8)	C	No	No	Ar (CaAa)	110.000 - 0.000	-4.000	0.35	6	6	1.000	1.980		0.001
PWRT-606-S(7/8)	C	No	No	Ar (CaAa)	110.000 - 0.000	-7.000	0.35	9	9	1.000	0.920		0.001
T-Brackets (Af) *	C	No	No	Af (CaAa)	110.000 - 0.000	-5.000	0.43	1	1	1.000	1.000		0.008
HCS 2.0 Part 3(1-1/2)	C	No	No	Ar (CaAa)	100.000 - 0.000	-2.000	-0.45	1	1	1.000	1.550		0.002
T-Brackets (Af) *	C	No	No	Af (CaAa)	100.000 - 0.000	-4.000	-0.43	1	1	1.000	1.000		0.008
LDF4-50A(1/2) *	A	No	No	Ar (CaAa)	44.000 - 0.000	-4.000	0.37	1	1	0.500	0.630		0.000
Safety Line 3/8 *	A	No	No	Ar (CaAa)	120.000 - 0.000	0.000	0.47	1	1	0.375	0.375		0.000

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 klf
*								

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	120.000-117.667	A	0.000	0.000	0.087	0.000	0.001
		B	0.000	0.000	4.356	0.000	0.056
		C	0.000	0.000	0.000	0.000	0.000
T2	117.667-110.000	A	0.000	0.000	0.287	0.000	0.002
		B	0.000	0.000	14.311	0.000	0.185
		C	0.000	0.000	0.000	0.000	0.000
T3	110.000-90.000	A	0.000	0.000	0.750	0.000	0.004
		B	0.000	0.000	37.333	0.000	0.482
		C	0.000	0.000	51.370	0.000	0.588
T4	90.000-70.000	A	0.000	0.000	0.750	0.000	0.004
		B	0.000	0.000	37.333	0.000	0.482
		C	0.000	0.000	54.587	0.000	0.689
T5	70.000-52.615	A	0.000	0.000	0.652	0.000	0.004
		B	0.000	0.000	32.453	0.000	0.419
		C	0.000	0.000	47.451	0.000	0.599
T6	52.615-50.000	A	0.000	0.000	0.098	0.000	0.001
		B	0.000	0.000	4.881	0.000	0.063
		C	0.000	0.000	7.136	0.000	0.090
T7	50.000-40.000	A	0.000	0.000	0.627	0.000	0.003
		B	0.000	0.000	18.667	0.000	0.241
		C	0.000	0.000	27.293	0.000	0.344
T8	40.000-20.000	A	0.000	0.000	2.010	0.000	0.007

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
		B	0.000	0.000	37.333	0.000	0.482
		C	0.000	0.000	54.587	0.000	0.689
T9	20.000-0.000	A	0.000	0.000	2.010	0.000	0.007
		B	0.000	0.000	37.333	0.000	0.482
		C	0.000	0.000	54.587	0.000	0.689

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	120.000-117.667	A	0.966	0.000	0.000	0.538	0.000	0.004
		B		0.000	0.000	10.508	0.000	0.136
		C		0.000	0.000	0.000	0.000	0.000
T2	117.667-110.000	A	0.962	0.000	0.000	1.763	0.000	0.014
		B		0.000	0.000	34.462	0.000	0.446
		C		0.000	0.000	0.000	0.000	0.000
T3	110.000-90.000	A	0.950	0.000	0.000	4.549	0.000	0.035
		B		0.000	0.000	89.412	0.000	1.155
		C		0.000	0.000	116.377	0.000	1.512
T4	90.000-70.000	A	0.929	0.000	0.000	4.465	0.000	0.034
		B		0.000	0.000	88.585	0.000	1.139
		C		0.000	0.000	122.814	0.000	1.649
T5	70.000-52.615	A	0.904	0.000	0.000	3.796	0.000	0.028
		B		0.000	0.000	76.167	0.000	0.974
		C		0.000	0.000	106.173	0.000	1.413
T6	52.615-50.000	A	0.888	0.000	0.000	0.563	0.000	0.004
		B		0.000	0.000	11.372	0.000	0.145
		C		0.000	0.000	15.910	0.000	0.210
T7	50.000-40.000	A	0.877	0.000	0.000	3.082	0.000	0.023
		B		0.000	0.000	43.267	0.000	0.550
		C		0.000	0.000	60.691	0.000	0.799
T8	40.000-20.000	A	0.842	0.000	0.000	8.745	0.000	0.063
		B		0.000	0.000	85.159	0.000	1.075
		C		0.000	0.000	120.422	0.000	1.565
T9	20.000-0.000	A	0.754	0.000	0.000	8.045	0.000	0.054
		B		0.000	0.000	81.705	0.000	1.012
		C		0.000	0.000	118.012	0.000	1.482

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	120.000-117.667	-0.583	-6.011	-0.575	-6.636
T2	117.667-110.000	-0.950	-8.942	-0.772	-8.424
T3	110.000-90.000	-6.391	-5.713	-6.422	-5.475
T4	90.000-70.000	-5.899	-5.355	-5.938	-5.100
T5	70.000-52.615	-6.297	-5.802	-6.613	-5.758
T6	52.615-50.000	-6.265	-5.747	-6.555	-5.630
T7	50.000-40.000	-5.126	-4.724	-4.713	-3.924
T8	40.000-20.000	-5.926	-5.782	-6.840	-6.278
T9	20.000-0.000	-7.027	-7.036	-8.940	-8.192

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	HB114-1-0813U4-M5J(1-1/4)	117.67 - 120.00	0.6000	0.4859
T1	2	LDF5-50A(7/8")	117.67 - 120.00	0.6000	0.4859
T1	5	2-1/4" Rigid Conduit	117.67 - 120.00	0.6000	0.4859
T1	6	9207(5/16)	117.67 - 120.00	0.6000	0.4859
T1	7	9207(5/16)	117.67 - 120.00	0.6000	0.4859
T1	8	T-Brackets (Af)	117.67 - 120.00	0.6000	0.4859
T1	26	Safety Line 3/8	117.67 - 120.00	0.6000	0.4859
T2	1	HB114-1-0813U4-M5J(1-1/4)	110.00 - 117.67	0.6000	0.6000
T2	2	LDF5-50A(7/8")	110.00 - 117.67	0.6000	0.6000
T2	5	2-1/4" Rigid Conduit	110.00 - 117.67	0.6000	0.6000
T2	6	9207(5/16)	110.00 - 117.67	0.6000	0.6000
T2	7	9207(5/16)	110.00 - 117.67	0.6000	0.6000
T2	8	T-Brackets (Af)	110.00 - 117.67	0.6000	0.6000
T2	26	Safety Line 3/8	110.00 - 117.67	0.6000	0.6000
T3	1	HB114-1-0813U4-M5J(1-1/4)	90.00 - 110.00	0.6000	0.6000
T3	2	LDF5-50A(7/8")	90.00 - 110.00	0.6000	0.6000
T3	5	2-1/4" Rigid Conduit	90.00 - 110.00	0.6000	0.6000
T3	6	9207(5/16)	90.00 - 110.00	0.6000	0.6000
T3	7	9207(5/16)	90.00 - 110.00	0.6000	0.6000
T3	8	T-Brackets (Af)	90.00 - 110.00	0.6000	0.6000
T3	13	2-1/4" Rigid Conduit	90.00 - 110.00	0.6000	0.6000
T3	14	LDF7-50A(1-5/8)	90.00 - 110.00	0.6000	0.6000
T3	17	PWRT-606-S(7/8)	90.00 - 110.00	0.6000	0.6000
T3	18	T-Brackets (Af)	90.00 - 110.00	0.6000	0.6000
T3	20	HCS 2.0 Part 3(1-1/2)	90.00 - 100.00	0.6000	0.6000
T3	21	T-Brackets (Af)	90.00 - 100.00	0.6000	0.6000
T3	26	Safety Line 3/8	90.00 - 110.00	0.6000	0.6000
T4	1	HB114-1-0813U4-M5J(1-1/4)	70.00 - 90.00	0.6000	0.5592
T4	2	LDF5-50A(7/8")	70.00 - 90.00	0.6000	0.5592
T4	5	2-1/4" Rigid Conduit	70.00 - 90.00	0.6000	0.5592
T4	6	9207(5/16)	70.00 - 90.00	0.6000	0.5592
T4	7	9207(5/16)	70.00 - 90.00	0.6000	0.5592
T4	8	T-Brackets (Af)	70.00 - 90.00	0.6000	0.5592
T4	13	2-1/4" Rigid Conduit	70.00 - 90.00	0.6000	0.5592
T4	14	LDF7-50A(1-5/8)	70.00 -	0.6000	0.5592

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	17	PWRT-606-S(7/8)	90.00 70.00 - 90.00	0.6000	0.5592
T4	18	T-Brackets (Af)	70.00 - 90.00	0.6000	0.5592
T4	20	HCS 2.0 Part 3(1-1/2)	70.00 - 90.00	0.6000	0.5592
T4	21	T-Brackets (Af)	70.00 - 90.00	0.6000	0.5592
T4	26	Safety Line 3/8	70.00 - 90.00	0.6000	0.5592
T5	1	HB114-1-0813U4-M5J(1-1/4)	52.61 - 70.00	0.6000	0.6000
T5	2	LDF5-50A(7/8")	52.61 - 70.00	0.6000	0.6000
T5	5	2-1/4" Rigid Conduit	52.61 - 70.00	0.6000	0.6000
T5	6	9207(5/16)	52.61 - 70.00	0.6000	0.6000
T5	7	9207(5/16)	52.61 - 70.00	0.6000	0.6000
T5	8	T-Brackets (Af)	52.61 - 70.00	0.6000	0.6000
T5	13	2-1/4" Rigid Conduit	52.61 - 70.00	0.6000	0.6000
T5	14	LDF7-50A(1-5/8)	52.61 - 70.00	0.6000	0.6000
T5	17	PWRT-606-S(7/8)	52.61 - 70.00	0.6000	0.6000
T5	18	T-Brackets (Af)	52.61 - 70.00	0.6000	0.6000
T5	20	HCS 2.0 Part 3(1-1/2)	52.61 - 70.00	0.6000	0.6000
T5	21	T-Brackets (Af)	52.61 - 70.00	0.6000	0.6000
T5	26	Safety Line 3/8	52.61 - 70.00	0.6000	0.6000
T6	1	HB114-1-0813U4-M5J(1-1/4)	50.00 - 52.61	0.6000	0.6000
T6	2	LDF5-50A(7/8")	50.00 - 52.61	0.6000	0.6000
T6	5	2-1/4" Rigid Conduit	50.00 - 52.61	0.6000	0.6000
T6	6	9207(5/16)	50.00 - 52.61	0.6000	0.6000
T6	7	9207(5/16)	50.00 - 52.61	0.6000	0.6000
T6	8	T-Brackets (Af)	50.00 - 52.61	0.6000	0.6000
T6	13	2-1/4" Rigid Conduit	50.00 - 52.61	0.6000	0.6000
T6	14	LDF7-50A(1-5/8)	50.00 - 52.61	0.6000	0.6000
T6	17	PWRT-606-S(7/8)	50.00 - 52.61	0.6000	0.6000
T6	18	T-Brackets (Af)	50.00 - 52.61	0.6000	0.6000
T6	20	HCS 2.0 Part 3(1-1/2)	50.00 - 52.61	0.6000	0.6000
T6	21	T-Brackets (Af)	50.00 - 52.61	0.6000	0.6000
T6	26	Safety Line 3/8	50.00 - 52.61	0.6000	0.6000
T7	1	HB114-1-0813U4-M5J(1-1/4)	40.00 - 50.00	0.6000	0.4260
T7	2	LDF5-50A(7/8")	40.00 - 50.00	0.6000	0.4260
T7	5	2-1/4" Rigid Conduit	40.00 - 50.00	0.6000	0.4260

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	6	9207(5/16)	40.00 - 50.00	0.6000	0.4260
T7	7	9207(5/16)	40.00 - 50.00	0.6000	0.4260
T7	8	T-Brackets (Af)	40.00 - 50.00	0.6000	0.4260
T7	13	2-1/4" Rigid Conduit	40.00 - 50.00	0.6000	0.4260
T7	14	LDF7-50A(1-5/8)	40.00 - 50.00	0.6000	0.4260
T7	17	PWRT-606-S(7/8)	40.00 - 50.00	0.6000	0.4260
T7	18	T-Brackets (Af)	40.00 - 50.00	0.6000	0.4260
T7	20	HCS 2.0 Part 3(1-1/2)	40.00 - 50.00	0.6000	0.4260
T7	21	T-Brackets (Af)	40.00 - 50.00	0.6000	0.4260
T7	24	LDF4-50A(1/2)	40.00 - 44.00	0.6000	0.4260
T7	26	Safety Line 3/8	40.00 - 50.00	0.6000	0.4260
T8	1	HB114-1-0813U4-M5J(1-1/4)	20.00 - 40.00	0.6000	0.5523
T8	2	LDF5-50A(7/8")	20.00 - 40.00	0.6000	0.5523
T8	5	2-1/4" Rigid Conduit	20.00 - 40.00	0.6000	0.5523
T8	6	9207(5/16)	20.00 - 40.00	0.6000	0.5523
T8	7	9207(5/16)	20.00 - 40.00	0.6000	0.5523
T8	8	T-Brackets (Af)	20.00 - 40.00	0.6000	0.5523
T8	13	2-1/4" Rigid Conduit	20.00 - 40.00	0.6000	0.5523
T8	14	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.5523
T8	17	PWRT-606-S(7/8)	20.00 - 40.00	0.6000	0.5523
T8	18	T-Brackets (Af)	20.00 - 40.00	0.6000	0.5523
T8	20	HCS 2.0 Part 3(1-1/2)	20.00 - 40.00	0.6000	0.5523
T8	21	T-Brackets (Af)	20.00 - 40.00	0.6000	0.5523
T8	24	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.5523
T8	26	Safety Line 3/8	20.00 - 40.00	0.6000	0.5523
T9	1	HB114-1-0813U4-M5J(1-1/4)	0.00 - 20.00	0.6000	0.6000
T9	2	LDF5-50A(7/8")	0.00 - 20.00	0.6000	0.6000
T9	5	2-1/4" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T9	6	9207(5/16)	0.00 - 20.00	0.6000	0.6000
T9	7	9207(5/16)	0.00 - 20.00	0.6000	0.6000
T9	8	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	13	2-1/4" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T9	14	LDF7-50A(1-5/8)	0.00 - 20.00	0.6000	0.6000
T9	17	PWRT-606-S(7/8)	0.00 - 20.00	0.6000	0.6000
T9	18	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	20	HCS 2.0 Part 3(1-1/2)	0.00 - 20.00	0.6000	0.6000
T9	21	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	24	LDF4-50A(1/2)	0.00 - 20.00	0.6000	0.6000
T9	26	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
* CLEARWIRE *					
LLPX310R w/ Mount Pipe	A	From Leg	4.000 0.000 -2.000	0.000	120.000
LLPX310R w/ Mount Pipe	B	From Leg	4.000 0.000 -2.000	0.000	120.000
LLPX310R w/ Mount Pipe	C	From Leg	4.000 0.000 -2.000	0.000	120.000
FDD_R6_RRH	A	From Leg	4.000 0.000 -2.000	0.000	120.000
FDD_R6_RRH	B	From Leg	4.000 0.000 -2.000	0.000	120.000
FDD_R6_RRH	C	From Leg	4.000 0.000 -2.000	0.000	120.000
5' x 2" Pipe Mount	B	From Leg	4.000 0.000 0.000	0.000	120.000
5' x 2" Pipe Mount	C	From Leg	4.000 0.000 0.000	0.000	120.000
(2) 5' x 2" Pipe Mount	B	From Leg	4.000 0.000 0.000	0.000	120.000
5' x 2" Pipe Mount	C	From Leg	4.000 0.000 0.000	0.000	120.000
(2) Side Arm Mount [SO 301-1]	B	From Leg	5.000 0.000 0.000	0.000	120.000
Side Arm Mount [SO 301-1]	C	From Leg	5.000 0.000 0.000	0.000	120.000
*					
* SPRINT *					
P40-16-XLPP-RR-A w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	120.000
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	120.000
P40-16-XLPP-RR-A w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	120.000
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	120.000
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	120.000
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	120.000
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000 0.000 0.000	0.000	120.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft
800 EXTERNAL NOTCH FILTER	B	From Leg	4.000 0.000 0.000	0.000	120.000
800 EXTERNAL NOTCH FILTER	C	From Leg	4.000 0.000 0.000	0.000	120.000
1900MHz RRH (65MHz)	A	From Leg	4.000 0.000 0.000	0.000	120.000
1900MHz RRH (65MHz)	B	From Leg	4.000 0.000 0.000	0.000	120.000
1900MHz RRH (65MHz)	C	From Leg	4.000 0.000 0.000	0.000	120.000
800MHZ RRH	A	From Leg	4.000 0.000 0.000	0.000	120.000
800MHZ RRH	B	From Leg	4.000 0.000 0.000	0.000	120.000
800MHZ RRH	C	From Leg	4.000 0.000 0.000	0.000	120.000
ACU-A20-N	A	From Leg	4.000 0.000 0.000	0.000	120.000
ACU-A20-N	B	From Leg	4.000 0.000 0.000	0.000	120.000
ACU-A20-N	C	From Leg	4.000 0.000 0.000	0.000	120.000
TD-RRH8x20-25	A	From Leg	4.000 0.000 0.000	0.000	120.000
TD-RRH8x20-25	B	From Leg	4.000 0.000 0.000	0.000	120.000
TD-RRH8x20-25	C	From Leg	4.000 0.000 0.000	0.000	120.000
5' x 2" Pipe Mount	A	From Leg	4.000 0.000 0.000	0.000	120.000
5' x 2" Pipe Mount	B	From Leg	4.000 0.000 0.000	0.000	120.000
5' x 2" Pipe Mount	C	From Leg	4.000 0.000 0.000	0.000	120.000
Platform Mount [LP 405-1] *	C	None		0.000	120.000
RRUS 32 B2	A	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 32 B2	B	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 32 B2	C	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 32 B30	A	From Leg	4.000 0.000 2.000	0.000	110.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft
RRUS 32 B30	B	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 32 B30	C	From Leg	4.000 0.000 2.000	0.000	110.000
DC6-48-60-18-8F	B	From Leg	4.000 0.000 2.000	0.000	110.000
DC6-48-60-18-8F	C	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6419 B77G w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6419 B77G w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6419 B77G w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	110.000
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	110.000
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	110.000
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	110.000
TPA65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	110.000
TPA65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	110.000
TPA65R-BU6D w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6449 N77 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6449 N77 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	110.000
AIR 6449 N77 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	110.000
RADIO 4478 B14	A	From Leg	4.000 0.000 2.000	0.000	110.000
RADIO 4478 B14	B	From Leg	4.000 0.000 2.000	0.000	110.000
RADIO 4478 B14	C	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 4449 B5/B12	A	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 4449 B5/B12	B	From Leg	4.000 0.000 2.000	0.000	110.000
RRUS 4449 B5/B12	C	From Leg	4.000 0.000	0.000	110.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft
RRUS 4426 B66	A	From Leg	2.000 4.000 0.000	0.000	110.000
RRUS 4426 B66	B	From Leg	2.000 4.000 0.000	0.000	110.000
RRUS 4426 B66	C	From Leg	2.000 4.000 0.000	0.000	110.000
DC9-48-60-24-8C-EV	A	From Leg	2.000 4.000 0.000	0.000	110.000
Sector Mount [SM 502-3]	C	None	2.000	0.000	110.000
*					
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	100.000
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	100.000
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B604	A	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B604	B	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B604	C	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B605	A	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B605	B	From Leg	4.000 0.000 0.000	0.000	100.000
TA08025-B605	C	From Leg	4.000 0.000 0.000	0.000	100.000
RDIDC-9181-PF-48	A	From Leg	4.000 0.000 0.000	0.000	100.000
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	100.000
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	100.000
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	100.000
Commscope MTC3975083 (3)	C	None		0.000	100.000
*					
*					
BULLET III	C	From Leg	3.000 0.000	0.000	44.000
Side Arm Mount [SO 701-1]	C	From Leg	2.000 1.500 0.000	0.000	44.000
*			0.000		

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft
* CLEARWIRE *								
A-ANT-23G-2-C	B	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	-10.000		120.000	2.175
A-ANT-23G-2-C	B	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	90.000		120.000	2.175
A-ANT-23G-2-C	C	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	10.000		120.000	2.175
*								

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105245	1097.165	2764.990	0.683	0.209	7.619	19.201	5.301
Pirod 105217	2307.763	5088.706	0.593	0.391	8.013	17.669	5.301
Pirod 105217 w/ (2) 1.25 Tierod	2297.598	4775.669	0.793	0.355	7.978	16.582	7.753

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	1.2D+1.0W (pattern 1) 0 deg - No Ice
4	1.2D+1.0W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.0 Wind 0 deg - No Ice
6	1.2 Dead+1.0 Wind 30 deg - No Ice
7	1.2D+1.0W (pattern 1) 30 deg - No Ice
8	1.2D+1.0W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.0 Wind 30 deg - No Ice
10	1.2 Dead+1.0 Wind 60 deg - No Ice
11	1.2D+1.0W (pattern 1) 60 deg - No Ice
12	1.2D+1.0W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.0 Wind 60 deg - No Ice
14	1.2 Dead+1.0 Wind 90 deg - No Ice
15	1.2D+1.0W (pattern 1) 90 deg - No Ice
16	1.2D+1.0W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.0 Wind 90 deg - No Ice
18	1.2 Dead+1.0 Wind 120 deg - No Ice
19	1.2D+1.0W (pattern 1) 120 deg - No Ice
20	1.2D+1.0W (pattern 2) 120 deg - No Ice
21	0.9 Dead+1.0 Wind 120 deg - No Ice
22	1.2 Dead+1.0 Wind 150 deg - No Ice
23	1.2D+1.0W (pattern 1) 150 deg - No Ice
24	1.2D+1.0W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.0 Wind 150 deg - No Ice

Comb. No.	Description
26	1.2 Dead+1.0 Wind 180 deg - No Ice
27	1.2D+1.0W (pattern 1) 180 deg - No Ice
28	1.2D+1.0W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.0 Wind 180 deg - No Ice
30	1.2 Dead+1.0 Wind 210 deg - No Ice
31	1.2D+1.0W (pattern 1) 210 deg - No Ice
32	1.2D+1.0W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.0 Wind 210 deg - No Ice
34	1.2 Dead+1.0 Wind 240 deg - No Ice
35	1.2D+1.0W (pattern 1) 240 deg - No Ice
36	1.2D+1.0W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.0 Wind 240 deg - No Ice
38	1.2 Dead+1.0 Wind 270 deg - No Ice
39	1.2D+1.0W (pattern 1) 270 deg - No Ice
40	1.2D+1.0W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.0 Wind 270 deg - No Ice
42	1.2 Dead+1.0 Wind 300 deg - No Ice
43	1.2D+1.0W (pattern 1) 300 deg - No Ice
44	1.2D+1.0W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.0 Wind 300 deg - No Ice
46	1.2 Dead+1.0 Wind 330 deg - No Ice
47	1.2D+1.0W (pattern 1) 330 deg - No Ice
48	1.2D+1.0W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.0 Wind 330 deg - No Ice
50	1.2 Dead+1.0 Ice+1.0 Temp
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	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	120 - 117.667	Leg	Max Tension	10	0.111	0.000	0.000
			Max. Compression	55	-2.793	0.067	0.030
			Max. Mx	34	-1.411	-0.264	0.081
			Max. My	2	-1.151	-0.036	-0.266
			Max. Vy	14	-1.435	-0.000	-0.000
			Max. Vx	2	1.412	-0.000	-0.000
		Diagonal	Max Tension	14	2.654	0.000	0.000
			Max. Compression	14	-2.721	0.000	0.000
			Max. Mx	52	0.292	0.002	0.000
			Max. My	10	-0.635	0.000	-0.000
			Max. Vy	52	-0.003	0.000	0.000

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	0.000	0.000	0.000
		Top Girt	Max Tension	10	1.845	-0.116	-0.001
			Max. Compression	34	-1.777	0.060	-0.001
			Max. Mx	2	0.934	-0.198	-0.000
			Max. My	2	0.383	-0.198	-0.007
			Max. Vy	2	0.120	-0.198	-0.000
			Max. Vx	2	-0.004	-0.198	-0.007
T2	117.667 - 110	Leg	Max Tension	13	11.380	0.557	-0.212
			Max. Compression	34	-14.014	-0.050	0.038
			Max. Mx	14	-12.337	0.619	-0.048
			Max. My	2	-13.781	-0.065	-0.592
			Max. Vy	34	-1.715	0.308	-0.107
			Max. Vx	2	-1.754	0.041	0.318
		Diagonal	Max Tension	14	2.384	0.000	0.000
			Max. Compression	14	-2.452	0.000	0.000
			Max. Mx	56	0.475	-0.002	-0.000
			Max. My	10	-1.972	-0.001	0.001
			Max. Vy	56	0.004	-0.002	-0.000
			Max. Vx	10	0.000	0.000	0.000
		Horizontal	Max Tension	26	0.281	0.000	0.000
			Max. Compression	5	-0.147	0.000	0.000
			Max. Mx	51	0.088	0.006	0.000
			Max. My	22	0.095	0.000	0.000
			Max. Vy	51	-0.007	0.000	0.000
			Max. Vx	22	-0.000	0.000	0.000
		Top Girt	Max Tension	34	0.230	0.000	0.000
			Max. Compression	13	-0.160	0.000	0.000
			Max. Mx	50	0.060	0.007	0.000
			Max. My	22	0.036	0.000	-0.000
			Max. Vy	50	-0.008	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
		Bottom Girt	Max Tension	26	0.800	0.000	0.000
			Max. Compression	34	-0.831	0.000	0.000
			Max. Mx	50	0.006	0.007	0.000
			Max. My	22	0.108	0.000	-0.000
			Max. Vy	50	-0.008	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
T3	110 - 90	Leg	Max Tension	13	65.606	1.067	0.043
			Max. Compression	2	-74.472	0.531	-0.001
			Max. Mx	2	-74.465	-1.153	0.008
			Max. My	6	-3.510	0.029	-1.077
			Max. Vy	2	-4.043	0.531	-0.001
			Max. Vx	6	3.380	0.019	0.985
		Diagonal	Max Tension	14	4.677	0.000	0.000
			Max. Compression	14	-4.716	0.000	0.000
			Max. Mx	6	2.915	-0.004	-0.000
			Max. My	14	-4.253	-0.000	0.003
			Max. Vy	51	0.005	-0.003	0.000
			Max. Vx	14	-0.002	-0.000	0.003
		Horizontal	Max Tension	26	1.303	0.000	0.000
			Max. Compression	5	-1.001	0.000	0.000
			Max. Mx	51	0.170	0.007	0.000
			Max. My	22	0.613	0.000	0.000
			Max. Vy	51	-0.007	0.000	0.000
			Max. Vx	22	-0.000	0.000	0.000
		Top Girt	Max Tension	34	1.605	0.000	0.000
			Max. Compression	10	-1.596	0.000	0.000
			Max. Mx	50	0.015	0.006	0.000
			Max. My	22	0.003	0.000	-0.000
			Max. Vy	50	0.007	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
		Bottom Girt	Max Tension	26	2.281	0.000	0.000
			Max. Compression	2	-2.270	0.000	0.000
			Max. Mx	50	0.070	0.008	0.000
			Max. My	22	0.402	0.000	-0.000
			Max. Vy	50	-0.008	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
T4	90 - 70	Leg	Max Tension	13	123.477	2.435	0.008

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	2	-136.328	-0.449	-0.020
			Max. Mx	2	-136.319	-2.665	-0.100
			Max. My	22	-6.057	0.069	2.109
			Max. Vy	2	-4.433	-0.449	-0.020
			Max. Vx	22	3.558	-0.003	0.332
		Diagonal	Max Tension	6	7.260	-0.004	-0.001
			Max. Compression	30	-7.301	0.000	0.000
			Max. Mx	2	2.873	-0.007	-0.002
			Max. My	6	-4.352	0.002	0.005
			Max. Vy	51	0.007	-0.005	0.001
			Max. Vx	6	-0.002	0.002	0.005
		Secondary Horizontal	Max Tension	6	3.156	-0.000	0.001
			Max. Compression	6	-3.043	-0.004	-0.002
			Max. Mx	2	-1.409	-0.011	-0.005
			Max. My	6	0.087	-0.011	-0.006
			Max. Vy	60	-0.011	-0.007	-0.000
			Max. Vx	6	-0.003	0.000	0.000
		Top Girt	Max Tension	2	1.986	0.000	0.000
			Max. Compression	10	-1.812	0.000	0.000
			Max. Mx	50	0.028	0.011	0.000
			Max. My	22	-0.344	0.000	-0.000
			Max. Vy	50	-0.011	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
		Bottom Girt	Max Tension	26	2.798	0.000	0.000
			Max. Compression	2	-3.162	0.000	0.000
			Max. Mx	50	0.066	0.014	0.000
			Max. My	22	0.721	0.000	-0.000
			Max. Vy	50	-0.012	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
T5	70 - 52.6146	Leg	Max Tension	29	168.153	-0.172	-0.003
			Max. Compression	2	-183.613	0.102	0.005
			Max. Mx	2	-136.351	4.016	0.149
			Max. My	22	-5.744	-0.150	-3.235
			Max. Vy	2	-4.468	4.016	0.149
			Max. Vx	22	3.573	-0.150	-3.235
		Diagonal	Max Tension	6	6.238	0.000	0.000
			Max. Compression	30	-6.762	0.000	0.000
			Max. Mx	30	3.079	-0.007	0.000
			Max. My	18	-6.048	0.002	0.004
			Max. Vy	51	0.007	-0.005	-0.000
			Max. Vx	18	-0.002	0.001	0.004
		Horizontal	Max Tension	26	2.418	0.000	0.000
			Max. Compression	5	-2.130	0.000	0.000
			Max. Mx	50	0.198	0.013	0.000
			Max. My	38	0.123	0.000	-0.000
			Max. Vy	50	-0.011	0.000	0.000
			Max. Vx	38	0.000	0.000	0.000
		Top Girt	Max Tension	34	2.271	0.000	0.000
			Max. Compression	6	-2.006	0.000	0.000
			Max. Mx	50	0.068	0.014	0.000
			Max. My	22	-0.573	0.000	-0.000
			Max. Vy	50	-0.012	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
T6	52.6146 - 50	Leg	Max Tension	29	177.351	-0.197	0.027
			Max. Compression	2	-193.446	3.438	0.128
			Max. Mx	2	-193.446	3.438	0.128
			Max. My	22	-7.356	0.051	-1.979
			Max. Vy	2	-5.556	3.438	0.128
			Max. Vx	22	3.501	0.051	-1.979
		Diagonal	Max Tension	6	4.915	0.000	0.000
			Max. Compression	6	-5.084	0.000	0.000
			Max. Mx	2	3.710	-0.006	0.000
			Max. My	49	-4.270	0.001	-0.001
			Max. Vy	51	0.007	-0.005	0.000
			Max. Vx	46	0.000	0.000	-0.001
		Horizontal	Max Tension	26	1.329	0.000	0.000
			Max. Compression	5	-1.121	0.000	0.000
			Max. Mx	50	0.192	0.013	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	38	0.112	0.000	-0.000
			Max. Vy	50	-0.011	0.000	0.000
			Max. Vx	38	0.000	0.000	0.000
		Bottom Girt	Max Tension	26	1.902	0.000	0.000
			Max. Compression	2	-1.735	0.000	0.000
			Max. Mx	50	0.055	0.016	0.000
			Max. My	22	-0.234	0.000	-0.000
			Max. Vy	50	-0.013	0.000	0.000
			Max. Vx	22	0.000	0.000	0.000
T7	50 - 40	Leg	Max Tension	29	171.942	-3.144	-0.131
			Max. Compression	2	-186.603	8.003	0.079
			Max. Mx	26	171.176	-8.498	-0.138
			Max. My	6	-7.863	-0.271	-14.512
			Max. Vy	10	0.649	-8.437	0.035
			Max. Vx	46	-1.349	-0.318	14.022
		Diagonal	Max Tension	5	6.101	0.000	0.000
			Max. Compression	26	-6.474	0.000	0.000
			Max. Mx	26	0.934	0.129	0.018
			Max. My	8	-2.027	0.110	0.030
			Max. Vy	6	-0.027	0.116	0.029
			Max. Vx	8	-0.006	0.110	0.030
T8	40 - 20	Leg	Max Tension	29	182.419	-7.900	-0.075
			Max. Compression	2	-200.422	7.415	0.040
			Max. Mx	26	177.784	-8.498	-0.138
			Max. My	6	-9.233	-0.271	-14.512
			Max. Vy	26	-0.182	-7.943	-0.079
			Max. Vx	46	0.802	-0.319	14.022
		Diagonal	Max Tension	22	2.774	0.000	0.000
			Max. Compression	29	-3.274	0.000	0.000
			Max. Mx	2	1.625	0.126	0.009
			Max. My	24	0.083	0.093	-0.012
			Max. Vy	2	-0.029	0.126	0.009
			Max. Vx	24	0.003	0.000	0.000
T9	20 - 0	Leg	Max Tension	29	191.362	-6.630	-0.067
			Max. Compression	2	-213.187	-0.000	-0.000
			Max. Mx	2	-207.617	7.415	0.040
			Max. My	6	-10.713	-0.291	-10.006
			Max. Vy	26	-0.768	-6.739	-0.072
			Max. Vx	46	1.065	-0.311	9.613
		Diagonal	Max Tension	29	4.432	0.000	0.000
			Max. Compression	2	-5.108	0.000	0.000
			Max. Mx	2	1.446	0.070	0.006
			Max. My	25	-3.054	-0.025	-0.014
			Max. Vy	52	0.024	0.034	-0.006
			Max. Vx	25	0.002	-0.025	-0.014

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	34	211.485	14.122	-8.400
	Max. H_x	34	211.485	14.122	-8.400
	Max. H_z	13	-192.325	-12.938	7.687
	Min. Vert	13	-192.325	-12.938	7.687
	Min. H_x	13	-192.325	-12.938	7.687
	Min. H_z	34	211.485	14.122	-8.400
Leg B	Max. Vert	18	208.011	-14.033	-8.084
	Max. H_x	45	-188.121	12.737	7.318
	Max. H_z	45	-188.121	12.737	7.318
	Min. Vert	45	-188.121	12.737	7.318
	Min. H_x	18	208.011	-14.033	-8.084
	Min. H_z	18	208.011	-14.033	-8.084
Leg A	Max. Vert	2	219.705	-0.327	17.200
	Max. H_x	20	-76.754	1.103	-5.580

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_z	2	219.705	-0.327	17.200
	Min. Vert	29	-196.276	0.346	-15.526
	Min. H_x	44	98.436	-1.171	7.171
	Min. H_z	29	-196.276	0.346	-15.526

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	27.056	0.000	0.000	-1.616	3.079	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	32.467	0.047	-23.077	-1808.978	-2.843	-5.862
1.2D+1.0W (pattern 1) 0 deg - No Ice	32.467	0.047	-19.569	-1426.808	-2.846	-5.851
1.2D+1.0W (pattern 2) 0 deg - No Ice	32.467	0.051	-18.492	-1608.561	-3.014	-5.780
0.9 Dead+1.0 Wind 0 deg - No Ice	24.350	0.047	-23.077	-1800.257	-3.751	-5.850
1.2 Dead+1.0 Wind 30 deg - No Ice	32.467	11.641	-20.028	-1576.978	-916.543	-5.120
1.2D+1.0W (pattern 1) 30 deg - No Ice	32.467	9.879	-16.967	-1243.670	-724.608	-5.095
1.2D+1.0W (pattern 2) 30 deg - No Ice	32.467	9.357	-16.065	-1401.973	-815.691	-5.080
0.9 Dead+1.0 Wind 30 deg - No Ice	24.350	11.641	-20.028	-1569.303	-913.263	-5.107
1.2 Dead+1.0 Wind 60 deg - No Ice	32.467	18.880	-10.903	-874.794	-1508.029	-3.299
1.2D+1.0W (pattern 1) 60 deg - No Ice	32.467	15.925	-9.192	-688.002	-1185.422	-3.224
1.2D+1.0W (pattern 2) 60 deg - No Ice	32.467	15.297	-8.834	-784.028	-1350.819	-3.297
0.9 Dead+1.0 Wind 60 deg - No Ice	24.350	18.880	-10.903	-870.253	-1501.975	-3.287
1.2 Dead+1.0 Wind 90 deg - No Ice	32.467	20.124	-0.084	-13.337	-1636.303	-3.494
1.2D+1.0W (pattern 1) 90 deg - No Ice	32.467	16.855	-0.084	-13.309	-1278.343	-3.391
1.2D+1.0W (pattern 2) 90 deg - No Ice	32.467	16.496	-0.088	-13.500	-1480.229	-3.533
0.9 Dead+1.0 Wind 90 deg - No Ice	24.350	20.124	-0.084	-12.755	-1629.555	-3.487
1.2 Dead+1.0 Wind 120 deg - No Ice	32.467	18.717	10.751	847.946	-1482.327	0.472
1.2D+1.0W (pattern 1) 120 deg - No Ice	32.467	15.812	9.069	664.173	-1164.943	0.543
1.2D+1.0W (pattern 2) 120 deg - No Ice	32.467	15.129	8.675	758.435	-1327.630	0.393
0.9 Dead+1.0 Wind 120 deg - No Ice	24.350	18.717	10.751	844.543	-1476.426	0.472
1.2 Dead+1.0 Wind 150 deg - No Ice	32.467	10.981	19.021	1501.320	-864.393	6.083
1.2D+1.0W (pattern 1) 150 deg - No Ice	32.467	9.291	16.084	1181.168	-680.120	6.098
1.2D+1.0W (pattern 2) 150 deg - No Ice	32.467	8.842	15.316	1339.168	-770.787	5.983
0.9 Dead+1.0 Wind 150 deg - No Ice	24.350	10.981	19.021	1494.919	-861.373	6.076
1.2 Dead+1.0 Wind 180 deg - No Ice	32.467	-0.037	22.567	1777.744	9.217	6.118
1.2D+1.0W (pattern 1) 180 deg - No Ice	32.467	-0.037	19.102	1400.129	9.213	6.106
1.2D+1.0W (pattern 2) 180 deg - No Ice	32.467	-0.041	18.132	1582.185	9.384	6.035

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
0.9 Dead+1.0 Wind 180 deg - No Ice	24.350	-0.037	22.567	1770.093	8.231	6.106
1.2 Dead+1.0 Wind 210 deg - No Ice	32.467	-11.508	19.839	1555.822	910.964	5.418
1.2D+1.0W (pattern 1) 210 deg - No Ice	32.467	-9.763	16.809	1225.566	720.852	5.386
1.2D+1.0W (pattern 2) 210 deg - No Ice	32.467	-9.241	15.906	1382.576	811.144	5.377
0.9 Dead+1.0 Wind 210 deg - No Ice	24.350	-11.508	19.839	1549.211	905.873	5.404
1.2 Dead+1.0 Wind 240 deg - No Ice	32.467	-18.975	10.928	862.960	1508.397	3.563
1.2D+1.0W (pattern 1) 240 deg - No Ice	32.467	-16.042	9.229	677.450	1187.999	3.482
1.2D+1.0W (pattern 2) 240 deg - No Ice	32.467	-15.321	8.818	771.805	1350.509	3.560
0.9 Dead+1.0 Wind 240 deg - No Ice	24.350	-18.975	10.928	859.484	1500.517	3.551
1.2 Dead+1.0 Wind 270 deg - No Ice	32.467	-19.947	0.038	3.420	1628.939	3.661
1.2D+1.0W (pattern 1) 270 deg - No Ice	32.467	-16.712	0.038	3.449	1274.539	3.560
1.2D+1.0W (pattern 2) 270 deg - No Ice	32.467	-16.354	0.041	3.597	1474.905	3.700
0.9 Dead+1.0 Wind 270 deg - No Ice	24.350	-19.947	0.038	3.897	1620.353	3.654
1.2 Dead+1.0 Wind 300 deg - No Ice	32.467	-18.467	-10.594	-846.858	1483.806	-0.740
1.2D+1.0W (pattern 1) 300 deg - No Ice	32.467	-15.569	-8.916	-663.589	1167.296	-0.805
1.2D+1.0W (pattern 2) 300 deg - No Ice	32.467	-14.978	-8.576	-758.760	1331.553	-0.660
0.9 Dead+1.0 Wind 300 deg - No Ice	24.350	-18.467	-10.594	-842.455	1475.986	-0.740
1.2 Dead+1.0 Wind 330 deg - No Ice	32.467	-10.992	-19.056	-1509.612	873.388	-5.924
1.2D+1.0W (pattern 1) 330 deg - No Ice	32.467	-9.302	-16.120	-1189.493	689.064	-5.934
1.2D+1.0W (pattern 2) 330 deg - No Ice	32.467	-8.853	-15.351	-1347.471	779.764	-5.823
0.9 Dead+1.0 Wind 330 deg - No Ice	24.350	-10.992	-19.056	-1502.201	868.434	-5.916
1.2 Dead+1.0 Ice+1.0 Temp	56.893	0.000	0.000	-4.321	11.000	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	56.893	0.009	-6.984	-539.642	9.650	-2.380
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	56.893	3.441	-5.937	-463.127	-255.913	-1.861
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	56.893	5.499	-3.177	-254.678	-422.185	-1.531
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	56.893	6.005	-0.017	-6.698	-466.833	-1.457
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	56.893	5.235	3.014	232.056	-401.029	-0.360
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	56.893	3.231	5.598	429.542	-239.324	1.633
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	56.893	-0.007	6.849	521.511	12.210	2.430
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	56.893	-3.388	5.854	447.010	273.092	1.917
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	56.893	-5.455	3.146	241.796	438.363	1.582
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	56.893	-5.917	0.007	-3.181	481.387	1.491
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	56.893	-5.202	-2.992	-240.088	422.502	0.309
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	56.893	-3.233	-5.605	-439.144	261.688	-1.600
Dead+Wind 0 deg - Service	27.056	0.012	-6.076	-476.159	1.388	-1.541
Dead+Wind 30 deg - Service	27.056	3.065	-5.273	-415.227	-238.526	-1.359

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
Dead+Wind 60 deg - Service	27.056	4.971	-2.871	-230.822	-393.842	-0.869
Dead+Wind 90 deg - Service	27.056	5.299	-0.022	-4.604	-427.533	-0.910
Dead+Wind 120 deg - Service	27.056	4.928	2.831	221.550	-387.119	0.125
Dead+Wind 150 deg - Service	27.056	2.891	5.008	393.105	-224.863	1.591
Dead+Wind 180 deg - Service	27.056	-0.010	5.942	465.685	4.548	1.607
Dead+Wind 210 deg - Service	27.056	-3.030	5.224	407.420	241.352	1.433
Dead+Wind 240 deg - Service	27.056	-4.996	2.877	225.493	398.234	0.936
Dead+Wind 270 deg - Service	27.056	-5.252	0.010	-0.212	429.871	0.956
Dead+Wind 300 deg - Service	27.056	-4.862	-2.790	-223.494	391.753	-0.192
Dead+Wind 330 deg - Service	27.056	-2.894	-5.017	-397.542	231.465	-1.546

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	0.000	-27.056	0.000	0.000	27.056	0.000	0.000%
2	0.047	-32.467	-23.077	-0.047	32.467	23.077	0.000%
3	0.047	-32.467	-19.569	-0.047	32.467	19.569	0.000%
4	0.051	-32.467	-18.492	-0.051	32.467	18.492	0.000%
5	0.047	-24.350	-23.077	-0.047	24.350	23.077	0.000%
6	11.641	-32.467	-20.028	-11.641	32.467	20.028	0.000%
7	9.879	-32.467	-16.967	-9.879	32.467	16.967	0.000%
8	9.357	-32.467	-16.065	-9.357	32.467	16.065	0.000%
9	11.641	-24.350	-20.028	-11.641	24.350	20.028	0.000%
10	18.880	-32.467	-10.903	-18.880	32.467	10.903	0.000%
11	15.925	-32.467	-9.192	-15.925	32.467	9.192	0.000%
12	15.297	-32.467	-8.834	-15.297	32.467	8.834	0.000%
13	18.880	-24.350	-10.903	-18.880	24.350	10.903	0.000%
14	20.124	-32.467	-0.084	-20.124	32.467	0.084	0.000%
15	16.855	-32.467	-0.084	-16.855	32.467	0.084	0.000%
16	16.496	-32.467	-0.088	-16.496	32.467	0.088	0.000%
17	20.124	-24.350	-0.084	-20.124	24.350	0.084	0.000%
18	18.717	-32.467	10.751	-18.717	32.467	-10.751	0.000%
19	15.812	-32.467	9.069	-15.812	32.467	-9.069	0.000%
20	15.129	-32.467	8.675	-15.129	32.467	-8.675	0.000%
21	18.717	-24.350	10.751	-18.717	24.350	-10.751	0.000%
22	10.981	-32.467	19.021	-10.981	32.467	-19.021	0.000%
23	9.291	-32.467	16.084	-9.291	32.467	-16.084	0.000%
24	8.842	-32.467	15.316	-8.842	32.467	-15.316	0.000%
25	10.981	-24.350	19.021	-10.981	24.350	-19.021	0.000%
26	-0.037	-32.467	22.567	0.037	32.467	-22.567	0.000%
27	-0.037	-32.467	19.102	0.037	32.467	-19.102	0.000%
28	-0.041	-32.467	18.132	0.041	32.467	-18.132	0.000%
29	-0.037	-24.350	22.567	0.037	24.350	-22.567	0.000%
30	-11.508	-32.467	19.839	11.508	32.467	-19.839	0.000%
31	-9.763	-32.467	16.809	9.763	32.467	-16.809	0.000%
32	-9.241	-32.467	15.906	9.241	32.467	-15.906	0.000%
33	-11.508	-24.350	19.839	11.508	24.350	-19.839	0.000%
34	-18.975	-32.467	10.928	18.975	32.467	-10.928	0.000%
35	-16.042	-32.467	9.229	16.042	32.467	-9.229	0.000%
36	-15.321	-32.467	8.818	15.321	32.467	-8.818	0.000%
37	-18.975	-24.350	10.928	18.975	24.350	-10.928	0.000%
38	-19.947	-32.467	0.038	19.947	32.467	-0.038	0.000%
39	-16.712	-32.467	0.038	16.712	32.467	-0.038	0.000%
40	-16.354	-32.467	0.041	16.354	32.467	-0.041	0.000%
41	-19.947	-24.350	0.038	19.947	24.350	-0.038	0.000%
42	-18.467	-32.467	-10.594	18.467	32.467	10.594	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
43	-15.569	-32.467	-8.916	15.569	32.467	8.916	0.000%
44	-14.978	-32.467	-8.576	14.978	32.467	8.576	0.000%
45	-18.467	-24.350	-10.594	18.467	24.350	10.594	0.000%
46	-10.992	-32.467	-19.056	10.992	32.467	19.056	0.000%
47	-9.302	-32.467	-16.120	9.302	32.467	16.120	0.000%
48	-8.853	-32.467	-15.351	8.853	32.467	15.351	0.000%
49	-10.992	-24.350	-19.056	10.992	24.350	19.056	0.000%
50	0.000	-56.893	0.000	0.000	56.893	0.000	0.000%
51	0.009	-56.893	-6.984	-0.009	56.893	6.984	0.000%
52	3.441	-56.893	-5.937	-3.441	56.893	5.937	0.000%
53	5.499	-56.893	-3.177	-5.499	56.893	3.177	0.000%
54	6.005	-56.893	-0.017	-6.005	56.893	0.017	0.000%
55	5.235	-56.893	3.014	-5.235	56.893	-3.014	0.000%
56	3.231	-56.893	5.598	-3.231	56.893	-5.598	0.000%
57	-0.007	-56.893	6.849	0.007	56.893	-6.849	0.000%
58	-3.388	-56.893	5.854	3.388	56.893	-5.854	0.000%
59	-5.455	-56.893	3.146	5.455	56.893	-3.146	0.000%
60	-5.917	-56.893	0.007	5.917	56.893	-0.007	0.000%
61	-5.202	-56.893	-2.992	5.202	56.893	2.992	0.000%
62	-3.233	-56.893	-5.605	3.233	56.893	5.605	0.000%
63	0.012	-27.056	-6.076	-0.012	27.056	6.076	0.000%
64	3.065	-27.056	-5.273	-3.065	27.056	5.273	0.000%
65	4.971	-27.056	-2.871	-4.971	27.056	2.871	0.000%
66	5.299	-27.056	-0.022	-5.299	27.056	0.022	0.000%
67	4.928	-27.056	2.831	-4.928	27.056	-2.831	0.000%
68	2.891	-27.056	5.008	-2.891	27.056	-5.008	0.000%
69	-0.010	-27.056	5.942	0.010	27.056	-5.942	0.000%
70	-3.030	-27.056	5.224	3.030	27.056	-5.224	0.000%
71	-4.996	-27.056	2.877	4.996	27.056	-2.877	0.000%
72	-5.252	-27.056	0.010	5.252	27.056	-0.010	0.000%
73	-4.862	-27.056	-2.790	4.862	27.056	2.790	0.000%
74	-2.894	-27.056	-5.017	2.894	27.056	5.017	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	0.00002403
3	Yes	4	0.00000001	0.00002631
4	Yes	4	0.00000001	0.00002408
5	Yes	4	0.00000001	0.00001046
6	Yes	4	0.00000001	0.00002667
7	Yes	4	0.00000001	0.00002831
8	Yes	4	0.00000001	0.00002628
9	Yes	4	0.00000001	0.00001218
10	Yes	4	0.00000001	0.00002865
11	Yes	4	0.00000001	0.00003024
12	Yes	4	0.00000001	0.00002831
13	Yes	4	0.00000001	0.00001193
14	Yes	4	0.00000001	0.00002856
15	Yes	4	0.00000001	0.00002897
16	Yes	4	0.00000001	0.00002801
17	Yes	4	0.00000001	0.00001412
18	Yes	4	0.00000001	0.00002357
19	Yes	4	0.00000001	0.00002627
20	Yes	4	0.00000001	0.00002365
21	Yes	4	0.00000001	0.00000917
22	Yes	4	0.00000001	0.00002996
23	Yes	4	0.00000001	0.00002954
24	Yes	4	0.00000001	0.00002924
25	Yes	4	0.00000001	0.00001678
26	Yes	4	0.00000001	0.00002947
27	Yes	4	0.00000001	0.00003061
28	Yes	4	0.00000001	0.00002908

29	Yes	4	0.00000001	0.00001333
30	Yes	4	0.00000001	0.00002626
31	Yes	4	0.00000001	0.00002821
32	Yes	4	0.00000001	0.00002600
33	Yes	4	0.00000001	0.00001126
34	Yes	4	0.00000001	0.00002381
35	Yes	4	0.00000001	0.00002627
36	Yes	4	0.00000001	0.00002386
37	Yes	4	0.00000001	0.00000967
38	Yes	4	0.00000001	0.00002806
39	Yes	4	0.00000001	0.00002877
40	Yes	4	0.00000001	0.00002758
41	Yes	4	0.00000001	0.00001341
42	Yes	4	0.00000001	0.00002863
43	Yes	4	0.00000001	0.00003023
44	Yes	4	0.00000001	0.00002832
45	Yes	4	0.00000001	0.00001192
46	Yes	4	0.00000001	0.00003010
47	Yes	4	0.00000001	0.00002952
48	Yes	4	0.00000001	0.00002934
49	Yes	4	0.00000001	0.00001702
50	Yes	4	0.00000001	0.00000948
51	Yes	4	0.00000001	0.00015696
52	Yes	4	0.00000001	0.00015903
53	Yes	4	0.00000001	0.00016004
54	Yes	4	0.00000001	0.00015674
55	Yes	4	0.00000001	0.00015413
56	Yes	4	0.00000001	0.00015758
57	Yes	4	0.00000001	0.00016114
58	Yes	4	0.00000001	0.00015883
59	Yes	4	0.00000001	0.00015590
60	Yes	4	0.00000001	0.00015731
61	Yes	4	0.00000001	0.00015942
62	Yes	4	0.00000001	0.00015833
63	Yes	4	0.00000001	0.00001706
64	Yes	4	0.00000001	0.00001758
65	Yes	4	0.00000001	0.00001803
66	Yes	4	0.00000001	0.00001753
67	Yes	4	0.00000001	0.00001707
68	Yes	4	0.00000001	0.00001758
69	Yes	4	0.00000001	0.00001806
70	Yes	4	0.00000001	0.00001756
71	Yes	4	0.00000001	0.00001708
72	Yes	4	0.00000001	0.00001751
73	Yes	4	0.00000001	0.00001801
74	Yes	4	0.00000001	0.00001757

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	7.119	64	0.542	0.041
T2	117.667 - 110	6.850	64	0.542	0.041
T3	110 - 90	5.962	64	0.534	0.042
T4	90 - 70	3.786	64	0.456	0.039
T5	70 - 52.6146	2.066	64	0.323	0.031
T6	52.6146 - 50	1.002	64	0.220	0.019
T7	50 - 40	0.881	64	0.202	0.018
T8	40 - 20	0.516	64	0.144	0.012
T9	20 - 0	0.110	64	0.052	0.005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	A-ANT-23G-2-C	64	7.119	0.542	0.041	92157
120.000	LLPX310R w/ Mount Pipe	64	7.119	0.542	0.041	92157
110.000	RRUS 32 B2	64	5.962	0.534	0.042	35881
100.000	MX08FRO665-21 w/ Mount Pipe	64	4.832	0.505	0.041	14453
44.000	BULLET III	64	0.646	0.166	0.014	9048

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	27.159	6	2.071	0.162
T2	117.667 - 110	26.135	6	2.071	0.159
T3	110 - 90	22.743	6	2.040	0.163
T4	90 - 70	14.441	6	1.741	0.152
T5	70 - 52.6146	7.878	6	1.233	0.118
T6	52.6146 - 50	3.821	6	0.838	0.074
T7	50 - 40	3.359	6	0.770	0.068
T8	40 - 20	1.967	6	0.550	0.045
T9	20 - 0	0.420	6	0.197	0.018

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	A-ANT-23G-2-C	6	27.159	2.071	0.162	25983
120.000	LLPX310R w/ Mount Pipe	6	27.159	2.071	0.162	25983
110.000	RRUS 32 B2	6	22.743	2.040	0.163	9377
100.000	MX08FRO665-21 w/ Mount Pipe	6	18.434	1.928	0.161	3785
44.000	BULLET III	6	2.461	0.632	0.054	2368

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
T2	117.667	Leg	A325N	0.625	4	3.504	27.612	0.127	1.05	Bolt DS
T3	110	Leg	A325N	0.625	5	14.894	27.612	0.539	1.05	Bolt DS
T4	90	Leg	A325N	0.750	5	27.265	39.761	0.686	1.05	Bolt DS
T6	52.6146	Leg	A325N	1.000	6	29.558	54.517	0.542	1.05	Bolt Tension
T7	50	Leg	A325N	1.000	6	28.657	54.517	0.526	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	6.101	10.663	0.572	1.05	Member Block Shear
T8	40	Leg	A325N	1.000	6	30.403	54.517	0.558	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	2.774	10.663	0.260	1.05	Member Block Shear
T9	20	Diagonal	A325N	1.000	1	4.432	10.663	0.416	1.05	Member Block Shear

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	120 - 117.667	1 1/2	2.333	2.333	74.7 K=1.00	1.767	-2.793	52.899	0.053 [1]
T2	117.667 - 110	1 1/2	7.667	2.333	74.7 K=1.00	1.767	-11.976	52.899	0.226 [1]
T3	110 - 90	1 3/4	20.002	2.396	65.7 K=1.00	2.405	-70.016	78.927	0.887 [1]
T4	90 - 70	2	20.002	1.196	28.7 K=1.00	3.142	-130.191	133.113	0.978 [1]
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9 K=1.00	4.909	-183.613	190.559	0.964 [1]
T6	52.6146 - 50	2 1/2	2.615	2.031	39.0 K=1.00	4.909	-190.125	197.641	0.962 [1]
T7	50 - 40	Pirod 105245	10.017	10.017	37.8 K=1.00	5.301	-186.603	214.859	0.868 [1]
T8	40 - 20	Pirod 105217	20.033	10.017	37.8 K=1.00	5.301	-200.422	214.859	0.933 [1]
T9	20 - 0	Pirod 105217 w/ (2) 1.25 Tierod	20.033	10.017	64.0 K=1.00	7.753	-213.187	258.681	0.824 [1]

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	238.565	0.196	1.350	3.335	0.406
T8	40 - 20	0.5	1.471	120.0	238.565	0.196	0.804	3.335	0.242
T9	20 - 0	0.5	1.455	118.8	348.898	0.196	1.066	3.388	0.316

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	120 - 117.667	3/4	2.917	2.813	126.0 K=0.70	0.442	-2.721	6.287	0.433 [1]
T2	117.667 - 110	5/8	4.206	2.028	140.2 K=0.90	0.307	-2.452	3.527	0.695 [1]
T3	110 - 90	3/4	4.628	2.246	129.4 K=0.90	0.442	-4.716	5.962	0.791 [1]
T4	90 - 70	7/8	5.051	2.448	134.3 K=1.00	0.601	-7.301	7.533	0.969 [1]
T5	70 - 52.6146	7/8	5.122	2.462	121.6 K=0.90	0.601	-6.762	9.192	0.736 [1]
T6	52.6146 - 50	7/8	5.365	2.582	127.5 K=0.90	0.601	-5.084	8.361	0.608 [1]
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	120.8 K=1.00	0.902	-6.474	17.576	0.368 [1]
T8	40 - 20	L2 1/2x2 1/2x3/16	11.930	5.383	130.5 K=1.00	0.902	-3.274	15.162	0.216 [1]
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	153.4 K=1.00	0.902	-5.108	10.974	0.465 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	117.667 - 110	3/4	3.500	3.375	151.2 K=0.70	0.442	-0.242	4.366	0.055 [1]
T3	110 - 90	3/4	3.930	3.784	169.5 K=0.70	0.442	-1.263	3.473	0.364 [1]
T5	70 - 52.6146	7/8	4.885	4.676	179.6 K=0.70	0.601	-3.051	4.213	0.724 [1]
T6	52.6146 - 50	7/8	4.944	4.736	181.9 K=0.70	0.601	-3.213	4.107	0.782 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T4	90 - 70	1 1/4	4.458	2.145	82.4 K=1.00	1.227	-3.043	33.619	0.091 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	120 - 117.667	5x3/8	3.500	2.531	280.6 K=1.00	1.875	-1.777	5.380	0.330 [1]
		KL/R > 200 (C) - 4							
T2	117.667 - 110	7/8	3.500	3.375	129.6 K=0.70	0.601	-0.243	8.088	0.030 [1]
T3	110 - 90	3/4	3.510	3.365	150.7 K=0.70	0.442	-1.596	4.393	0.363 [1]
T4	90 - 70	1	4.013	3.846	184.6 K=1.00	0.785	-2.361	5.207	0.454 [1]
T5	70 - 52.6146	1	4.526	4.317	145.1 K=0.70	0.785	-3.181	8.432	0.377 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	117.667 - 110	7/8	3.500	3.375	129.6 K=0.70	0.601	-0.831	8.088	0.103 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	110 - 90	3/4	3.990	3.844	172.2 K=0.70	0.442	-2.270	3.366	0.675 [1]
T4	90 - 70	1	4.487	4.321	207.4 K=1.00	0.785	-3.162	4.125	0.767 [1]
		KL/R > 200 (C) - 112							
T6	52.6146 - 50	1	4.988	4.779	160.6 K=0.70	0.785	-3.351	6.881	0.487 [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	120 - 117.667	1 1/2	2.333	2.333	74.7	1.767	0.111	79.522	0.001 [1]
T2	117.667 - 110	1 1/2	7.667	0.333	10.7	1.234	11.380	60.151	0.189 [1] #
T3	110 - 90	1 3/4	20.002	0.417	11.4	1.794	65.606	87.466	0.750 [1] #
T4	90 - 70	2	20.002	0.500	12.0	3.142	123.477	141.372	0.873 [1] #
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9	4.909	168.153	220.893	0.761 [1]
T6	52.6146 - 50	2 1/2	2.615	0.583	11.2	4.909	177.351	220.893	0.803 [1]
T7	50 - 40	Pirod 105245	10.017	10.017	37.8	5.301	171.942	238.565	0.721 [1]
T8	40 - 20	Pirod 105217	20.033	10.017	37.8	5.301	182.419	238.565	0.765 [1]
T9	20 - 0	Pirod 105217 w/ (2) 1.25 Tierod	20.033	10.017	64.0	7.753	191.362	348.898	0.548 [1]

[1] P_u / ϕP_n controls
[#] Based on net area of leg in section below

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	238.565	0.196	1.350	3.335	0.406
T8	40 - 20	0.5	1.471	120.0	238.565	0.196	0.804	3.335	0.242
T9	20 - 0	0.5	1.455	118.8	348.898	0.196	1.066	3.388	0.316

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	120 - 117.667	3/4	2.917	2.813	180.0	0.442	2.654	19.880	0.134 [1]
T2	117.667 - 110	5/8	4.206	2.028	155.8	0.307	2.384	13.806	0.173 [1]
T3	110 - 90	3/4	4.628	2.246	143.8	0.442	4.677	19.880	0.235 [1]
T4	90 - 70	7/8	5.051	2.448	134.3	0.601	7.260	27.059	0.268 [1]
T5	70 - 52.6146	7/8	5.122	2.462	135.1	0.601	6.238	27.059	0.231 [1]
T6	52.6146 - 50	7/8	5.365	2.582	141.6	0.601	4.915	27.059	0.182 [1]

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	80.1	0.518	6.101	22.546	0.271 [1]
T8	40 - 20	L2 1/2x2 1/2x3/16	11.930	5.383	86.2	0.518	2.774	22.546	0.123 [1]
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	100.8	0.518	4.432	22.546	0.197 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	117.667 - 110	3/4	3.500	3.375	216.0	0.442	0.281	19.880	0.014 [1]
T3	110 - 90	3/4	3.870	3.724	238.3	0.442	1.303	19.880	0.066 [1]
T5	70 - 52.6146	7/8	4.885	4.676	256.5	0.601	3.051	27.059	0.113 [1]
T6	52.6146 - 50	7/8	4.944	4.736	259.8	0.601	3.213	27.059	0.119 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T4	90 - 70	1 1/4	4.458	2.145	164.8	1.227	3.156	55.223	0.057 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	120 - 117.667	5x3/8	3.500	2.531	280.6	1.875	1.845	60.750	0.030 [1]
T2	117.667 - 110	7/8	3.500	3.375	185.1	0.601	0.243	27.059	0.009 [1]
T3	110 - 90	3/4	3.510	3.365	215.3	0.442	1.605	19.880	0.081 [1]
T4	90 - 70	1	4.013	3.846	184.6	0.785	2.361	35.343	0.067 [1]
T5	70 - 52.6146	1	4.526	4.317	207.2	0.785	3.181	35.343	0.090 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	117.667 - 110	7/8	3.500	3.375	185.1	0.601	0.800	27.059	0.030 [1]
T3	110 - 90	3/4	3.990	3.844	246.0	0.442	2.281	19.880	0.115 [1]
T4	90 - 70	1	4.487	4.321	207.4	0.785	2.798	35.343	0.079 [1]
T6	52.6146 - 50	1	4.988	4.779	229.4	0.785	3.351	35.343	0.095 [1]

[1] P_u / ϕP_n controls

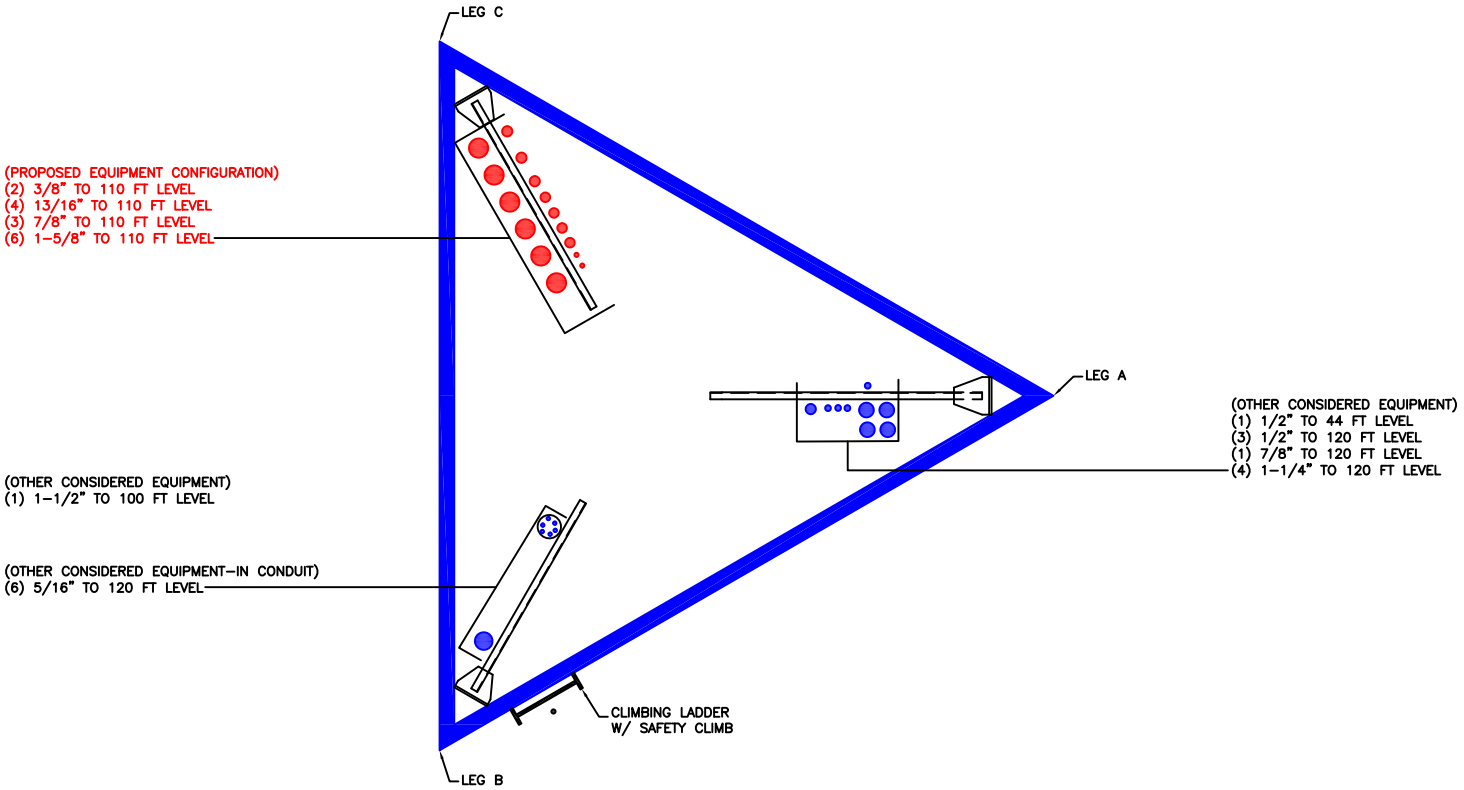
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	120 - 117.667	Leg	1 1/2	2	-2.793	55.544	5.0	Pass
T2	117.667 - 110	Leg	1 1/2	13	-11.976	55.544	21.6	Pass
T3	110 - 90	Leg	1 3/4	44	-70.016	82.873	84.5	Pass
T4	90 - 70	Leg	2	108	-130.191	139.769	93.1	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-183.613	200.087	91.8	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-190.125	207.523	91.6	Pass
T7	50 - 40	Leg	Pirod 105245	256	-186.603	225.602	82.7	Pass
T8	40 - 20	Leg	Pirod 105217	265	-200.422	225.602	88.8	Pass
T9	20 - 0	Leg	Pirod 105217 w/ (2) 1.25 Tierod	280	-213.187	271.615	78.5	Pass
T1	120 - 117.667	Diagonal	3/4	8	-2.721	6.601	41.2	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.452	3.703	66.2	Pass
T3	110 - 90	Diagonal	3/4	52	-4.716	6.260	75.3	Pass
T4	90 - 70	Diagonal	7/8	120	-7.301	7.910	92.3	Pass
T5	70 - 52.6146	Diagonal	7/8	240	-6.762	9.652	70.1	Pass
T6	52.6146 - 50	Diagonal	7/8	252	-5.084	8.779	57.9	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	258	-6.474	18.455	35.1	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	277	-3.274	15.920	20.6	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	285	-5.108	11.522	44.3	Pass
T2	117.667 - 110	Horizontal	3/4	28	-0.242	4.584	5.3	Pass
T3	110 - 90	Horizontal	3/4	57	-1.263	3.647	34.6	Pass
T5	70 - 52.6146	Horizontal	7/8	199	-3.051	4.424	69.0	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-3.213	4.312	74.5	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	123	-3.043	35.300	8.6	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-1.777	5.649	31.4	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.243	8.492	2.9	Pass
T3	110 - 90	Top Girt	3/4	46	-1.596	4.612	34.6	Pass
T4	90 - 70	Top Girt	1	110	-2.361	5.467	43.2	Pass
T5	70 - 52.6146	Top Girt	1	191	-3.181	8.854	35.9	Pass
T2	117.667 - 110	Bottom Girt	7/8	20	-0.831	8.492	9.8	Pass
T3	110 - 90	Bottom Girt	3/4	48	-2.270	3.534	64.2	Pass
T4	90 - 70	Bottom Girt	1	112	-3.162	4.331	73.0	Pass
T6	52.6146 - 50	Bottom Girt	1	246	-3.351	7.225	46.4	Pass
						Summary		
						Leg (T4)	93.1	Pass
						Diagonal (T4)	92.3	Pass
						Horizontal (T6)	74.5	Pass
						Secondary Horizontal (T4)	8.6	Pass
						Top Girt (T4)	43.2	Pass
						Bottom Girt (T4)	73.0	Pass
						Bolt Checks	65.3	Pass
						RATING =	**93.1**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING


LEG C
(PROPOSED EQUIPMENT CONFIGURATION)
(2) 3/8" TO 110 FT LEVEL
(4) 13/16" TO 110 FT LEVEL
(3) 7/8" TO 110 FT LEVEL
(6) 1-5/8" TO 110 FT LEVEL
LEG A
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 44 FT LEVEL
(3) 1/2" TO 120 FT LEVEL
(1) 7/8" TO 120 FT LEVEL
(4) 1-1/4" TO 120 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/2" TO 100 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(6) 5/16" TO 120 FT LEVEL
CLIMBING LADDER
W/ SAFETY CLIMB
LEG B

APPENDIX C

ADDITIONAL CALCULATIONS

Truss Leg Reinforcement

BU # :	876312
Site Name:	MONTOWESE AMODIO SELF
Order:	556501, Rev. 1
Elevation:	0-20
TIA-222 Revision:	H

Existing Tie Rods		
Diameter, de:	1.5	in
Unbraced Length, Le:	14.1875	in
Yield Strength, Fye:	50	ksi

New Tie Rods		
Diameter, dn:	1.25	in
Unbraced Length, Ln:	20	in
Offset, X:	0.625	in
Yield Strength, Fyn:	50	ksi

Truss Leg		
Width, w:	12	in
Unbraced Length, Lleg:	10	ft

Reactions from tnx		
Compression, C:	213.187	kip
Tension, T:	191.362	kip

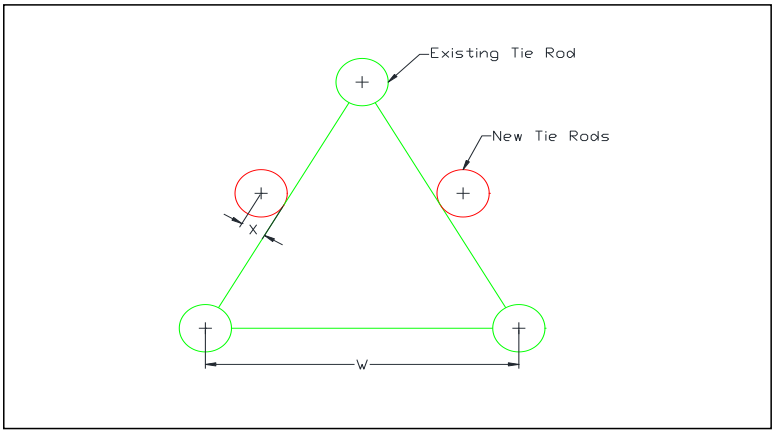
Output from tnx		
KL/r Modified Leg, KLtnx:	31.3	

Length Factors		
Length Factor of Existing Tie Rods, Ke:	1	
Length Factor of New Tie Rods, Kn:	1	
Length Factor of the Leg, Kleg:	1	

Results	Demand	Capacity	Rating*	Check
Compression (Existing Tie Rods), kip:	48.57	71.62	64.6%	**Pass**
Compression (New Tie Rods), kip:	33.73	40.93	78.5%	**Pass**
Compression (Modified Tie Rods), kip:	213.19	328.56	61.8%	**Pass**
Tension (Existing Tie Rods), kip:	43.60	79.52	52.2%	**Pass**
Tension (New Tie Rods), kip:	30.28	55.22	52.2%	**Pass**
Tension (Modified Tie Rods), kip:	191.36	349.01	52.2%	**Pass**

**Section 15.5 Applied*

Adjustments for tnx		
Diameter of modified truss leg, Deqv:	1.814	in
Leg K Factor Adjustment, K:	2.045	



Self Support Anchor Rod Capacity

Site Info	
BU #	876312
Site Name	OWESE AMODIO SELF
Order #	556501, Rev. 1

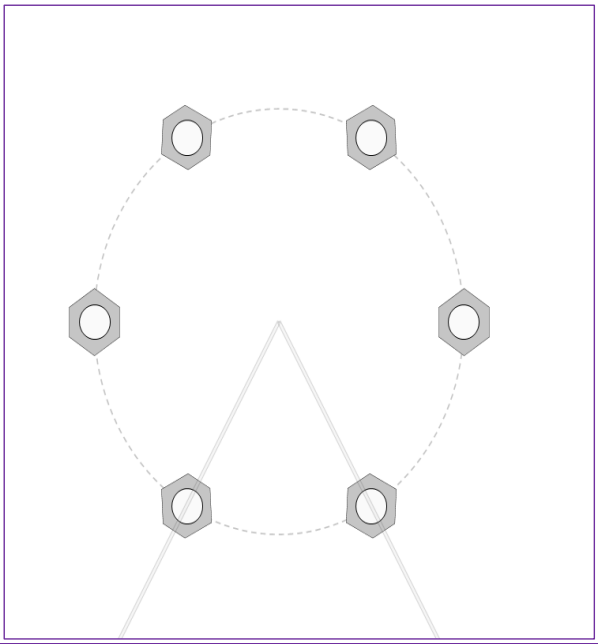
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	2

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	219.71	196.28
Shear Force (kips)	17.20	15.53

**TIA-222-H Section 15.5 Applied*

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

**Anchor Rod Eccentricity Applied*



Connection Properties

Anchor Rod Data

(6) 1" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi)

l_{ar} (in): 2

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 32.71	ϕPn_t = 56.81	**Stress Rating**
Vu = 2.59	ϕVn = 36.82	**54.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Pile Foundation

Checks the capacity of pile foundation configurations for monopoles or self-support towers with individual foundations in Rev. F, G, and H.

BU #:	876312
Site Name:	MONTOWESE AMODIO SELF
Order:	556501, Rev. 1

Tower Type:	Self-Support
TIA Revision:	H

Top & Bot. Pad Rein. Different?: ☐

Factored Design Reactions Per Leg		
Uplift, Tu:	196.28	kips
Compression, Cu:	219.7	kips
Uplift Shear, Su:	15.53	kips
Compression Shear, Sc:	17.2	kips
Load Eccentricity, Ecc:	0	in
Bolt Circle / Bearing Plate Width, BC:	10	in

Pile Properties		
Pile Shape:	H-Pile	
HP Size:	HP10 x 42	
Length of Pile, Lpile:	41	ft
Pile (Soil) Capacity Given?	Yes	
Steel Grade, Fy:	36	ksi

Pile Group		
Group Configuration:	Rectangular	
Number of Columns, Nx:	3	
Number of Rows, Ny:	2	
Column Spacing, Dx:	36	in
Row Spacing, Dy:	36	in
Orientation of Neutral Axis, θ:	0	deg
Group Efficiency Given in Geotech?	No	

Program Calculated Group Efficiency, Eg: 1.00

Pile Cap		
Cap Type:	Block	
Depth to Bottom of Block, D:	2.00	ft
Thickness of Block, T:	4.00	ft
Block Width, Wx:	9.50	ft
Block Length, Wy:	7.00	ft
Pad Rebar Size (Bot.), Spad:	7	
Pad Rebar Quantity (X-direction) (Bot.), Mpad:	12	
Pad Rebar Quantity (Y-direction) (Bot.), Mpad $_y$:	8	

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Strength, Fc:	3	ksi
Clear Cover, cc:	3	in

Soil Properties		
Groundwater Depth, GW:	6.00	ft
Soil Unit Weight:	130	pcf
Cohesion, Co:	0	ksf
Friction Angle, ϕ:	36	deg
Neglected Depth, ND:	3.33	ft
Negative Friction Force (per pile), Sw:		kips
SPT Blow Count, N_{blows}:	15	

Design Checks	Capacity	Demand	Rating*	Check
PILE CHECKS				
Soil Compression (kips per pile):	71.25	63.26	**84.6%**	**Pass**
Soil Uplift (kips per pile):	30.00	28.52	**90.5%**	**Pass**
Pile Tensile Strength (kips):	357.12	28.52	**7.6%**	**Pass**
PAD CHECKS				
One-Way Shear (kips):	301.50	146.16	**46.2%**	**Pass**
Pad Shear - Comp Two-Way (ksi):	0.164	0.023	**13.6%**	**Pass**
*Flexural Two-Way (Comp) (kip*ft):*	1858.26	0.00	**0.0%**	**Pass**
Pad Shear - Tension Two-Way (ksi):	0.164	0.012	**6.7%**	**Pass**
*Flexural Two-Way (Tension) (kip*ft):*	1858.26	0.00	**0.0%**	**Pass**
*Pad Flexure (kip*ft):*	933.41	300.65	**30.7%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating:	**46.2%**
Soil Rating:	**90.5%**

Ultimate Pile Capacities		
Ultimate Compression, Cn:	95	kips
Ultimate Tension, Tn:	40	kips

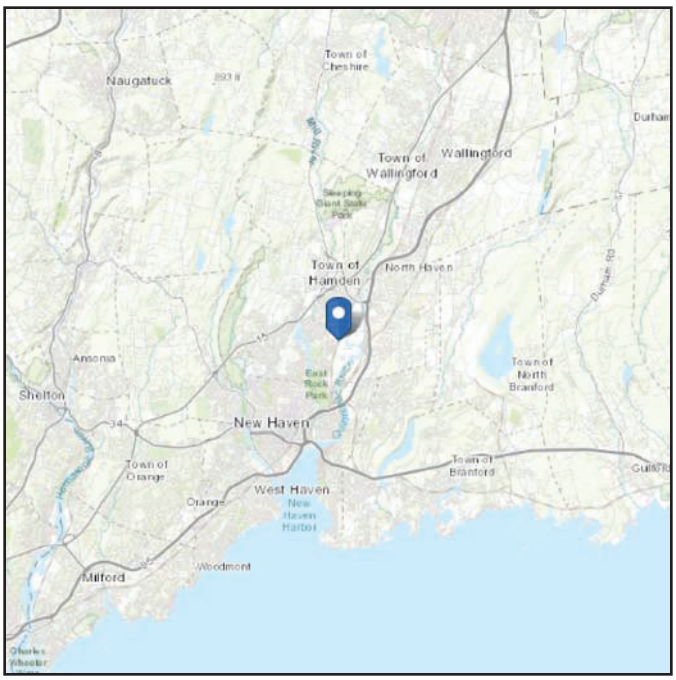
Per CCIsites Doc. # 1611716

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 7.4 ft (NAVD 88)
Latitude: 41.355464
Longitude: -72.890314



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Sat Sep 18 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

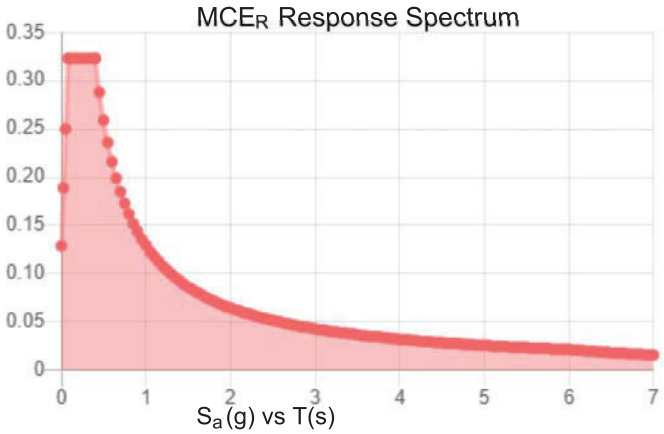
Seismic

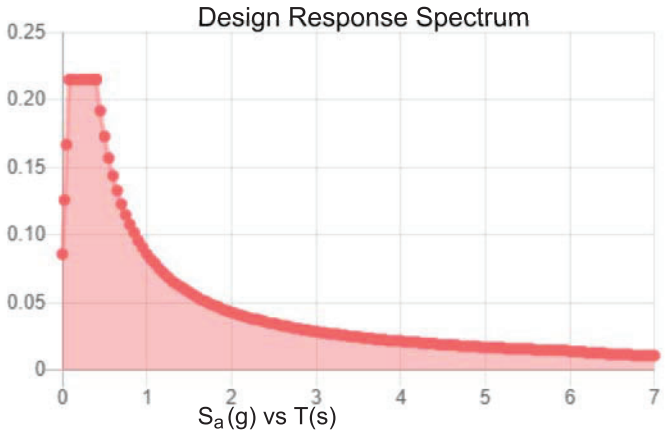
Site Soil Class: D - Default (see Section 11.4.3)

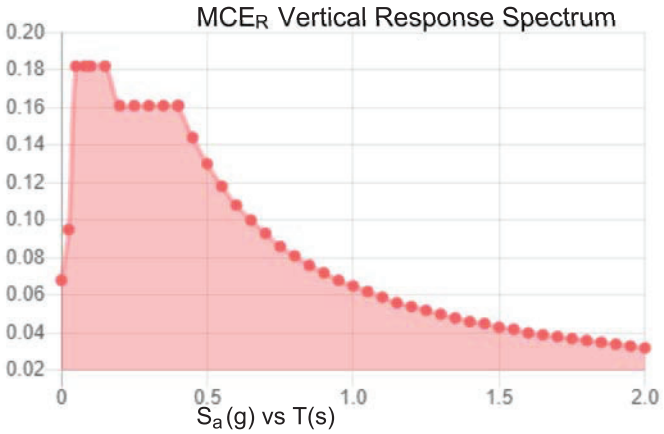
Results:

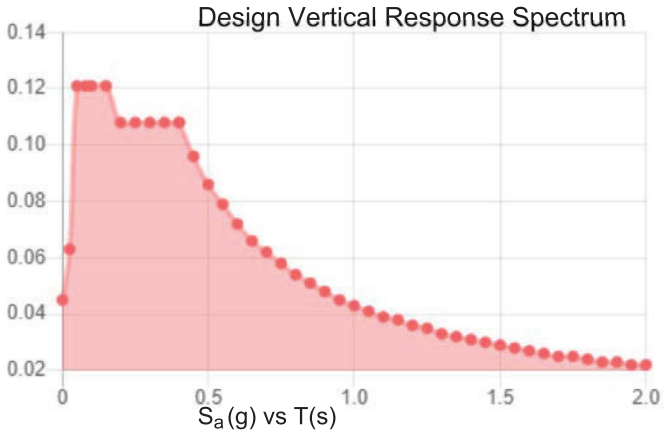
S_S :	0.202	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.113
F_v :	2.4	PGA_M :	0.178
S_{MS} :	0.323	F_{PGA} :	1.575
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.215	C_v :	0.704

Seismic Design Category B









Data Accessed: Sat Sep 18 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Sat Sep 18 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **March 1, 2022**

Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	CTL02173
	Carrier Site Name:	MONTOWESE AMODIO SELF STORE
	Carrier FA Number:	10035219
Crown Castle Designation:	**Crown Castle BU Number:**	876312
	Crown Castle Site Name:	MONTOWESE AMODIO SELF STORE
	Crown Castle JDE Job Number:	649407
	Crown Castle Order Number:	556501 Rev.1
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:**	1039-Z0001-B
Site Data:	**2755 State Street, Hamden, New Haven County, CT, 06517** **Latitude 41°21'19.67" Longitude -72°53'25.13"**	
Structure Information:	**Tower Height & Type:**	**120.0 ft Self Support**
	Mount Elevation:	**110.0 ft**
	Mount Type:	**12.5 ft Sector Frame**

Infinigy Engineering, PLLC is pleased to submit this **"Mount Replacement Analysis Report"** to determine the structural integrity of AT&T Mobility's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

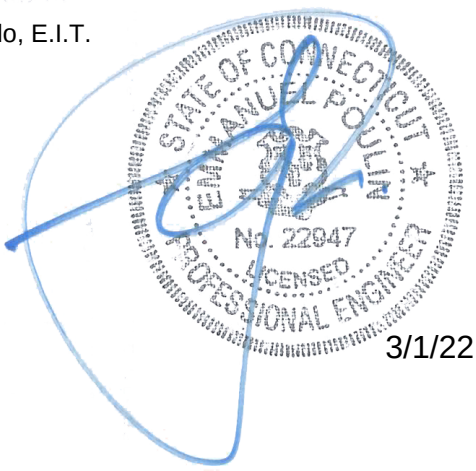
Sector Frame **Sufficient**

***See Section 4.1 of this report for the loading and structural modifications required in order for the mount to support the loading listed in Table 1.**

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 120 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Alex Mercado, E.I.T.

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



3/1/22

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 sector 12.5 ft Sector Frame, designed by Site Pro 1.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.202
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
110.0	112.0	3	CCI ANTENNAS	DMP65R-BU6D	12.5 ft Sector Frame (Site Pro 1 VFA12-H10-2120)
		3	CCI ANTENNAS	TPA65R-BU6D	
		3	ERICSSON	AIR 6419 B77G	
		3	ERICSSON	AIR 6449 N77	
		3	ERICSSON	RADIO 4478 B14	
		3	ERICSSON	RRUS 32 B2	
		3	ERICSSON	RRUS 32 B30	
		3	ERICSSON	RRUS 4426 B66	
		3	ERICSSON	RRUS 4449 B5/B12	
		2	RAYCAP	DC6-48-60-18-8F	
		1	RAYCAP	D9-48-60-24-8C-EV	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Mobility Application	556501 Rev.1	CCI Sites
Mount Manufacturer Drawings	Site Pro 1	VFA12-H10-2120	Infinigy
Loading Documents	AT&T Mobility	RFDS ID: 4387615	TSA

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.1.7, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Mount Analysis* (Revision D).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	Q345 (GR 36)
HSS (Rectangular)	Q235-GB (GR 35)
Pipe	Q235-GB (GR 35)
Connection Bolts	SAE J429 Grade 2

This analysis may be affected if any assumptions are not valid or have been made in error. Infinigy Engineering, PLLC should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Sector Frame, Worst Case Sector)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP2	110.0	55.1	Pass
	Horizontal(s)	H1		47.7	Pass
	Standoff(s)	S1		21.6	Pass
	Bracing(s)	M10		52.3	Pass
	Connection Plate(s)	M36		45.2	Pass
	Mount Connection(s)	--		17.1	Pass

Structure Rating (max from all components) =	55.1%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing / Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb)	Notes
N68A	Proposed	1,958.8	Leg	1 1/2	2,777.2	1,2

Notes:
1) Tieback connection point is within 25% of either end of the connected tower member
2) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances*

4.1) Recommendations

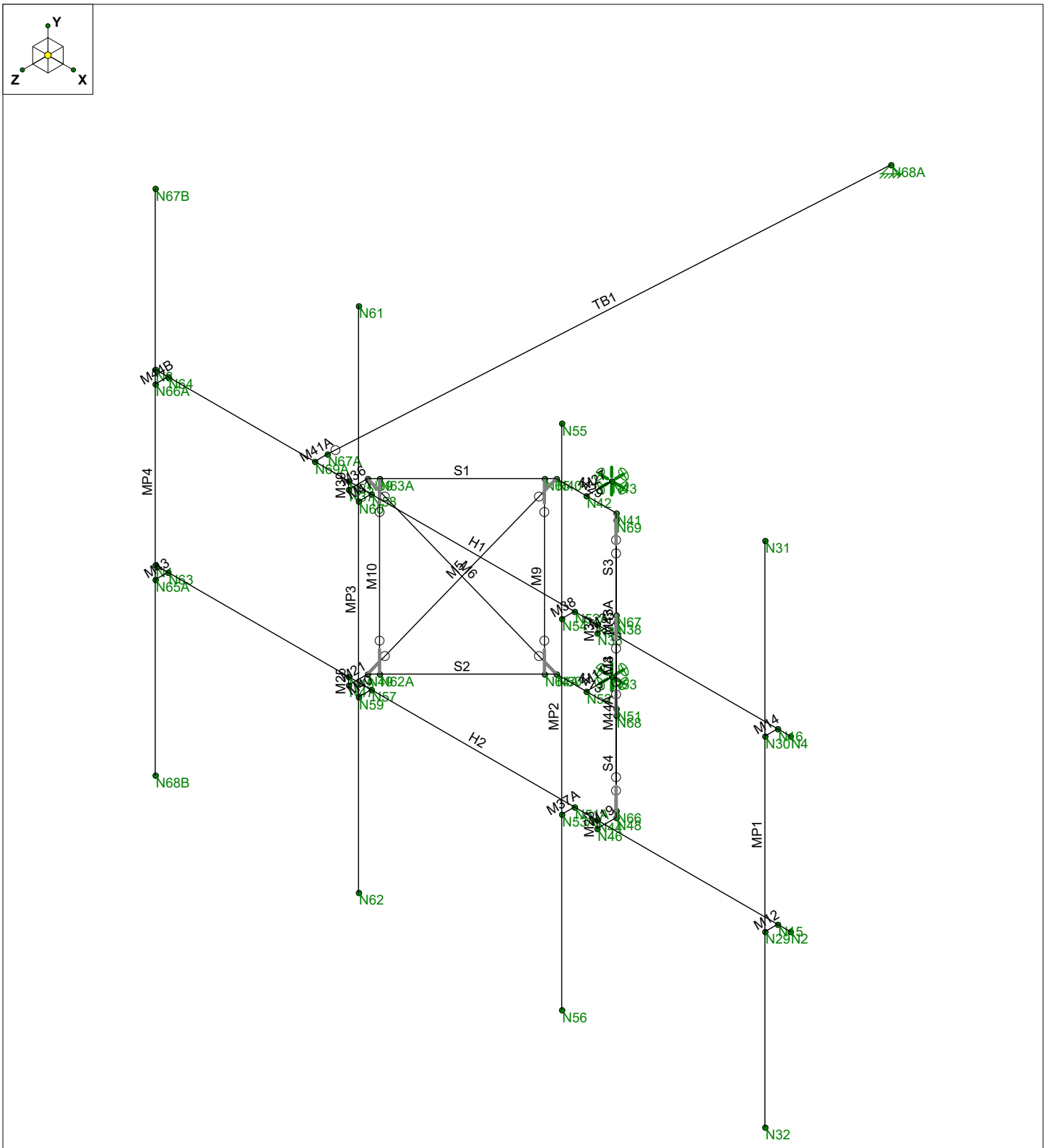
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. (3) Site Pro 1 VFA12-H10-2120

No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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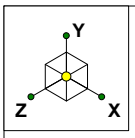

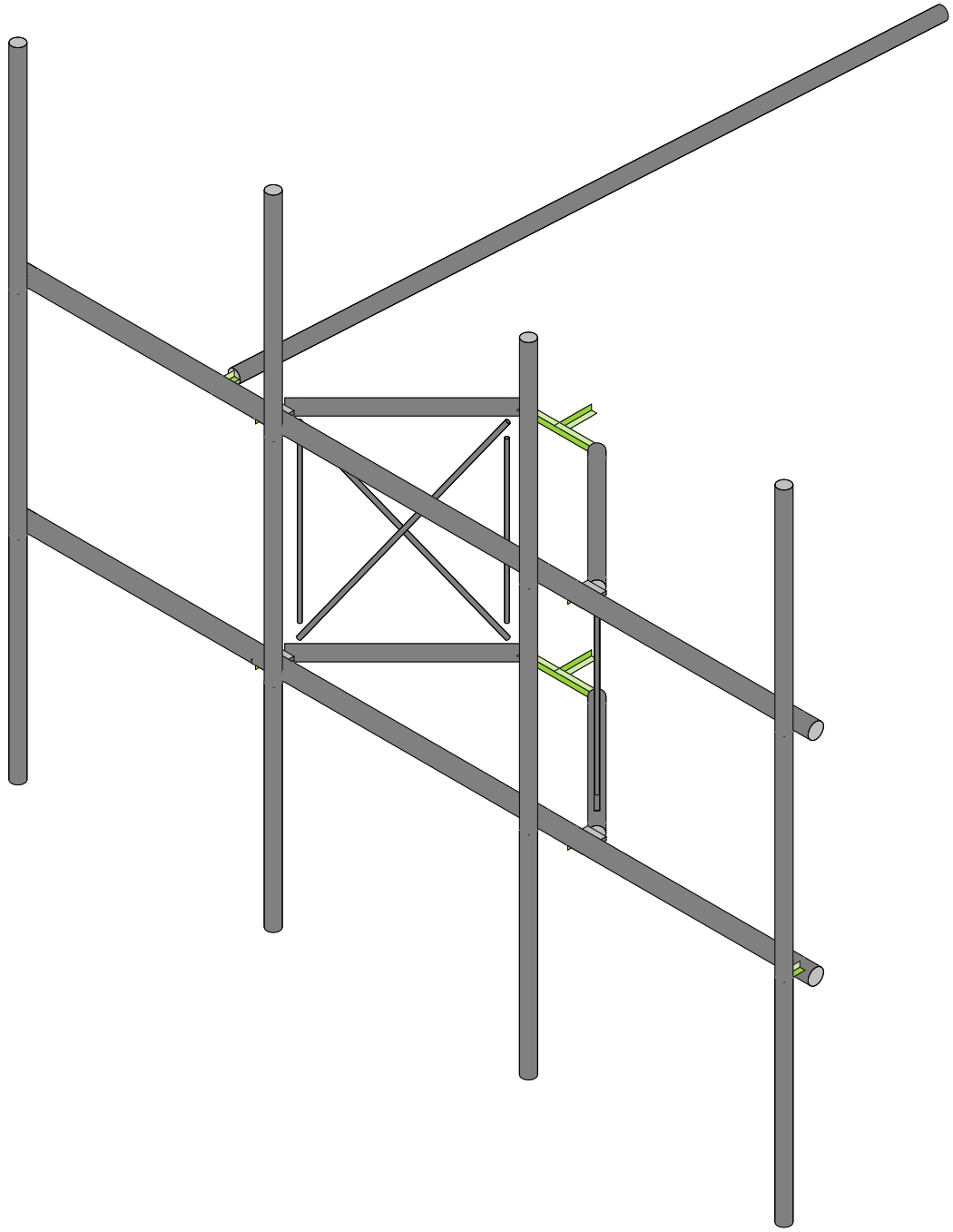

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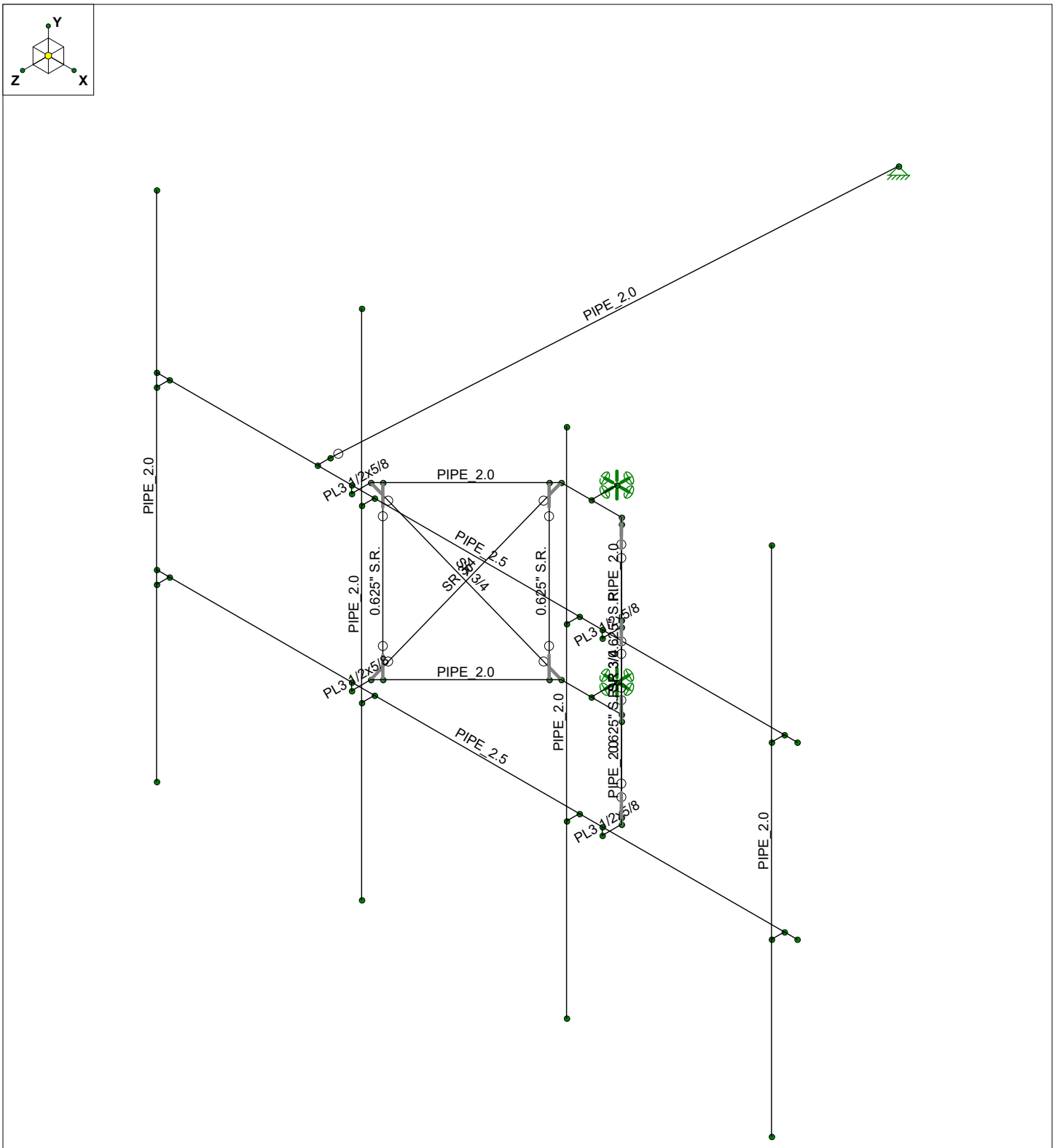

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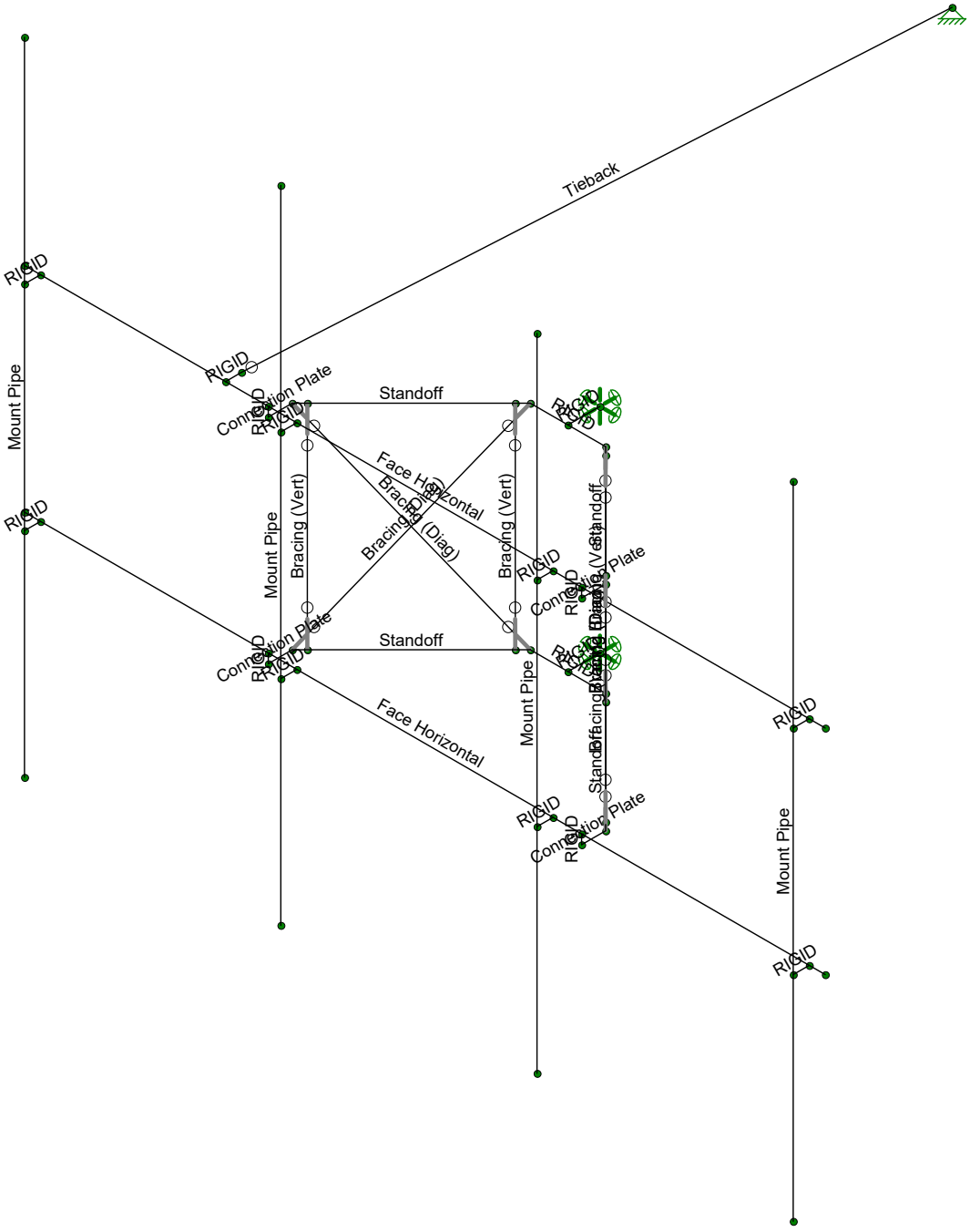

Infinigy Engineering	876312	Section Sets
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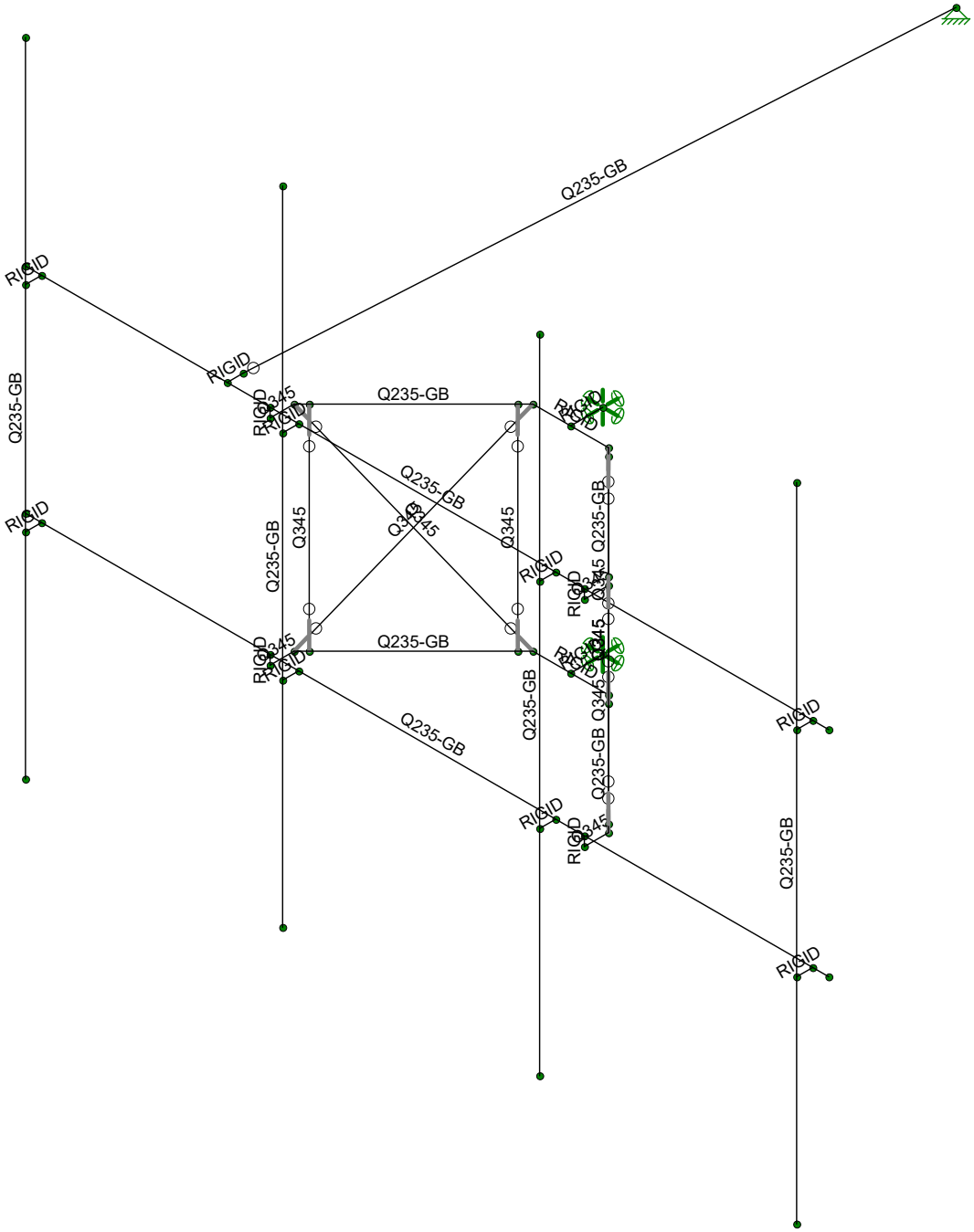

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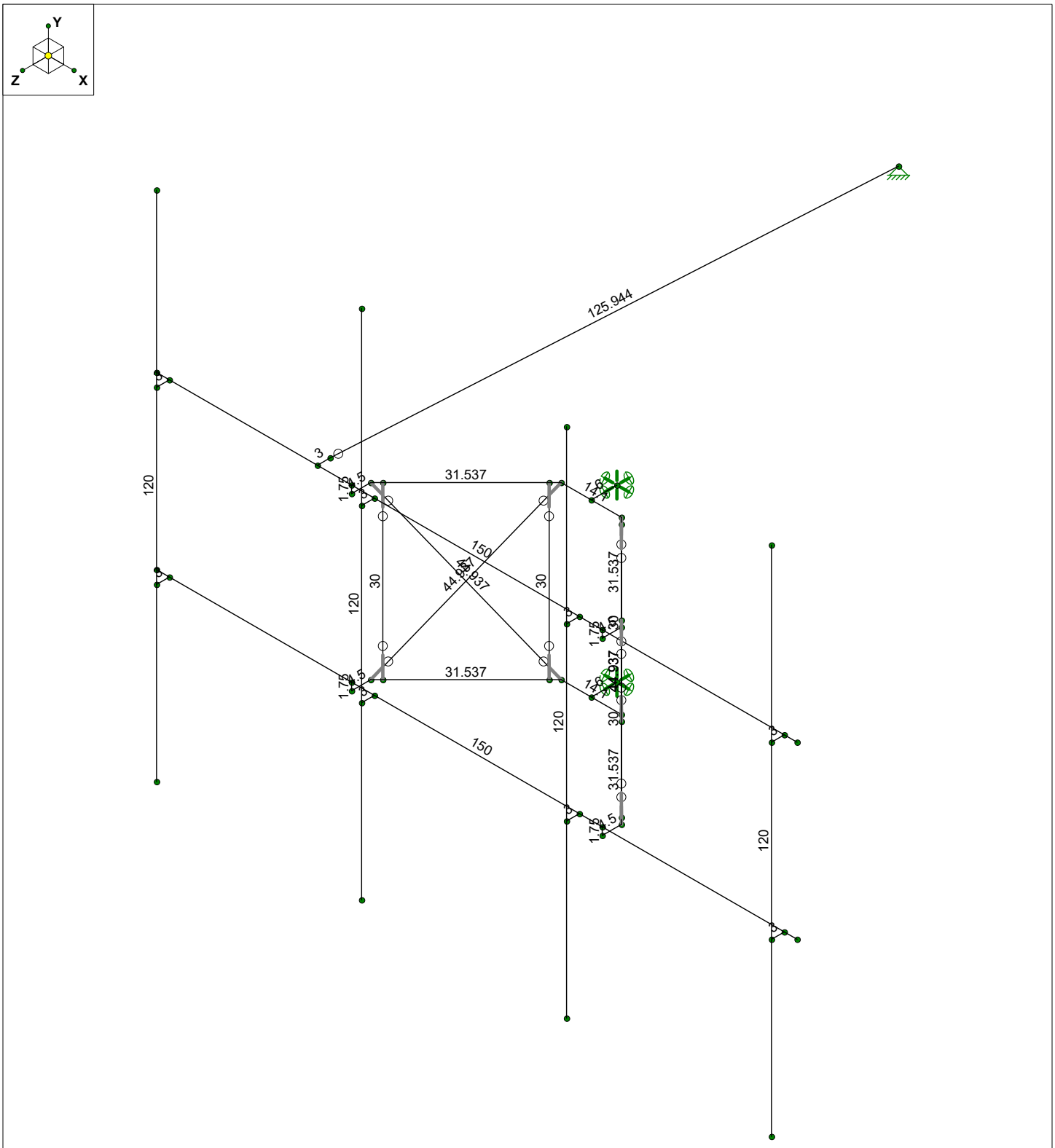

Member Length (in) Displayed

Infinigy Engineering	876312	Length
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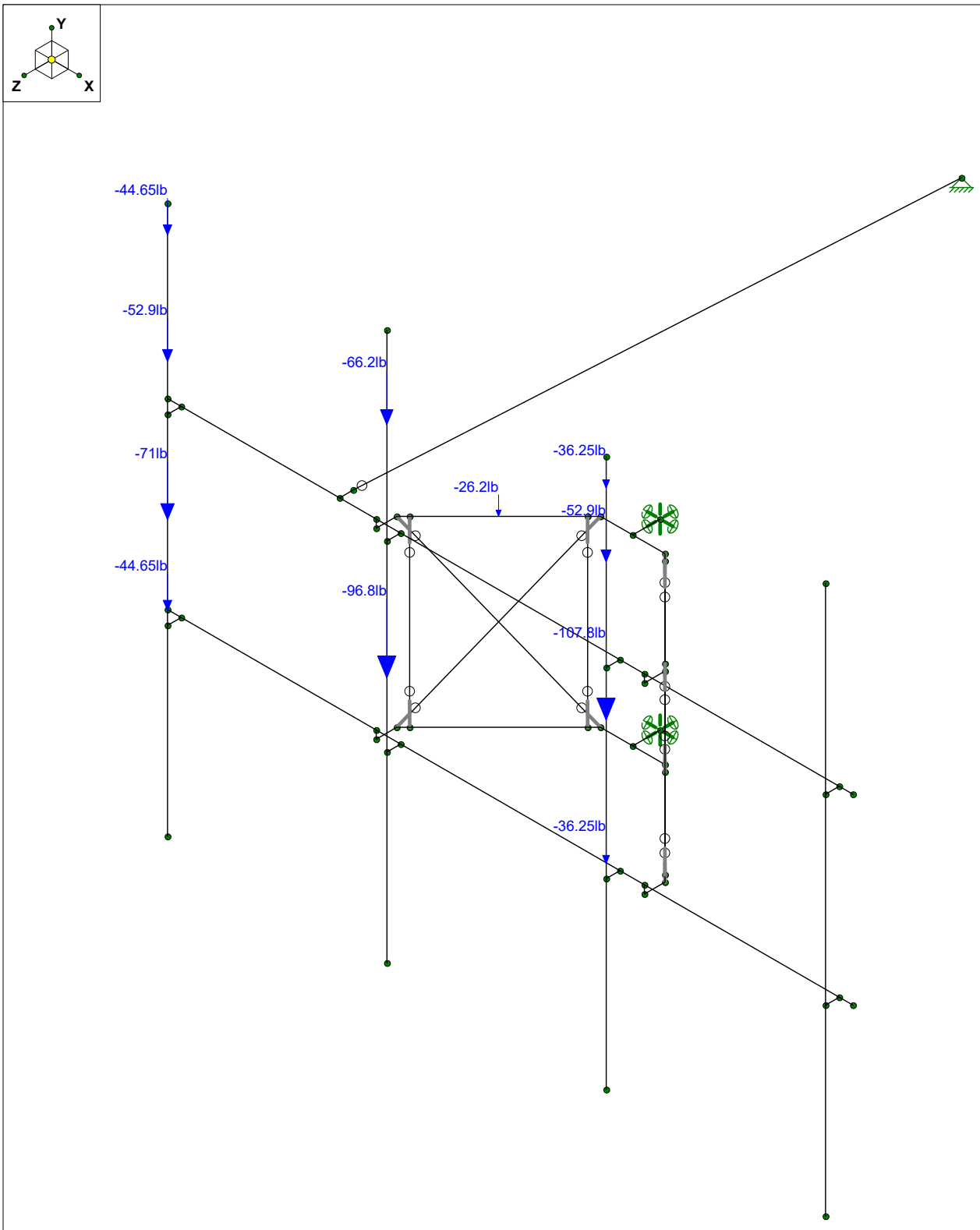

Loads: BLC 1, Self Weight

Infinigy Engineering	876312	Self Weight
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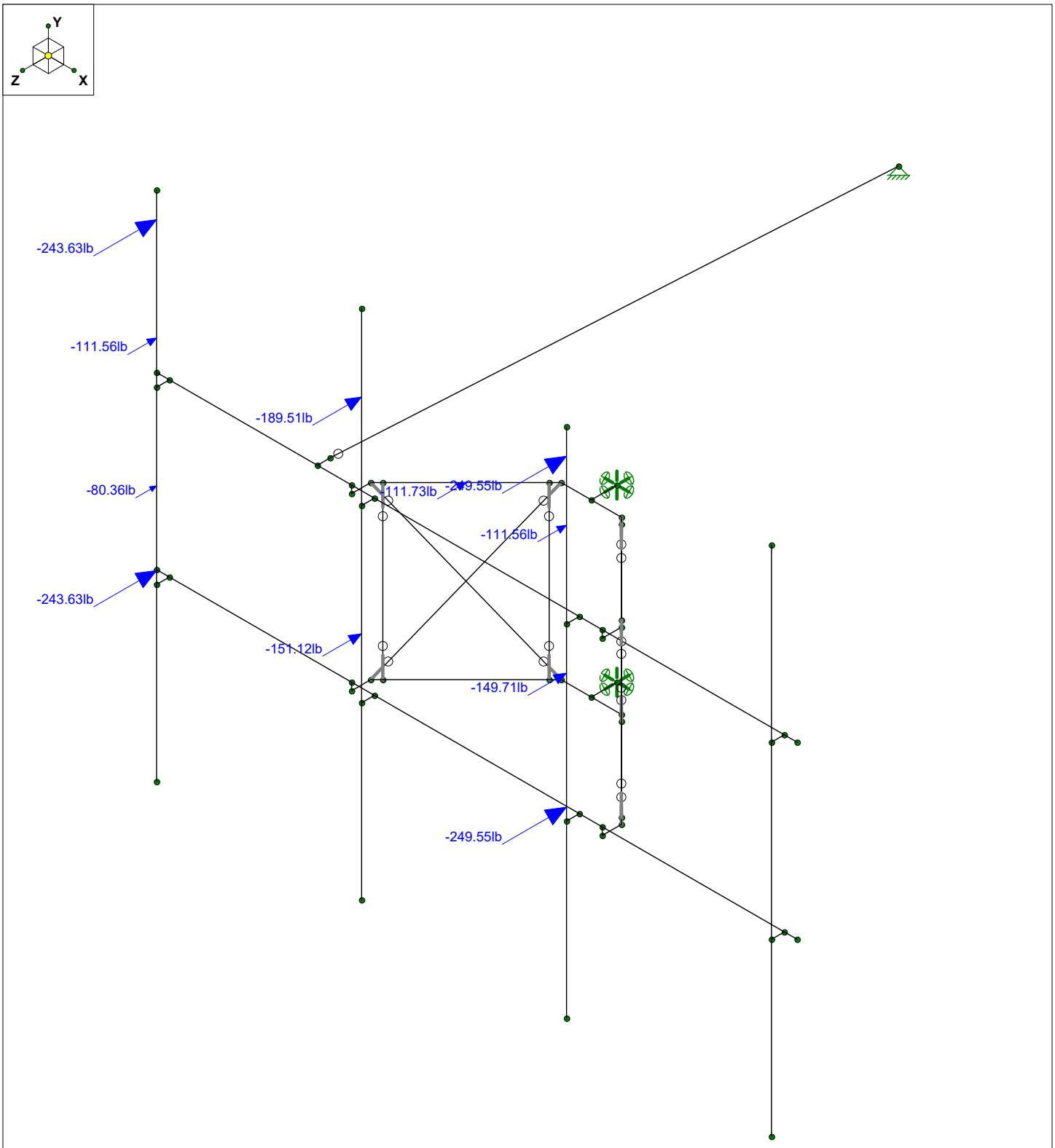

Loads: BLC 2, Wind Load AZI 0

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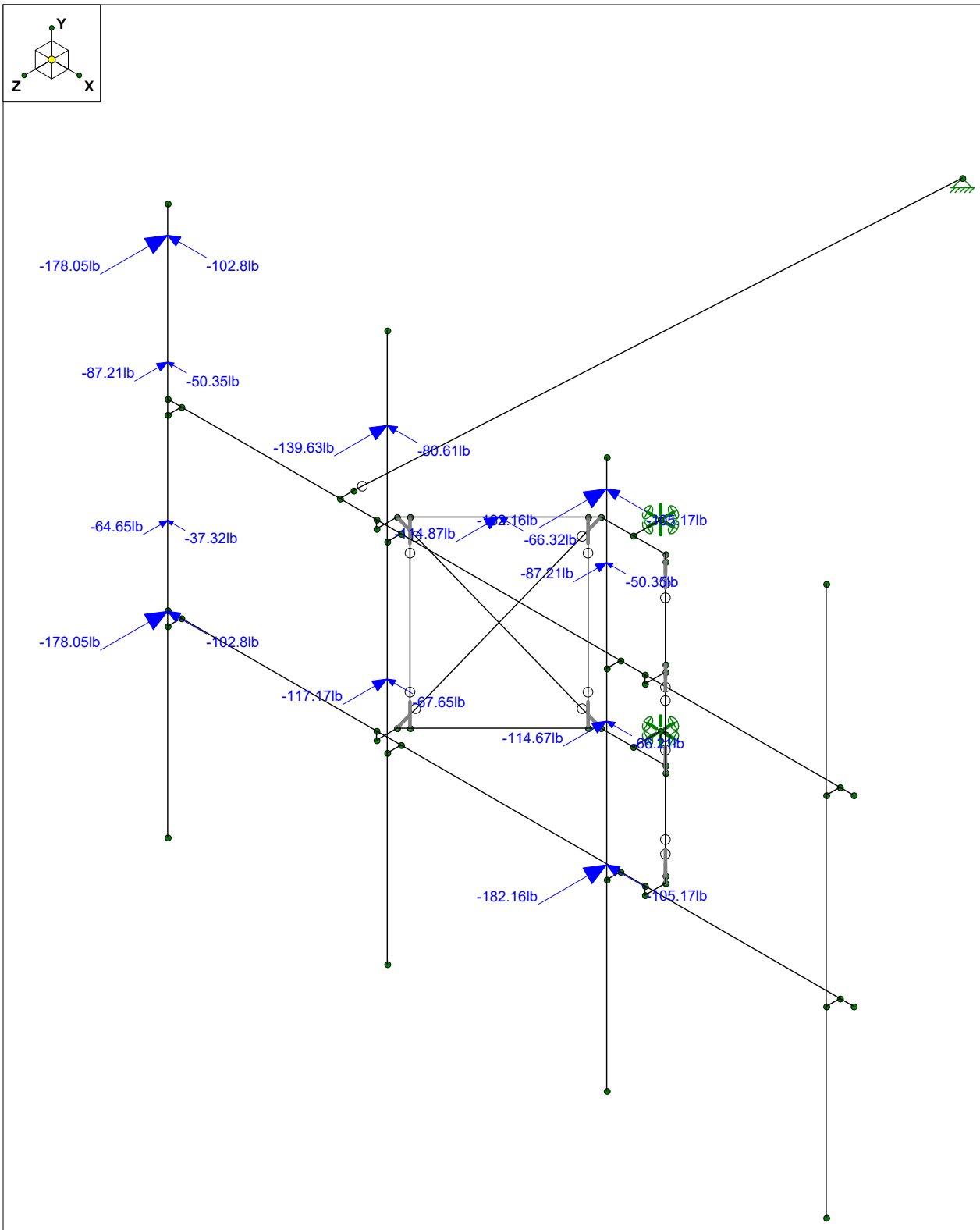

Loads: BLC 3, Wind Load AZI 30

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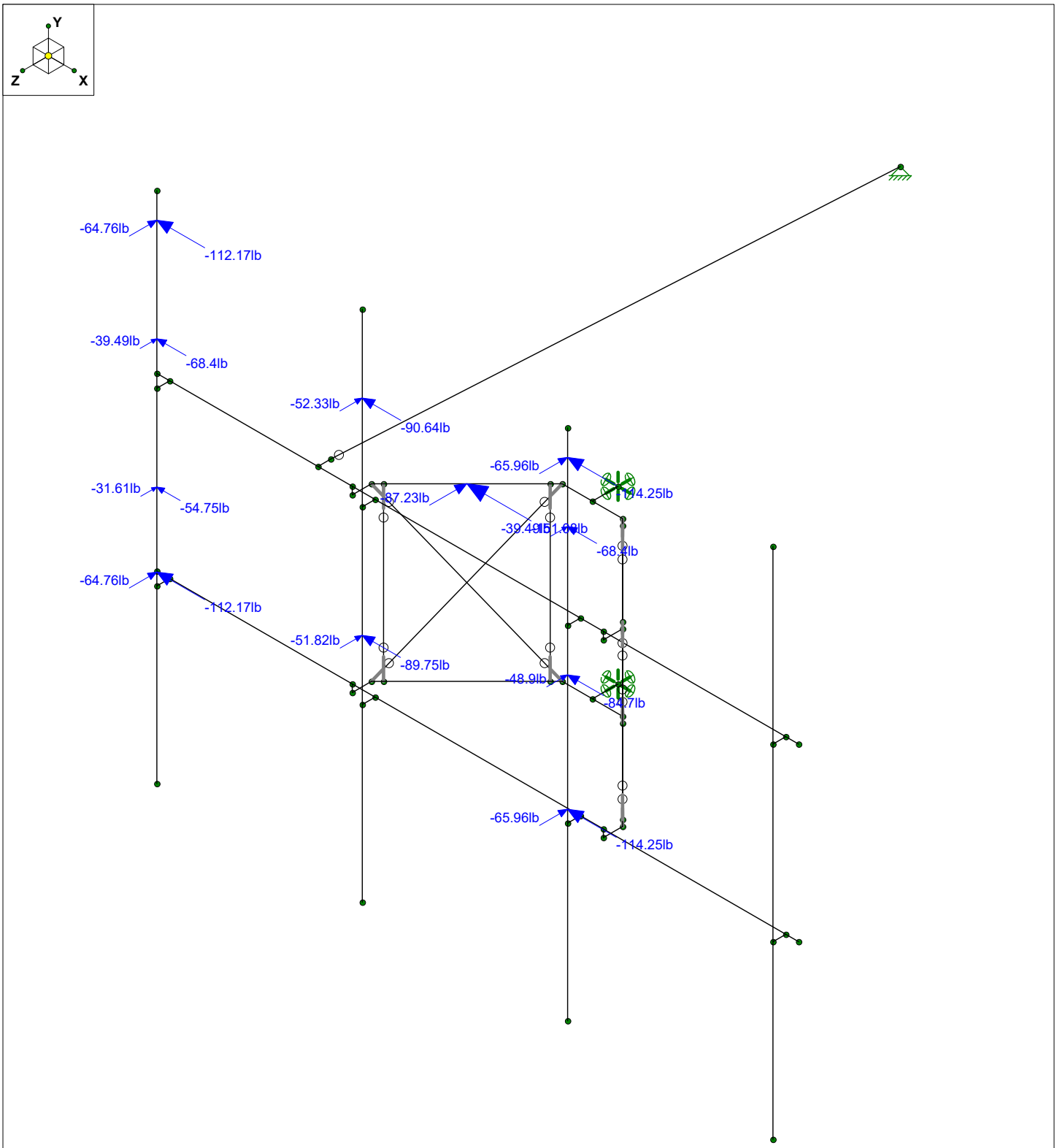

Loads: BLC 4, Wind Load AZI 60

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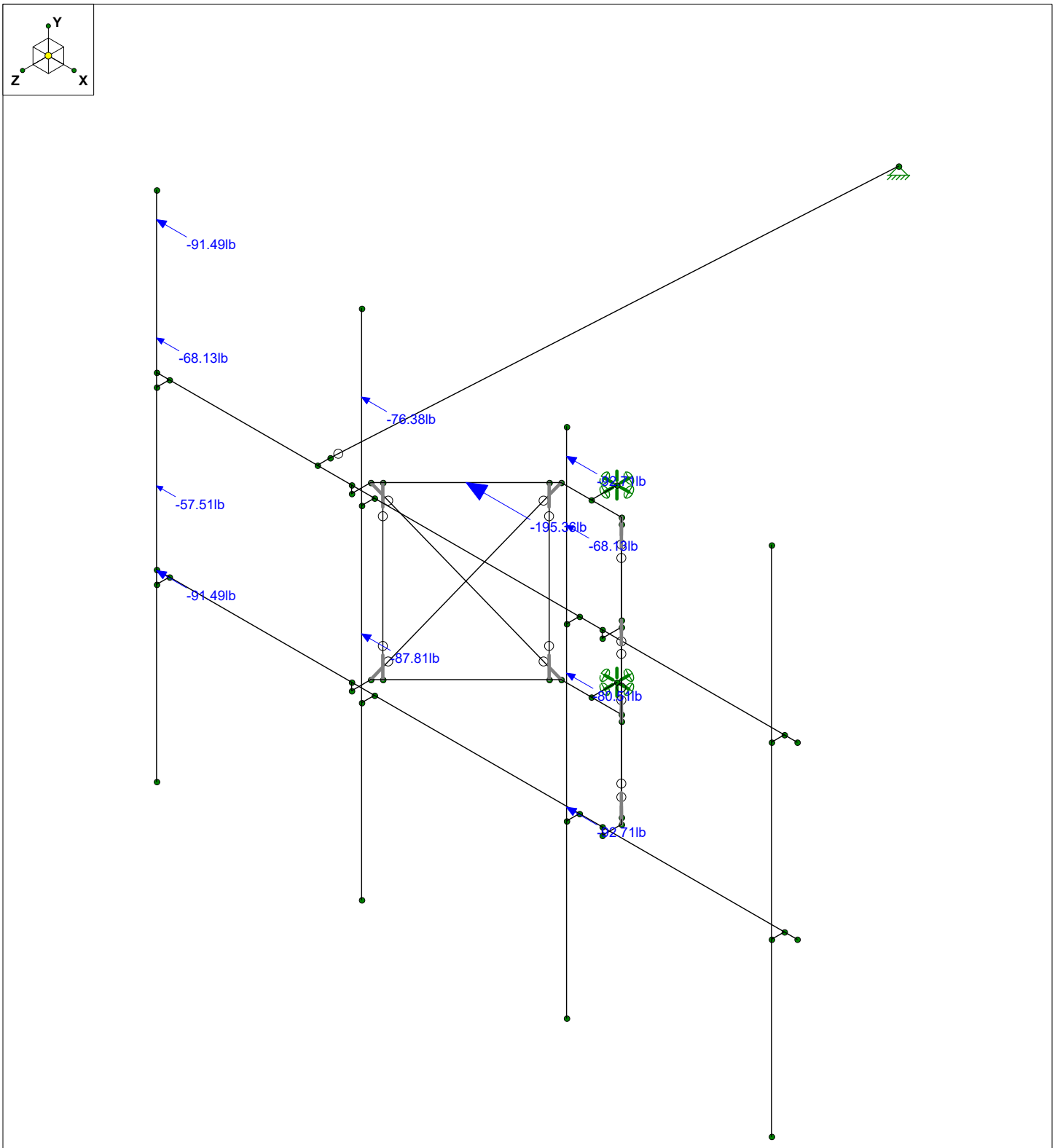

Loads: BLC 5, Wind Load AZI 90

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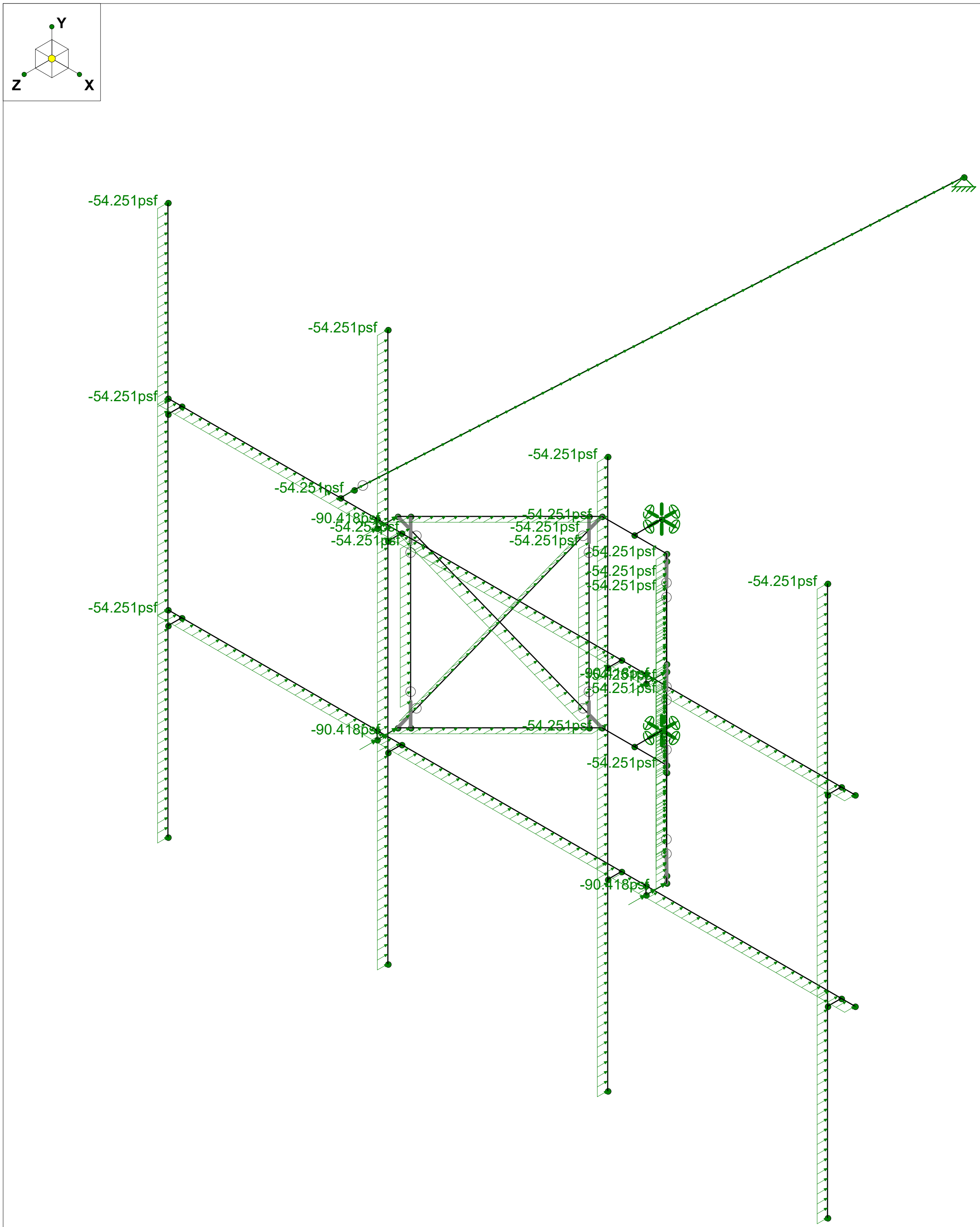

Loads: BLC 14, Distr. Wind Load Z

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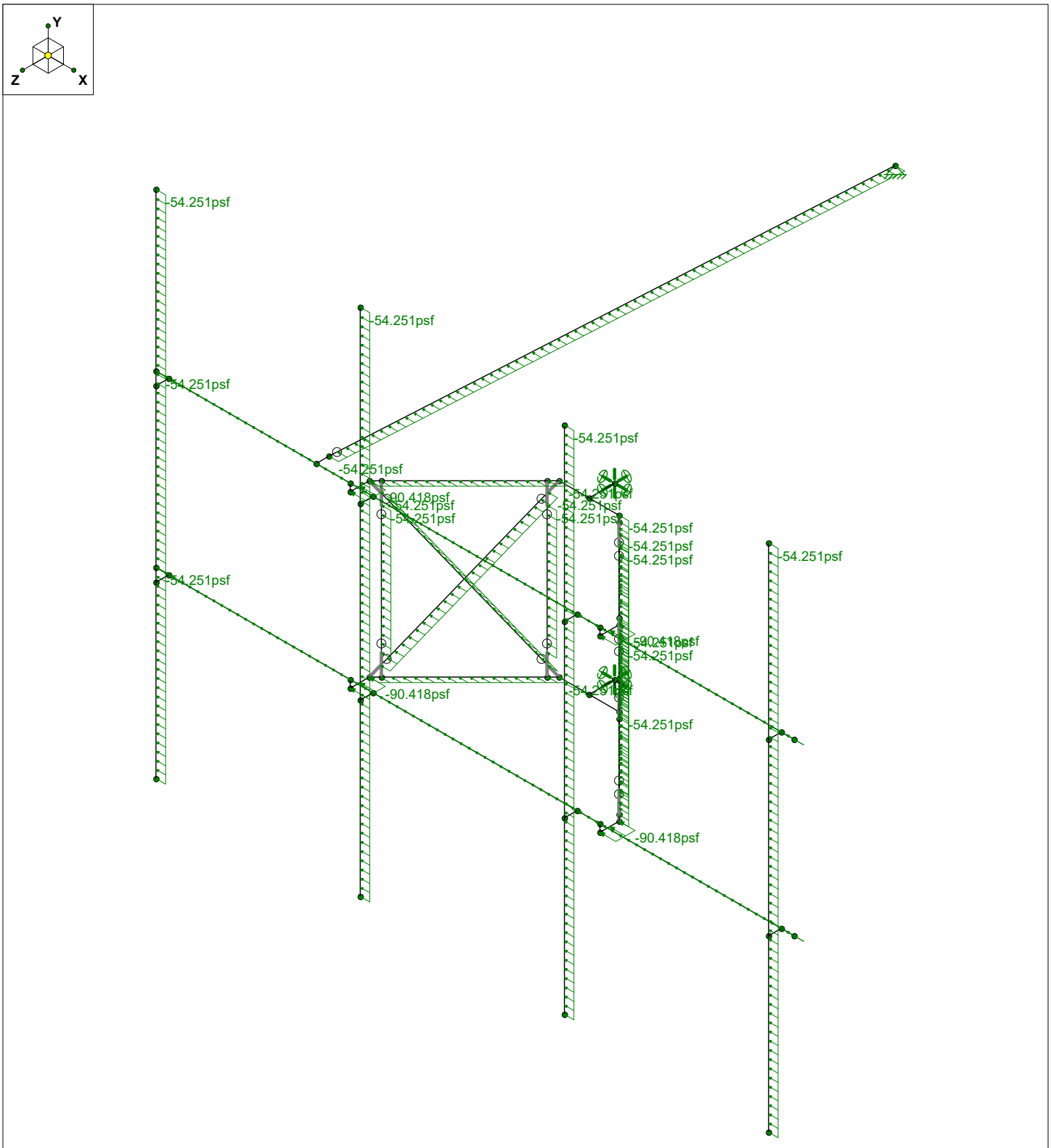

Loads: BLC 15, Distr. Wind Load X

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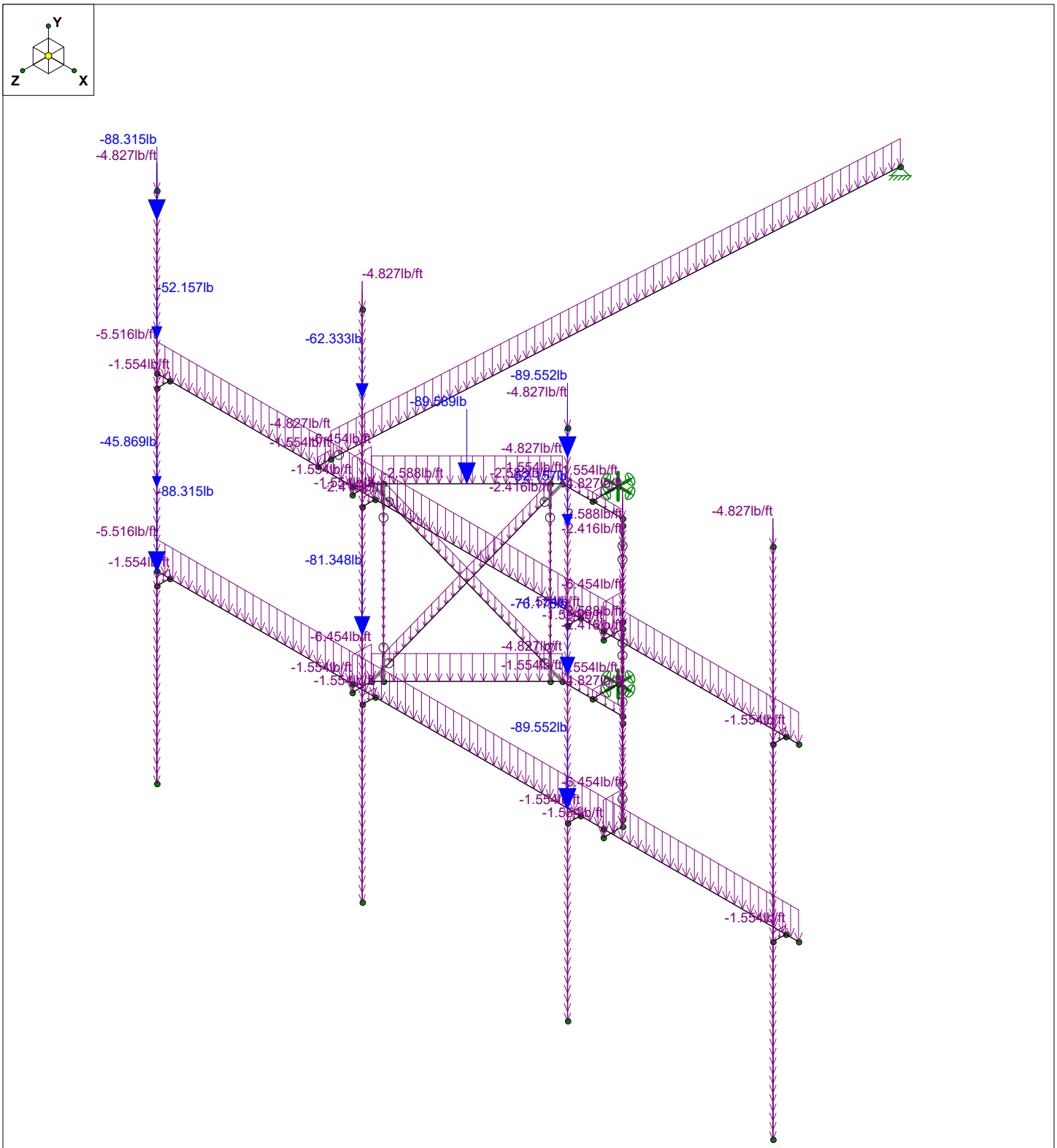

Loads: BLC 16, Ice Weight

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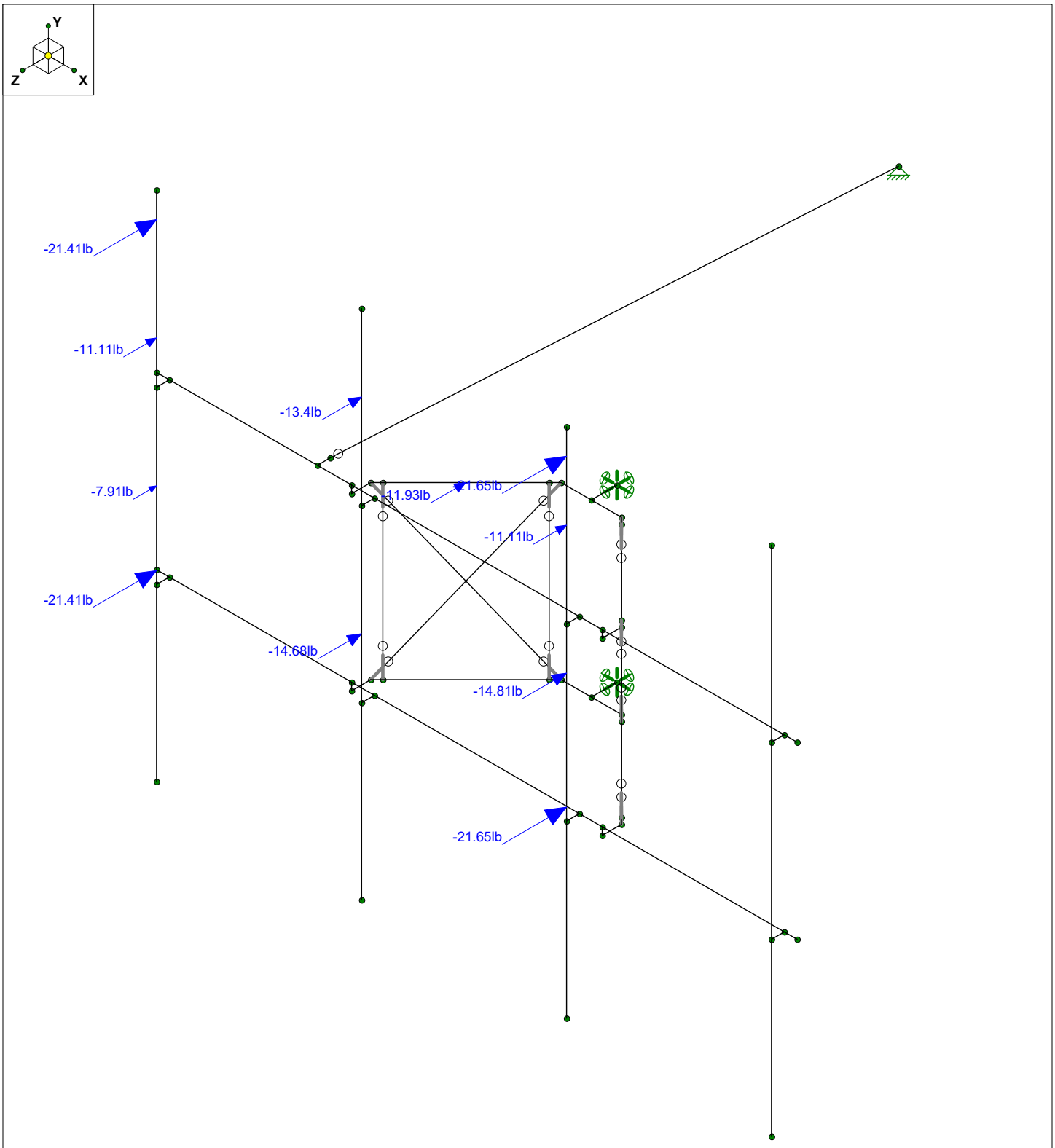

Loads: BLC 17, Ice Wind Load AZI 0

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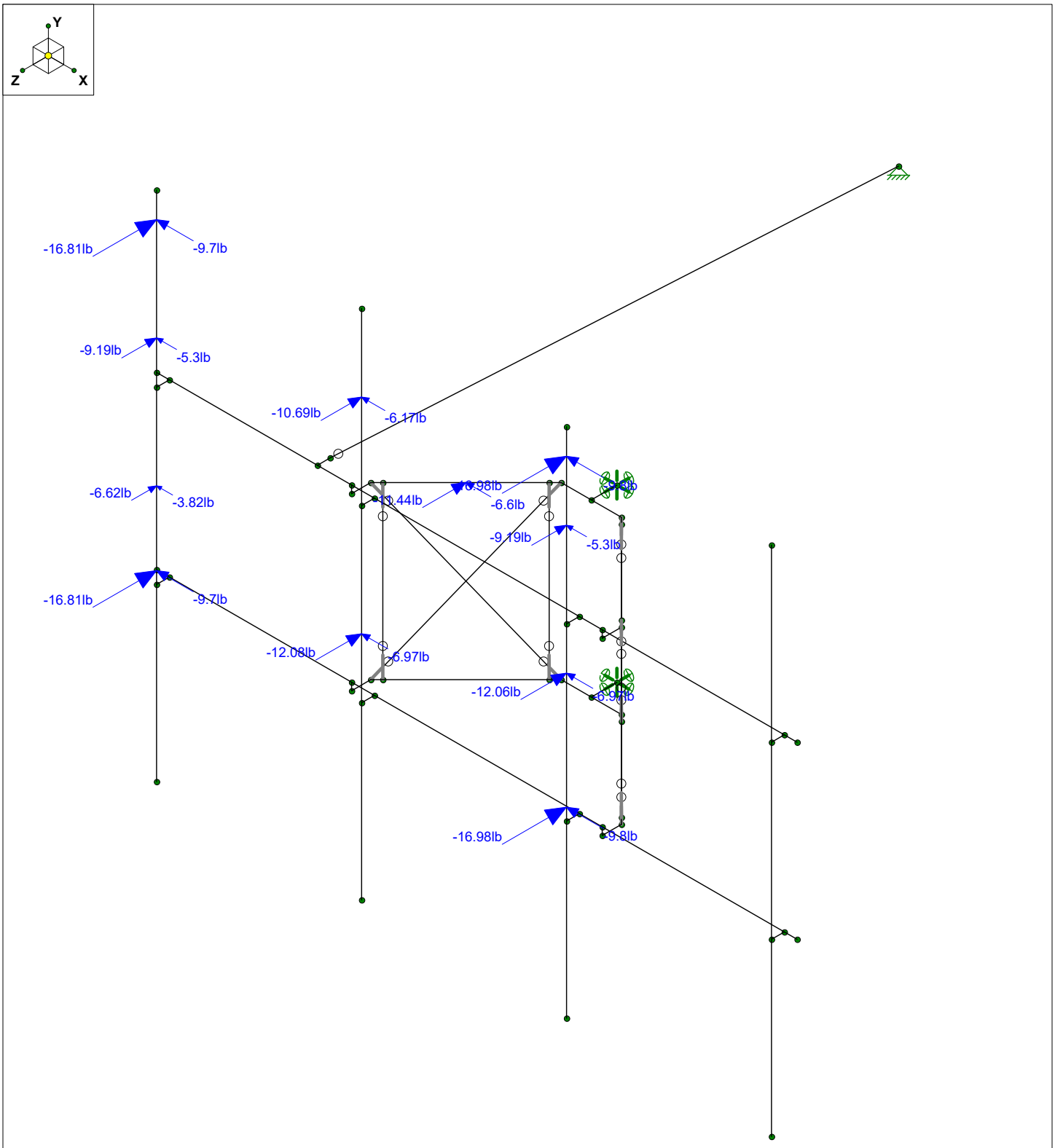

Loads: BLC 18, Ice Wind Load AZI 30

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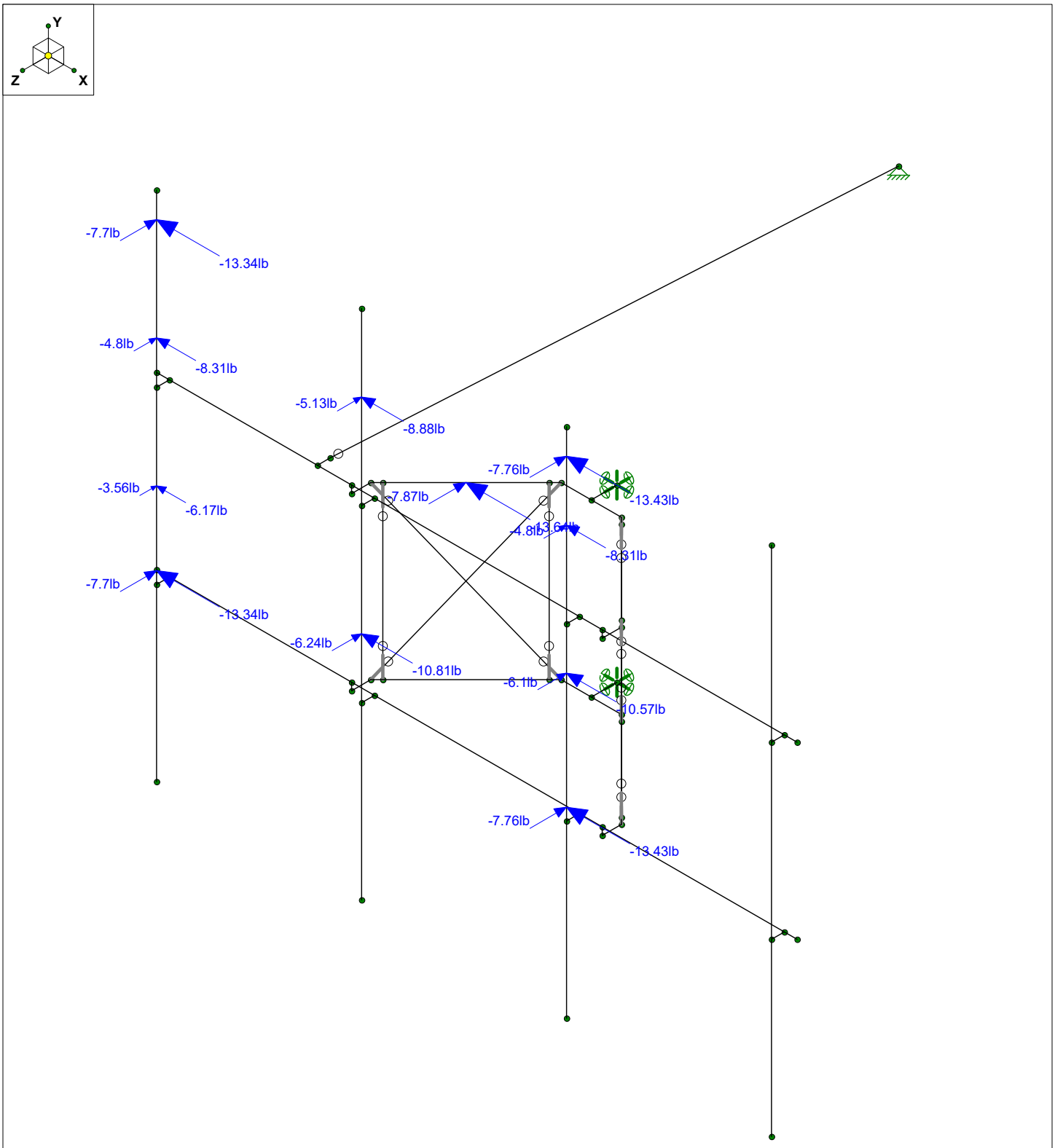

Loads: BLC 19, Ice Wind Load AZI 60

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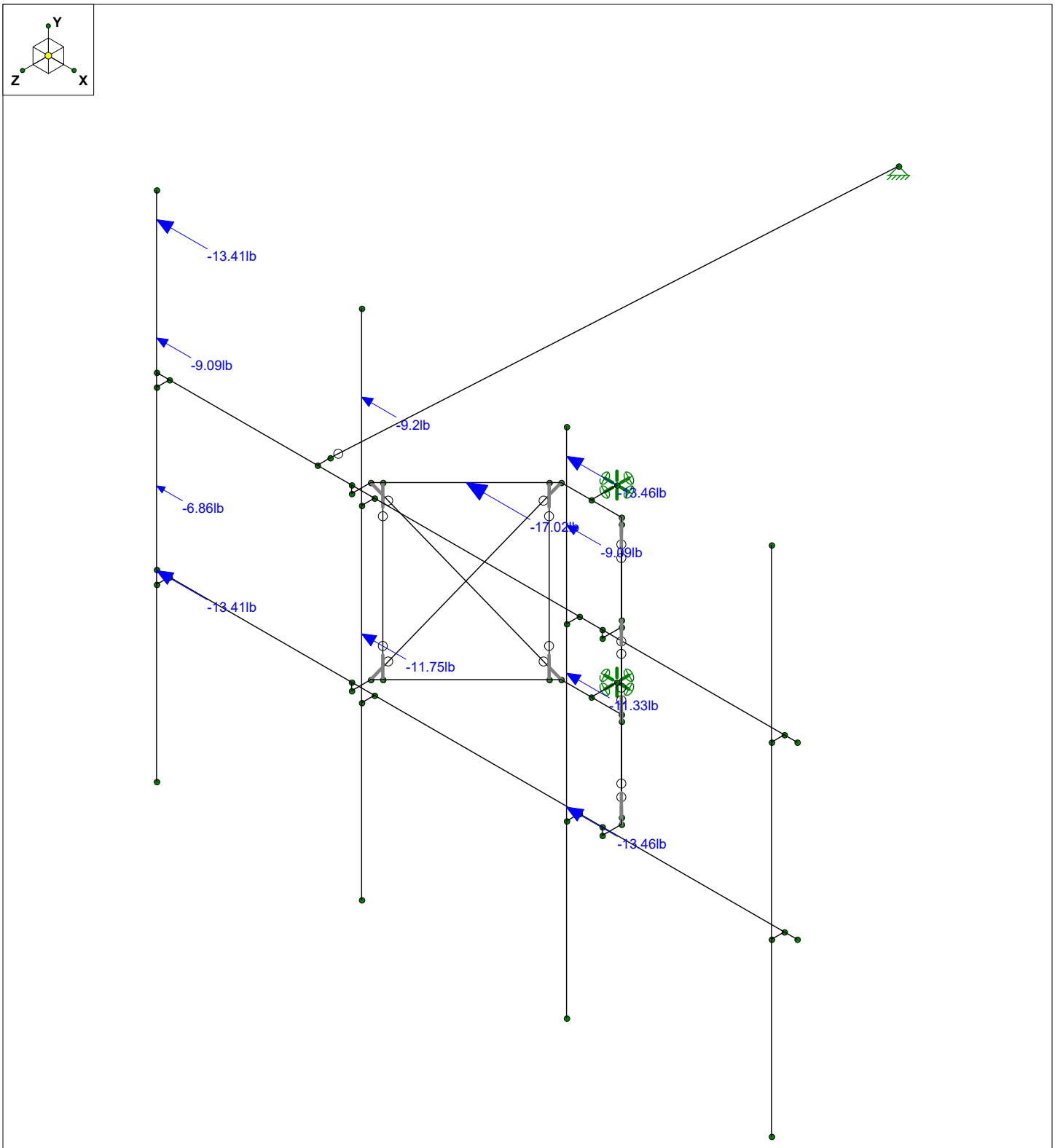

Loads: BLC 20, Ice Wind Load AZI 90

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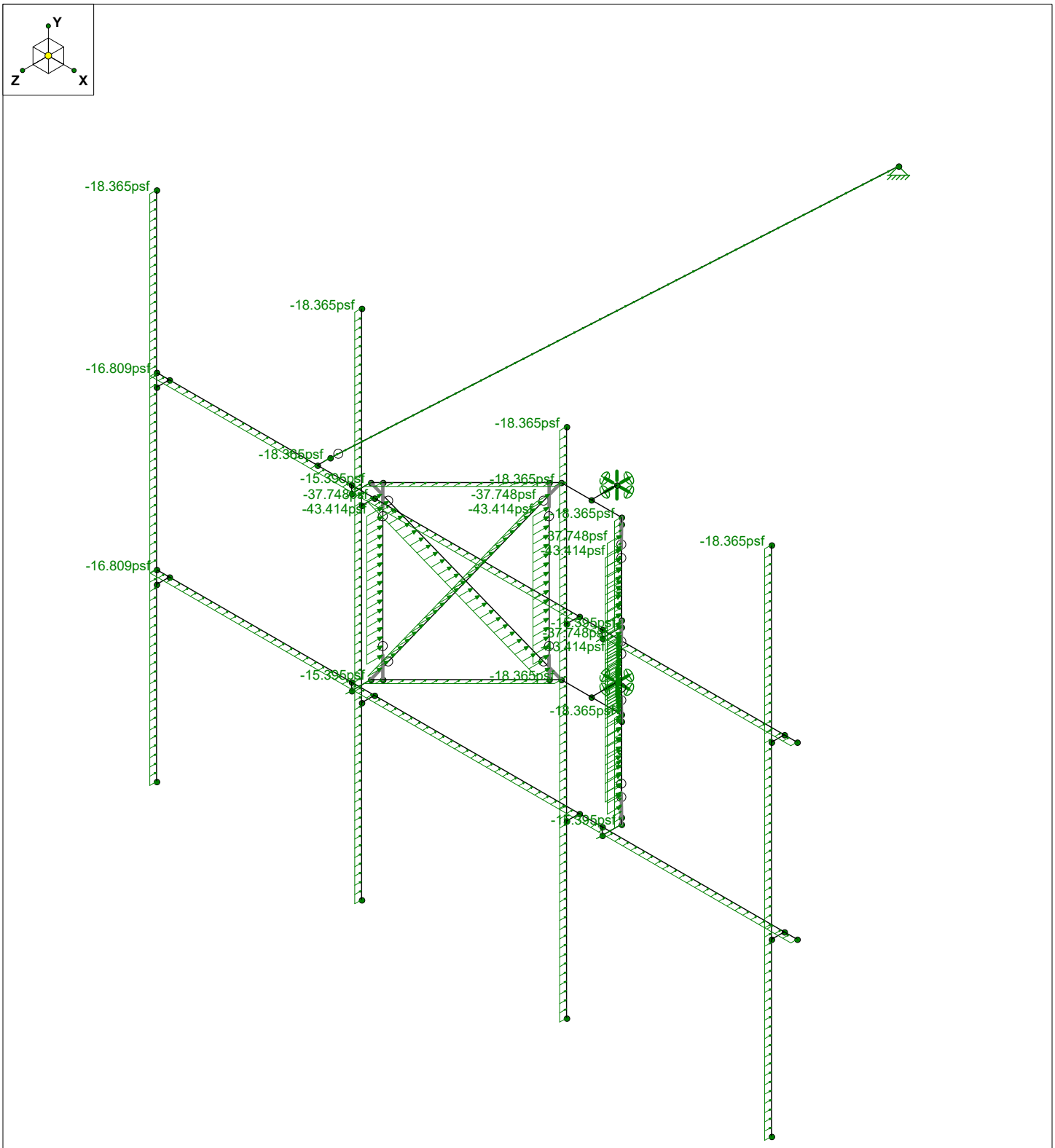

Loads: BLC 29, Distr. Ice Wind Load Z

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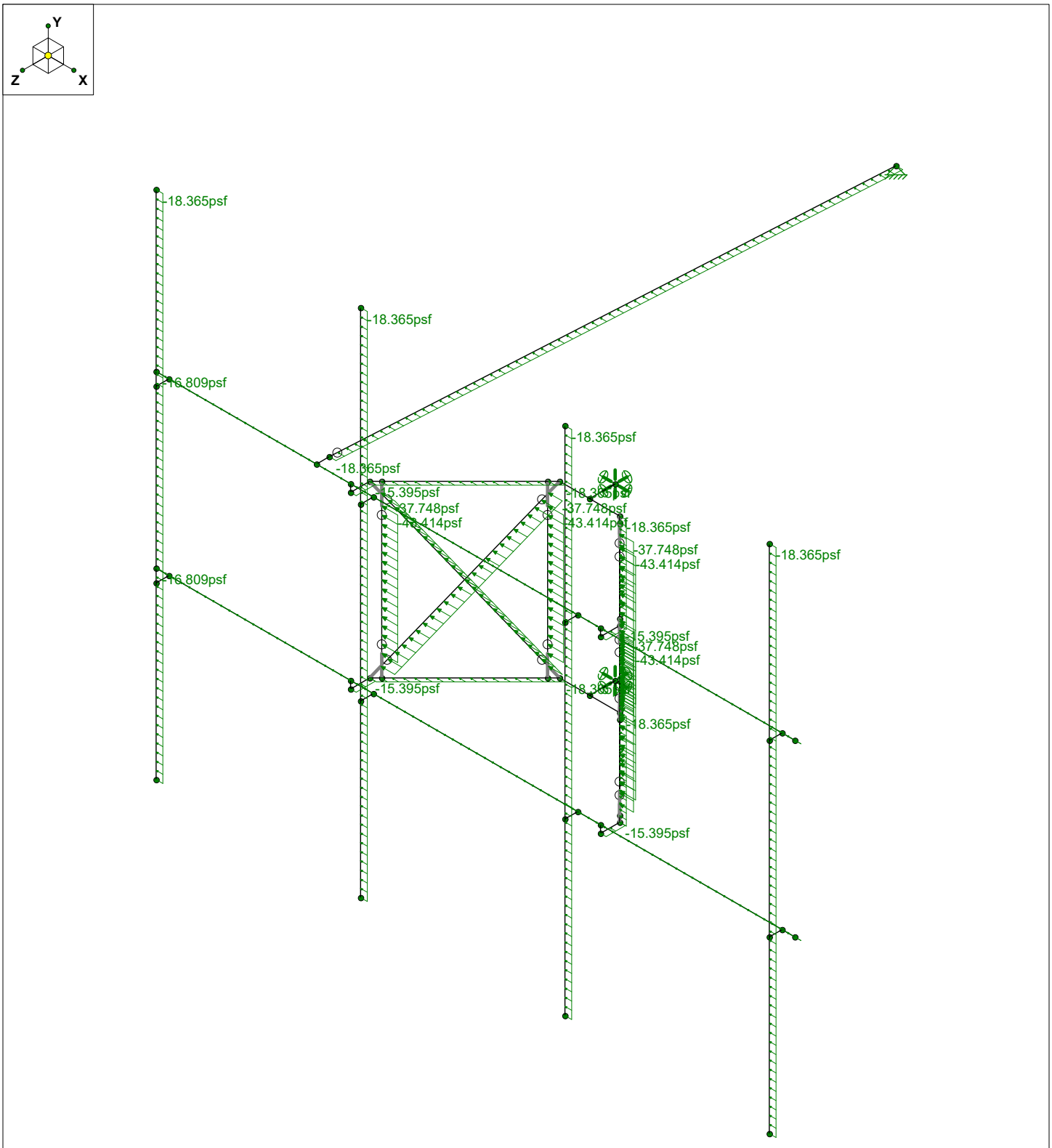
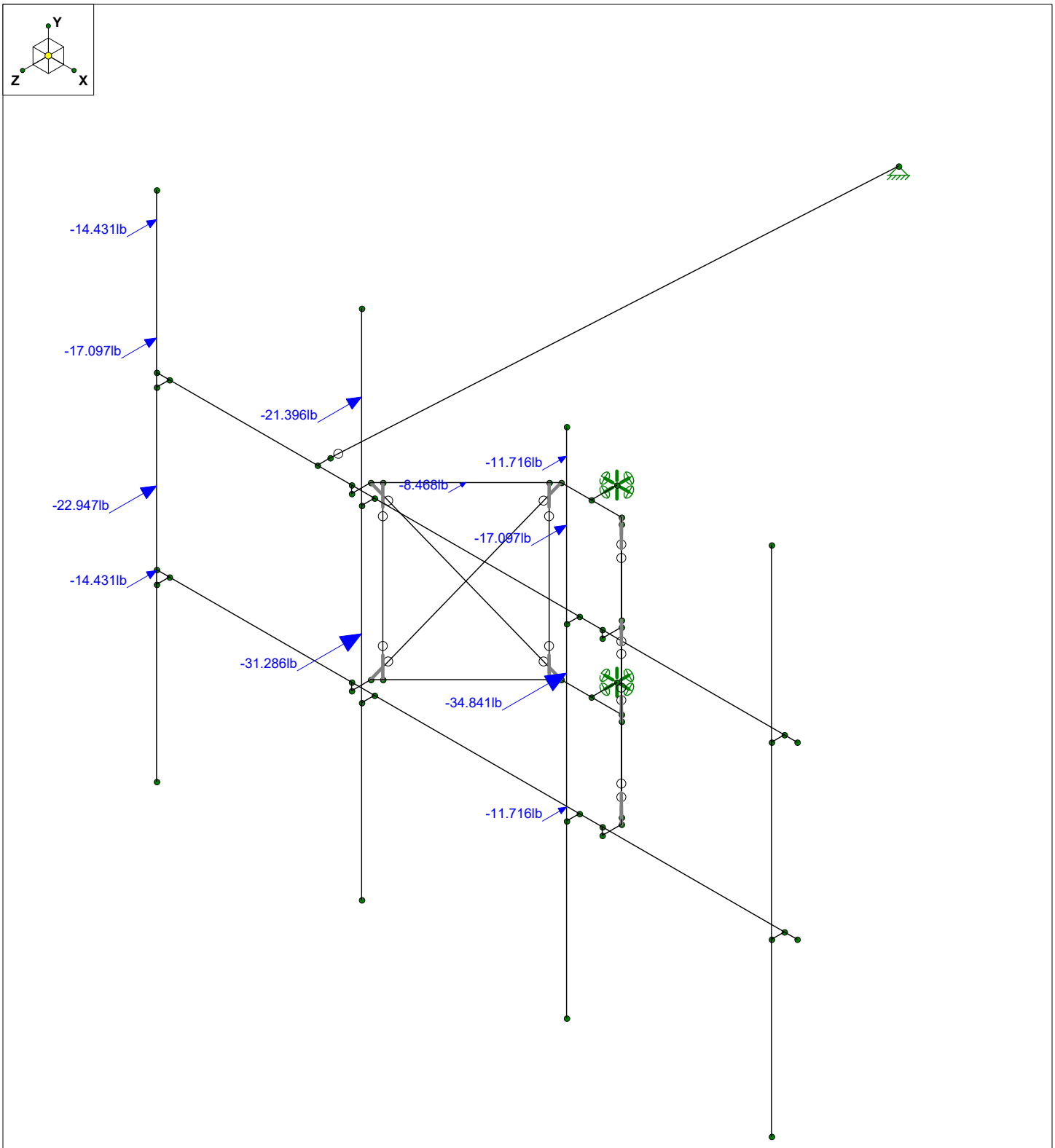


Loads: BLC 30, Distr. Ice Wind Load X

Infinigy Engineering	876312	Dist. Ice Wind Loading 90
AM		Mar 1, 2022 at 10:34 AM
1039-Z0001-B		876312_loaded.r3d



Loads: BLC 31, Seismic Load Z

Infinigy Engineering	876312	Seismic Loading 0
AM		Mar 1, 2022 at 10:34 AM
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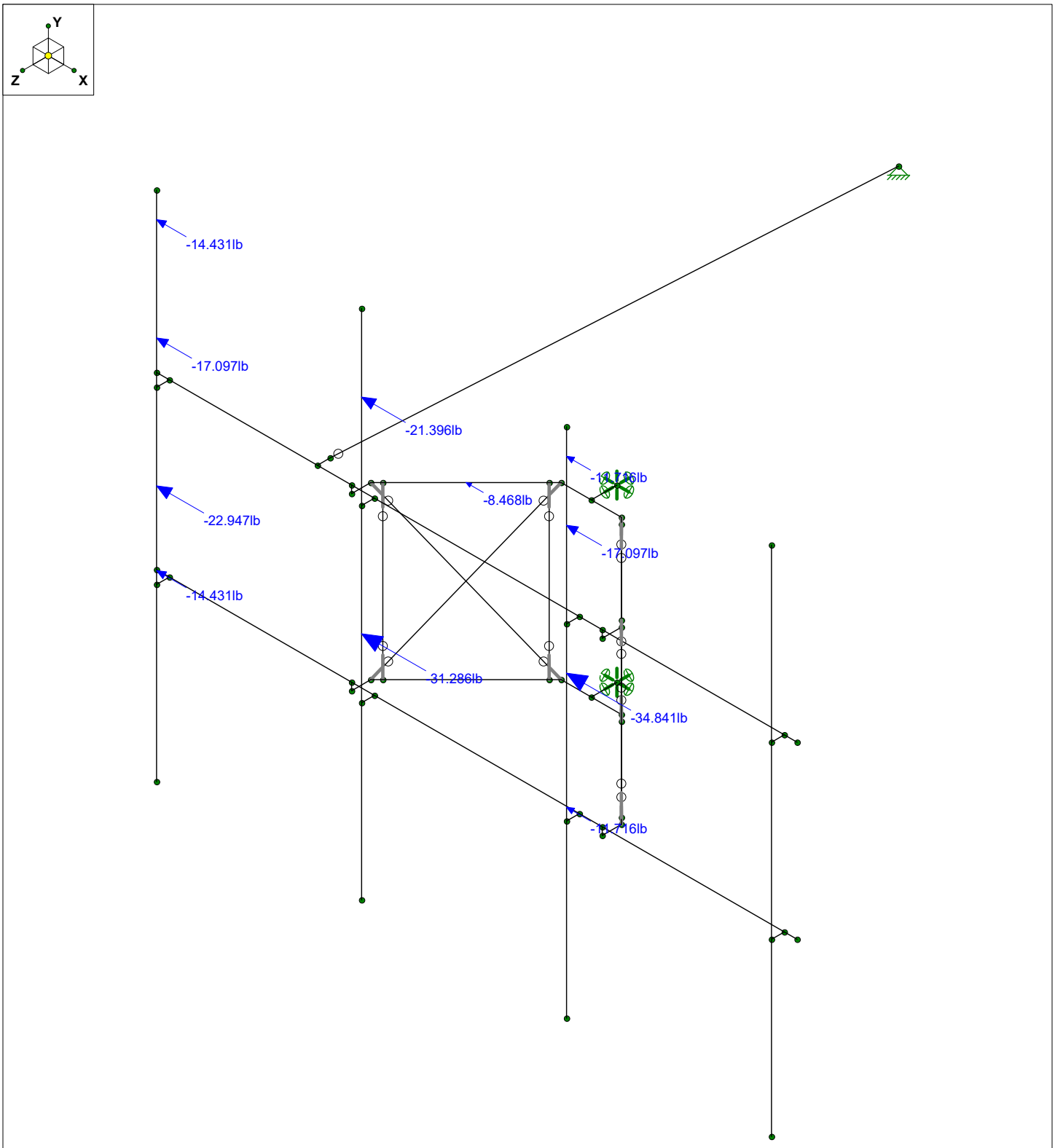
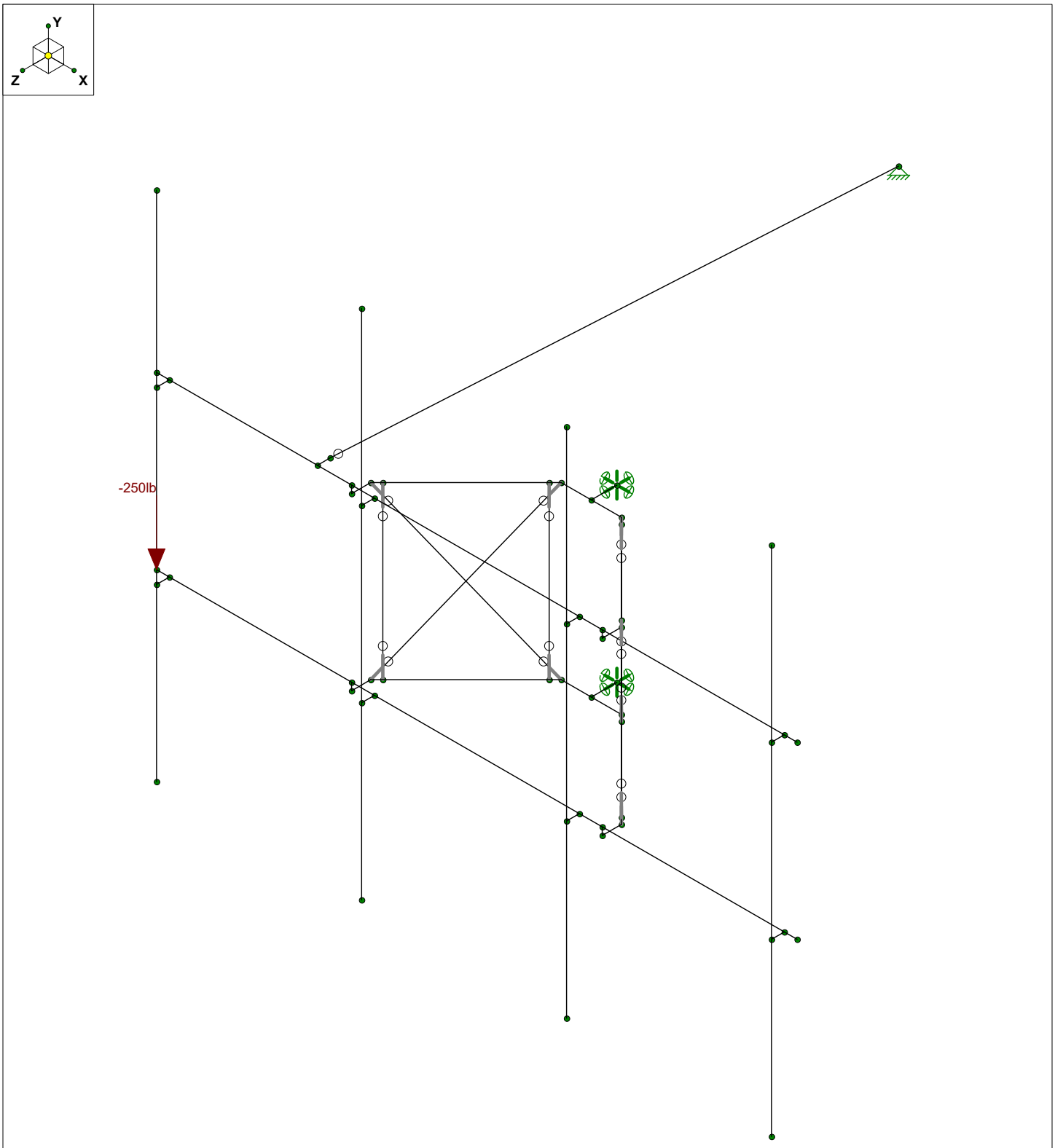


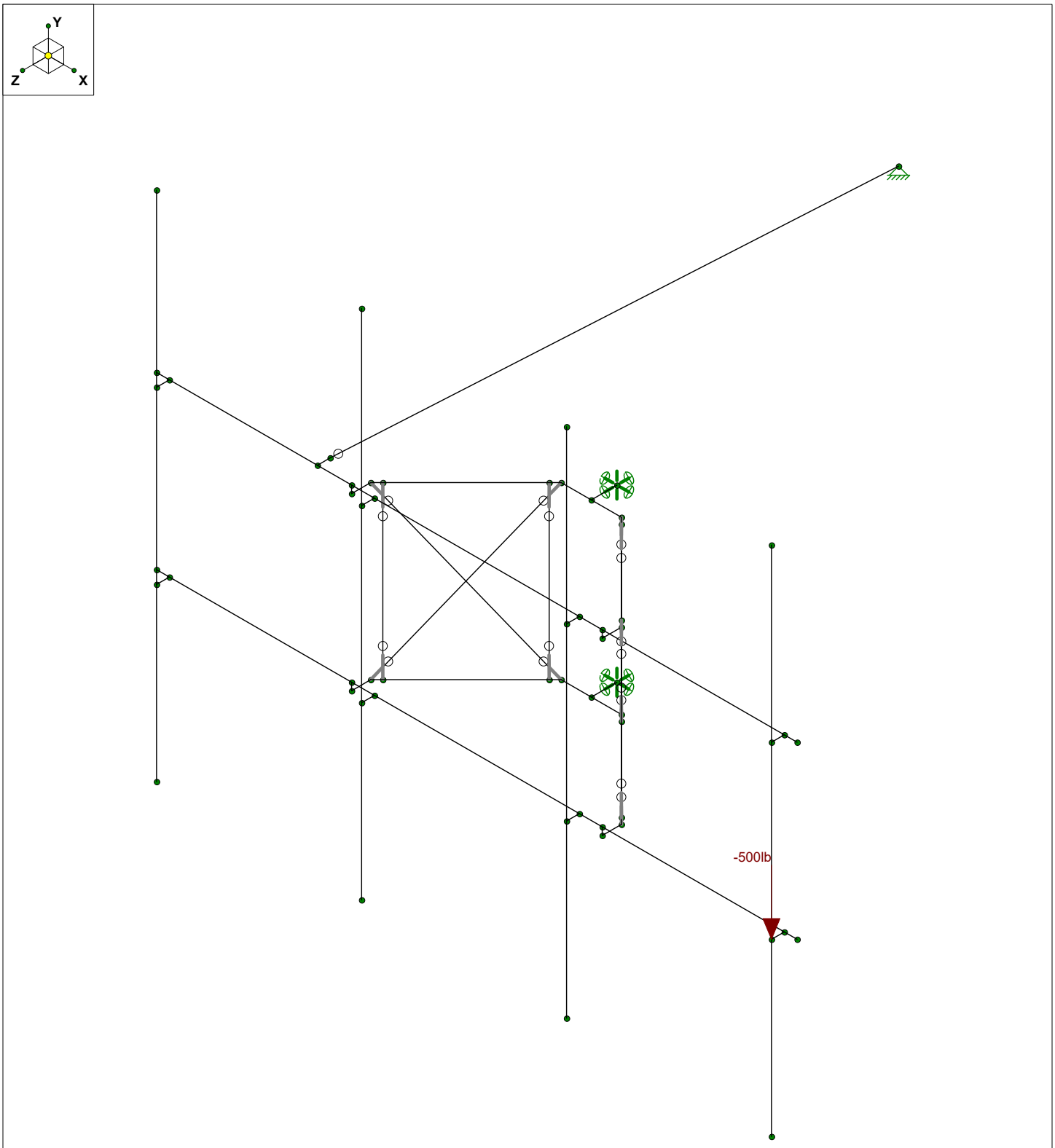
Loads: BLC 32, Seismic Load X

Infinigy Engineering	876312	Seismic Loading 90
AM		Mar 1, 2022 at 10:34 AM
1039-Z0001-B		876312_loaded.r3d



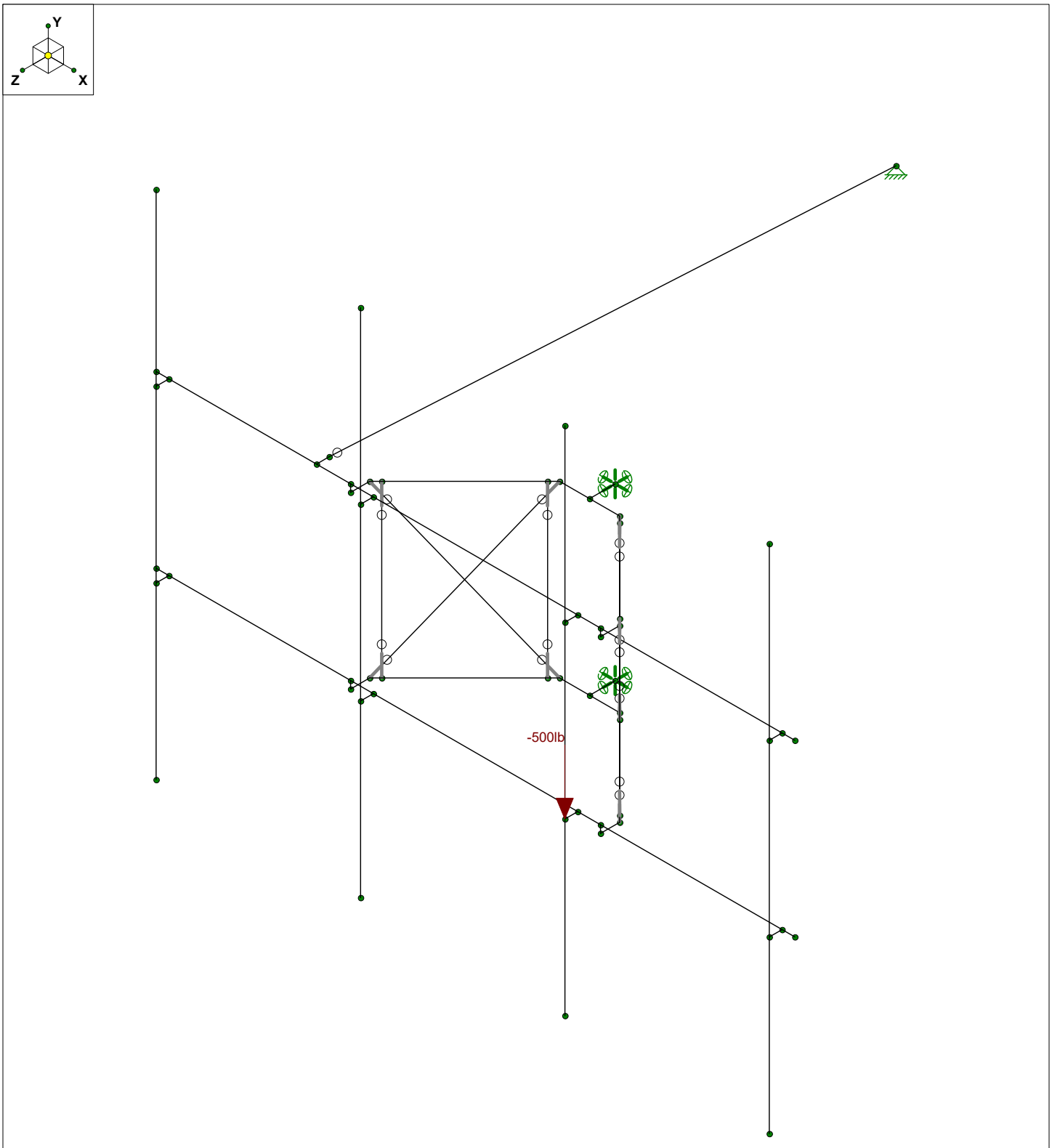
Loads: BLC 33, Service Live Loads

Infinigy Engineering	876312	Service
AM		Mar 1, 2022 at 10:34 AM
1039-Z0001-B		876312_loaded.r3d



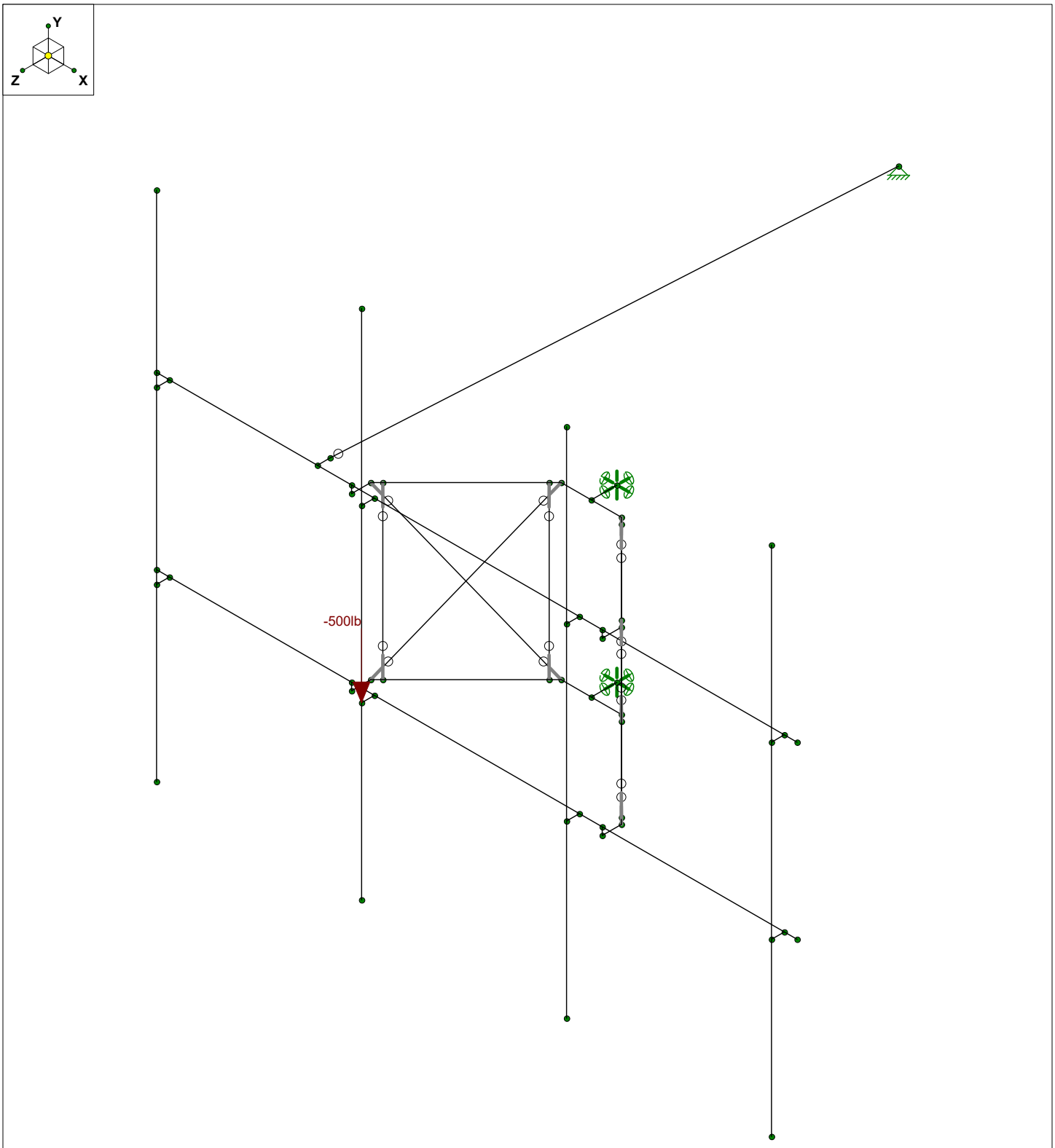
Loads: BLC 34, Maintenance Load 1

Infinigy Engineering	876312	Maintenance Load 1
AM		Mar 1, 2022 at 10:34 AM
1039-Z0001-B		876312_loaded.r3d



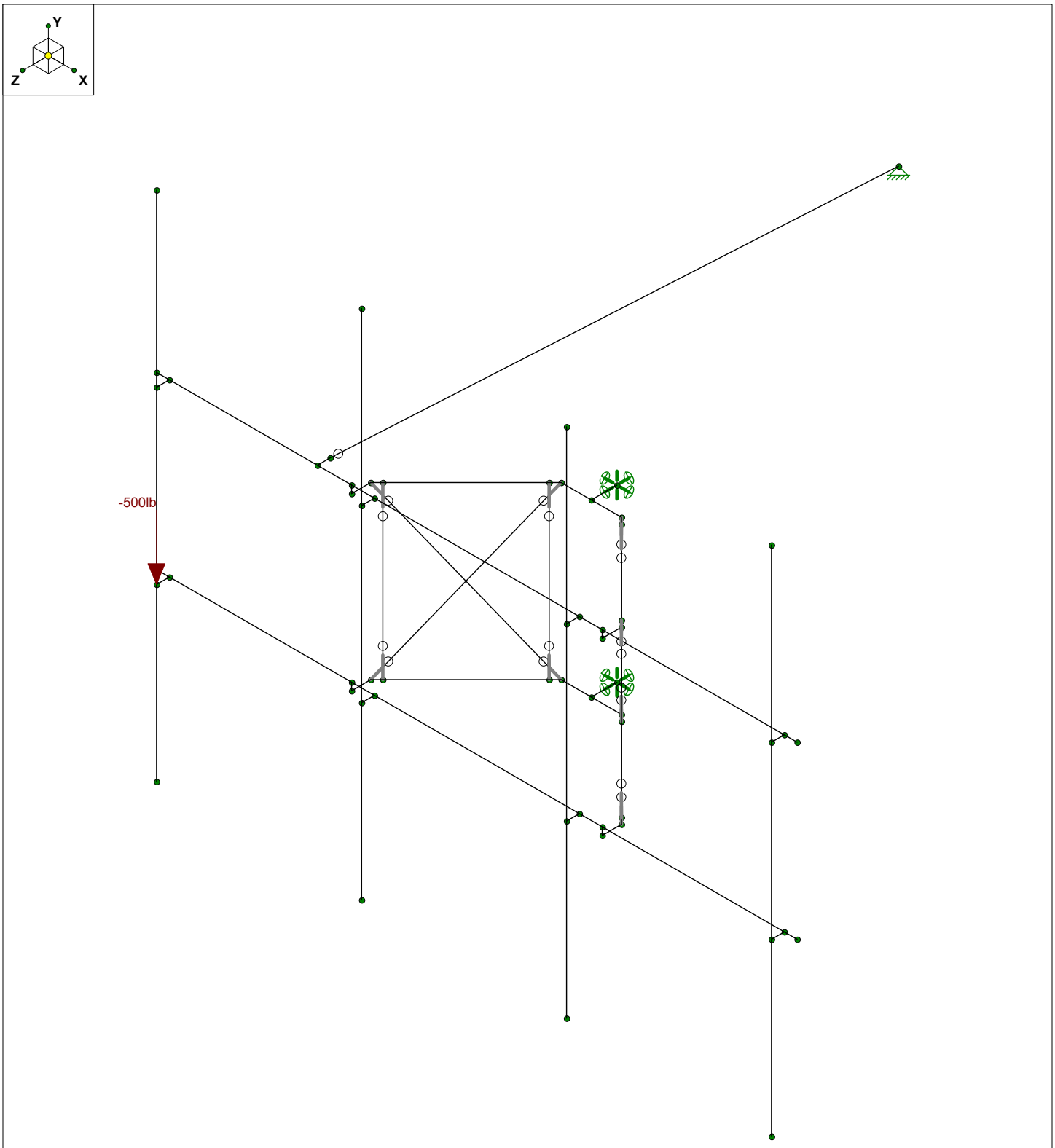
Loads: BLC 35, Maintenance Load 2

Infinigy Engineering	876312	Maintenance Load 2
AM		Mar 1, 2022 at 10:34 AM
1039-Z0001-B		876312_loaded.r3d



Loads: BLC 36, Maintenance Load 3

Infinigy Engineering	876312	Maintenance Load 3
AM		Mar 1, 2022 at 10:35 AM
1039-Z0001-B		876312_loaded.r3d



Loads: BLC 37, Maintenance Load 4

Infinigy Engineering	876312	Maintenance Load 4
AM		Mar 1, 2022 at 10:35 AM
1039-Z0001-B		876312_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	AT&T Mobility
Engineer:	Alex Mercado

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	7.40	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Sector Frame (Multiple)	
Num Sectors:	3	
Centerline AGL:	110.00	ft
Tower Height AGL:	120.00	ft

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

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	1.000	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

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	in
Flat Pressure:	90.418	psf
Round Pressure:	54.251	psf
Ice Wind Pressure:	9.419	psf

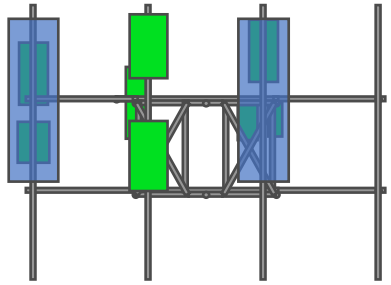
SEISMIC DATA		
Short-Period Accel. (S_s):	0.202	g
1-Second Accel. (S_1):	0.054	g
Short-Period Design (S_{DS}):	0.215	
1-Second Design (S_{D1}):	0.086	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

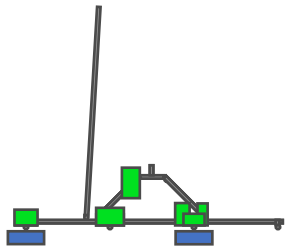
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

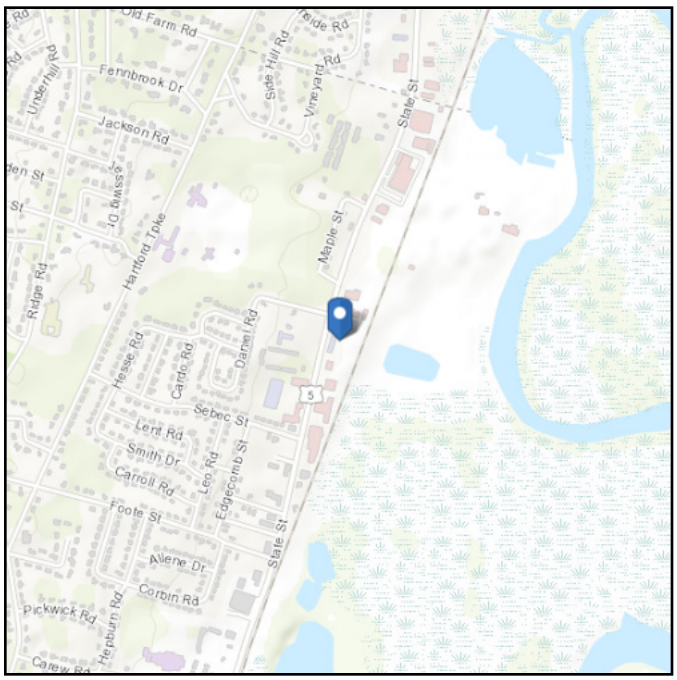
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
CCI ANTENNAS DMP65R-BU6D	112.0	3	0.90	45.38	11.93	4.48	487.26	182.98	89.30	28.86	MP4
CCI ANTENNAS TPA65R-BU6D	112.0	3	0.90	45.38	12.22	4.54	499.10	185.43	72.50	23.43	MP2
ERICSSON AIR 6419 B77G	112.0	3	0.90	45.38	4.64	1.87	189.51	76.38	66.20	21.40	MP3
ERICSSON AIR 6449 N77	112.0	3	0.90	45.38	3.70	2.15	151.12	87.81	96.80	31.29	MP3
ERICSSON RADIO 4478 B14	112.0	3	0.90	45.38	2.02	1.25	82.55	50.89	59.40	19.20	MP2
ERICSSON RRUS 32 B2	112.0	3	0.90	45.38	2.73	1.67	111.56	68.13	52.90	17.10	MP2
ERICSSON RRUS 32 B30	112.0	3	0.90	45.38	2.73	1.67	111.56	68.13	52.90	17.10	MP4
ERICSSON RRUS 4426 B66	112.0	3	0.90	45.38	1.64	0.73	67.16	29.62	48.40	15.64	MP2
ERICSSON RRUS 4449 B5/B12	112.0	3	0.90	45.38	1.97	1.41	80.36	57.51	71.00	22.95	MP4
RAYCAP DC6-48-60-18-8F	112.0	2	0.90	45.38	2.04	2.04	83.30	83.30	18.90	6.11	Leg/Flush
RAYCAP DC9-48-60-24-8C-EV	112.0	1	0.90	45.38	2.74	4.78	111.73	195.36	26.20	8.47	S1

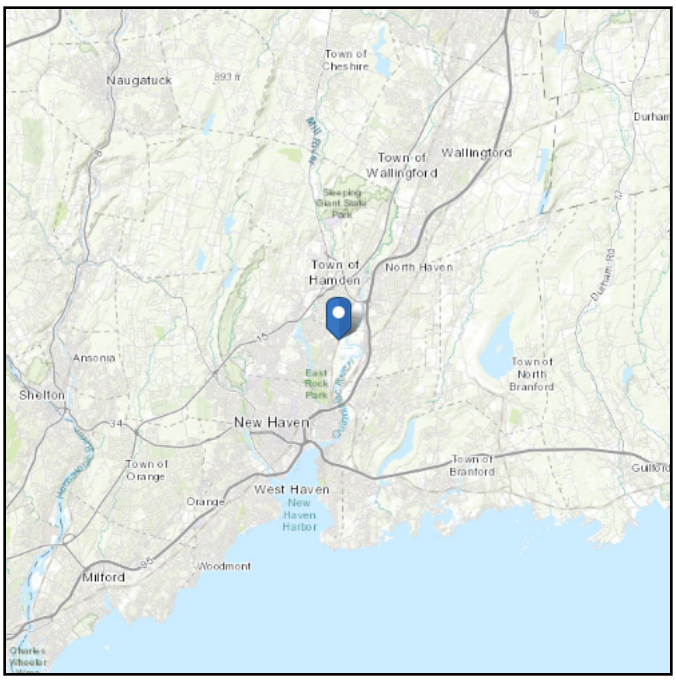
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 7.4 ft (NAVD 88)
Latitude: 41.355464
Longitude: -72.890314





Wind

Results:

Wind Speed	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Feb 18 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

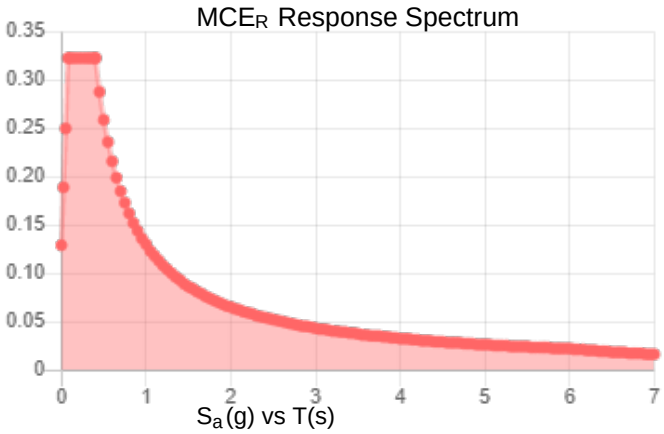
Seismic

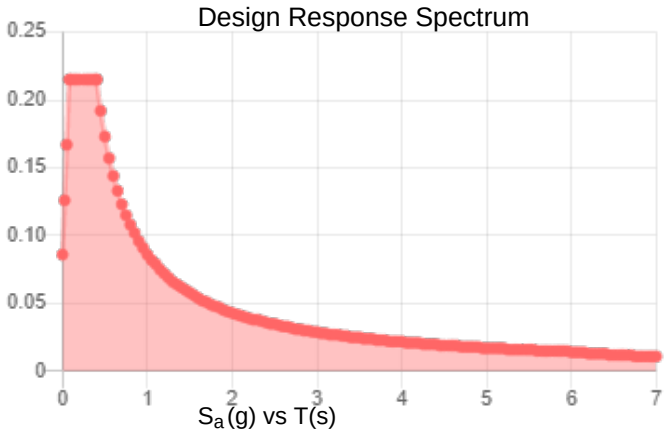
Site Soil Class: D - Default (see Section 11.4.3)

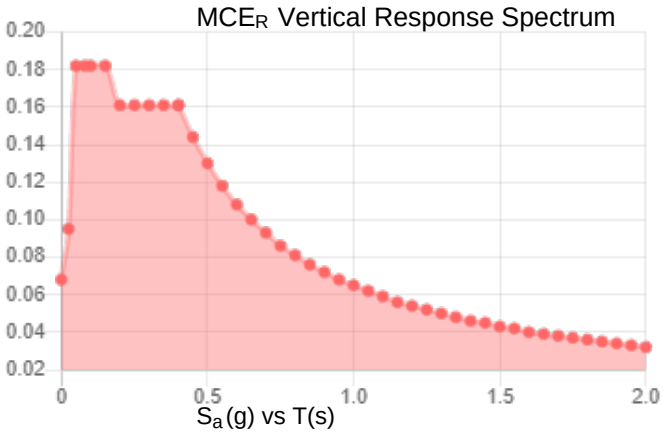
Results:

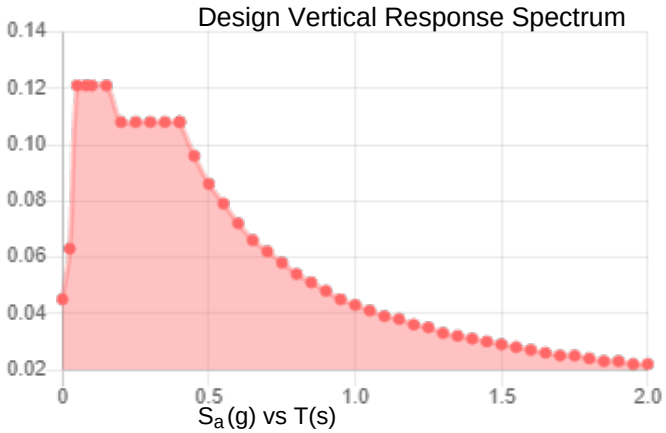
S_S :	0.202	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.113
F_v :	2.4	PGA_M :	0.178
S_{MS} :	0.323	F_{PGA} :	1.575
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.215	C_v :	0.704

Seismic Design Category B









Data Accessed: **Fri Feb 18 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Feb 18 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M3	N38	N51			Bracing (Diag)	Beam	BAR	Q345	Typical
2	M4	N41	N48			Bracing (Diag)	Beam	BAR	Q345	Typical
3	M5	N40	N49			Bracing (Diag)	Beam	BAR	Q345	Typical
4	M6	N39	N50			Bracing (Diag)	Beam	BAR	Q345	Typical
5	M9	N65	N64A			Bracing (Vert)	Beam	BAR	Q345	Typical
6	M10	N63A	N62A			Bracing (Vert)	Beam	BAR	Q345	Typical
7	M11	N53	N52		90	RIGID	None	None	RIGID	Typical
8	M12	N15	N29			RIGID	None	None	RIGID	Typical
9	M13	N50	N51			RIGID	None	None	RIGID	Typical
10	M14	N16	N30			RIGID	None	None	RIGID	Typical
11	S4	N51	N48			Standoff	Beam	Pipe	Q235-GB	Typical
12	S2	N50	N49			Standoff	Beam	Pipe	Q235-GB	Typical
13	M19	N48	N46		90	Connection Plate	Beam	RECT	Q345	Typical
14	M21	N49	N47		90	Connection Plate	Beam	RECT	Q345	Typical
15	M23	N44	N46			RIGID	None	None	RIGID	Typical
16	M25	N45	N47			RIGID	None	None	RIGID	Typical
17	M27	N43	N42		90	RIGID	None	None	RIGID	Typical
18	MP1	N31	N32			Mount Pipe	Column	Pipe	Q235-GB	Typical
19	M29	N40	N41			RIGID	None	None	RIGID	Typical
20	S3	N41	N38			Standoff	Beam	Pipe	Q235-GB	Typical
21	S1	N40	N39			Standoff	Beam	Pipe	Q235-GB	Typical
22	M35	N38	N36		90	Connection Plate	Beam	RECT	Q345	Typical
23	M36	N39	N37		90	Connection Plate	Beam	RECT	Q345	Typical
24	M37	N34	N36			RIGID	None	None	RIGID	Typical
25	M39	N35	N37			RIGID	None	None	RIGID	Typical
26	H2	N1	N2			Face Horizontal	Beam	Pipe	Q235-GB	Typical
27	H1	N3	N4			Face Horizontal	Beam	Pipe	Q235-GB	Typical
28	M43A	N69	N68			Bracing (Vert)	Beam	BAR	Q345	Typical
29	M44A	N67	N66			Bracing (Vert)	Beam	BAR	Q345	Typical
30	M41A	N67A	N69A			RIGID	None	None	RIGID	Typical
31	TB1	N67A	N68A			Tieback	Beam	Pipe	Q235-GB	Typical
32	M37A	N51A	N53A			RIGID	None	None	RIGID	Typical
33	M38	N52A	N54			RIGID	None	None	RIGID	Typical
34	MP2	N55	N56			Mount Pipe	Column	Pipe	Q235-GB	Typical
35	M40	N57	N59			RIGID	None	None	RIGID	Typical
36	M41	N58	N60			RIGID	None	None	RIGID	Typical
37	MP3	N61	N62			Mount Pipe	Column	Pipe	Q235-GB	Typical
38	M43	N63	N65A			RIGID	None	None	RIGID	Typical
39	M44B	N64	N66A			RIGID	None	None	RIGID	Typical
40	MP4	N67B	N68B			Mount Pipe	Column	Pipe	Q235-GB	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		17	74.2	0
3	Total General		17	74.2	0
4					
5	Hot Rolled Steel				
6	Q235-GB	PIPE_2.0	9	732.1	.212
7	Q235-GB	PIPE_2.5	2	300	.137
8	Q345	0.625" S.R.	4	120	.01
9	Q345	PL3 1/2x5/8	4	18	.011
10	Q345	SR 3/4	4	179.7	.023
11	Total HR Steel		23	1349.8	.393

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
1	Self Weight	DL		-1			12			
2	Wind Load AZI 0	WLZ					24			
3	Wind Load AZI 30	None					24			
4	Wind Load AZI 60	None					24			
5	Wind Load AZI 90	WLX					24			
6	Wind Load AZI 120	None					24			
7	Wind Load AZI 150	None					24			
8	Wind Load AZI 180	None					24			
9	Wind Load AZI 210	None					24			
10	Wind Load AZI 240	None					24			
11	Wind Load AZI 270	None					24			
12	Wind Load AZI 300	None					24			
13	Wind Load AZI 330	None					24			
14	Distr. Wind Load Z	WLZ						40		
15	Distr. Wind Load X	WLX						40		
16	Ice Weight	OL1					12	40		
17	Ice Wind Load AZI 0	OL2					24			
18	Ice Wind Load AZI ...	None					24			
19	Ice Wind Load AZI ...	None					24			
20	Ice Wind Load AZI ...	OL3					24			
21	Ice Wind Load AZI ...	None					24			
22	Ice Wind Load AZI ...	None					24			
23	Ice Wind Load AZI ...	None					24			
24	Ice Wind Load AZI ...	None					24			
25	Ice Wind Load AZI ...	None					24			
26	Ice Wind Load AZI ...	None					24			
27	Ice Wind Load AZI ...	None					24			
28	Ice Wind Load AZI ...	None					24			
29	Distr. Ice Wind Loa...	OL2						40		
30	Distr. Ice Wind Loa...	OL3						40		
31	Seismic Load Z	ELZ			-.323		12			
32	Seismic Load X	ELX	-.323				12			
33	Service Live Loads	LL				1				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				

Load Combinations

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	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	-.8...	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	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.8...														
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	-.8...														
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															

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
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	-.8...	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	-.8...	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.8...												
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	-.8...												
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 A...	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	-.8...	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	-.8...	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.243	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	-.8...	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	-.8...	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.857	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	2	.25	14	.25	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	3	.25	14	.216	15	.125	33	1.5										
65	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	4	.25	14	.125	15	.216	33	1.5										
66	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	5	.25	14		15	.25	33	1.5										
67	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	6	.25	14	-.1...	15	.216	33	1.5										
68	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	7	.25	14	-.2...	15	.125	33	1.5										
69	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	8	.25	14	-.25	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	9	.25	14	-.2...	15	-.1...	33	1.5										
71	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	10	.25	14	-.1...	15	-.2...	33	1.5										

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	11	.25	14		15	-.25	33	1.5												
73	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	12	.25	14	.125	15	-.2...	33	1.5												
74	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	13	.25	14	.216	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	2	.063	14	.063	15													
77	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031												
78	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054												
79	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	5	.063	14		15	.063												
80	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	6	.063	14	-.0...	15	.054												
81	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	7	.063	14	-.0...	15	.031												
82	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	8	.063	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	9	.063	14	-.0...	15	-.0...												
84	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	10	.063	14	-.0...	15	-.0...												
85	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	11	.063	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.0...												
87	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.0...												
88	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	2	.063	14	.063	15													
89	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031												
90	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054												
91	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	5	.063	14		15	.063												
92	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	6	.063	14	-.0...	15	.054												
93	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	7	.063	14	-.0...	15	.031												
94	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	8	.063	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	9	.063	14	-.0...	15	-.0...												
96	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	10	.063	14	-.0...	15	-.0...												
97	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	11	.063	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.0...												
99	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.0...												
100	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	2	.063	14	.063	15													
101	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031												
102	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054												
103	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	5	.063	14		15	.063												
104	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	6	.063	14	-.0...	15	.054												
105	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	7	.063	14	-.0...	15	.031												
106	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	8	.063	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	9	.063	14	-.0...	15	-.0...												
108	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	10	.063	14	-.0...	15	-.0...												
109	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	11	.063	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.0...												
111	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.0...												
112	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	2	.063	14	.063	15													
113	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031												
114	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054												
115	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	5	.063	14		15	.063												
116	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	6	.063	14	-.0...	15	.054												
117	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	7	.063	14	-.0...	15	.031												
118	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	8	.063	14	-.0...	15													
119	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	9	.063	14	-.0...	15	-.0...												
120	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	10	.063	14	-.0...	15	-.0...												
121	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	11	.063	14		15	-.0...												
122	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.0...												

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	N43	max	1894.454	4	2132.939	35	1485.549	25	21.535	25	0	122	238.39	87
2		min	-1254.717	22	-84.474	25	-2934.8...	7	-1105.8...	35	0	1	-1121.9...	122
3	N53	max	774.898	79	1285.295	28	1813.888	28	33.26	19	0	122	249.256	77
4		min	-1486.662	121	-91.027	19	205.564	20	-650.994	28	0	1	-332.189	70
5	N68A	max	87.146	9	47.328	35	1957.076	3	0	122	0	122	0	122
6		min	-86.548	3	15.57	53	-1960.5...	9	0	1	0	1	0	1
7	Totals:	max	1666.999	5	2564.112	28	2796.912	2						
8		min	-1666.997	23	881.278	59	-2796.9...	20						

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	PIPE_2.5	Beam	Pipe	Q235-GB	Typical	1.61	1.45	1.45	2.89
2	Standoff	PIPE_2.0	Beam	Pipe	Q235-GB	Typical	1.02	.627	.627	1.25
3	Bracing (Vert)	0.625" S.R.	Beam	BAR	Q345	Typical	.307	.007	.007	.015
4	Mount Pipe	PIPE_2.0	Column	Pipe	Q235-GB	Typical	1.02	.627	.627	1.25
5	Conn. Plate	PL0.625x3.5	Beam	RECT	Q345	Typical	2.188	.071	2.233	.253
6	Pivot Plate	PL0.625x9.25	Beam	RECT	Q345	Typical	5.781	.188	41.222	.721
7	Connection Plate	PL3 1/2x5/8	Beam	RECT	Q345	Typical	2.188	.071	2.233	.253
8	Tieback	PIPE_2.0	Beam	Pipe	Q235-GB	Typical	1.02	.627	.627	1.25
9	Bracing (Diag)	SR 3/4	Beam	BAR	Q345	Typical	.442	.016	.016	.031

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N43	Reaction	Reaction	Reaction	Reaction		Reaction
2	N53	Reaction	Reaction	Reaction	Reaction		Reaction
3	N68A	Reaction	Reaction	Reaction			

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M3	BenPIN	BenPIN	3	3	Euler Buc...	Yes				None
2	M4	BenPIN	BenPIN	3	3	Euler Buc...	Yes				None
3	M5	BenPIN	BenPIN	3	3	Euler Buc...	Yes				None
4	M6	BenPIN	BenPIN	3	3	Euler Buc...	Yes				None
5	M9	BenPIN	BenPIN	5	5		Yes				None
6	M10	BenPIN	BenPIN	5	5		Yes				None
7	M11						Yes	** NA **			None
8	M12						Yes	** NA **			None
9	M13						Yes	** NA **			None
10	M14						Yes	** NA **			None
11	S4						Yes				None
12	S2						Yes				None
13	M19						Yes				None
14	M21						Yes				None
15	M23						Yes	** NA **			None
16	M25						Yes	** NA **			None
17	M27						Yes	** NA **			None
18	MP1						Yes	** NA **			None
19	M29						Yes	** NA **			None
20	S3						Yes				None
21	S1						Yes	Default			None
22	M35						Yes				None
23	M36						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
24	M37						Yes	** NA **			None
25	M39						Yes	** NA **			None
26	H2						Yes				None
27	H1						Yes				None
28	M43A	BenPIN	BenPIN	5	5		Yes				None
29	M44A	BenPIN	BenPIN	5	5		Yes				None
30	M41A						Yes	** NA **			None
31	TB1	BenPIN					Yes				None
32	M37A						Yes	** NA **			None
33	M38						Yes	** NA **			None
34	MP2						Yes	** NA **			None
35	M40						Yes	** NA **			None
36	M41						Yes	** NA **			None
37	MP3						Yes	** NA **			None
38	M43						Yes	** NA **			None
39	M44B						Yes	** NA **			None
40	MP4						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	M3	Bracing (Di...	50.937			Lbyy						Lateral
2	M4	Bracing (Di...	50.937			Lbyy						Lateral
3	M5	Bracing (Di...	50.937			Lbyy						Lateral
4	M6	Bracing (Di...	50.937			Lbyy						Lateral
5	M9	Bracing (Ve...	40			Lbyy						Lateral
6	M10	Bracing (Ve...	40			Lbyy						Lateral
7	S4	Standoff	31.537			Lbyy						Lateral
8	S2	Standoff	31.537			Lbyy						Lateral
9	M19	Connection ...	4.5			Lbyy						Lateral
10	M21	Connection ...	4.5			Lbyy						Lateral
11	MP1	Mount Pipe	120			Lbyy						Lateral
12	S3	Standoff	31.537			Lbyy						Lateral
13	S1	Standoff	31.537			Lbyy						Lateral
14	M35	Connection ...	4.5			Lbyy						Lateral
15	M36	Connection ...	4.5			Lbyy						Lateral
16	H2	Face Horizo...	150			Lbyy						Lateral
17	H1	Face Horizo...	150			Lbyy						Lateral
18	M43A	Bracing (Ve...	40			Lbyy						Lateral
19	M44A	Bracing (Ve...	40			Lbyy						Lateral
20	TB1	Tieback	125.944			Lbyy						Lateral
21	MP2	Mount Pipe	120			Lbyy						Lateral
22	MP3	Mount Pipe	120			Lbyy						Lateral
23	MP4	Mount Pipe	120			Lbyy						Lateral

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Ther...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	Q345	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	Q235-GB	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
8	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (l...
1	N1	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (l...
1	N29	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), (l...
1	N53A	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), (l...
1	N59	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), (l...
1	N65A	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-44.65	6
2	MP4	Y	-44.65	77.2
3	MP2	Y	-36.25	6
4	MP2	Y	-36.25	77.2
5	MP3	Y	-66.2	18
6	MP3	Y	-96.8	66
7	MP2	Y	-59.4	50
8	MP2	Y	-52.9	20
9	MP4	Y	-52.9	%25
10	MP2	Y	-48.4	50
11	MP4	Y	-71	%50
12	S1	Y	-26.2	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	6
2	MP4	Z	-243.63	6
3	MP4	X	0	77.2
4	MP4	Z	-243.63	77.2
5	MP2	X	0	6
6	MP2	Z	-249.55	6
7	MP2	X	0	77.2
8	MP2	Z	-249.55	77.2
9	MP3	X	0	18
10	MP3	Z	-189.51	18
11	MP3	X	0	66
12	MP3	Z	-151.12	66
13	MP2	X	0	50
14	MP2	Z	-82.55	50
15	MP2	X	0	20
16	MP2	Z	-111.56	20
17	MP4	X	0	%25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP4	Z	-111.56	%25
19	MP2	X	0	50
20	MP2	Z	-67.16	50
21	MP4	X	0	%50
22	MP4	Z	-80.36	%50
23	S1	X	0	%50
24	S1	Z	-111.73	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-102.8	6
2	MP4	Z	-178.05	6
3	MP4	X	-102.8	77.2
4	MP4	Z	-178.05	77.2
5	MP2	X	-105.17	6
6	MP2	Z	-182.16	6
7	MP2	X	-105.17	77.2
8	MP2	Z	-182.16	77.2
9	MP3	X	-80.61	18
10	MP3	Z	-139.63	18
11	MP3	X	-67.65	66
12	MP3	Z	-117.17	66
13	MP2	X	-37.32	50
14	MP2	Z	-64.64	50
15	MP2	X	-50.35	20
16	MP2	Z	-87.21	20
17	MP4	X	-50.35	%25
18	MP4	Z	-87.21	%25
19	MP2	X	-28.89	50
20	MP2	Z	-50.03	50
21	MP4	X	-37.32	%50
22	MP4	Z	-64.65	%50
23	S1	X	-66.32	%50
24	S1	Z	-114.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-112.17	6
2	MP4	Z	-64.76	6
3	MP4	X	-112.17	77.2
4	MP4	Z	-64.76	77.2
5	MP2	X	-114.25	6
6	MP2	Z	-65.96	6
7	MP2	X	-114.25	77.2
8	MP2	Z	-65.96	77.2
9	MP3	X	-90.64	18
10	MP3	Z	-52.33	18
11	MP3	X	-89.75	66
12	MP3	Z	-51.82	66
13	MP2	X	-50.92	50
14	MP2	Z	-29.4	50
15	MP2	X	-68.4	20
16	MP2	Z	-39.49	20
17	MP4	X	-68.4	%25
18	MP4	Z	-39.49	%25
19	MP2	X	-33.78	50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
20	MP2	Z	-19.5	50
21	MP4	X	-54.75	%50
22	MP4	Z	-31.61	%50
23	S1	X	-151.08	%50
24	S1	Z	-87.23	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-91.49	6
2	MP4	Z	0	6
3	MP4	X	-91.49	77.2
4	MP4	Z	0	77.2
5	MP2	X	-92.71	6
6	MP2	Z	0	6
7	MP2	X	-92.71	77.2
8	MP2	Z	0	77.2
9	MP3	X	-76.38	18
10	MP3	Z	0	18
11	MP3	X	-87.81	66
12	MP3	Z	0	66
13	MP2	X	-50.89	50
14	MP2	Z	0	50
15	MP2	X	-68.13	20
16	MP2	Z	0	20
17	MP4	X	-68.13	%25
18	MP4	Z	0	%25
19	MP2	X	-29.62	50
20	MP2	Z	0	50
21	MP4	X	-57.51	%50
22	MP4	Z	0	%50
23	S1	X	-195.36	%50
24	S1	Z	0	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-112.17	6
2	MP4	Z	64.76	6
3	MP4	X	-112.17	77.2
4	MP4	Z	64.76	77.2
5	MP2	X	-114.25	6
6	MP2	Z	65.96	6
7	MP2	X	-114.25	77.2
8	MP2	Z	65.96	77.2
9	MP3	X	-90.64	18
10	MP3	Z	52.33	18
11	MP3	X	-89.75	66
12	MP3	Z	51.82	66
13	MP2	X	-50.92	50
14	MP2	Z	29.4	50
15	MP2	X	-68.4	20
16	MP2	Z	39.49	20
17	MP4	X	-68.4	%25
18	MP4	Z	39.49	%25
19	MP2	X	-33.78	50
20	MP2	Z	19.5	50
21	MP4	X	-54.75	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP4	Z	31.61	%50
23	S1	X	-151.08	%50
24	S1	Z	87.23	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-102.8	6
2	MP4	Z	178.05	6
3	MP4	X	-102.8	77.2
4	MP4	Z	178.05	77.2
5	MP2	X	-105.17	6
6	MP2	Z	182.16	6
7	MP2	X	-105.17	77.2
8	MP2	Z	182.16	77.2
9	MP3	X	-80.61	18
10	MP3	Z	139.63	18
11	MP3	X	-67.65	66
12	MP3	Z	117.17	66
13	MP2	X	-37.32	50
14	MP2	Z	64.64	50
15	MP2	X	-50.35	20
16	MP2	Z	87.21	20
17	MP4	X	-50.35	%25
18	MP4	Z	87.21	%25
19	MP2	X	-28.89	50
20	MP2	Z	50.03	50
21	MP4	X	-37.32	%50
22	MP4	Z	64.65	%50
23	S1	X	-66.32	%50
24	S1	Z	114.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	6
2	MP4	Z	243.63	6
3	MP4	X	0	77.2
4	MP4	Z	243.63	77.2
5	MP2	X	0	6
6	MP2	Z	249.55	6
7	MP2	X	0	77.2
8	MP2	Z	249.55	77.2
9	MP3	X	0	18
10	MP3	Z	189.51	18
11	MP3	X	0	66
12	MP3	Z	151.12	66
13	MP2	X	0	50
14	MP2	Z	82.55	50
15	MP2	X	0	20
16	MP2	Z	111.56	20
17	MP4	X	0	%25
18	MP4	Z	111.56	%25
19	MP2	X	0	50
20	MP2	Z	67.16	50
21	MP4	X	0	%50
22	MP4	Z	80.36	%50
23	S1	X	0	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
24	S1	Z	111.73	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	102.8	6
2	MP4	Z	178.05	6
3	MP4	X	102.8	77.2
4	MP4	Z	178.05	77.2
5	MP2	X	105.17	6
6	MP2	Z	182.16	6
7	MP2	X	105.17	77.2
8	MP2	Z	182.16	77.2
9	MP3	X	80.61	18
10	MP3	Z	139.63	18
11	MP3	X	67.65	66
12	MP3	Z	117.17	66
13	MP2	X	37.32	50
14	MP2	Z	64.64	50
15	MP2	X	50.35	20
16	MP2	Z	87.21	20
17	MP4	X	50.35	%25
18	MP4	Z	87.21	%25
19	MP2	X	28.89	50
20	MP2	Z	50.03	50
21	MP4	X	37.32	%50
22	MP4	Z	64.65	%50
23	S1	X	66.32	%50
24	S1	Z	114.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	112.17	6
2	MP4	Z	64.76	6
3	MP4	X	112.17	77.2
4	MP4	Z	64.76	77.2
5	MP2	X	114.25	6
6	MP2	Z	65.96	6
7	MP2	X	114.25	77.2
8	MP2	Z	65.96	77.2
9	MP3	X	90.64	18
10	MP3	Z	52.33	18
11	MP3	X	89.75	66
12	MP3	Z	51.82	66
13	MP2	X	50.92	50
14	MP2	Z	29.4	50
15	MP2	X	68.4	20
16	MP2	Z	39.49	20
17	MP4	X	68.4	%25
18	MP4	Z	39.49	%25
19	MP2	X	33.78	50
20	MP2	Z	19.5	50
21	MP4	X	54.75	%50
22	MP4	Z	31.61	%50
23	S1	X	151.08	%50
24	S1	Z	87.23	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	91.49	6
2	MP4	Z	0	6
3	MP4	X	91.49	77.2
4	MP4	Z	0	77.2
5	MP2	X	92.71	6
6	MP2	Z	0	6
7	MP2	X	92.71	77.2
8	MP2	Z	0	77.2
9	MP3	X	76.38	18
10	MP3	Z	0	18
11	MP3	X	87.81	66
12	MP3	Z	0	66
13	MP2	X	50.89	50
14	MP2	Z	0	50
15	MP2	X	68.13	20
16	MP2	Z	0	20
17	MP4	X	68.13	%25
18	MP4	Z	0	%25
19	MP2	X	29.62	50
20	MP2	Z	0	50
21	MP4	X	57.51	%50
22	MP4	Z	0	%50
23	S1	X	195.36	%50
24	S1	Z	0	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	112.17	6
2	MP4	Z	-64.76	6
3	MP4	X	112.17	77.2
4	MP4	Z	-64.76	77.2
5	MP2	X	114.25	6
6	MP2	Z	-65.96	6
7	MP2	X	114.25	77.2
8	MP2	Z	-65.96	77.2
9	MP3	X	90.64	18
10	MP3	Z	-52.33	18
11	MP3	X	89.75	66
12	MP3	Z	-51.82	66
13	MP2	X	50.92	50
14	MP2	Z	-29.4	50
15	MP2	X	68.4	20
16	MP2	Z	-39.49	20
17	MP4	X	68.4	%25
18	MP4	Z	-39.49	%25
19	MP2	X	33.78	50
20	MP2	Z	-19.5	50
21	MP4	X	54.75	%50
22	MP4	Z	-31.61	%50
23	S1	X	151.08	%50
24	S1	Z	-87.23	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	102.8	6
2	MP4	Z	-178.05	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP4	X	102.8	77.2
4	MP4	Z	-178.05	77.2
5	MP2	X	105.17	6
6	MP2	Z	-182.16	6
7	MP2	X	105.17	77.2
8	MP2	Z	-182.16	77.2
9	MP3	X	80.61	18
10	MP3	Z	-139.63	18
11	MP3	X	67.65	66
12	MP3	Z	-117.17	66
13	MP2	X	37.32	50
14	MP2	Z	-64.64	50
15	MP2	X	50.35	20
16	MP2	Z	-87.21	20
17	MP4	X	50.35	%25
18	MP4	Z	-87.21	%25
19	MP2	X	28.89	50
20	MP2	Z	-50.03	50
21	MP4	X	37.32	%50
22	MP4	Z	-64.65	%50
23	S1	X	66.32	%50
24	S1	Z	-114.87	%50

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-88.315	6
2	MP4	Y	-88.315	77.2
3	MP2	Y	-89.552	6
4	MP2	Y	-89.552	77.2
5	MP3	Y	-62.333	18
6	MP3	Y	-81.348	66
7	MP2	Y	-43.775	50
8	MP2	Y	-52.157	20
9	MP4	Y	-52.157	%25
10	MP2	Y	-32.403	50
11	MP4	Y	-45.869	%50
12	S1	Y	-89.589	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	6
2	MP4	Z	-21.41	6
3	MP4	X	0	77.2
4	MP4	Z	-21.41	77.2
5	MP2	X	0	6
6	MP2	Z	-21.65	6
7	MP2	X	0	77.2
8	MP2	Z	-21.65	77.2
9	MP3	X	0	18
10	MP3	Z	-13.4	18
11	MP3	X	0	66
12	MP3	Z	-14.68	66
13	MP2	X	0	50
14	MP2	Z	-8.05	50
15	MP2	X	0	20
16	MP2	Z	-11.11	20

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP4	X	0	%25
18	MP4	Z	-11.11	%25
19	MP2	X	0	50
20	MP2	Z	-6.76	50
21	MP4	X	0	%50
22	MP4	Z	-7.91	%50
23	S1	X	0	%50
24	S1	Z	-11.93	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-9.7	6
2	MP4	Z	-16.81	6
3	MP4	X	-9.7	77.2
4	MP4	Z	-16.81	77.2
5	MP2	X	-9.8	6
6	MP2	Z	-16.98	6
7	MP2	X	-9.8	77.2
8	MP2	Z	-16.98	77.2
9	MP3	X	-6.17	18
10	MP3	Z	-10.69	18
11	MP3	X	-6.97	66
12	MP3	Z	-12.08	66
13	MP2	X	-3.84	50
14	MP2	Z	-6.64	50
15	MP2	X	-5.3	20
16	MP2	Z	-9.19	20
17	MP4	X	-5.3	%25
18	MP4	Z	-9.19	%25
19	MP2	X	-3.13	50
20	MP2	Z	-5.42	50
21	MP4	X	-3.82	%50
22	MP4	Z	-6.62	%50
23	S1	X	-6.6	%50
24	S1	Z	-11.44	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-13.34	6
2	MP4	Z	-7.7	6
3	MP4	X	-13.34	77.2
4	MP4	Z	-7.7	77.2
5	MP2	X	-13.43	6
6	MP2	Z	-7.76	6
7	MP2	X	-13.43	77.2
8	MP2	Z	-7.76	77.2
9	MP3	X	-8.88	18
10	MP3	Z	-5.13	18
11	MP3	X	-10.81	66
12	MP3	Z	-6.24	66
13	MP2	X	-6	50
14	MP2	Z	-3.46	50
15	MP2	X	-8.31	20
16	MP2	Z	-4.8	20
17	MP4	X	-8.31	%25
18	MP4	Z	-4.8	%25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP2	X	-4.57	50
20	MP2	Z	-2.64	50
21	MP4	X	-6.17	%50
22	MP4	Z	-3.56	%50
23	S1	X	-13.64	%50
24	S1	Z	-7.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-13.41	6
2	MP4	Z	0	6
3	MP4	X	-13.41	77.2
4	MP4	Z	0	77.2
5	MP2	X	-13.46	6
6	MP2	Z	0	6
7	MP2	X	-13.46	77.2
8	MP2	Z	0	77.2
9	MP3	X	-9.2	18
10	MP3	Z	0	18
11	MP3	X	-11.75	66
12	MP3	Z	0	66
13	MP2	X	-6.55	50
14	MP2	Z	0	50
15	MP2	X	-9.09	20
16	MP2	Z	0	20
17	MP4	X	-9.09	%25
18	MP4	Z	0	%25
19	MP2	X	-4.78	50
20	MP2	Z	0	50
21	MP4	X	-6.86	%50
22	MP4	Z	0	%50
23	S1	X	-17.02	%50
24	S1	Z	0	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-13.34	6
2	MP4	Z	7.7	6
3	MP4	X	-13.34	77.2
4	MP4	Z	7.7	77.2
5	MP2	X	-13.43	6
6	MP2	Z	7.76	6
7	MP2	X	-13.43	77.2
8	MP2	Z	7.76	77.2
9	MP3	X	-8.88	18
10	MP3	Z	5.13	18
11	MP3	X	-10.81	66
12	MP3	Z	6.24	66
13	MP2	X	-6	50
14	MP2	Z	3.46	50
15	MP2	X	-8.31	20
16	MP2	Z	4.8	20
17	MP4	X	-8.31	%25
18	MP4	Z	4.8	%25
19	MP2	X	-4.57	50
20	MP2	Z	2.64	50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
21	MP4	X	-6.17	%50
22	MP4	Z	3.56	%50
23	S1	X	-13.64	%50
24	S1	Z	7.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-9.7	6
2	MP4	Z	16.81	6
3	MP4	X	-9.7	77.2
4	MP4	Z	16.81	77.2
5	MP2	X	-9.8	6
6	MP2	Z	16.98	6
7	MP2	X	-9.8	77.2
8	MP2	Z	16.98	77.2
9	MP3	X	-6.17	18
10	MP3	Z	10.69	18
11	MP3	X	-6.97	66
12	MP3	Z	12.08	66
13	MP2	X	-3.84	50
14	MP2	Z	6.64	50
15	MP2	X	-5.3	20
16	MP2	Z	9.19	20
17	MP4	X	-5.3	%25
18	MP4	Z	9.19	%25
19	MP2	X	-3.13	50
20	MP2	Z	5.42	50
21	MP4	X	-3.82	%50
22	MP4	Z	6.62	%50
23	S1	X	-6.6	%50
24	S1	Z	11.44	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	6
2	MP4	Z	21.41	6
3	MP4	X	0	77.2
4	MP4	Z	21.41	77.2
5	MP2	X	0	6
6	MP2	Z	21.65	6
7	MP2	X	0	77.2
8	MP2	Z	21.65	77.2
9	MP3	X	0	18
10	MP3	Z	13.4	18
11	MP3	X	0	66
12	MP3	Z	14.68	66
13	MP2	X	0	50
14	MP2	Z	8.05	50
15	MP2	X	0	20
16	MP2	Z	11.11	20
17	MP4	X	0	%25
18	MP4	Z	11.11	%25
19	MP2	X	0	50
20	MP2	Z	6.76	50
21	MP4	X	0	%50
22	MP4	Z	7.91	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
23	S1	X	0	%50
24	S1	Z	11.93	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	9.7	6
2	MP4	Z	16.81	6
3	MP4	X	9.7	77.2
4	MP4	Z	16.81	77.2
5	MP2	X	9.8	6
6	MP2	Z	16.98	6
7	MP2	X	9.8	77.2
8	MP2	Z	16.98	77.2
9	MP3	X	6.17	18
10	MP3	Z	10.69	18
11	MP3	X	6.97	66
12	MP3	Z	12.08	66
13	MP2	X	3.84	50
14	MP2	Z	6.64	50
15	MP2	X	5.3	20
16	MP2	Z	9.19	20
17	MP4	X	5.3	%25
18	MP4	Z	9.19	%25
19	MP2	X	3.13	50
20	MP2	Z	5.42	50
21	MP4	X	3.82	%50
22	MP4	Z	6.62	%50
23	S1	X	6.6	%50
24	S1	Z	11.44	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	13.34	6
2	MP4	Z	7.7	6
3	MP4	X	13.34	77.2
4	MP4	Z	7.7	77.2
5	MP2	X	13.43	6
6	MP2	Z	7.76	6
7	MP2	X	13.43	77.2
8	MP2	Z	7.76	77.2
9	MP3	X	8.88	18
10	MP3	Z	5.13	18
11	MP3	X	10.81	66
12	MP3	Z	6.24	66
13	MP2	X	6	50
14	MP2	Z	3.46	50
15	MP2	X	8.31	20
16	MP2	Z	4.8	20
17	MP4	X	8.31	%25
18	MP4	Z	4.8	%25
19	MP2	X	4.57	50
20	MP2	Z	2.64	50
21	MP4	X	6.17	%50
22	MP4	Z	3.56	%50
23	S1	X	13.64	%50
24	S1	Z	7.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	13.41	6
2	MP4	Z	0	6
3	MP4	X	13.41	77.2
4	MP4	Z	0	77.2
5	MP2	X	13.46	6
6	MP2	Z	0	6
7	MP2	X	13.46	77.2
8	MP2	Z	0	77.2
9	MP3	X	9.2	18
10	MP3	Z	0	18
11	MP3	X	11.75	66
12	MP3	Z	0	66
13	MP2	X	6.55	50
14	MP2	Z	0	50
15	MP2	X	9.09	20
16	MP2	Z	0	20
17	MP4	X	9.09	%25
18	MP4	Z	0	%25
19	MP2	X	4.78	50
20	MP2	Z	0	50
21	MP4	X	6.86	%50
22	MP4	Z	0	%50
23	S1	X	17.02	%50
24	S1	Z	0	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	13.34	6
2	MP4	Z	-7.7	6
3	MP4	X	13.34	77.2
4	MP4	Z	-7.7	77.2
5	MP2	X	13.43	6
6	MP2	Z	-7.76	6
7	MP2	X	13.43	77.2
8	MP2	Z	-7.76	77.2
9	MP3	X	8.88	18
10	MP3	Z	-5.13	18
11	MP3	X	10.81	66
12	MP3	Z	-6.24	66
13	MP2	X	6	50
14	MP2	Z	-3.46	50
15	MP2	X	8.31	20
16	MP2	Z	-4.8	20
17	MP4	X	8.31	%25
18	MP4	Z	-4.8	%25
19	MP2	X	4.57	50
20	MP2	Z	-2.64	50
21	MP4	X	6.17	%50
22	MP4	Z	-3.56	%50
23	S1	X	13.64	%50
24	S1	Z	-7.87	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	9.7	6
2	MP4	Z	-16.81	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP4	X	9.7	77.2
4	MP4	Z	-16.81	77.2
5	MP2	X	9.8	6
6	MP2	Z	-16.98	6
7	MP2	X	9.8	77.2
8	MP2	Z	-16.98	77.2
9	MP3	X	6.17	18
10	MP3	Z	-10.69	18
11	MP3	X	6.97	66
12	MP3	Z	-12.08	66
13	MP2	X	3.84	50
14	MP2	Z	-6.64	50
15	MP2	X	5.3	20
16	MP2	Z	-9.19	20
17	MP4	X	5.3	%25
18	MP4	Z	-9.19	%25
19	MP2	X	3.13	50
20	MP2	Z	-5.42	50
21	MP4	X	3.82	%50
22	MP4	Z	-6.62	%50
23	S1	X	6.6	%50
24	S1	Z	-11.44	%50

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Z	-14.431	6
2	MP4	Z	-14.431	77.2
3	MP2	Z	-11.716	6
4	MP2	Z	-11.716	77.2
5	MP3	Z	-21.396	18
6	MP3	Z	-31.286	66
7	MP2	Z	-19.198	50
8	MP2	Z	-17.097	20
9	MP4	Z	-17.097	%25
10	MP2	Z	-15.643	50
11	MP4	Z	-22.947	%50
12	S1	Z	-8.468	%50

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-14.431	6
2	MP4	X	-14.431	77.2
3	MP2	X	-11.716	6
4	MP2	X	-11.716	77.2
5	MP3	X	-21.396	18
6	MP3	X	-31.286	66
7	MP2	X	-19.198	50
8	MP2	X	-17.097	20
9	MP4	X	-17.097	%25
10	MP2	X	-15.643	50
11	MP4	X	-22.947	%50
12	S1	X	-8.468	%50

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
1	M3	SZ	-54.251	-54.251	0	%100
2	M4	SZ	-54.251	-54.251	0	%100
3	M5	SZ	-54.251	-54.251	0	%100
4	M6	SZ	-54.251	-54.251	0	%100
5	M9	SZ	-54.251	-54.251	0	%100
6	M10	SZ	-54.251	-54.251	0	%100
7	M11	SZ	0	0	0	%100
8	M12	SZ	0	0	0	%100
9	M13	SZ	0	0	0	%100
10	M14	SZ	0	0	0	%100
11	S4	SZ	-54.251	-54.251	0	%100
12	S2	SZ	-54.251	-54.251	0	%100
13	M19	SZ	-90.418	-90.418	0	%100
14	M21	SZ	-90.418	-90.418	0	%100
15	M23	SZ	0	0	0	%100
16	M25	SZ	0	0	0	%100
17	M27	SZ	0	0	0	%100
18	MP1	SZ	-54.251	-54.251	0	%100
19	M29	SZ	0	0	0	%100
20	S3	SZ	-54.251	-54.251	0	%100
21	S1	SZ	-54.251	-54.251	0	%100
22	M35	SZ	-90.418	-90.418	0	%100
23	M36	SZ	-90.418	-90.418	0	%100
24	M37	SZ	0	0	0	%100
25	M39	SZ	0	0	0	%100
26	H2	SZ	-54.251	-54.251	0	%100
27	H1	SZ	-54.251	-54.251	0	%100
28	M43A	SZ	-54.251	-54.251	0	%100
29	M44A	SZ	-54.251	-54.251	0	%100
30	M41A	SZ	0	0	0	%100
31	TB1	SZ	-54.251	-54.251	0	%100
32	M37A	SZ	0	0	0	%100
33	M38	SZ	0	0	0	%100
34	MP2	SZ	-54.251	-54.251	0	%100
35	M40	SZ	0	0	0	%100
36	M41	SZ	0	0	0	%100
37	MP3	SZ	-54.251	-54.251	0	%100
38	M43	SZ	0	0	0	%100
39	M44B	SZ	0	0	0	%100
40	MP4	SZ	-54.251	-54.251	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
1	M3	SX	-54.251	-54.251	0	%100
2	M4	SX	-54.251	-54.251	0	%100
3	M5	SX	-54.251	-54.251	0	%100
4	M6	SX	-54.251	-54.251	0	%100
5	M9	SX	-54.251	-54.251	0	%100
6	M10	SX	-54.251	-54.251	0	%100
7	M11	SX	0	0	0	%100
8	M12	SX	0	0	0	%100
9	M13	SX	0	0	0	%100
10	M14	SX	0	0	0	%100
11	S4	SX	-54.251	-54.251	0	%100
12	S2	SX	-54.251	-54.251	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
13	M19	SX	-90.418	-90.418	0	%100
14	M21	SX	-90.418	-90.418	0	%100
15	M23	SX	0	0	0	%100
16	M25	SX	0	0	0	%100
17	M27	SX	0	0	0	%100
18	MP1	SX	-54.251	-54.251	0	%100
19	M29	SX	0	0	0	%100
20	S3	SX	-54.251	-54.251	0	%100
21	S1	SX	-54.251	-54.251	0	%100
22	M35	SX	-90.418	-90.418	0	%100
23	M36	SX	-90.418	-90.418	0	%100
24	M37	SX	0	0	0	%100
25	M39	SX	0	0	0	%100
26	H2	SX	-54.251	-54.251	0	%100
27	H1	SX	-54.251	-54.251	0	%100
28	M43A	SX	-54.251	-54.251	0	%100
29	M44A	SX	-54.251	-54.251	0	%100
30	M41A	SX	0	0	0	%100
31	TB1	SX	-54.251	-54.251	0	%100
32	M37A	SX	0	0	0	%100
33	M38	SX	0	0	0	%100
34	MP2	SX	-54.251	-54.251	0	%100
35	M40	SX	0	0	0	%100
36	M41	SX	0	0	0	%100
37	MP3	SX	-54.251	-54.251	0	%100
38	M43	SX	0	0	0	%100
39	M44B	SX	0	0	0	%100
40	MP4	SX	-54.251	-54.251	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
1	M3	Y	-2.588	-2.588	0	%100
2	M4	Y	-2.588	-2.588	0	%100
3	M5	Y	-2.588	-2.588	0	%100
4	M6	Y	-2.588	-2.588	0	%100
5	M9	Y	-2.416	-2.416	0	%100
6	M10	Y	-2.416	-2.416	0	%100
7	M11	Y	-1.554	-1.554	0	%100
8	M12	Y	-1.554	-1.554	0	%100
9	M13	Y	-1.554	-1.554	0	%100
10	M14	Y	-1.554	-1.554	0	%100
11	S4	Y	-4.827	-4.827	0	%100
12	S2	Y	-4.827	-4.827	0	%100
13	M19	Y	-6.454	-6.454	0	%100
14	M21	Y	-6.454	-6.454	0	%100
15	M23	Y	-1.554	-1.554	0	%100
16	M25	Y	-1.554	-1.554	0	%100
17	M27	Y	-1.554	-1.554	0	%100
18	MP1	Y	-4.827	-4.827	0	%100
19	M29	Y	-1.554	-1.554	0	%100
20	S3	Y	-4.827	-4.827	0	%100
21	S1	Y	-4.827	-4.827	0	%100
22	M35	Y	-6.454	-6.454	0	%100
23	M36	Y	-6.454	-6.454	0	%100
24	M37	Y	-1.554	-1.554	0	%100
25	M39	Y	-1.554	-1.554	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
26	H2	Y	-5.516	-5.516	0	%100
27	H1	Y	-5.516	-5.516	0	%100
28	M43A	Y	-2.416	-2.416	0	%100
29	M44A	Y	-2.416	-2.416	0	%100
30	M41A	Y	-1.554	-1.554	0	%100
31	TB1	Y	-4.827	-4.827	0	%100
32	M37A	Y	-1.554	-1.554	0	%100
33	M38	Y	-1.554	-1.554	0	%100
34	MP2	Y	-4.827	-4.827	0	%100
35	M40	Y	-1.554	-1.554	0	%100
36	M41	Y	-1.554	-1.554	0	%100
37	MP3	Y	-4.827	-4.827	0	%100
38	M43	Y	-1.554	-1.554	0	%100
39	M44B	Y	-1.554	-1.554	0	%100
40	MP4	Y	-4.827	-4.827	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
1	M3	SZ	-37.748	-37.748	0	%100
2	M4	SZ	-37.748	-37.748	0	%100
3	M5	SZ	-37.748	-37.748	0	%100
4	M6	SZ	-37.748	-37.748	0	%100
5	M9	SZ	-43.414	-43.414	0	%100
6	M10	SZ	-43.414	-43.414	0	%100
7	M11	SZ	0	0	0	%100
8	M12	SZ	0	0	0	%100
9	M13	SZ	0	0	0	%100
10	M14	SZ	0	0	0	%100
11	S4	SZ	-18.365	-18.365	0	%100
12	S2	SZ	-18.365	-18.365	0	%100
13	M19	SZ	-15.395	-15.395	0	%100
14	M21	SZ	-15.395	-15.395	0	%100
15	M23	SZ	0	0	0	%100
16	M25	SZ	0	0	0	%100
17	M27	SZ	0	0	0	%100
18	MP1	SZ	-18.365	-18.365	0	%100
19	M29	SZ	0	0	0	%100
20	S3	SZ	-18.365	-18.365	0	%100
21	S1	SZ	-18.365	-18.365	0	%100
22	M35	SZ	-15.395	-15.395	0	%100
23	M36	SZ	-15.395	-15.395	0	%100
24	M37	SZ	0	0	0	%100
25	M39	SZ	0	0	0	%100
26	H2	SZ	-16.809	-16.809	0	%100
27	H1	SZ	-16.809	-16.809	0	%100
28	M43A	SZ	-43.414	-43.414	0	%100
29	M44A	SZ	-43.414	-43.414	0	%100
30	M41A	SZ	0	0	0	%100
31	TB1	SZ	-18.365	-18.365	0	%100
32	M37A	SZ	0	0	0	%100
33	M38	SZ	0	0	0	%100
34	MP2	SZ	-18.365	-18.365	0	%100
35	M40	SZ	0	0	0	%100
36	M41	SZ	0	0	0	%100
37	MP3	SZ	-18.365	-18.365	0	%100
38	M43	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
39	M44B	SZ	0	0	0	%100
40	MP4	SZ	-18.365	-18.365	0	%100

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

	Member Label	Direction	Start Magnitude..	End Magnitude[...	Start Location[i...	End Location[in...
1	M3	SX	-37.748	-37.748	0	%100
2	M4	SX	-37.748	-37.748	0	%100
3	M5	SX	-37.748	-37.748	0	%100
4	M6	SX	-37.748	-37.748	0	%100
5	M9	SX	-43.414	-43.414	0	%100
6	M10	SX	-43.414	-43.414	0	%100
7	M11	SX	0	0	0	%100
8	M12	SX	0	0	0	%100
9	M13	SX	0	0	0	%100
10	M14	SX	0	0	0	%100
11	S4	SX	-18.365	-18.365	0	%100
12	S2	SX	-18.365	-18.365	0	%100
13	M19	SX	-15.395	-15.395	0	%100
14	M21	SX	-15.395	-15.395	0	%100
15	M23	SX	0	0	0	%100
16	M25	SX	0	0	0	%100
17	M27	SX	0	0	0	%100
18	MP1	SX	-18.365	-18.365	0	%100
19	M29	SX	0	0	0	%100
20	S3	SX	-18.365	-18.365	0	%100
21	S1	SX	-18.365	-18.365	0	%100
22	M35	SX	-15.395	-15.395	0	%100
23	M36	SX	-15.395	-15.395	0	%100
24	M37	SX	0	0	0	%100
25	M39	SX	0	0	0	%100
26	H2	SX	-16.809	-16.809	0	%100
27	H1	SX	-16.809	-16.809	0	%100
28	M43A	SX	-43.414	-43.414	0	%100
29	M44A	SX	-43.414	-43.414	0	%100
30	M41A	SX	0	0	0	%100
31	TB1	SX	-18.365	-18.365	0	%100
32	M37A	SX	0	0	0	%100
33	M38	SX	0	0	0	%100
34	MP2	SX	-18.365	-18.365	0	%100
35	M40	SX	0	0	0	%100
36	M41	SX	0	0	0	%100
37	MP3	SX	-18.365	-18.365	0	%100
38	M43	SX	0	0	0	%100
39	M44B	SX	0	0	0	%100
40	MP4	SX	-18.365	-18.365	0	%100

Member Area Loads

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

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*...	...	Eqn
1	MP2	PIPE_2.0	.551	40	8	.060	40		9	9836..	32130	1871...	1871...	....	H1-...
2	M10	0.625" S.R.	.523	20.313	112	.014	0		10	1757..	9946..	96.7...	96.7...	1	H1-...
3	MP4	PIPE_2.0	.481	40	2	.132	40		8	9836..	32130	1871...	1871...	....	H1-...
4	H1	PIPE_2.5	.477	37.5	8	.168	39.063		3	1455..	50715	3596...	3596...	....	H1-...
5	M36	PL3 1/2x5/8	.452	4.5	13	.202	0	y	117	6859..	70875	922....	5167...	....	H1-...
6	MP3	PIPE_2.0	.373	40	8	.074	40		9	9836..	32130	1871...	1871...	....	H1-...
7	M35	PL3 1/2x5/8	.364	4.5	2	.191	0	y	82	6859..	70875	922....	5167...	....	H1-...
8	MP1	PIPE_2.0	.359	80	83	.043	40		82	9836..	32130	1871...	1871...	....	H1-...
9	H2	PIPE_2.5	.343	45.313	113	.113	46.875		8	1455..	50715	3596...	3596...	....	H1-...
10	M21	PL3 1/2x5/8	.297	4.5	8	.268	4.5	y	117	6859..	70875	922....	5167...	....	H1-...
11	TB1	PIPE_2.0	.272	62.972	4	.006	0		11	8930..	32130	1871...	1871...	....	H1-...
12	S1	PIPE_2.0	.216	31.537	7	.089	29.566		112	2957..	32130	1871...	1871...	....	H1-...
13	M19	PL3 1/2x5/8	.192	4.5	8	.180	0	y	77	6859..	70875	922....	5167...	....	H1-...
14	M5	SR 3/4	.181	0	118	.020	0		8	1737..	1431...	178....	178....	....	H1-...
15	S2	PIPE_2.0	.174	31.537	8	.106	31.537		27	2957..	32130	1871...	1871...	....	H1-...
16	M44A	0.625" S.R.	.157	30	14	.010	0		120	1757..	9946..	96.7...	96.7...	1	H1-...
17	S3	PIPE_2.0	.107	31.537	82	.042	31.537		8	2957..	32130	1871...	1871...	....	H1-...
18	S4	PIPE_2.0	.105	31.537	82	.069	29.566		8	2957..	32130	1871...	1871...	....	H1-...
19	M4	SR 3/4	.072	0	82	.006	44.937		6	1737..	1431...	178....	178....	....	H1-...
20	M9	0.625" S.R.	.028	15	8	.015	0		9	1757..	9946..	96.7...	96.7...	1	H1-...
21	M43A	0.625" S.R.	.027	15	8	.016	0		9	1757..	9946..	96.7...	96.7...	1	H1-...
22	M3	SR 3/4	.014	0	20	.006	0		120	1737..	1431...	178....	178....	....	H1-...
23	M6	SR 3/4	.000	0	122	.012	0		13	1737..	1431...	178....	178....	1	H1-...

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	ONTOWESE AMODIO SELF STOI
Site Number:	876312
Connection Description:	Sector Frame to Tower

MAXIMUM BOLT LOADS		
Bolt Tension:	2028.80	lbs
Bolt Shear:	1453.31	lbs

WORST CASE BOLT LOADS[1]		
Bolt Tension:	1808.95	lbs
Bolt Shear:	1453.31	lbs

BOLT PROPERTIES		
Bolt Type:	Threaded Rod	-
Bolt Diameter:	0.625	in
Bolt Grade:	Other	-
Yield Strength:	57	ksi
Ultimate Strength:	74	ksi
# of Threaded Rods:	4	-
Threads Excluded?	No	-

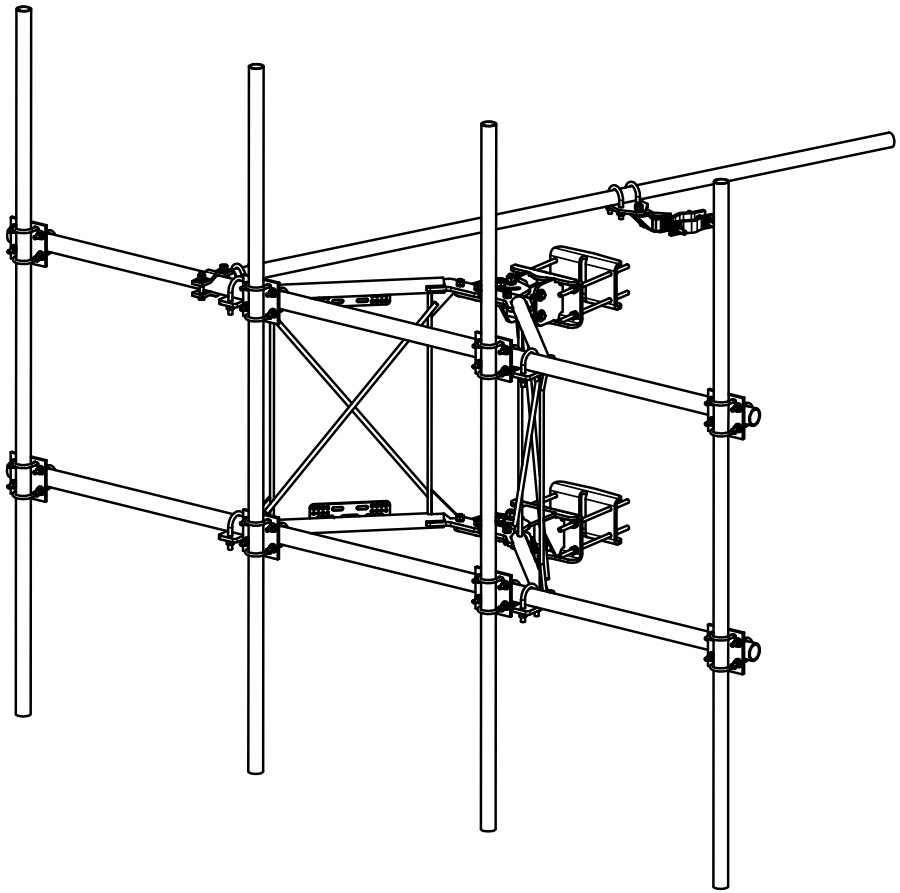
[1] *Worst case bolt loads correspond to Load combination #116 on member M27 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of M11, M27

BOLT CHECK		
Tensile Strength	12543.09	
Shear Strength	8513.59	
Max Tensile Usage	16.2%	
Max Shear Usage	17.1%	
Interaction Check (Worst Case)	0.05	***≤1.05***
Result	Pass	

APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD) / SUPPLEMENTAL DRAWINGS



PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
5	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
6	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
7	2	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	11.74
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	2	X-TBCA	TIE BACK CLIP ANGLE		2.01	4.01
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	2	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	7.19
12	4	DCP	1/2" THICK, 5-3/4" CNTER TO CENTER CLAMP HALF	8 1/8 in	2.36	9.45
13	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
14	1	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	40.75
15	4	P2120	2-3/8" x 120" (2" SCH. 40) GALAVANIZED PIPE	120 in	38.81	155.25
16	4	A34212	3/4" x 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
17	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
18	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
19	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
20	8	G58R-18	5/8" x 18" THREADED ROD (HDG.)	18 in	0.40	3.19
21	2	G58R-12	5/8" x 12" THREADED ROD (HDG.)		1.05	2.09
22	2	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	1.39
23	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
24	4	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	4.00
25	2	G5807	5/8" x 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
26	1	G5806	5/8" x 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
27	4	G5804	5/8" x 4" HDG HEX BOLT GR5		0.44	1.78
28	8	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	2	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	0.54
30	15	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.06
31	50	G58LW	5/8" HDG LOCKWASHER		0.03	1.30
32	53	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	6.88
33	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
34	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
35	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
36	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
37	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	773.39

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	7/2/2018

REVISION HISTORY

DESCRIPTION: 12' 6" HEAVY DUTY V-FRAME ASSEMBLY W/ 1 STIFF ARM & MOUNT PIPES

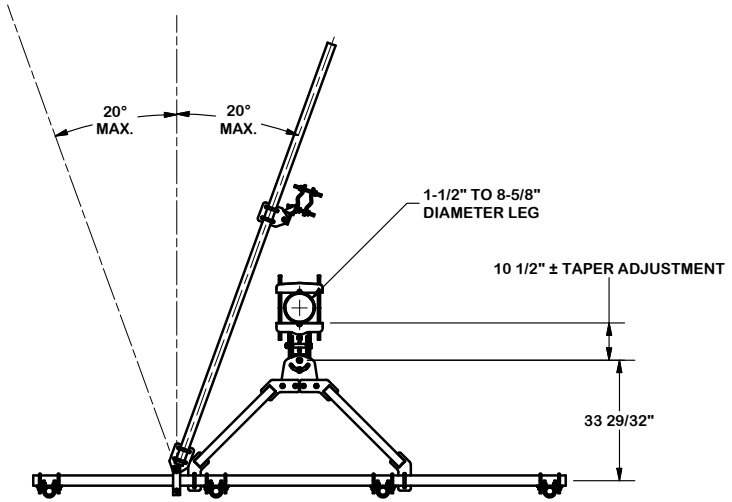
SITE PRO 1 — A valmont COMPANY

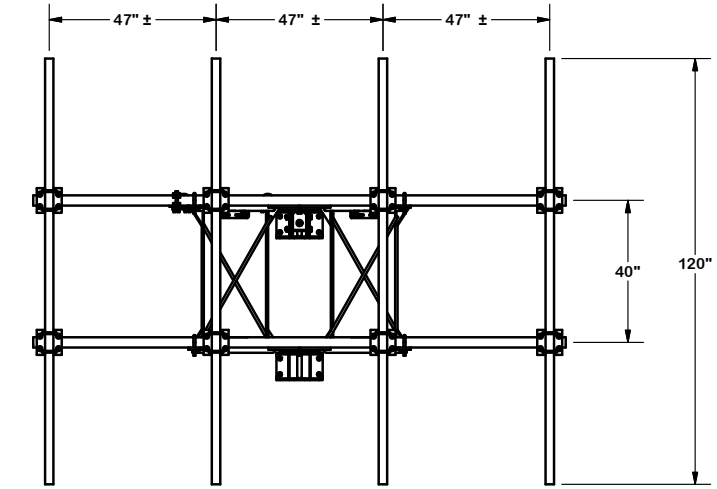
Engineering Support Team: 1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 7/3/2017		VFA12-H10-2120

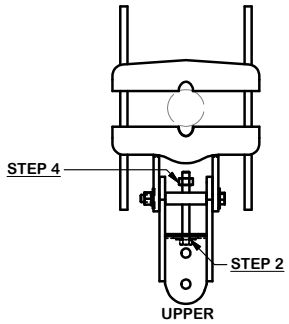
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

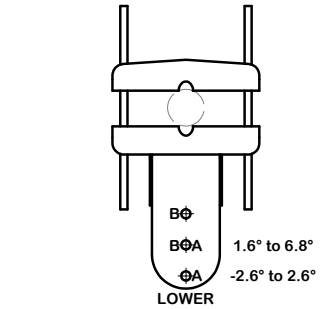


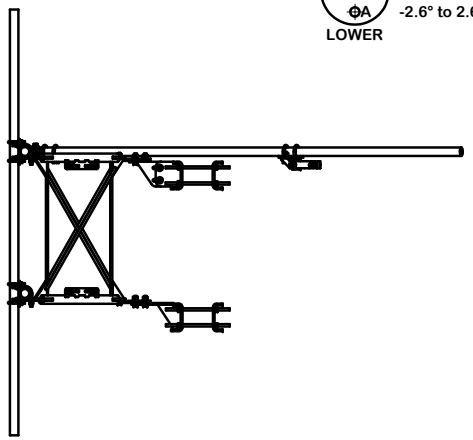


ANGLE CALIBRATING PROCEDURE:

1. MEASURE TOWER TAPER AND PICK LOWER BRACKET HOLE:
   - HOLE A = -2.6° TO 2.6°
   - HOLE B = 1.6° TO 6.8°
2. USE CALIBRATING BOLT TO ADJUST FRAME TO DESIRED TAPER
3. TORQUE LOCKING BOLTS TO 100 ft.-lbs.
4. ADVANCE LOCKING NUT TO POSITIONING PLATE, THEN TIGHTEN.







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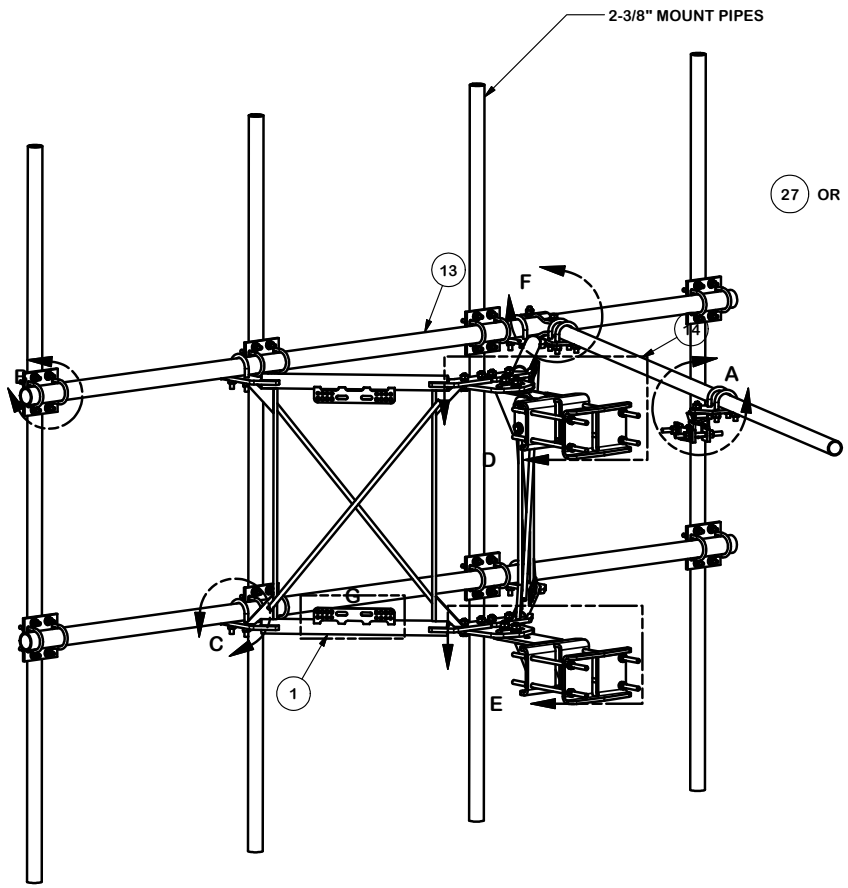
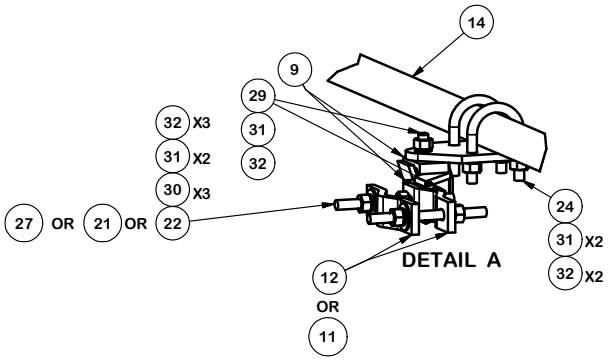
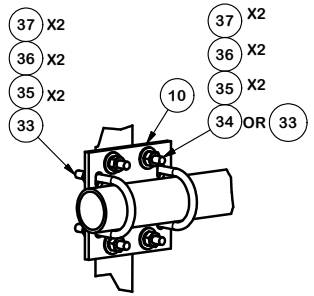
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

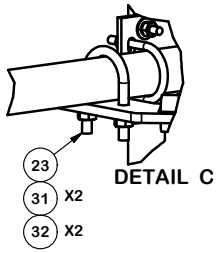




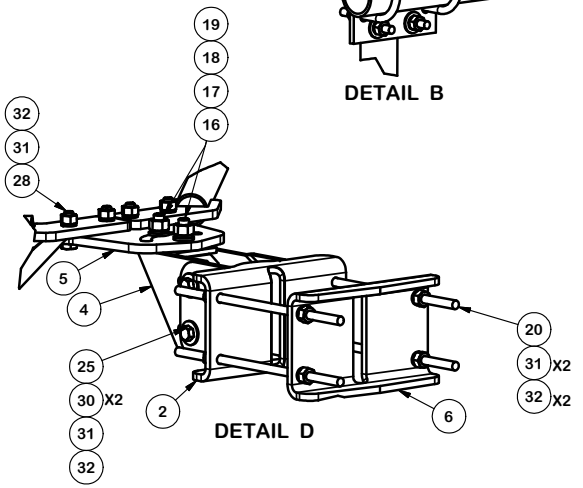
DETAIL A



DETAIL B



DETAIL C



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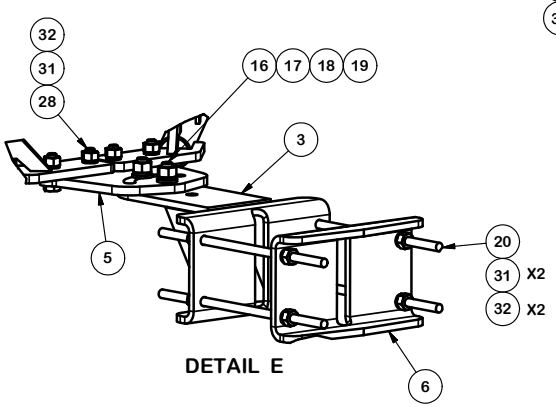

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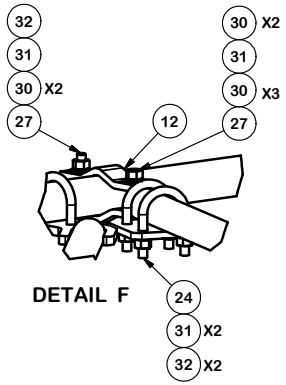
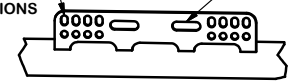


DETAIL F

REVIEW CARRIER STANDARDS FOR PROPER SURFACE PREPARTION AND ASSEMBLY OF ELECTRICAL CONNECTIONS

9/16" SLOTTED HOLE FOR EQUIPMENT PIPE U-BOLT



DETAIL G

TOLERANCE NOTES

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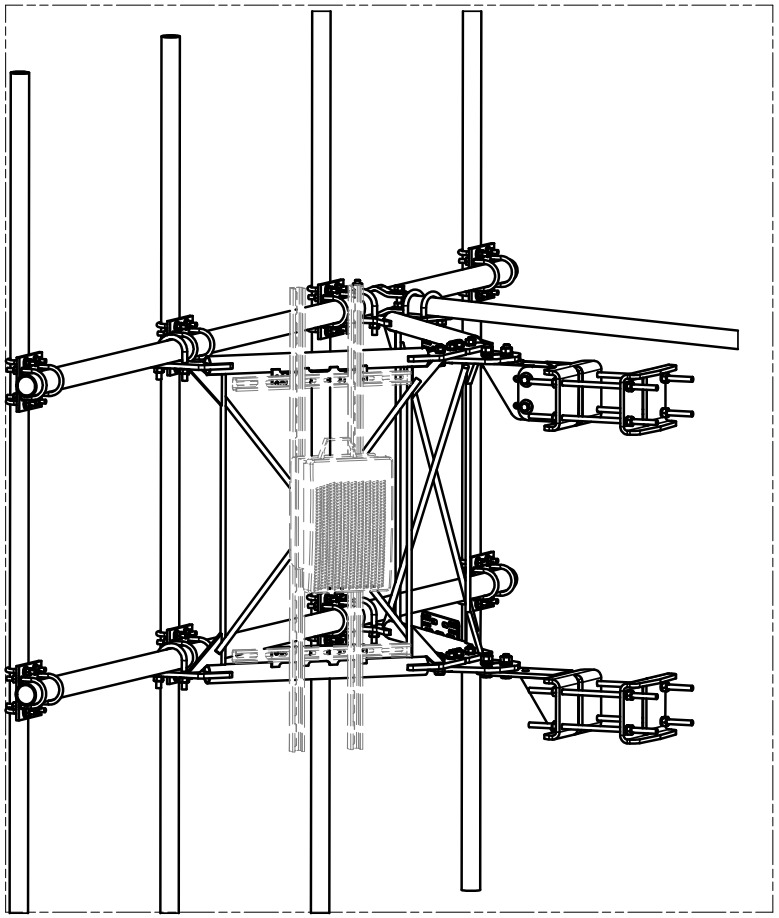
REVISION HISTORY				
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	7/2/2018

DESCRIPTION: 12' 6" HEAVY DUTY V-FRAME ASSEMBLY W/ 1 STIFF ARM & MOUNT PIPES

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 7/3/2017		VFA12-H10-2120

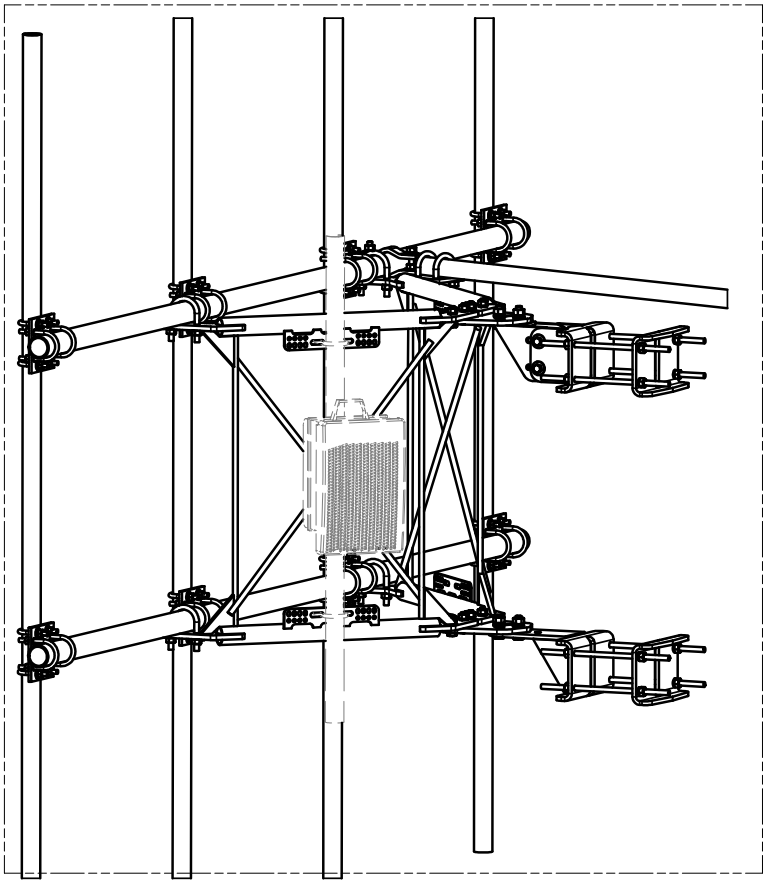
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX



UNISTRUT AND HARDWARE
SOLD SEPARATELY.

REQUIRES 3/8" HARDWARE



EQUIPMENT PIPE AND HARDWARE
SOLD SEPARATELY.

REQUIRES 1/2" HARDWARE
AND 2-3/8" TO 4-1/2" O.D. PIPE

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
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SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

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CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 5/3/2018	VFA12-H10-2120

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Safety Survey Report Predictive (RFSSRP) Prepared For AT&T

Site Name:	MONTOWESE AMODIO SELF STORE
FA#	10035219
USID:	24531
Site ID:	CTL02173
Address:	2755 STATE STREET HAMDEN, CT 06517
County:	NEW HAVEN
Latitude:	41.3554639
Longitude:	-72.8903319
Structure Type:	SELF-SUPPORT
Property Owner:	HAMDEN STORAGE LLC
Pace Job:	MRCTB052184
RFDS Technology:	5G NR 1SR CBAND

Report Information

Report Writer: Sunita Sati

Report Generated Date: 07-11-2022

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant when the remediation recommended in section 5 or appropriate remediation determined by AT&T is implemented

Table of Contents

1. Executive Summary

1.1 Site Summary

Max Predictive Spatial Average MPE% & Location on Site (General Public)	665297.0% on Antennas Centerline Level & at AT&T Sec-B antenna no. #B3-1
Max Predictive Spatial Average MPE% at Ground Level (General Public)	1.6%
AT&T Mobility Site Compliance	AT&T Mobility will be Compliant by implementing remediation recommended as per section 5 in this report.

TABLE 1: Site Summary

1.2 Signage Summary (Proposed)

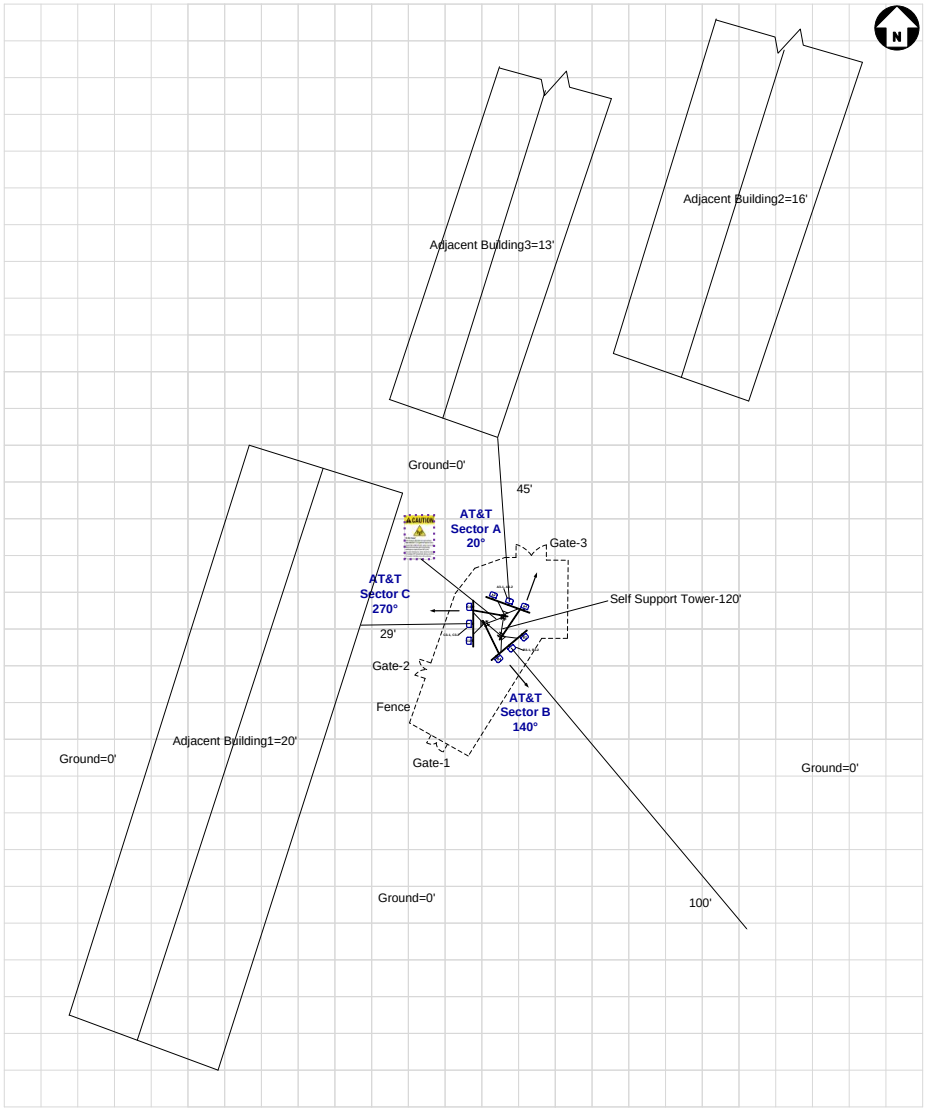
AT&T Signage Locations	Sign Type									
	Safety Instructions	Notice Sign 2	Caution Sign 2	Caution Sign 2B	Caution Sign 2C	Caution 7"x7"	Warning Sign 1B	RF Exposure Map	Lock	Barriers
Access Point(s)				1						
Alpha										
Beta										
Gamma										

TABLE 2: Signage Summary (Proposed)

1.3 List of Documents used to prepare this Report

- *876312 CD*
- *876312_556501 RFDS*

2. Site Scale Map



AT&T Antenna	Proposed	Proposed Signage									
Panel	Barrier	Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	***Map Scale = 10 ft***
OMNI	Posts										

3. Antenna Inventory

Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (0)	HBW (0)	Antenna Gain (dBd)	Antenna Aperture (ft)	Transmitter Power (Watts)	Total Loss (dB)	Total ERP (Watts)	Total EIRP (Watts)
A2	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	20	73	12.35	6	120.00	0.5	1837.30	3014.26
A2	AT&T	CCI	TPA65R-BU6D	Panel	1900	LTE/5G	20	66	15.95	6	120.00	0.5	4209.02	6905.28
A2	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	20	66	16.25	6	180.00	0.5	6765.07	11098.71
A3-1	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	20	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A3-2	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	20	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	20	74	11.85	6	120.00	0.5	1637.50	2686.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	20	63	12.45	6	120.00	0.5	1880.10	3084.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	20	54	16.25	6	75.00	0.5	2818.78	4624.46
B2	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	140	73	12.35	6	120.00	0.5	1837.30	3014.26
B2	AT&T	CCI	TPA65R-BU6D	Panel	1900	LTE/5G	140	66	15.95	6	120.00	0.5	4209.02	6905.28
B2	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	140	66	16.25	6	180.00	0.5	6765.07	11098.71
B3-1	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	140	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B3-2	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	140	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	140	74	11.85	6	120.00	0.5	1637.50	2686.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	140	63	12.45	6	120.00	0.5	1880.10	3084.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	140	54	16.25	6	75.00	0.5	2818.78	4624.46
C2	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	270	73	12.35	6	120.00	0.5	1837.30	3014.26
C2	AT&T	CCI	TPA65R-BU6D	Panel	1900	LTE/5G	270	66	15.95	6	120.00	0.5	4209.02	6905.28
C2	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	270	66	16.25	6	180.00	0.5	6765.07	11098.71
C3-1	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	270	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C3-2	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	270	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	270	74	11.85	6	120.00	0.5	1637.50	2686.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	270	63	12.45	6	120.00	0.5	1880.10	3084.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	270	54	16.25	6	75.00	0.5	2818.78	4624.46

Table 3.1: Antenna Inventory Table

Note: **^ Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.**
* 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP

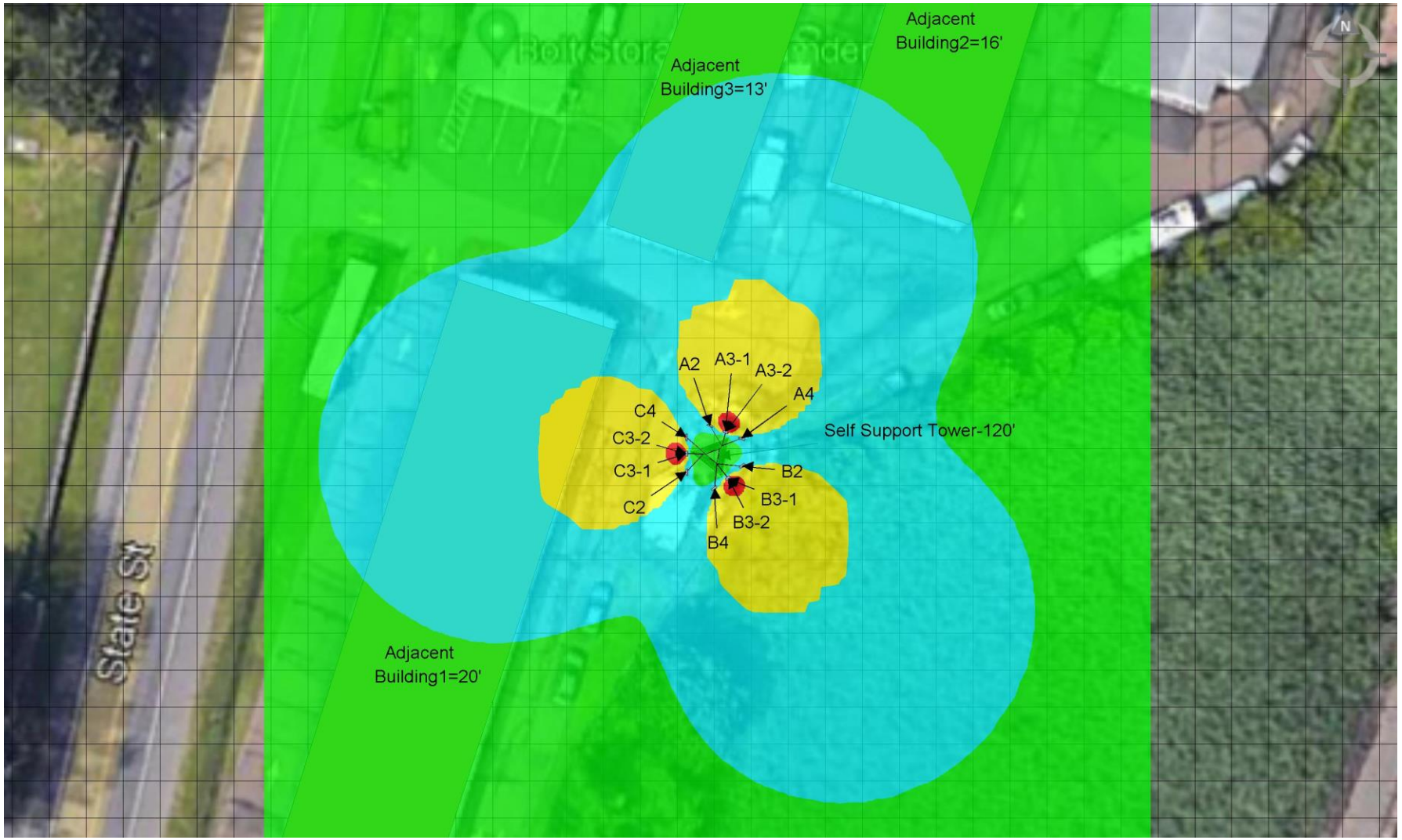
Antenna Heights (Z)

Ant ID	Operator	Antenna Radiation Centerline	Z-Height from Adj. Bldg-1	Z-Height from Adj Bldg-2	Z-Height from Adj. Bldg-3	Z-Height from Ground
A2	AT&T	112.00	89.00	93.00	96.00	109.00
A3-1	AT&T	113.75	92.48	96.48	99.48	112.48
A3-2	AT&T	110.25	88.98	92.98	95.98	108.98
A4	AT&T	112.00	89.00	93.00	96.00	109.00
B2	AT&T	112.00	89.00	93.00	96.00	109.00
B3-1	AT&T	113.75	92.48	96.48	99.48	112.48
B3-2	AT&T	110.25	88.98	92.98	95.98	108.98
B4	AT&T	112.00	89.00	93.00	96.00	109.00
C2	AT&T	112.00	89.00	93.00	96.00	109.00
C3-1	AT&T	113.75	92.48	96.48	99.48	112.48
C3-2	AT&T	110.25	88.98	92.98	95.98	108.98
C4	AT&T	112.00	89.00	93.00	96.00	109.00

Table 3.2: Antenna Height(s) Summary Table

4. Predicted Emission

4.1 Predictive Cumulative MPE Contribution from All Sources at Antennas Centerline Level (110.25 ft.)



Max. Predictive Spatial Average MPE% = **665297.0%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.2 Predictive Cumulative MPE Contribution from All Sources at Adjacent Building1 Level (20 ft.)

Max. Predictive Spatial Average MPE% = **2.4%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.3 Predictive Cumulative MPE Contribution from All Sources at Adjacent Building2 Level (16 ft.)

Max. Predictive Spatial Average MPE% = **2.2%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.4 Predictive Cumulative MPE Contribution from All Sources at Adjacent Building3 Level (13 ft.)

Max. Predictive Spatial Average MPE% = **1.9%**

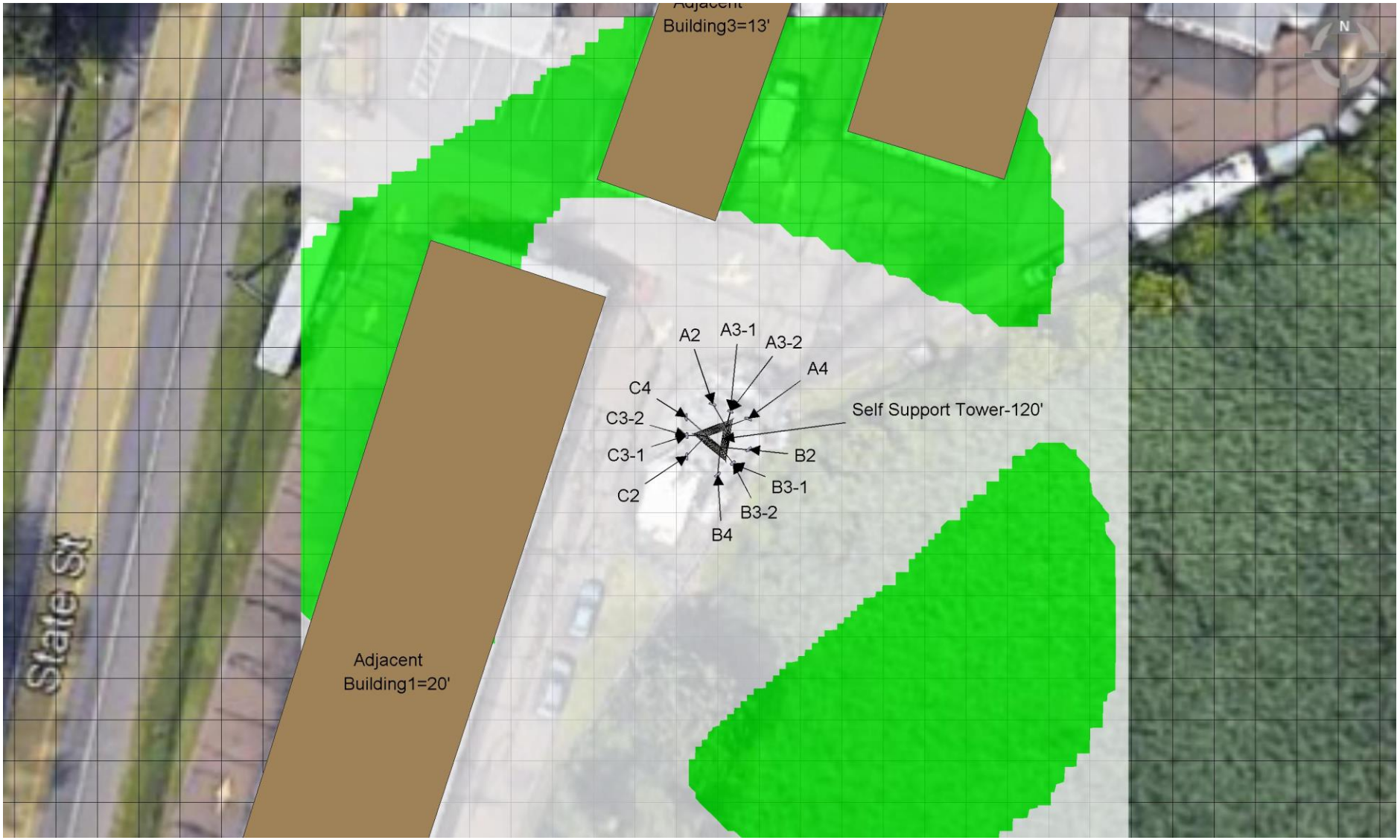
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.5 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.)



Max. Predictive Spatial Average MPE% = **1.6%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

5. Statement of Compliance

5.1 Statement of AT&T Mobility Compliance

At the time of our Analysis, AT&T Mobility is required to take action to fulfill their Obligations to comply with the FCC's mandate as defined in OET-65

Recommendations

AT&T Alpha Sector:

- No Action Required

AT&T Beta Sector:

- No Action Required

AT&T Gamma Sector:

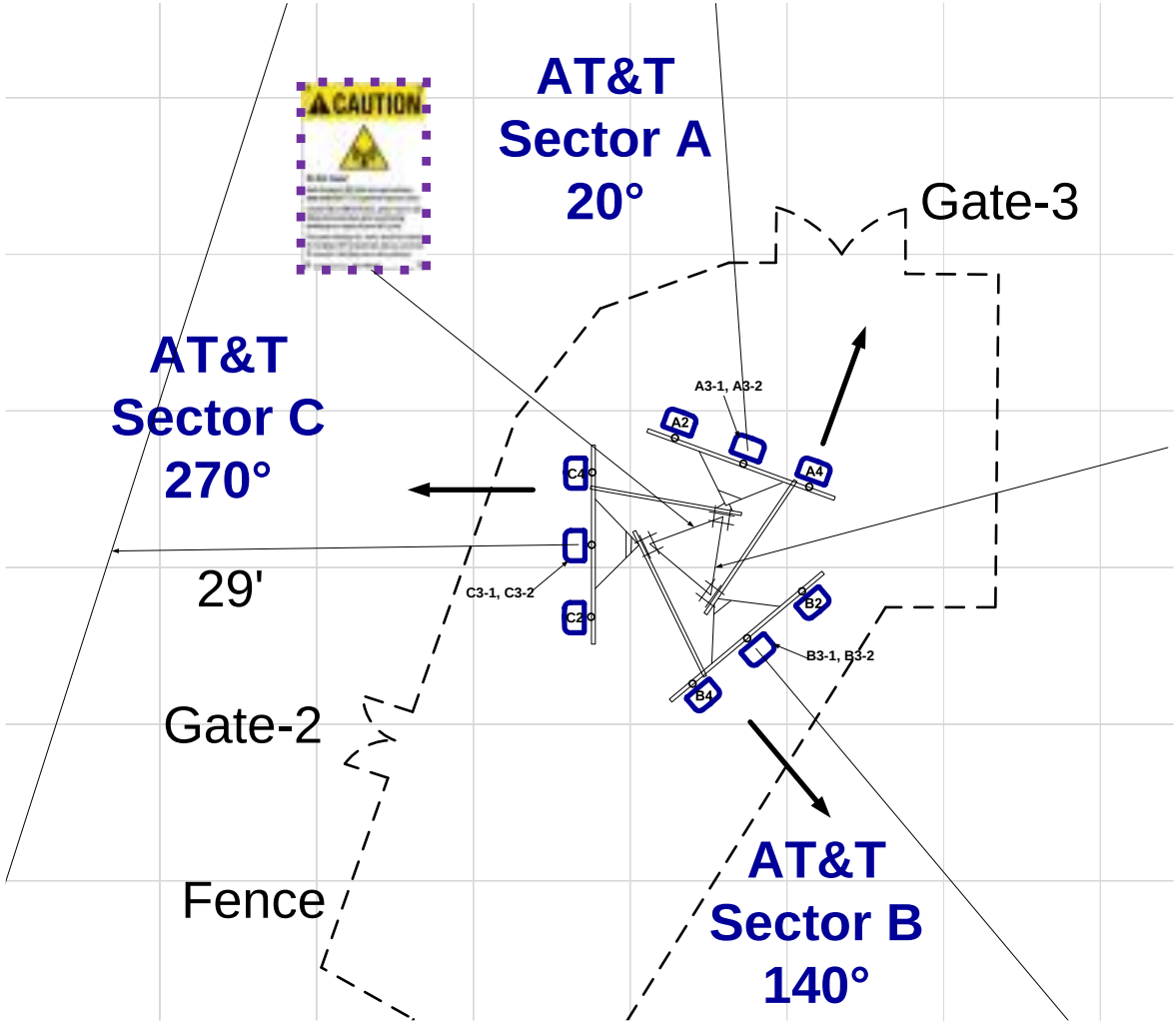
- No Action Required

Self-Support:

- One Caution 2B Sign to be posted on the Tower at climbing access, facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 13. (1 Total Sign)

Recommendations Map – Detailed View

AT&T Alpha, Beta & Gamma Sectors



AT&T Antenna		Proposed		Proposed Signage									Map Scale = 10 ft
	Panel	Barrier		Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	
	OMNI	Posts											

Appendix A – Statement of Limiting Conditions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at full power at all times. AT&T has further recommended to assume a 75% duty cycle of maximum radiated power for all LTE & 5G carriers (& consider 100% duty cycle for all UMTS carriers).

In this site compliance report, it is assumed that Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS^ antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.

AT&T recommended to consider - For C-BAND and/or DoD AAS^ antenna(s) 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP.

AT&T recommended to use worst-case tilts for the simulations.

*[1] **Power Reduction Factor**: IEC Standard 62232: 2017 allows for a statistically conservative power density model to more realistically define the RF exposure area. AT&T recommends a "0.32" factor to calculate the "Actual Maximum" (time averaged) power value, which accounts for "Beam Scanning," "Scheduling," and "RBS Utilization" This recommended value is a conservative figure modelled and supported by other vendors and through measurements published in scientific articles and white papers by IEEE and others. Those publication are listed below:*

1. IEEE Access, Time-Averaged Realistic Maximum Power Levels for the Assessment of RF Exposure for 5G Radio Base Stations Using Massive MIMO (Published Sept. 18, 2017 / BJÖRN THORS, ANDERS FURUSKÄR, DAVIDE COLOMBI, AND CHRISTER TÖRNEVIK)
2. IEEE Explore, A Statistical Approach for RF Exposure Compliance Boundary Assessment in Massive MIMO Systems (Published Jan. 25, 2018 / Paolo Baracca, Andreas Weber, Thorsten Wild, Christophe Grangeat)
3. IEEE Access, In-situ Measurement Methodology for the Assessment of 5G NR Massive MIMO Base Station Exposure at Sub-6 GHz Frequencies (Published Dec. 20, 2019 / SAM AERTS, LEEN VERLOOCK, MATTHIAS VAN DEN BOSSCHE, DAVIDE COLOMBI, LUC MARTENS, CHRISTER TÖRNEVIK AND WOUT JOSEPH)
4. Applied Sciences, Analysis of the Actual Power and EMF Exposure from Base Stations in a Commercial 5G Network (Published July 30, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)
5. Ofcom Technical Report, Electromagnetic Field (EMF) measurements near 5G mobile phone base stations (Published Feb. 21, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)

MobileComm believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor). Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modelling in this way, MobileComm has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Other Carrier" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, MobileComm uses the closest frequency in the antenna's range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.

Appendix B – FCC Guidelines and Emissions Threshold Limits

All power density values used in this report were analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2).The number of µW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (µW/cm2). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 µW/cm2 and 567 µW/cm2 respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 µW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety and can exercise control over their exposure. Occupational/Controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

Additional details can be found in FCC OET 65.

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-I,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/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-I,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- *are exposed to RF energy as a consequence of their employment;*
- *have been made aware of the possibility of exposure; and*
- *can exercise control over their exposure.*

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

Appendix D – General Safety Recommendations

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- *adding new antennas that may have been located on the site*
- *removing of any existing antennas*
- *changes in the radiating power or number of RF emitters*

3. Post the appropriate SAFETY INSTRUCTIONS, NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in the report section above, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.

4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

5. For a General Public environment the five color levels identified in measured RF emission diagram can be interpreted in the following manner:

- *White represents areas predicted to be greater than or equal to 0% and less than 1% of the MPE general public limits*
- *Green represents areas predicted to be greater than or equal to 1% and less than 100% of the MPE general public limits*
- *Blue represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE general public limits.*
- *Yellow represents areas predicted to be greater than or equal to 500% and lesser than 5000% of the MPE general public limits.*
- *Red areas indicates predicted levels greater than or equal to 5000% of the MPE general public limits.*

Appendix E – References

1 - FCC Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General Public or Uncontrolled environment when human exposure to RF fields occurs to the general public or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General Public or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

2 - Physical Testing measurement procedure and Tools

The Narda Broadband Field Meter NBM-550 can make rapid conformance measurements with evaluation in the time domain when used in conjunction EA5091 probe. This probe is a so-called Shaped Probe, i.e. it is frequency weighted so that it automatically takes account of the FCC Occupational limit values. To collect data, the probe is pointed towards the potential source(s) of EME radiation and moved slowly from ground level up to slightly above head height (approx. 6 ft).

Spatial Average Measurement A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

3 - Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: *Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.*

Training and Qualification Verification: *All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).*

Physical Access Control: *Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:*

- *Locked door or gate*
- *Alarmed door*
- *Locked ladder access*
- *Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)*

RF Signage: *Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.*

Assume all antennas are active: *Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.*

Maintain a 3 foot clearance from all antennas: *There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.*

Rooftop RF Emissions Diagram: *Section 4 of this report contains an RF Emissions Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas on the rooftop. This analysis is all theoretical and assumes a duty cycle of 75% for each transmitting antenna at full power. This analysis is a worst case scenario. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.*

4 - Definitions

Compliance- *The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.*

Decibel (dB) – *A unit for measuring power or strength of a signal.*

Duty Cycle – *The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 75% corresponds to continuous operation.*

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – *The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses*

Effective Radiated Power (ERP) – *In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.*

Gain (of an antenna in dbd) – *The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of a directional antennas as compared to a reference dipole.*

General Population/Uncontrolled Environment – *Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.*

Generic Antenna – *For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.*

Isotropic Antenna – *An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.*

Maximum Measurement – *This measurement represents the single largest measurement recorded when performing a spatial average measurement.*

Maximum Exposure Limit (MPE) – *The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.*

Occupational/Controlled Environment – *Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.*

Radio Frequency Radiation – *Electromagnetic waves that are propagated from antennas through space.*

Spatial Average Measurement – *A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.*

Transmitter Power Output (TPO) – *The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.*

Appendix F – Proprietary Statement

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by MobileComm are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to MobileComm so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.