April 8, 2021

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

Re:	**Notice of Exempt Modification – Antenna and RRU Add**
Property Address:	**48 Westchester Road, Colchester, CT 06415**
Applicant:	**AT&T Mobility, LLC**

Dear Ms. Bachman:

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

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 157-feet on an existing' 180-foot Water Tank, owned by SBA Towers Inc. at 8051 Congress Ave, Boca Raton, FL 33478-1307. AT&T now intends to remove three (3) 4' Kathrein 7770 Panel Antennas, each currently installed in position [4], and remove one (1) 4' KMW AM-X-CD-14-65-00T-RET Panel Antenna, Two (2) 8' KMW AM-X-CD-17-65-00T-RET Panel Antennas all currently installed in position [3]. AT&T then swap these for (2) 4' CCI HPA65R-BU4A Panel Antennas, One (1) 8' CCI HPA65R-BU8A Panel Antenna, each to be installed in position [3] all sectors, Two (2) 4' CCI DMP65R-BU4DA Panel Antennas, and (1) 8' CCI DMP65R-BU8A Panel Antennas, to be installed in position [4] all sectors. In addition, AT&T intends to remove three (3) Remote Radio Units add one (1) RRUS-4478 B14, one (1) RRUS-4449 B5/B12, and one (1) RRUS-8843 B2/B66A in positions [3+4], all sectors, for a total of nine (9) new RRUs. All of the changes will take place on the existing antenna mount. This modification/proposal includes B2, B5, and B12 hardware that is both 4G(LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

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

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5I0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Reed Gustafson– Town Building Official, Town of Colchester, CT at 127 Norwich Ave, Colchester, CT 06415 and Mary Bylone– First Selectman, Town of Colchester, CT at 127 Norwich Ave, Colchester, CT 06415. A copy of this letter is being sent to the property and tower owner SBA Towers Inc. at 8051 Congress Ave, Boca Raton, FL 33478-1307.

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

- **EM-AT&T-028-020328 -** AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 48 Westchester Road, Colchester, Connecticut.
- **EM-CING-028-081125 -** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 48 Westchester Street, Colchester, Connecticut.
- **EM-CING-028-121015C –** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 48 Westchester Road, Colchester, Connecticut.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 157-foot level of the 180'-foot Monopole.

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

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

Sincerely,

Kristina Cottone

CC w/enclosures:
Reed Gustafson– Town Building Official, Town of Colchester, CT
Mary Bylone– First Selectman, Town of Colchester, CT
SBA - Tower and Property Owner

Planning and Zoning
Planning Director
Town Engineer
Code Administration
Health Director
Building Official
Fire Marshal
Registered Sanitarian
Zoning Enforcement
Wetlands Enforcement

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

November 4, 1999

Ms. Esther McNany
SBA Inc.
125 Shaw Street
New London, CT 06320

RE: SDP#99-235, SBA/Omnipoint Communications, 48 Westchester Road, Communications Tower, Site Development Plan prepared by Goodkind & O'Dea Inc (Job#CT10125-018) dated 8/25/99 revised through 9/28/99

Dear Ms. McNany:

The above referenced site development plan was approved by the Zoning & Planning Commission at their regular meeting held November 3, 1999.

Per Section 12.10.1 of the Zoning Regulations, a bond in the amount of 25% of the total cost of site improvements must be posted prior to the endorsement of this plan and/or commencement of work. A bond estimate must be submitted to the Town Engineer for his review and approval.

If you have any questions, please call me at 537-7283.

Very truly yours,

Alicia Lathrop
Zoning Enforcement Officer

Town of Colchester, CT

Property Listing Report

Map Block Lot	06-12/038-000/TWR	Account	11AT0009	PID	105119

Property Information

Property Location	48 WESTCHESTER RD
Owner	SBA TOWERS INC
Co-Owner	ATTN TAX DEPARTMENT CT 002652
Mailing Address	8051 CONGRESS AVENUE BOCA RATON FL 33487-1307
Land Use	4310 Tel Rel Tw
Land Class	I
Zoning Code	
Census Tract	NA
Sub Lot	

Neighborhood	NA
Acreage	0
Utilities	
Lot Setting/Desc	NA NA
Survey Map	
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On 4/8/2021

Town of Colchester, CT

Property Listing Report | Map Block Lot **06-12/038-000/TWR** | Account **11AT0009**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Outbuildings	677900	474500
Land	0	0
Total	677900	474500

Outbuilding and Extra Items

Type	Description
Fence 8' Chain	320.00 L.F.
Cell Tower	3.00 SITES
Cell Shed	200.00 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
SBA TOWERS INC	000/ 000	10/1/2011	

Report Created On **4/8/2021**

SiteSafe
A QUALTEK Company

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC
Site FA – 10090905
Site ID – CTL05344
USID – 24510
Site Name – COLCHESTER NW MRCTB047310-MRCTB048208-MRCTB047224-MRCTB047306

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

Latitude: N41-35-23.97
Longitude: W72-24-05.04
Structure Type: Monopole

Report generated date: April 20, 2021
Report by: Nick Kutzke
Customer Contact: Kristina Cottone

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CTL05344_2021-LTE-Next-Carrier_LTE_MM093Q_2051A0WAJ1_10090905_24510_03-09-2020_Final-Approved_v6.00

CD's: 10090905_AE201_210326_CTL05344_REV5

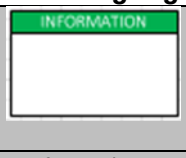
RF Powers Used: Max RRH Powers

1.2 Fall Arrest Anchor Point Summary

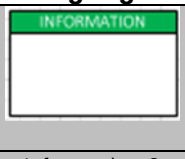
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	NA	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

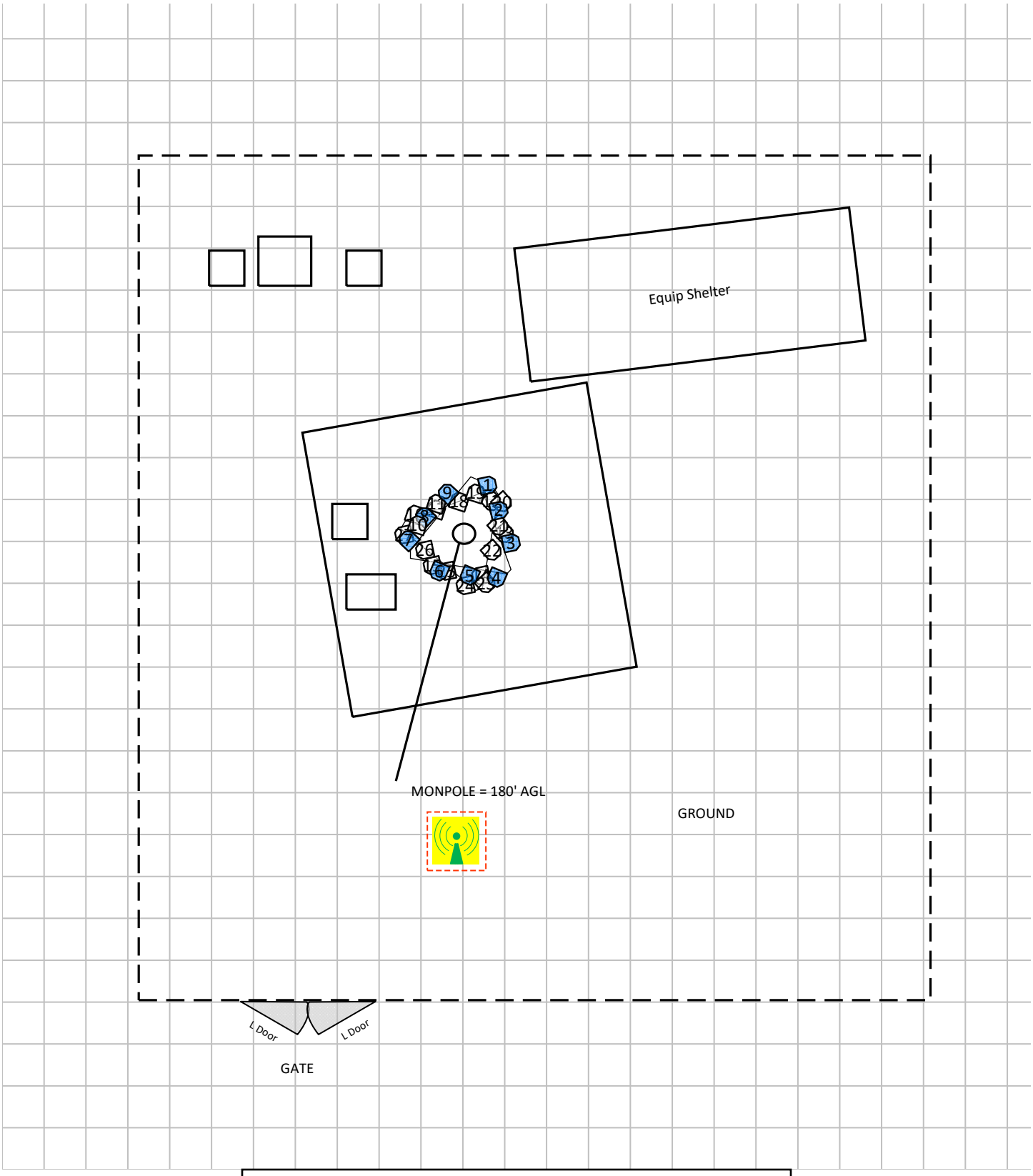
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)						**1**			
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Elevation View
- AT&T Mobility, LLC Contribution

Site Scale Map For: COLCHESTER NW



(Feet)

0 6.1 12.3

www.sitesafe.com
4/20/2021 8:06:53 AM

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Notice | Notice 2 | Caution | Caution 2 | Warning | Warning 2 | Info | Info 2 | RF Emissions Diagram | Locked Ladder

Existing Barrier ——— **Proposed Barrier/Sign** — — — **Remove Sign** X

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	60	82.0	4.6	40	TPO	Watt	0	1	566.3	11.51	154.7'	0°	4°
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU4A	Panel	763	LTE	60	68.0	4	160	TPO	Watt	0	1	2037.6	11.05	155'	0°	10°
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU4A	Panel	2100	LTE	60	60.5	4	160	TPO	Watt	0	1	5237.5	15.15	155'	0°	10°
3	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	1900	LTE	60	67.9	4	160	TPO	Watt	0	1	3541	13.45	155'	0°	8°
3	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	850	5G	60	68.8	4	80	TPO	Watt	0	1	847.4	10.25	155'	0°	8°
3	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	737	LTE	60	65.4	4	160	TPO	Watt	0	1	1581.7	9.95	155'	0°	8°
3	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	850	LTE/AWS1	60	68.8	4	80	TPO	Watt	0	1	847.4	10.25	155'	0°	8°
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	185	82.0	4.6	40	TPO	Watt	0	1	566.3	11.51	154.7'	0°	2°
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU4A	Panel	763	LTE	185	68.0	4	160	TPO	Watt	0	1	2037.6	11.05	155'	0°	5°
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU4A	Panel	2100	LTE	185	60.5	4	80	TPO	Watt	0	1	2618.7	15.15	155'	0°	5°
6	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	1900	LTE	185	67.9	4	160	TPO	Watt	0	1	3541	13.45	155'	0°	5°
6	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	850	5G	185	68.8	4	80	TPO	Watt	0	1	847.4	10.25	155'	0°	5°
6	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	737	LTE	185	65.4	4	160	TPO	Watt	0	1	1581.7	9.95	155'	0°	5°
6	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU4D	Panel	850	LTE	185	68.8	4	80	TPO	Watt	0	1	847.4	10.25	155'	0°	5°
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	295	82.0	4.6	40	TPO	Watt	0	1	566.3	11.51	154.7'	0°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU8A	Panel	763	LTE	295	65.7	8	160	TPO	Watt	0	1	3312.2	13.16	153'	0°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA65R-BU8A	Panel	2100	LTE	295	61.2	8	160	TPO	Watt	0	1	5371.8	15.26	153'	0°	2°
9	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU8D	Panel	1900	LTE	295	67.0	8	160	TPO	Watt	0	1	4169.8	14.16	153'	0°	2°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
9	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU8D	Panel	850	5G	295	71.4	8	80	TPO	Watt	0	1	1442.4	12.56	153'	0°	2°
9	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU8D	Panel	737	LTE	295	70.6	8	160	TPO	Watt	0	1	2692.3	12.26	153'	0°	0°
9	AT&T MOBILITY LLC (Proposed)	Cci DMP65R-BU8D	Panel	850	LTE	295	71.4	8	80	TPO	Watt	0	1	1442.4	12.56	153'	0°	2°
10	UNKNOWN CARRIER	Generic	Panel	850		0	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	173.9'	0°	0°
11	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		0	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	173.9'	0°	0°
12	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	850		120	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	173.9'	0°	0°
13	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		120	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	173.9'	0°	0°
14	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	850		240	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	173.9'	0°	0°
15	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		240	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	173.9'	0°	0°
16	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	700		0	65.0	6.3	160	TPO	Watt	0	1	2884.8	12.56	163.9'	0°	0°
17	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	850		0	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	163.9'	0°	0°
18	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		0	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	163.9'	0°	0°
19	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	2100		0	65.0	6.3	160	TPO	Watt	0	1	5716.4	15.53	163.9'	0°	0°
20	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	700		120	65.0	6.3	160	TPO	Watt	0	1	2884.8	12.56	163.9'	0°	0°
21	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	850		120	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	163.9'	0°	0°
22	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		120	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	163.9'	0°	0°
23	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	2100		120	65.0	6.3	160	TPO	Watt	0	1	5716.4	15.53	163.9'	0°	0°
24	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	700		240	65.0	6.3	160	TPO	Watt	0	1	2884.8	12.56	163.9'	0°	0°
25	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	850		240	65.0	6.3	160	TPO	Watt	0	1	3524.7	13.43	163.9'	0°	0°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
26	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	1900		240	65.0	6.3	160	TPO	Watt	0	1	6762.7	16.26	163.9'	0°	0°
27	UNKNOWN CARRIER	AT&T MOBILITY LLC (Proposed)	Panel	2100		240	65.0	6.3	160	TPO	Watt	0	1	5716.4	15.53	163.9'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

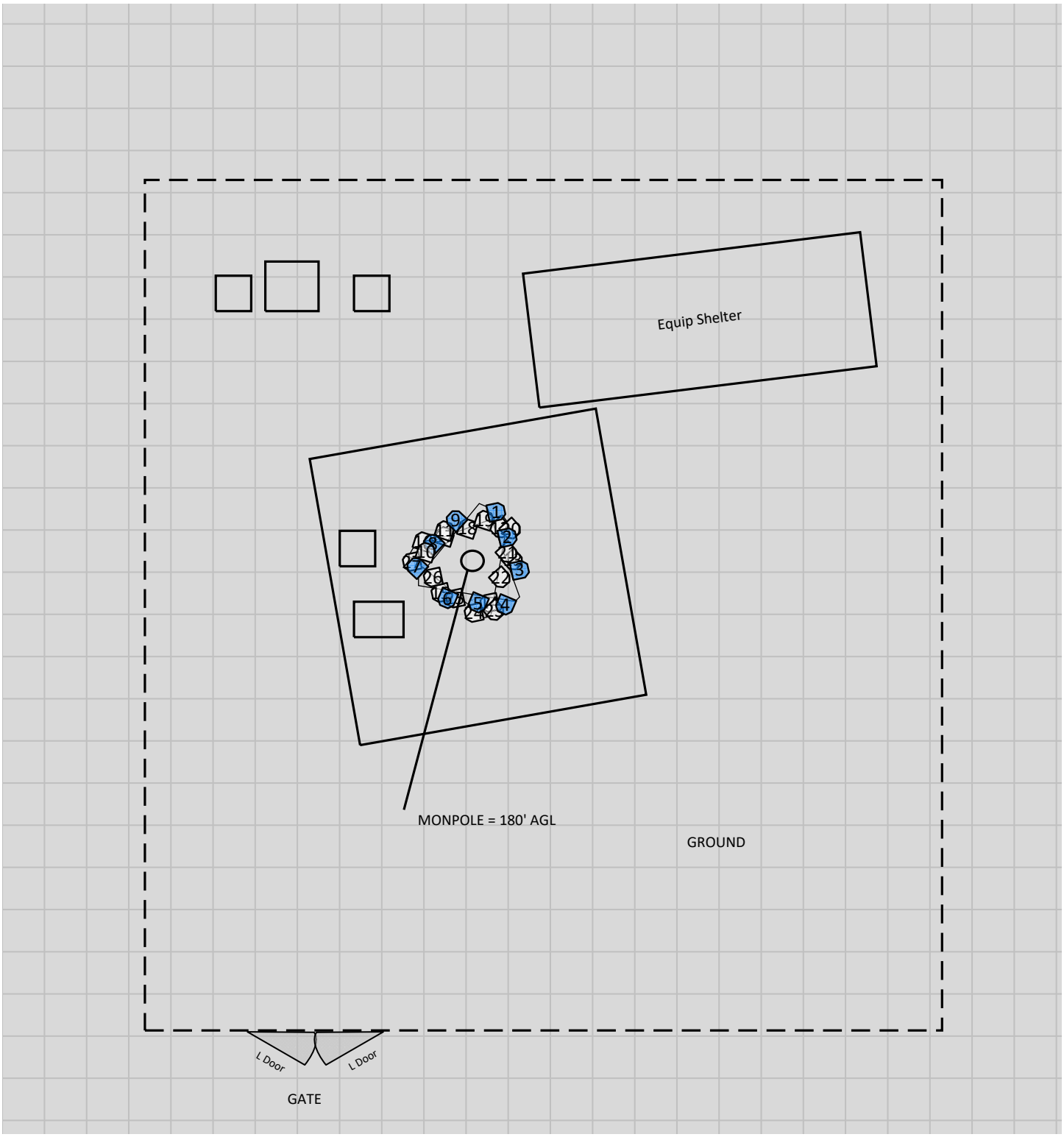
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

- GROUND = 0'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: COLCHESTER NW
Composite Diagram



% of FCC Public Exposure Limit
Spatially Averaged

% of FCC Public Exposure Limit
0-5 5-100 100-500 500-5000 5000+

Carrier Identification
AT&T MOBILITY LLC VERIZON WIRELESS T-MOBILE SPRINT UNKNOWN CARRIER

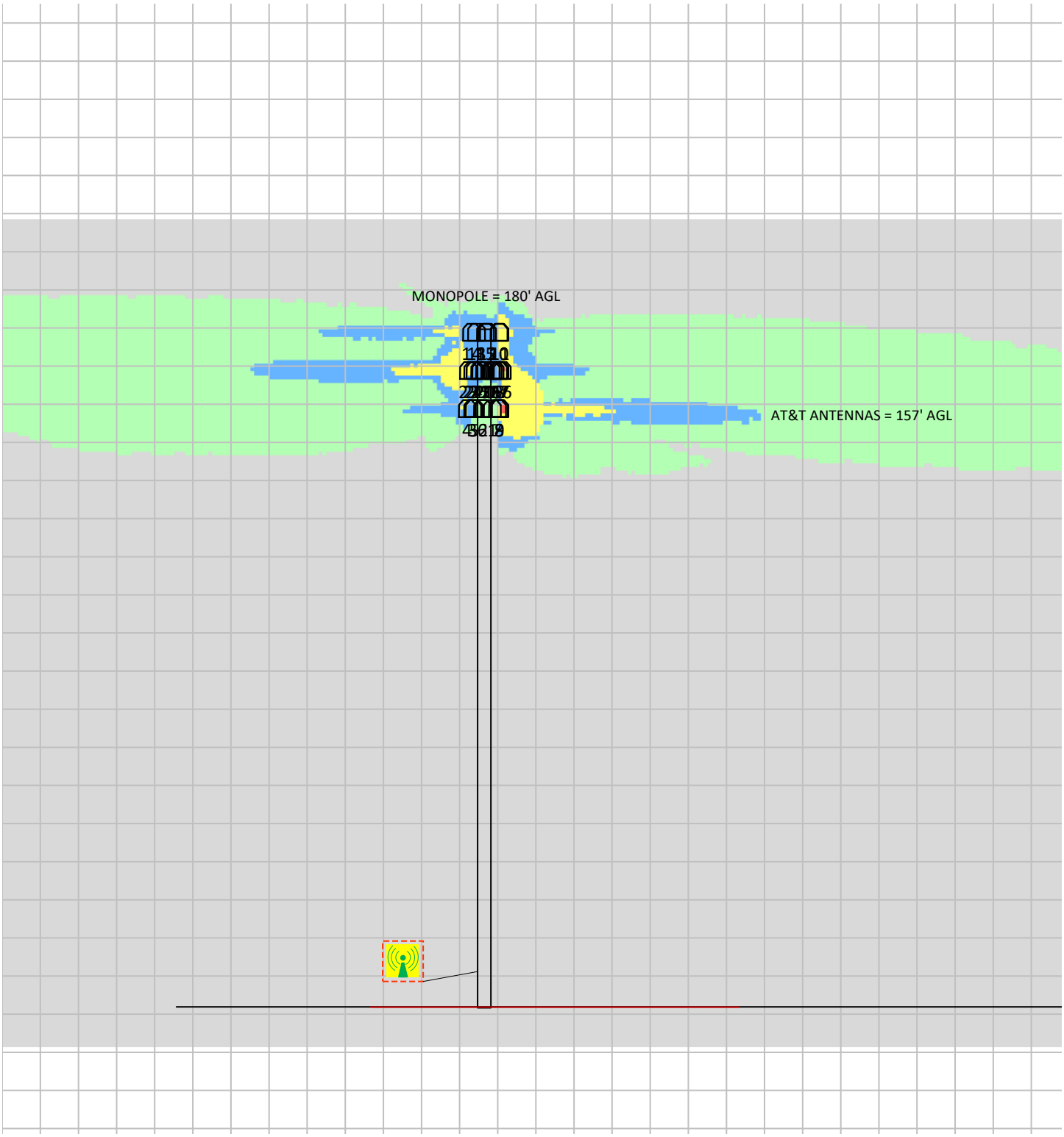
Existing Barrier Proposed Barrier/Sign Remove Sign X Locked Ladder

(Feet)
0 6.7 13.4

www.sitesafe.com
4/20/2021 8:13:01 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: COLCHESTER NW
Elevation View



% of FCC Public Exposure Limit
Single Level (0)

% of FCC Public Exposure Limit
0-5 | 5-100 | 100-500 | 500-5000 | 5000+

Carrier Identification
AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

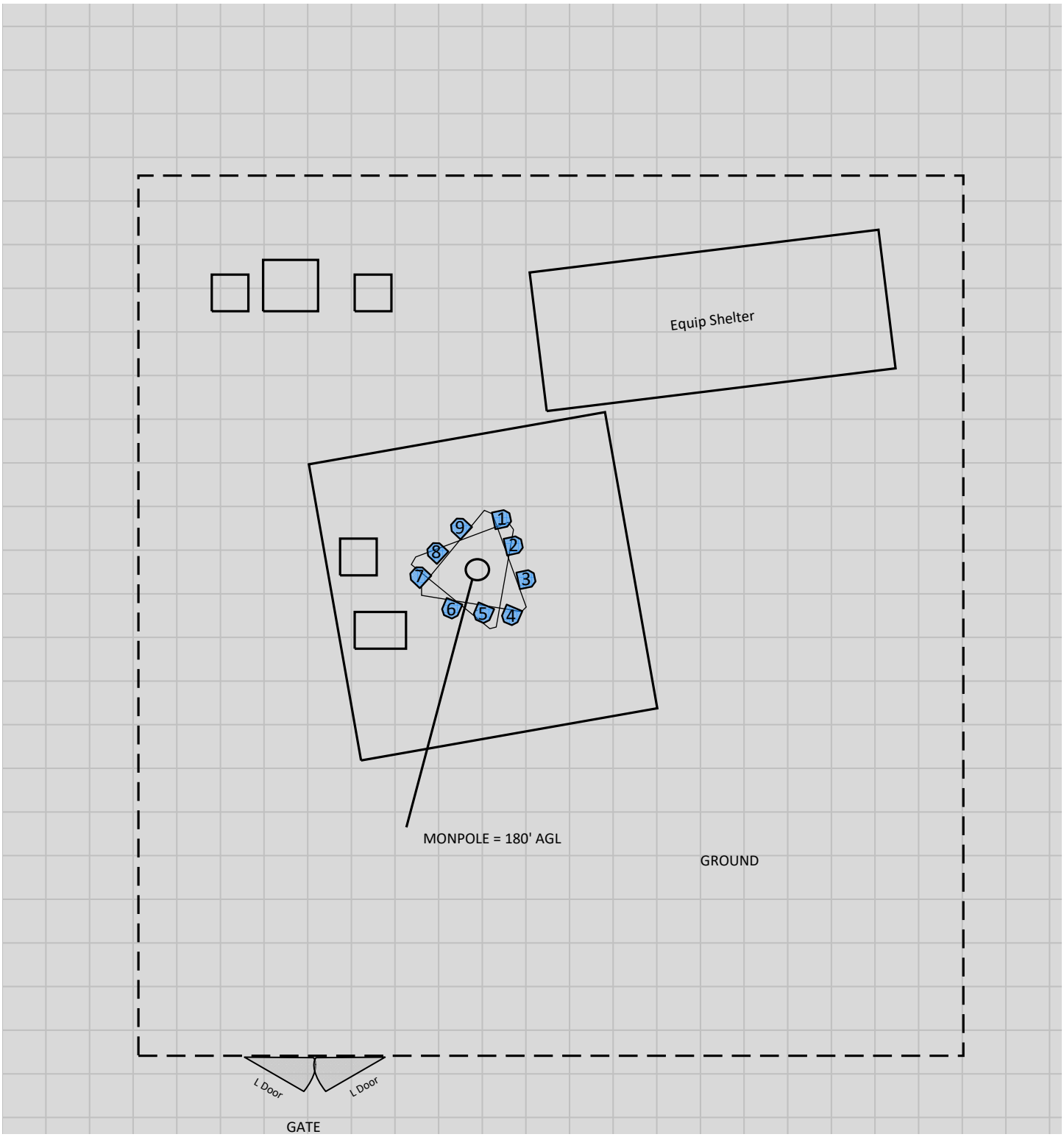
Existing Barrier | Proposed Barrier/Sign | Remove Sign X | Locked Ladder

(Feet)
0 18.5 37.1

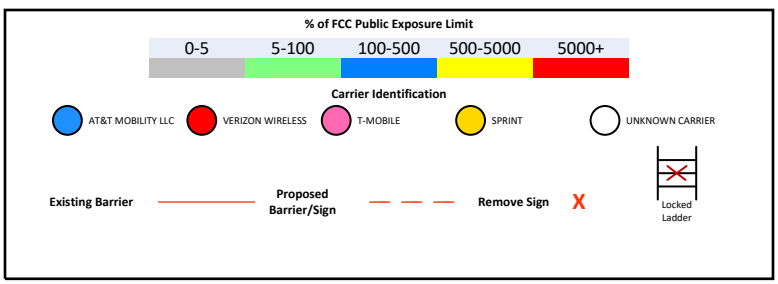
www.sitesafe.com
4/20/2021 8:09:56 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

RF Exposure Simulation For: COLCHESTER NW
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit
Spatially Averaged



(Feet)

0 6.4 12.9

www.sitesafe.com
4/20/2021 8:14:00 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Location

(1) Caution 2B sign(s) required.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Nick Kutzke.

April 20, 2021

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

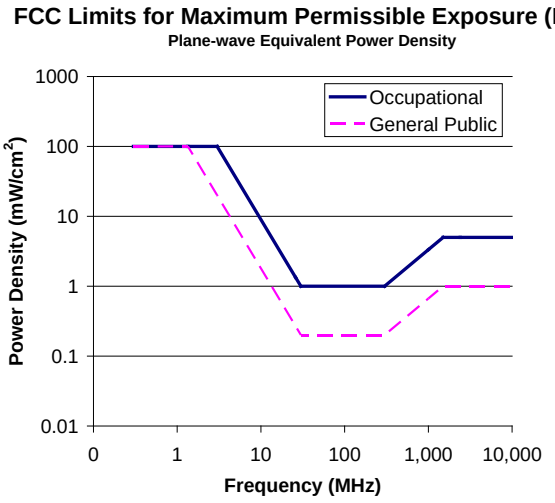
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

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

Limits for General Population/Uncontrolled Exposure (MPE)

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

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

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

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

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

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 worker's 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 (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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. 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.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" 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, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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 100% 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over 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, Sitesafe will use its 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 Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – 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 a 6-foot tall 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 G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

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

Structural Analysis Report

Existing 180 ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02218-S

Customer Site Name: Colchester

Carrier Name: AT&T (App#: 135062-3)

Carrier Site ID / Name: CTL05344 / Colchester NW

Site Location: 48 Westchester Road

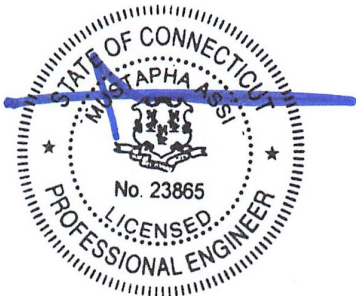
Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

Exp.10/31/2021



04/13/2021

Analysis Result:

Max Structural Usage: 80.3% [Pass]

Max Foundation Usage: 71.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft Valmont Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawings prepared by Valmont Microflect, Order # 19487-99 Dated 11/03/1999
Foundation Drawing	Foundation Drawing prepared byTowerkraftt, Project# 2985 Dated 11/04/1999
Geotechnical Report	JGI #99539G.dated 11/12/1999.
Modification Drawings	N/A
Mount Analysis	AT&T Passing MA by Infinigy And From zero to Infinigy # 1106-A0001-B. dated 03/02/2021.

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed Vult = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.062

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	177.0	3	RFS - APXV18-206516S-C-A20 - Panel	(1) Platform w/ Hand Rails & w/ SitePro1 PRK-1245	(12) 1 5/8" (1) 5/16" Fiber (2) 5/16" Cat 6	T-Mobile
-		3	Commscope - LNX-6515DS-VTM - Panel			
-		3	Ericsson - KRY 112 144/1 - TMA			
-		3	Kathrein - 782 11056 - Bias T's			
-		1	Fastback Networks - IBR 1300 - Dish			
7	167.0	6	Antel - LPA-80080-4CF-EDIN-0 - Panel	(1) Platform w/ Hand Rails	(1) 1 1/4" Fiber (12) 1 5/8" (1) 1 5/8" Fiber	Verizon
8		6	Commscope - SBNHH-1D65B - Panel			
9		3	Alcatel-Lucent B13 RRH4x30-4R RRH			
10		3	Alcatel-Lucent B4 RRH 4x45-4R RRH			
11		2	Raycap RC2DC-3315-PF-48 ODU			
12	157.0	6	Powerwave - 7770 w/ Mount Pipe - Panel	(1) Low Profile Platform	(12) 1 5/8" (2) DC (1) Fiber	Cingular
13		2	Powerwave - P65-17-XLH-RR - Panel			
14		1	KMW - AM-X-CD-16-65-00T - Panel			
15		6	Powerwave - LGP21401 - TMA			
16		6	Ericsson - RRUS 11 - RRU			
17		6	Powerwave - LGP21903 - Diplexer			
18		1	Raycap - DC6-48-60-18-8F - SP			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
11	157.0	3	Powerwave - 7770 - Panel	(1) Low Profile Platform	(12) 1 5/8" (2) ¾ DC (1) ½ Fiber	AT&T
12		2	CCI - DMP65R-BU4DA - Panel			
13		1	CCI - DMP65R-BU8DA - Panel			
14		2	CCI - HPA65R-BU4A - Panel			
15		1	CCI - HPA65R-BU8A - Panel			
16		3	4449 B5/B12			
17		3	8843 B2/B66A			
18		1	Raycap DC6-48-60-18-8F			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**80.3%**	**74.9%**	**58.4%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	5045.0	39.5	56.1
Analysis Reactions	5330.1	43.5	79.7
Factored Reactions*	6810.8	53.3	75.7
% of Design Reactions	78.3%	81.6%	105.2%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.4793 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

[MODIFICATIONS]

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

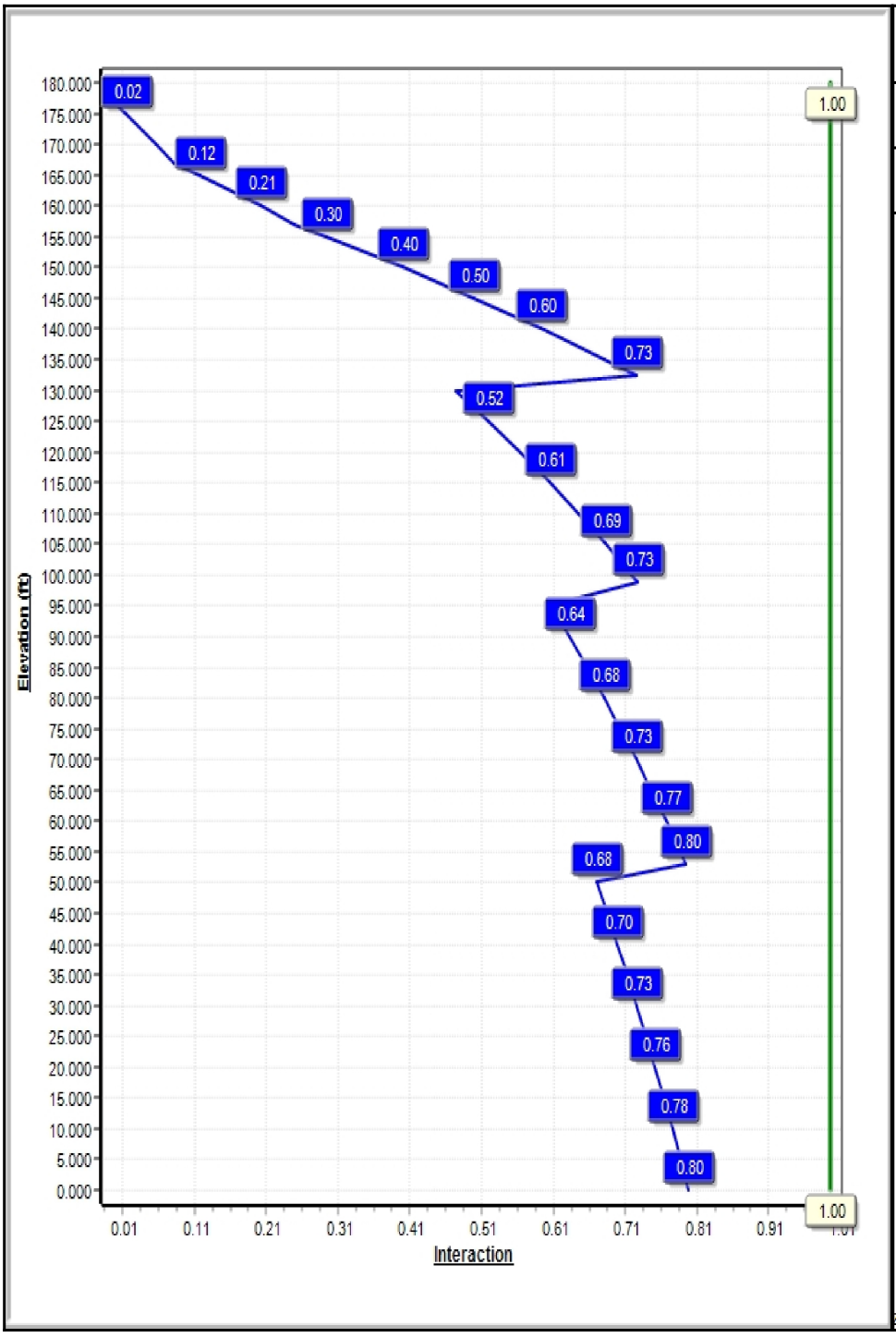
Usage Diagram - Max Ratio 80.28% at 0.0ft

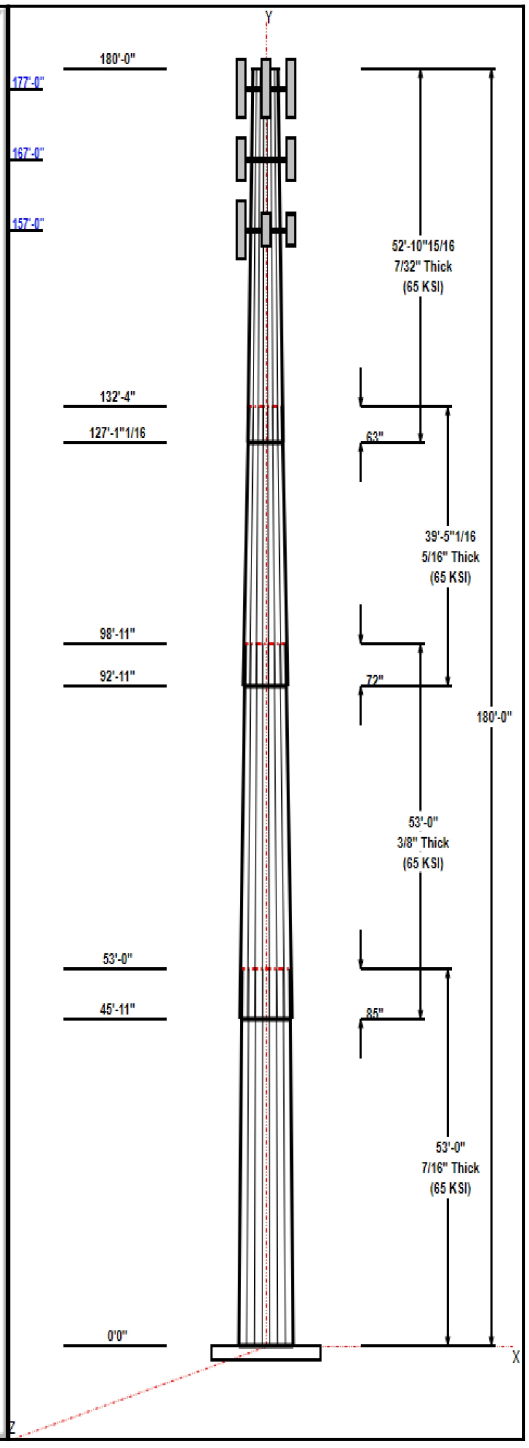
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	26
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 105 mph Wind





Structure: CT02218-S-SBA

Type: Tapered
Site Name: Colchester
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.20502

4/13/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	49.13	60.00	0.438		0.20502	65
2	53.00	40.47	51.34	0.375	Slip	0.20502	65
3	39.42	34.24	42.33	0.313	Slip	0.20502	65
4	52.91	24.91	35.76	0.219	Slip	0.20502	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
180.00	180.00	1	6' Lightning rod	T-Mobile
177.00	177.00	3	KRY 112 144/1	T-Mobile
177.00	177.00	3	782 11056	T-Mobile
177.00	177.00	1	Platform w/ Hand Rail	T-Mobile
177.00	177.00	3	APXV18-206516S-C-A20	T-Mobile
177.00	177.00	3	LNX-6515DS-VTM	T-Mobile
177.00	177.00	1	Fastback Networks - IBR	T-Mobile
177.00	177.00	1	MS-KI22-5 (Kickers w/o	T-Mobile
177.00	177.00	1	Pipe Mount	T-Mobile
167.00	167.00	6	LPA-80080-4CF-EDIN-0	Verizon
167.00	167.00	1	Platform w/ Hand Rails	Verizon
167.00	167.00	6	SBNHH-1D65B	Verizon
167.00	167.00	3	Alcatel-Lucent B13	Verizon
167.00	167.00	3	Alcatel-Lucent B4 RRH	Verizon
167.00	167.00	2	Raycap	Verizon
157.00	157.00	1	Low Profile Platform-flat	AT&T
157.00	157.00	3	7770	AT&T
157.00	157.00	2	DMP65R-BU4DA	AT&T
157.00	157.00	1	DMP65R-BU8DA	AT&T
157.00	157.00	2	HPA65R-BU4A	AT&T
157.00	157.00	1	HPA65R-BU8A	AT&T
157.00	157.00	3	4449 B5/B12	AT&T
157.00	157.00	3	8843 B2/B66A	AT&T
157.00	157.00	1	Raycap DC6-48-60-18-8F	AT&T

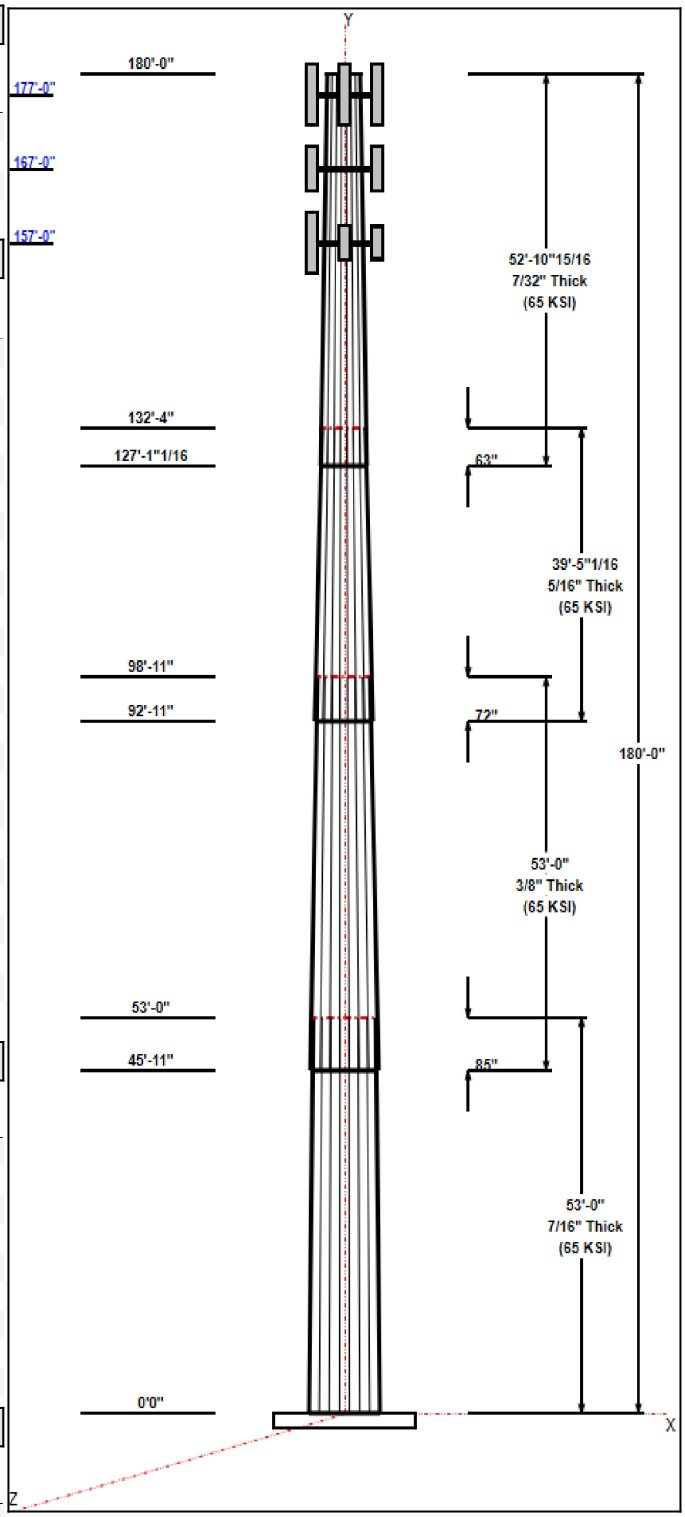
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1 5/8" Coax	T-Mobile
0.00	177.00	Inside	5/16" Coax	T-Mobile
0.00	177.00	Inside	5/16" Cat 6	T-Mobile
0.00	167.00	Inside	1 1/4" Fiber	Verizon
0.00	167.00	Inside	1 5/8" Coax	Verizon
0.00	167.00	Inside	1 5/8" Fiber	Verizon
0.00	157.00	Inside	1 5/8" Coax	AT&T
0.00	157.00	Inside	DC	AT&T
0.00	157.00	Inside	Fiber	AT&T

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate



Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	74.6	60.0	Polygon

Reactions

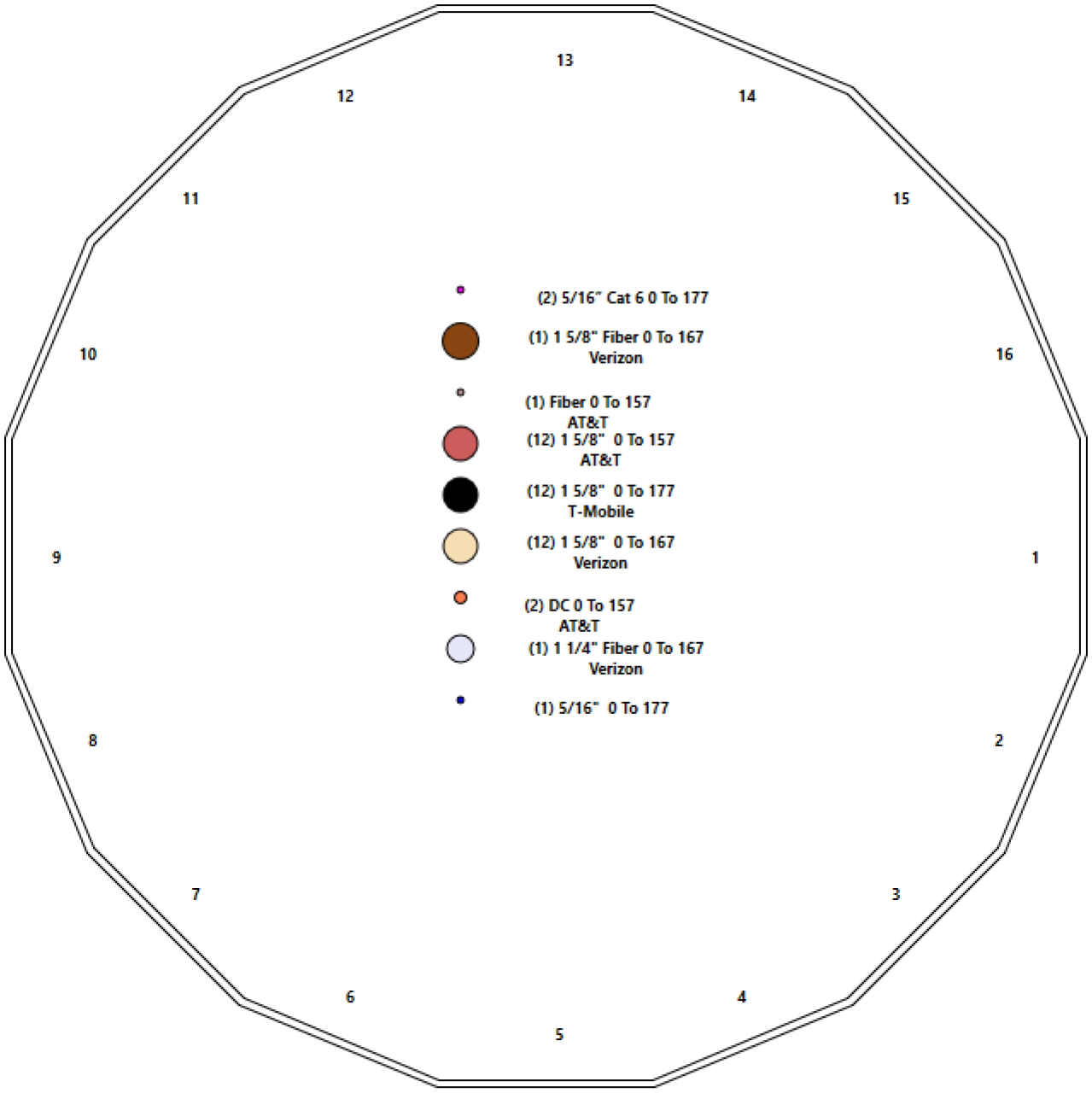
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	5330.1	43.5	55.0
0.9D + 1.6W 105 mph Wind	5272.9	43.5	41.3
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1243.4	10.0	79.7
1.2D + 1.0E	154.3	1.2	55.1
0.9D + 1.0E	152.4	1.2	41.3
1.0D + 1.0W 60 mph Wind	1082.1	8.9	45.9

Structure: CT02218-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Colchester
Height: 180.00 (ft)

4/13/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	53.000	0.4380	65		0.00	13,640
2	16	53.000	0.3750	65	Slip	85.00	9,822
3	16	39.420	0.3130	65	Slip	72.00	5,086
4	16	52.913	0.2190	65	Slip	63.00	3,788
					Total Shaft Weight:		**32,336**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	60.00	0.00	83.22	37298.12	25.66	136.99	49.13	53.00	68.04	20382.3	20.72	112.1	0.205022
2	51.34	45.92	60.96	20001.00	25.64	136.90	40.47	98.92	47.96	9740.99	19.88	107.9	0.205022
3	42.33	92.92	41.95	9354.08	25.31	135.23	34.24	132.34	33.88	4927.66	20.17	109.4	0.205022
4	35.76	127.0	24.83	3961.68	30.89	163.28	24.91	180.00	17.25	1328.51	21.03	113.7	0.205022

Load Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	180.00	6' Lightning rod	1	6.50	0.38	1.00	43.47	1.488	0.00	0.00	0.00
2	177.00	KRY 112 144/1	3	11.00	0.41	0.67	21.96	0.893	0.67	0.00	0.00
3	177.00	782 11056	3	1.80	0.28	0.67	6.40	0.688	0.67	0.00	0.00
4	177.00	Platform w/ Hand Rail (round)	1	1600.00	32.00	1.00	3734.89	60.389	1.00	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	18.70	3.61	0.73	89.94	5.498	0.73	0.00	0.00
6	177.00	LNX-6515DS-VTM	3	49.80	11.47	0.80	283.54	14.775	0.80	0.00	0.00
7	177.00	Fastback Networks - IBR 1300 -	1	8.90	0.67	1.00	27.08	1.023	1.00	0.00	0.00
8	177.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	353.24	11.004	1.00	0.00	0.00
9	177.00	Pipe Mount	1	40.00	2.63	0.75	121.62	8.698	0.75	0.00	0.00
10	167.00	LPA-80080-4CF-EDIN-0	6	12.00	2.61	1.00	149.23	3.473	1.00	0.00	0.00
11	167.00	Platform w/ Hand Rails (flat)	1	2000.00	40.00	1.00	4116.86	61.169	1.00	0.00	0.00
12	167.00	SBNHH-1D65B	6	40.00	8.16	0.83	245.75	9.475	0.83	0.00	0.00
13	167.00	Alcatel-Lucent B13 RRH4x30-4R	3	57.20	2.16	0.88	120.16	2.777	0.88	0.00	0.00
14	167.00	Alcatel-Lucent B4 RRH 4x45-4R	3	64.00	2.60	0.80	148.71	3.312	0.80	0.00	0.00
15	167.00	Raycap RC2DC-3315-PF-48 ODU	2	32.00	3.79	0.84	147.95	4.755	0.84	0.00	0.00
16	157.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2251.92	46.038	1.00	0.00	0.00
17	157.00	7770	3	35.00	5.50	0.73	170.93	6.570	0.73	0.00	0.00
18	157.00	DMP65R-BU4DA	2	67.90	8.00	0.82	320.94	8.926	0.82	0.00	0.00
19	157.00	DMP65R-BU8DA	1	52.50	17.87	1.00	248.15	19.938	1.00	0.00	0.00
20	157.00	HPA65R-BU4A	2	28.70	4.96	1.00	135.65	5.534	1.00	0.00	0.00
21	157.00	HPA65R-BU8A	1	76.50	11.23	1.00	361.58	12.529	1.00	0.00	0.00
22	157.00	4449 B5/B12	3	71.00	1.97	0.67	124.62	2.520	0.67	0.00	0.00
23	157.00	8843 B2/B66A	3	72.00	1.64	0.67	119.06	2.139	0.67	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	31.80	0.92	1.00	93.91	1.360	1.00	0.00	0.00
		Totals:	**55**	**6,872.90**			**18,187.64**				

Linear Appurtenances

Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Exposed Width**	**Exposed**
0.00	177.00	(12) 1 5/8" Coax	0.00	Inside
0.00	177.00	(1) 5/16" Coax	0.00	Inside
0.00	177.00	(2) 5/16" Cat 6	0.00	Inside
0.00	167.00	(1) 1 1/4" Fiber	0.00	Inside
0.00	167.00	(12) 1 5/8" Coax	0.00	Inside
0.00	167.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	157.00	(12) 1 5/8" Coax	0.00	Inside
0.00	157.00	(2) DC	0.00	Inside
0.00	157.00	(1) Fiber	0.00	Inside

Shaft Section Properties

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4380	60.000	83.221	37298.1	25.66	136.99	73.5	1219.	0.0
5.00		0.4380	58.975	81.789	35405.3	25.19	134.65	74.1	1177.	1403.7
10.00		0.4380	57.950	80.357	33577.6	24.73	132.31	74.6	1136.	1379.4
15.00		0.4380	56.925	78.924	31813.9	24.26	129.96	75.1	1096.	1355.0
20.00		0.4380	55.900	77.492	30113.1	23.79	127.62	75.6	1056.	1330.6
25.00		0.4380	54.874	76.060	28474.0	23.33	125.28	76.2	1017.	1306.3
30.00		0.4380	53.849	74.627	26895.5	22.86	122.94	76.7	979.7	1281.9
35.00		0.4380	52.824	73.195	25376.4	22.40	120.60	77.2	942.3	1257.5
40.00		0.4380	51.799	71.763	23915.7	21.93	118.26	77.8	905.7	1233.1
45.00		0.4380	50.774	70.330	22512.1	21.47	115.92	78.3	869.7	1208.8
45.92	Bot - Section 2	0.4380	50.586	70.068	22260.8	21.38	115.49	78.4	863.2	219.0
50.00		0.4380	49.749	68.898	21164.5	21.00	113.58	78.8	834.5	1805.5
53.00	Top - Section 1	0.3750	49.884	59.225	18339.4	24.87	133.02	0.0	0.0	1307.3
55.00		0.3750	49.474	58.734	17887.4	24.65	131.93	74.7	709.2	401.4
60.00		0.3750	48.449	57.508	16790.3	24.11	129.20	75.3	679.8	988.9
65.00		0.3750	47.424	56.282	15738.9	23.56	126.46	75.9	651.0	968.0
70.00		0.3750	46.398	55.056	14732.4	23.02	123.73	76.5	622.8	947.1
75.00		0.3750	45.373	53.829	13769.7	22.48	121.00	77.1	595.3	926.3
80.00		0.3750	44.348	52.603	12849.9	21.93	118.26	77.8	568.4	905.4
85.00		0.3750	43.323	51.377	11972.0	21.39	115.53	78.4	542.1	884.5
90.00		0.3750	42.298	50.150	11135.1	20.84	112.79	79.0	516.4	863.7
92.92	Bot - Section 3	0.3750	41.700	49.435	10665.4	20.53	111.20	79.3	501.7	494.2
95.00		0.3750	41.273	48.924	10338.1	20.30	110.06	79.6	491.3	644.5
98.92	Top - Section 2	0.3130	41.096	40.720	8556.2	24.53	131.30	0.0	0.0	1193.7
100.00		0.3130	40.874	40.499	8417.2	24.38	130.59	75.0	403.9	149.7
105.00		0.3130	39.849	39.475	7795.0	23.73	127.31	75.7	383.7	680.3
110.00		0.3130	38.824	38.452	7204.2	23.08	124.04	76.5	364.0	662.9
115.00		0.3130	37.798	37.428	6644.1	22.43	120.76	77.2	344.8	645.5
120.00		0.3130	36.773	36.405	6113.8	21.78	117.49	77.9	326.1	628.1
125.00		0.3130	35.748	35.381	5612.5	21.13	114.21	78.7	308.0	610.7
127.09	Bot - Section 4	0.3130	35.320	34.954	5411.6	20.85	112.84	79.0	300.5	249.7
130.00		0.3130	34.723	34.357	5139.3	20.48	110.94	79.4	290.3	587.6
132.34	Top - Section 3	0.2190	34.682	24.076	3612.5	29.91	158.37	0.0	0.0	464.0
135.00		0.2190	34.136	23.695	3443.5	29.41	155.87	69.3	197.9	216.5
140.00		0.2190	33.111	22.979	3140.6	28.48	151.19	70.3	186.1	397.0
145.00		0.2190	32.086	22.262	2856.0	27.55	146.51	71.4	174.6	384.9
150.00		0.2190	31.061	21.546	2589.2	26.62	141.83	72.5	163.5	372.7
155.00		0.2190	30.036	20.830	2339.5	25.69	137.15	73.5	152.8	360.5
157.00		0.2190	29.626	20.544	2244.3	25.32	135.28	73.9	148.6	140.8
160.00		0.2190	29.010	20.114	2106.4	24.76	132.47	74.6	142.4	207.5
165.00		0.2190	27.985	19.398	1889.3	23.83	127.79	75.6	132.4	336.1
167.00		0.2190	27.575	19.111	1806.8	23.45	125.91	76.0	128.5	131.0
170.00		0.2190	26.960	18.682	1687.7	22.90	123.11	76.7	122.8	192.9
175.00		0.2190	25.935	17.966	1500.9	21.96	118.43	77.7	113.5	311.8
177.00		0.2190	25.525	17.679	1430.3	21.59	116.55	78.1	109.9	121.3
180.00		0.2190	24.910	17.249	1328.5	21.03	113.74	78.8	104.6	178.3
										32335.6

Wind Loading - Shaft

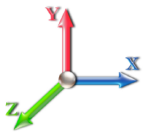
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	493.51	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	485.08	0.750	0.000	5.00	25.272	18.95	760.3	0.0	1684.5
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	5.00	24.837	18.63	747.2	0.0	1655.2
15.00		1.00	0.85	22.791	25.07	468.21	0.750	0.000	5.00	24.401	18.30	734.1	0.0	1626.0
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	5.00	23.966	17.97	765.0	0.0	1596.7
25.00		1.00	0.95	25.345	27.88	475.97	0.750	0.000	5.00	23.530	17.65	787.2	0.0	1567.5
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	5.00	23.095	17.32	802.9	0.0	1538.3
35.00		1.00	1.01	27.206	29.93	474.71	0.750	0.000	5.00	22.659	16.99	813.7	0.0	1509.0
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	5.00	22.224	16.67	820.8	0.0	1479.8
45.00		1.00	1.07	28.684	31.55	468.51	0.750	0.000	5.00	21.788	16.34	825.0	0.0	1450.5
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	0.92	3.947	2.96	150.1	0.0	262.8
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	4.08	17.666	13.25	683.9	0.0	2166.6
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	3.00	12.794	9.60	501.4	0.0	1568.8
55.00		1.00	1.12	29.922	32.91	466.26	0.750	0.000	2.00	8.442	6.33	333.4	0.0	481.7
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	5.00	20.800	15.60	836.7	0.0	1186.6
65.00		1.00	1.16	30.993	34.09	454.87	0.750	0.000	5.00	20.365	15.27	833.1	0.0	1161.6
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	5.00	19.929	14.95	828.1	0.0	1136.6
75.00		1.00	1.19	31.941	35.13	441.81	0.750	0.000	5.00	19.494	14.62	821.9	0.0	1111.5
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	5.00	19.058	14.29	814.5	0.0	1086.5
85.00		1.00	1.22	32.793	36.07	427.44	0.750	0.000	5.00	18.623	13.97	806.1	0.0	1061.5
90.00		1.00	1.24	33.190	36.51	419.84	0.750	0.000	5.00	18.187	13.64	796.8	0.0	1036.4
92.92	Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	2.92	10.408	7.81	459.1	0.0	593.0
95.00		1.00	1.25	33.570	36.93	412.01	0.750	0.000	2.08	7.454	5.59	330.3	0.0	773.4
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	3.92	13.810	10.36	617.2	0.0	1432.4
100.00		1.00	1.27	33.935	37.33	410.23	0.750	0.000	1.08	3.773	2.83	169.0	0.0	179.6
105.00		1.00	1.28	34.285	37.71	402.00	0.750	0.000	5.00	17.147	12.86	776.0	0.0	816.4
110.00		1.00	1.29	34.623	38.08	393.58	0.750	0.000	5.00	16.711	12.53	763.7	0.0	795.5
115.00		1.00	1.30	34.948	38.44	384.99	0.750	0.000	5.00	16.276	12.21	750.8	0.0	774.6
120.00		1.00	1.32	35.263	38.79	376.23	0.750	0.000	5.00	15.840	11.88	737.3	0.0	753.7
125.00		1.00	1.33	35.567	39.12	367.32	0.750	0.000	5.00	15.405	11.55	723.2	0.0	732.8
127.09	Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	2.09	6.300	4.73	296.8	0.0	299.6
130.00		1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.91	8.777	6.58	415.5	0.0	705.1
132.34	Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	2.34	6.933	5.20	329.4	0.0	556.9
135.00		1.00	1.35	36.148	39.76	353.60	0.750	0.000	2.66	7.787	5.84	371.5	0.0	259.8
140.00		1.00	1.36	36.426	40.07	344.30	0.750	0.000	5.00	14.284	10.71	686.8	0.0	476.5
145.00		1.00	1.37	36.696	40.37	334.88	0.750	0.000	5.00	13.849	10.39	670.8	0.0	461.8
150.00		1.00	1.38	36.959	40.65	325.34	0.750	0.000	5.00	13.413	10.06	654.4	0.0	447.2
155.00		1.00	1.39	37.215	40.94	315.69	0.750	0.000	5.00	12.978	9.73	637.5	0.0	432.6
157.00	Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	2.00	5.069	3.80	249.7	0.0	168.9
160.00		1.00	1.40	37.464	41.21	305.93	0.750	0.000	3.00	7.473	5.60	369.6	0.0	249.0
165.00		1.00	1.41	37.708	41.48	296.08	0.750	0.000	5.00	12.107	9.08	602.6	0.0	403.3
167.00	Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	2.00	4.721	3.54	235.6	0.0	157.2
170.00		1.00	1.42	37.946	41.74	286.13	0.750	0.000	3.00	6.950	5.21	348.1	0.0	231.5
175.00		1.00	1.42	38.178	42.00	276.09	0.750	0.000	5.00	11.236	8.43	566.2	0.0	374.1
177.00	Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	2.00	4.372	3.28	220.9	0.0	145.5
180.00	Appurtenance(s)	1.00	1.43	38.405	42.25	265.97	0.750	0.000	3.00	6.428	4.82	325.9	0.0	213.9

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Totals:	**180.00**	**26,770.1**	**38,802.8**

Discrete Appurtenance Forces

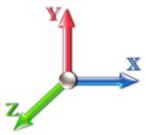
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	38.405	42.245	1.00	1.00	0.38	7.80	0.000	0.000	25.69	0.00	0.00
2	177.00	KRY 112 144/1	3	38.269	42.096	0.50	0.75	0.62	39.60	0.000	0.000	41.63	0.00	0.00
3	177.00	782 11056	3	38.269	42.096	0.50	0.75	0.42	6.48	0.000	0.000	28.43	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1920.00	0.000	0.000	2155.32	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	38.269	42.096	0.55	0.75	5.93	67.32	0.000	0.000	399.37	0.00	0.00
6	177.00	LNX-6515DS-VTM	3	38.269	42.096	0.60	0.75	20.65	179.28	0.000	0.000	1390.59	0.00	0.00
7	177.00	Fastback Networks - IBR	1	38.269	42.096	1.00	1.00	0.67	10.68	0.000	0.000	45.13	0.00	0.00
8	177.00	MS-KI22-5 (Kickers w/o	1	38.269	42.096	1.00	1.00	5.33	175.20	0.000	0.000	359.00	0.00	0.00
9	177.00	Pipe Mount	1	38.269	42.096	0.56	0.75	1.48	48.00	0.000	0.000	99.64	0.00	0.00
10	167.00	Raycap	2	37.804	41.584	0.67	0.80	5.09	76.80	0.000	0.000	338.91	0.00	0.00
11	167.00	Alcatel-Lucent B4 RRH	3	37.804	41.584	0.64	0.80	4.99	230.40	0.000	0.000	332.14	0.00	0.00
12	167.00	Alcatel-Lucent B13	3	37.804	41.584	0.70	0.80	4.56	205.92	0.000	0.000	303.52	0.00	0.00
13	167.00	SBNHH-1D65B	6	37.804	41.584	0.66	0.80	32.51	288.00	0.000	0.000	2162.99	0.00	0.00
14	167.00	LPA-80080-4CF-EDIN-0	6	37.804	41.584	0.80	0.80	12.53	86.40	0.000	0.000	833.54	0.00	0.00
15	167.00	Platform w/ Hand Rails	1	37.804	41.584	1.00	1.00	40.00	2400.00	0.000	0.000	2661.37	0.00	0.00
16	157.00	DMP65R-BU8DA	1	37.315	41.047	0.80	0.80	14.30	63.00	0.000	0.000	938.89	0.00	0.00
17	157.00	Low Profile Platform-flat	1	37.315	41.047	1.00	1.00	25.00	1440.00	0.000	0.000	1641.87	0.00	0.00
18	157.00	7770	3	37.315	41.047	0.58	0.80	9.64	126.00	0.000	0.000	632.84	0.00	0.00
19	157.00	DMP65R-BU4DA	2	37.315	41.047	0.66	0.80	10.50	162.96	0.000	0.000	689.32	0.00	0.00
20	157.00	HPA65R-BU8A	1	37.315	41.047	0.80	0.80	8.98	91.80	0.000	0.000	590.02	0.00	0.00
21	157.00	HPA65R-BU4A	2	37.315	41.047	0.80	0.80	7.94	68.88	0.000	0.000	521.20	0.00	0.00
22	157.00	4449 B5/B12	3	37.315	41.047	0.54	0.80	3.17	255.60	0.000	0.000	208.04	0.00	0.00
23	157.00	8843 B2/B66A	3	37.315	41.047	0.67	1.00	3.30	259.20	0.000	0.000	216.49	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.80	0.80	0.74	38.16	0.000	0.000	48.34	0.00	0.00
							Totals:		**8,247.48**			**16,664.29**		

Total Applied Force Summary

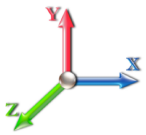
Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		760.28	1926.28	0.00	0.00
10.00		747.18	1897.04	0.00	0.00
15.00		734.08	1867.79	0.00	0.00
20.00		764.99	1838.55	0.00	0.00
25.00		787.21	1809.31	0.00	0.00
30.00		802.88	1780.06	0.00	0.00
35.00		813.72	1750.82	0.00	0.00
40.00		820.83	1721.58	0.00	0.00
45.00		824.95	1692.34	0.00	0.00
45.92		150.09	307.09	0.00	0.00
50.00		683.87	2364.11	0.00	0.00
53.00		501.38	1713.83	0.00	0.00
55.00		333.43	578.39	0.00	0.00
60.00		836.72	1428.44	0.00	0.00
65.00		833.12	1403.41	0.00	0.00
70.00		828.13	1378.37	0.00	0.00
75.00		821.88	1353.33	0.00	0.00
80.00		814.51	1328.30	0.00	0.00
85.00		806.12	1303.26	0.00	0.00
90.00		796.80	1278.22	0.00	0.00
92.92		459.06	734.07	0.00	0.00
95.00		330.33	874.16	0.00	0.00
98.92		617.17	1621.83	0.00	0.00
100.00		168.99	232.03	0.00	0.00
105.00		776.00	1058.20	0.00	0.00
110.00		763.73	1037.30	0.00	0.00
115.00		750.82	1016.41	0.00	0.00
120.00		737.31	995.51	0.00	0.00
125.00		723.22	974.61	0.00	0.00
127.09		296.81	400.56	0.00	0.00
130.00		415.51	846.03	0.00	0.00
132.34		329.44	669.85	0.00	0.00
135.00		371.54	388.56	0.00	0.00
140.00		686.82	718.26	0.00	0.00
145.00		670.81	703.64	0.00	0.00
150.00		654.37	689.01	0.00	0.00
155.00		637.51	674.39	0.00	0.00
157.00	(17) attachments	5736.71	2771.26	0.00	0.00
160.00		369.57	346.08	0.00	0.00
165.00		602.60	565.11	0.00	0.00
167.00	(21) attachments	6868.05	3509.47	0.00	0.00
170.00		348.14	277.27	0.00	0.00
175.00		566.22	450.43	0.00	0.00
177.00	(16) attachments	4739.98	2622.64	0.00	0.00
180.00	(1) attachments	351.54	221.74	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Totals:	**43,434.42**	**55,118.93**	**0.00**	**0.00**

Calculated Forces

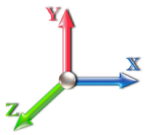
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.04	-43.53	0.00	-5330.1	0.00	5330.10	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.803
5.00	-52.97	-42.95	0.00	-5112.4	0.00	5112.44	5452.09	2726.05	13177.2	6541.73	0.11	-0.199	0.000	0.791
10.00	-50.92	-42.38	0.00	-4897.6	0.00	4897.68	5394.71	2697.35	12808.5	6358.68	0.42	-0.400	0.000	0.780
15.00	-48.91	-41.80	0.00	-4685.8	0.00	4685.80	5335.97	2667.98	12441.5	6176.49	0.95	-0.603	0.000	0.768
20.00	-46.94	-41.18	0.00	-4476.8	0.00	4476.80	5275.87	2637.93	12076.4	5995.24	1.69	-0.808	0.000	0.756
25.00	-45.00	-40.53	0.00	-4270.9	0.00	4270.90	5214.41	2607.20	11713.3	5815.02	2.65	-1.015	0.000	0.743
30.00	-43.09	-39.85	0.00	-4068.2	0.00	4068.26	5151.59	2575.80	11352.6	5635.92	3.83	-1.223	0.000	0.730
35.00	-41.21	-39.15	0.00	-3869.0	0.00	3869.02	5087.42	2543.71	10994.2	5458.02	5.22	-1.433	0.000	0.717
40.00	-39.37	-38.43	0.00	-3673.2	0.00	3673.29	5021.88	2510.94	10638.5	5281.41	6.83	-1.644	0.000	0.704
45.00	-37.62	-37.63	0.00	-3481.1	0.00	3481.17	4954.99	2477.50	10285.5	5106.18	8.67	-1.857	0.000	0.690
45.92	-37.25	-37.54	0.00	-3446.6	0.00	3446.67	4942.58	2471.29	10221.1	5074.21	9.03	-1.897	0.000	0.687
50.00	-34.81	-36.87	0.00	-3293.3	0.00	3293.38	4886.75	2443.37	9935.52	4932.41	10.73	-2.073	0.000	0.675
53.00	-33.05	-36.37	0.00	-3182.7	0.00	3182.77	3967.43	1983.71	8109.29	4025.79	12.08	-2.204	0.000	0.799
55.00	-32.38	-36.11	0.00	-3110.0	0.00	3110.04	3947.58	1973.79	8001.39	3972.23	13.02	-2.291	0.000	0.791
60.00	-30.84	-35.34	0.00	-2929.5	0.00	2929.51	3897.00	1948.50	7732.70	3838.84	15.55	-2.532	0.000	0.771
65.00	-29.33	-34.57	0.00	-2752.8	0.00	2752.82	3845.06	1922.53	7465.70	3706.29	18.33	-2.772	0.000	0.751
70.00	-27.85	-33.79	0.00	-2580.0	0.00	2580.00	3791.77	1895.89	7200.54	3574.65	21.36	-3.013	0.000	0.729
75.00	-26.41	-33.00	0.00	-2411.0	0.00	2411.07	3737.12	1868.56	6937.41	3444.02	24.64	-3.254	0.000	0.707
80.00	-25.00	-32.22	0.00	-2246.0	0.00	2246.06	3681.11	1840.56	6676.48	3314.49	28.18	-3.495	0.000	0.685
85.00	-23.62	-31.43	0.00	-2084.9	0.00	2084.98	3623.74	1811.87	6417.92	3186.13	31.96	-3.735	0.000	0.661
90.00	-22.29	-30.62	0.00	-1927.8	0.00	1927.84	3565.02	1782.51	6161.91	3059.03	36.00	-3.973	0.000	0.637
92.92	-21.53	-30.16	0.00	-1838.5	0.00	1838.53	3530.13	1765.07	6013.81	2985.51	38.47	-4.113	0.000	0.622
95.00	-20.61	-29.82	0.00	-1775.7	0.00	1775.70	3504.93	1752.47	5908.61	2933.28	40.29	-4.214	0.000	0.612
98.92	-18.98	-29.12	0.00	-1658.9	0.00	1658.93	2742.07	1371.04	4616.42	2291.78	43.82	-4.399	0.000	0.731
100.00	-18.68	-28.98	0.00	-1627.3	0.00	1627.39	2732.96	1366.48	4575.83	2271.63	44.82	-4.451	0.000	0.724
105.00	-17.56	-28.20	0.00	-1482.4	0.00	1482.47	2690.08	1345.04	4389.32	2179.04	49.62	-4.714	0.000	0.687
110.00	-16.47	-27.43	0.00	-1341.4	0.00	1341.45	2645.83	1322.92	4204.31	2087.20	54.69	-4.971	0.000	0.649
115.00	-15.41	-26.66	0.00	-1204.3	0.00	1204.31	2600.23	1300.12	4020.98	1996.19	60.03	-5.223	0.000	0.610
120.00	-14.38	-25.89	0.00	-1071.0	0.00	1071.02	2553.28	1276.64	3839.50	1906.09	65.62	-5.466	0.000	0.568
125.00	-13.40	-25.12	0.00	-941.56	0.00	941.56	2504.96	1252.48	3660.03	1816.99	71.46	-5.700	0.000	0.524
127.09	-12.99	-24.81	0.00	-889.16	0.00	889.16	2484.39	1242.20	3585.78	1780.13	73.97	-5.797	0.000	0.505
130.00	-12.14	-24.33	0.00	-816.89	0.00	816.89	2455.29	1227.64	3482.76	1728.99	77.55	-5.928	0.000	0.478
132.34	-11.46	-23.95	0.00	-760.04	0.00	760.04	1489.26	744.63	2121.49	1053.20	80.47	-6.030	0.000	0.730
135.00	-11.04	-23.58	0.00	-696.24	0.00	696.24	1477.63	738.82	2071.36	1028.31	83.86	-6.142	0.000	0.686
140.00	-10.30	-22.86	0.00	-578.34	0.00	578.34	1454.76	727.38	1977.27	981.60	90.42	-6.405	0.000	0.597
145.00	-9.59	-22.16	0.00	-464.02	0.00	464.02	1430.53	715.26	1883.34	934.97	97.25	-6.641	0.000	0.504
150.00	-8.91	-21.45	0.00	-353.24	0.00	353.24	1404.94	702.47	1789.74	888.50	104.30	-6.845	0.000	0.405
155.00	-8.28	-20.75	0.00	-245.98	0.00	245.98	1377.99	688.99	1696.65	842.29	111.55	-7.009	0.000	0.299
157.00	-6.22	-14.73	0.00	-204.47	0.00	204.47	1366.83	683.41	1659.60	823.90	114.49	-7.064	0.000	0.253
160.00	-5.90	-14.33	0.00	-160.28	0.00	160.28	1349.68	674.84	1604.25	796.42	118.94	-7.133	0.000	0.206
165.00	-5.40	-13.66	0.00	-88.65	0.00	88.65	1320.02	660.01	1512.71	750.97	126.44	-7.217	0.000	0.123
167.00	-2.79	-6.41	0.00	-61.33	0.00	61.33	1307.77	653.89	1476.37	732.93	129.46	-7.240	0.000	0.086
170.00	-2.55	-6.03	0.00	-42.10	0.00	42.10	1289.00	644.50	1422.20	706.04	134.01	-7.264	0.000	0.062
175.00	-2.18	-5.41	0.00	-11.95	0.00	11.95	1256.62	628.31	1332.89	661.70	141.61	-7.287	0.000	0.020
177.00	-0.18	-0.38	0.00	-1.13	0.00	1.13	1243.29	621.64	1297.54	644.16	144.66	-7.290	0.000	0.002
180.00	0.00	-0.35	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	149.23	-7.290	0.000	0.000

Wind Loading - Shaft

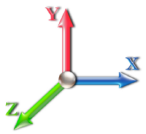
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	493.51	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	485.08	0.750	0.000	5.00	25.272	18.95	760.3	0.0	1263.4
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	5.00	24.837	18.63	747.2	0.0	1241.4
15.00		1.00	0.85	22.791	25.07	468.21	0.750	0.000	5.00	24.401	18.30	734.1	0.0	1219.5
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	5.00	23.966	17.97	765.0	0.0	1197.6
25.00		1.00	0.95	25.345	27.88	475.97	0.750	0.000	5.00	23.530	17.65	787.2	0.0	1175.6
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	5.00	23.095	17.32	802.9	0.0	1153.7
35.00		1.00	1.01	27.206	29.93	474.71	0.750	0.000	5.00	22.659	16.99	813.7	0.0	1131.8
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	5.00	22.224	16.67	820.8	0.0	1109.8
45.00		1.00	1.07	28.684	31.55	468.51	0.750	0.000	5.00	21.788	16.34	825.0	0.0	1087.9
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	0.92	3.947	2.96	150.1	0.0	197.1
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	4.08	17.666	13.25	683.9	0.0	1625.0
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	3.00	12.794	9.60	501.4	0.0	1176.6
55.00		1.00	1.12	29.922	32.91	466.26	0.750	0.000	2.00	8.442	6.33	333.4	0.0	361.3
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	5.00	20.800	15.60	836.7	0.0	890.0
65.00		1.00	1.16	30.993	34.09	454.87	0.750	0.000	5.00	20.365	15.27	833.1	0.0	871.2
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	5.00	19.929	14.95	828.1	0.0	852.4
75.00		1.00	1.19	31.941	35.13	441.81	0.750	0.000	5.00	19.494	14.62	821.9	0.0	833.6
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	5.00	19.058	14.29	814.5	0.0	814.9
85.00		1.00	1.22	32.793	36.07	427.44	0.750	0.000	5.00	18.623	13.97	806.1	0.0	796.1
90.00		1.00	1.24	33.190	36.51	419.84	0.750	0.000	5.00	18.187	13.64	796.8	0.0	777.3
92.92	Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	2.92	10.408	7.81	459.1	0.0	444.8
95.00		1.00	1.25	33.570	36.93	412.01	0.750	0.000	2.08	7.454	5.59	330.3	0.0	580.1
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	3.92	13.810	10.36	617.2	0.0	1074.3
100.00		1.00	1.27	33.935	37.33	410.23	0.750	0.000	1.08	3.773	2.83	169.0	0.0	134.7
105.00		1.00	1.28	34.285	37.71	402.00	0.750	0.000	5.00	17.147	12.86	776.0	0.0	612.3
110.00		1.00	1.29	34.623	38.08	393.58	0.750	0.000	5.00	16.711	12.53	763.7	0.0	596.6
115.00		1.00	1.30	34.948	38.44	384.99	0.750	0.000	5.00	16.276	12.21	750.8	0.0	581.0
120.00		1.00	1.32	35.263	38.79	376.23	0.750	0.000	5.00	15.840	11.88	737.3	0.0	565.3
125.00		1.00	1.33	35.567	39.12	367.32	0.750	0.000	5.00	15.405	11.55	723.2	0.0	549.6
127.09	Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	2.09	6.300	4.73	296.8	0.0	224.7
130.00		1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.91	8.777	6.58	415.5	0.0	528.9
132.34	Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	2.34	6.933	5.20	329.4	0.0	417.6
135.00		1.00	1.35	36.148	39.76	353.60	0.750	0.000	2.66	7.787	5.84	371.5	0.0	194.8
140.00		1.00	1.36	36.426	40.07	344.30	0.750	0.000	5.00	14.284	10.71	686.8	0.0	357.3
145.00		1.00	1.37	36.696	40.37	334.88	0.750	0.000	5.00	13.849	10.39	670.8	0.0	346.4
150.00		1.00	1.38	36.959	40.65	325.34	0.750	0.000	5.00	13.413	10.06	654.4	0.0	335.4
155.00		1.00	1.39	37.215	40.94	315.69	0.750	0.000	5.00	12.978	9.73	637.5	0.0	324.4
157.00	Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	2.00	5.069	3.80	249.7	0.0	126.7
160.00		1.00	1.40	37.464	41.21	305.93	0.750	0.000	3.00	7.473	5.60	369.6	0.0	186.8
165.00		1.00	1.41	37.708	41.48	296.08	0.750	0.000	5.00	12.107	9.08	602.6	0.0	302.5
167.00	Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	2.00	4.721	3.54	235.6	0.0	117.9
170.00		1.00	1.42	37.946	41.74	286.13	0.750	0.000	3.00	6.950	5.21	348.1	0.0	173.6
175.00		1.00	1.42	38.178	42.00	276.09	0.750	0.000	5.00	11.236	8.43	566.2	0.0	280.6
177.00	Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	2.00	4.372	3.28	220.9	0.0	109.2
180.00	Appurtenance(s)	1.00	1.43	38.405	42.25	265.97	0.750	0.000	3.00	6.428	4.82	325.9	0.0	160.5

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Totals:	**180.00**	**26,770.1**	**29,102.1**

Discrete Appurtenance Forces

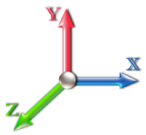
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	38.405	42.245	1.00	1.00	0.38	5.85	0.000	0.000	25.69	0.00	0.00
2	177.00	KRY 112 144/1	3	38.269	42.096	0.50	0.75	0.62	29.70	0.000	0.000	41.63	0.00	0.00
3	177.00	782 11056	3	38.269	42.096	0.50	0.75	0.42	4.86	0.000	0.000	28.43	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1440.00	0.000	0.000	2155.32	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	38.269	42.096	0.55	0.75	5.93	50.49	0.000	0.000	399.37	0.00	0.00
6	177.00	LNX-6515DS-VTM	3	38.269	42.096	0.60	0.75	20.65	134.46	0.000	0.000	1390.59	0.00	0.00
7	177.00	Fastback Networks - IBR	1	38.269	42.096	1.00	1.00	0.67	8.01	0.000	0.000	45.13	0.00	0.00
8	177.00	MS-KI22-5 (Kickers w/o	1	38.269	42.096	1.00	1.00	5.33	131.40	0.000	0.000	359.00	0.00	0.00
9	177.00	Pipe Mount	1	38.269	42.096	0.56	0.75	1.48	36.00	0.000	0.000	99.64	0.00	0.00
10	167.00	Raycap	2	37.804	41.584	0.67	0.80	5.09	57.60	0.000	0.000	338.91	0.00	0.00
11	167.00	Alcatel-Lucent B4 RRH	3	37.804	41.584	0.64	0.80	4.99	172.80	0.000	0.000	332.14	0.00	0.00
12	167.00	Alcatel-Lucent B13	3	37.804	41.584	0.70	0.80	4.56	154.44	0.000	0.000	303.52	0.00	0.00
13	167.00	SBNHH-1D65B	6	37.804	41.584	0.66	0.80	32.51	216.00	0.000	0.000	2162.99	0.00	0.00
14	167.00	LPA-80080-4CF-EDIN-0	6	37.804	41.584	0.80	0.80	12.53	64.80	0.000	0.000	833.54	0.00	0.00
15	167.00	Platform w/ Hand Rails	1	37.804	41.584	1.00	1.00	40.00	1800.00	0.000	0.000	2661.37	0.00	0.00
16	157.00	DMP65R-BU8DA	1	37.315	41.047	0.80	0.80	14.30	47.25	0.000	0.000	938.89	0.00	0.00
17	157.00	Low Profile Platform-flat	1	37.315	41.047	1.00	1.00	25.00	1080.00	0.000	0.000	1641.87	0.00	0.00
18	157.00	7770	3	37.315	41.047	0.58	0.80	9.64	94.50	0.000	0.000	632.84	0.00	0.00
19	157.00	DMP65R-BU4DA	2	37.315	41.047	0.66	0.80	10.50	122.22	0.000	0.000	689.32	0.00	0.00
20	157.00	HPA65R-BU8A	1	37.315	41.047	0.80	0.80	8.98	68.85	0.000	0.000	590.02	0.00	0.00
21	157.00	HPA65R-BU4A	2	37.315	41.047	0.80	0.80	7.94	51.66	0.000	0.000	521.20	0.00	0.00
22	157.00	4449 B5/B12	3	37.315	41.047	0.54	0.80	3.17	191.70	0.000	0.000	208.04	0.00	0.00
23	157.00	8843 B2/B66A	3	37.315	41.047	0.67	1.00	3.30	194.40	0.000	0.000	216.49	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.80	0.80	0.74	28.62	0.000	0.000	48.34	0.00	0.00
							Totals:		**6,185.61**			**16,664.29**		

Total Applied Force Summary

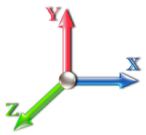
Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		760.28	1444.71	0.00	0.00
10.00		747.18	1422.78	0.00	0.00
15.00		734.08	1400.84	0.00	0.00
20.00		764.99	1378.91	0.00	0.00
25.00		787.21	1356.98	0.00	0.00
30.00		802.88	1335.05	0.00	0.00
35.00		813.72	1313.12	0.00	0.00
40.00		820.83	1291.18	0.00	0.00
45.00		824.95	1269.25	0.00	0.00
45.92		150.09	230.32	0.00	0.00
50.00		683.87	1773.08	0.00	0.00
53.00		501.38	1285.37	0.00	0.00
55.00		333.43	433.79	0.00	0.00
60.00		836.72	1071.33	0.00	0.00
65.00		833.12	1052.55	0.00	0.00
70.00		828.13	1033.78	0.00	0.00
75.00		821.88	1015.00	0.00	0.00
80.00		814.51	996.22	0.00	0.00
85.00		806.12	977.44	0.00	0.00
90.00		796.80	958.67	0.00	0.00
92.92		459.06	550.55	0.00	0.00
95.00		330.33	655.62	0.00	0.00
98.92		617.17	1216.37	0.00	0.00
100.00		168.99	174.02	0.00	0.00
105.00		776.00	793.65	0.00	0.00
110.00		763.73	777.98	0.00	0.00
115.00		750.82	762.30	0.00	0.00
120.00		737.31	746.63	0.00	0.00
125.00		723.22	730.96	0.00	0.00
127.09		296.81	300.42	0.00	0.00
130.00		415.51	634.52	0.00	0.00
132.34		329.44	502.39	0.00	0.00
135.00		371.54	291.42	0.00	0.00
140.00		686.82	538.69	0.00	0.00
145.00		670.81	527.73	0.00	0.00
150.00		654.37	516.76	0.00	0.00
155.00		637.51	505.79	0.00	0.00
157.00	(17) attachments	5736.71	2078.45	0.00	0.00
160.00		369.57	259.56	0.00	0.00
165.00		602.60	423.83	0.00	0.00
167.00	(21) attachments	6868.05	2632.10	0.00	0.00
170.00		348.14	207.96	0.00	0.00
175.00		566.22	337.82	0.00	0.00
177.00	(16) attachments	4739.98	1966.98	0.00	0.00
180.00	(1) attachments	351.54	166.30	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Tower Engineering Solutions

Totals:	**43,434.42**	**41,339.20**	**0.00**	**0.00**

Calculated Forces

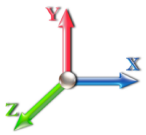
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-41.26	-43.51	0.00	-5272.8	0.00	5272.85	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.792
5.00	-39.67	-42.88	0.00	-5055.3	0.00	5055.32	5452.09	2726.05	13177.2	6541.73	0.11	-0.197	0.000	0.780
10.00	-38.11	-42.26	0.00	-4840.9	0.00	4840.92	5394.71	2697.35	12808.5	6358.68	0.42	-0.396	0.000	0.769
15.00	-36.56	-41.64	0.00	-4629.6	0.00	4629.62	5335.97	2667.98	12441.5	6176.49	0.94	-0.596	0.000	0.757
20.00	-35.05	-40.99	0.00	-4421.4	0.00	4421.42	5275.87	2637.93	12076.4	5995.24	1.68	-0.799	0.000	0.744
25.00	-33.56	-40.30	0.00	-4216.4	0.00	4216.49	5214.41	2607.20	11713.3	5815.02	2.62	-1.003	0.000	0.732
30.00	-32.10	-39.58	0.00	-4015.0	0.00	4015.01	5151.59	2575.80	11352.6	5635.92	3.78	-1.208	0.000	0.719
35.00	-30.67	-38.85	0.00	-3817.0	0.00	3817.09	5087.42	2543.71	10994.2	5458.02	5.16	-1.415	0.000	0.706
40.00	-29.26	-38.10	0.00	-3622.8	0.00	3622.84	5021.88	2510.94	10638.5	5281.41	6.75	-1.624	0.000	0.692
45.00	-27.93	-37.30	0.00	-3432.3	0.00	3432.32	4954.99	2477.50	10285.5	5106.18	8.57	-1.834	0.000	0.678
45.92	-27.64	-37.20	0.00	-3398.1	0.00	3398.12	4942.58	2471.29	10221.1	5074.21	8.92	-1.873	0.000	0.676
50.00	-25.79	-36.52	0.00	-3246.2	0.00	3246.24	4886.75	2443.37	9935.52	4932.41	10.60	-2.047	0.000	0.664
53.00	-24.46	-36.02	0.00	-3136.6	0.00	3136.68	3967.43	1983.71	8109.29	4025.79	11.93	-2.175	0.000	0.786
55.00	-23.94	-35.74	0.00	-3064.6	0.00	3064.65	3947.58	1973.79	8001.39	3972.23	12.86	-2.262	0.000	0.778
60.00	-22.76	-34.95	0.00	-2885.9	0.00	2885.97	3897.00	1948.50	7732.70	3838.84	15.35	-2.499	0.000	0.758
65.00	-21.60	-34.16	0.00	-2711.2	0.00	2711.23	3845.06	1922.53	7465.70	3706.29	18.10	-2.736	0.000	0.737
70.00	-20.47	-33.37	0.00	-2540.4	0.00	2540.44	3791.77	1895.89	7200.54	3574.65	21.09	-2.973	0.000	0.716
75.00	-19.37	-32.57	0.00	-2373.6	0.00	2373.61	3737.12	1868.56	6937.41	3444.02	24.33	-3.210	0.000	0.695
80.00	-18.29	-31.77	0.00	-2210.7	0.00	2210.76	3681.11	1840.56	6676.48	3314.49	27.82	-3.447	0.000	0.672
85.00	-17.24	-30.98	0.00	-2051.8	0.00	2051.89	3623.74	1811.87	6417.92	3186.13	31.55	-3.683	0.000	0.649
90.00	-16.24	-30.17	0.00	-1896.9	0.00	1896.99	3565.02	1782.51	6161.91	3059.03	35.53	-3.918	0.000	0.625
92.92	-15.66	-29.71	0.00	-1808.9	0.00	1808.98	3530.13	1765.07	6013.81	2985.51	37.97	-4.056	0.000	0.611
95.00	-14.96	-29.37	0.00	-1747.0	0.00	1747.08	3504.93	1752.47	5908.61	2933.28	39.76	-4.155	0.000	0.600
98.92	-13.73	-28.69	0.00	-1632.0	0.00	1632.05	2742.07	1371.04	4616.42	2291.78	43.24	-4.337	0.000	0.718
100.00	-13.49	-28.55	0.00	-1600.9	0.00	1600.96	2732.96	1366.48	4575.83	2271.63	44.23	-4.388	0.000	0.710
105.00	-12.64	-27.77	0.00	-1458.2	0.00	1458.22	2690.08	1345.04	4389.32	2179.04	48.96	-4.646	0.000	0.674
110.00	-11.81	-27.00	0.00	-1319.3	0.00	1319.37	2645.83	1322.92	4204.31	2087.20	53.96	-4.900	0.000	0.637
115.00	-11.01	-26.23	0.00	-1184.4	0.00	1184.40	2600.23	1300.12	4020.98	1996.19	59.22	-5.147	0.000	0.598
120.00	-10.22	-25.47	0.00	-1053.2	0.00	1053.26	2553.28	1276.64	3839.50	1906.09	64.73	-5.387	0.000	0.557
125.00	-9.50	-24.70	0.00	-925.92	0.00	925.92	2504.96	1252.48	3660.03	1816.99	70.49	-5.617	0.000	0.514
127.09	-9.18	-24.40	0.00	-874.37	0.00	874.37	2484.39	1242.20	3585.78	1780.13	72.96	-5.712	0.000	0.495
130.00	-8.54	-23.94	0.00	-803.30	0.00	803.30	2455.29	1227.64	3482.76	1728.99	76.48	-5.840	0.000	0.468
132.34	-8.03	-23.57	0.00	-747.37	0.00	747.37	1489.26	744.63	2121.49	1053.20	79.36	-5.941	0.000	0.716
135.00	-7.71	-23.20	0.00	-684.59	0.00	684.59	1477.63	738.82	2071.36	1028.31	82.70	-6.051	0.000	0.672
140.00	-7.15	-22.49	0.00	-568.60	0.00	568.60	1454.76	727.38	1977.27	981.60	89.17	-6.310	0.000	0.585
145.00	-6.62	-21.79	0.00	-456.16	0.00	456.16	1430.53	715.26	1883.34	934.97	95.89	-6.542	0.000	0.493
150.00	-6.11	-21.10	0.00	-347.23	0.00	347.23	1404.94	702.47	1789.74	888.50	102.84	-6.742	0.000	0.396
155.00	-5.65	-20.41	0.00	-241.74	0.00	241.74	1377.99	688.99	1696.65	842.29	109.98	-6.904	0.000	0.292
157.00	-4.26	-14.47	0.00	-200.91	0.00	200.91	1366.83	683.41	1659.60	823.90	112.88	-6.957	0.000	0.247
160.00	-4.03	-14.08	0.00	-157.50	0.00	157.50	1349.68	674.84	1604.25	796.42	117.26	-7.026	0.000	0.201
165.00	-3.67	-13.43	0.00	-87.10	0.00	87.10	1320.02	660.01	1512.71	750.97	124.65	-7.108	0.000	0.119
167.00	-1.91	-6.29	0.00	-60.23	0.00	60.23	1307.77	653.89	1476.37	732.93	127.62	-7.130	0.000	0.084
170.00	-1.75	-5.92	0.00	-41.35	0.00	41.35	1289.00	644.50	1422.20	706.04	132.10	-7.154	0.000	0.060
175.00	-1.48	-5.32	0.00	-11.74	0.00	11.74	1256.62	628.31	1332.89	661.70	139.59	-7.177	0.000	0.019
177.00	-0.12	-0.37	0.00	-1.11	0.00	1.11	1243.29	621.64	1297.54	644.16	142.59	-7.179	0.000	0.002
180.00	0.00	-0.35	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	147.09	-7.180	0.000	0.000

Wind Loading - Shaft

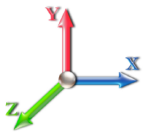
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	26.307	31.57	179.5	472.8	2157.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.946	31.14	177.0	498.9	2154.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	25.556	30.67	174.3	511.0	2137.0
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	25.154	30.19	182.1	517.0	2113.8
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	24.746	29.69	187.7	519.5	2087.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	24.333	29.20	191.8	519.7	2057.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	23.916	28.70	194.8	518.2	2027.2
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	23.498	28.20	196.8	515.4	1995.2
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	23.077	27.69	198.1	511.7	1962.2
45.92	Bot - Section 2	1.00	1.07	6.532	7.19	0.00	1.200	1.550	0.92	4.184	5.02	36.1	93.7	356.4
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	4.08	18.730	22.48	164.4	420.2	2586.9
53.00	Top - Section 1	1.00	1.11	6.732	7.41	0.00	1.200	1.573	3.00	13.580	16.30	120.7	306.9	1875.7
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.00	8.968	10.76	80.3	203.8	685.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	22.127	26.55	201.8	503.6	1690.3
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.702	26.04	201.3	497.4	1659.0
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.277	25.53	200.5	490.8	1627.3
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	20.851	25.02	199.3	483.7	1595.2
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	20.424	24.51	197.9	476.3	1562.8
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	19.997	24.00	196.3	468.6	1530.1
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	19.569	23.48	194.4	460.7	1497.1
92.92	Bot - Section 3	1.00	1.25	7.577	8.33	0.00	1.200	1.664	2.92	11.217	13.46	112.2	265.9	859.0
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.08	8.033	9.64	80.7	191.3	964.7
98.92	Top - Section 2	1.00	1.26	7.677	8.45	0.00	1.200	1.674	3.92	14.902	17.88	151.0	354.4	1786.9
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.08	4.075	4.89	41.4	97.6	277.3
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	18.550	22.26	190.4	442.0	1258.4
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.121	21.75	187.8	433.2	1228.7
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	17.692	21.23	185.1	424.2	1198.8
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.262	20.71	182.2	415.0	1168.7
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	16.833	20.20	179.2	405.6	1138.5
127.09	Bot - Section 4	1.00	1.33	8.093	8.90	0.00	1.200	1.717	2.09	6.897	8.28	73.7	167.6	467.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	2.91	9.613	11.54	103.2	233.6	938.8
132.34	Top - Section 3	1.00	1.34	8.163	8.98	0.00	1.200	1.723	2.34	7.604	9.13	81.9	185.3	742.1
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	2.66	8.553	10.26	92.5	208.4	468.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	15.729	18.87	171.5	381.6	858.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	15.298	18.36	168.0	371.7	833.5
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	14.868	17.84	164.5	361.7	808.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	14.437	17.32	160.8	351.6	784.2
157.00	Appurtenance(s)	1.00	1.39	8.462	9.31	0.00	1.200	1.753	2.00	5.654	6.78	63.1	139.0	308.0
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	3.00	8.351	10.02	93.7	204.8	453.9
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	13.575	16.29	153.2	331.1	734.4
167.00	Appurtenance(s)	1.00	1.41	8.572	9.43	0.00	1.200	1.764	2.00	5.309	6.37	60.1	130.8	288.0
170.00		1.00	1.42	8.604	9.46	0.00	1.200	1.767	3.00	7.834	9.40	89.0	192.4	423.9
175.00		1.00	1.42	8.657	9.52	0.00	1.200	1.772	5.00	12.713	15.26	145.3	310.2	684.3
177.00	Appurtenance(s)	1.00	1.43	8.678	9.55	0.00	1.200	1.774	2.00	4.964	5.96	56.9	122.4	267.9
180.00	Appurtenance(s)	1.00	1.43	8.709	9.58	0.00	1.200	1.777	3.00	7.317	8.78	84.1	179.8	393.7

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Totals:	**180.00**	**6,546.6**	**54,694.0**

Discrete Appurtenance Forces

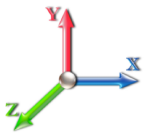
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	8.709	9.579	0.00	1.00	1.49	39.47	0.000	0.000	14.25	0.00	0.00
2	177.00	KRY 112 144/1	3	8.678	9.546	0.50	0.75	1.35	63.18	0.000	0.000	12.85	0.00	0.00
3	177.00	782 11056	3	8.678	9.546	0.50	0.75	1.04	12.17	0.000	0.000	9.90	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	8.678	9.546	1.00	1.00	60.39	3454.89	0.000	0.000	576.45	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	8.678	9.546	0.55	0.75	9.03	221.05	0.000	0.000	86.21	0.00	0.00
6	177.00	LNX-6515DS-VTM	3	8.678	9.546	0.60	0.75	26.60	682.79	0.000	0.000	253.87	0.00	0.00
7	177.00	Fastback Networks - IBR	1	8.678	9.546	1.00	1.00	1.02	24.76	0.000	0.000	9.76	0.00	0.00
8	177.00	MS-KI22-5 (Kickers w/o	1	8.678	9.546	1.00	1.00	11.00	318.44	0.000	0.000	105.04	0.00	0.00
9	177.00	Pipe Mount	1	8.678	9.546	0.56	0.75	4.89	106.62	0.000	0.000	46.70	0.00	0.00
10	167.00	Raycap	2	8.572	9.429	0.67	0.80	6.39	258.70	0.000	0.000	60.27	0.00	0.00
11	167.00	Alcatel-Lucent B4 RRH	3	8.572	9.429	0.64	0.80	6.36	484.54	0.000	0.000	59.97	0.00	0.00
12	167.00	Alcatel-Lucent B13	3	8.572	9.429	0.70	0.80	5.87	348.91	0.000	0.000	55.31	0.00	0.00
13	167.00	SBNHH-1D65B	6	8.572	9.429	0.66	0.80	37.75	1522.50	0.000	0.000	355.95	0.00	0.00
14	167.00	LPA-80080-4CF-EDIN-0	6	8.572	9.429	0.80	0.80	16.67	909.75	0.000	0.000	157.20	0.00	0.00
15	167.00	Platform w/ Hand Rails	1	8.572	9.429	1.00	1.00	61.17	3916.86	0.000	0.000	576.79	0.00	0.00
16	157.00	DMP65R-BU8DA	1	8.462	9.308	0.80	0.80	15.95	164.45	0.000	0.000	148.46	0.00	0.00
17	157.00	Low Profile Platform-flat	1	8.462	9.308	1.00	1.00	46.04	2191.92	0.000	0.000	428.51	0.00	0.00
18	157.00	7770	3	8.462	9.308	0.58	0.80	11.51	533.80	0.000	0.000	107.14	0.00	0.00
19	157.00	DMP65R-BU4DA	2	8.462	9.308	0.66	0.80	11.71	511.43	0.000	0.000	109.00	0.00	0.00
20	157.00	HPA65R-BU8A	1	8.462	9.308	0.80	0.80	10.02	306.68	0.000	0.000	93.30	0.00	0.00
21	157.00	HPA65R-BU4A	2	8.462	9.308	0.80	0.80	8.85	46.79	0.000	0.000	82.41	0.00	0.00
22	157.00	4449 B5/B12	3	8.462	9.308	0.54	0.80	4.05	375.67	0.000	0.000	37.71	0.00	0.00
23	157.00	8843 B2/B66A	3	8.462	9.308	0.67	1.00	4.30	364.38	0.000	0.000	40.02	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	8.462	9.308	0.80	0.80	1.09	82.57	0.000	0.000	10.13	0.00	0.00
							Totals:		**16,942.32**			**3,437.19**		

Total Applied Force Summary

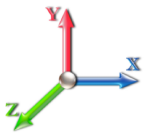
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		179.46	2399.10	0.00	0.00
10.00		177.00	2395.90	0.00	0.00
15.00		174.34	2378.78	0.00	0.00
20.00		182.07	2355.56	0.00	0.00
25.00		187.73	2328.82	0.00	0.00
30.00		191.82	2299.75	0.00	0.00
35.00		194.76	2269.01	0.00	0.00
40.00		196.80	2237.02	0.00	0.00
45.00		198.13	2204.02	0.00	0.00
45.92		36.08	400.76	0.00	0.00
50.00		164.41	2784.33	0.00	0.00
53.00		120.68	2020.74	0.00	0.00
55.00		80.32	782.14	0.00	0.00
60.00		201.84	1932.09	0.00	0.00
65.00		201.33	1900.82	0.00	0.00
70.00		200.48	1869.12	0.00	0.00
75.00		199.34	1837.04	0.00	0.00
80.00		197.93	1804.62	0.00	0.00
85.00		196.28	1771.89	0.00	0.00
90.00		194.41	1738.88	0.00	0.00
92.92		112.18	1000.01	0.00	0.00
95.00		80.72	1065.43	0.00	0.00
98.92		151.02	1976.27	0.00	0.00
100.00		41.39	329.67	0.00	0.00
105.00		190.36	1500.20	0.00	0.00
110.00		187.79	1470.48	0.00	0.00
115.00		185.07	1440.57	0.00	0.00
120.00		182.20	1410.50	0.00	0.00
125.00		179.20	1380.26	0.00	0.00
127.09		73.68	568.20	0.00	0.00
130.00		103.19	1079.64	0.00	0.00
132.34		81.93	855.13	0.00	0.00
135.00		92.54	597.00	0.00	0.00
140.00		171.49	1099.83	0.00	0.00
145.00		168.03	1075.34	0.00	0.00
150.00		164.47	1050.73	0.00	0.00
155.00		160.81	1026.01	0.00	0.00
157.00	(17) attachments	1119.82	4982.36	0.00	0.00
160.00		93.65	550.93	0.00	0.00
165.00		153.22	896.21	0.00	0.00
167.00	(21) attachments	1325.54	7793.99	0.00	0.00
170.00		88.98	469.69	0.00	0.00
175.00		145.27	760.61	0.00	0.00
177.00	(16) attachments	1157.65	5182.37	0.00	0.00
180.00	(1) attachments	98.36	433.16	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Tower Engineering Solutions

Totals:	**9,983.80**	**79,704.97**	**0.00**	**0.00**

Calculated Forces

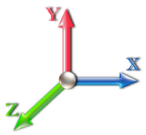
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-79.70	-10.02	0.00	-1243.4	0.00	1243.41	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.199
5.00	-77.29	-9.90	0.00	-1193.3	0.00	1193.33	5452.09	2726.05	13177.2	6541.73	0.02	-0.046	0.000	0.197
10.00	-74.89	-9.78	0.00	-1143.8	0.00	1143.83	5394.71	2697.35	12808.5	6358.68	0.10	-0.093	0.000	0.194
15.00	-72.50	-9.66	0.00	-1094.9	0.00	1094.93	5335.97	2667.98	12441.5	6176.49	0.22	-0.141	0.000	0.191
20.00	-70.14	-9.53	0.00	-1046.6	0.00	1046.63	5275.87	2637.93	12076.4	5995.24	0.40	-0.189	0.000	0.188
25.00	-67.80	-9.39	0.00	-998.97	0.00	998.97	5214.41	2607.20	11713.3	5815.02	0.62	-0.237	0.000	0.185
30.00	-65.50	-9.25	0.00	-952.00	0.00	952.00	5151.59	2575.80	11352.6	5635.92	0.89	-0.286	0.000	0.182
35.00	-63.22	-9.09	0.00	-905.77	0.00	905.77	5087.42	2543.71	10994.2	5458.02	1.22	-0.335	0.000	0.178
40.00	-60.98	-8.94	0.00	-860.31	0.00	860.31	5021.88	2510.94	10638.5	5281.41	1.60	-0.384	0.000	0.175
45.00	-58.77	-8.75	0.00	-815.63	0.00	815.63	4954.99	2477.50	10285.5	5106.18	2.03	-0.434	0.000	0.172
45.92	-58.37	-8.74	0.00	-807.61	0.00	807.61	4942.58	2471.29	10221.1	5074.21	2.11	-0.444	0.000	0.171
50.00	-55.58	-8.59	0.00	-771.92	0.00	771.92	4886.75	2443.37	9935.52	4932.41	2.51	-0.485	0.000	0.168
53.00	-53.56	-8.47	0.00	-746.16	0.00	746.16	3967.43	1983.71	8109.29	4025.79	2.82	-0.515	0.000	0.199
55.00	-52.77	-8.42	0.00	-729.22	0.00	729.22	3947.58	1973.79	8001.39	3972.23	3.04	-0.536	0.000	0.197
60.00	-50.83	-8.25	0.00	-687.12	0.00	687.12	3897.00	1948.50	7732.70	3838.84	3.63	-0.592	0.000	0.192
65.00	-48.92	-8.08	0.00	-645.87	0.00	645.87	3845.06	1922.53	7465.70	3706.29	4.29	-0.649	0.000	0.187
70.00	-47.05	-7.90	0.00	-605.50	0.00	605.50	3791.77	1895.89	7200.54	3574.65	5.00	-0.705	0.000	0.182
75.00	-45.21	-7.72	0.00	-566.00	0.00	566.00	3737.12	1868.56	6937.41	3444.02	5.76	-0.762	0.000	0.176
80.00	-43.40	-7.54	0.00	-527.39	0.00	527.39	3681.11	1840.56	6676.48	3314.49	6.59	-0.818	0.000	0.171
85.00	-41.62	-7.36	0.00	-489.68	0.00	489.68	3623.74	1811.87	6417.92	3186.13	7.48	-0.875	0.000	0.165
90.00	-39.88	-7.17	0.00	-452.89	0.00	452.89	3565.02	1782.51	6161.91	3059.03	8.43	-0.931	0.000	0.159
92.92	-38.88	-7.06	0.00	-431.98	0.00	431.98	3530.13	1765.07	6013.81	2985.51	9.01	-0.964	0.000	0.156
95.00	-37.81	-6.98	0.00	-417.27	0.00	417.27	3504.93	1752.47	5908.61	2933.28	9.43	-0.987	0.000	0.153
98.92	-35.84	-6.81	0.00	-389.92	0.00	389.92	2742.07	1371.04	4616.42	2291.78	10.26	-1.031	0.000	0.183
100.00	-35.50	-6.79	0.00	-382.54	0.00	382.54	2732.96	1366.48	4575.83	2271.63	10.50	-1.043	0.000	0.181
105.00	-34.00	-6.61	0.00	-348.59	0.00	348.59	2690.08	1345.04	4389.32	2179.04	11.62	-1.105	0.000	0.173
110.00	-32.53	-6.43	0.00	-315.55	0.00	315.55	2645.83	1322.92	4204.31	2087.20	12.81	-1.165	0.000	0.164
115.00	-31.08	-6.24	0.00	-283.43	0.00	283.43	2600.23	1300.12	4020.98	1996.19	14.06	-1.225	0.000	0.154
120.00	-29.67	-6.06	0.00	-252.22	0.00	252.22	2553.28	1276.64	3839.50	1906.09	15.38	-1.282	0.000	0.144
125.00	-28.29	-5.87	0.00	-221.94	0.00	221.94	2504.96	1252.48	3660.03	1816.99	16.75	-1.337	0.000	0.133
127.09	-27.72	-5.79	0.00	-209.70	0.00	209.70	2484.39	1242.20	3585.78	1780.13	17.34	-1.360	0.000	0.129
130.00	-26.64	-5.68	0.00	-192.82	0.00	192.82	2455.29	1227.64	3482.76	1728.99	18.18	-1.391	0.000	0.122
132.34	-25.79	-5.58	0.00	-179.56	0.00	179.56	1489.26	744.63	2121.49	1053.20	18.87	-1.415	0.000	0.188
135.00	-25.19	-5.50	0.00	-164.69	0.00	164.69	1477.63	738.82	2071.36	1028.31	19.66	-1.441	0.000	0.177
140.00	-24.09	-5.32	0.00	-137.21	0.00	137.21	1454.76	727.38	1977.27	981.60	21.21	-1.504	0.000	0.156
145.00	-23.01	-5.15	0.00	-110.60	0.00	110.60	1430.53	715.26	1883.34	934.97	22.81	-1.560	0.000	0.134
150.00	-21.96	-4.97	0.00	-84.87	0.00	84.87	1404.94	702.47	1789.74	888.50	24.47	-1.608	0.000	0.111
155.00	-20.94	-4.79	0.00	-60.02	0.00	60.02	1377.99	688.99	1696.65	842.29	26.18	-1.648	0.000	0.086
157.00	-15.99	-3.53	0.00	-50.44	0.00	50.44	1366.83	683.41	1659.60	823.90	26.87	-1.662	0.000	0.073
160.00	-15.44	-3.43	0.00	-39.85	0.00	39.85	1349.68	674.84	1604.25	796.42	27.92	-1.679	0.000	0.062
165.00	-14.55	-3.25	0.00	-22.72	0.00	22.72	1320.02	660.01	1512.71	750.97	29.69	-1.700	0.000	0.041
167.00	-6.80	-1.69	0.00	-16.22	0.00	16.22	1307.77	653.89	1476.37	732.93	30.41	-1.706	0.000	0.027
170.00	-6.33	-1.59	0.00	-11.14	0.00	11.14	1289.00	644.50	1422.20	706.04	31.48	-1.712	0.000	0.021
175.00	-5.58	-1.42	0.00	-3.18	0.00	3.18	1256.62	628.31	1332.89	661.70	33.28	-1.718	0.000	0.009
177.00	-0.43	-0.11	0.00	-0.33	0.00	0.33	1243.29	621.64	1297.54	644.16	34.00	-1.719	0.000	0.001
180.00	0.00	-0.10	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	35.08	-1.719	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33		**SA**	0.01	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1403.7	0.00	0.03	0.02	18.08	
10.00		1379.3	0.01	0.05	0.03	25.18	
15.00		1354.9	0.01	0.06	0.03	28.45	
20.00		1330.6	0.02	0.07	0.04	29.91	
25.00		1306.2	0.04	0.07	0.04	30.47	
30.00		1281.8	0.05	0.07	0.04	30.64	
35.00		1257.5	0.07	0.07	0.04	30.67	
40.00		1233.1	0.09	0.07	0.04	30.70	
45.00		1208.7	0.12	0.07	0.03	30.77	
45.92	Bot - Section 2	218.97	0.12	0.07	0.03	5.60	
50.00		1805.5	0.15	0.07	0.03	46.98	
53.00	Top - Section 1	1307.2	0.16	0.07	0.03	34.41	
55.00		401.39	0.18	0.07	0.03	10.63	
60.00		988.87	0.21	0.06	0.02	26.34	
65.00		968.00	0.25	0.06	0.02	25.36	
70.00		947.14	0.29	0.05	0.01	23.45	
75.00		926.28	0.33	0.04	0.01	20.19	
80.00		905.41	0.37	0.03	0.01	15.20	
85.00		884.55	0.42	0.01	0.01	8.35	
90.00		863.69	0.47	-0.01	0.01	0.15	
92.92	Bot - Section 3	494.18	0.50	-0.02	0.01	-2.79	
95.00		644.51	0.53	-0.03	0.01	-6.27	
98.92	Top - Section 2	1193.6	0.57	-0.04	0.01	-20.07	
100.00		149.70	0.58	-0.05	0.01	-2.78	
105.00		680.33	0.64	-0.07	0.02	-17.13	
110.00		662.92	0.71	-0.09	0.03	-19.30	
115.00		645.50	0.77	-0.11	0.05	-19.67	
120.00		628.09	0.84	-0.12	0.07	-18.49	
125.00		610.68	0.91	-0.12	0.09	-16.01	
127.09	Bot - Section 4	249.71	0.94	-0.12	0.10	-6.06	
130.00		587.62	0.99	-0.11	0.12	-12.29	
132.34	Top - Section 3	464.04	1.02	-0.10	0.14	-8.24	
135.00		216.47	1.06	-0.09	0.17	-2.95	
140.00		397.05	1.14	-0.04	0.21	-1.71	
145.00		384.86	1.23	0.03	0.27	2.69	
150.00		372.68	1.31	0.14	0.35	7.59	
155.00		360.49	1.40	0.29	0.43	12.91	
157.00	Appurtenance(s)	2228.7	1.44	0.36	0.47	94.89	
160.00		207.52	1.49	0.48	0.53	11.08	
165.00		336.12	1.59	0.74	0.65	24.59	
167.00	Appurtenance(s)	2870.6	1.63	0.86	0.71	234.46	
170.00		192.90	1.69	1.07	0.79	18.36	
175.00		311.76	1.79	1.48	0.95	37.24	
177.00	Appurtenance(s)	2160.0	1.83	1.67	1.03	280.43	
180.00	Appurtenance(s)	184.78	1.89	1.98	1.14	27.00	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Totals:	**39,208.5**	**1,069.0**	**Total Wind:**	**43,434.4**

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

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 23

Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.01			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.12	-1.23	0.00	-154.35	0.00	154.35	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.033
5.00	-53.19	-1.21	0.00	-148.22	0.00	148.22	5452.09	2726.05	13177.2	6541.73		0.00	-0.01	0.032
10.00	-51.30	-1.19	0.00	-142.16	0.00	142.16	5394.71	2697.35	12808.5	6358.68		0.01	-0.01	0.032
15.00	-49.43	-1.17	0.00	-136.20	0.00	136.20	5335.97	2667.98	12441.5	6176.49		0.03	-0.02	0.031
20.00	-47.59	-1.14	0.00	-130.36	0.00	130.36	5275.87	2637.93	12076.4	5995.24		0.05	-0.02	0.031
25.00	-45.78	-1.12	0.00	-124.65	0.00	124.65	5214.41	2607.20	11713.3	5815.02		0.08	-0.03	0.030
30.00	-44.00	-1.09	0.00	-119.07	0.00	119.07	5151.59	2575.80	11352.6	5635.92		0.11	-0.04	0.030
35.00	-42.25	-1.06	0.00	-113.62	0.00	113.62	5087.42	2543.71	10994.2	5458.02		0.15	-0.04	0.029
40.00	-40.53	-1.03	0.00	-108.31	0.00	108.31	5021.88	2510.94	10638.5	5281.41		0.20	-0.05	0.029
45.00	-38.83	-1.00	0.00	-103.14	0.00	103.14	4954.99	2477.50	10285.5	5106.18		0.25	-0.05	0.028
45.92	-38.53	-1.00	0.00	-102.22	0.00	102.22	4942.58	2471.29	10221.1	5074.21		0.26	-0.06	0.028
50.00	-36.16	-0.95	0.00	-98.14	0.00	98.14	4886.75	2443.37	9935.52	4932.41		0.31	-0.06	0.027
53.00	-34.45	-0.92	0.00	-95.27	0.00	95.27	3967.43	1983.71	8109.29	4025.79		0.35	-0.06	0.032
55.00	-33.87	-0.91	0.00	-93.43	0.00	93.43	3947.58	1973.79	8001.39	3972.23		0.38	-0.07	0.032
60.00	-32.44	-0.89	0.00	-88.87	0.00	88.87	3897.00	1948.50	7732.70	3838.84		0.45	-0.07	0.031
65.00	-31.04	-0.86	0.00	-84.44	0.00	84.44	3845.06	1922.53	7465.70	3706.29		0.54	-0.08	0.031
70.00	-29.66	-0.84	0.00	-80.11	0.00	80.11	3791.77	1895.89	7200.54	3574.65		0.63	-0.09	0.030
75.00	-28.31	-0.82	0.00	-75.90	0.00	75.90	3737.12	1868.56	6937.41	3444.02		0.72	-0.10	0.030
80.00	-26.98	-0.81	0.00	-71.78	0.00	71.78	3681.11	1840.56	6676.48	3314.49		0.83	-0.10	0.029
85.00	-25.68	-0.80	0.00	-67.73	0.00	67.73	3623.74	1811.87	6417.92	3186.13		0.94	-0.11	0.028
90.00	-24.40	-0.80	0.00	-63.72	0.00	63.72	3565.02	1782.51	6161.91	3059.03		1.06	-0.12	0.028
92.92	-23.66	-0.80	0.00	-61.37	0.00	61.37	3530.13	1765.07	6013.81	2985.51		1.14	-0.12	0.027
95.00	-22.79	-0.80	0.00	-59.70	0.00	59.70	3504.93	1752.47	5908.61	2933.28		1.19	-0.13	0.027
98.92	-21.17	-0.80	0.00	-56.56	0.00	56.56	2742.07	1371.04	4616.42	2291.78		1.30	-0.13	0.032
100.00	-20.93	-0.80	0.00	-55.69	0.00	55.69	2732.96	1366.48	4575.83	2271.63		1.33	-0.14	0.032
105.00	-19.88	-0.80	0.00	-51.68	0.00	51.68	2690.08	1345.04	4389.32	2179.04		1.48	-0.15	0.031
110.00	-18.84	-0.80	0.00	-47.67	0.00	47.67	2645.83	1322.92	4204.31	2087.20		1.64	-0.15	0.030
115.00	-17.82	-0.80	0.00	-43.65	0.00	43.65	2600.23	1300.12	4020.98	1996.19		1.80	-0.16	0.029
120.00	-16.83	-0.80	0.00	-39.64	0.00	39.64	2553.28	1276.64	3839.50	1906.09		1.98	-0.17	0.027
125.00	-15.85	-0.80	0.00	-35.62	0.00	35.62	2504.96	1252.48	3660.03	1816.99		2.16	-0.18	0.026
127.09	-15.45	-0.80	0.00	-33.95	0.00	33.95	2484.39	1242.20	3585.78	1780.13		2.24	-0.18	0.025
130.00	-14.61	-0.80	0.00	-31.62	0.00	31.62	2455.29	1227.64	3482.76	1728.99		2.36	-0.19	0.024
132.34	-13.94	-0.80	0.00	-29.75	0.00	29.75	1489.26	744.63	2121.49	1053.20		2.45	-0.19	0.038
135.00	-13.55	-0.80	0.00	-27.62	0.00	27.62	1477.63	738.82	2071.36	1028.31		2.56	-0.20	0.036
140.00	-12.83	-0.80	0.00	-23.63	0.00	23.63	1454.76	727.38	1977.27	981.60		2.77	-0.21	0.033
145.00	-12.12	-0.80	0.00	-19.63	0.00	19.63	1430.53	715.26	1883.34	934.97		3.00	-0.22	0.029
150.00	-11.44	-0.79	0.00	-15.66	0.00	15.66	1404.94	702.47	1789.74	888.50		3.23	-0.23	0.026
155.00	-10.76	-0.77	0.00	-11.72	0.00	11.72	1377.99	688.99	1696.65	842.29		3.47	-0.23	0.022
157.00	-7.99	-0.67	0.00	-10.18	0.00	10.18	1366.83	683.41	1659.60	823.90		3.57	-0.24	0.018
160.00	-7.64	-0.65	0.00	-8.18	0.00	8.18	1349.68	674.84	1604.25	796.42		3.72	-0.24	0.016
165.00	-7.08	-0.63	0.00	-4.91	0.00	4.91	1320.02	660.01	1512.71	750.97		3.98	-0.25	0.012
167.00	-3.57	-0.38	0.00	-3.65	0.00	3.65	1307.77	653.89	1476.37	732.93		4.08	-0.25	0.008
170.00	-3.29	-0.36	0.00	-2.52	0.00	2.52	1289.00	644.50	1422.20	706.04		4.23	-0.25	0.006
175.00	-2.84	-0.32	0.00	-0.72	0.00	0.72	1256.62	628.31	1332.89	661.70		4.49	-0.25	0.003
177.00	-0.22	-0.03	0.00	-0.08	0.00	0.08	1243.29	621.64	1297.54	644.16		4.60	-0.25	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05		4.76	-0.25	0.000

Calculated Forces

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33		**SA**	0.01	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1403.7	0.00	0.03	0.02	18.08	
10.00		1379.3	0.01	0.05	0.03	25.18	
15.00		1354.9	0.01	0.06	0.03	28.45	
20.00		1330.6	0.02	0.07	0.04	29.91	
25.00		1306.2	0.04	0.07	0.04	30.47	
30.00		1281.8	0.05	0.07	0.04	30.64	
35.00		1257.5	0.07	0.07	0.04	30.67	
40.00		1233.1	0.09	0.07	0.04	30.70	
45.00		1208.7	0.12	0.07	0.03	30.77	
45.92	Bot - Section 2	218.97	0.12	0.07	0.03	5.60	
50.00		1805.5	0.15	0.07	0.03	46.98	
53.00	Top - Section 1	1307.2	0.16	0.07	0.03	34.41	
55.00		401.39	0.18	0.07	0.03	10.63	
60.00		988.87	0.21	0.06	0.02	26.34	
65.00		968.00	0.25	0.06	0.02	25.36	
70.00		947.14	0.29	0.05	0.01	23.45	
75.00		926.28	0.33	0.04	0.01	20.19	
80.00		905.41	0.37	0.03	0.01	15.20	
85.00		884.55	0.42	0.01	0.01	8.35	
90.00		863.69	0.47	-0.01	0.01	0.15	
92.92	Bot - Section 3	494.18	0.50	-0.02	0.01	-2.79	
95.00		644.51	0.53	-0.03	0.01	-6.27	
98.92	Top - Section 2	1193.6	0.57	-0.04	0.01	-20.07	
100.00		149.70	0.58	-0.05	0.01	-2.78	
105.00		680.33	0.64	-0.07	0.02	-17.13	
110.00		662.92	0.71	-0.09	0.03	-19.30	
115.00		645.50	0.77	-0.11	0.05	-19.67	
120.00		628.09	0.84	-0.12	0.07	-18.49	
125.00		610.68	0.91	-0.12	0.09	-16.01	
127.09	Bot - Section 4	249.71	0.94	-0.12	0.10	-6.06	
130.00		587.62	0.99	-0.11	0.12	-12.29	
132.34	Top - Section 3	464.04	1.02	-0.10	0.14	-8.24	
135.00		216.47	1.06	-0.09	0.17	-2.95	
140.00		397.05	1.14	-0.04	0.21	-1.71	
145.00		384.86	1.23	0.03	0.27	2.69	
150.00		372.68	1.31	0.14	0.35	7.59	
155.00		360.49	1.40	0.29	0.43	12.91	
157.00	Appurtenance(s)	2228.7	1.44	0.36	0.47	94.89	
160.00		207.52	1.49	0.48	0.53	11.08	
165.00		336.12	1.59	0.74	0.65	24.59	
167.00	Appurtenance(s)	2870.6	1.63	0.86	0.71	234.46	
170.00		192.90	1.69	1.07	0.79	18.36	
175.00		311.76	1.79	1.48	0.95	37.24	
177.00	Appurtenance(s)	2160.0	1.83	1.67	1.03	280.43	
180.00	Appurtenance(s)	184.78	1.89	1.98	1.14	27.00	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Tower Engineering Solutions

Totals:	**39,208.5**	**1,069.0**	**Total Wind:**	**43,434.4**

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

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 22

Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.01			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-41.34	-1.22	0.00	-152.43	0.00	152.43	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.030
5.00	-39.89	-1.21	0.00	-146.31	0.00	146.31	5452.09	2726.05	13177.2	6541.73		0.00	-0.01	0.030
10.00	-38.47	-1.19	0.00	-140.27	0.00	140.27	5394.71	2697.35	12808.5	6358.68		0.01	-0.01	0.029
15.00	-37.07	-1.16	0.00	-134.33	0.00	134.33	5335.97	2667.98	12441.5	6176.49		0.03	-0.02	0.029
20.00	-35.69	-1.14	0.00	-128.52	0.00	128.52	5275.87	2637.93	12076.4	5995.24		0.05	-0.02	0.028
25.00	-34.33	-1.11	0.00	-122.84	0.00	122.84	5214.41	2607.20	11713.3	5815.02		0.08	-0.03	0.028
30.00	-33.00	-1.08	0.00	-117.30	0.00	117.30	5151.59	2575.80	11352.6	5635.92		0.11	-0.04	0.027
35.00	-31.69	-1.05	0.00	-111.89	0.00	111.89	5087.42	2543.71	10994.2	5458.02		0.15	-0.04	0.027
40.00	-30.39	-1.02	0.00	-106.63	0.00	106.63	5021.88	2510.94	10638.5	5281.41		0.20	-0.05	0.026
45.00	-29.13	-0.99	0.00	-101.51	0.00	101.51	4954.99	2477.50	10285.5	5106.18		0.25	-0.05	0.026
45.92	-28.90	-0.99	0.00	-100.60	0.00	100.60	4942.58	2471.29	10221.1	5074.21		0.26	-0.05	0.026
50.00	-27.12	-0.94	0.00	-96.56	0.00	96.56	4886.75	2443.37	9935.52	4932.41		0.31	-0.06	0.025
53.00	-25.84	-0.91	0.00	-93.73	0.00	93.73	3967.43	1983.71	8109.29	4025.79		0.35	-0.06	0.030
55.00	-25.40	-0.90	0.00	-91.92	0.00	91.92	3947.58	1973.79	8001.39	3972.23		0.37	-0.07	0.030
60.00	-24.33	-0.88	0.00	-87.42	0.00	87.42	3897.00	1948.50	7732.70	3838.84		0.45	-0.07	0.029
65.00	-23.28	-0.85	0.00	-83.04	0.00	83.04	3845.06	1922.53	7465.70	3706.29		0.53	-0.08	0.028
70.00	-22.24	-0.83	0.00	-78.79	0.00	78.79	3791.77	1895.89	7200.54	3574.65		0.62	-0.09	0.028
75.00	-21.23	-0.81	0.00	-74.64	0.00	74.64	3737.12	1868.56	6937.41	3444.02		0.71	-0.10	0.027
80.00	-20.23	-0.80	0.00	-70.59	0.00	70.59	3681.11	1840.56	6676.48	3314.49		0.82	-0.10	0.027
85.00	-19.26	-0.79	0.00	-66.61	0.00	66.61	3623.74	1811.87	6417.92	3186.13		0.93	-0.11	0.026
90.00	-18.30	-0.79	0.00	-62.67	0.00	62.67	3565.02	1782.51	6161.91	3059.03		1.05	-0.12	0.026
92.92	-17.75	-0.79	0.00	-60.37	0.00	60.37	3530.13	1765.07	6013.81	2985.51		1.12	-0.12	0.025
95.00	-17.09	-0.79	0.00	-58.73	0.00	58.73	3504.93	1752.47	5908.61	2933.28		1.18	-0.13	0.025
98.92	-15.87	-0.79	0.00	-55.64	0.00	55.64	2742.07	1371.04	4616.42	2291.78		1.28	-0.13	0.030
100.00	-15.70	-0.79	0.00	-54.79	0.00	54.79	2732.96	1366.48	4575.83	2271.63		1.31	-0.13	0.030
105.00	-14.91	-0.79	0.00	-50.85	0.00	50.85	2690.08	1345.04	4389.32	2179.04		1.46	-0.14	0.029
110.00	-14.13	-0.79	0.00	-46.91	0.00	46.91	2645.83	1322.92	4204.31	2087.20		1.61	-0.15	0.028
115.00	-13.37	-0.79	0.00	-42.96	0.00	42.96	2600.23	1300.12	4020.98	1996.19		1.77	-0.16	0.027
120.00	-12.62	-0.79	0.00	-39.02	0.00	39.02	2553.28	1276.64	3839.50	1906.09		1.95	-0.17	0.025
125.00	-11.89	-0.79	0.00	-35.08	0.00	35.08	2504.96	1252.48	3660.03	1816.99		2.13	-0.18	0.024
127.09	-11.59	-0.79	0.00	-33.44	0.00	33.44	2484.39	1242.20	3585.78	1780.13		2.21	-0.18	0.023
130.00	-10.95	-0.79	0.00	-31.14	0.00	31.14	2455.29	1227.64	3482.76	1728.99		2.32	-0.19	0.022
132.34	-10.45	-0.79	0.00	-29.30	0.00	29.30	1489.26	744.63	2121.49	1053.20		2.41	-0.19	0.035
135.00	-10.16	-0.79	0.00	-27.21	0.00	27.21	1477.63	738.82	2071.36	1028.31		2.52	-0.19	0.033
140.00	-9.62	-0.79	0.00	-23.28	0.00	23.28	1454.76	727.38	1977.27	981.60		2.73	-0.21	0.030
145.00	-9.09	-0.78	0.00	-19.35	0.00	19.35	1430.53	715.26	1883.34	934.97		2.95	-0.21	0.027
150.00	-8.58	-0.77	0.00	-15.44	0.00	15.44	1404.94	702.47	1789.74	888.50		3.18	-0.22	0.023
155.00	-8.07	-0.76	0.00	-11.57	0.00	11.57	1377.99	688.99	1696.65	842.29		3.42	-0.23	0.020
157.00	-5.99	-0.66	0.00	-10.05	0.00	10.05	1366.83	683.41	1659.60	823.90		3.52	-0.23	0.017
160.00	-5.73	-0.65	0.00	-8.08	0.00	8.08	1349.68	674.84	1604.25	796.42		3.66	-0.24	0.014
165.00	-5.31	-0.62	0.00	-4.85	0.00	4.85	1320.02	660.01	1512.71	750.97		3.91	-0.24	0.010
167.00	-2.68	-0.37	0.00	-3.61	0.00	3.61	1307.77	653.89	1476.37	732.93		4.02	-0.24	0.007
170.00	-2.47	-0.35	0.00	-2.49	0.00	2.49	1289.00	644.50	1422.20	706.04		4.17	-0.24	0.005
175.00	-2.13	-0.32	0.00	-0.72	0.00	0.72	1256.62	628.31	1332.89	661.70		4.43	-0.25	0.003
177.00	-0.17	-0.03	0.00	-0.08	0.00	0.08	1243.29	621.64	1297.54	644.16		4.53	-0.25	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05		4.68	-0.25	0.000

Calculated Forces

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Wind Loading - Shaft

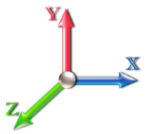
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	282.00	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	277.19	0.750	0.000	5.00	25.272	18.95	155.2	0.0	1403.7
10.00		1.00	0.85	7.442	8.19	272.37	0.750	0.000	5.00	24.837	18.63	152.5	0.0	1379.4
15.00		1.00	0.85	7.442	8.19	267.55	0.750	0.000	5.00	24.401	18.30	149.8	0.0	1355.0
20.00		1.00	0.90	7.896	8.69	270.63	0.750	0.000	5.00	23.966	17.97	156.1	0.0	1330.6
25.00		1.00	0.95	8.276	9.10	271.98	0.750	0.000	5.00	23.530	17.65	160.7	0.0	1306.3
30.00		1.00	0.98	8.600	9.46	272.07	0.750	0.000	5.00	23.095	17.32	163.9	0.0	1281.9
35.00		1.00	1.01	8.883	9.77	271.26	0.750	0.000	5.00	22.659	16.99	166.1	0.0	1257.5
40.00		1.00	1.04	9.137	10.05	269.76	0.750	0.000	5.00	22.224	16.67	167.5	0.0	1233.1
45.00		1.00	1.07	9.366	10.30	267.72	0.750	0.000	5.00	21.788	16.34	168.4	0.0	1208.8
45.92	Bot - Section 2	1.00	1.07	9.406	10.35	267.30	0.750	0.000	0.92	3.947	2.96	30.6	0.0	219.0
50.00		1.00	1.09	9.576	10.53	265.24	0.750	0.000	4.08	17.666	13.25	139.6	0.0	1805.5
53.00	Top - Section 1	1.00	1.11	9.694	10.66	263.58	0.750	0.000	3.00	12.794	9.60	102.3	0.0	1307.3
55.00		1.00	1.12	9.770	10.75	266.44	0.750	0.000	2.00	8.442	6.33	68.0	0.0	401.4
60.00		1.00	1.14	9.951	10.95	263.32	0.750	0.000	5.00	20.800	15.60	170.8	0.0	988.9
65.00		1.00	1.16	10.120	11.13	259.93	0.750	0.000	5.00	20.365	15.27	170.0	0.0	968.0
70.00		1.00	1.17	10.279	11.31	256.30	0.750	0.000	5.00	19.929	14.95	169.0	0.0	947.1
75.00		1.00	1.19	10.430	11.47	252.46	0.750	0.000	5.00	19.494	14.62	167.7	0.0	926.3
80.00		1.00	1.21	10.572	11.63	248.44	0.750	0.000	5.00	19.058	14.29	166.2	0.0	905.4
85.00		1.00	1.22	10.708	11.78	244.25	0.750	0.000	5.00	18.623	13.97	164.5	0.0	884.5
90.00		1.00	1.24	10.838	11.92	239.91	0.750	0.000	5.00	18.187	13.64	162.6	0.0	863.7
92.92	Bot - Section 3	1.00	1.25	10.911	12.00	237.32	0.750	0.000	2.92	10.408	7.81	93.7	0.0	494.2
95.00		1.00	1.25	10.962	12.06	235.43	0.750	0.000	2.08	7.454	5.59	67.4	0.0	644.5
98.92	Top - Section 2	1.00	1.26	11.055	12.16	231.84	0.750	0.000	3.92	13.810	10.36	126.0	0.0	1193.7
100.00		1.00	1.27	11.081	12.19	234.42	0.750	0.000	1.08	3.773	2.83	34.5	0.0	149.7
105.00		1.00	1.28	11.195	12.31	229.72	0.750	0.000	5.00	17.147	12.86	158.4	0.0	680.3
110.00		1.00	1.29	11.305	12.44	224.91	0.750	0.000	5.00	16.711	12.53	155.9	0.0	662.9
115.00		1.00	1.30	11.412	12.55	219.99	0.750	0.000	5.00	16.276	12.21	153.2	0.0	645.5
120.00		1.00	1.32	11.514	12.67	214.99	0.750	0.000	5.00	15.840	11.88	150.5	0.0	628.1
125.00		1.00	1.33	11.614	12.78	209.90	0.750	0.000	5.00	15.405	11.55	147.6	0.0	610.7
127.09	Bot - Section 4	1.00	1.33	11.654	12.82	207.75	0.750	0.000	2.09	6.300	4.73	60.6	0.0	249.7
130.00		1.00	1.34	11.710	12.88	204.72	0.750	0.000	2.91	8.777	6.58	84.8	0.0	587.6
132.34	Top - Section 3	1.00	1.34	11.754	12.93	202.27	0.750	0.000	2.34	6.933	5.20	67.2	0.0	464.0
135.00		1.00	1.35	11.803	12.98	202.06	0.750	0.000	2.66	7.787	5.84	75.8	0.0	216.5
140.00		1.00	1.36	11.894	13.08	196.74	0.750	0.000	5.00	14.284	10.71	140.2	0.0	397.0
145.00		1.00	1.37	11.982	13.18	191.36	0.750	0.000	5.00	13.849	10.39	136.9	0.0	384.9
150.00		1.00	1.38	12.068	13.27	185.91	0.750	0.000	5.00	13.413	10.06	133.5	0.0	372.7
155.00		1.00	1.39	12.152	13.37	180.39	0.750	0.000	5.00	12.978	9.73	130.1	0.0	360.5
157.00	Appurtenance(s)	1.00	1.39	12.185	13.40	178.17	0.750	0.000	2.00	5.069	3.80	51.0	0.0	140.8
160.00		1.00	1.40	12.233	13.46	174.82	0.750	0.000	3.00	7.473	5.60	75.4	0.0	207.5
165.00		1.00	1.41	12.313	13.54	169.19	0.750	0.000	5.00	12.107	9.08	123.0	0.0	336.1
167.00	Appurtenance(s)	1.00	1.41	12.344	13.58	166.92	0.750	0.000	2.00	4.721	3.54	48.1	0.0	131.0
170.00		1.00	1.42	12.390	13.63	163.50	0.750	0.000	3.00	6.950	5.21	71.0	0.0	192.9
175.00		1.00	1.42	12.466	13.71	157.77	0.750	0.000	5.00	11.236	8.43	115.6	0.0	311.8
177.00	Appurtenance(s)	1.00	1.43	12.496	13.75	155.46	0.750	0.000	2.00	4.372	3.28	45.1	0.0	121.3
180.00	Appurtenance(s)	1.00	1.43	12.540	13.79	151.98	0.750	0.000	3.00	6.428	4.82	66.5	0.0	178.3

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Totals:	**180.00**	**5,463.3**	**32,335.6**

Discrete Appurtenance Forces

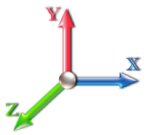
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	12.540	13.794	1.00	1.00	0.38	6.50	0.000	0.000	5.24	0.00	0.00
2	177.00	KRY 112 144/1	3	12.496	13.746	0.50	0.75	0.62	33.00	0.000	0.000	8.50	0.00	0.00
3	177.00	782 11056	3	12.496	13.746	0.50	0.75	0.42	5.40	0.000	0.000	5.80	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	12.496	13.746	1.00	1.00	32.00	1600.00	0.000	0.000	439.86	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	12.496	13.746	0.55	0.75	5.93	56.10	0.000	0.000	81.50	0.00	0.00
6	177.00	LNX-6515DS-VTM	3	12.496	13.746	0.60	0.75	20.65	149.40	0.000	0.000	283.79	0.00	0.00
7	177.00	Fastback Networks - IBR	1	12.496	13.746	1.00	1.00	0.67	8.90	0.000	0.000	9.21	0.00	0.00
8	177.00	MS-KI22-5 (Kickers w/o	1	12.496	13.746	1.00	1.00	5.33	146.00	0.000	0.000	73.26	0.00	0.00
9	177.00	Pipe Mount	1	12.496	13.746	0.56	0.75	1.48	40.00	0.000	0.000	20.34	0.00	0.00
10	167.00	Raycap	2	12.344	13.578	0.67	0.80	5.09	64.00	0.000	0.000	69.17	0.00	0.00
11	167.00	Alcatel-Lucent B4 RRH	3	12.344	13.578	0.64	0.80	4.99	192.00	0.000	0.000	67.78	0.00	0.00
12	167.00	Alcatel-Lucent B13	3	12.344	13.578	0.70	0.80	4.56	171.60	0.000	0.000	61.94	0.00	0.00
13	167.00	SBNHH-1D65B	6	12.344	13.578	0.66	0.80	32.51	240.00	0.000	0.000	441.43	0.00	0.00
14	167.00	LPA-80080-4CF-EDIN-0	6	12.344	13.578	0.80	0.80	12.53	72.00	0.000	0.000	170.11	0.00	0.00
15	167.00	Platform w/ Hand Rails	1	12.344	13.578	1.00	1.00	40.00	2000.00	0.000	0.000	543.14	0.00	0.00
16	157.00	DMP65R-BU8DA	1	12.185	13.403	0.80	0.80	14.30	52.50	0.000	0.000	191.61	0.00	0.00
17	157.00	Low Profile Platform-flat	1	12.185	13.403	1.00	1.00	25.00	1200.00	0.000	0.000	335.08	0.00	0.00
18	157.00	7770	3	12.185	13.403	0.58	0.80	9.64	105.00	0.000	0.000	129.15	0.00	0.00
19	157.00	DMP65R-BU4DA	2	12.185	13.403	0.66	0.80	10.50	135.80	0.000	0.000	140.68	0.00	0.00
20	157.00	HPA65R-BU8A	1	12.185	13.403	0.80	0.80	8.98	76.50	0.000	0.000	120.41	0.00	0.00
21	157.00	HPA65R-BU4A	2	12.185	13.403	0.80	0.80	7.94	57.40	0.000	0.000	106.37	0.00	0.00
22	157.00	4449 B5/B12	3	12.185	13.403	0.54	0.80	3.17	213.00	0.000	0.000	42.46	0.00	0.00
23	157.00	8843 B2/B66A	3	12.185	13.403	0.67	1.00	3.30	216.00	0.000	0.000	44.18	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	12.185	13.403	0.80	0.80	0.74	31.80	0.000	0.000	9.86	0.00	0.00
							Totals:		**6,872.90**			**3,400.88**		

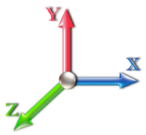
Total Applied Force Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		155.16	1605.23	0.00	0.00
10.00		152.49	1580.86	0.00	0.00
15.00		149.81	1556.49	0.00	0.00
20.00		156.12	1532.12	0.00	0.00
25.00		160.66	1507.76	0.00	0.00
30.00		163.85	1483.39	0.00	0.00
35.00		166.07	1459.02	0.00	0.00
40.00		167.52	1434.65	0.00	0.00
45.00		168.36	1410.28	0.00	0.00
45.92		30.63	255.91	0.00	0.00
50.00		139.56	1970.09	0.00	0.00
53.00		102.32	1428.19	0.00	0.00
55.00		68.05	481.99	0.00	0.00
60.00		170.76	1190.37	0.00	0.00
65.00		170.03	1169.50	0.00	0.00
70.00		169.01	1148.64	0.00	0.00
75.00		167.73	1127.78	0.00	0.00
80.00		166.23	1106.91	0.00	0.00
85.00		164.52	1086.05	0.00	0.00
90.00		162.61	1065.19	0.00	0.00
92.92		93.69	611.72	0.00	0.00
95.00		67.41	728.47	0.00	0.00
98.92		125.95	1351.53	0.00	0.00
100.00		34.49	193.36	0.00	0.00
105.00		158.37	881.83	0.00	0.00
110.00		155.86	864.42	0.00	0.00
115.00		153.23	847.00	0.00	0.00
120.00		150.47	829.59	0.00	0.00
125.00		147.60	812.18	0.00	0.00
127.09		60.57	333.80	0.00	0.00
130.00		84.80	705.03	0.00	0.00
132.34		67.23	558.21	0.00	0.00
135.00		75.82	323.80	0.00	0.00
140.00		140.17	598.55	0.00	0.00
145.00		136.90	586.36	0.00	0.00
150.00		133.55	574.18	0.00	0.00
155.00		130.10	561.99	0.00	0.00
157.00	(17) attachments	1170.76	2309.39	0.00	0.00
160.00		75.42	288.40	0.00	0.00
165.00		122.98	470.92	0.00	0.00
167.00	(21) attachments	1401.64	2924.56	0.00	0.00
170.00		71.05	231.06	0.00	0.00
175.00		115.56	375.36	0.00	0.00
177.00	(16) attachments	967.34	2185.53	0.00	0.00
180.00	(1) attachments	71.74	184.78	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

Tower Engineering Solutions

Totals:	**8,864.17**	**45,932.44**	**0.00**	**0.00**

Calculated Forces

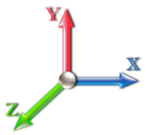
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.93	-8.88	0.00	-1082.1	0.00	1082.15	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.169
5.00	-44.32	-8.76	0.00	-1037.7	0.00	1037.75	5452.09	2726.05	13177.2	6541.73	0.02	-0.040	0.000	0.167
10.00	-42.73	-8.63	0.00	-993.97	0.00	993.97	5394.71	2697.35	12808.5	6358.68	0.09	-0.081	0.000	0.164
15.00	-41.17	-8.51	0.00	-950.82	0.00	950.82	5335.97	2667.98	12441.5	6176.49	0.19	-0.122	0.000	0.162
20.00	-39.63	-8.38	0.00	-908.27	0.00	908.27	5275.87	2637.93	12076.4	5995.24	0.34	-0.164	0.000	0.159
25.00	-38.12	-8.24	0.00	-866.38	0.00	866.38	5214.41	2607.20	11713.3	5815.02	0.54	-0.206	0.000	0.156
30.00	-36.63	-8.10	0.00	-825.18	0.00	825.18	5151.59	2575.80	11352.6	5635.92	0.78	-0.248	0.000	0.154
35.00	-35.16	-7.95	0.00	-784.70	0.00	784.70	5087.42	2543.71	10994.2	5458.02	1.06	-0.291	0.000	0.151
40.00	-33.73	-7.80	0.00	-744.94	0.00	744.94	5021.88	2510.94	10638.5	5281.41	1.39	-0.334	0.000	0.148
45.00	-32.31	-7.64	0.00	-705.94	0.00	705.94	4954.99	2477.50	10285.5	5106.18	1.76	-0.377	0.000	0.145
45.92	-32.05	-7.62	0.00	-698.94	0.00	698.94	4942.58	2471.29	10221.1	5074.21	1.83	-0.385	0.000	0.144
50.00	-30.08	-7.48	0.00	-667.83	0.00	667.83	4886.75	2443.37	9935.52	4932.41	2.18	-0.421	0.000	0.142
53.00	-28.65	-7.38	0.00	-645.39	0.00	645.39	3967.43	1983.71	8109.29	4025.79	2.45	-0.447	0.000	0.168
55.00	-28.16	-7.32	0.00	-630.63	0.00	630.63	3947.58	1973.79	8001.39	3972.23	2.64	-0.465	0.000	0.166
60.00	-26.97	-7.17	0.00	-594.01	0.00	594.01	3897.00	1948.50	7732.70	3838.84	3.15	-0.514	0.000	0.162
65.00	-25.80	-7.01	0.00	-558.19	0.00	558.19	3845.06	1922.53	7465.70	3706.29	3.72	-0.562	0.000	0.157
70.00	-24.64	-6.85	0.00	-523.16	0.00	523.16	3791.77	1895.89	7200.54	3574.65	4.33	-0.611	0.000	0.153
75.00	-23.51	-6.69	0.00	-488.92	0.00	488.92	3737.12	1868.56	6937.41	3444.02	5.00	-0.660	0.000	0.148
80.00	-22.40	-6.53	0.00	-455.49	0.00	455.49	3681.11	1840.56	6676.48	3314.49	5.72	-0.709	0.000	0.144
85.00	-21.31	-6.37	0.00	-422.86	0.00	422.86	3623.74	1811.87	6417.92	3186.13	6.49	-0.757	0.000	0.139
90.00	-20.25	-6.20	0.00	-391.03	0.00	391.03	3565.02	1782.51	6161.91	3059.03	7.31	-0.806	0.000	0.134
92.92	-19.63	-6.11	0.00	-372.94	0.00	372.94	3530.13	1765.07	6013.81	2985.51	7.81	-0.834	0.000	0.130
95.00	-18.90	-6.04	0.00	-360.22	0.00	360.22	3504.93	1752.47	5908.61	2933.28	8.18	-0.855	0.000	0.128
98.92	-17.55	-5.90	0.00	-336.56	0.00	336.56	2742.07	1371.04	4616.42	2291.78	8.89	-0.892	0.000	0.153
100.00	-17.35	-5.87	0.00	-330.17	0.00	330.17	2732.96	1366.48	4575.83	2271.63	9.10	-0.903	0.000	0.152
105.00	-16.47	-5.72	0.00	-300.81	0.00	300.81	2690.08	1345.04	4389.32	2179.04	10.07	-0.956	0.000	0.144
110.00	-15.60	-5.56	0.00	-272.23	0.00	272.23	2645.83	1322.92	4204.31	2087.20	11.10	-1.008	0.000	0.136
115.00	-14.75	-5.40	0.00	-244.44	0.00	244.44	2600.23	1300.12	4020.98	1996.19	12.18	-1.059	0.000	0.128
120.00	-13.92	-5.25	0.00	-217.42	0.00	217.42	2553.28	1276.64	3839.50	1906.09	13.32	-1.109	0.000	0.120
125.00	-13.11	-5.09	0.00	-191.18	0.00	191.18	2504.96	1252.48	3660.03	1816.99	14.51	-1.156	0.000	0.110
127.09	-12.78	-5.03	0.00	-180.55	0.00	180.55	2484.39	1242.20	3585.78	1780.13	15.02	-1.176	0.000	0.107
130.00	-12.07	-4.94	0.00	-165.90	0.00	165.90	2455.29	1227.64	3482.76	1728.99	15.74	-1.203	0.000	0.101
132.34	-11.51	-4.86	0.00	-154.36	0.00	154.36	1489.26	744.63	2121.49	1053.20	16.34	-1.223	0.000	0.154
135.00	-11.19	-4.79	0.00	-141.42	0.00	141.42	1477.63	738.82	2071.36	1028.31	17.03	-1.246	0.000	0.145
140.00	-10.59	-4.64	0.00	-117.48	0.00	117.48	1454.76	727.38	1977.27	981.60	18.36	-1.299	0.000	0.127
145.00	-10.00	-4.50	0.00	-94.27	0.00	94.27	1430.53	715.26	1883.34	934.97	19.75	-1.347	0.000	0.108
150.00	-9.43	-4.36	0.00	-71.77	0.00	71.77	1404.94	702.47	1789.74	888.50	21.18	-1.389	0.000	0.088
155.00	-8.87	-4.22	0.00	-49.98	0.00	49.98	1377.99	688.99	1696.65	842.29	22.66	-1.422	0.000	0.066
157.00	-6.59	-2.99	0.00	-41.54	0.00	41.54	1366.83	683.41	1659.60	823.90	23.26	-1.433	0.000	0.055
160.00	-6.30	-2.91	0.00	-32.57	0.00	32.57	1349.68	674.84	1604.25	796.42	24.16	-1.447	0.000	0.046
165.00	-5.83	-2.78	0.00	-18.01	0.00	18.01	1320.02	660.01	1512.71	750.97	25.69	-1.465	0.000	0.028
167.00	-2.94	-1.30	0.00	-12.46	0.00	12.46	1307.77	653.89	1476.37	732.93	26.30	-1.469	0.000	0.019
170.00	-2.71	-1.22	0.00	-8.55	0.00	8.55	1289.00	644.50	1422.20	706.04	27.23	-1.474	0.000	0.014
175.00	-2.34	-1.10	0.00	-2.43	0.00	2.43	1256.62	628.31	1332.89	661.70	28.77	-1.479	0.000	0.006
177.00	-0.18	-0.08	0.00	-0.23	0.00	0.23	1243.29	621.64	1297.54	644.16	29.39	-1.479	0.000	0.001
180.00	0.00	-0.07	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	30.32	-1.479	0.000	0.000

Final Analysis Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	4/13/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	43.5	0.00	55.04	0.00	0.00	5330.10
0.9D + 1.6W 105 mph Wind	43.5	0.00	41.26	0.00	0.00	5272.85
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.0	0.00	79.70	0.00	0.00	1243.41
1.2D + 1.0E	1.2	0.00	55.12	0.00	0.00	154.35
0.9D + 1.0E	1.2	0.00	41.34	0.00	0.00	152.43
1.0D + 1.0W 60 mph Wind	8.9	0.00	45.93	0.00	0.00	1082.15

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-55.04	-43.53	0.00	-5330.1	0.00	-5330.1	5508.12	2754.0	13547.4	6725.55	0.00	0.803
0.9D + 1.6W 105 mph Wind	-41.26	-43.51	0.00	-5272.8	0.00	-5272.8	5508.12	2754.0	13547.4	6725.55	0.00	0.792
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-79.70	-10.02	0.00	-1243.4	0.00	-1243.4	5508.12	2754.0	13547.4	6725.55	0.00	0.199
1.2D + 1.0E	-13.94	-0.80	0.00	-29.75	0.00	-29.75	1489.26	744.63	2121.49	1053.20	132.34	0.038
0.9D + 1.0E	-10.45	-0.79	0.00	-29.30	0.00	-29.30	1489.26	744.63	2121.49	1053.20	132.34	0.035
1.0D + 1.0W 60 mph Wind	-45.93	-8.88	0.00	-1082.1	0.00	-1082.1	5508.12	2754.0	13547.4	6725.55	0.00	0.169

Base Plate Summary

Structure:	CT02218-S-SB		**Code:**	EIA/TIA-222-G	4/13/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	5045.00
Axial (kip):	56.10
Shear (kip):	39.50
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	5330.10
Axial (kip):	55.04
Shear (kip):	43.53

Base Plate	
Yield (ksi):	60.00
Width (in):	74.62
Style:	Polygon
Polygon Sides:	16.00
Clip Length (in):	0.00
Effective Len (in):	13.76
Moment (kip-in):	820.65
Allow Stress (ksi):	81.00
Applied Stress (ksi):	46.98
Stress Ratio:	0.58

Anchor Bolts	
Bolt Circle:	68.62
Number Bolts:	20.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	190.41
Allowable (kip):	260.00
Ratio:	0.75
Tension	
Force (kip):	182.44
Allowable (kip):	260.00
Ratio:	0.72

Monopole Mat Foundation Design

				Date
				4/13/2021
	Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	180
	Site Number:	CT02218-S-SBA	**Engineer Name:**	T. Alajaj
	Engr. Number:	104869	**Engineer Login ID:**	

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

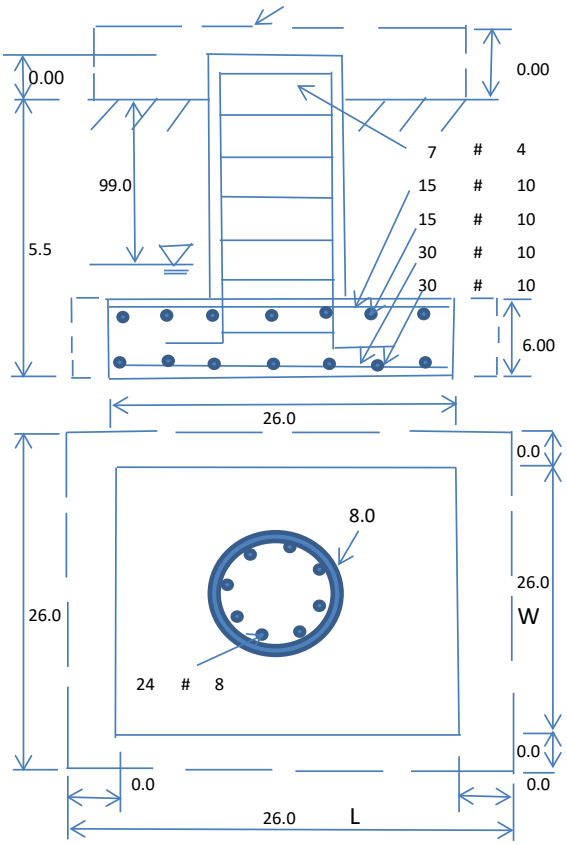
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	55.0	Shear Force (Kips):	43.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5330.1
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):		Thickness of Pad (ft):	6.00
Length of Pad (ft.):	26	Width of Pad (ft.):	26
Final Length of pad (ft)	26.0	Final width of pad (ft):	26.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	24	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	15	Qty. of Rebar in Pad (W):	15
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	1.25	Total Dry Soil Weight (Kips):	0.14
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.14	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4056.35	Total Dry Concrete Weight (Kips):	608.45
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	608.45	Total Vertical Load on Base (Kips):	663.59

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3667	<	Allowable Factored Soil Bearing (psf):	9000	0.41	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7835.5	>	Design Factored Momont (kips-ft):	5591	0.71	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.40	OK!				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1752.7	>	One-Way Factored Shear (L-D. Kips):	203.5	0.12	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1752.7	>	One-Way Factored Shear (W-D., Kips)	203.5	0.12	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1171.2	>	One-Way Factored Shear (C-C, Kips):	202.5	0.17	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	11476.6	>	Moment at Bottom (L-Dir. K-Ft):	1814.2	0.16	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	11476.6	>	Moment at Bottom (W-Dir. K-Ft):	1814.2	0.16	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	16133.5	>	Moment at Bottom (C-C Dir. K-Ft):	2565.7	0.16	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0009		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5799.9	>	Moment at the top (L-Dir K-Ft):	811.7	0.14	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5799.9	>	Moment at the top (W-Dir K-Ft):	811.7	0.14	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8178.0	>	Moment at the top (C-C Dir. K-Ft):	764.8	0.09	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	2132.0	k-ft.	Max. factored shear stress v_{u_CD}:	2.6	Psi
Max. factored shear stress v_{u_AB}:	4.8	Psi	Factored shear Strength ϕv_n:	164.3	Psi
Max. factored shear stress v_u:	4.8	Psi	Check Usage of Punching Shear Capacity:	0.03	OK!

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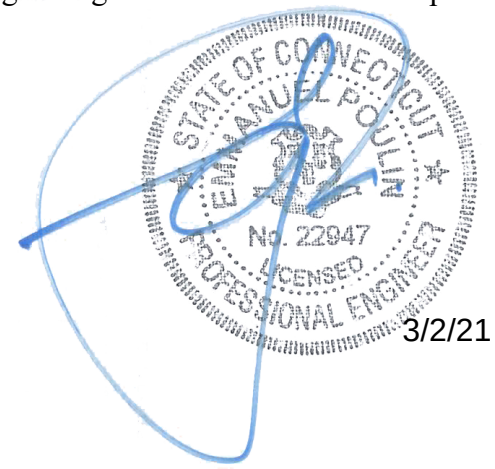
Mount Analysis Report

March 2, 2021

Site Name	Colchester NW
Site Number	CTL05344
FA Location Code	10090905
PTN Number	2051A0VAW8/ 2051A0VEVY/ 2051A0VDC9/ 2051A0WAFX/ 2051A0WAJ1
PACE Number	MRCTB047310/ MRCTB047306/ MRCTB047224/ MRCTB048208/ MRCTB048211
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T
Site Location	48 Westchester Road Colchester, CT 06415 New London County 41º 35' 24.0" N NAD83 72º 24' 5.0" W NAD83
Mount Centerline EL.	157.0 ft
Mount Type	Platform
Structural Usage Ratio	**89.8%**
Overall Result	**Pass**

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



Emmanuel Poulin, PE
VP of Engineering
Structures@infinigy.com
CT PE License #: 22947
CT COA #: PEC.0001615

Contents

Introduction

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

Supporting Documentation

Construction Drawings	Infinigy Engineering, PLLC Site No. CTL05344, dated November 20, 2020
Proposed Loading	AT&T RFDS Application ID No. 3719867, dated January 23, 2021
Mount Manufacturer Drawings	Site Pro 1, Part No. PRK-SFS-L, dated September 8, 2017
Previous Mount Analysis	Infinigy Engineering, PLLC Site No. CTL05344, dated February 17, 2021

Analysis Code Requirements

Wind Speed	135 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0” ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC
Risk Category	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0.0 ft.
Spectral Response	S_s = 0.207 g / S_1 = 0.056 g
Site Class	D-Stiff Soil (Assumed)
HMSL	372.6 ft

Conclusion

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

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

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Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
157.0	157.0	12.5	3	POWERWAVE 7770	AT&T
		10.0	2	CCI HPA65R-BU4A	
		10.0	1	CCI HPA65R-BU8A	
		4.0	2	CCI DMP65R-BU4DA	
		4.0	1	CCI DMP65R-BU8DA	
		10.0	3	ERICSSON RRUS-4449 B5/B12	
		10.0	3	ERICSSON RRUS-8843 B2/B66A	
		--	1	RAYCAP DC6-48-60-18-8F	

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

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

Structure Usages

Mount Pipe	89.8%	Pass
Horizontal Pipe	21.5%	Pass
Cross Arm	17.6%	Pass
Handrail Connection Angle	3.0%	Pass
Corner Connection Plate	34.4%	Pass
Standoff Tube	31.4%	Pass
Handrail Pipe	49.9%	Pass
Kicker	33.7%	Pass
RATING =	**89.8%%**	**Pass**

Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	20,340.15	4,458.60	21.9%
Max Shear (lbs.)	13,805.83	1,582.69	11.5%
Combined Tension/Shear	--	--	6.0%

***Assumed (1) 5/8" A325 Bolt, (4) per mount to tower connection. Contractor to field verify anchor diameters prior to installation of proposed equipment.**

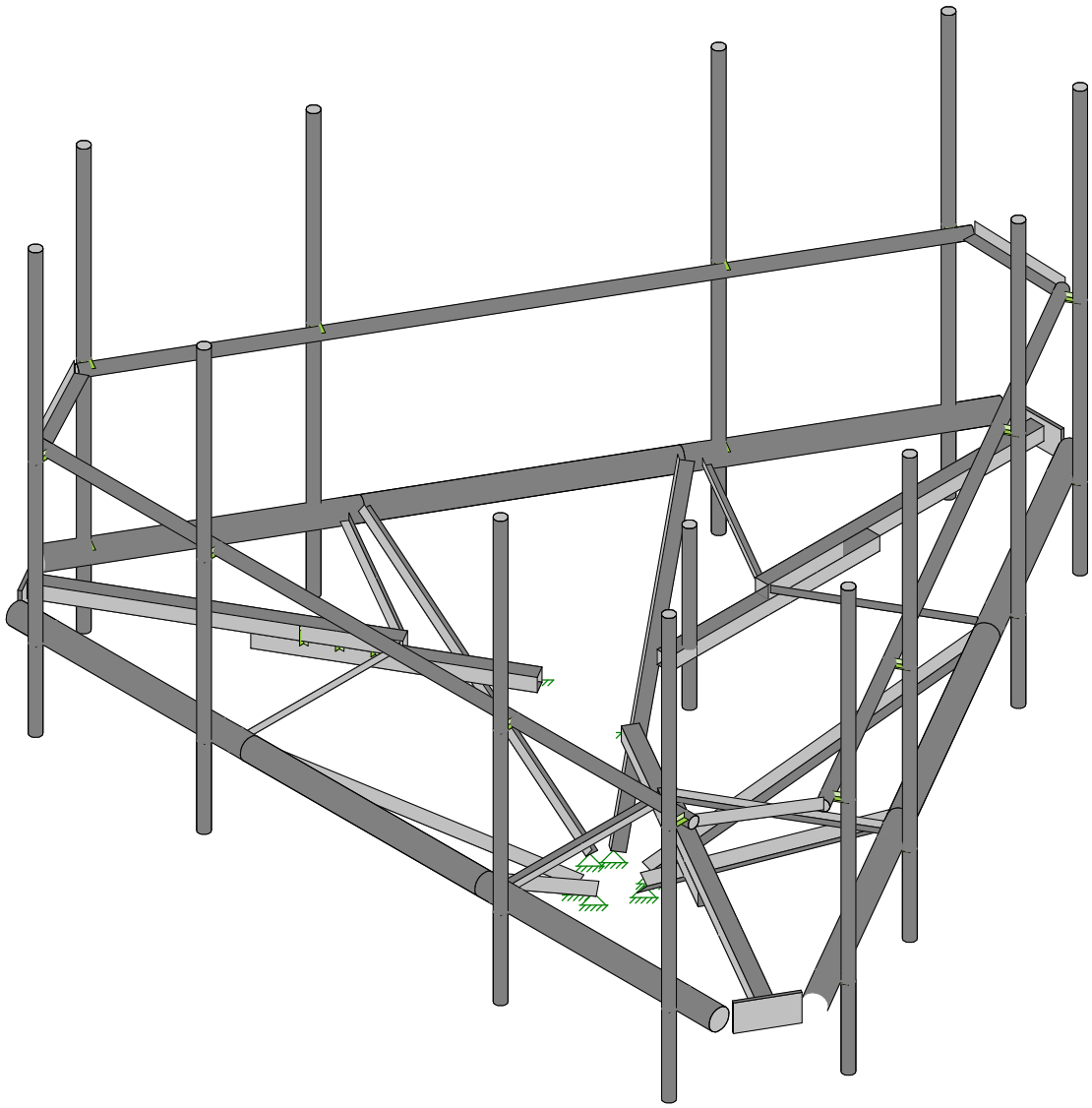
Anchor reactions are acceptable per rigorous structural analysis.

Assumptions and Limitations

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

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

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



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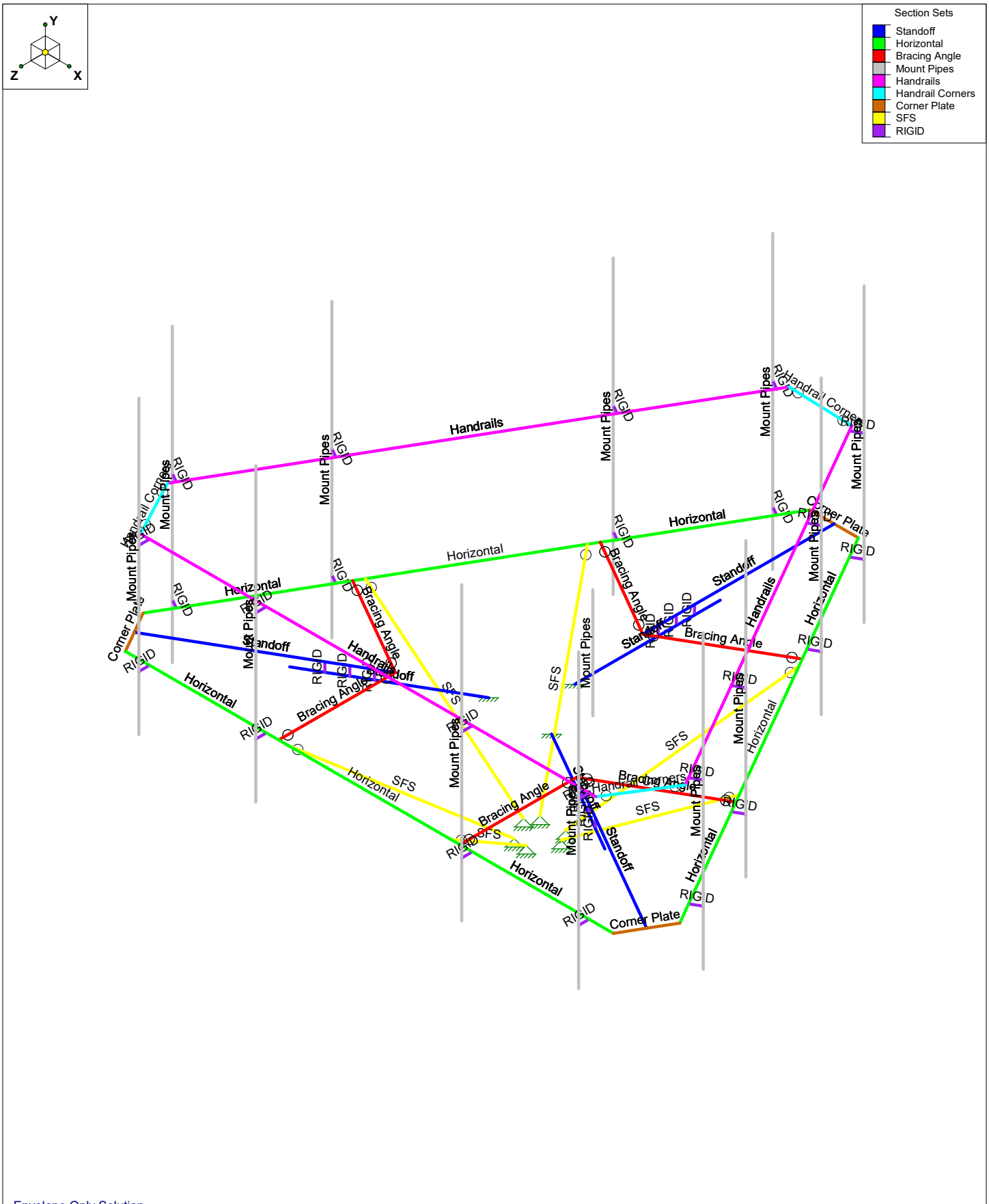

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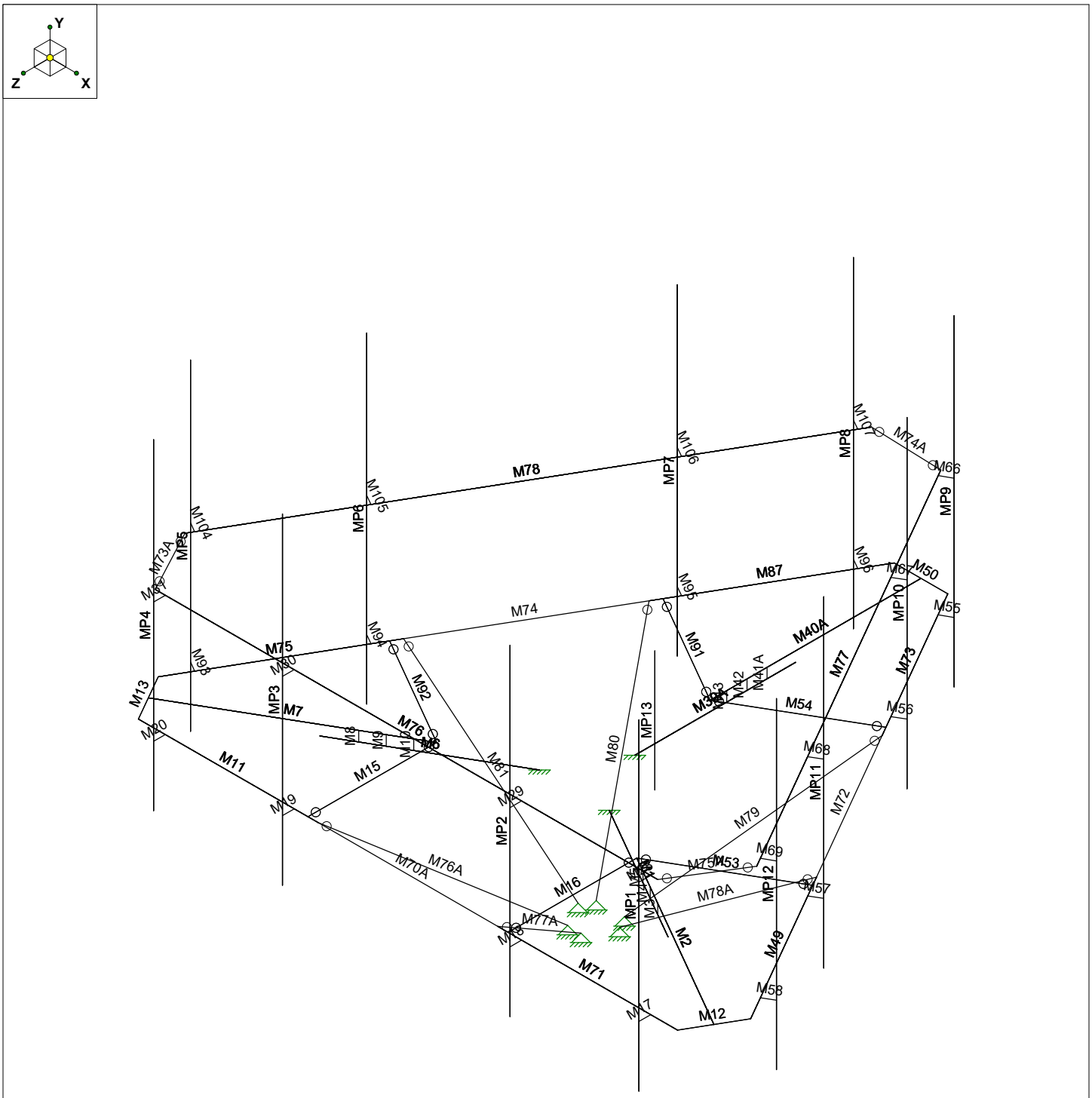

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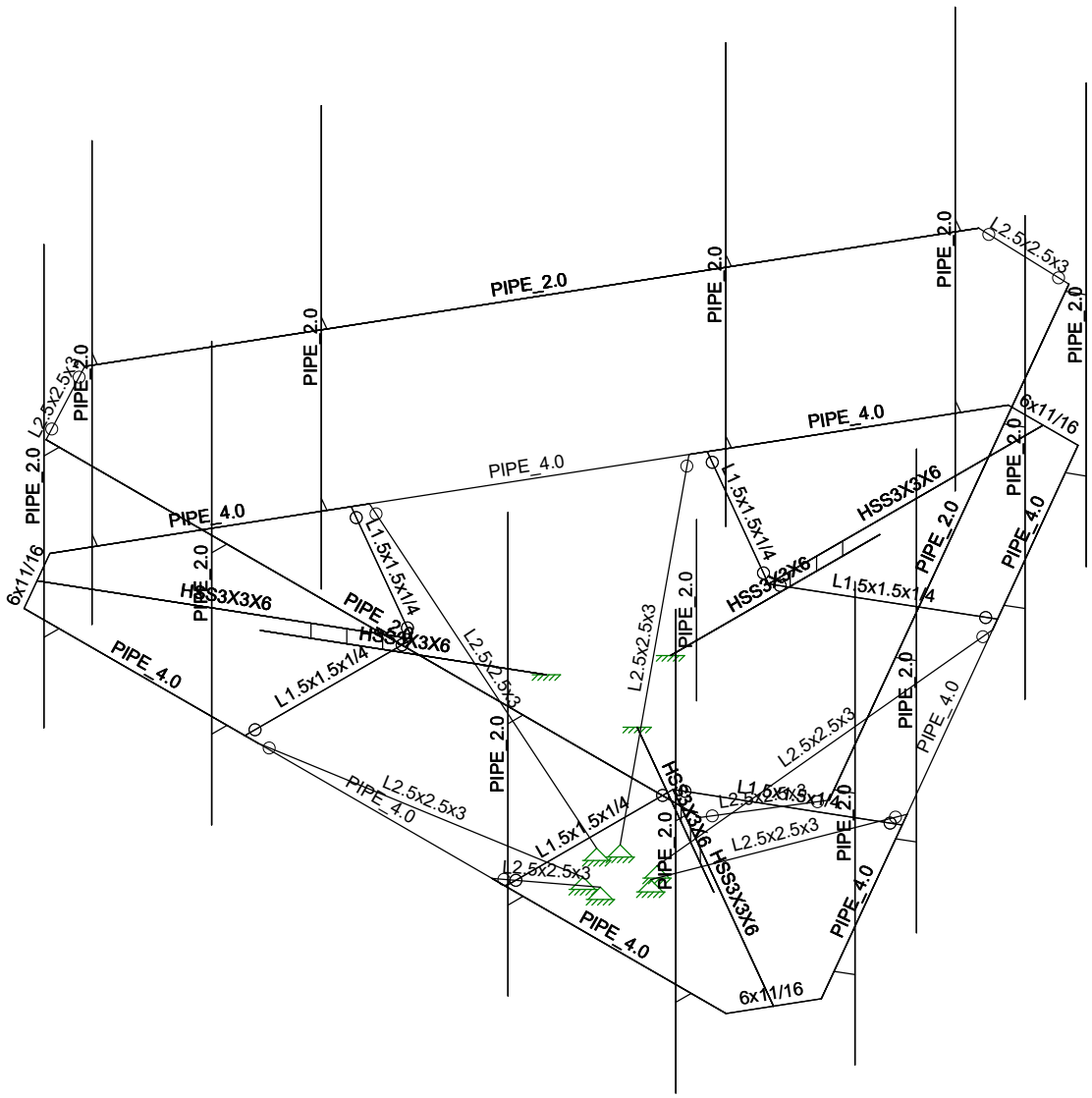

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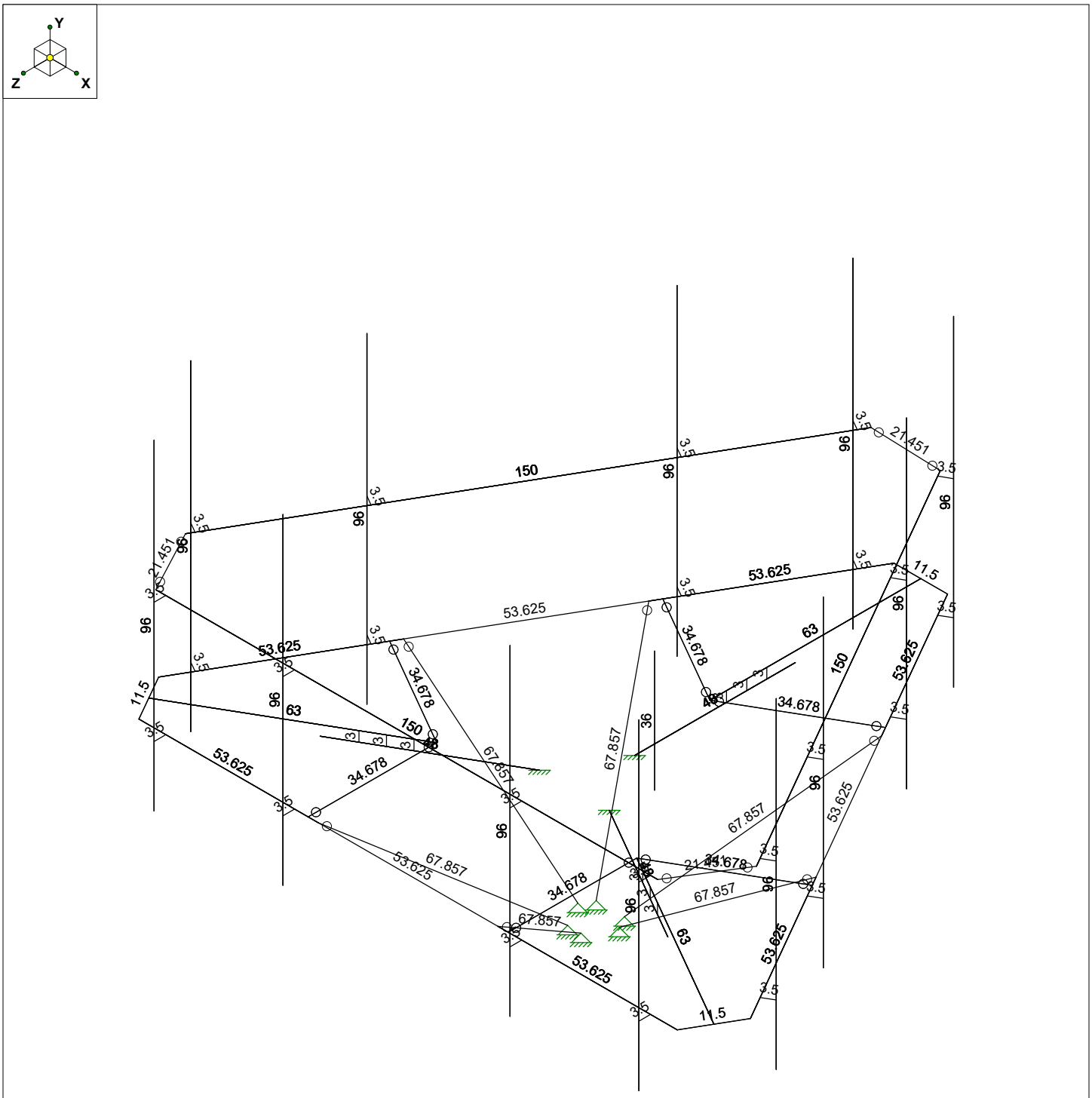

Member Length (in) Displayed
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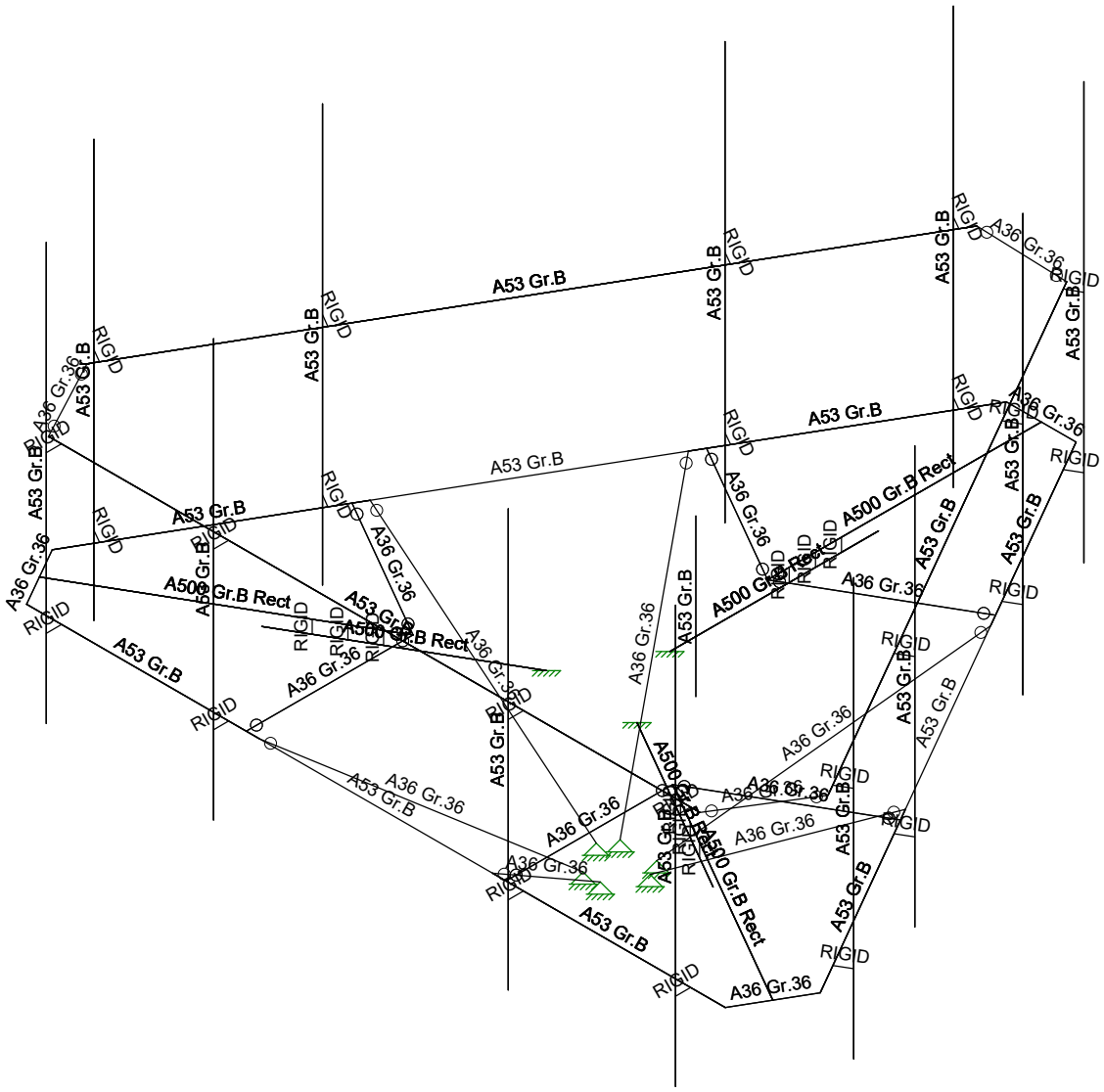

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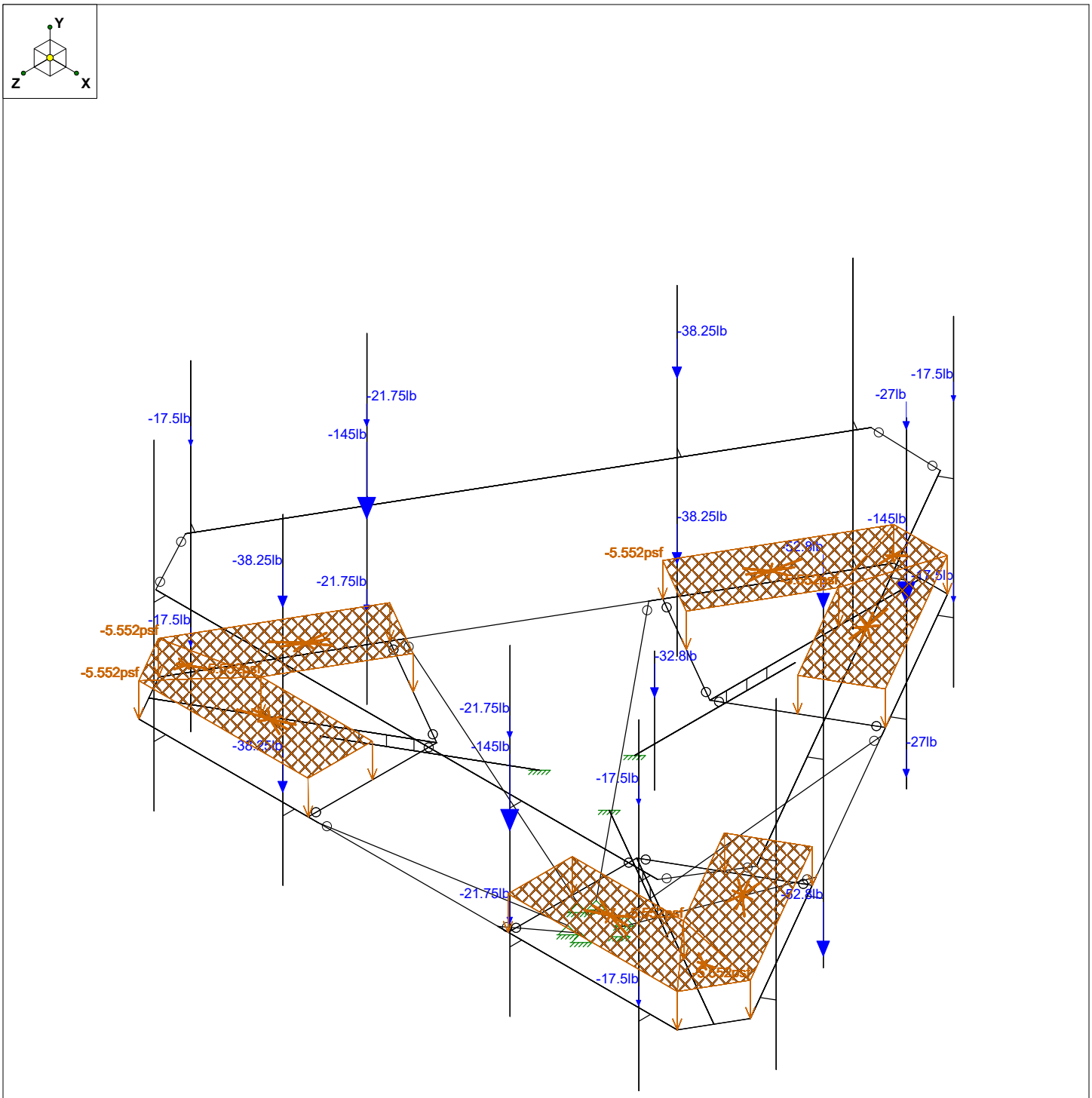

Loads: BLC 1, Self Weight
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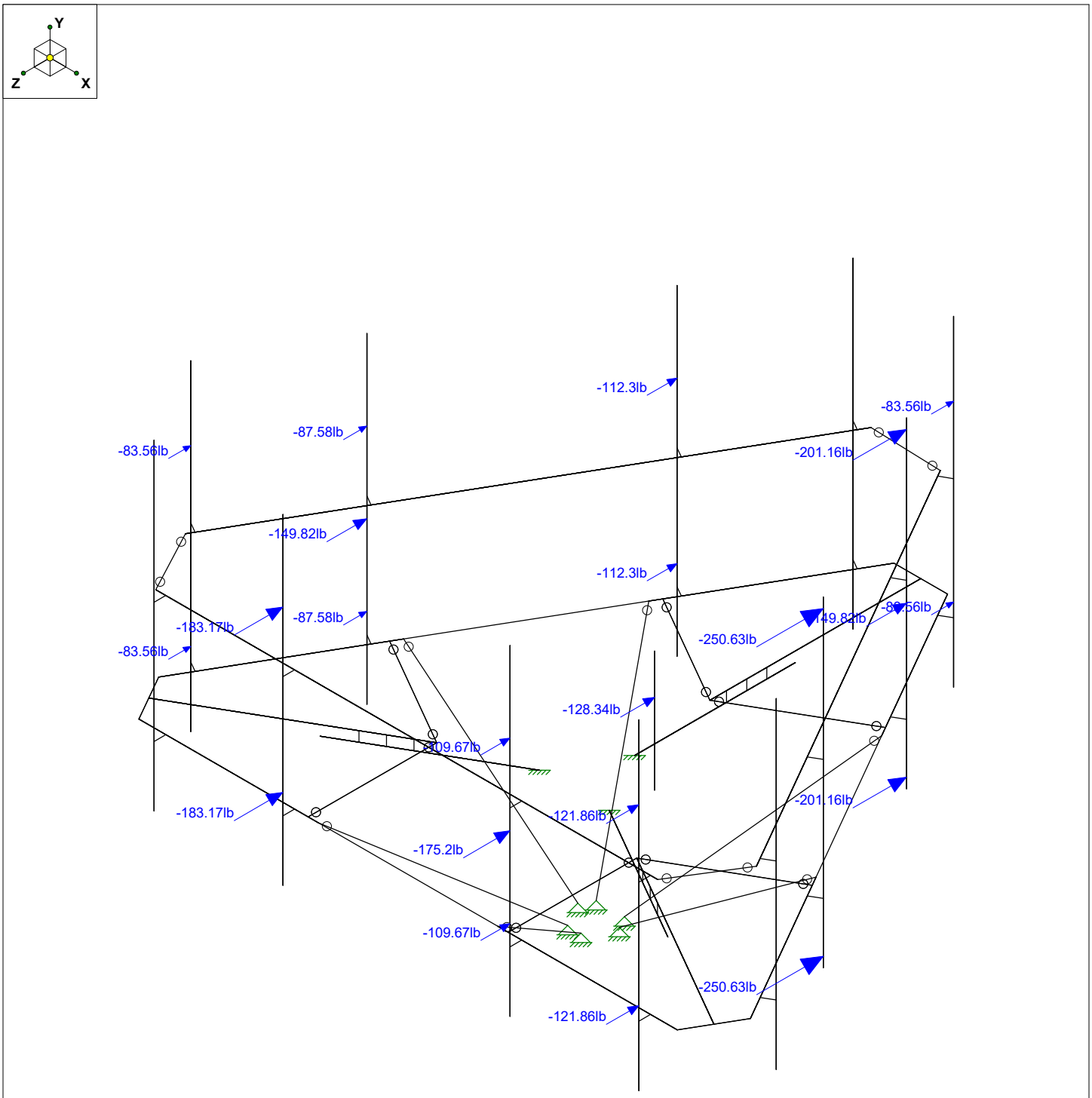

Loads: BLC 2, Wind Load AZI 0
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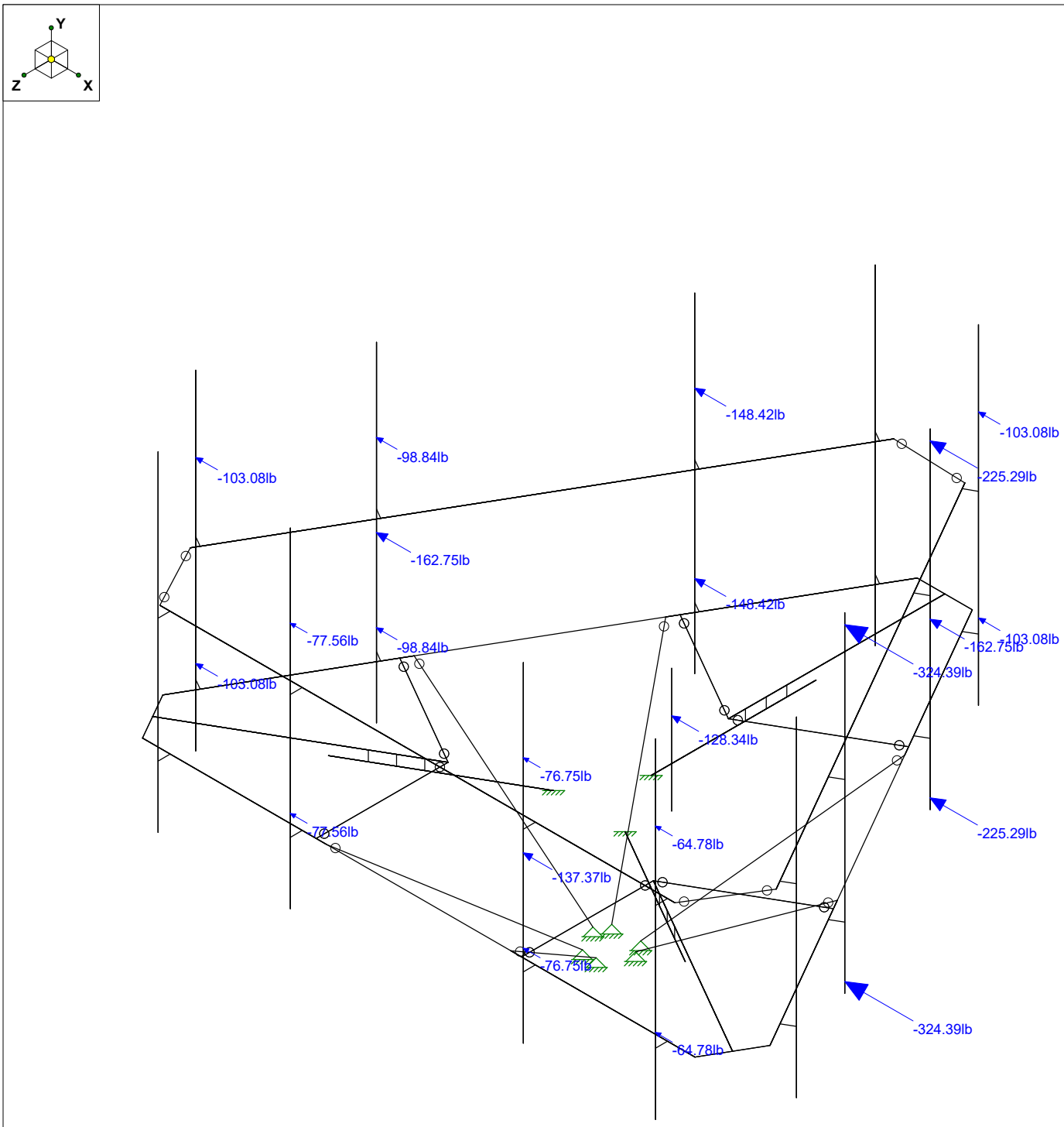

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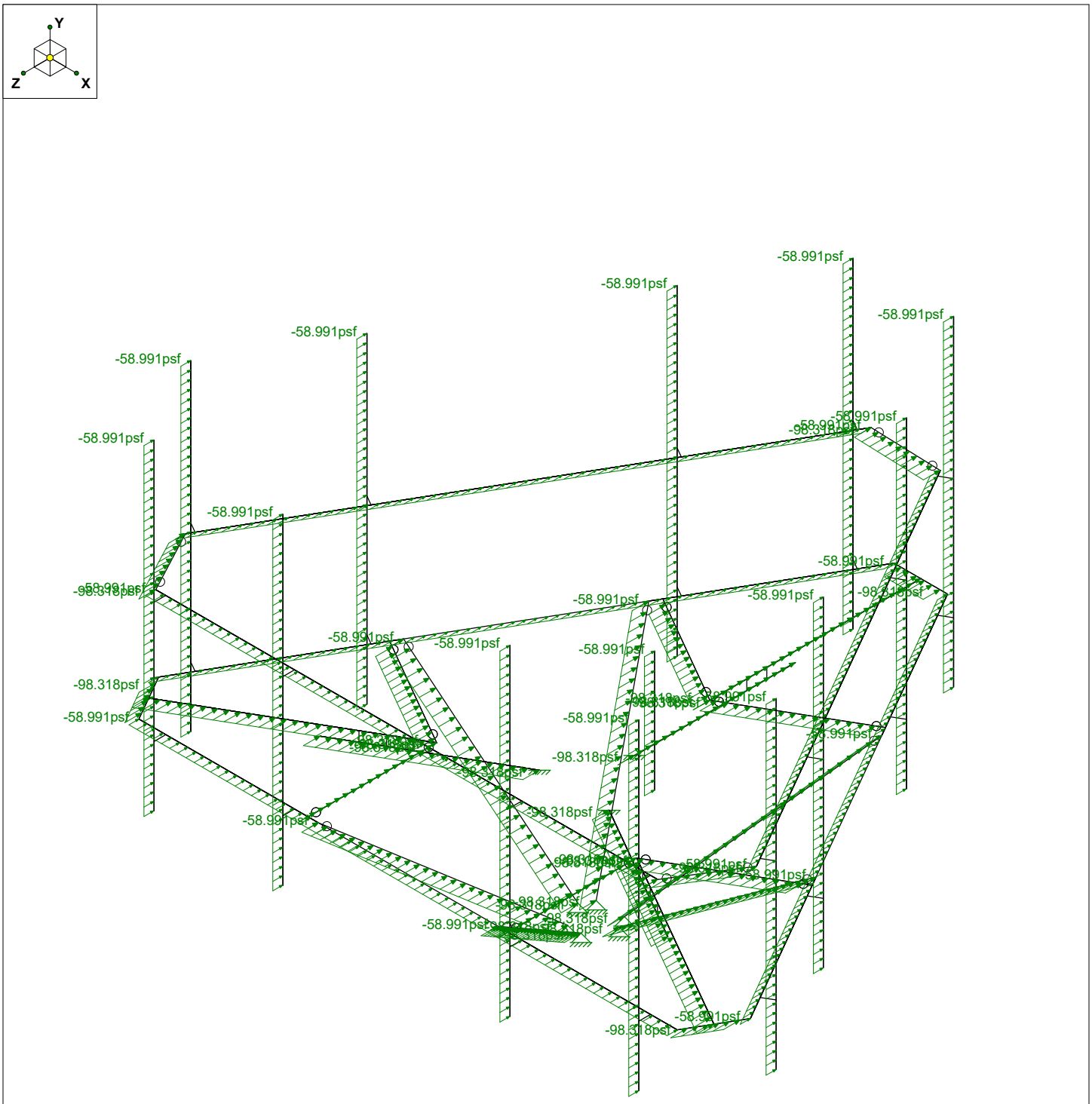
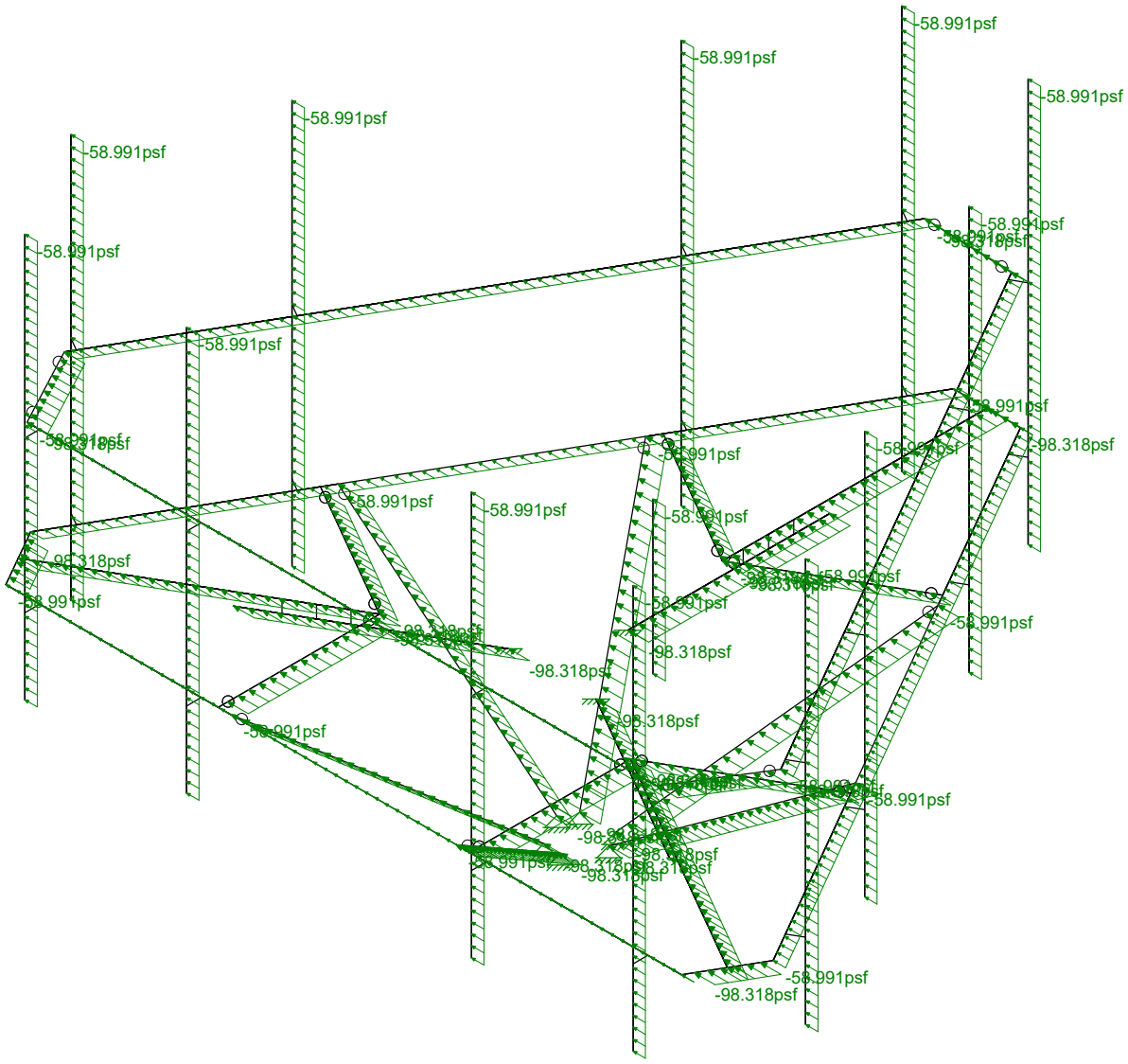


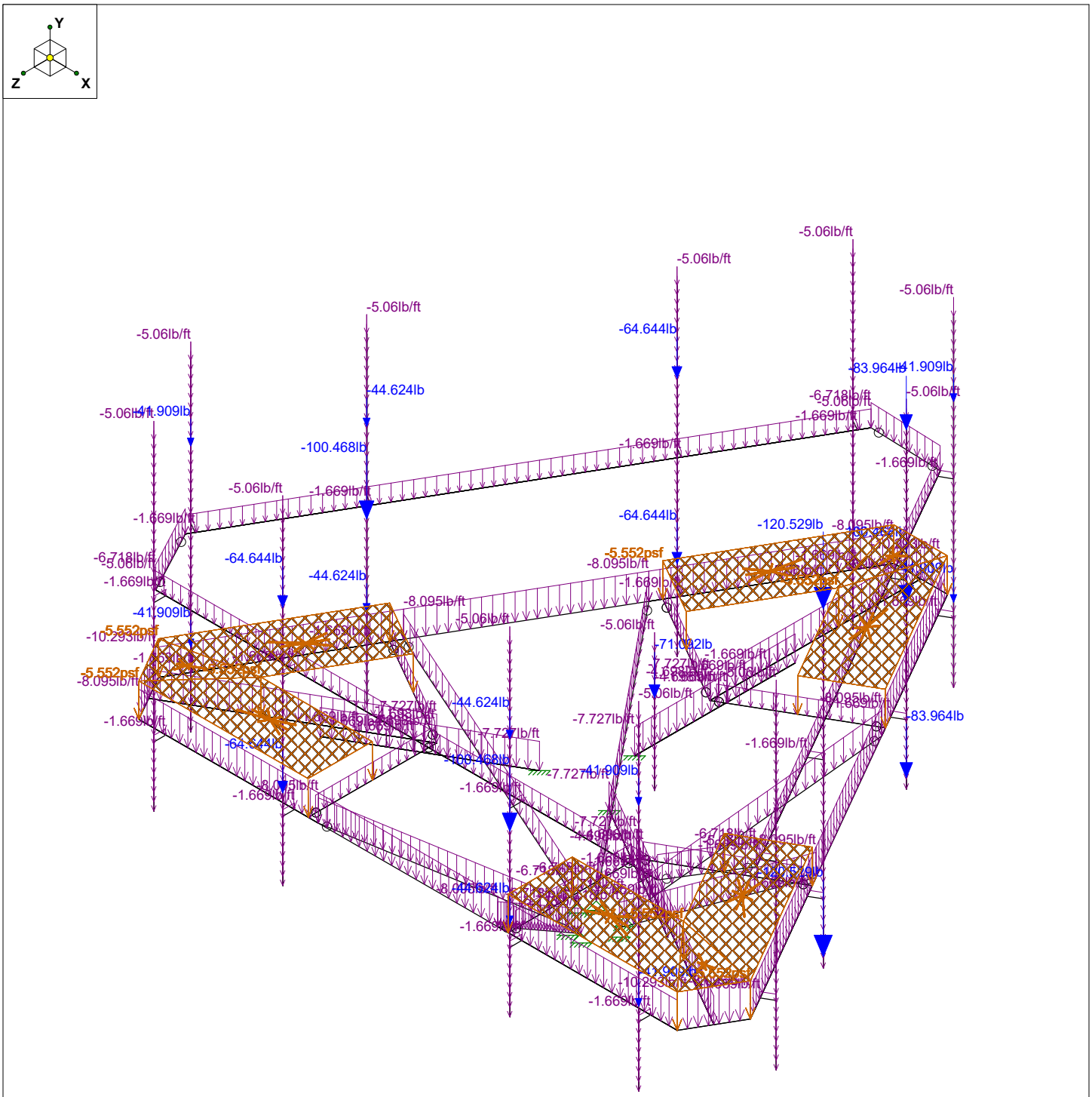
Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05344	Dist. WL 0
DMLG		Mar 2, 2021 at 5:10 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



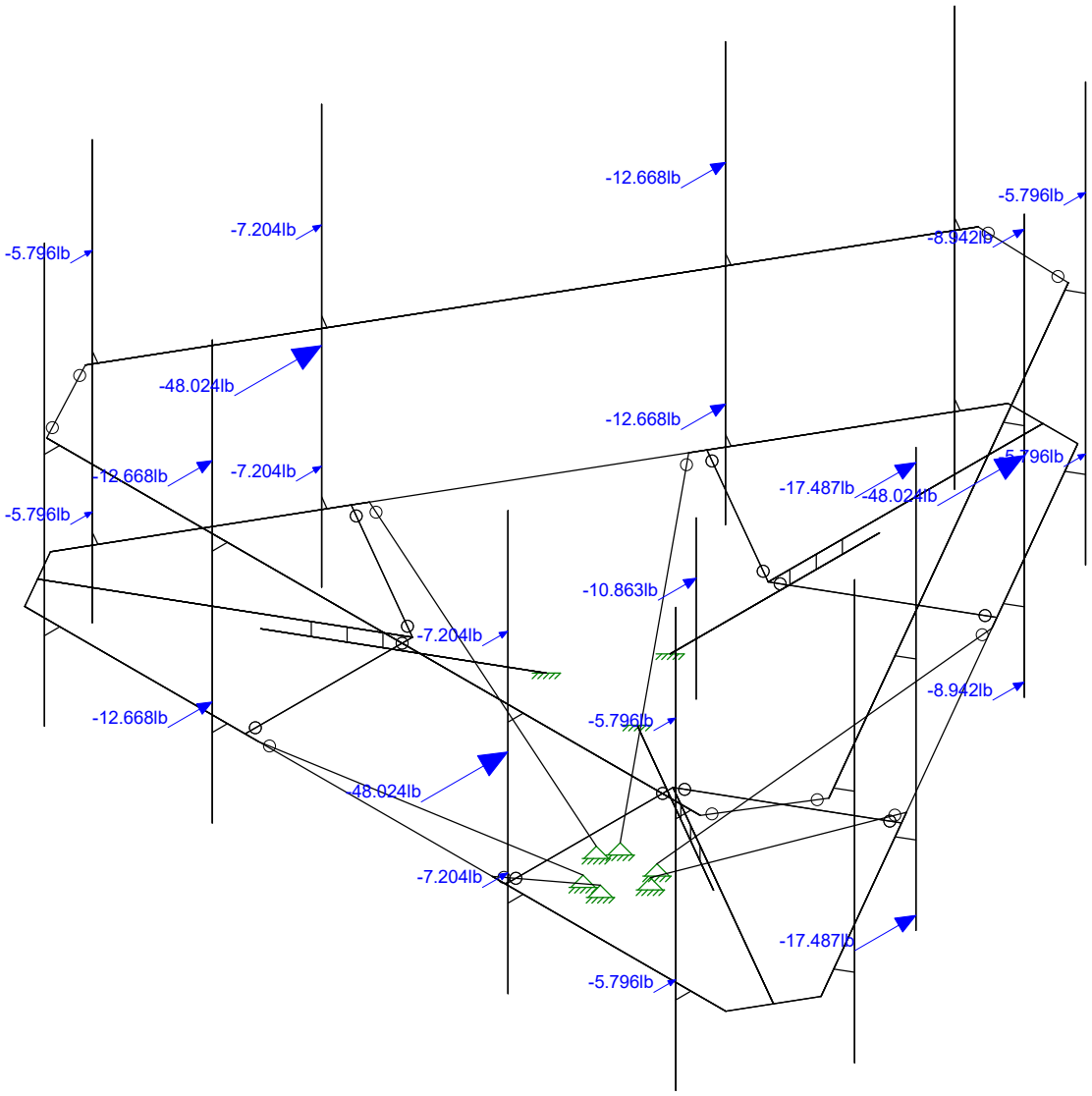
Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05344	Dist. WL 90
DMLG		Mar 2, 2021 at 5:11 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



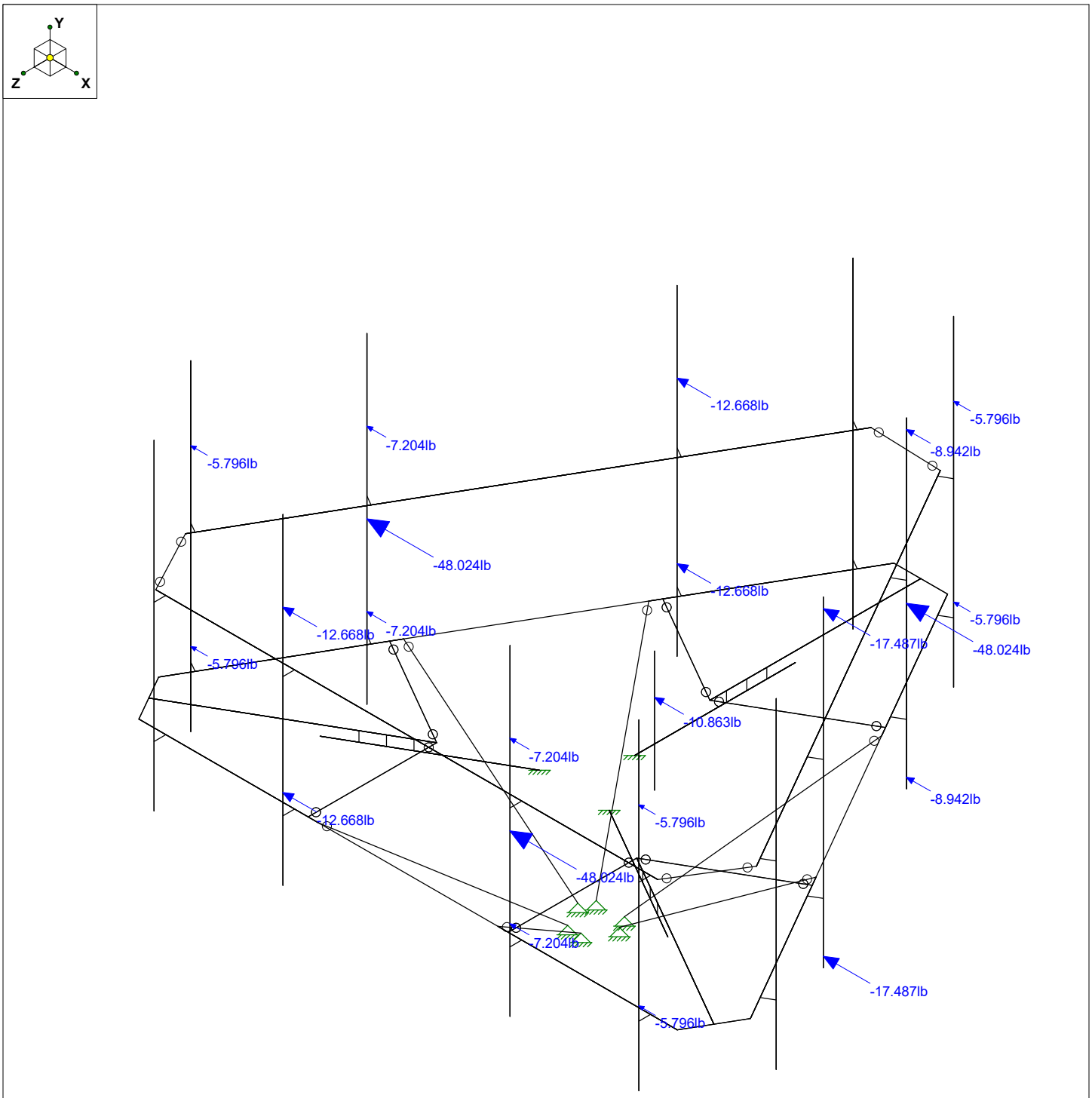
Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05344	Ice
DMLG		Mar 2, 2021 at 5:11 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



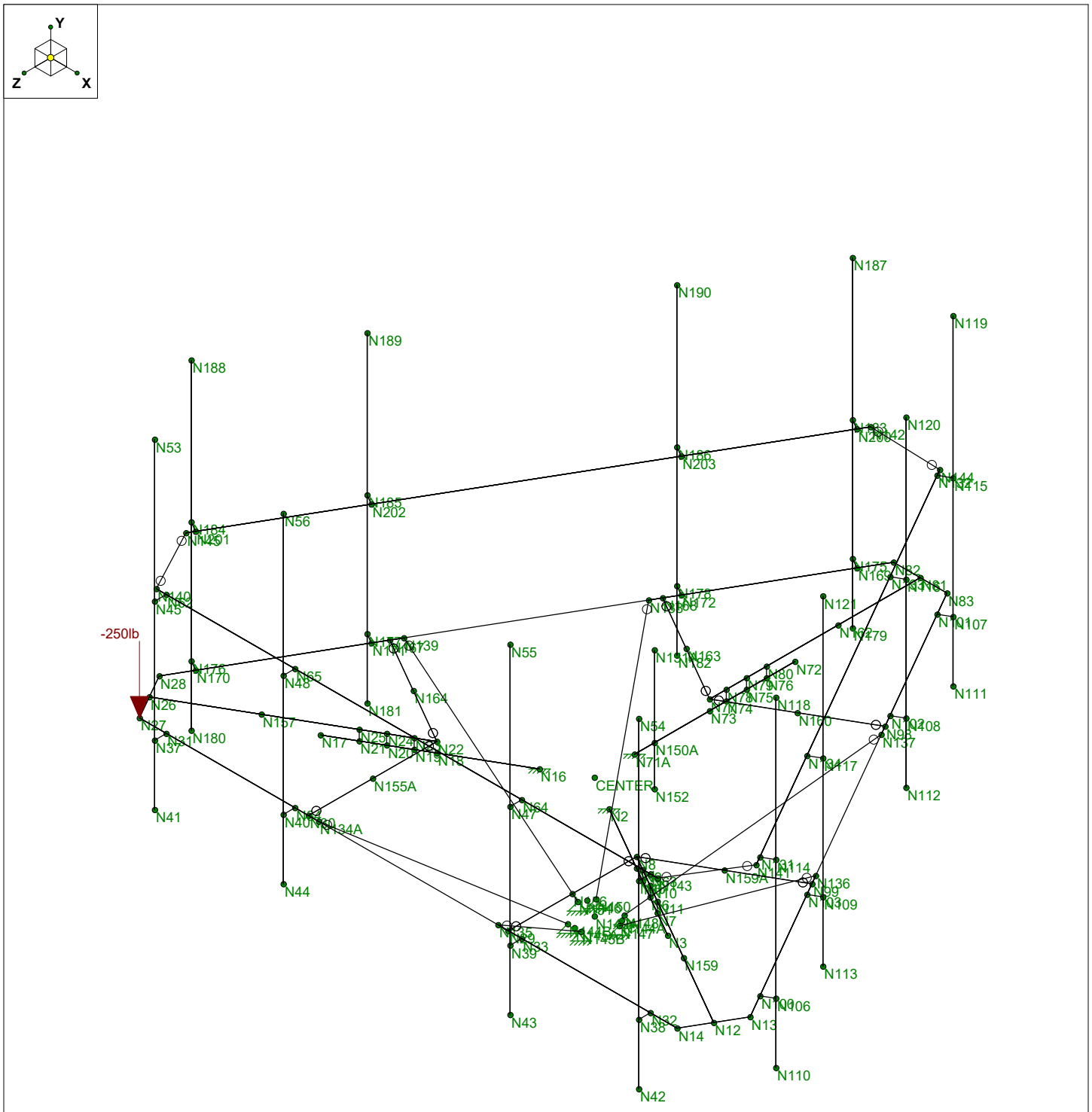
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05344	Seismic 0
DMLG		Mar 2, 2021 at 5:12 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



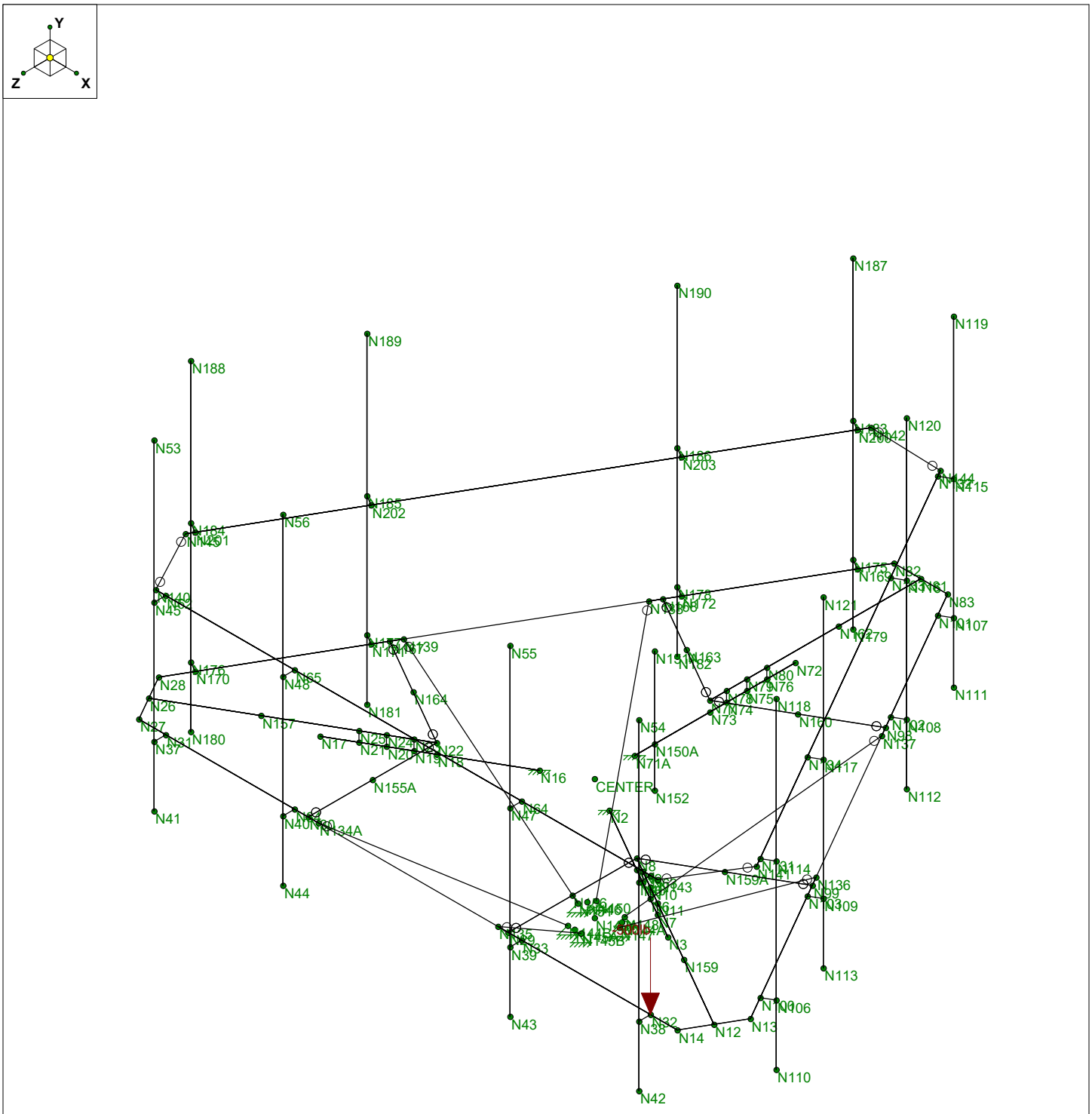
Loads: BLC 32, Seismic Load X
Envelope Only Solution

Infinigy Engineering, PLLC	CTL05344	Seismic 90
DMLG		Mar 2, 2021 at 5:13 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



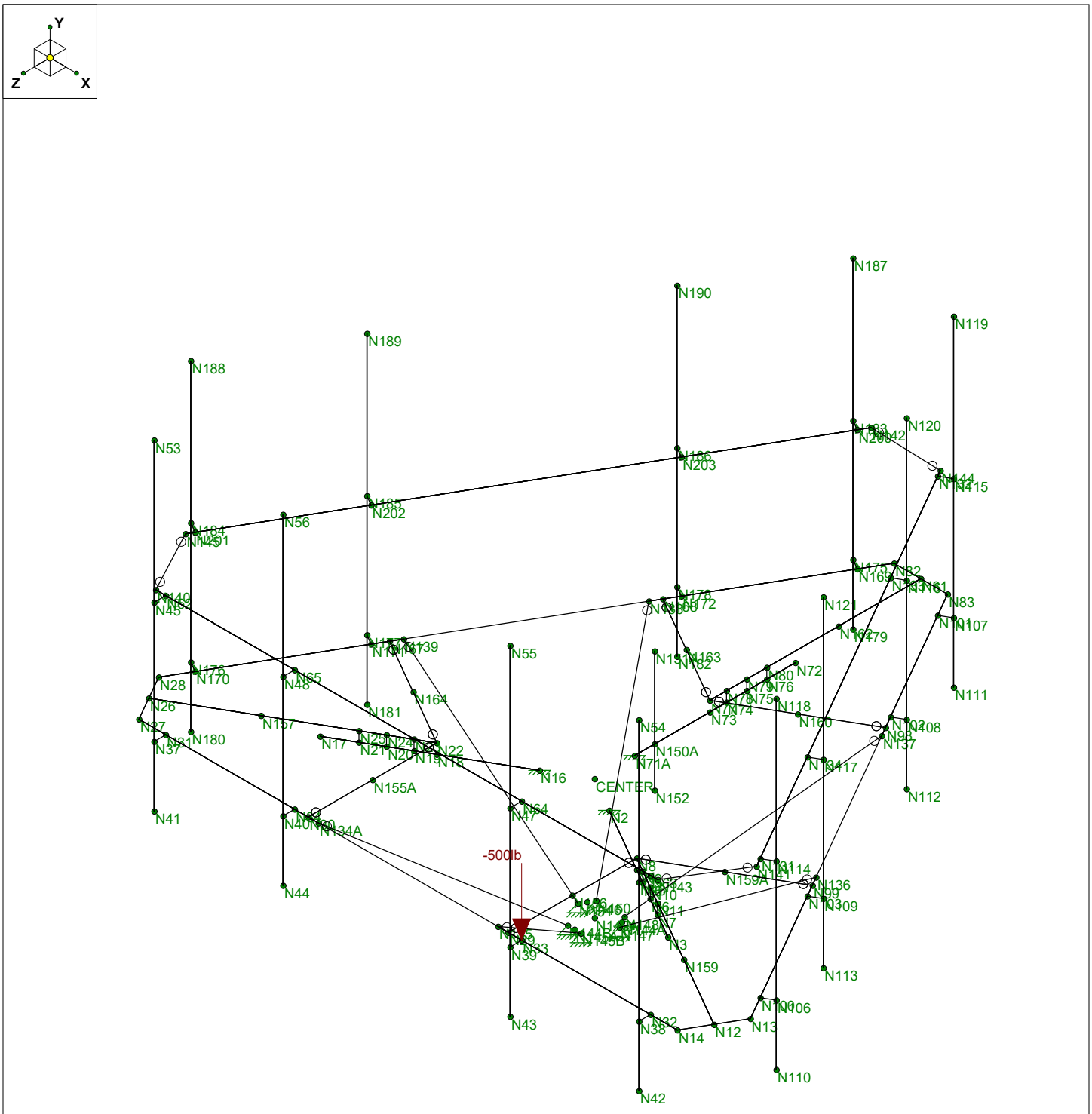
Loads: BLC 33, Service Live Loads

Infinigy Engineering, PLLC	CTL05344	Live Load BLC 33
DMLG		Mar 2, 2021 at 5:18 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



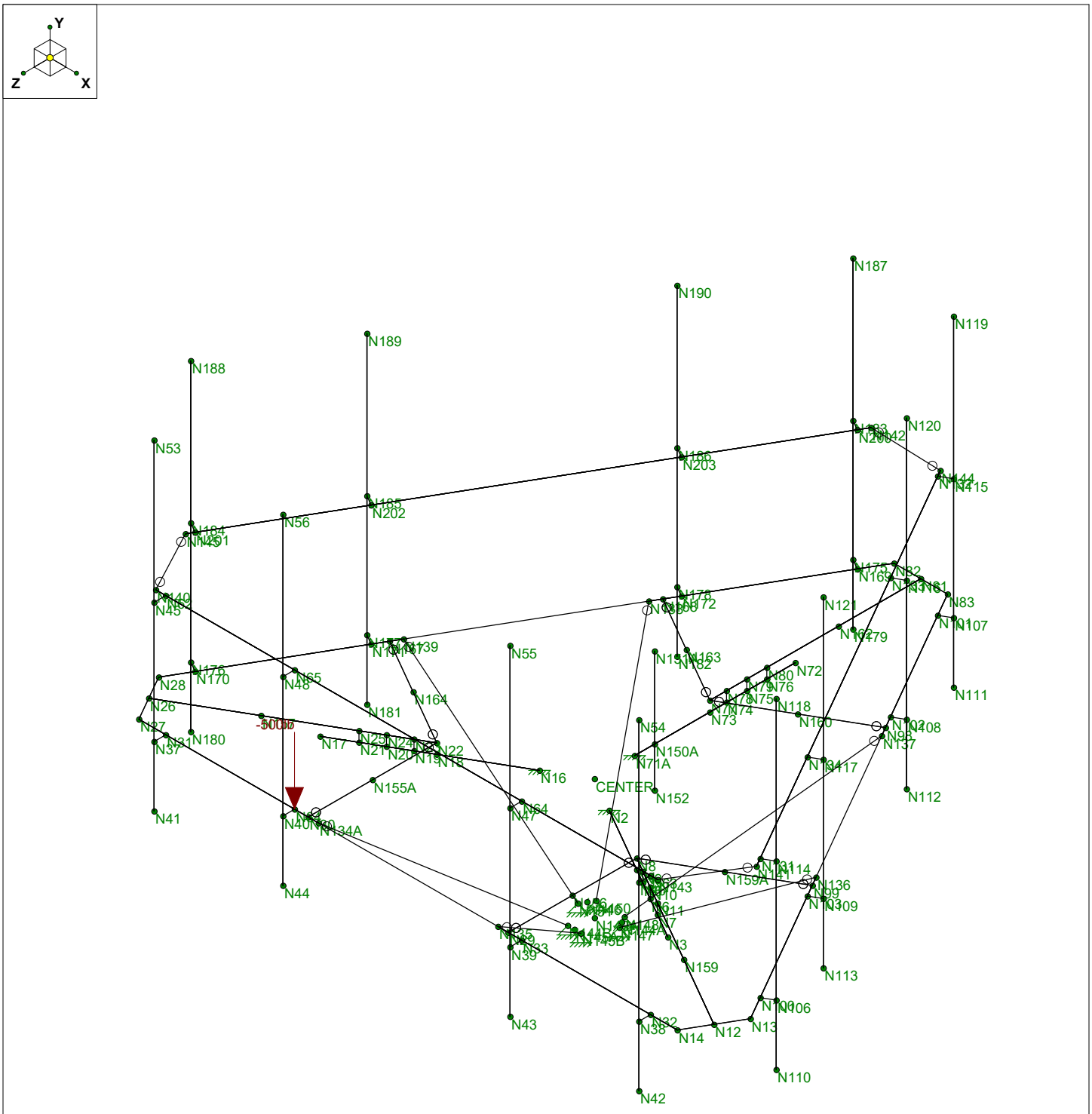
Loads: BLC 34, Maintenance Load 1

Infinigy Engineering, PLLC	CTL05344	Live Load BLC 34
DMLG		Mar 2, 2021 at 5:19 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



Loads: BLC 35, Maintenance Load 2

Infinigy Engineering, PLLC	CTL05344	Live Load BLC 35
DMLG		Mar 2, 2021 at 5:21 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d



Loads: BLC 36, Maintenance Load 3

Infinigy Engineering, PLLC	CTL05344	Live Load BLC 36
DMLG		Mar 2, 2021 at 5:23 PM
1106-A0001-B		CTL05344_loaded_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	Smartlink
Carrier:	AT&T
Engineer:	Dante Lo Greco

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	tiff Soil (Assumed)	
Ground Elevation:	372.60	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	157.00	ft
Tower Height AGL:	180.00	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):	0.987	*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}):	135	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	98.318	psf
Round Pressure:	58.991	psf
Ice Wind Pressure:	8.092	psf

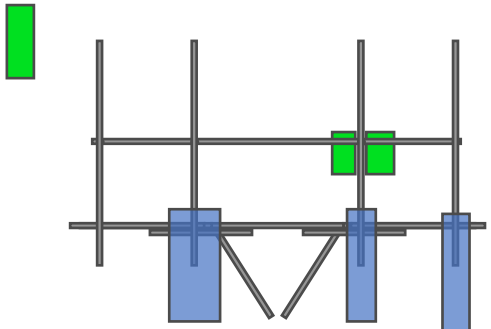
SEISMIC DATA		
Short-Period Accel. (S_s):	0.207	g
1-Second Accel. (S_1):	0.056	g
Short-Period Design (S_{DS}):	0.221	
1-Second Design (S_{D1}):	0.090	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (a_p):	1.000	
Response Mod. (R_p):	2.500	
Overstrength (Ω_o):	1.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

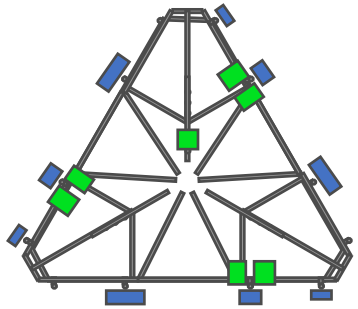
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



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Infinigy Load Calculator V2.1.4

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft²)	EPA_T (ft²)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
POWERWAVE TECHNOLOGIES 7770	157.0	3	0.90	49.16	5.51	2.93	243.71	129.55	35.00	11.59	MP1
CCI ANTENNAS HPA65R-BU4A	157.0	3	0.90	49.16	4.96	3.47	219.35	153.51	43.50	14.41	MP2
CCI ANTENNAS HPA65R-BU8A	157.0	3	0.90	49.16	11.23	8.04	497.00	355.91	54.00	17.88	Leg/Flush
CCI ANTENNAS DMP65R-BU4DA	157.0	3	0.90	49.16	8.28	3.51	366.33	155.11	76.50	25.34	MP3
CCI ANTENNAS DMP65R-BU8DA	157.0	3	0.90	49.16	17.87	8.12	790.67	359.35	105.60	34.97	Leg/Flush
ERICSSON TME-RADIO 4449	157.0	3	0.90	49.16	1.98	1.41	87.60	62.38	70.00	23.18	MP2
ERICSSON TME-RADIO 8843	157.0	3	0.90	49.16	1.98	1.70	87.60	74.99	75.00	24.84	MP2
RAYCAP TME-DC6-48-60-18-8F	157.0	1	0.90	49.16	2.90	2.90	128.34	128.34	32.80	10.86	MP13

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N3			Standoff	Beam	None	A500 Gr....	Typical
2	M2	N8	N12			Standoff	Beam	None	A500 Gr....	Typical
3	M3	N11	N7			RIGID	None	None	RIGID	Typical
4	M4	N10	N6			RIGID	None	None	RIGID	Typical
5	M5	N9	N5			RIGID	None	None	RIGID	Typical
6	M6	N16	N17			Standoff	Beam	None	A500 Gr....	Typical
7	M7	N22	N26			Standoff	Beam	None	A500 Gr....	Typical
8	M8	N25	N21			RIGID	None	None	RIGID	Typical
9	M9	N24	N20			RIGID	None	None	RIGID	Typical
10	M10	N23	N19			RIGID	None	None	RIGID	Typical
11	M11	N27	N134A			Horizontal	Beam	None	A53 Gr.B	Typical
12	M12	N14	N13			Corner Plate	Beam	None	A36 Gr.36	Typical
13	M13	N28	N27			Corner Plate	Beam	None	A36 Gr.36	Typical
14	M15	N22	N30			Bracing Angle	Beam	None	A36 Gr.36	Typical
15	M16	N8	N29		270	Bracing Angle	Beam	None	A36 Gr.36	Typical
16	M17	N32	N38			RIGID	None	None	RIGID	Typical
17	M18	N33	N39			RIGID	None	None	RIGID	Typical
18	M19	N34	N40			RIGID	None	None	RIGID	Typical
19	M20	N31	N37			RIGID	None	None	RIGID	Typical
20	MP1	N54	N42			Mount Pipes	Column	None	A53 Gr.B	Typical
21	MP2	N55	N43			Mount Pipes	Column	None	A53 Gr.B	Typical
22	MP3	N56	N44			Mount Pipes	Column	None	A53 Gr.B	Typical
23	MP4	N53	N41			Mount Pipes	Column	None	A53 Gr.B	Typical
24	M28	N63	N46			RIGID	None	None	RIGID	Typical
25	M29	N64	N47			RIGID	None	None	RIGID	Typical
26	M30	N65	N48			RIGID	None	None	RIGID	Typical
27	M31	N62	N45			RIGID	None	None	RIGID	Typical
28	M39A	N71A	N72			Standoff	Beam	None	A500 Gr....	Typical
29	M40A	N77	N81			Standoff	Beam	None	A500 Gr....	Typical
30	M41A	N80	N76		240	RIGID	None	None	RIGID	Typical
31	M42	N79	N75		240	RIGID	None	None	RIGID	Typical
32	M43	N78	N74		240	RIGID	None	None	RIGID	Typical
33	M49	N13	N136			Horizontal	Beam	None	A53 Gr.B	Typical
34	M50	N83	N82			Corner Plate	Beam	None	A36 Gr.36	Typical
35	M53	N8	N99			Bracing Angle	Beam	None	A36 Gr.36	Typical
36	M54	N77	N98		270	Bracing Angle	Beam	None	A36 Gr.36	Typical
37	M55	N101	N107			RIGID	None	None	RIGID	Typical
38	M56	N102	N108			RIGID	None	None	RIGID	Typical
39	M57	N103	N109			RIGID	None	None	RIGID	Typical
40	M58	N100	N106			RIGID	None	None	RIGID	Typical
41	MP9	N119	N111		240	Mount Pipes	Column	None	A53 Gr.B	Typical
42	MP10	N120	N112		240	Mount Pipes	Column	None	A53 Gr.B	Typical
43	MP11	N121	N113		240	Mount Pipes	Column	None	A53 Gr.B	Typical
44	MP12	N118	N110		240	Mount Pipes	Column	None	A53 Gr.B	Typical
45	M66	N132	N115			RIGID	None	None	RIGID	Typical
46	M67	N133	N116			RIGID	None	None	RIGID	Typical
47	M68	N134	N117			RIGID	None	None	RIGID	Typical
48	M69	N131	N114			RIGID	None	None	RIGID	Typical
49	M87	N82	N138			Horizontal	Beam	None	A53 Gr.B	Typical
50	M91	N77	N168			Bracing Angle	Beam	None	A36 Gr.36	Typical
51	M92	N22	N167		270	Bracing Angle	Beam	None	A36 Gr.36	Typical
52	M93	N170	N176			RIGID	None	None	RIGID	Typical
53	M94	N171	N177			RIGID	None	None	RIGID	Typical
54	M95	N172	N178			RIGID	None	None	RIGID	Typical
55	M96	N169	N175			RIGID	None	None	RIGID	Typical
56	MP5	N188	N180		120	Mount Pipes	Column	None	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	MP6	N189	N181		120	Mount Pipes	Column	None	A53 Gr.B	Typical
58	MP7	N190	N182		120	Mount Pipes	Column	None	A53 Gr.B	Typical
59	MP8	N187	N179		120	Mount Pipes	Column	None	A53 Gr.B	Typical
60	M104	N201	N184			RIGID	None	None	RIGID	Typical
61	M105	N202	N185			RIGID	None	None	RIGID	Typical
62	M106	N203	N186			RIGID	None	None	RIGID	Typical
63	M107	N200	N183			RIGID	None	None	RIGID	Typical
64	M70A	N134A	N135			Horizontal	Beam	None	A53 Gr.B	Typical
65	M71	N135	N14			Horizontal	Beam	None	A53 Gr.B	Typical
66	M72	N136	N137			Horizontal	Beam	None	A53 Gr.B	Typical
67	M73	N137	N83			Horizontal	Beam	None	A53 Gr.B	Typical
68	M74	N138	N139			Horizontal	Beam	None	A53 Gr.B	Typical
69	M75	N139	N28			Horizontal	Beam	None	A53 Gr.B	Typical
70	M76	N140	N143			Handrails	Beam	None	A53 Gr.B	Typical
71	M77	N141	N144			Handrails	Beam	None	A53 Gr.B	Typical
72	M78	N142	N145			Handrails	Beam	None	A53 Gr.B	Typical
73	M73A	N140	N145			Handrail Corners	Beam	None	A36 Gr.36	Typical
74	M74A	N142	N144			Handrail Corners	Beam	None	A36 Gr.36	Typical
75	M75A	N141	N143			Handrail Corners	Beam	None	A36 Gr.36	Typical
76	M76A	N144B	N134A			SFS	Beam	None	A36 Gr.36	Typical
77	M77A	N145B	N135			SFS	Beam	None	A36 Gr.36	Typical
78	M78A	N147	N136			SFS	Beam	None	A36 Gr.36	Typical
79	M79	N148	N137			SFS	Beam	None	A36 Gr.36	Typical
80	M80	N150	N138			SFS	Beam	None	A36 Gr.36	Typical
81	M81	N151	N139			SFS	Beam	None	A36 Gr.36	Typical
82	MP13	N151A	N152			Mount Pipes	Column	None	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		33	111	0
3	Total General		33	111	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6x11/16	3	34.5	40.355
7	A36 Gr.36	L1.5x1.5x1/4	6	208.1	40.563
8	A36 Gr.36	L2.5x2.5x3	9	471.5	120.463
9	A500 Gr.B Rect	HSS3X3X6	6	333	344.279
10	A53 Gr.B	PIPE_2.0	16	1638	473.769
11	A53 Gr.B	PIPE_4.0	9	482.6	405.092
12	Total HR Steel		49	3167.7	1424.522

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Self Weight	DL		-1			25		9	
2	Wind Load AZI 0	WLZ					50			
3	Wind Load AZI 30	None					50			
4	Wind Load AZI 60	None					50			
5	Wind Load AZI 90	WLX					50			
6	Wind Load AZI 120	None					50			
7	Wind Load AZI 150	None					50			
8	Wind Load AZI 180	None					50			
9	Wind Load AZI 210	None					50			
10	Wind Load AZI 240	None					50			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
11	Wind Load AZI 270	None					50			
12	Wind Load AZI 300	None					50			
13	Wind Load AZI 330	None					50			
14	Distr. Wind Load Z	WLZ						82		
15	Distr. Wind Load X	WLX						82		
16	Ice Weight	OL1					25	82	9	
17	Ice Wind Load AZI 0	OL2					50			
18	Ice Wind Load AZI 30	None					50			
19	Ice Wind Load AZI 60	None					50			
20	Ice Wind Load AZI 90	OL3					50			
21	Ice Wind Load AZI 120	None					50			
22	Ice Wind Load AZI 150	None					50			
23	Ice Wind Load AZI 180	None					50			
24	Ice Wind Load AZI 210	None					50			
25	Ice Wind Load AZI 240	None					50			
26	Ice Wind Load AZI 270	None					50			
27	Ice Wind Load AZI 300	None					50			
28	Ice Wind Load AZI 330	None					50			
29	Distr. Ice Wind Load Z	OL2						82		
30	Distr. Ice Wind Load X	OL3						82		
31	Seismic Load Z	ELZ			-.331		25			
32	Seismic Load X	ELX	-.331				25			
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				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	Maintenance Load 11	LL				1				
45	Maintenance Load 12	LL				1				
46	Maintenance Load 13	LL				1				
47	BLC 1 Transient Area Lo...	None						36		
48	BLC 16 Transient Area L...	None						36		

Load Combinations

	Description	S...	PD...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.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	S...	PD...	SRSS	B...	Fa...	B...	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 AZI 0	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y		1	1.2...	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.8...	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.8...	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y		1	.856	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.8...	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.8...	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	2	.198	14	.198	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	3	.198	14	.171	15	.099	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	4	.198	14	.099	15	.171	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	5	.198	14		15	.198	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	6	.198	14	-.0...	15	.171	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	7	.198	14	-.1...	15	.099	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	8	.198	14	-.1...	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	9	.198	14	-.1...	15	-.0...	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	10	.198	14	-.0...	15	-.1...	33	1.5										

Load Combinations (Continued)

	Description	S...	PD...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	11	.198	14		15	-.1...	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	12	.198	14	.099	15	-.1...	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL (60...	Yes	Y		1	1	13	.198	14	.171	15	-.0...	33	1.5										
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	2	.049	14	.049	15											
77	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	3	.049	14	.043	15	.025										
78	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	4	.049	14	.025	15	.043										
79	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	5	.049	14		15	.049										
80	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	6	.049	14	-.0...	15	.043										
81	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	7	.049	14	-.0...	15	.025										
82	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	8	.049	14	-.0...	15											
83	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	9	.049	14	-.0...	15	-.0...										
84	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	10	.049	14	-.0...	15	-.0...										
85	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	11	.049	14		15	-.0...										
86	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	12	.049	14	.025	15	-.0...										
87	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	13	.049	14	.043	15	-.0...										
88	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	2	.049	14	.049	15											
89	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	3	.049	14	.043	15	.025										
90	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	4	.049	14	.025	15	.043										
91	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	5	.049	14		15	.049										
92	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	6	.049	14	-.0...	15	.043										
93	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	7	.049	14	-.0...	15	.025										
94	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	8	.049	14	-.0...	15											
95	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	9	.049	14	-.0...	15	-.0...										
96	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	10	.049	14	-.0...	15	-.0...										
97	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	11	.049	14		15	-.0...										
98	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	12	.049	14	.025	15	-.0...										
99	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	13	.049	14	.043	15	-.0...										
100	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	2	.049	14	.049	15											
101	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	3	.049	14	.043	15	.025										
102	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	4	.049	14	.025	15	.043										
103	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	5	.049	14		15	.049										
104	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	6	.049	14	-.0...	15	.043										
105	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	7	.049	14	-.0...	15	.025										
106	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	8	.049	14	-.0...	15											
107	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	9	.049	14	-.0...	15	-.0...										
108	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	10	.049	14	-.0...	15	-.0...										
109	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	11	.049	14		15	-.0...										
110	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	12	.049	14	.025	15	-.0...										
111	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	13	.049	14	.043	15	-.0...										
112	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	2	.049	14	.049	15											
113	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	3	.049	14	.043	15	.025										
114	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	4	.049	14	.025	15	.043										
115	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	5	.049	14		15	.049										
116	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	6	.049	14	-.0...	15	.043										
117	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	7	.049	14	-.0...	15	.025										
118	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	8	.049	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	9	.049	14	-.0...	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	10	.049	14	-.0...	15	-.0...										
121	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	11	.049	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	12	.049	14	.025	15	-.0...										
123	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	13	.049	14	.043	15	-.0...										
124	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	2	.049	14	.049	15											
125	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	3	.049	14	.043	15	.025										
126	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	4	.049	14	.025	15	.043										
127	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	5	.049	14		15	.049										
128	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	6	.049	14	-.0...	15	.043										

Load Combinations (Continued)

	Description	S...	PD...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
129	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	7	.049	14	-.0...	15	.025										
130	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	8	.049	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	9	.049	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	10	.049	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	11	.049	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	12	.049	14	.025	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1SWL..	Yes	Y		1	1.2	38	1.5	13	.049	14	.043	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	2	.049	14	.049	15											
137	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	3	.049	14	.043	15	.025										
138	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	4	.049	14	.025	15	.043										
139	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	5	.049	14		15	.049										
140	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	6	.049	14	-.0...	15	.043										
141	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	7	.049	14	-.0...	15	.025										
142	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	8	.049	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	9	.049	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	10	.049	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	11	.049	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	12	.049	14	.025	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1SWL..	Yes	Y		1	1.2	39	1.5	13	.049	14	.043	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	2	.049	14	.049	15											
149	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	3	.049	14	.043	15	.025										
150	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	4	.049	14	.025	15	.043										
151	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	5	.049	14		15	.049										
152	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	6	.049	14	-.0...	15	.043										
153	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	7	.049	14	-.0...	15	.025										
154	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	8	.049	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	9	.049	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	10	.049	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	11	.049	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	12	.049	14	.025	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1SWL..	Yes	Y		1	1.2	40	1.5	13	.049	14	.043	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	2	.049	14	.049	15											
161	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	3	.049	14	.043	15	.025										
162	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	4	.049	14	.025	15	.043										
163	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	5	.049	14		15	.049										
164	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	6	.049	14	-.0...	15	.043										
165	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	7	.049	14	-.0...	15	.025										
166	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	8	.049	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	9	.049	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	10	.049	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	11	.049	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	12	.049	14	.025	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1SWL..	Yes	Y		1	1.2	41	1.5	13	.049	14	.043	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	2	.049	14	.049	15											
173	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	3	.049	14	.043	15	.025										
174	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	4	.049	14	.025	15	.043										
175	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	5	.049	14		15	.049										
176	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	6	.049	14	-.0...	15	.043										
177	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	7	.049	14	-.0...	15	.025										
178	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	8	.049	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	9	.049	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	10	.049	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	11	.049	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	12	.049	14	.025	15	-.0...										
183	1.2DL + 1.5LM-MP9 + 1SWL..	Yes	Y		1	1.2	42	1.5	13	.049	14	.043	15	-.0...										
184	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	2	.049	14	.049	15											
185	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	3	.049	14	.043	15	.025										

Load Combinations (Continued)

	Description	S...	PD...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
186	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	4	.049	14	.025	15	.043										
187	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	5	.049	14		15	.049										
188	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	6	.049	14	-.0...	15	.043										
189	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	7	.049	14	-.0...	15	.025										
190	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	8	.049	14	-.0...	15											
191	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	9	.049	14	-.0...	15	-.0...										
192	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	10	.049	14	-.0...	15	-.0...										
193	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	11	.049	14		15	-.0...										
194	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	12	.049	14	.025	15	-.0...										
195	1.2DL + 1.5LM-MP10 + 1SW..	Yes	Y		1	1.2	43	1.5	13	.049	14	.043	15	-.0...										
196	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	2	.049	14	.049	15											
197	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	3	.049	14	.043	15	.025										
198	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	4	.049	14	.025	15	.043										
199	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	5	.049	14		15	.049										
200	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	6	.049	14	-.0...	15	.043										
201	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	7	.049	14	-.0...	15	.025										
202	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	8	.049	14	-.0...	15											
203	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	9	.049	14	-.0...	15	-.0...										
204	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	10	.049	14	-.0...	15	-.0...										
205	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	11	.049	14		15	-.0...										
206	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	12	.049	14	.025	15	-.0...										
207	1.2DL + 1.5LM-MP11 + 1SW..	Yes	Y		1	1.2	44	1.5	13	.049	14	.043	15	-.0...										
208	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	2	.049	14	.049	15											
209	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	3	.049	14	.043	15	.025										
210	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	4	.049	14	.025	15	.043										
211	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	5	.049	14		15	.049										
212	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	6	.049	14	-.0...	15	.043										
213	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	7	.049	14	-.0...	15	.025										
214	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	8	.049	14	-.0...	15											
215	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	9	.049	14	-.0...	15	-.0...										
216	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	10	.049	14	-.0...	15	-.0...										
217	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	11	.049	14		15	-.0...										
218	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	12	.049	14	.025	15	-.0...										
219	1.2DL + 1.5LM-MP12 + 1SW..	Yes	Y		1	1.2	45	1.5	13	.049	14	.043	15	-.0...										
220	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	2	.049	14	.049	15											
221	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	3	.049	14	.043	15	.025										
222	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	4	.049	14	.025	15	.043										
223	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	5	.049	14		15	.049										
224	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	6	.049	14	-.0...	15	.043										
225	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	7	.049	14	-.0...	15	.025										
226	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	8	.049	14	-.0...	15											
227	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	9	.049	14	-.0...	15	-.0...										
228	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	10	.049	14	-.0...	15	-.0...										
229	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	11	.049	14		15	-.0...										
230	1.2DL + 1.5LM-MP13 + 1SW..	Yes	Y		1	1.2	46	1.5	12	.049	14	.025	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	N16	max	4002.827	6	251.947	12	2401.629	24	926.045	15	1511.124	15	632.43	22
2		min	-3883.599	24	-17.919	18	-2451.625	6	-1182.036	9	-1518.811	9	-1121.278	4
3	N2	max	3819.171	16	248.668	4	2836.014	15	1214.862	25	2597.856	19	1199.319	12
4		min	-4033.65	10	-15.536	22	-2945.666	9	-1525.084	7	-2641.583	13	-724.71	18
5	N71A	max	2256.946	17	921	226	5185.807	2	1218.669	2	3184.242	11	1675.846	11
6		min	-2283.907	11	16.78	14	-4989.682	20	-618.282	20	-3174.859	17	-1651.118	17
7	N144B	max	276.977	24	1223.553	6	1519.21	6	0	230	0	230	0	230

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
8		min	-714.504	6	-518.645	24	-642.215	24	0	1	0	1	0	1
9	N145B	max	813.466	10	1379.252	10	1718.402	10	0	230	0	230	0	230
10		min	-295.458	16	-547.149	16	-678.417	16	0	1	0	1	0	1
11	N147	max	1624.101	168	1153.027	168	72.584	15	0	230	0	230	0	230
12		min	-407.171	16	-301.495	16	-136.152	9	0	1	0	1	0	1
13	N148	max	946.066	2	1214.353	2	396.987	20	0	230	0	230	0	230
14		min	-302.285	20	-377.418	20	-1404.157	124	0	1	0	1	0	1
15	N150	max	462.436	20	1305.835	2	640.286	20	0	230	0	230	0	230
16		min	-1018.324	2	-581.789	20	-1480.153	2	0	1	0	1	0	1
17	N151	max	522.868	25	1181.514	7	84.495	25	0	230	0	230	0	230
18		min	-1657.893	177	-372.913	25	-152.408	7	0	1	0	1	0	1
19	Totals:	max	6654.641	5	6427.424	27	6769.381	14						
20		min	-6654.639	23	2230.3	57	-6769.382	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	MP10	PIPE_2.0	.898	78	12	.191	78		12	14916....	32130	1871.6...	1871.6...	1...	H1-1b
2	MP11	PIPE_2.0	.856	78	12	.216	42		12	14916....	32130	1871.6...	1871.6...	1...	H1-1b
3	MP2	PIPE_2.0	.709	78	7	.161	78		5	14916....	32130	1871.6...	1871.6...	1...	H1-1b
4	MP1	PIPE_2.0	.682	78	7	.167	78		11	14916....	32130	1871.6...	1871.6...	2...	H1-1b
5	MP8	PIPE_2.0	.669	78	6	.171	78		13	14916....	32130	1871.6...	1871.6...	1...	H1-1b
6	MP7	PIPE_2.0	.668	78	5	.152	78		7	14916....	32130	1871.6...	1871.6...	1...	H1-1b
7	MP6	PIPE_2.0	.654	78	3	.155	78		12	14916....	32130	1871.6...	1871.6...	1...	H1-1b
8	MP3	PIPE_2.0	.604	78	9	.169	78		7	14916....	32130	1871.6...	1871.6...	1...	H1-1b
9	MP9	PIPE_2.0	.592	78	11	.227	78		12	14916....	32130	1871.6...	1871.6...	1...	H1-1b
10	MP12	PIPE_2.0	.586	78	13	.281	42		12	14916....	32130	1871.6...	1871.6...	1...	H1-1b
11	MP4	PIPE_2.0	.517	78	10	.185	42		7	14916....	32130	1871.6...	1871.6...	1...	H1-1b
12	MP5	PIPE_2.0	.505	78	3	.150	42		5	14916....	32130	1871.6...	1871.6...	2...	H1-1b
13	M77	PIPE_2.0	.499	40.625	12	.373	3.125		12	6295.4...	32130	1871.6...	1871.6...	1...	H3-6
14	M50	6x11/16	.344	0	7	.770	0	y	12	111996...	133650	1914.2...	16706....	1...	H1-1b
15	M77A	L2.5x2.5x3	.337	34.635	11	.007	0	z	23	10269....	29192.4	872.574	1563.9...	1...	H2-1
16	M78	PIPE_2.0	.324	3.125	5	.169	40.625		7	6295.4...	32130	1871.6...	1871.6...	2...	H1-1b
17	M81	L2.5x2.5x3	.320	36.049	7	.010	0	z	20	10269....	29192.4	872.574	1575.4...	1...	H2-1
18	M13	6x11/16	.317	5.75	11	.612	0	y	4	111996...	133650	1914.2...	16706....	1...	H1-1b
19	M39A	HSS3X3X6	.314	0	5	.232	0	z	11	134086...	140346	11212.5	11212.5	1	H1-1b
20	M12	6x11/16	.311	0	3	.719	0	y	7	111996...	133650	1914.2...	16706....	1...	H1-1b
21	M76	PIPE_2.0	.299	146.8...	7	.188	3.125		7	6295.4...	32130	1871.6...	1871.6...	2...	H1-1b
22	M76A	L2.5x2.5x3	.298	35.342	5	.007	0	z	23	10269....	29192.4	872.574	1562.8...	1...	H2-1
23	M79	L2.5x2.5x3	.282	32.515	3	.007	67.857	z	22	10269....	29192.4	872.574	1559.8...	1...	H2-1
24	M80	L2.5x2.5x3	.278	33.929	3	.007	67.857	z	24	10269....	29192.4	872.574	1551.8...	1...	H2-1
25	M1	HSS3X3X6	.276	0	8	.204	0	z	7	134086...	140346	11212.5	11212.5	1	H1-1b
26	M78A	L2.5x2.5x3	.271	36.756	9	.010	0	z	20	10269....	29192.4	872.574	1570.0...	1...	H2-1
27	M87	PIPE_4.0	.215	53.625	2	.189	7.82		4	87470....	93240	10631....	10631....	1...	H1-1b
28	M74	PIPE_4.0	.210	0	2	.153	0		13	87470....	93240	10631....	10631....	2...	H1-1b
29	M71	PIPE_4.0	.207	0	10	.187	0		11	87470....	93240	10631....	10631....	1...	H1-1b
30	M11	PIPE_4.0	.206	53.625	6	.201	50.832		6	87470....	93240	10631....	10631....	1...	H1-1b
31	M70A	PIPE_4.0	.202	53.625	10	.160	0		5	87470....	93240	10631....	10631....	2...	H1-1b
32	M75	PIPE_4.0	.188	0	6	.183	45.805		5	87470....	93240	10631....	10631....	1...	H1-1b
33	M73	PIPE_4.0	.187	0	2	.216	53.625		6	87470....	93240	10631....	10631....	1...	H1-1b
34	M72	PIPE_4.0	.182	53.625	2	.119	0		9	87470....	93240	10631....	10631....	1...	H1-1b
35	M16	L1.5x1.5x1/4	.176	19.868	16	.018	34.678	z	7	10601....	22275	360.338	833.922	1...	H2-1
36	M54	L1.5x1.5x1/4	.176	18.062	19	.018	34.678	z	11	10601....	22275	360.338	834.027	1...	H2-1
37	M49	PIPE_4.0	.176	53.625	10	.215	7.82		12	87470....	93240	10631....	10631....	1...	H1-1b
38	M91	L1.5x1.5x1/4	.166	18.423	21	.018	0	z	12	10601....	22275	360.338	834.027	1...	H2-1
39	M6	HSS3X3X6	.164	0	3	.153	0	z	3	134086...	140346	11212.5	11212.5	1	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
40	M15	L1.5x1.5x1/4	.164	19.868	24	.015	0	z	4	10601....	22275	360.338	833.85	1...	H2-1
41	M92	L1.5x1.5x1/4	.140	19.506	24	.015	34.678	z	3	10601....	22275	360.338	834.027	1...	H2-1
42	M53	L1.5x1.5x1/4	.137	18.423	17	.017	34.678	y	7	10601....	22275	360.338	834.027	1...	H2-1
43	MP13	PIPE 2.0	.082	24	11	.016	24		11	28843....	32130	1871.6...	1871.6...	2...	H1-1b
44	M40A	HSS3X3X6	.075	4.594	11	.110	63	z	12	123526...	140346	11212.5	11212.5	1	H1-1b
45	M2	HSS3X3X6	.066	17.063	13	.113	63	z	7	123526...	140346	11212.5	11212.5	1	H1-1b
46	M7	HSS3X3X6	.056	63	5	.098	63	z	3	123526...	140346	11212.5	11212.5	1	H1-1b
47	M74A	L2.5x2.5x3	.030	10.725	13	.152	0	z	6	26301....	29192.4	872.574	1971.83	1...	H2-1
48	M75A	L2.5x2.5x3	.027	10.949	11	.152	0	y	7	26301....	29192.4	872.574	1971.83	1...	H2-1
49	M73A	L2.5x2.5x3	.026	10.502	5	.114	21.451	z	9	26301....	29192.4	872.574	1971.83	1...	H2-1

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*P...	phi*T...	phi*M...	phi*M...	phi*...phi*...	Cb	Eqn
No Data to Print ...															

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

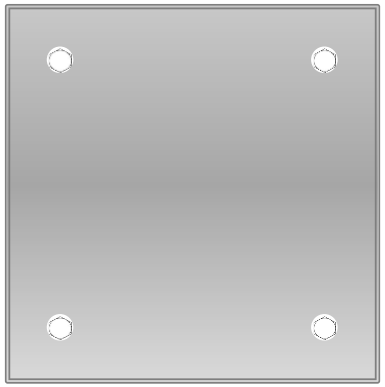
Bolt Calculation Tool, V1.4

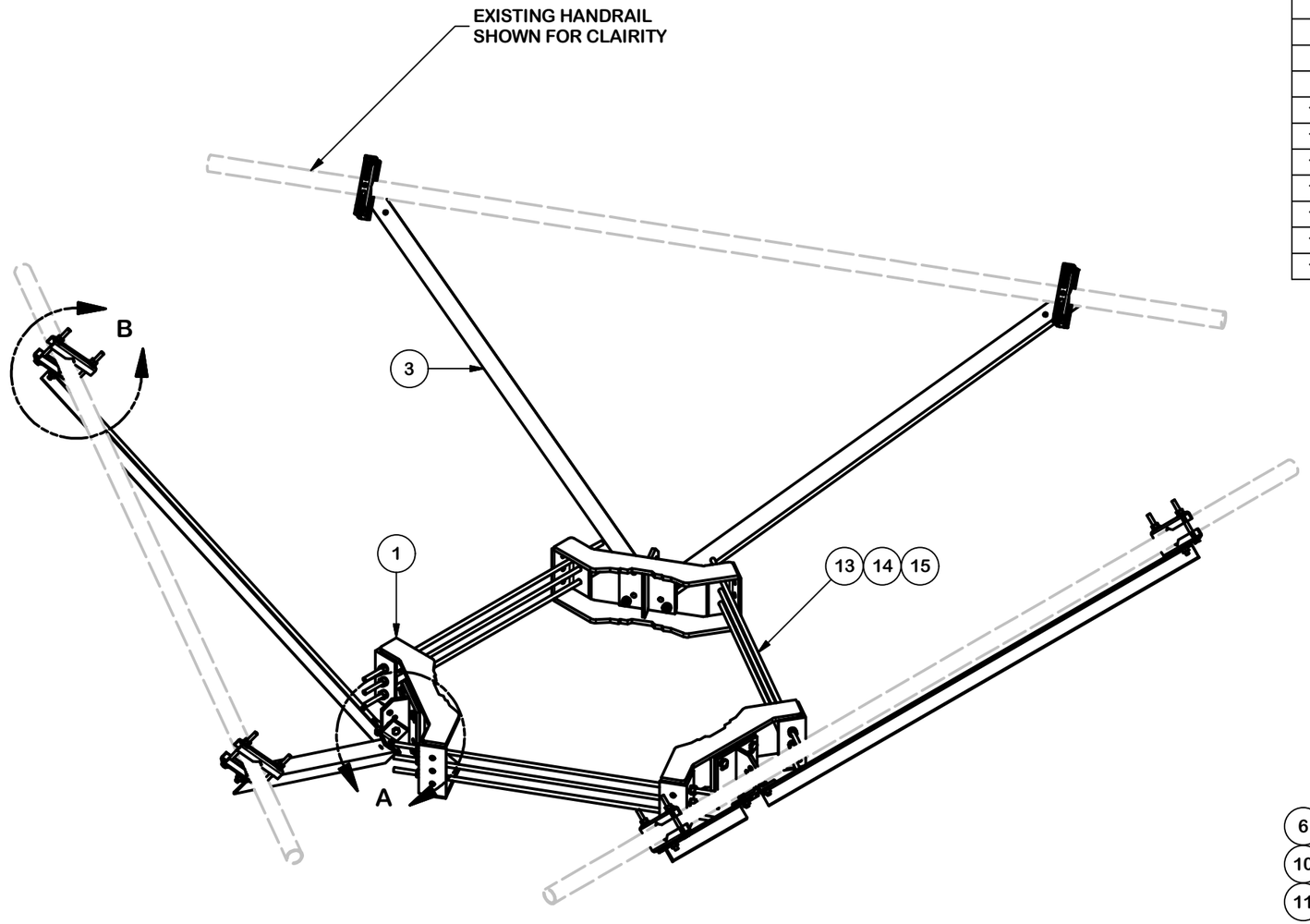
PROJECT DATA	
Site Name:	Colchester NW
Site Number:	CTL05344
Job Code:	1106-A0001-B
Connection Description:	Standoff to Collar

APPLIED LOADS		
Bolt Tension:	4458.60	lbs
Bolt Shear:	1582.69	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Tensile Usage	21.9%	
Shear Usage	11.5%	
Interaction Check	0.06	***≤1.05***
Result	Pass	





PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-TBW	T-BRACKET WELDMENT		13.60	40.80
3	6	X-254924	DIAGONAL ANGLE - SITE PRO 1	72 in	19.71	118.24
4	12	X-STU	STIFF ARM CHANNEL BRACKET	8 1/2 in	1.37	16.46
5	6	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	11.15
6	12	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	1.77
7	3	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.61
8	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
9	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
10	27	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.38
11	27	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.93
12	12	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	3.75
13	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
13	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
14	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
15	30	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	3.90
					TOTAL WT. #	642.04

DETAIL A

DETAIL B

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/25/2017

REVISION HISTORY

TOLERANCE NOTES

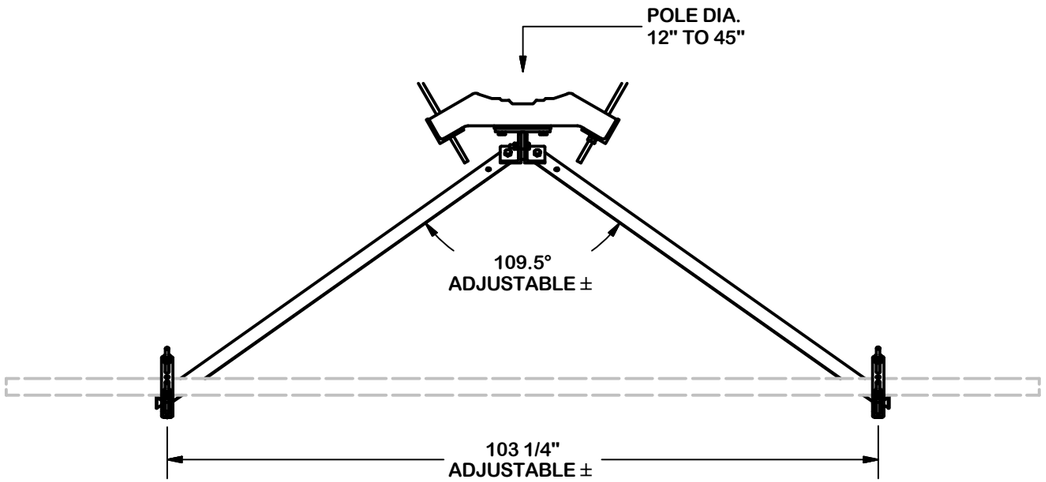
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

DESCRIPTION: HANDRAIL REINFORCEMENT KIT (LONG)

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS-L

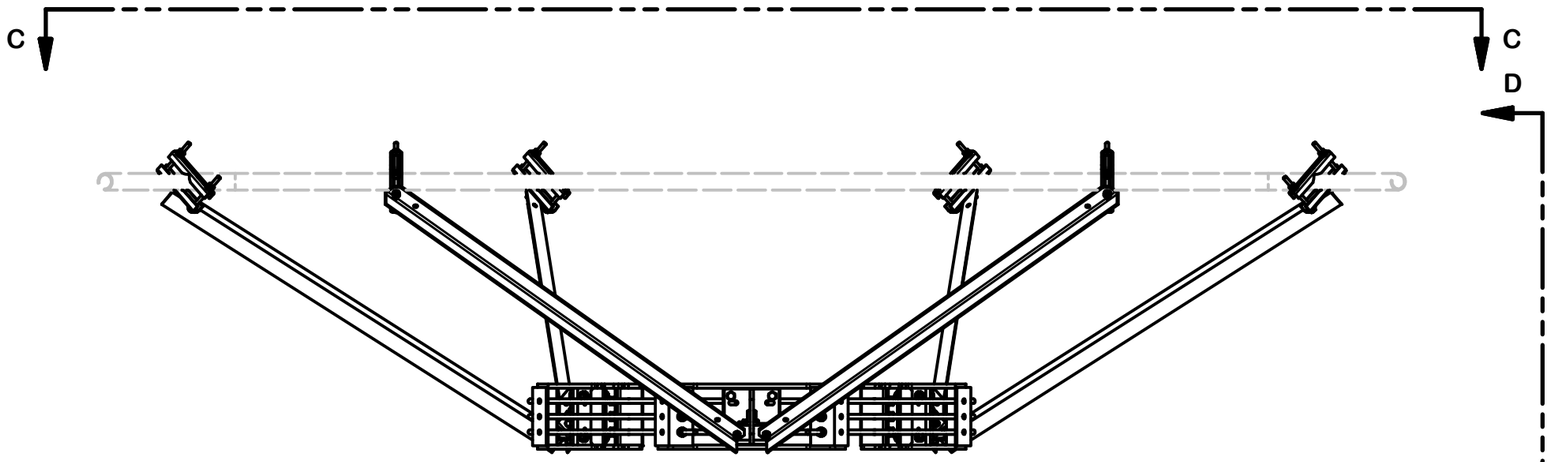
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	SHOP	BMC 9/8/2017	PRK-SFS-L

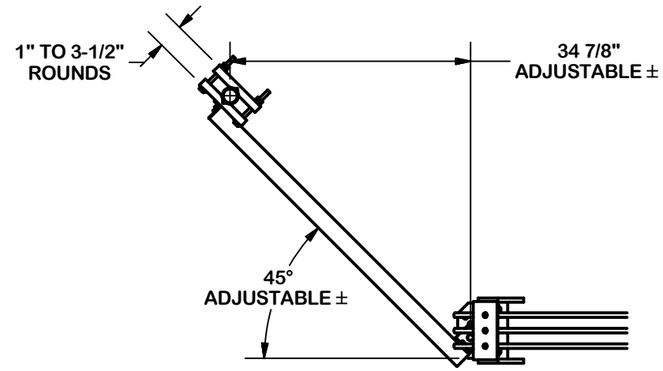
SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX



PARTIAL VIEW C-C

VERTICAL POSITION





PARTIAL VIEW D-D

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/25/2017

REVISION HISTORY

TOLERANCE NOTES

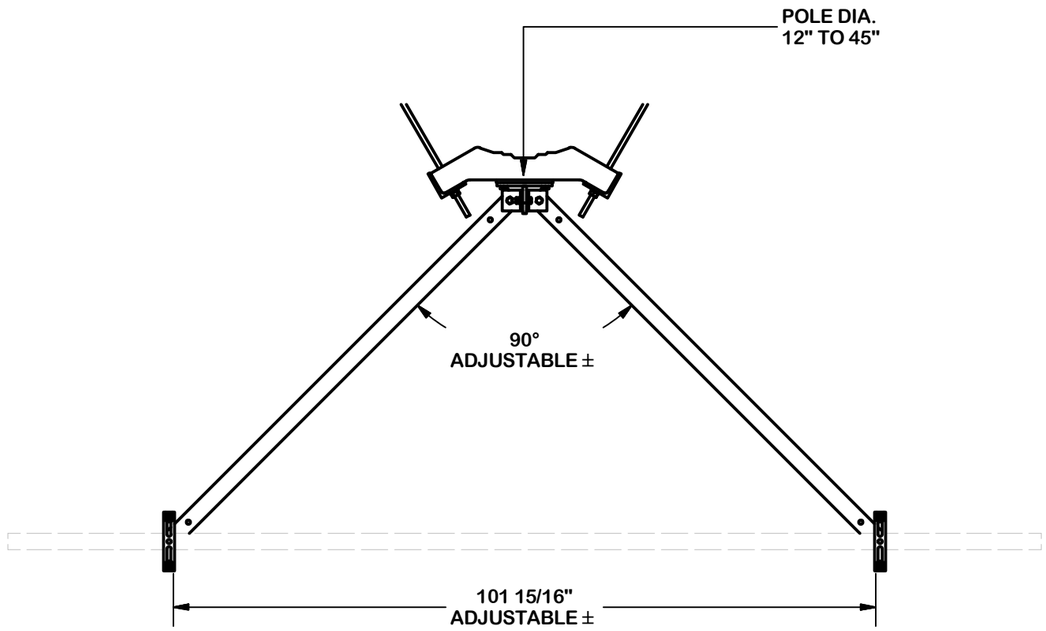
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

DESCRIPTION: HANDRAIL REINFORCEMENT KIT (LONG)

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

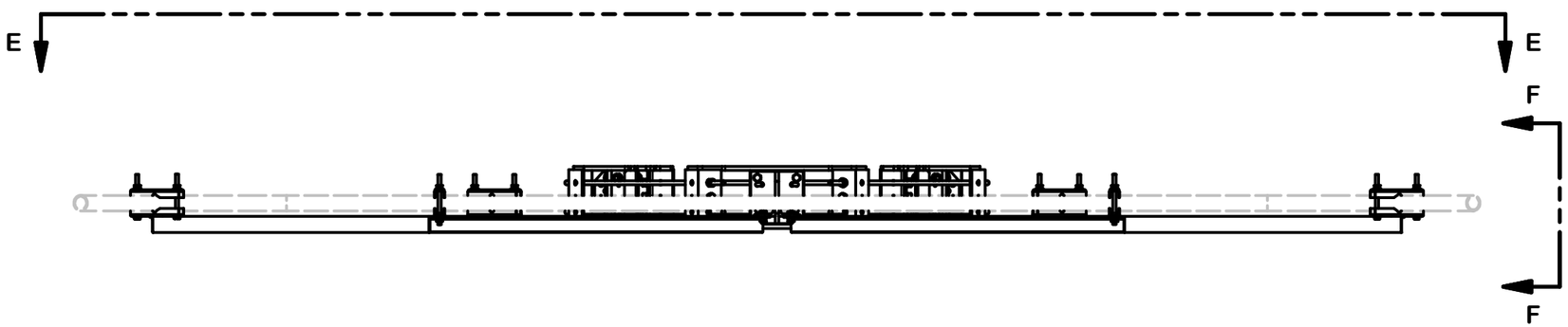
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS-L

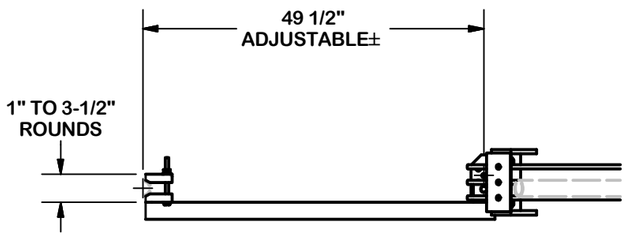
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	SHOP	BMC 9/8/2017	PRK-SFS-L



PARTIAL VIEW E-E

HORIZONTAL POSITION





PARTIAL VIEW F-F

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	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/25/2017

REVISION HISTORY

DESCRIPTION
HANDRAIL REINFORCEMENT KIT (LONG)

CPD NO.	DRAWN BY	ENG. APPROVAL
SP1	CSL3 2/23/2017	3RD PARTY

CLASS	SUB	DRAWING USAGE	CHECKED BY
81	02	SHOP	BMC 9/8/2017

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

PART NO. PRK-SFS-L

DWG. NO. PRK-SFS-L

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Monday, April 19, 2021 12:30 PM
To: Kristina Cottone
Subject: FedEx Shipment 773433005216: Your package has been delivered

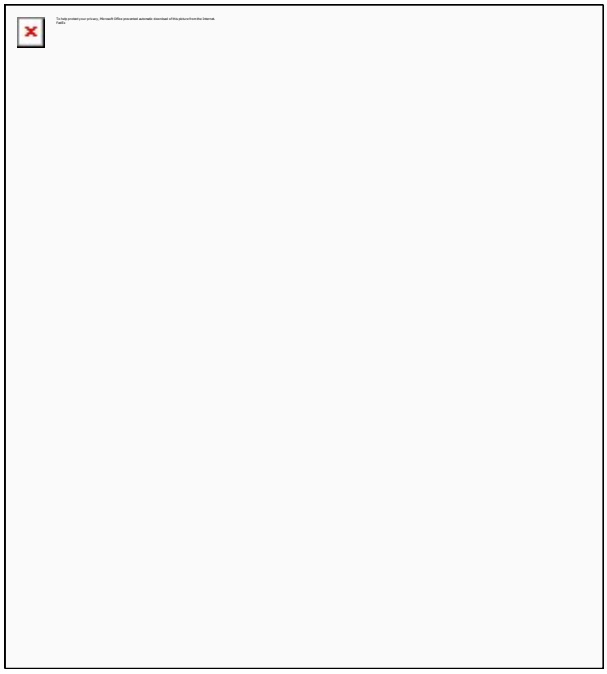
Hi. Your package was delivered Mon, 04/19/2021 at 12:28pm.

Delivered to 8051 CONGRESS AVE, Boca Raton, FL 33487
Received by BHAPTON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	773433005216
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	SBA Communications Corp. George O'Neil

	8051 Congress Avenue BOCA RATON, FL, US, 33487
REFERENCE	CTL05344 - Colchester
SHIP DATE	Fri 4/16/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	BOCA RATON, FL, US, 33487
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 11:30 AM CDT 04/19/2021.

All weights are estimated.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Monday, April 19, 2021 11:14 AM
To: Kristina Cottone
Subject: FedEx Shipment 773432944369: Your package has been delivered

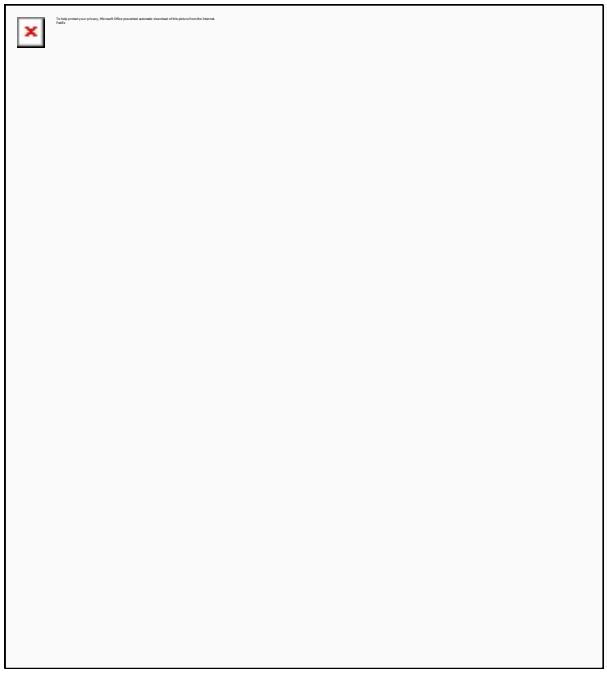
Hi. Your package was delivered Mon, 04/19/2021 at 11:12am.

Delivered to
Received by Signature Not Req

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	773432944369
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	Town of Colchester ATTN: Building Department Reed G.

	127 Norwich Ave COLCHESTER, CT, US, 06415
REFERENCE	CTL05344 - Colchester
SHIP DATE	Fri 4/16/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	COLCHESTER, CT, US, 06415
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:13 AM CDT 04/19/2021.

All weights are estimated.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Monday, April 19, 2021 11:14 AM
To: Kristina Cottone
Subject: FedEx Shipment 773432967110: Your package has been delivered

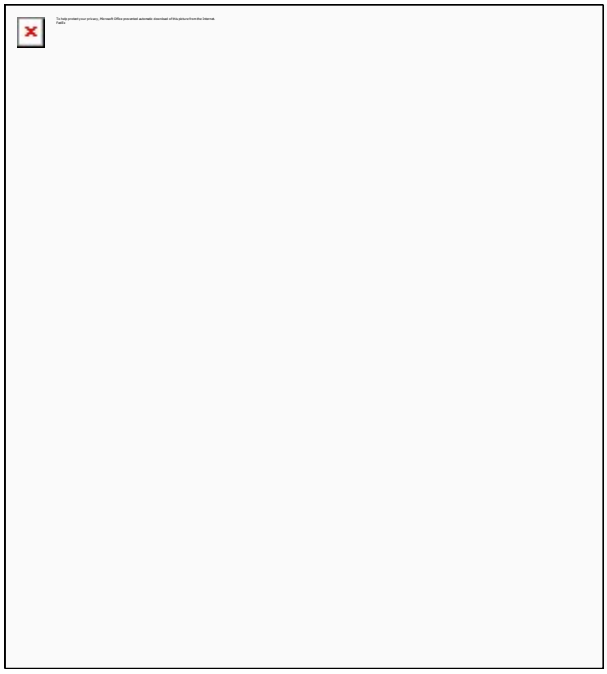
Hi. Your package was delivered Mon, 04/19/2021 at 11:12am.

Delivered to
Received by Signature Not Req

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	773432967110
FROM	Smartlink LLC 85 Rangeway Road Building 3 Suite 102 NORTH BILLERICA, MA, US, 01862
TO	Town of Colchester ATTN: First Selectman Mary B.

	127 Norwich Ave COLCHESTER, CT, US, 06415
REFERENCE	CTL05344 - Colchester
SHIP DATE	Fri 4/16/2021 12:00 AM
PACKAGING TYPE	Package
ORIGIN	NORTH BILLERICA, MA, US, 01862
DESTINATION	COLCHESTER, CT, US, 06415
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Ground



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All weights are estimated.

SHEET INDEX

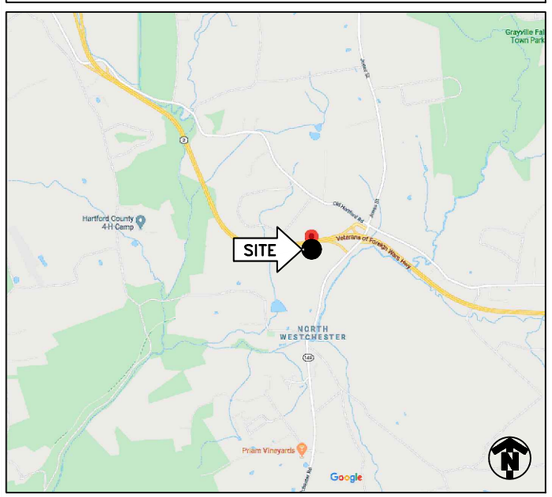
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL SITE PLAN
C2A	ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C5A	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I90WEST/MASSACHUETTS TURNPIKE. HEAD NORTHWEST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I90 EAST/MASSPIKE WEST/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 WEST/MASSACHUETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 WEST/MASSACHUETTS TURNPIKE. CONTINUE ON I-90 WEST/MASSACHUETTS TURNPIKE. TAKE I-84 TO CT-2 EAST IN COLCHESTER. MERGE ONTO I-90 WEST/MASSACHUETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY. CONTINUE ONTO I-84. USE THE LEFT LANE TO TAKE EXIT 55 FOR CT-2 EAST TOWARD NORWICH. CONTINUE ONTO CT-2 EAST.

LOCATION MAP



PROJECT

LTE 2C/5G NR/RETROFIT

SITE NAME

COLCHESTER NW

CELL SITE ID

CTL05344

FA SITE NUMBER

10090905

PACE ID

MRCTB047224/MRCTB047306/MRCTB047310
MRCTB047306/MRCTB047310

SITE ADDRESS

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

STRUCTURE TYPE

MONOPOLE

PROJECT TEAM

smartlink

PROJECT MANAGER

INFINIGY

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

ENGINEER

SCOPE OF WORK (PER LTE RFDS, DATED 03/12/2021 V6.00):

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

TOWER
- REMOVE (6) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS-11 B12
- INSTALL (3) 4449 B5/B12
- INSTALL (3) 8843 B2/B66A
- REMOVE (6) TMA UNITS
- INSTALL (6) Y CABLES ON DUAL BAND RRH
- INSTALL HANDRAIL KIT& REINFORCEMENT KIT

GROUND
- ADD 6630
- ADD IDLe CABLE
- INSTALL (2) 4478 B14
- RELOCATE SMART BIAS T FROM GSM FEEDER CABLES TO UMTS FEEDER CABLES
- INSTALL NEW FLEX 16 DOOR CABINET UPGRADE KIT
- INSTALL (1) DC6 WITH 2 #4 DC CABLE AND (1) FIBER

PROJECT SUMMARY

SITE NAME:	COLCHESTER NW	
CELL SITE ID:	CTL05344	
FA SITE #:	10090905	
SITE ADDRESS:	48 WESTCHESTER ROAD COLCHESTER, CT 06415	
COUNTY:	NEW LONDON	
SITE COORDINATES: LATITUDE:	41.5900000° N	(NAD 83)
LONGITUDE:	71.4014000° W	(NAD 83)
RAD CENTER	±157'	(AGL)
LANDLORD:	TBD	
APPLICANT:	AT&T MOBILITY 550 COCHITUATE RD. FRAMINGHAM, MA 01701	
CLIENT REPRESENTATIVE:	SMARTLINK, LLC 85 RANGEWAY RD., BUILDING 3, SUITE 102 NORTH BILLERICA, MA 01862	
CONTACT:	SHARON KEEFE 978-930-3918	
ENGINEER:	INFINIGY 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205	
CONTACT:	ALEX WELLER (518) 690-0790	
BUILDING CODE:	2018 CT STATE BUILDING CODE 2015 INTERNATIONAL BUILDING CODE ANSI/TIA-222 G 2015 INTERNATIONAL PLUMBING CODE 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE 2017 NFPA 70	
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)	

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

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

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

at&t

STATE OF CONNECTICUT
CHRISTOPHER J. WARREN
No. 23544
3/30/21
LICENSED PROFESSIONAL ENGINEER

No.	Submittal / Revision	App'd	Date
6	REVISED FOR PERMIT	BMM	03/26/21
5	REVISED FOR PERMIT	BMM	03/10/21
4	REVISED PER RFDS	BMM	03/05/21
3	REVISED FOR PERMIT	BMM	01/12/21
2	REVISED FOR PERMIT	BMM	12/14/20
1	ISSUED FOR PERMIT	BMM	11/20/20
0	ISSUED FOR REVIEW	BMM	08/14/20

Drawn: BMM Date: 08/14/20
Designed: ASW Date: 08/14/20
Checked: ASW Date: 08/14/20

Project Number: 499-006

Project Title:
COLCHESTER NW
CTL05344
FA# 10090905
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 03/26/21

CD

Drawing Title
TITLE PAGE

Drawing Number
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

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

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

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

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

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

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

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

PART 2 – EXECUTION

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

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

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

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

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

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

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

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

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

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

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

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

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

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
- C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
- D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
- E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

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

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

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

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

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

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

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

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

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

ABBREVIATIONS

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

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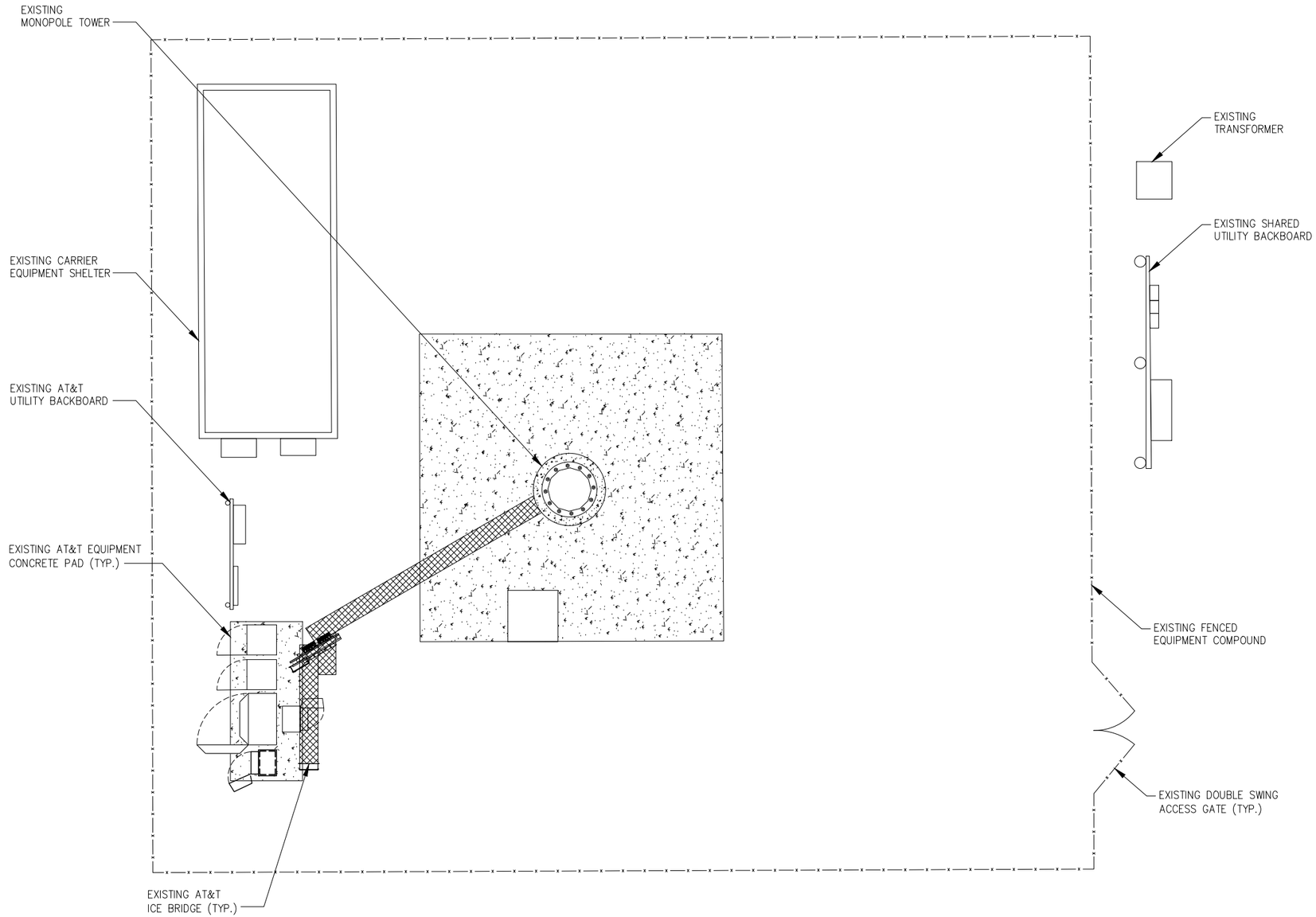
Project Title:
COLCHESTER NW
CTL05344
FA# 10090905
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 03/26/21
CD

Drawing Title
GENERAL NOTES

Drawing Number
C1



TRUE NORTH

1 SITE PLAN
SCALE: AS NOTED

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

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

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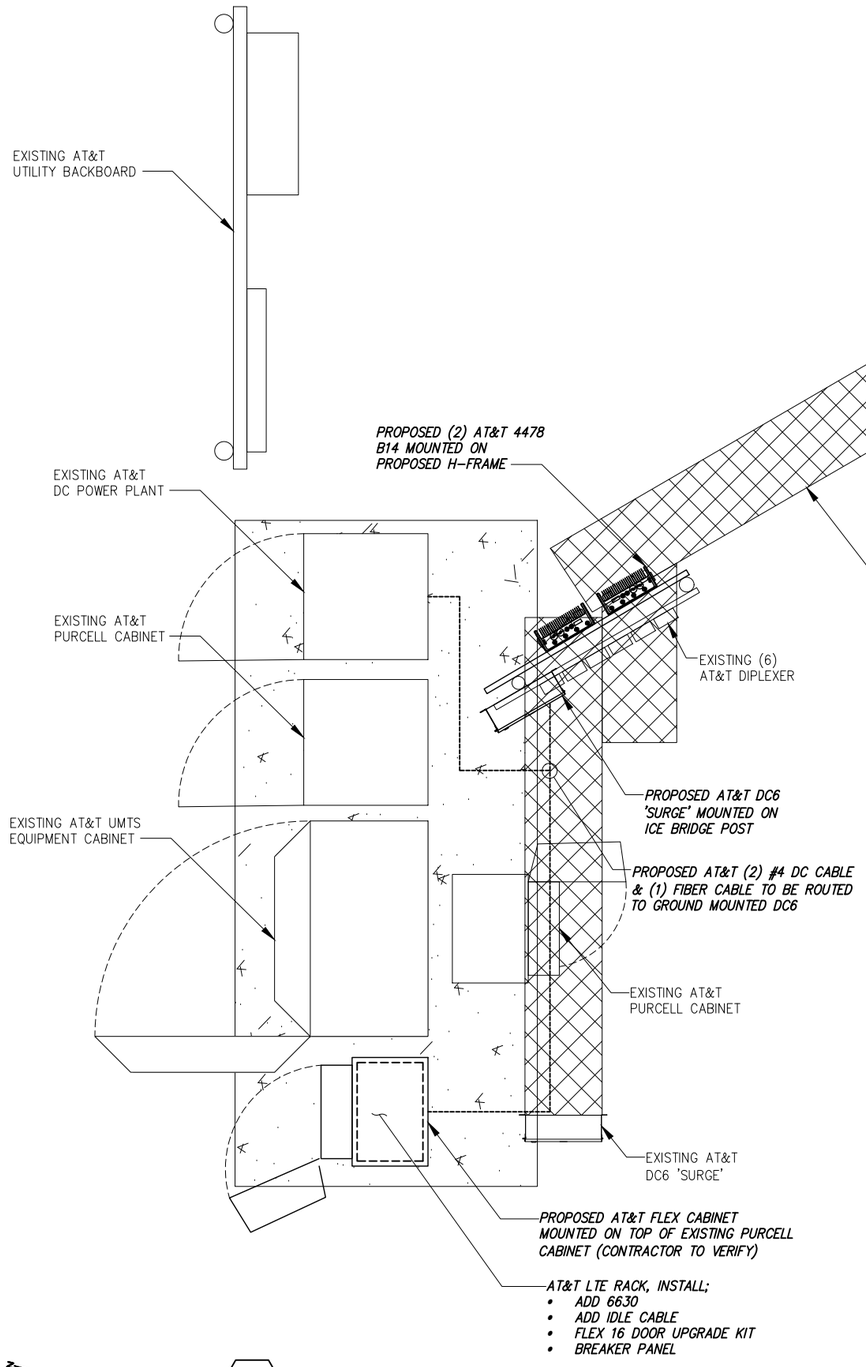
Drawing Title
OVERALL SITE PLAN

Drawing Number
C2



1 ENLARGED EQUIPMENT PLAN
SCALE: AS NOTED

GRAPHIC SCALE:

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

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

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

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Drawing Scale: AS NOTED
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CD

Drawing Title

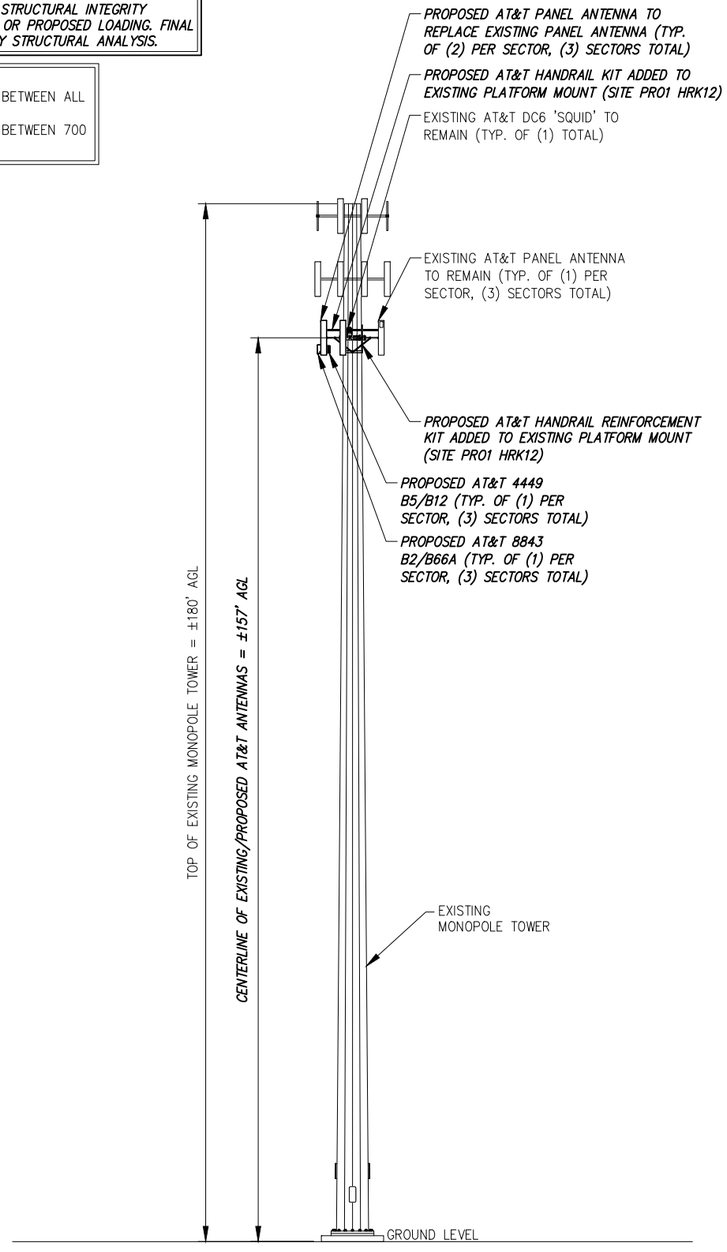
ENLARGED SITE PLAN

Drawing Number

C2A

NOTE:
- *FOR STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 03/02/21*
- *INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*

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



1 — ELEVATION VIEW
NOT TO SCALE

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 03/12/2021 V6.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/ DIPLEXER	RRUS	AZIMUTH	ANTENNA ℄ HEIGHT	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A-1	(E) UMTS 850	POWERWAVE 7770	--	--	60°	±157'	(2) (E) 1-5/8" COAX CABLES	±190'	(1) (E) DC6 'SQUID'
	A-2	--	--	--	--	--	--	--	--	
	A-3	*(P) LTE 700/AWS*	*CCI HPA65R-BU4A*	--	*(1) (P) 4478 B14 (GROUND MOUNTED)*	*60°*	*±157'*	(2) (E) 1-5/8" COAX CABLES	±190'	
	A-4	*(P) LTE 700/850/ 1900/5G 850*	*CCI DMP65R-BU4DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*60°*	*±157'*	*(2) (P) Y-CABLES* (1) (E) FIBER CABLE (2) (E) DC CABLES	±190'	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	--	--	185°	±157'	(2) (E) 1-5/8" COAX CABLES	±190'	
	B-2	--	--	--	--	--	--	--	--	
	B-3	*(P) LTE 700/850/ 1900/5G 850*	*CCI HPA65R-BU4A*	--	*(1) (P) 4478 B14 (GROUND MOUNTED)*	*185°*	*±157'*	(2) (E) 1-5/8" COAX CABLES	±190'	
	B-4	*(P) LTE 700/AWS*	*CCI DMP65R-BU4DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*185°*	*±157'*	*(2) (P) Y-CABLES* SEE A-4 FOR CABLE INFORMATION	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	--	--	295°	±157'	(2) (E) 1-5/8" COAX CABLES	±190'	
	G-2	--	--	--	--	--	--	--	--	
	G-3	*(P) LTE 700/850/ 1900/5G 850*	*CCI HPA65R-BU8A*	--	*(1) (P) 4478 B14 (GROUND MOUNTED)*	*295°*	*±157'*	(2) (E) 1-5/8" COAX CABLES	±190'	
	G-4	*(P) LTE 700/AWS*	*CCI DMP65R-BU8DA*	--	*(1) (P) 4449 B5/B12 (1) (P) 8843 B2/B66A*	*295°*	*±157'*	*(2) (P) Y-CABLES* SEE A-4 FOR CABLE INFORMATION	--	

2 — AT&T ANTENNA SCHEDULE
NOT TO SCALE

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COLCHESTER, CT 06415

Prepared For: smartlink

Drawing Scale: AS NOTED
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Drawing Title
ELEVATION VIEW

Drawing Number
C3

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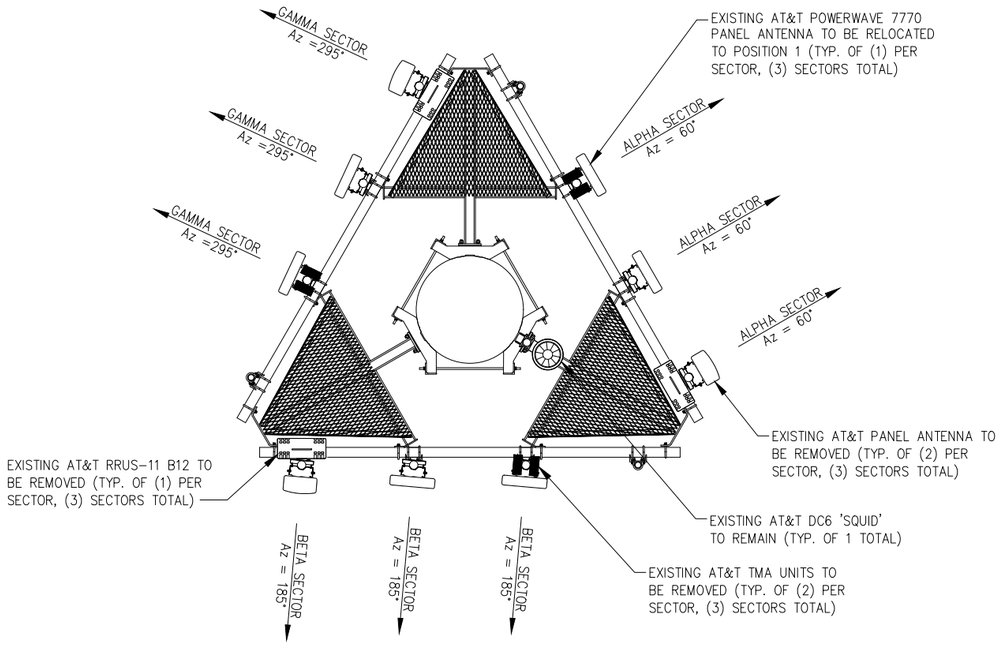
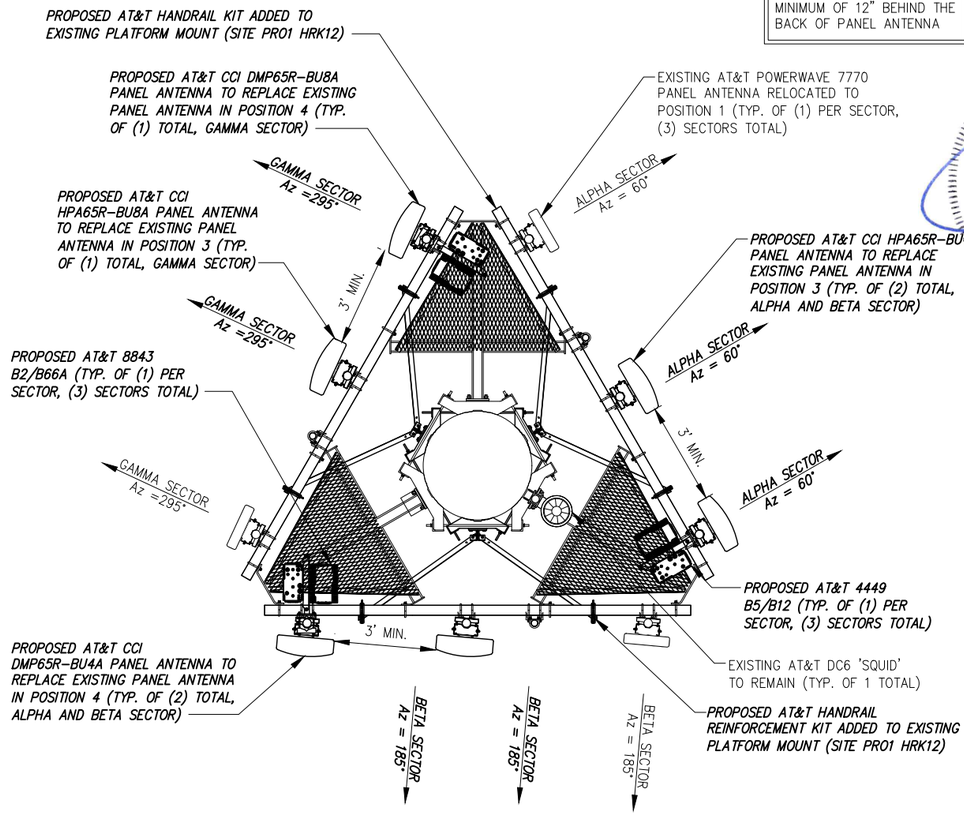
NOTE:
- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS

ALL EXISTING AND PROPOSED RRUS MOUNTED BEHIND ANTENNAS MUST BE A MINIMUM OF 12" BEHIND THE BACK OF PANEL ANTENNA



1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE



2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

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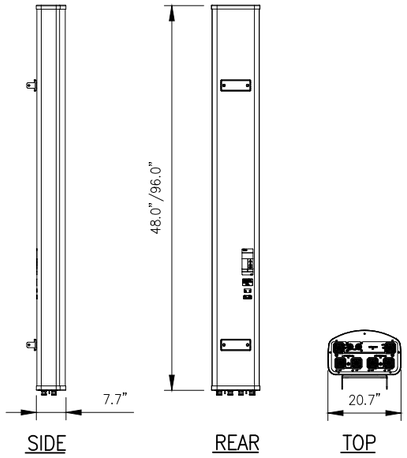
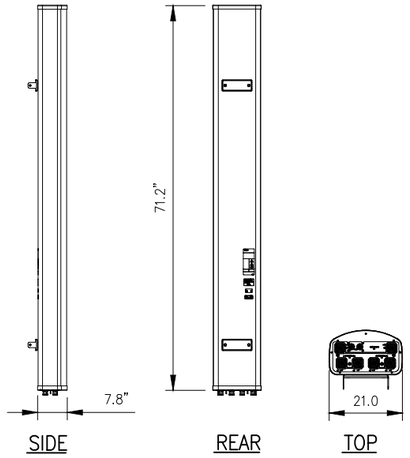
Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4



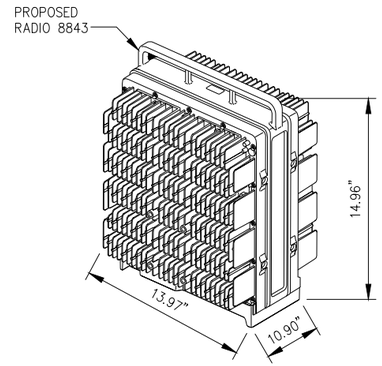
CCI MODEL NO.:	DMP65R-BU4DA/DMP65R-BU8DA
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	48.0"x20.7"x7.7"/96.0"x20.7"x7.7"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	67.9 LBS/95.7 LBS
CONNECTOR:	7-16 DIN FEMALE

1 ANTENNA DETAIL
NOT TO SCALE



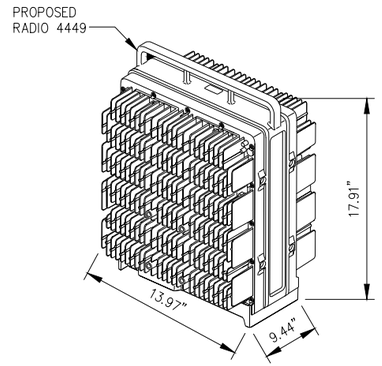
CCI MODEL NO.:	OPA65R-BU4DA/OPA65R-BU8DA
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	48.0"x21.0"x7.8"/96.0"x21.0"x7.8"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	52.5 LBS/76.5 LBS
CONNECTOR:	7-16 DIN FEMALE

2 ANTENNA DETAIL
NOT TO SCALE



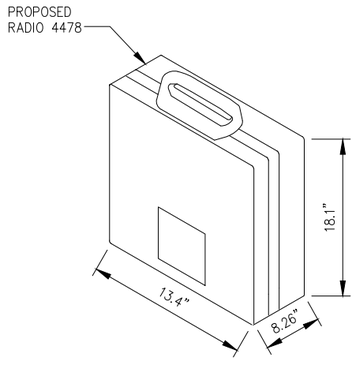
RADIO 8843 SPECIFICATIONS
- HxWxD, (INCHES) : 14.96"x13.97"x10.90"
- WEIGHT (LBS) : 71.87
- COLOR : GRAY

3 ERICSSON RADIO 8843 DETAIL
NOT TO SCALE



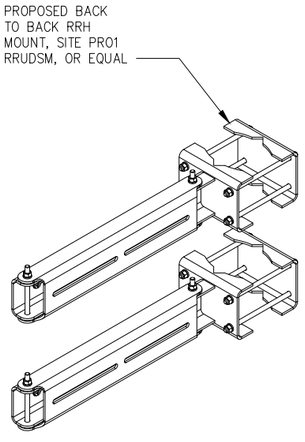
RADIO 4449 SPECIFICATIONS
- HxWxD, (INCHES) : 17.91"x13.97"x9.44"
- WEIGHT (LBS) : 70.54
- COLOR : GRAY

4 ERICSSON RADIO 4449 DETAIL
NOT TO SCALE

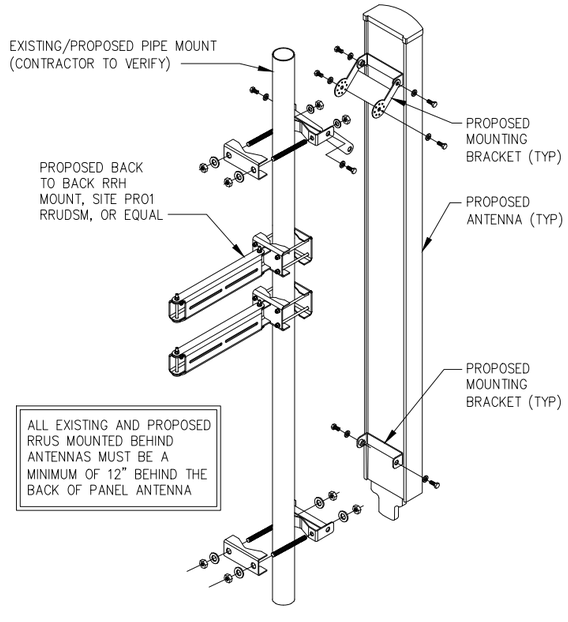


RADIO 4478-B14 SPECIFICATIONS
- HxWxD, (INCHES) : 18.1"x13.4"x8.26"
- WEIGHT (LBS) : 59.5
- COLOR : GRAY
- MOUNTING BRACKET: SXK1250244/1

5 ERICSSON RADIO 4478-B14 DETAIL
NOT TO SCALE



6 BACK TO BACK PIPE MOUNT DETAIL
NOT TO SCALE



7 ANTENNA MOUNTING DETAIL
NOT TO SCALE

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2	REVISED FOR PERMIT	BMM	12/14/20
1	ISSUED FOR PERMIT	BMM	11/20/20
0	ISSUED FOR REVIEW	BMM	08/14/20

Drawn: BMM Date: 08/14/20
Designed: ASW Date: 08/14/20
Checked: ASW Date: 08/14/20

Project Number: 499-006

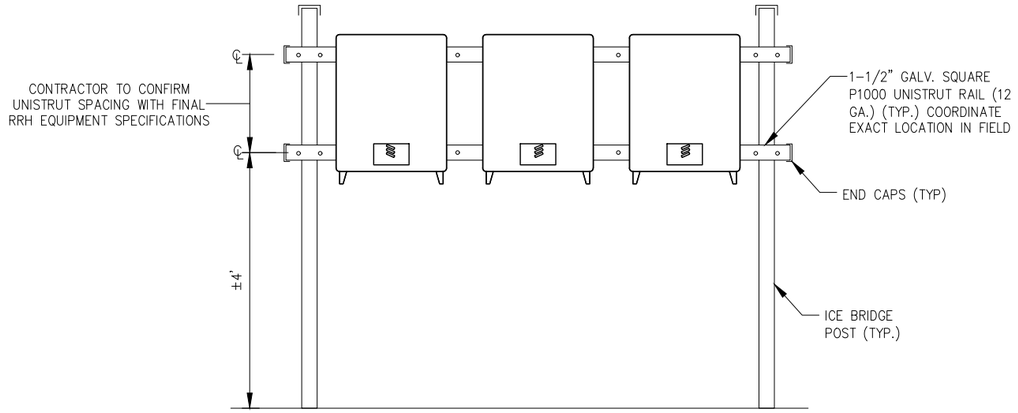
Project Title:
COLCHESTER NW
CTL05344
FA# 10090905
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

Prepared For: smartlink

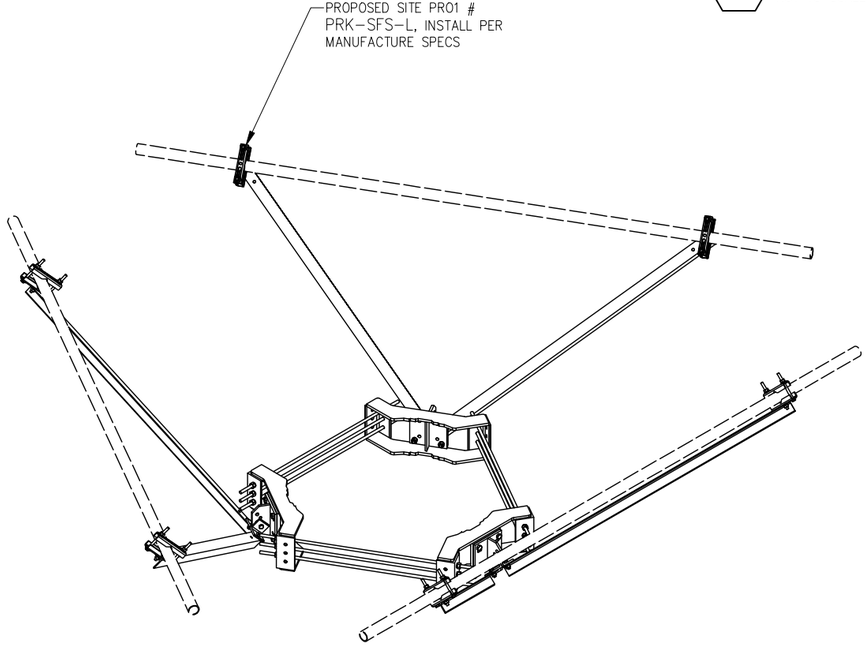
Drawing Scale: AS NOTED
Date: 03/26/21
CD

Drawing Title
EQUIPMENT DETAILS

Drawing Number
C5



1 -- RRH MOUNTING TO H-FRAME DETAIL
NOT TO SCALE



2 -- HANDRAIL REINFORCEMENT KIT
NOT TO SCALE

3 -- HANDRAIL KIT
NOT TO SCALE

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STATE OF CONNECTICUT
CHRISTOPHER J. WARREN
No. 23544
3/30/21
LICENSED
PROFESSIONAL ENGINEER

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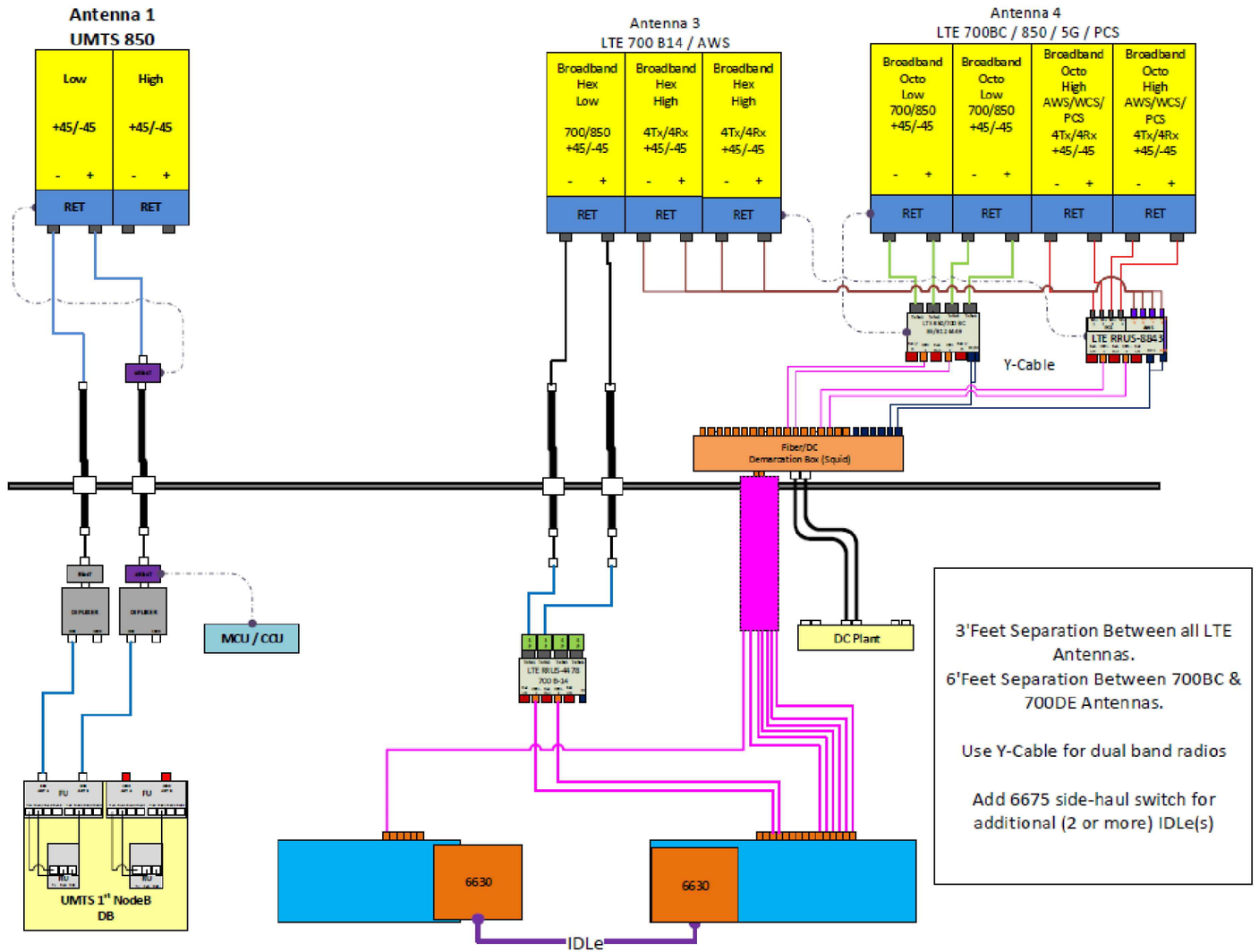
Drawing Number
C5A



Sector-B B14 Radio will be on its own. Sector A and C will share the B14 Radio. Port 1 & 2 will be used for sector-A. Port 3 & 4 to be used for sector-C.

ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
NOT TO SCALE

*BASED ON LTE RFDS, DATED 03/12/2021 V6.00

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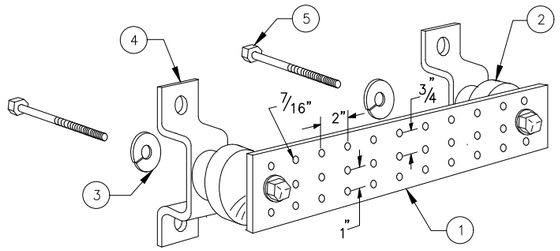
Drawing Title
PLUMBING DIAGRAM

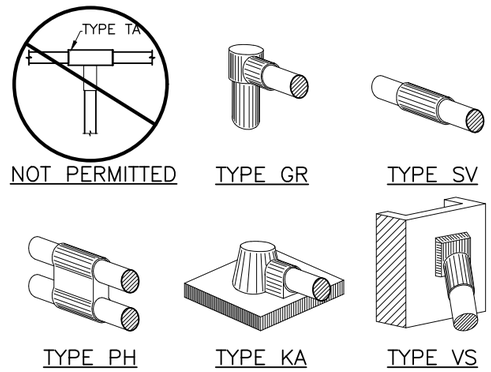
Drawing Number
C6



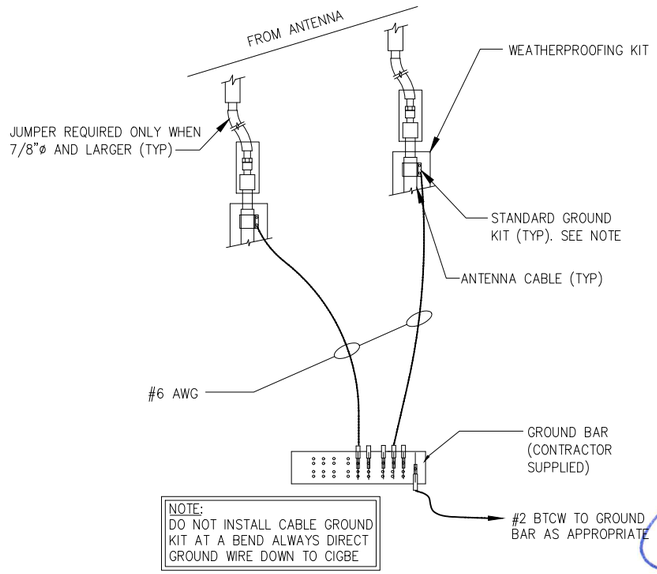
LEGEND

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

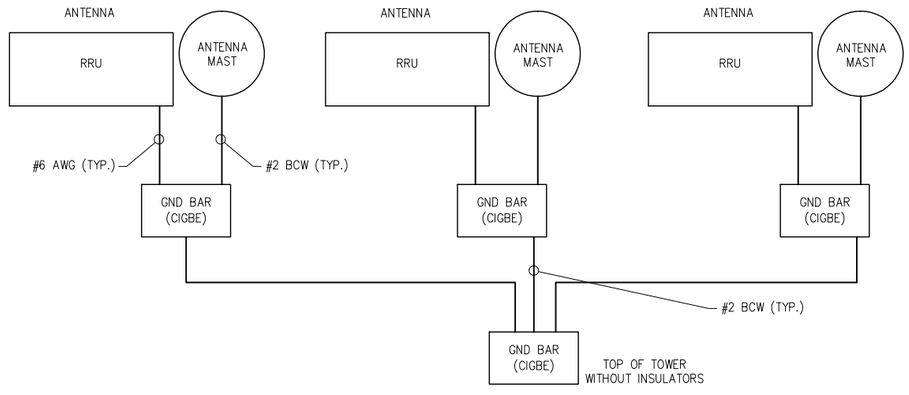
1 GROUND BAR
NOT TO SCALE



2 CADWELDS (TYPICAL)
NOT TO SCALE



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



4 SCHEMATIC DIAGRAM GROUNDING SYSTEM
NOT TO SCALE

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GROUNDING DETAILS

Drawing Number
C7