



Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

April 18, 2023

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

RE: **Notice of Exempt Modification for ATT
Crown #801485; ATT Site ID CTL05845
2715 Mountain Road, Suffield, CT 06093
Latitude: 41° 0' 41.80" / Longitude: -72° 43' 43.60"**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 170-foot level of the existing 190-foot monopole tower at 2715 Mountain Road, Suffield, CT. The tower is owned by Crown Castle USA Inc. and the property is owned by the Town of Suffield. AT&T now intends to replace six (6) antennas with six (6) new antennas and ancillary equipment at the 170-foot level. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

- Install Mount Modification
- (4) CCI-OPA65R-BU8DA Antennas
- (2) CCI-OPA65R-BU4DA Antennas
- (3) Ericsson-4478 B14 RRHs
- (3) Ericsson-4449 B5/B12 RRHs
- (3) Ericsson-8843 B2/B66A RRHs
- (1) RAYCAP-DC6-48-60-18-8C-EV Squid
- (2) 6AWG DC Cables (7/8")
- (1) 18-Pair Fiber Cable (3/8")
- (6) Y CABLES for Dual Band Radios
- (6) Dual Radio Mounts

Remove:

- (6) POWERWAVE-7770 Antennas
- (6) POWERWAVE-TT19-08BP111-001 TMAs
- (3) ERICSSON-RRUS-11 B12 RRHs
- (6) 1-5/8" COAX CABLES

The Foundation for a Wireless World.

CrownCastle.com

Ground:

Install New:

- (1) DC12 Box
- (1) 6648 w/XCEDE Cable

Remove:

- (12) POWERWAVE-LGP 21901 Diplexers

The facility was approved by the Town of Suffield's Economic Development Commission by means of a Special Permit on May 1, 2000. Said approval given with conditions. AT&T's proposed exempt modification complies with the conditions of approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman Colin Moll, as both the municipality and property owner, Bill Hawkins as Director of Planning & Development and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, ATT respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Domenica Tatasciore.

Sincerely,



Domenica Tatasciore
Site Acquisition Specialist
1800 W. Park Drive
Westborough, MA 01581
(508) 621-9161/ Domenica.Tatasciore@crowncastle.com

Melanie A. Bachman

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Attachments

cc:

Colin Moll, First Selectman
Suffield Town Hall
83 Mountain Road
Suffield, CT 06078
860-668-3300

Bill Hawkins, Director of Planning & Development
Suffield Town Hall
83 Mountain Road
Suffield, CT 06078
860-668-3848

Town of Suffield, Property Owner

Crown Castle, Tower Owner



Town of Suffield

303/733

May 4, 2000

Ms. Elaine Sarsynski, Director
Suffield Economic Development Commission
83 Mountain Road
Suffield, Connecticut 06078

Recorded
6-21-00

Re: File #740 - Request of the Suffield Economic Development Commission for a special use permit for the approval of sites for telecommunication towers located on Town properties: WPCA, Highway Department, and Transfer Station.

Dear Ms. Sarsynski:

At a duly called Special Meeting of the Suffield Zoning and Planning Commission held on Monday, May 1, 2000, the Commission voted to approve the Town of Suffield's special use permit request for the for three (3) proposed telecommunication sites located as designated:

1. Town of Suffield Transfer Station site on the west side of Mountain Road (Route 168), on undeveloped land west of the Transfer Station operations (Site A);
2. Town of Suffield Public Works garage/maintenance facility off of Mountain Road, on land immediately adjacent to the Maintenance Facility Building (Site B); and
3. Town of Suffield Sewage Treatment Plant on the east side of East Street (Route 159), on undeveloped land along the north side of the Treatment's Plant's access driveway (Site C).

with the following conditions:

1. The heights of the respective mono-pole towers, including antennae, shall not exceed 199-feet (Site A); 120-feet (Site B); and 174-feet (Site C);
2. Each tower shall be certified as "self-collapsing" by a Connecticut registered professional engineer;
3. Details drawings are to be submitted with each request for building permits for both the towers and related facilities;
4. FCC licenses shall be produced prior to the issuance of the permits for company leasing space on the towers;
5. The Zoning Enforcement Officer shall review each proposal for zoning conformance prior to the issuance of the building permits;
6. All utilities are to be underground;
7. Site plans are to be revised.

A mylar and four (4) copies of site plans for each of the three approved sites must be submitted to this office as soon as possible for signatures.

Please remit a check in the amount of \$10.00 (payable to the Town of Suffield), *along with this original letter*, to the Office of the Town Clerk, 83 Mountain Road. This fee is required to cover the cost of recording the Special Use Permit in the Office of the Town Clerk.



Property Information

Property Location	2715 MOUNTAIN RD
Mailing Address	83 MOUNTAIN RD SUFFIELD CT 060782041
Land Use	Governmental Building
Zoning Code	R90
Neighborhood	EA

Owner	SUFFIELD TOWN OF
Co-Owner	TOWN HALL
Book / Page	0180/0870
Land Class	Commercial
Census Tract	4772
Acreage	51.01

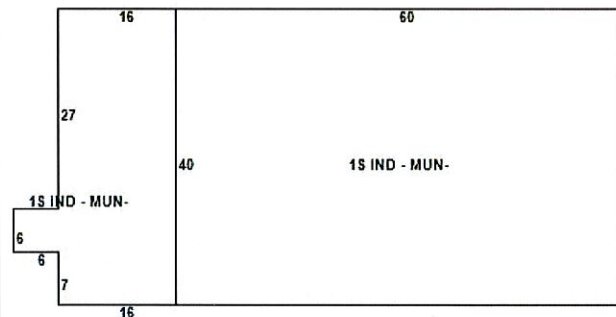
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	140800	98560
Outbuildings	30600	21420
Land	445100	311570
Total	616500	431550

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



Primary Construction Details

Year Built	1990
Building Desc.	Commercial
Building Style	
Stories	1
Exterior Walls	Pre-Finish Metal
Exterior Walls 2	Vinyl Siding
Interior Walls	None/Minumum
Interior Walls 2	
Interior Floors 1	Concrete
Interior Floors 2	

Heating Fuel	Wood
Heating Type	None
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	
Occupancy	0

Livable Area (ft)	3076
Building Use	Municipal
Building Condition	Average
Frame Type	C
Building Grade	0
Fireplaces	0
Wood Stoves	0
Attic Access	
Roof Style	Gable
Roof Cover	

Bsmt Area	0
Fin Bsmt Area	0
Fin Bsmt Quality	
Bsmt Access	
Bsmt Gar	0
Bsmt Sump Pump	No



Town of Suffield, CT

Property Listing Report

Map Block Lot 999

Developer Map 17/107

Unique Identifier R09002

Developer Lot

Building # 1

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Utility	Storage	1152	No Depreciation	2006
Shed	Frame	240	Good	2003
Loading Dock	Scales-Electric	20	Good	2018

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

Sales History

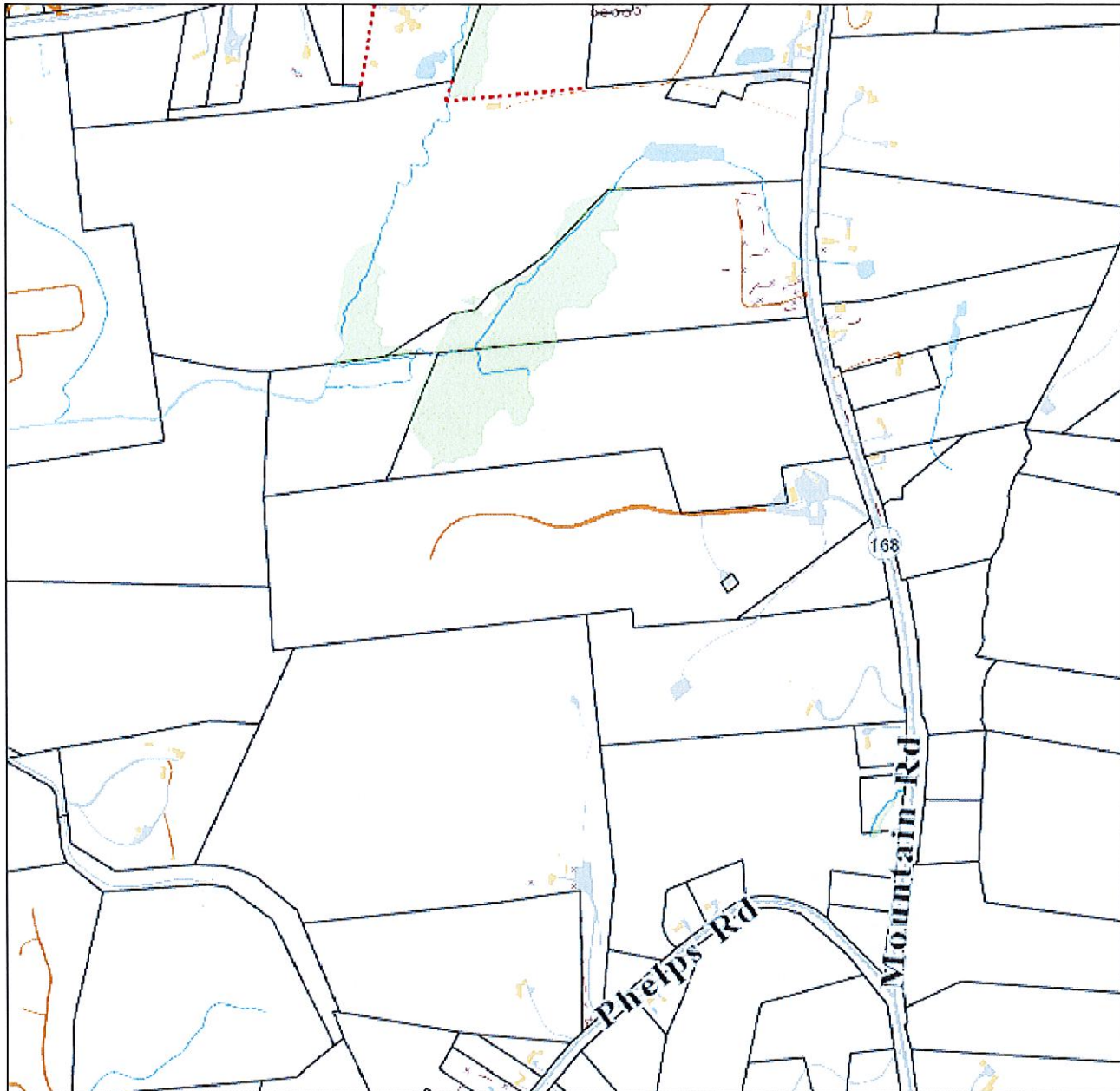
Owner of Record	Book/ Page	Sale Date	Sale Price
SUFFIELD TOWN OF	0180_0870	6/5/1985	0
KEMENT WILLIAM B & IRENE N	0147_0933	5/4/1977	0

Town of Suffield

Geographic Information System (GIS)



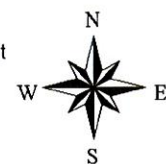
Date Printed: 4/10/2023



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Suffield and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 800 feet



From: TrackingUpdates@fedex.com
To: [Tatasciore, Domenica](#)
Subject: FedEx Shipment 771837688500: Your package has been delivered
Date: Wednesday, April 19, 2023 11:07:37 AM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

FedEx



Hi. Your package was
delivered Wed, 04/19/2023 at
11:01am.



Delivered to 83 MOUNTAIN RD, SUFFIELD, CT 06078
Received by M.URCH

[OBTAIN PROOF OF DELIVERY](#)

How was your delivery ?



TRACKING NUMBER [771837688500](#)

FROM Domenica Tatasciore
1800 West Park Drive
Suite 200
WESTBOROUGH, MA, US, 01581

TO Suffield Town Hall
Colin Moll, First Selectman
83 Mountain Road
SUFFIELD, CT, US, 06078

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Tue 4/18/2023 05:32 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

DESTINATION SUFFIELD, CT, US, 06078

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 0.50 LB

SERVICE TYPE FedEx Priority Overnight

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Subject: FedEx Shipment 771837695464: Your package has been delivered
Date: Wednesday, April 19, 2023 11:07:59 AM

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FedEx



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delivered Wed, 04/19/2023 at
11:01am.



Delivered to 83 MOUNTAIN RD, SUFFIELD, CT 06078
Received by M.URCH

[OBTAIN PROOF OF DELIVERY](#)

How was your delivery ?



TRACKING NUMBER [771837695464](#)

FROM Domenica Tatasciore
1800 West Park Drive
Suite 200
WESTBOROUGH, MA, US, 01581

TO Suffield Town Hall
Bill Hawkins, Director of Planning
83 Mountain Road
SUFFIELD, CT, US, 06078

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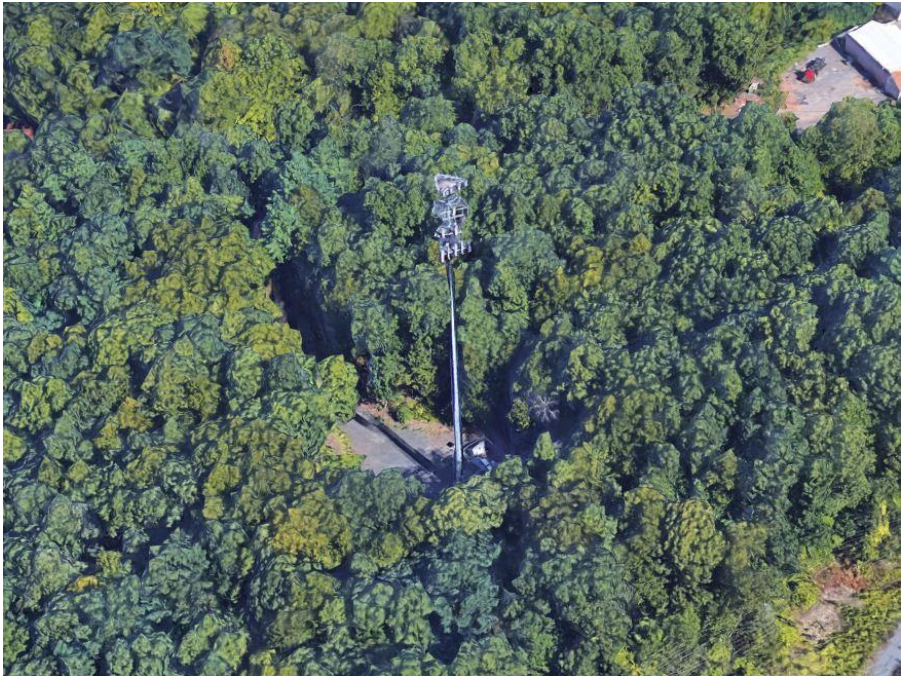
TOTAL SHIPMENT WEIGHT 0.50 LB

SERVICE TYPE FedEx Priority Overnight

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**RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
 EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS**



Site Name: SUFFIELD WEST
 AT&T Mobility FA# 10092225
 Crown Castle Site# 10092225
 Site ID: CTL05845
 Project Name: 5G NR 1DR-1
 Address: 2715 MOUNTAIN ROAD, WEST
 SUFFIELD, CT 06093
 County: HARTFORD
 Latitude: 42.0114919
 Longitude: -72.7288989
 Structure Type: MONOPOLE
 Property Owner: CROWN ATLANTIC COMPANY LLC
 Property Contact: VERONICA CHAPMAN

AT&T Existing Facility

Report Information

Report Writer: Monti Kumar **Report Generated Date:** 04-10-2023

Site Compliance Statement

Compliance Status	Compliant
Cumulative General Population % MPE (Ground Level)	0.1920%

April 10, 2023

Emissions Analysis for Site: CTL05845– SUFFIELD WEST

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **2715 MOUNTAIN ROAD, WEST SUFFIELD, CT 06093**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The number of mW/cm^2 or $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the 700 and 850 MHz Bands are approximately $0.467 mW/cm^2$ and $0.567 mW/cm^2$ respectively or $466.667 \mu W/cm^2$ and $566.667 \mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3540 MHz (DoD Band) and 3840 MHz (C-Band) bands is $1 mW/cm^2$ or $1000 \mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

1. Theoretical Calculations: Methods and Procedures

MobileComm Professionals, Inc has performed theoretical modeling of the site using a software tool, RoofMaster® Version 40.12.23.2022, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

2. Antenna Inventory & Power Data

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density (μW/cm ²)	Allowable MPE (μW/cm ²)	Calculated MPE%
A	1	AT&T	CCI	OPA65R-BU8D	Panel	700(FN)	LTE	0	75	13.55	8	4	40.00	3229.39	5298.10	170.00	0.003078	466.67	0.000660
A	1	AT&T	CCI	OPA65R-BU8D	Panel	2100	LTE/5G	0	69	16.05	8	4	40.00	5742.75	9421.50	170.00	0.001700	1000.00	0.000170
A	2	AT&T	CCI	OPA65R-BU8D	Panel	700(B12)	LTE	0	75	13.55	8	4	40.00	3229.39	5298.10	170.00	0.019330	466.67	0.004142
A	2	AT&T	CCI	OPA65R-BU8D	Panel	850	5G	0	63	14.45	8	4	40.00	3973.01	6518.08	170.00	0.021084	566.67	0.003721
A	2	AT&T	CCI	OPA65R-BU8D	Panel	1900	LTE/5G	0	67	15.75	8	4	40.00	5359.45	8792.65	170.00	0.027044	1000.00	0.002704
B	3	AT&T	CCI	OPA65R-BU8D	Panel	700(FN)	LTE	120	75	13.55	8	4	40.00	3229.39	5298.10	170.00	0.000009	466.67	0.000002
B	3	AT&T	CCI	OPA65R-BU8D	Panel	2100	LTE/5G	120	69	16.05	8	4	40.00	5742.75	9421.50	170.00	0.000001	1000.00	0.000000
B	4	AT&T	CCI	OPA65R-BU8D	Panel	700(B12)	LTE	120	75	13.55	8	4	40.00	3229.39	5298.10	170.00	0.000001	466.67	0.000000
B	4	AT&T	CCI	OPA65R-BU8D	Panel	850	5G	120	63	14.45	8	4	40.00	3973.01	6518.08	170.00	0.000008	566.67	0.000001
B	4	AT&T	CCI	OPA65R-BU8D	Panel	1900	LTE/5G	120	67	15.75	8	4	40.00	5359.45	8792.65	170.00	0.000042	1000.00	0.000004
C	5	AT&T	CCI	OPA65R-BU4D	Panel	700(FN)	LTE	230	73	11.05	4	4	40.00	1816.02	2979.34	170.00	0.000012	466.67	0.000002
C	5	AT&T	CCI	OPA65R-BU4D	Panel	2100	LTE/5G	230	70	14.55	4	4	40.00	4065.56	6669.91	170.00	0.000012	1000.00	0.000001
C	6	AT&T	CCI	OPA65R-BU4D	Panel	700(B12)	LTE	230	73	11.05	4	4	40.00	1816.02	2979.34	170.00	0.000013	466.67	0.000003
C	6	AT&T	CCI	OPA65R-BU4D	Panel	850	5G	230	62	11.85	4	4	40.00	2183.33	3581.95	170.00	0.000033	566.67	0.000006
C	6	AT&T	CCI	OPA65R-BU4D	Panel	1900	LTE/5G	230	69	14.25	4	4	40.00	3794.20	6224.72	170.00	0.000015	1000.00	0.000002
A	7	T-Mobile	Ericsson	AIR6419_LTE_B41	Panel	2500	LTE	60	12.5	22.65	2.86	1	40.67	7485.61	12280.81	182.00	0.140693	1000.00	0.014069
A	7	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	60	12.5	22.65	2.75	1	67.78	12476.02	20468.02	182.00	0.234488	1000.00	0.023449
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	60	69	13.25	8	2	30.00	1130.19	1854.18	182.00	0.012829	400.00	0.003207
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	60	69	13.25	8	1	80.00	1506.92	2472.24	182.00	0.017105	400.00	0.004276
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	60	64	13.65	8	2	30.00	1239.23	2033.06	182.00	0.015132	466.67	0.003243
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	GSM	60	63	16.05	8	4	30.00	4307.06	7066.12	182.00	0.033829	1000.00	0.003383
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	60	63	16.05	8	2	60.00	4307.06	7066.12	182.00	0.033829	1000.00	0.003383
A	8	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	LTE	60	65	16.45	8	2	60.00	4722.60	7747.85	182.00	0.024062	1000.00	0.002406
B	9	T-Mobile	Ericsson	AIR6419_LTE_B41	Panel	2500	LTE	180	12.5	22.65	2.86	1	40.67	7485.61	12280.81	182.00	0.000156	1000.00	0.000016
B	9	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	180	12.5	22.65	2.75	1	67.78	12476.02	20468.02	182.00	0.000260	1000.00	0.000026
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	180	69	13.25	8	2	30.00	1130.19	1854.18	182.00	0.000001	400.00	0.000000
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	180	69	13.25	8	1	80.00	1506.92	2472.24	182.00	0.000002	400.00	0.000000
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	180	64	13.65	8	2	30.00	1239.23	2033.06	182.00	0.000002	466.67	0.000001
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	GSM	180	63	16.05	8	4	30.00	4307.06	7066.12	182.00	0.000009	1000.00	0.000001
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	180	63	16.05	8	2	60.00	4307.06	7066.12	182.00	0.000009	1000.00	0.000001
B	10	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	LTE	180	65	16.45	8	2	60.00	4722.60	7747.85	182.00	0.000006	1000.00	0.000001
C	11	T-Mobile	Ericsson	AIR6419_LTE_B41	Panel	2500	LTE	300	12.5	22.65	2.86	1	40.67	7485.61	12280.81	182.00	0.008443	1000.00	0.000844
C	11	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	300	12.5	22.65	2.75	1	67.78	12476.02	20468.02	182.00	0.014072	1000.00	0.001407
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	300	69	13.25	8	2	30.00	1130.19	1854.18	182.00	0.000550	400.00	0.000137
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	300	69	13.25	8	1	80.00	1506.92	2472.24	182.00	0.000733	400.00	0.000183
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	300	64	13.65	8	2	30.00	1239.23	2033.06	182.00	0.001021	466.67	0.000219
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	GSM	300	63	16.05	8	4	30.00	4307.06	7066.12	182.00	0.001362	1000.00	0.000136
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	300	63	16.05	8	2	60.00	4307.06	7066.12	182.00	0.001362	1000.00	0.000136
C	12	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	LTE	300	65	16.45	8	2	60.00	4722.60	7747.85	182.00	0.000338	1000.00	0.000034

Table 2.1: Antenna Inventory & Power Data

*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6449 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6449 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6449 due to its similarity.

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density (µW/cm ²)	Allowable MPE (µW/cm ²)	Calculated MPE%
A	13	Verizon	Samsung	MT6407-77A	Panel	3700	5G	60	17	22.85	2.92	4	35.00	26985.35	44271.89	160.00	0.478091	1000.00	0.047809
A	14	Verizon	Commscope	SBNHH-1D65B	Panel	700	LTE	60	68	12.75	6.1	4	40.00	2686.09	4406.77	160.00	0.033405	466.67	0.007158
A	14	Verizon	Commscope	SBNHH-1D65B	Panel	850	LTE	60	66	12.55	6.1	4	40.00	2565.19	4208.43	160.00	0.030332	566.67	0.005353
A	14	Verizon	Commscope	SBNHH-1D65B	Panel	850	CDMA	60	66	12.55	6.1	2	20.00	993.25	1629.52	160.00	0.030332	566.67	0.005353
A	15	Verizon	Commscope	SBNHH-1D65B	Panel	1900	LTE	60	66	16.05	6.1	4	40.00	5742.75	9421.50	160.00	0.034338	1000.00	0.003434
A	15	Verizon	Commscope	SBNHH-1D65B	Panel	2100	LTE	60	63	16.45	6.1	4	40.00	6296.80	10330.47	160.00	0.033961	1000.00	0.003396
B	16	Verizon	Samsung	MT6407-77A	Panel	3700	5G	180	17	22.85	2.92	4	35.00	26985.35	44271.89	160.00	0.268265	1000.00	0.026827
B	17	Verizon	Commscope	SBNHH-1D65B	Panel	700	LTE	180	68	12.75	6.1	4	40.00	2686.09	4406.77	160.00	0.000025	466.67	0.000005
B	17	Verizon	Commscope	SBNHH-1D65B	Panel	850	LTE	180	66	12.55	6.1	4	40.00	2565.19	4208.43	160.00	0.000019	566.67	0.000003
B	17	Verizon	Commscope	SBNHH-1D65B	Panel	850	CDMA	180	66	12.55	6.1	2	20.00	993.25	1629.52	160.00	0.030332	566.67	0.005353
B	18	Verizon	Commscope	SBNHH-1D65B	Panel	1900	LTE	180	66	16.05	6.1	4	40.00	5742.75	9421.50	160.00	0.000014	1000.00	0.000001
B	18	Verizon	Commscope	SBNHH-1D65B	Panel	2100	LTE	180	63	16.45	6.1	4	40.00	6296.80	10330.47	160.00	0.000007	1000.00	0.000001
C	19	Verizon	Samsung	MT6407-77A	Panel	3700	5G	300	17	22.85	2.92	4	35.00	26985.35	44271.89	160.00	0.013536	1000.00	0.001354
C	20	Verizon	Commscope	SBNHH-1D65B	Panel	700	LTE	300	68	12.75	6.1	4	40.00	2686.09	4406.77	160.00	0.000084	466.67	0.000018
C	20	Verizon	Commscope	SBNHH-1D65B	Panel	850	LTE	300	66	12.55	6.1	4	40.00	2565.19	4208.43	160.00	0.000139	566.67	0.000025
C	20	Verizon	Commscope	SBNHH-1D65B	Panel	850	CDMA	300	66	12.55	6.1	2	20.00	993.25	1629.52	160.00	0.030332	566.67	0.005353
C	21	Verizon	Commscope	SBNHH-1D65B	Panel	1900	LTE	300	66	16.05	6.1	4	40.00	5742.75	9421.50	160.00	0.001229	1000.00	0.000123
C	21	Verizon	Commscope	SBNHH-1D65B	Panel	2100	LTE	300	63	16.45	6.1	4	40.00	6296.80	10330.47	160.00	0.000716	1000.00	0.000072
A	22	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	60	90	12	4	2	50.00	1412.54	2317.39	192.00	0.002692	566.67	0.000475
A	23	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	60	90	12	4	2	50.00	1412.54	2317.39	192.00	0.013002	566.67	0.002295
A	24	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	60	90	12	4	2	50.00	1412.54	2317.39	192.00	0.020090	566.67	0.003545
A	25	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	60	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000793	566.67	0.000140
B	26	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	180	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000003	566.67	0.000000
B	27	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	180	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000090	566.67	0.000016
B	28	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	180	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000074	566.67	0.000013
B	29	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	180	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000003	566.67	0.000000
C	30	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	300	90	12	4	2	50.00	1412.54	2317.39	192.00	0.003546	566.67	0.000626
C	31	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	300	90	12	4	2	50.00	1412.54	2317.39	192.00	0.000332	566.67	0.000059
C	32	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	300	90	12	4	2	50.00	1412.54	2317.39	192.00	0.004878	566.67	0.000861
C	33	Nextel	Decibel	DB844H90-XY	Panel	850	LTE	300	90	12	4	2	50.00	1412.54	2317.39	192.00	0.002455	566.67	0.000433
																Calculated Power Density (µW/cm ²)	1.645790%	Calculated MPE%	0.1920%

Table 2.2: Antenna Inventory & Power Data

*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6449 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6449 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6449 due to its similarity.

3. Compliance Summary

The theoretical calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated composite MPE value for this site assuming all carriers present is 0.1920% of the allowable FCC established general public limit sampled at the ground level.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were within the allowable 100% threshold standard per the federal government.

Date: **November 22, 2022**



Infinigy
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Fort Washington, PA 19034
(518) 690-0790
structural@infinigy.com

Subject: **Mount Modification Analysis Report**

Carrier Designation: **AT&T Mobility Equipment Change-Out**
Carrier Site Number: CT5845
Carrier Site Name: AWE Suffield West
Carrier FA Number: 10092225

Crown Castle Designation: **Crown Castle BU Number:** 801485
Crown Castle Site Name: CT SUFFIELD 1 CAC 801485
Crown Castle JDE Job Number: 726255
Crown Castle Order Number: 627244 Rev. 0

Engineering Firm Designation: **Infinigy Report Designation:** 1039-Z0001-B

Site Data: **2715 Mountain Rd., Suffield, Hartford County, CT, 06093**
Latitude 42°0'41.80" Longitude -72°43'43.60"

Structure Information: **Tower Height & Type:** **190.5 ft Monopole**
Mount Elevation: **168.0 ft**
Mount Type: **13.3 ft Platform**

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

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

Platform

Sufficient

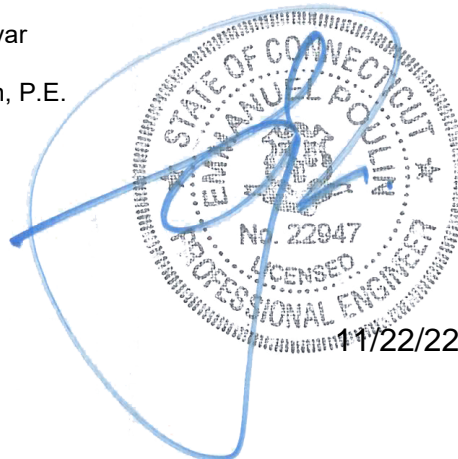
***See Section 4.1 of this report for the loading and structural modifications required in order for the mount to support the loading listed in Table 1.**

This analysis has been performed in accordance with the 2022 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 115 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Farhad Ahmadyar

Respectfully Submitted by: Emmanuel Poulin, P.E.

structural@infinigy.com



11/22/22

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Mount Modification Design Drawings (MDD) / Supplemental Drawings

1) INTRODUCTION

This is an existing 3-sector 13.3 ft Platform, mapped by Infinigy.

Proposed modifications are being considered in the analysis per Infinigy detail drawings provided in Appendix E – Mount Modification Design Drawings.

2) ANALYSIS CRITERIA

Building Code:	2021 IBC /2022 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	115 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.169
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 500 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
168.0	170.0	2	CCI ANTENNAS	OPA65R-BU4D	13.3 ft Platform
		4	CCI ANTENNAS	OPA65R-BU8D	
		1	KMW COMMUNICATIONS	AM-X-CD-14-65-00T-RET	
		2	POWERWAVE TECHNOLOGIES	P65-17-XLH-RR	
		3	ERICSSON	RRUS 4449 B5/B12	
		3	ERICSSON	RRUS 4478 B14_CCIV2	
		3	ERICSSON	RRUS 8843 B2/B66A_CCIV2	
	1	RAYCAP	DC6-48-60-18-8C-EV		
168.0	168.0	1	RAYCAP	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Mobility Application	627244 Rev. 0	CCI Sites
Loading Document	AT&T Mobility	RFDS ID: 5298140	TSA
Mount Mapping	Infinigy	10579977	CCI Sites
Mount Modification Drawings	Infinigy	Appendix E	Infinigy

3.1) Analysis Method

RISA-3D (Version 20.0.3), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.3.3, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Mount Analysis* (Revision E). In addition, this analysis is in accordance with AT&T Mount Technical Guidance ATT-002-291-373.

3.2) Assumptions

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

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP2	168.0	66.3	Pass
	Horizontal(s)	HOR1		30.9	Pass
	Standoff(s)	SA2		46.7	Pass
	Bracing(s)	M50		84.3	Pass
	Handrail(s)	M72		43.2	Pass
	Kicker(s)	M55		34.5	Pass
	Mount Connection(s)	-		14.8	Pass

Structure Rating (max from all components) =	84.3%
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Notes:

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

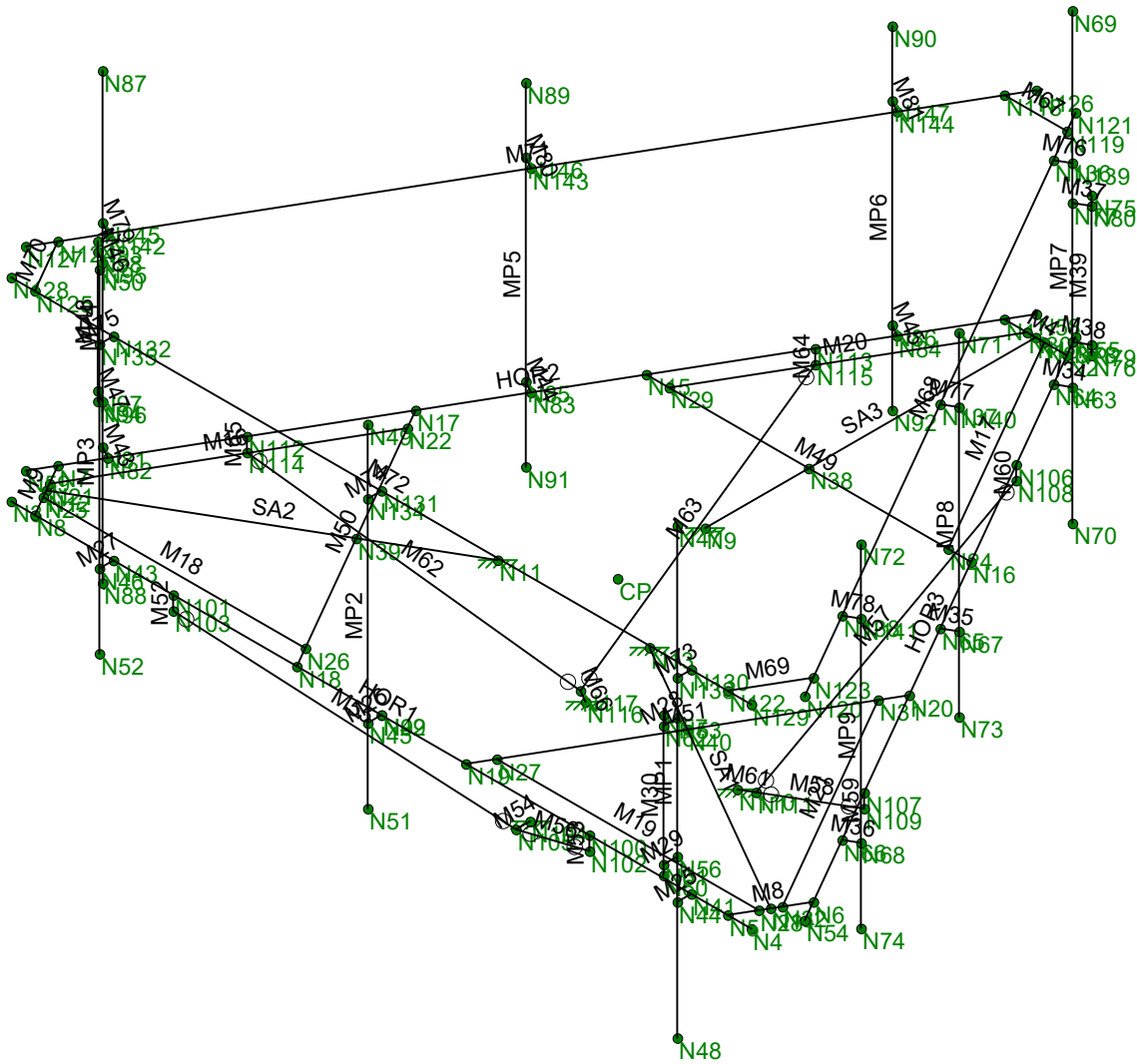
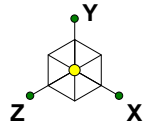
4.1) Recommendations

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

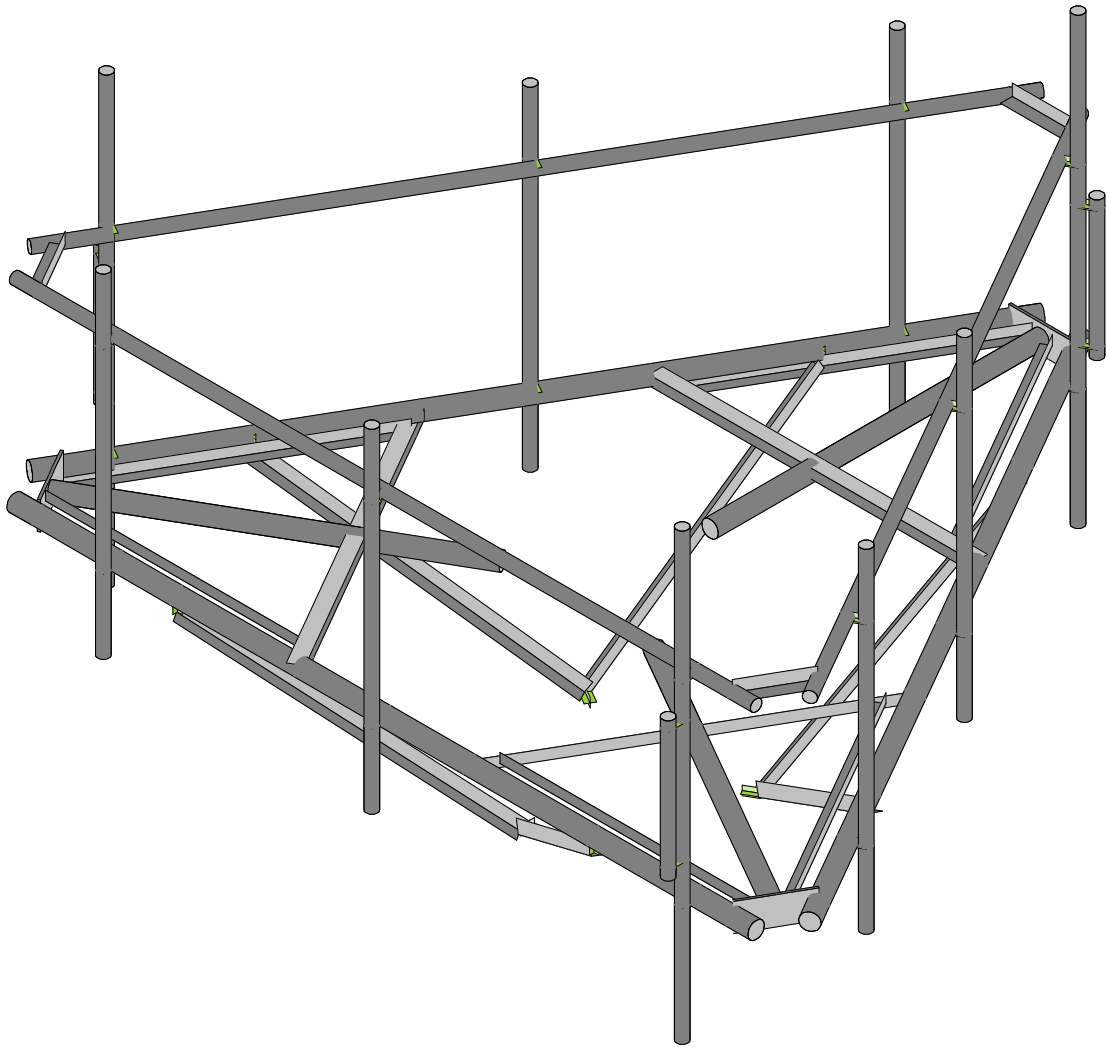
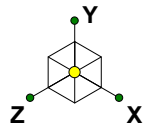
1. Installation of (1) Site Pro PRK-SFS-L reinforcement kit and (1) Site Pro 1 AHCP angle reinforcement kit.
2. Installation of (1) Pipe 2.0 STD 160" long horizontal pipe and (3) Site Pro 1 SCX1-K crossover plate kits per sector.

Engineering detail drawings have been provided in Appendix E – Mount Modification Design Drawings. Connection from the mount to the tower and local stresses on the tower are sufficient.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



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Infinigy

FA

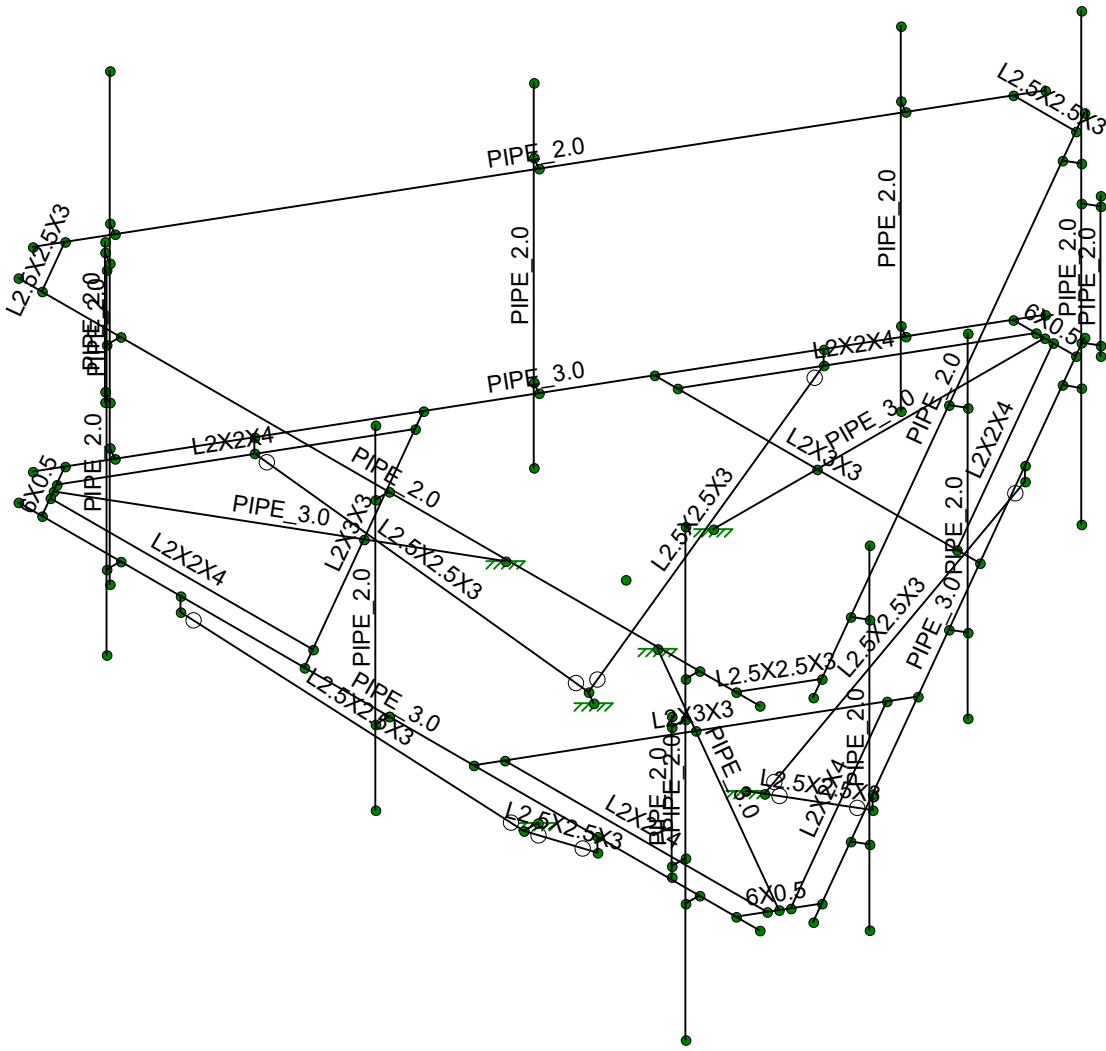
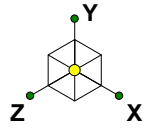
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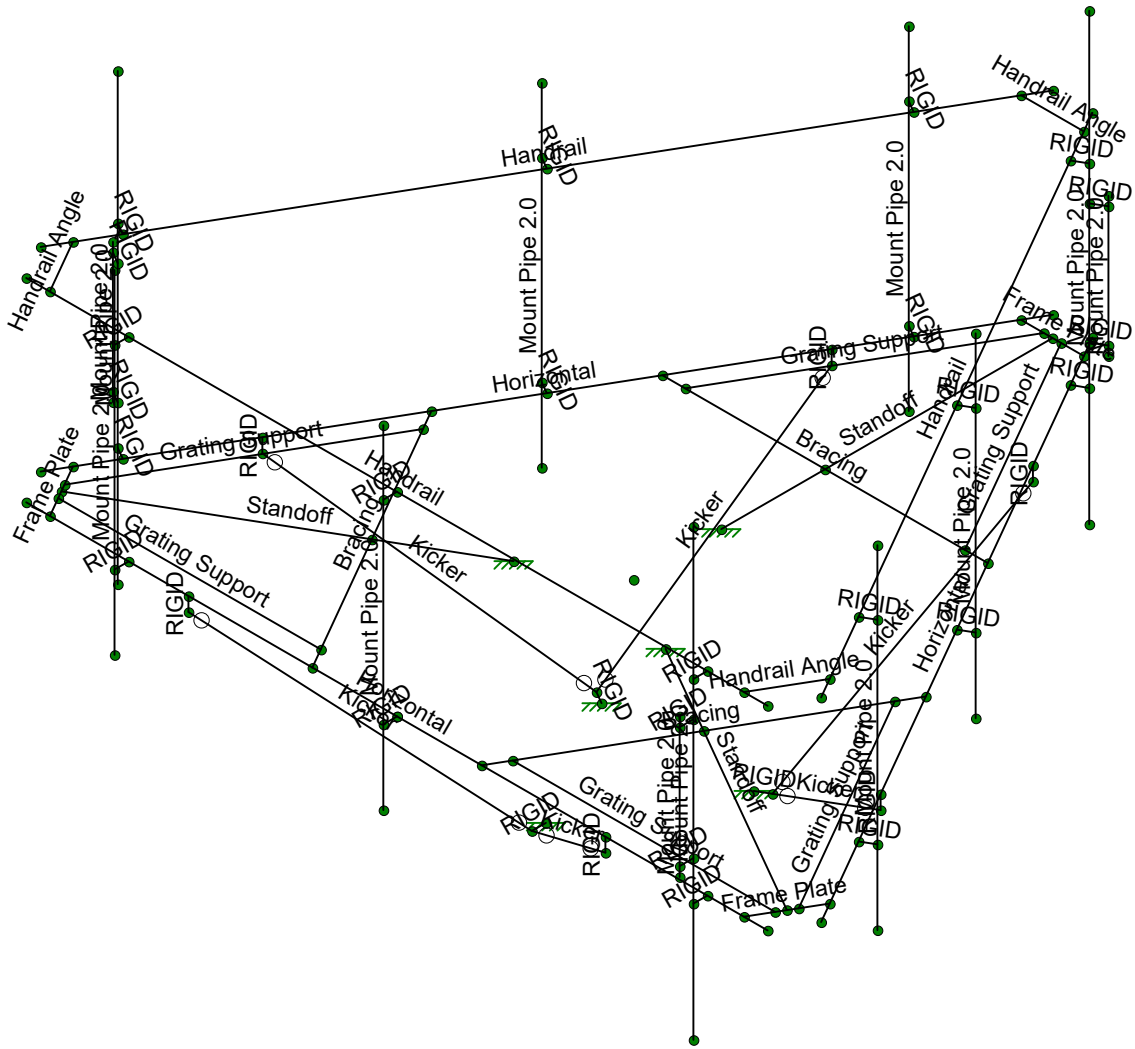
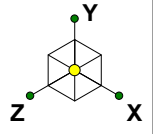
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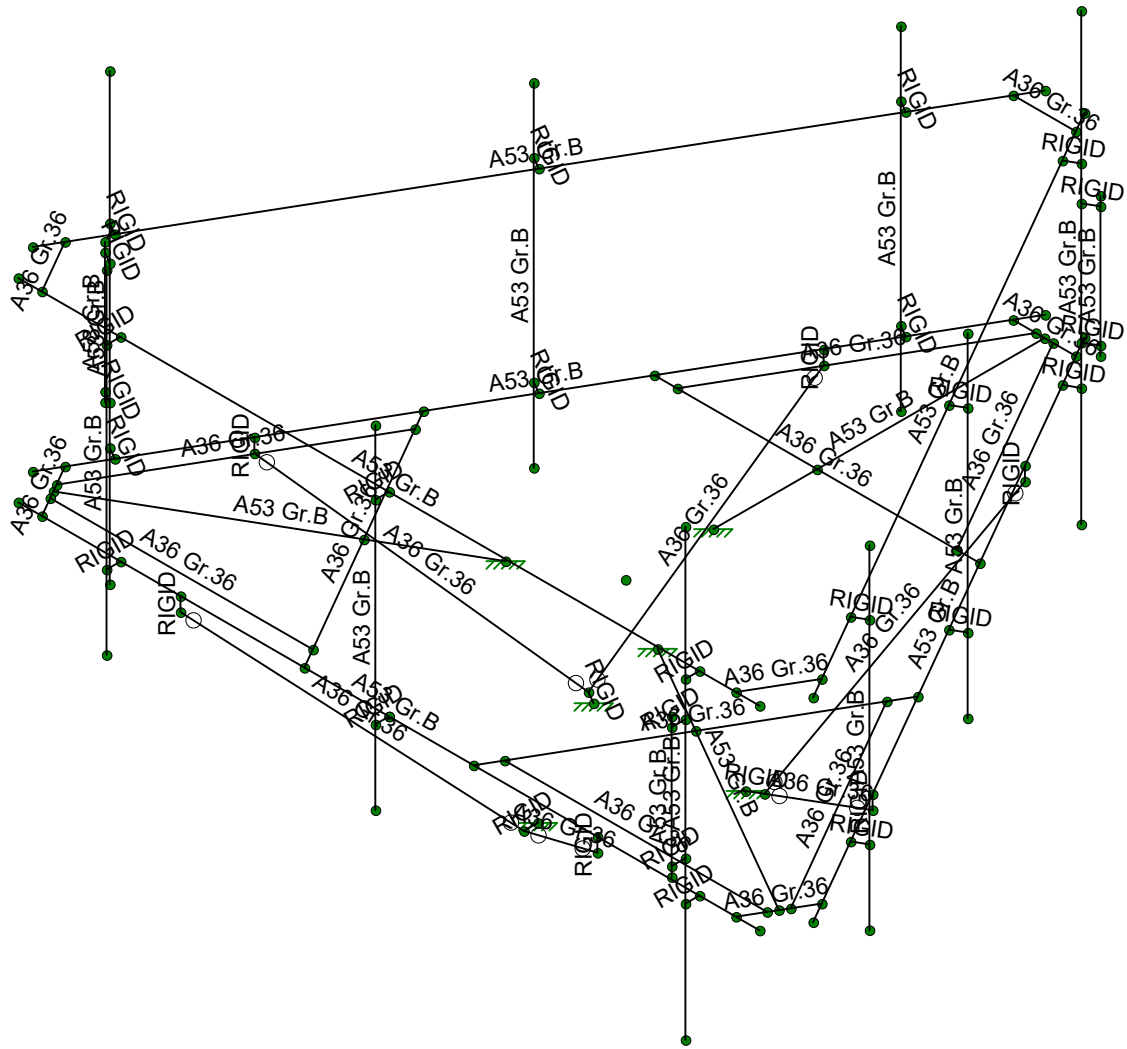
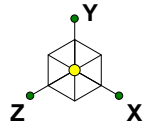
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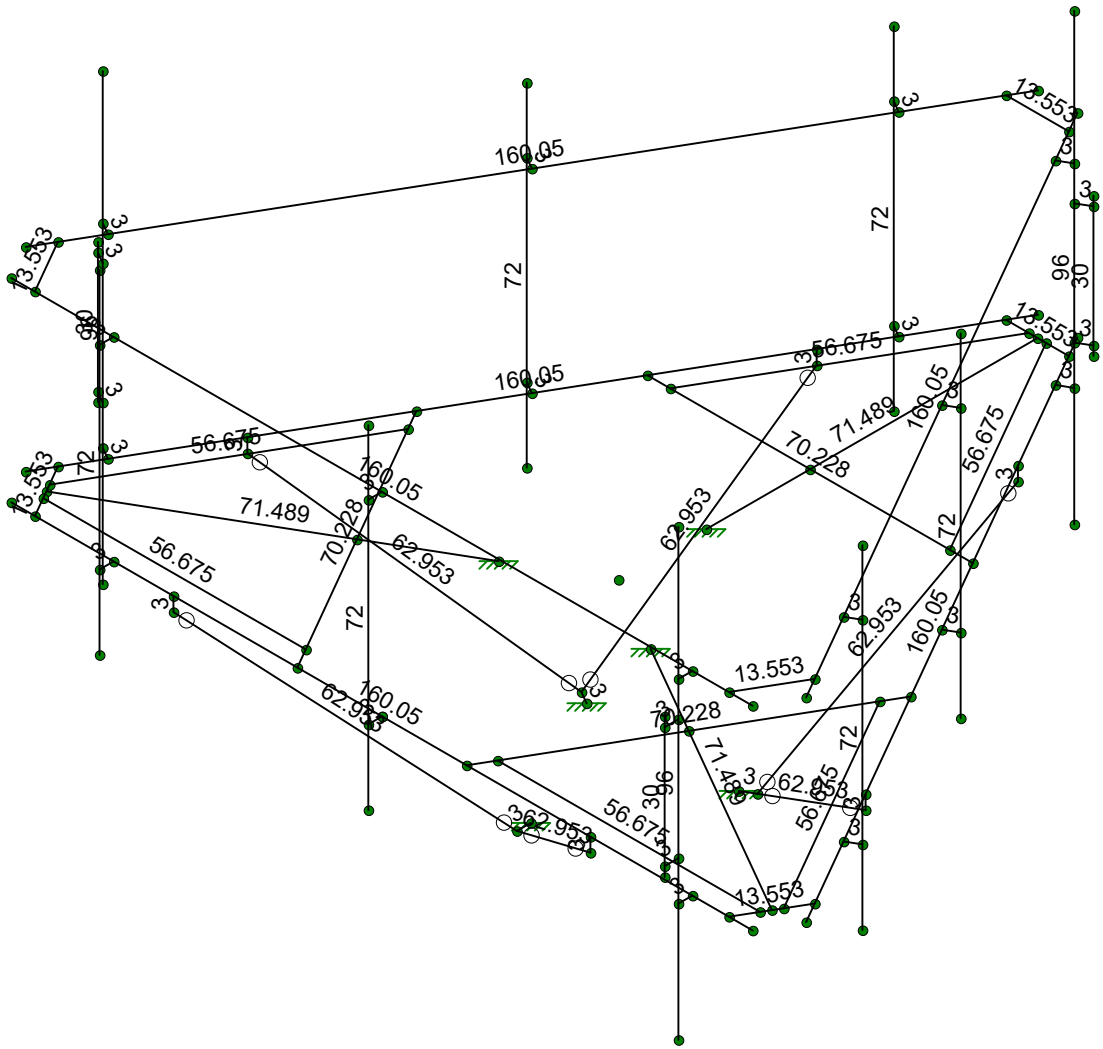
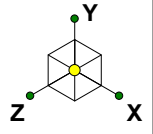
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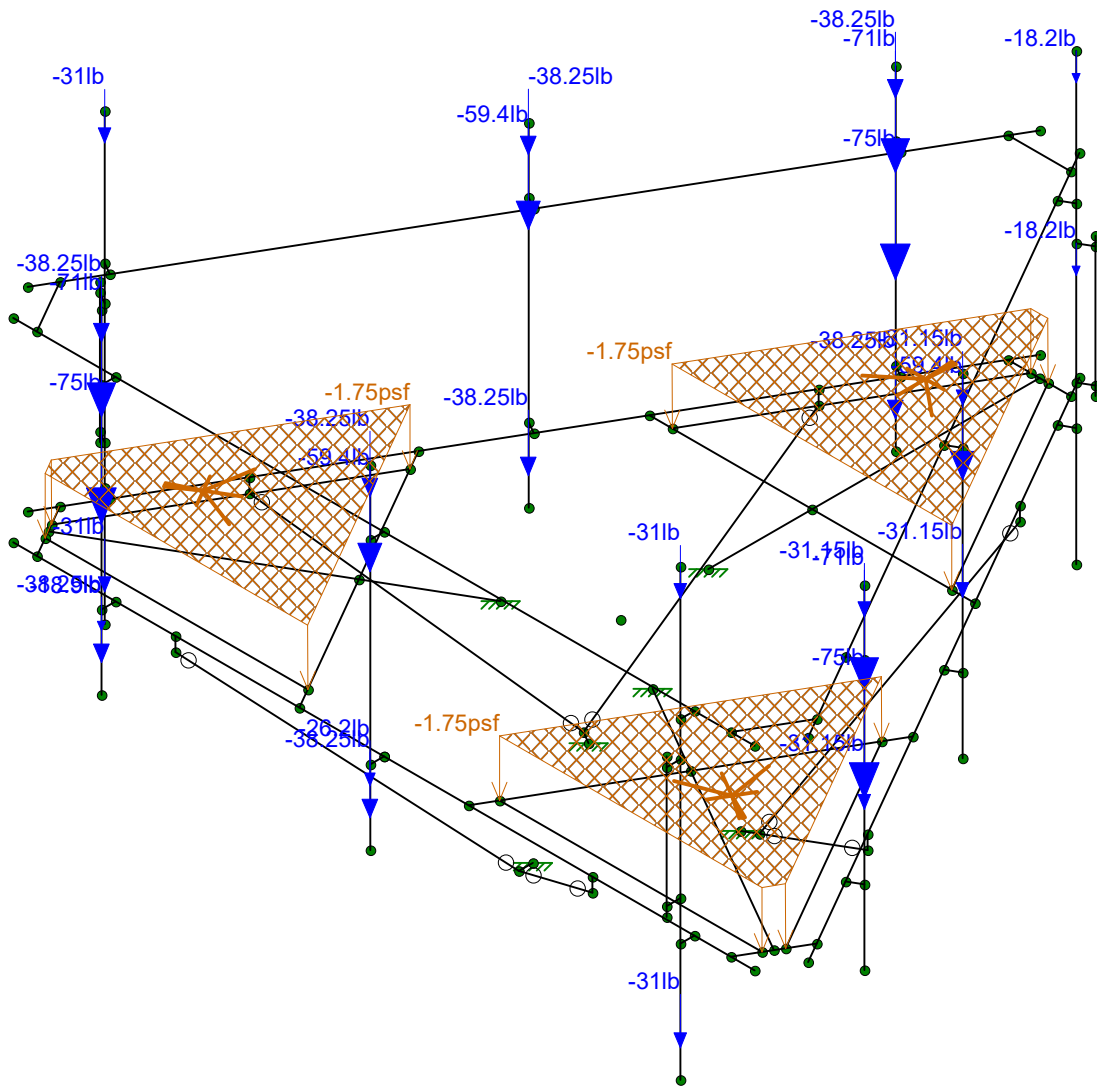
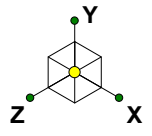


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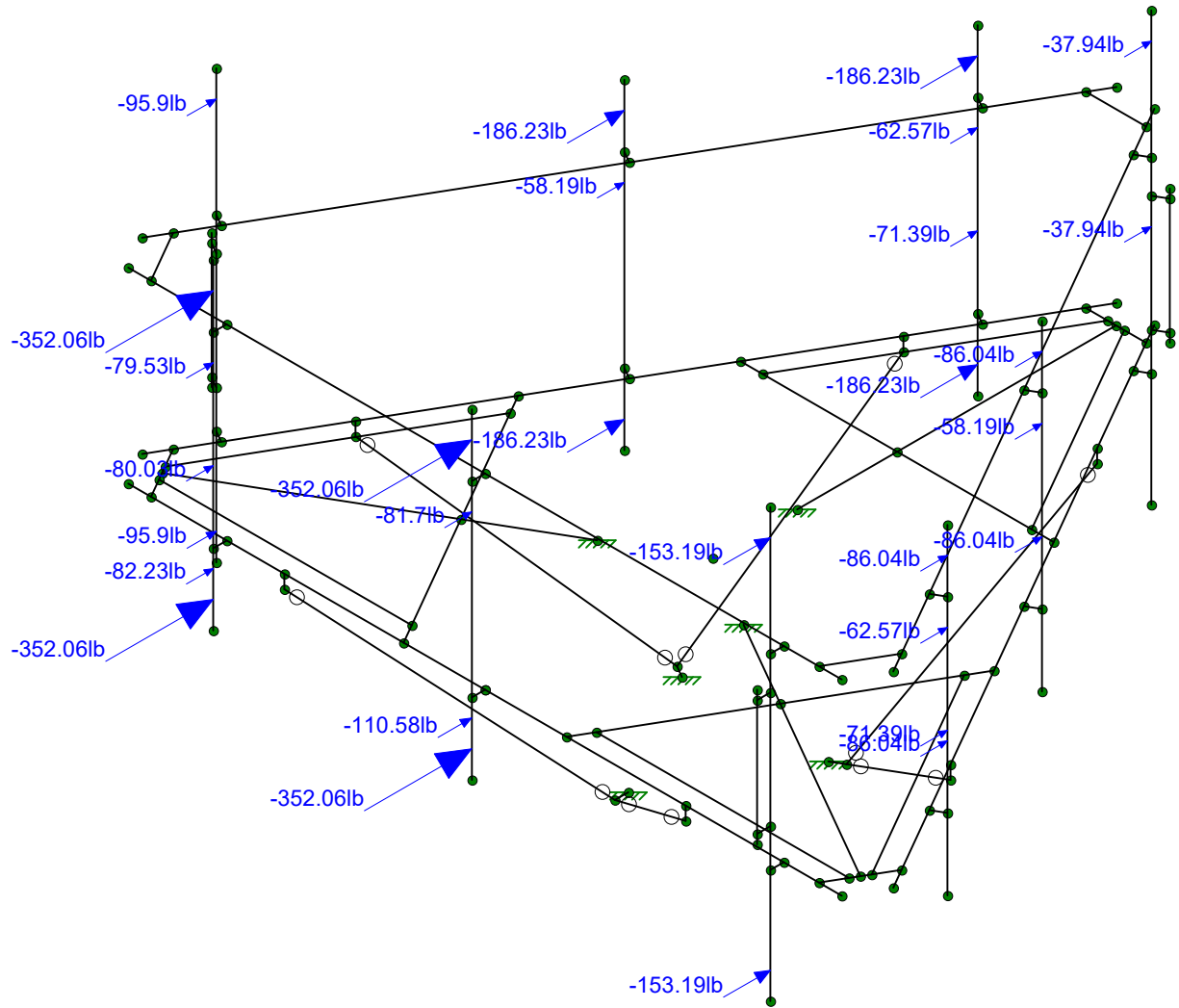
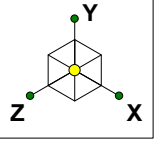
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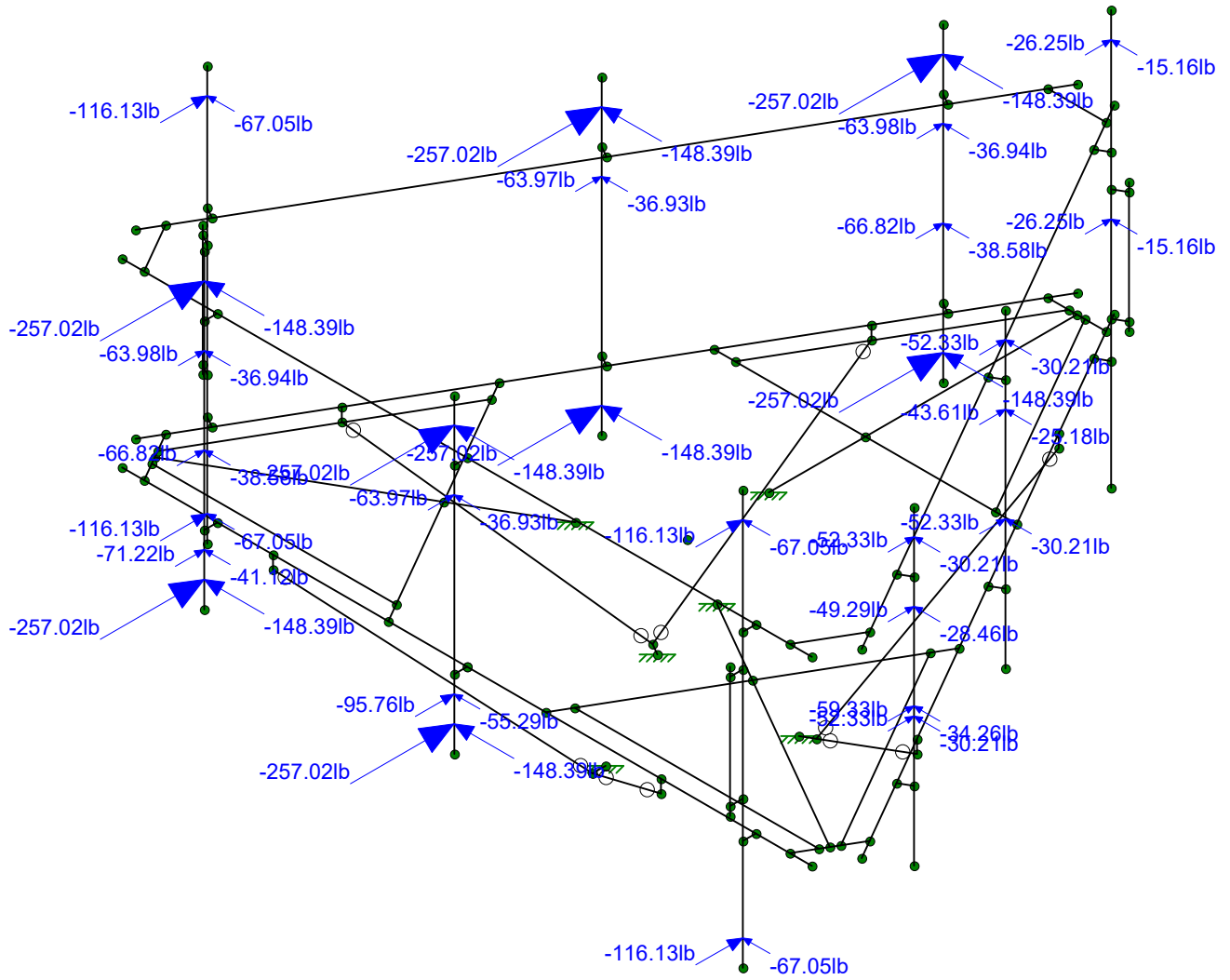
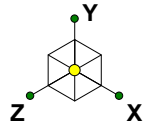


Loads: BLC 2, Wind Load AZI 0

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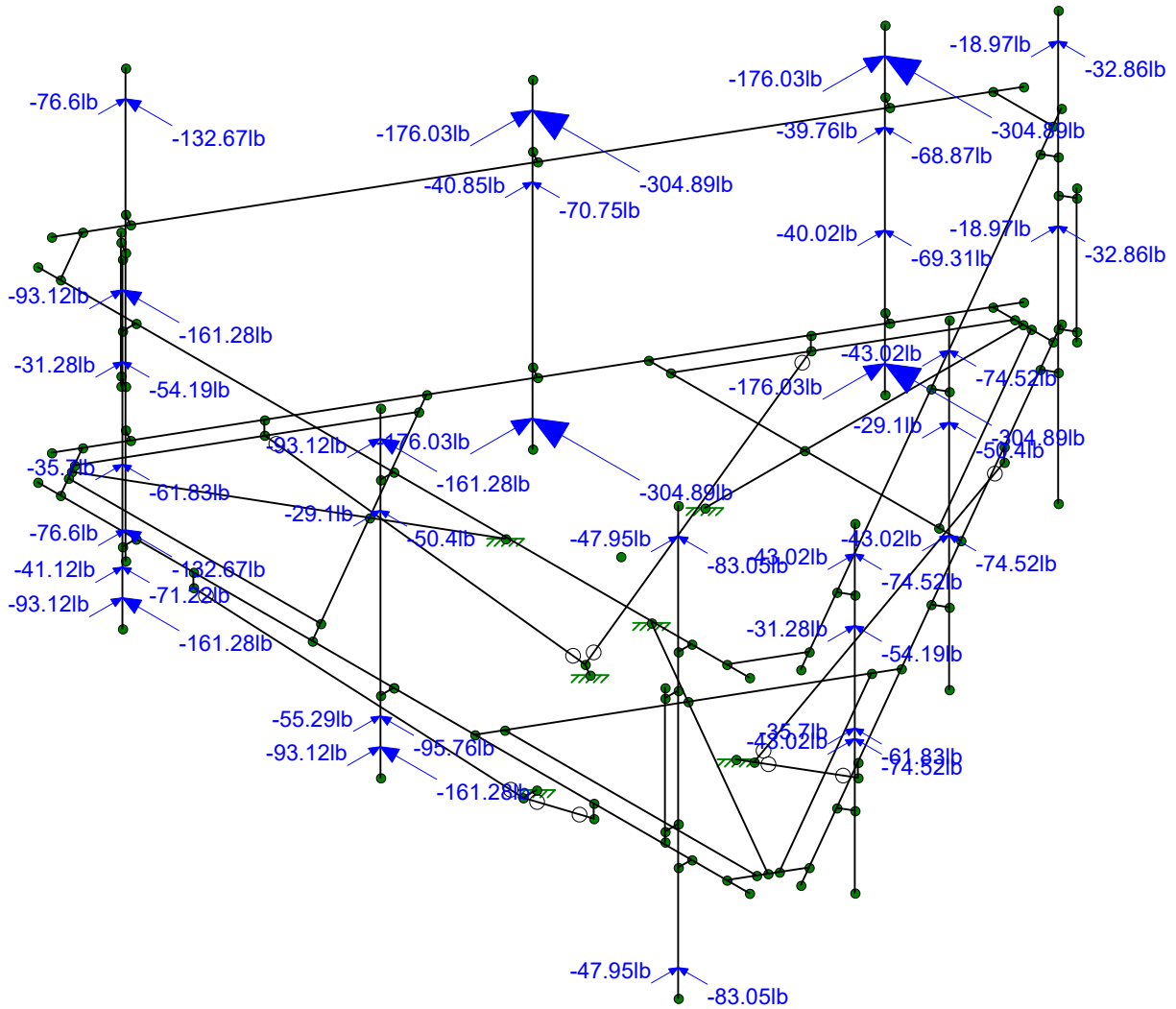
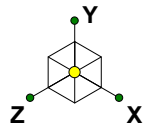


Loads: BLC 3, Wind Load AZI 30

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1039-Z0001-B

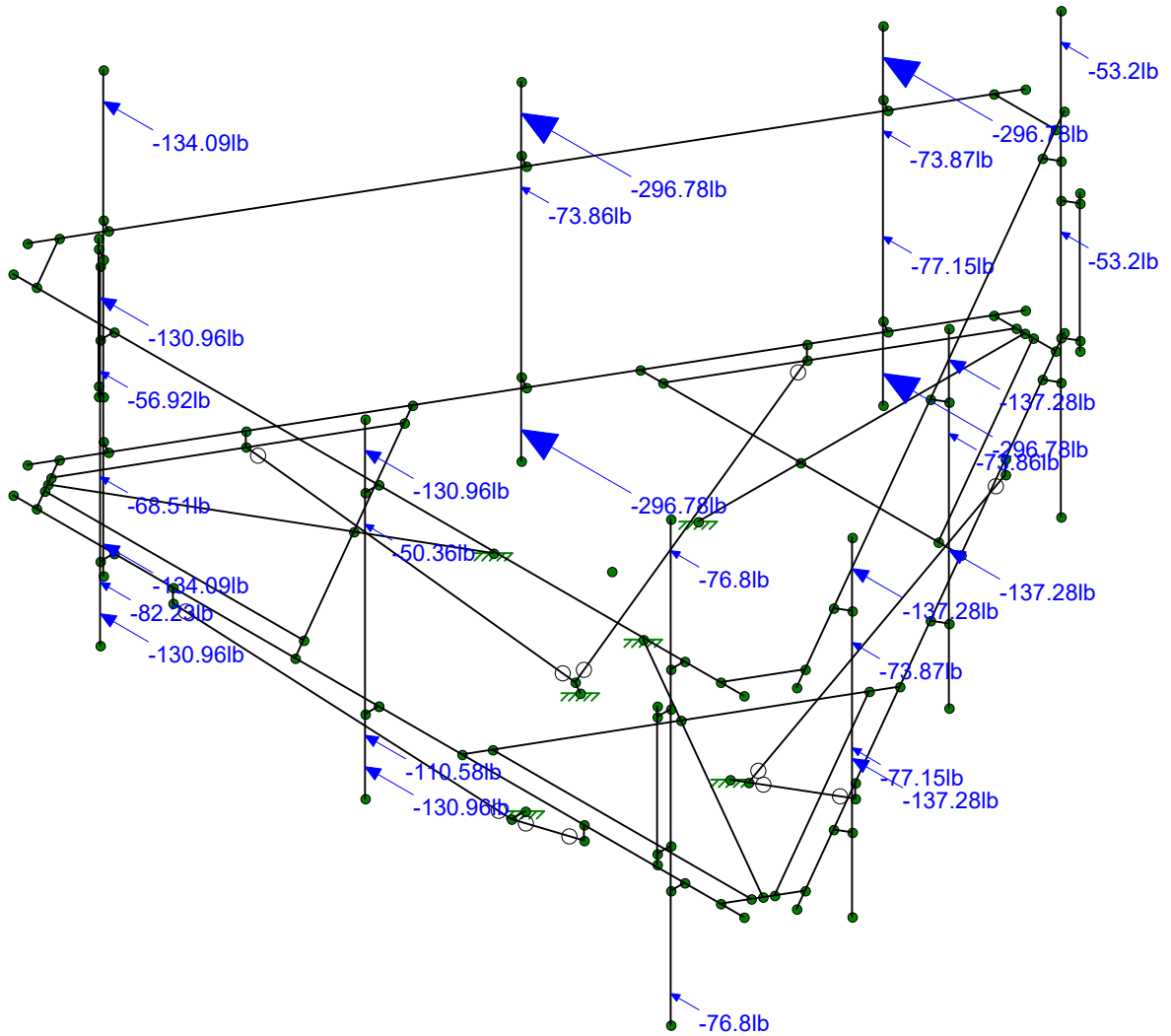
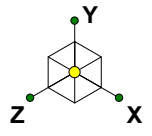
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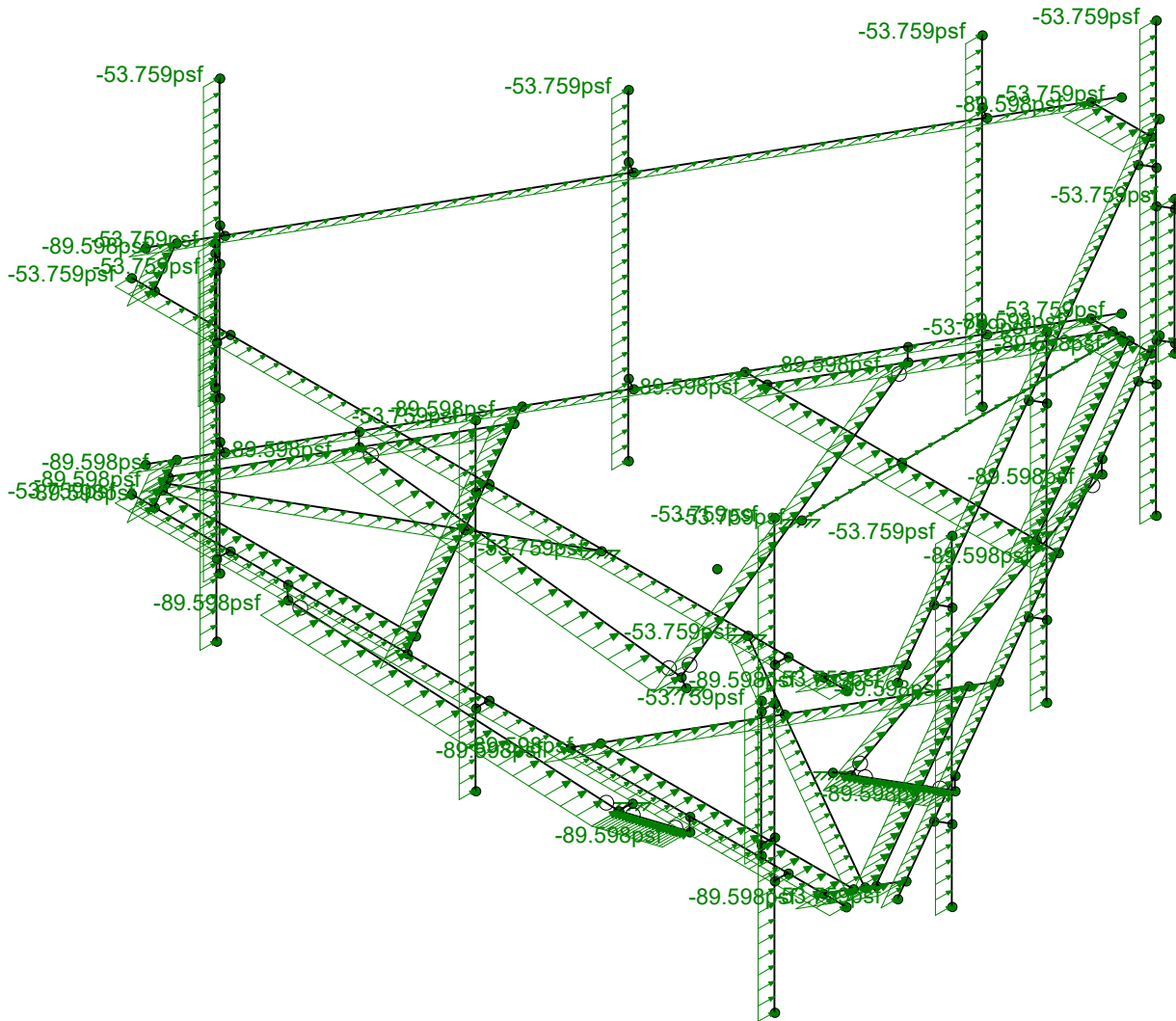
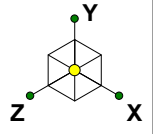
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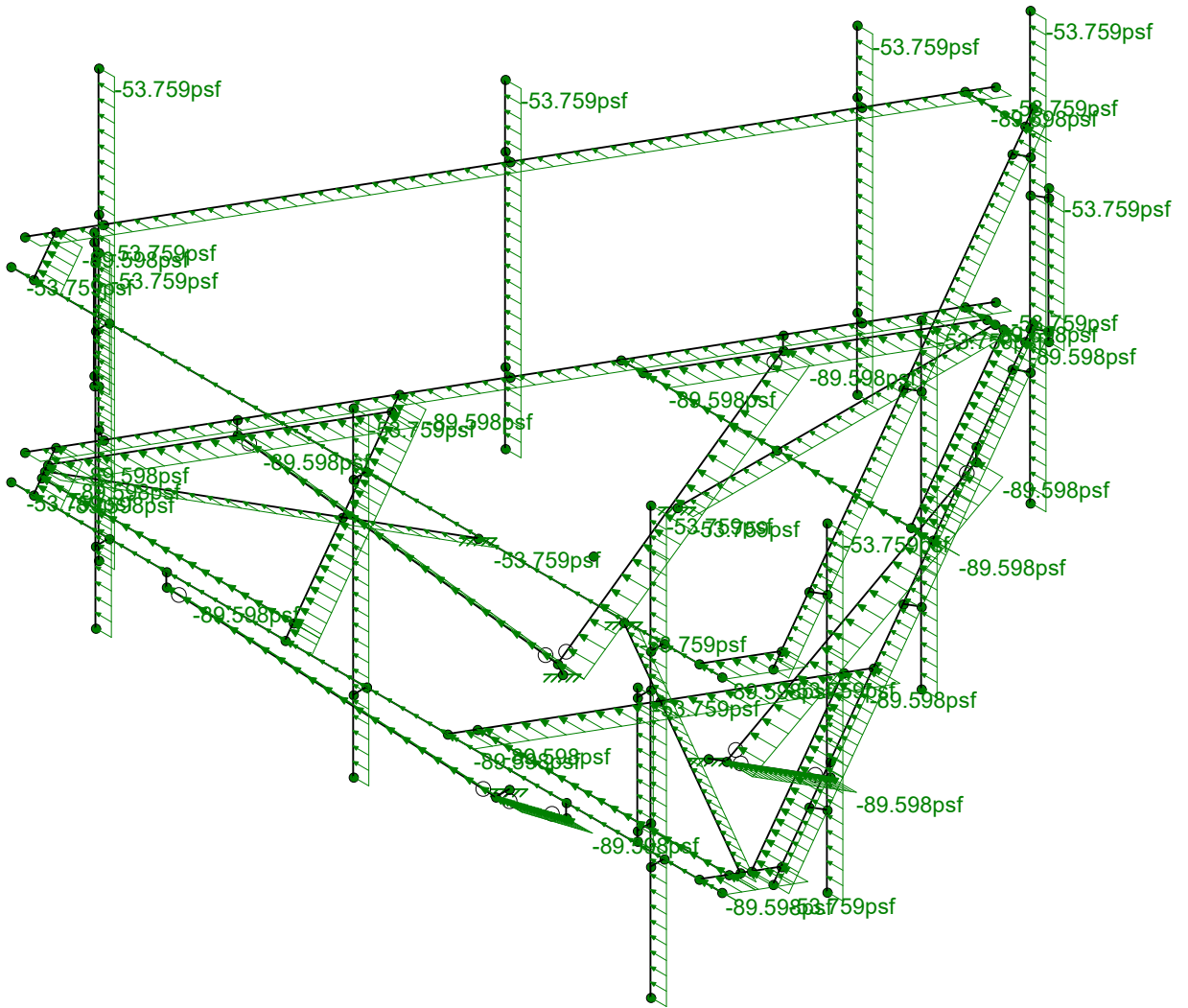
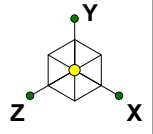
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1039-Z0001-B		845564 MOD_loaded.r3d



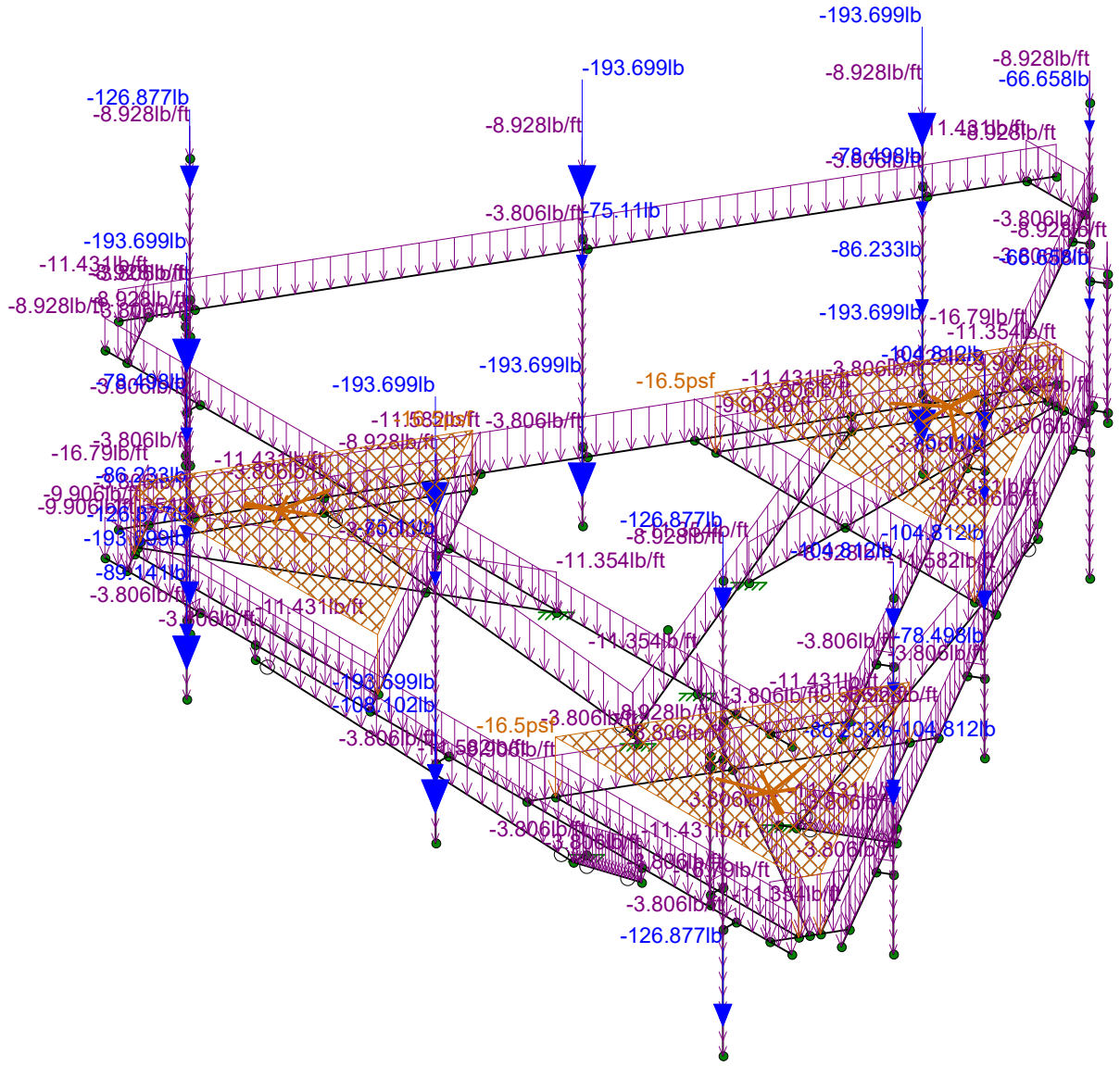
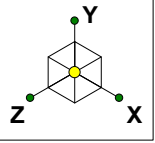
Loads: BLC 14, Distr. Wind Load Z

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FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



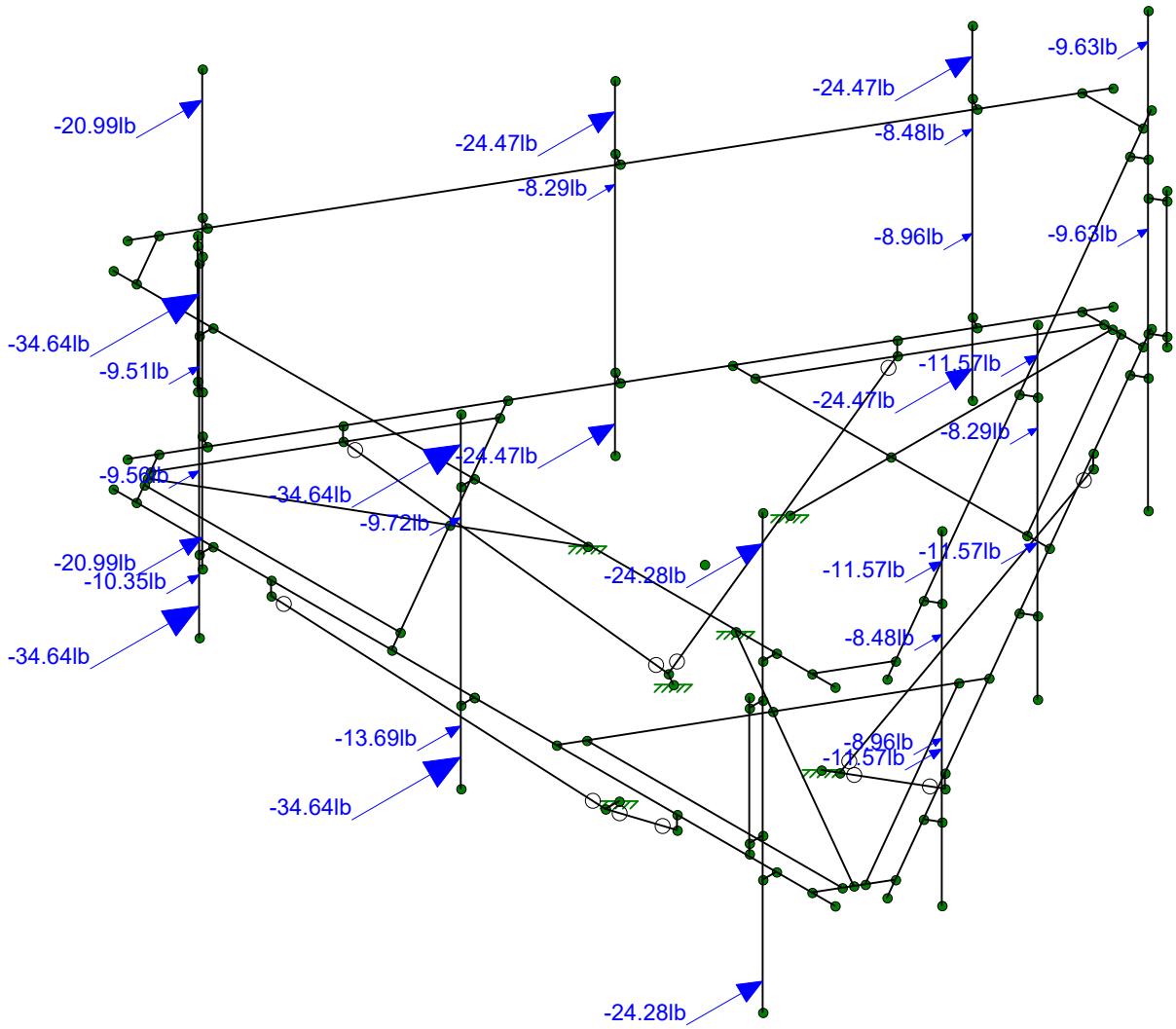
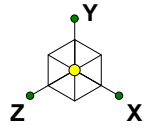
Loads: BLC 15, Distr. Wind Load X

Infinigy	801485	Dist. Wind Loading 90
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



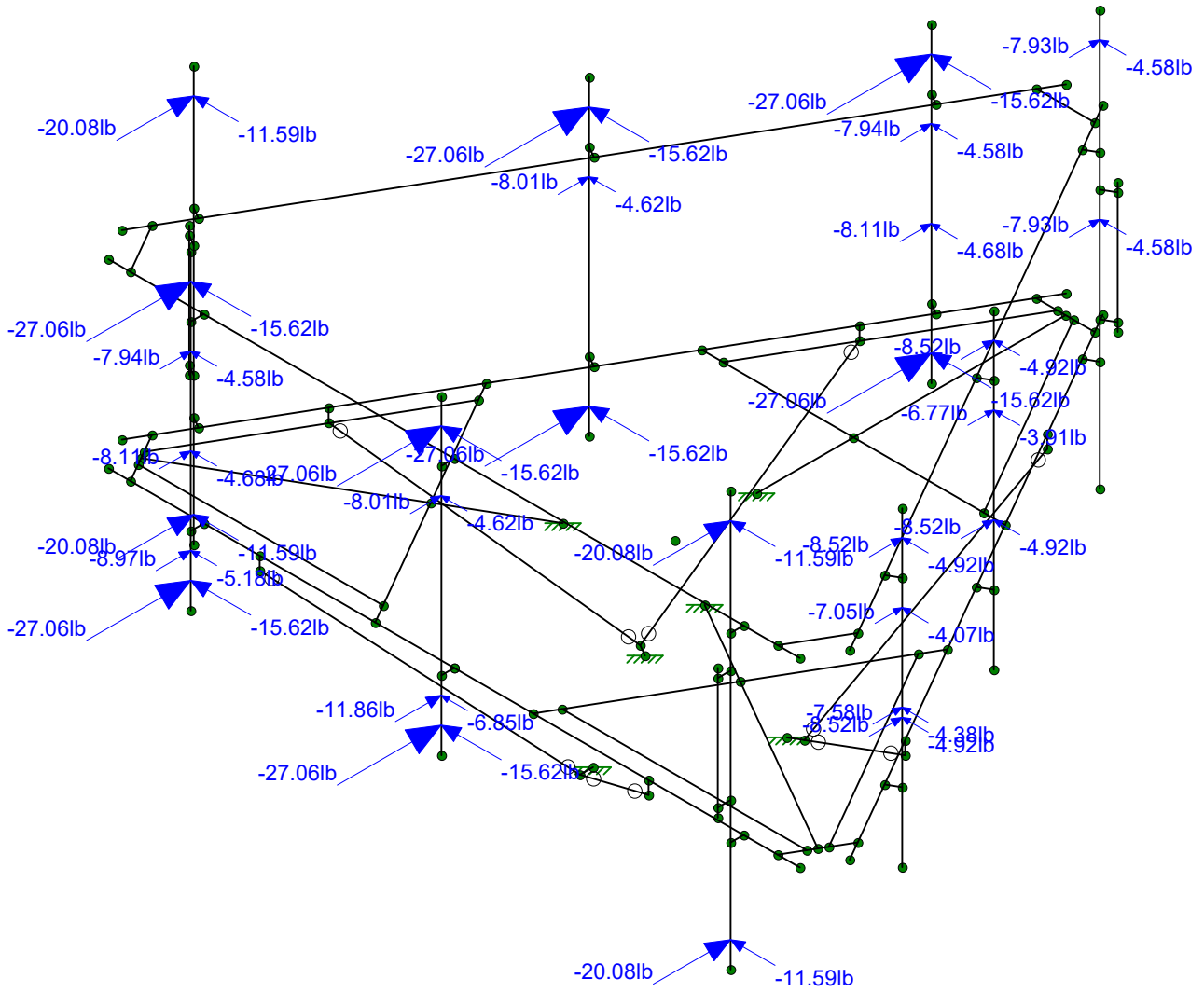
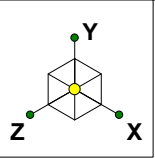
Loads: BLC 16, Ice Weight

Infinigy	801485	Ice Weight
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



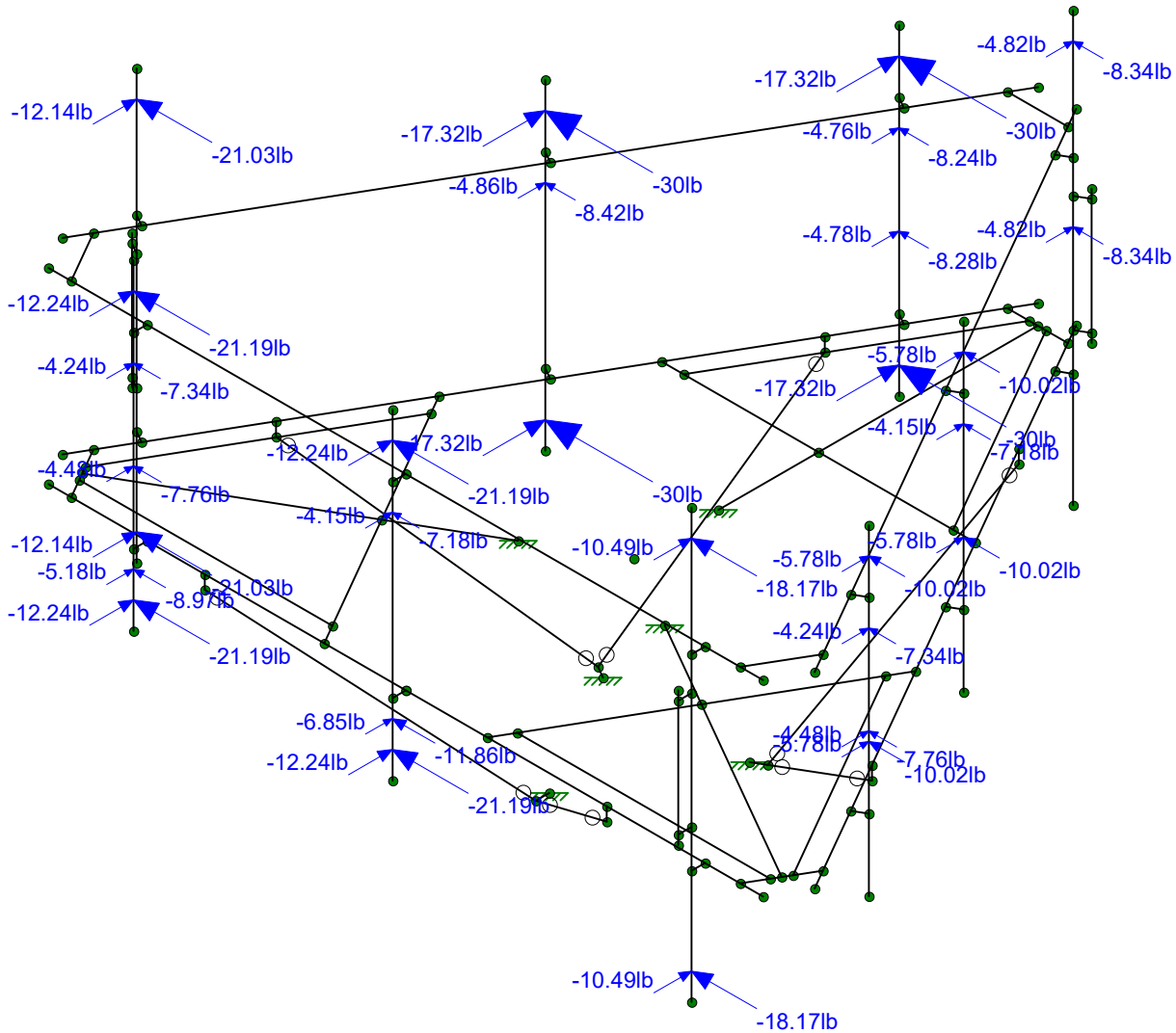
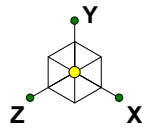
Loads: BLC 17, Ice Wind Load AZI 0

Infinigy	801485	Ice Wind Loading 0
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



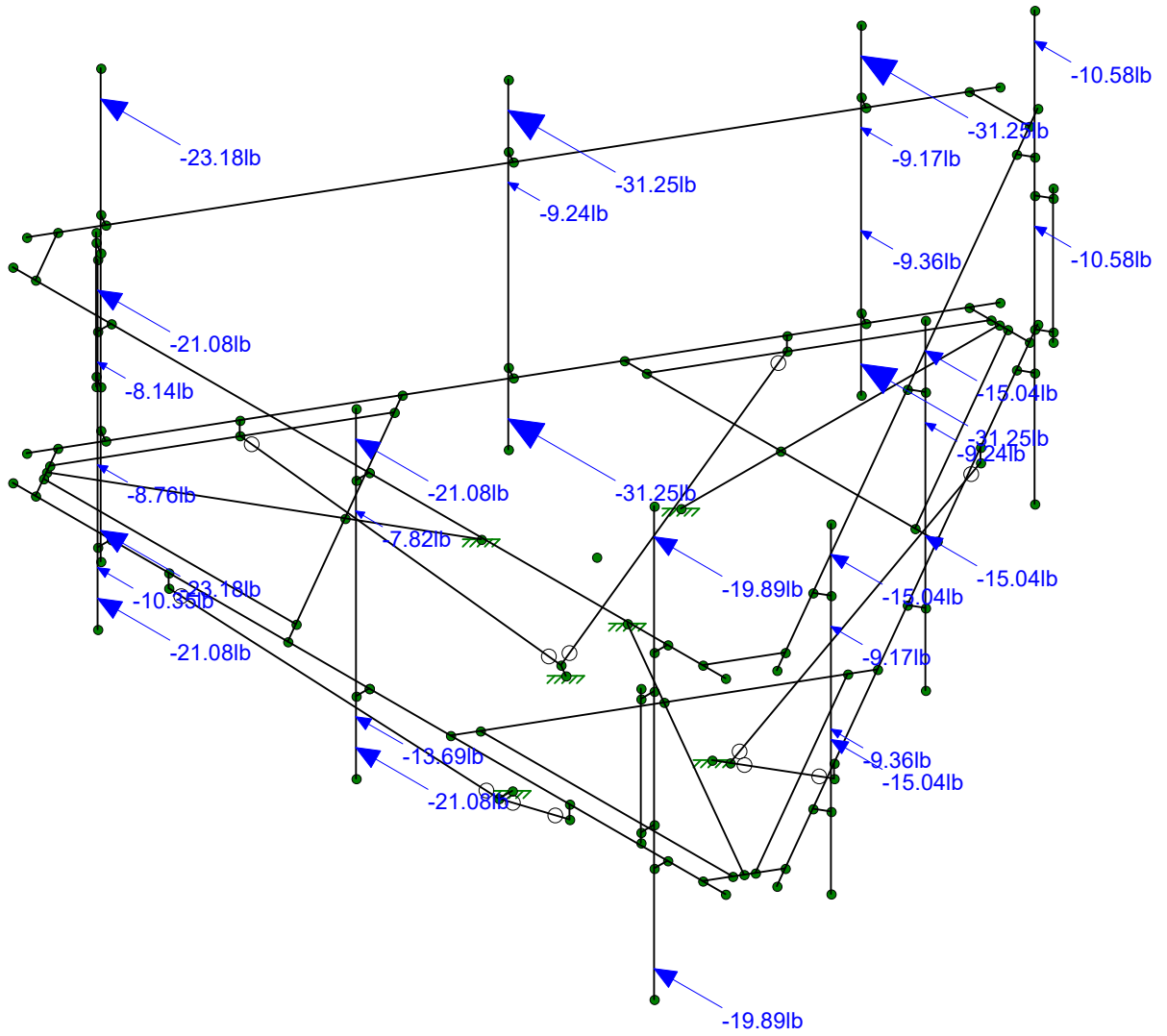
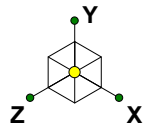
Loads: BLC 18, Ice Wind Load AZI 30

Infinigy	801485	Ice Wind Loading 30
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



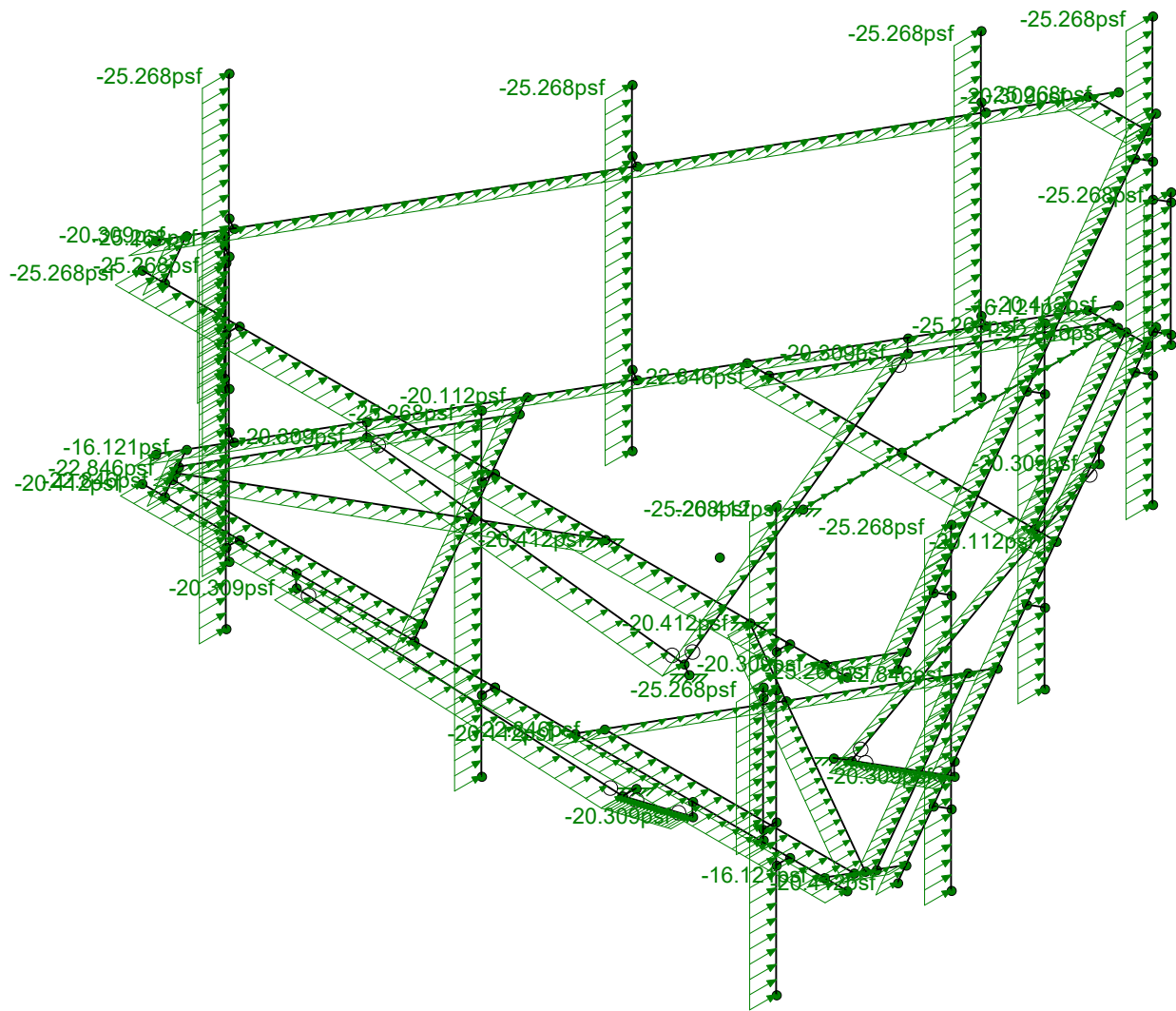
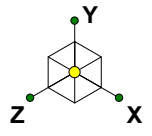
Loads: BLC 19, Ice Wind Load AZI 60

Infinigy	801485	Ice Wind Loading 60
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



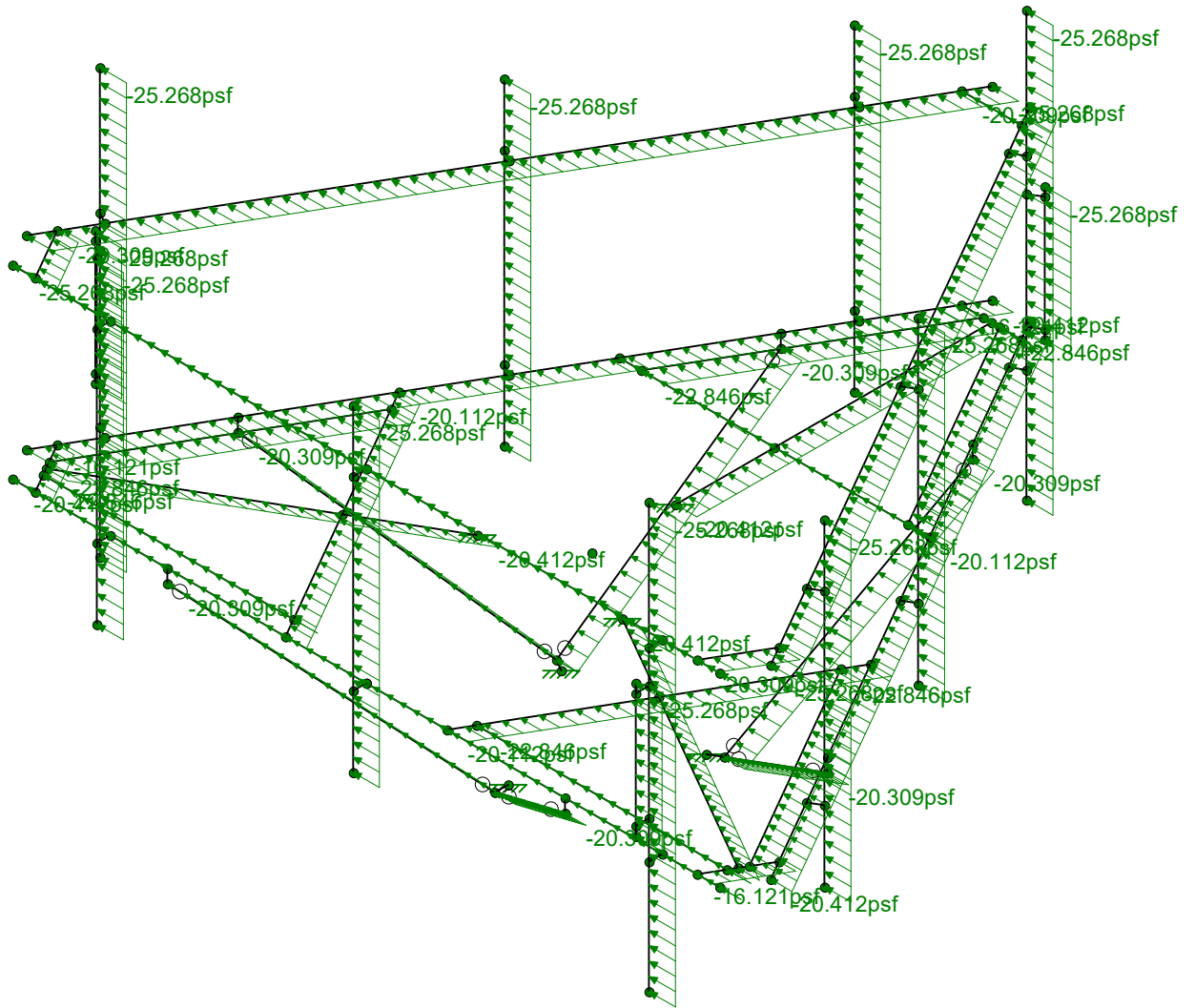
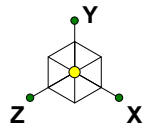
Loads: BLC 20, Ice Wind Load AZI 90

Infinigy	801485	Ice Wind Loading 90
FA		Nov 22, 2022 at 11:54 AM
1039-Z0001-B		845564 MOD_loaded.r3d



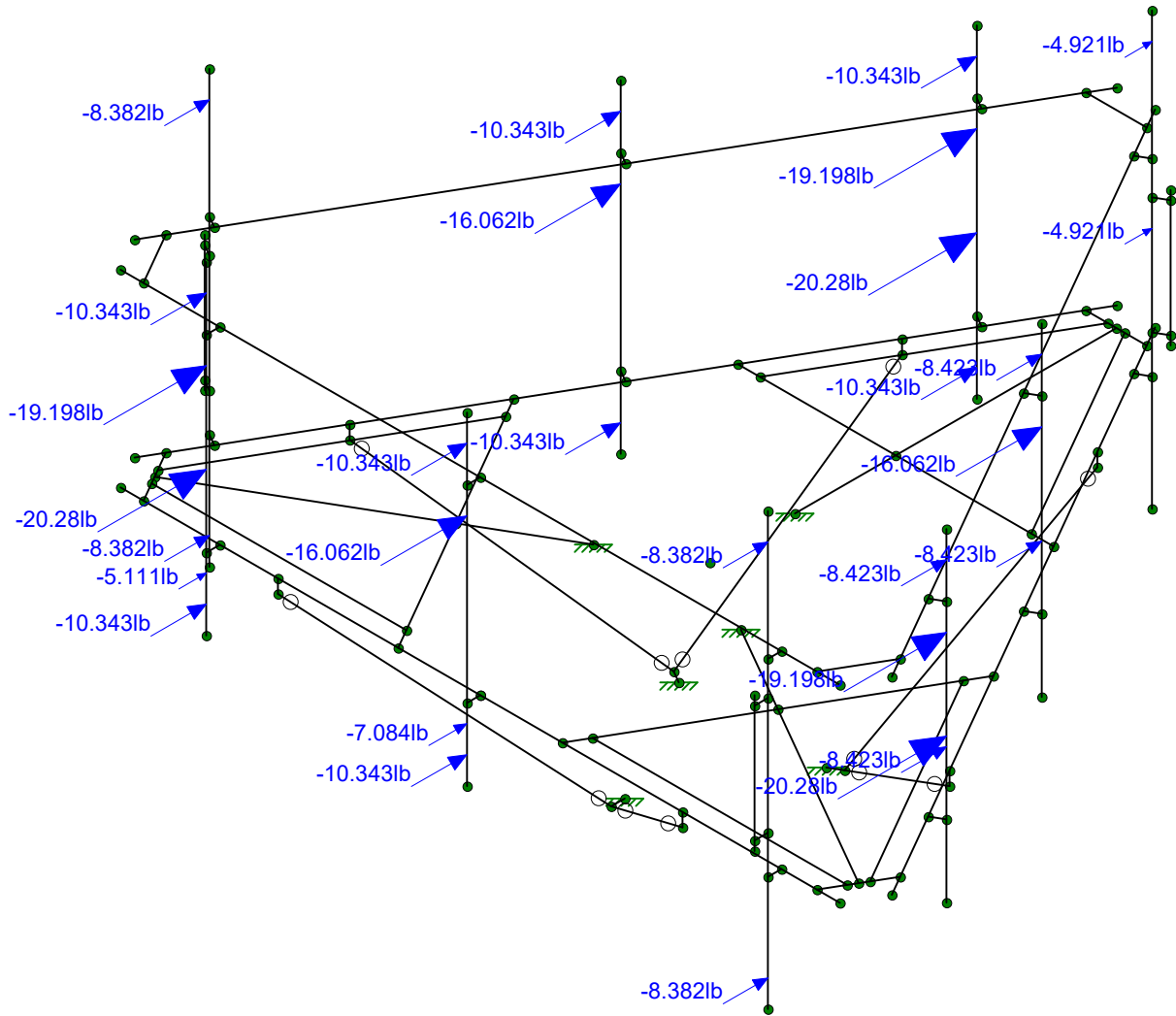
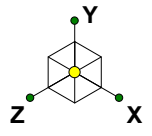
Loads: BLC 29, Distr. Ice Wind Load Z

Infinigy	801485	Dist. Ice Wind Loading 0
FA		Nov 22, 2022 at 11:55 AM
1039-Z0001-B		845564 MOD_loaded.r3d



Loads: BLC 30, Distr. Ice Wind Load X

Infinigy	801485	Dist. Ice Wind Loading 90
FA		Nov 22, 2022 at 11:55 AM
1039-Z0001-B		845564 MOD_loaded.r3d

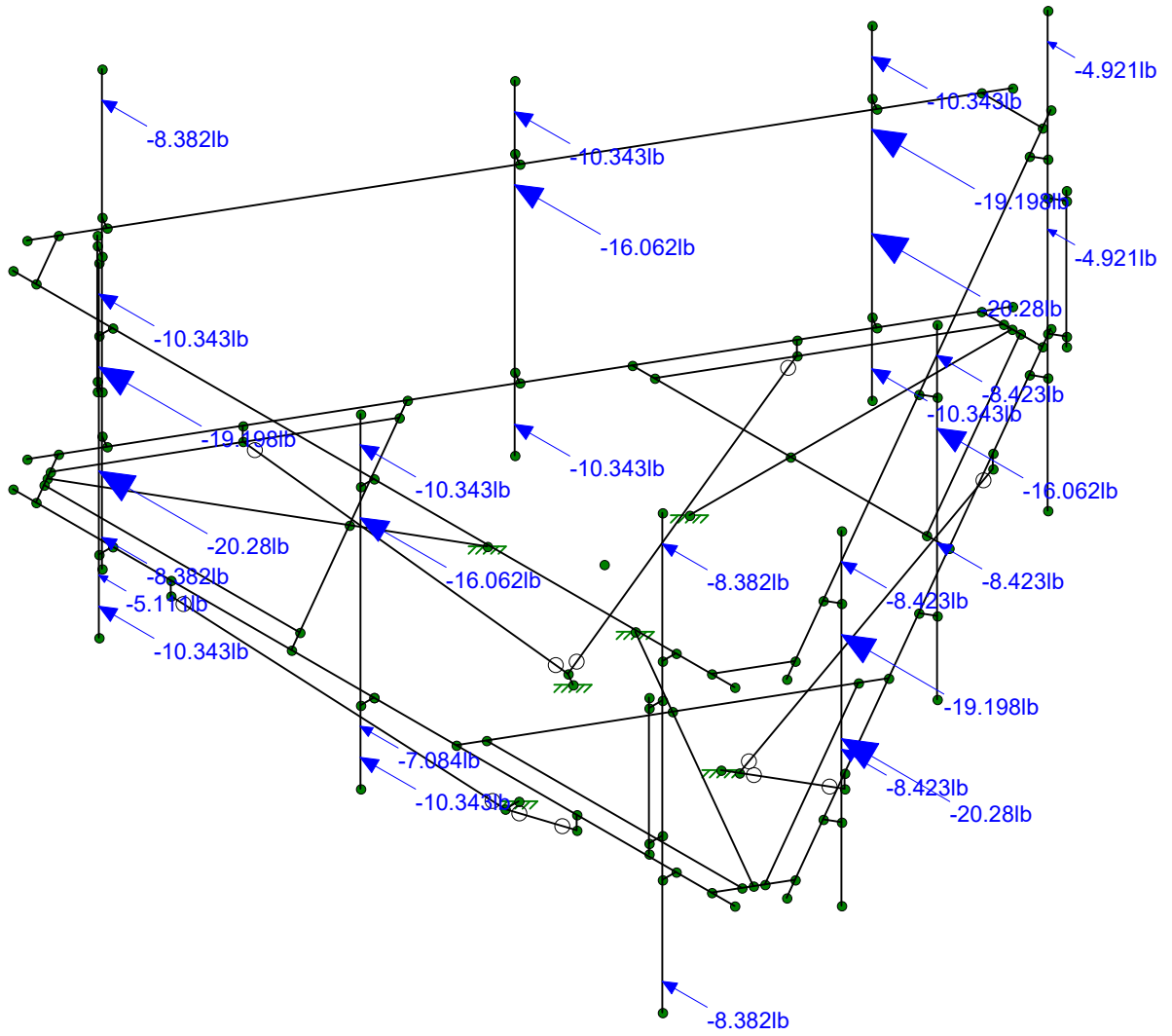
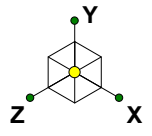


Loads: BLC 31, Seismic Load Z

Infinigy
FA
1039-Z0001-B

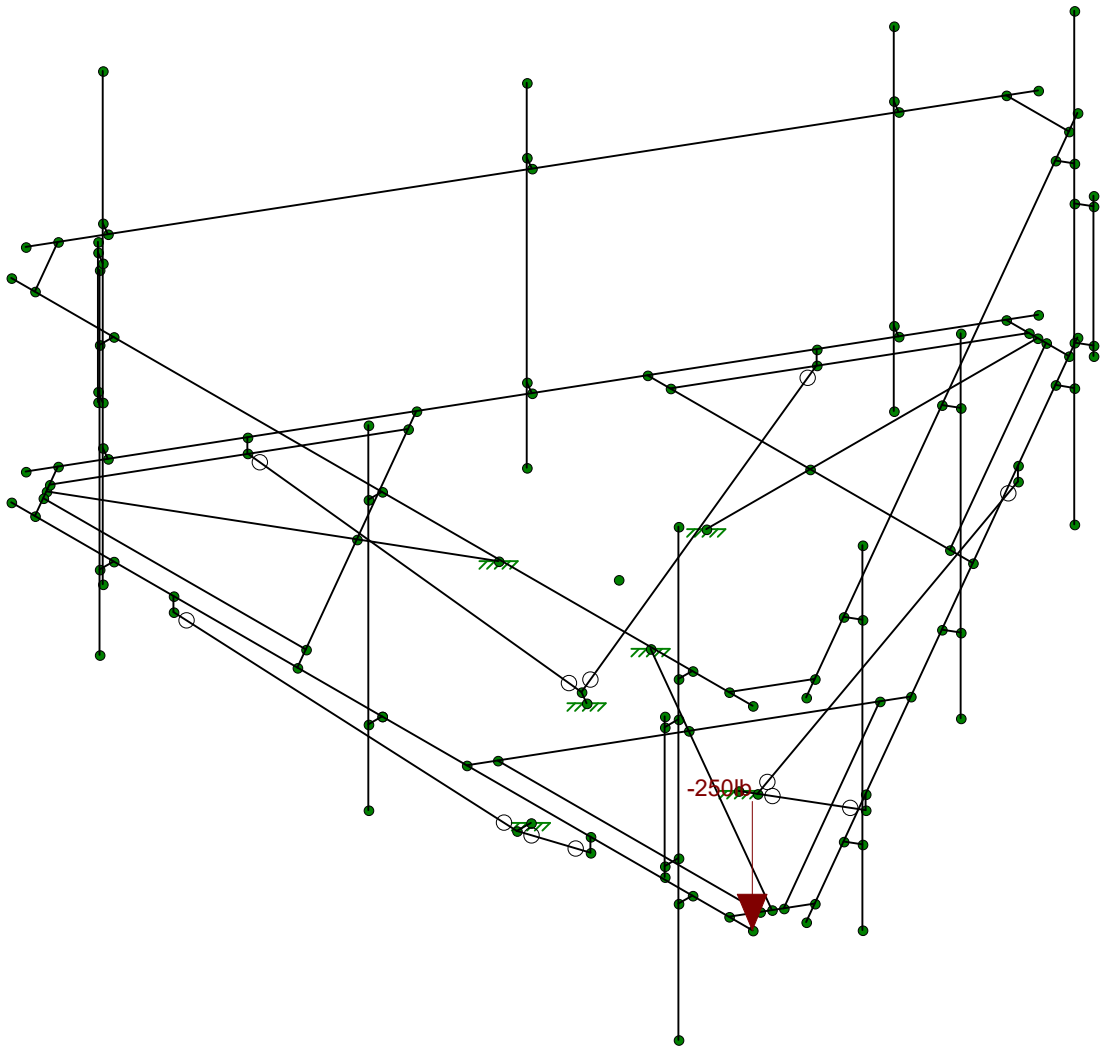
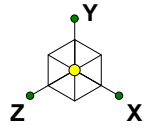
801485

Seismic Loading 0
Nov 22, 2022 at 11:55 AM
845564 MOD_loaded.r3d



Loads: BLC 32, Seismic Load X

Infinigy	801485	Seismic Loading 90
FA		Nov 22, 2022 at 11:55 AM
1039-Z0001-B		845564 MOD_loaded.r3d



Loads: BLC 33, Service Live Loads

Infinigy

FA

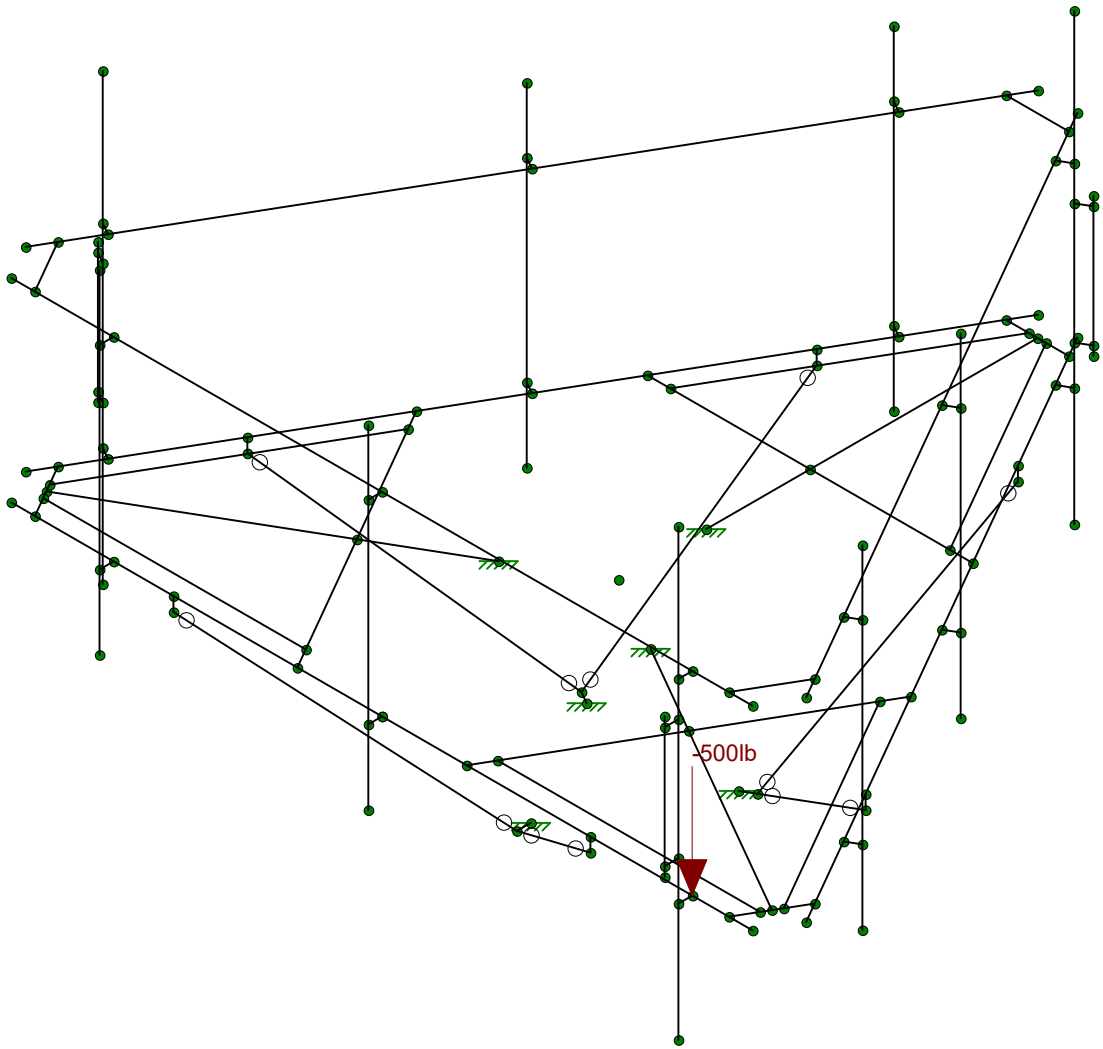
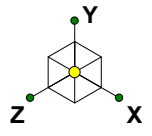
1039-Z0001-B

801485

Service

Nov 22, 2022 at 11:55 AM

845564 MOD_loaded.r3d



Loads: BLC 34, Maintenance Load Lm1

Infinigy

FA

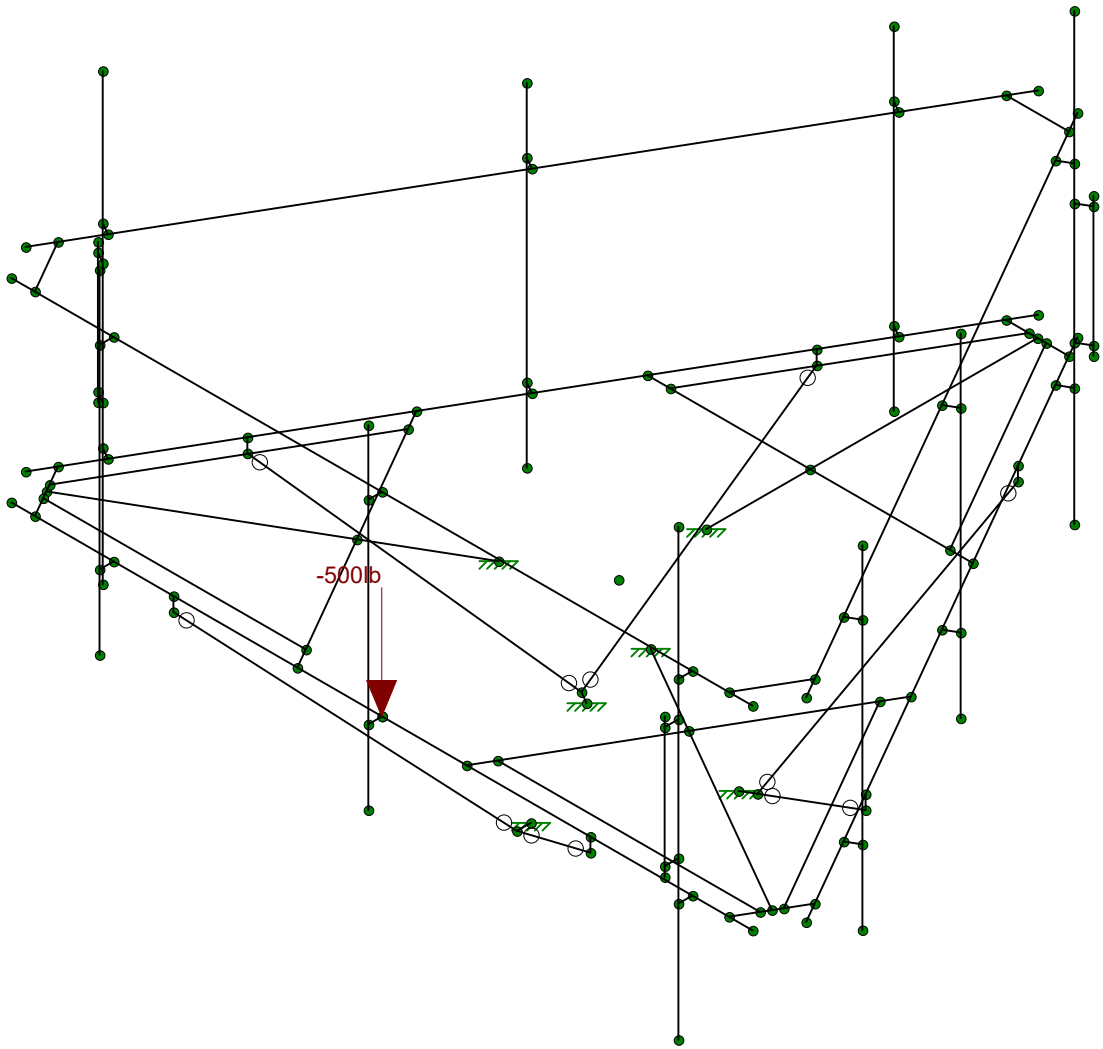
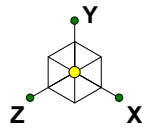
1039-Z0001-B

801485

Maintenance Load 1

Nov 22, 2022 at 11:55 AM

845564 MOD_loaded.r3d



Loads: BLC 35, Maintenance Load Lm2

Infinigy

FA

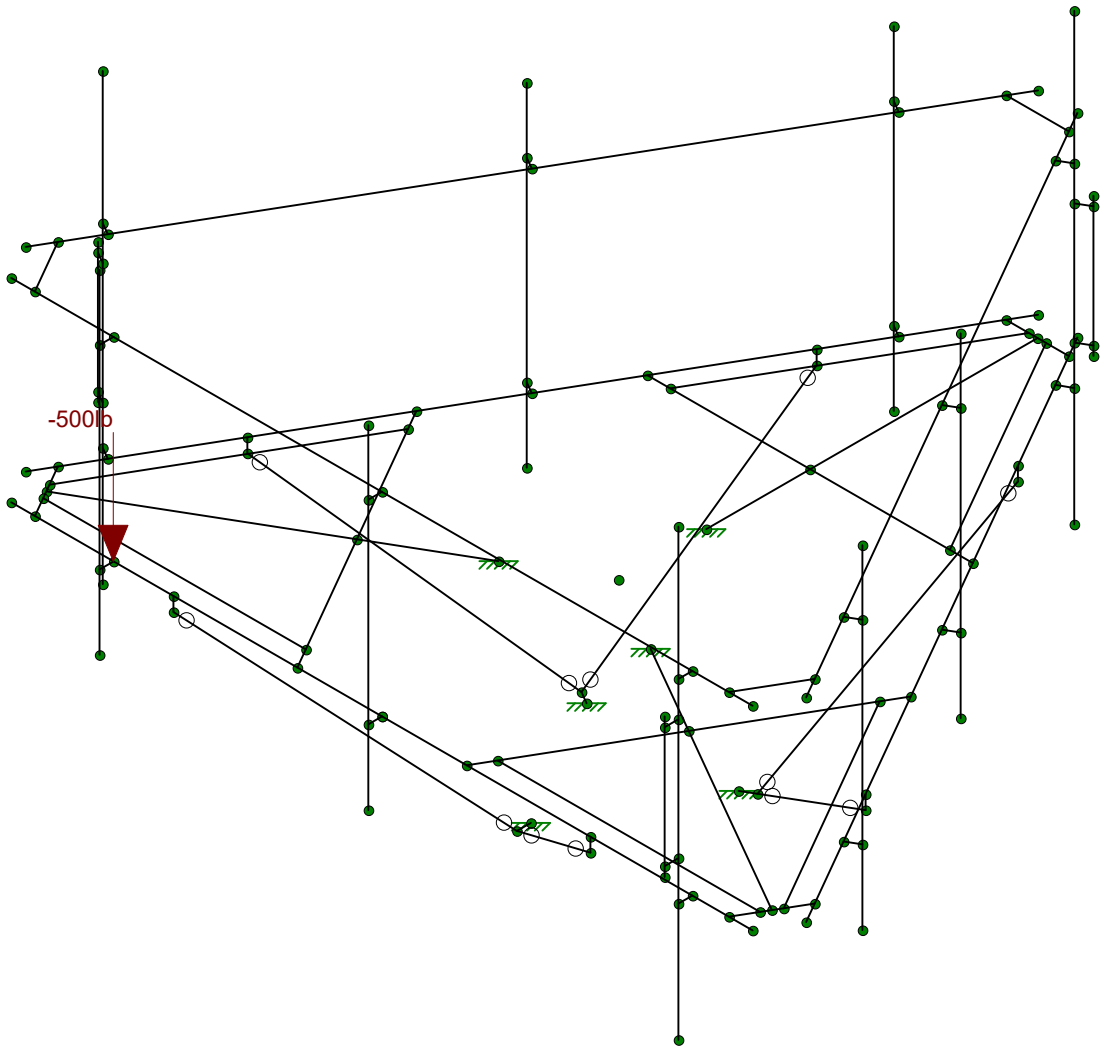
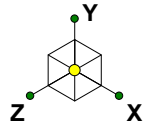
1039-Z0001-B

801485

Maintenance Load 2

Nov 22, 2022 at 11:55 AM

845564 MOD_loaded.r3d



Loads: BLC 36, Maintenance Load Lm3

Infinigy

FA

1039-Z0001-B

801485

Maintenance Load 3

Nov 22, 2022 at 11:55 AM

845564 MOD_loaded.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION		
Site Name:	CT SUFFIELD 1 CAC 801485	
Carrier:	AT&T Mobility	
Engineer:	Farhad Ahmadyar	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	370.57	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	168.00	ft
Tower Height AGL:	190.50	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	
Height Esc. Fact. (K_{iz}):	1.177	
Gust Effect Factor (G_h):	1.000	
Shielding Factor (K_a):	0.900	
Velocity Pressure Co. (K_z):	1.412	(Mount Elev)

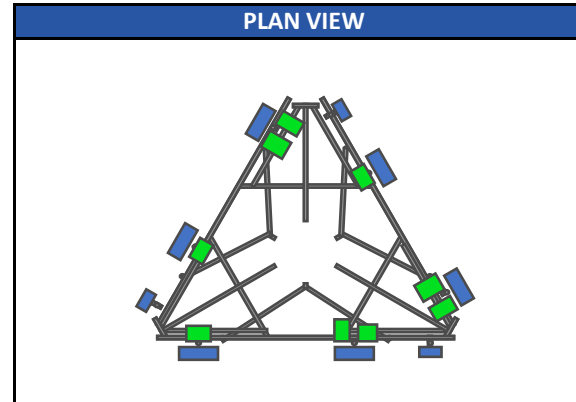
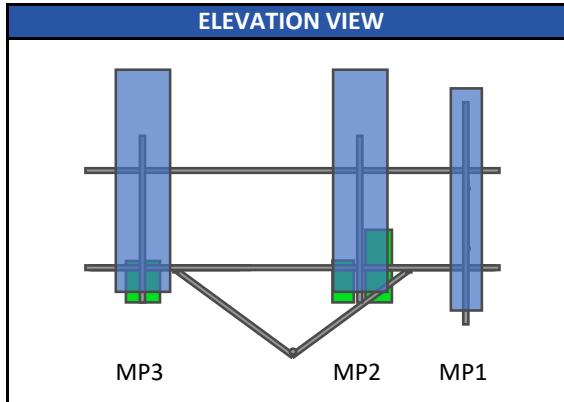
CODE STANDARDS		
Building Code:	2021 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	115	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Radial Ice Thickness (t_{iz}):	1.765	in
Flat Pressure:	89.598	psf
Round Pressure:	53.759	psf
Ice Wind Pressure:	10.162	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.169	g
1-Second Accel. (S_1):	0.054	g
Short-Period Design (S_{DS}):	0.180	
1-Second Design (S_{D1}):	0.086	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	
Seismic Importance (I_e):	1.000	
Seismic Response Co. (C_s):	0.090	
Total App. Weight:	626.500	lb
Total Shear Force (V_s):	56.469	lb
Hor. Seismic Load (E_h):	56.469	lb
Vert. Seismic Load (E_v):	22.587	lb *

*For reference only. Per TIA rev H section 16.7, E_v is not applicable to mounts

Program Inputs



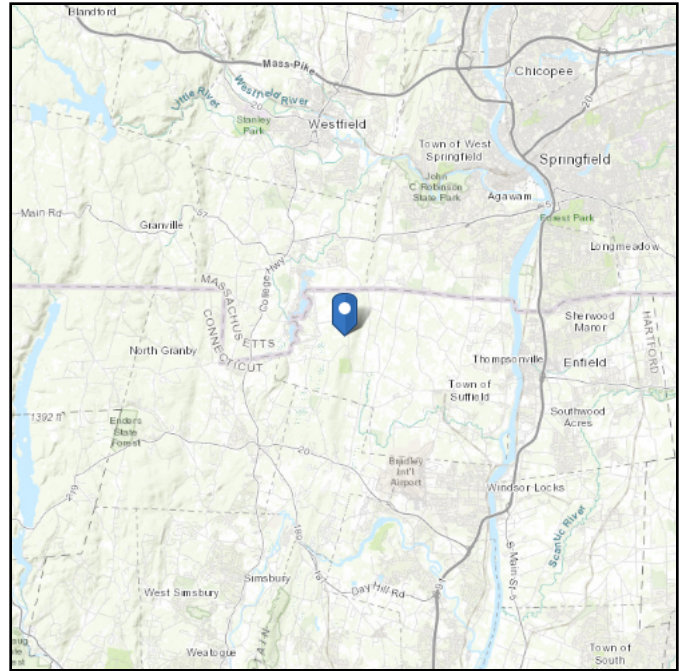
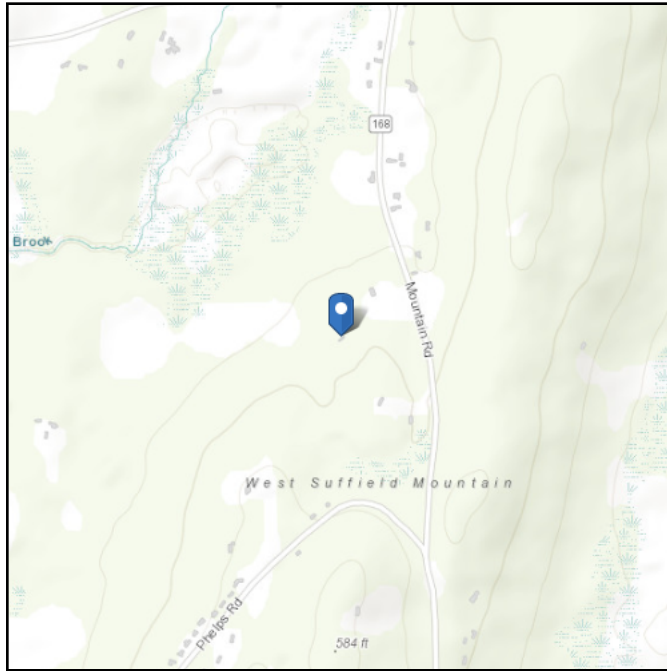
APPURTENANCE INFORMATION										
Appurtenance Name	Elevation	Qty.	Height (in)	Width (in)	Depth (in)	Weight (lbs)	EPA _N (ft ²)	EPA _T (ft ²)	Member (α sector)	
CCI ANTENNAS OPA65R-BU4D	170.0	1	48.00	21.00	7.80	62.30	8.06	2.99	Leg/Flush	
CCI ANTENNAS OPA65R-BU4D	170.0	1	48.00	21.00	7.80	62.30	8.06	2.99	Leg/Flush	
CCI ANTENNAS OPA65R-BU8D	170.0	2	96.00	21.00	7.80	76.50	17.42	6.48	MP2	
CCI ANTENNAS OPA65R-BU8D	170.0	2	96.00	21.00	7.80	76.50	17.42	6.48	MP3	
COMMUNICATIONS AM-X-CD-14-65-00'	170.0	1	48.00	11.80	5.90	36.40	3.01	1.50	Leg/Flush	
WERWAVE TECHNOLOGIES P65-17-XLH-	170.0	2	96.00	12.00	6.00	62.00	7.58	3.80	MP1	
ERICSSON RRUS 4449 B5/B12	170.0	3	17.90	13.19	9.44	71.00	1.97	1.41	MP3	
ERICSSON RRUS 4478 B14_CCIV2	170.0	3	18.10	13.40	8.26	59.40	2.02	1.25	MP2	
ERICSSON RRUS 8843 B2/B66A_CCIV2	170.0	3	18.00	13.20	11.30	75.00	1.98	1.70	MP3	
RAYCAP DC6-48-60-18-8C-EV	170.0	1	31.40	10.24	10.24	26.20	2.74	2.74	MP2	
RAYCAP DC6-48-60-18-8F	168.0	1	22.25	11.00	11.00	18.90	2.04	2.04	MP3	

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 370.57 ft (NAVD 88)
Latitude: 42.01161
Longitude: -72.72878



Wind

Results:

Wind Speed	115 Vmph
10-year MRI	75 Vmph
25-year MRI	83 Vmph
50-year MRI	89 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Oct 31 2022

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

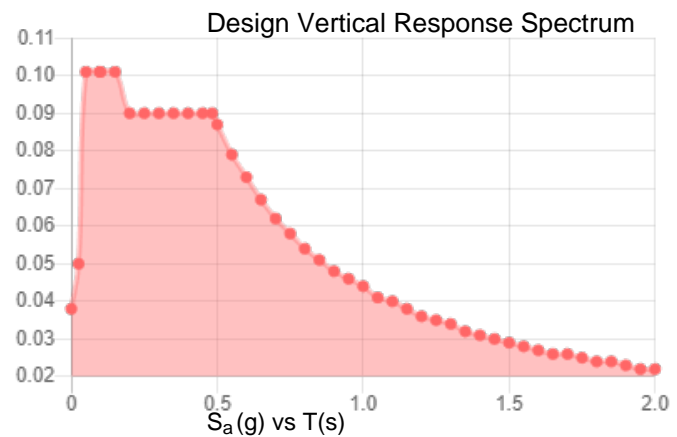
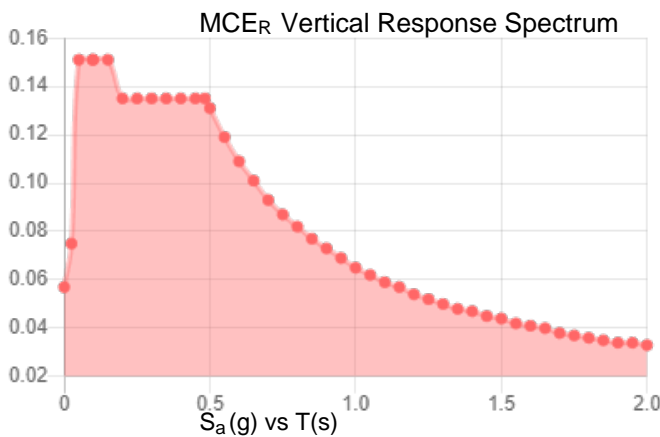
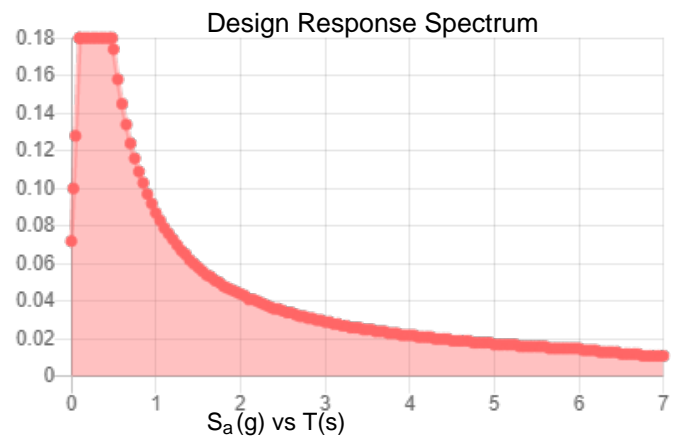
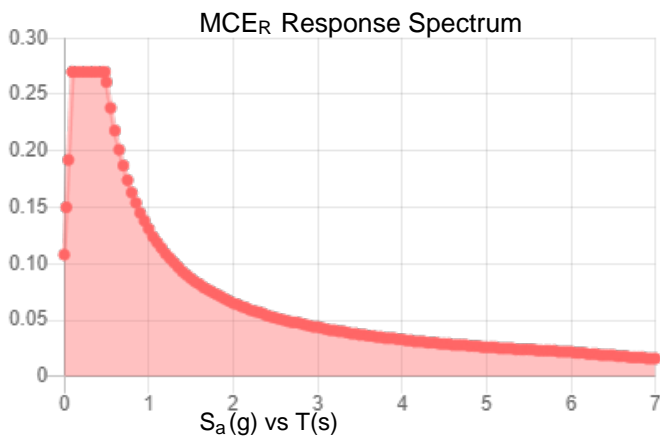
Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

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

Results:

S_s :	0.169	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.088
F_v :	2.4	PGA _M :	0.141
S_{MS} :	0.27	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.18	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon Oct 31 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Mon Oct 31 2022

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

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

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APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M4	N1	N2		Frame Plate	Beam	RECT	A36 Gr.36	Typical
2	HOR1	N3	N4		Horizontal	Beam	Pipe	A53 Gr.B	Typical
3	M8	N5	N6		Frame Plate	Beam	RECT	A36 Gr.36	Typical
4	M9	N7	N8		Frame Plate	Beam	RECT	A36 Gr.36	Typical
5	SA3	N9	N10		Standoff	Beam	Pipe	A53 Gr.B	Typical
6	SA2	N11	N12		Standoff	Beam	Pipe	A53 Gr.B	Typical
7	SA1	N13	N14		Standoff	Beam	Pipe	A53 Gr.B	Typical
8	M16	N21	N22		Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
9	M17	N23	N24		Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
10	M18	N25	N26	270	Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
11	M19	N27	N28	270	Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
12	M20	N29	N30		Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
13	M21	N31	N32		Grating Support	HBrace	Single Angle	A36 Gr.36	Typical
14	HOR3	N54	N55		Horizontal	Beam	Pipe	A53 Gr.B	Typical
15	HOR2	N58	N59		Horizontal	Beam	Pipe	A53 Gr.B	Typical
16	MP1	N47	N48		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
17	MP2	N49	N51		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
18	MP3	N50	N52		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
19	M25	N44	N41		RIGID	None	None	RIGID	Typical
20	M26	N45	N42		RIGID	None	None	RIGID	Typical
21	M27	N46	N43		RIGID	None	None	RIGID	Typical
22	M28	N53	N62		RIGID	None	None	RIGID	Typical
23	M29	N56	N61		RIGID	None	None	RIGID	Typical
24	M30	N57	N60		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
25	MP7	N69	N70		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
26	MP8	N71	N73		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
27	MP9	N72	N74		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
28	M34	N63	N64		RIGID	None	None	RIGID	Typical
29	M35	N67	N65		RIGID	None	None	RIGID	Typical
30	M36	N68	N66		RIGID	None	None	RIGID	Typical
31	M37	N77	N80		RIGID	None	None	RIGID	Typical
32	M38	N78	N79		RIGID	None	None	RIGID	Typical
33	M39	N75	N76		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
34	MP4	N87	N88		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
35	MP5	N89	N91		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
36	MP6	N90	N92		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
37	M43	N81	N82		RIGID	None	None	RIGID	Typical
38	M44	N85	N83		RIGID	None	None	RIGID	Typical
39	M45	N86	N84		RIGID	None	None	RIGID	Typical
40	M46	N95	N98		RIGID	None	None	RIGID	Typical
41	M47	N96	N97		RIGID	None	None	RIGID	Typical
42	M48	N93	N94		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
43	M49	N16	N15	90	Bracing	Beam	Single Angle	A36 Gr.36	Typical
44	M50	N17	N18	90	Bracing	Beam	Single Angle	A36 Gr.36	Typical
45	M51	N19	N20	90	Bracing	Beam	Single Angle	A36 Gr.36	Typical
46	M52	N101	N103		RIGID	None	None	RIGID	Typical
47	M53	N100	N102		RIGID	None	None	RIGID	Typical
48	M54	N104	N105		RIGID	None	None	RIGID	Typical
49	M55	N103	N105		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
50	M56	N102	N105		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
51	M57	N108	N111		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
52	M58	N109	N111		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
53	M59	N107	N109		RIGID	None	None	RIGID	Typical
54	M60	N106	N108		RIGID	None	None	RIGID	Typical
55	M61	N110	N111		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
56	M62	N114	N117		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
57	M63	N115	N117		Kicker	VBrace	Single Angle	A36 Gr.36	Typical
58	M64	N113	N115		RIGID	None	None	RIGID	Typical
59	M65	N112	N114		RIGID	None	None	RIGID	Typical
60	M66	N116	N117		RIGID	None	None	RIGID	Typical
61	M67	N118	N119		Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
62	M68	N120	N121		Handrail	Beam	Pipe	A53 Gr.B	Typical
63	M69	N122	N123		Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
64	M70	N124	N125		Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
65	M71	N126	N127		Handrail	Beam	Pipe	A53 Gr.B	Typical
66	M72	N128	N129		Handrail	Beam	Pipe	A53 Gr.B	Typical
67	M73	N133	N130		RIGID	None	None	RIGID	Typical
68	M74	N134	N131		RIGID	None	None	RIGID	Typical
69	M75	N135	N132		RIGID	None	None	RIGID	Typical
70	M76	N139	N136		RIGID	None	None	RIGID	Typical
71	M77	N140	N137		RIGID	None	None	RIGID	Typical
72	M78	N141	N138		RIGID	None	None	RIGID	Typical
73	M79	N145	N142		RIGID	None	None	RIGID	Typical
74	M80	N146	N143		RIGID	None	None	RIGID	Typical
75	M81	N147	N144		RIGID	None	None	RIGID	Typical

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁶ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	2.9e+7	1.115e+7	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	2.9e+7	1.115e+7	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	2.9e+7	1.115e+7	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	2.9e+7	1.115e+7	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.25	65	1.15
8	A913 Gr.65	2.9e+7	1.115e+7	0.3	0.65	0.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Horizontal	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Standoff	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Mount Pipe 2.0	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
4	Mount Pipe 2.5	PIPE 2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	Bracing	L2X3X3	Beam	Single Angle	A36 Gr.36	Typical	0.902	0.307	0.842	0.01
6	Grating Support	L2X2X4	HBrace	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
7	Frame Plate	6X0.5	Beam	RECT	A36 Gr.36	Typical	3	0.062	9	0.237
8	Handrail	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
9	Handrail Angle	L2.5X2.5X3	Beam	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
10	Mount Pipe 3.0	PIPE 3.0	Column	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
11	Kicker	L2.5X2.5X3	VBrace	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	-543.277202	0	-11.482797	
2	N2	-529.724482	0	-11.482797	
3	N3	-616.525842	0	130.039667	
4	N4	-456.475842	0	130.039667	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
5	N5	-461.569169	0	130.039667	
6	N6	-454.792809	0	118.302667	
7	N7	-618.208875	0	118.302667	
8	N8	-611.432514	0	130.039667	
9	N9	-536.500842	0	60.006203	
10	N10	-536.500842	0	-11.482797	
11	N11	-552.909404	0	88.426667	
12	N12	-614.820695	0	124.171167	
13	N13	-520.092279	0	88.426667	
14	N14	-458.180989	0	124.171167	
15	N15	-571.614708	0	37.599203	
16	N16	-501.386976	0	37.599203	
17	N17	-589.871369	0	69.220667	
18	N18	-554.757503	0	130.039667	
19	N19	-518.244181	0	130.039667	
20	N20	-483.130315	0	69.220667	
21	N21	-615.744744	0	122.570667	
22	N22	-587.407238	0	73.488667	
23	N23	-534.652744	0	-11.482797	
24	N24	-506.315238	0	37.599203	
25	N25	-613.896645	0	125.771667	
26	N26	-557.221634	0	125.771667	
27	N27	-515.78005	0	125.771667	
28	N28	-459.105038	0	125.771667	
29	N29	-566.686446	0	37.599203	
30	N30	-538.34894	0	-11.482797	
31	N31	-485.594446	0	73.488667	
32	N32	-457.25694	0	122.570667	
33	CP	-536.500842	0	78.953179	
34	N38	-536.500842	0	37.599203	
35	N39	-572.314436	0	99.630167	
36	N40	-500.687248	0	99.630167	
37	N54	-452.246145	0	122.713618	
38	N55	-532.271145	0	-15.893748	
39	N58	-540.730538	0	-15.893748	
40	N59	-620.755538	0	122.713618	
41	N41	-469.475842	0	130.039667	
42	N42	-536.475842	0	130.039667	
43	N43	-594.475842	0	130.039667	
44	N44	-469.475842	0	133.039667	
45	N45	-536.475842	0	133.039667	
46	N46	-594.475842	0	133.039667	
47	N47	-469.475842	70.5	133.039667	
48	N48	-469.475842	-25.5	133.039667	
49	N49	-536.475842	56	133.039667	
50	N50	-594.475842	56	133.039667	
51	N51	-536.475842	-16	133.039667	
52	N52	-594.475842	-16	133.039667	
53	N53	-469.475842	34.5	133.039667	
54	N56	-469.475842	8.5	133.039667	
55	N57	-469.475842	36.5	136.039667	
56	N60	-469.475842	6.5	136.039667	
57	N61	-469.475842	8.5	136.039667	
58	N62	-469.475842	34.5	136.039667	
59	N63	-523.173069	0	-6.135417	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
60	N64	-525.771145	0	-4.635417	
61	N65	-492.271145	0	53.388285	
62	N66	-463.271145	0	103.617758	
63	N67	-489.673069	0	51.888285	
64	N68	-460.673069	0	102.117758	
65	N69	-523.173069	70.5	-6.135417	
66	N70	-523.173069	-25.5	-6.135417	
67	N71	-489.673069	56	51.888285	
68	N72	-460.673069	56	102.117758	
69	N73	-489.673069	-16	51.888285	
70	N74	-460.673069	-16	102.117758	
71	N75	-520.574993	36.5	-7.635417	
72	N76	-520.574993	6.5	-7.635417	
73	N77	-523.173069	34.5	-6.135417	
74	N78	-523.173069	8.5	-6.135417	
75	N79	-520.574993	8.5	-7.635417	
76	N80	-520.574993	34.5	-7.635417	
77	N81	-616.853614	0	109.955288	
78	N82	-614.255538	0	111.455288	
79	N83	-580.755538	0	53.431586	
80	N84	-551.755538	0	3.202113	
81	N85	-583.353614	0	51.931586	
82	N86	-554.353614	0	1.702113	
83	N87	-616.853614	70.5	109.955288	
84	N88	-616.853614	-25.5	109.955288	
85	N89	-583.353614	56	51.931586	
86	N90	-554.353614	56	1.702113	
87	N91	-583.353614	-16	51.931586	
88	N92	-554.353614	-16	1.702113	
89	N93	-619.451691	36.5	108.455288	
90	N94	-619.451691	6.5	108.455288	
91	N95	-616.853614	34.5	109.955288	
92	N96	-616.853614	8.5	109.955288	
93	N97	-619.451691	8.5	108.455288	
94	N98	-619.451691	34.5	108.455288	
95	N99	-536.500842	0	130.039667	
96	N100	-491.500842	0	130.039667	
97	N101	-581.500842	0	130.039667	
98	N102	-491.500842	-3	130.039667	
99	N103	-581.500842	-3	130.039667	
100	N104	-536.500842	-36	97.900179	
101	N105	-536.500842	-36	100.900179	
102	N106	-514.758645	0	14.438792	
103	N107	-469.758645	0	92.381079	
104	N108	-514.758645	-3	14.438792	
105	N109	-469.758645	-3	92.381079	
106	N110	-520.092259	-36	69.479679	
107	N111	-517.494182	-36	67.979679	
108	N112	-603.243038	0	92.381079	
109	N113	-558.243038	0	14.438792	
110	N114	-603.243038	-3	92.381079	
111	N115	-558.243038	-3	14.438792	
112	N116	-552.909425	-36	69.479679	
113	N117	-555.507501	-36	67.979679	
114	N118	-543.277202	42	-11.482797	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
115	N119	-529.724482	42	-11.482797	
116	N120	-452.246145	42	122.713618	
117	N121	-532.271145	42	-15.893748	
118	N122	-461.569169	42	130.039667	
119	N123	-454.792809	42	118.302667	
120	N124	-618.208875	42	118.302667	
121	N125	-611.432514	42	130.039667	
122	N126	-540.730538	42	-15.893748	
123	N127	-620.755538	42	122.713618	
124	N128	-616.525842	42	130.039667	
125	N129	-456.475842	42	130.039667	
126	N130	-469.475842	42	130.039667	
127	N131	-536.475842	42	130.039667	
128	N132	-594.475842	42	130.039667	
129	N133	-469.475842	42	133.039667	
130	N134	-536.475842	42	133.039667	
131	N135	-594.475842	42	133.039667	
132	N136	-525.771145	42	-4.635417	
133	N137	-492.271145	42	53.388285	
134	N138	-463.271145	42	103.617758	
135	N139	-523.173069	42	-6.135417	
136	N140	-489.673069	42	51.888285	
137	N141	-460.673069	42	102.117758	
138	N142	-614.255538	42	111.455288	
139	N143	-580.755538	42	53.431586	
140	N144	-551.755538	42	3.202113	
141	N145	-616.853614	42	109.955288	
142	N146	-583.353614	42	51.931586	
143	N147	-554.353614	42	1.702113	

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Channel Conn.	a [in]	Function
1	M4	Frame Plate	13.553	Lbyy	N/A	N/A	Lateral
2	HOR1	Horizontal	160.05	Lbyy	N/A	N/A	Lateral
3	M8	Frame Plate	13.553	Lbyy	N/A	N/A	Lateral
4	M9	Frame Plate	13.553	Lbyy	N/A	N/A	Lateral
5	SA3	Standoff	71.489	Lbyy	N/A	N/A	Lateral
6	SA2	Standoff	71.489	Lbyy	N/A	N/A	Lateral
7	SA1	Standoff	71.489	Lbyy	N/A	N/A	Lateral
8	M16	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
9	M17	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
10	M18	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
11	M19	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
12	M20	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
13	M21	Grating Support	56.675	Lbyy	N/A	N/A	Lateral
14	HOR3	Horizontal	160.05	Lbyy	N/A	N/A	Lateral
15	HOR2	Horizontal	160.05	Lbyy	N/A	N/A	Lateral
16	MP1	Mount Pipe 2.0	96	Lbyy	N/A	N/A	Lateral
17	MP2	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
18	MP3	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
19	M30	Mount Pipe 2.0	30	Lbyy	N/A	N/A	Lateral
20	MP7	Mount Pipe 2.0	96	Lbyy	N/A	N/A	Lateral
21	MP8	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
22	MP9	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
23	M39	Mount Pipe 2.0	30	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	Channel Conn.	a [in]	Function
24	MP4	Mount Pipe 2.0	96	Lbyy	N/A	N/A	Lateral
25	MP5	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
26	MP6	Mount Pipe 2.0	72	Lbyy	N/A	N/A	Lateral
27	M48	Mount Pipe 2.0	30	Lbyy	N/A	N/A	Lateral
28	M49	Bracing	70.228	Lbyy	N/A	N/A	Lateral
29	M50	Bracing	70.228	Lbyy	N/A	N/A	Lateral
30	M51	Bracing	70.228	Lbyy	N/A	N/A	Lateral
31	M55	Kicker	62.953	Lbyy	N/A	N/A	Lateral
32	M56	Kicker	62.953	Lbyy	N/A	N/A	Lateral
33	M57	Kicker	62.953	Lbyy	N/A	N/A	Lateral
34	M58	Kicker	62.953	Lbyy	N/A	N/A	Lateral
35	M62	Kicker	62.953	Lbyy	N/A	N/A	Lateral
36	M63	Kicker	62.953	Lbyy	N/A	N/A	Lateral
37	M67	Handrail Angle	13.553	Lbyy	N/A	N/A	Lateral
38	M68	Handrail	160.05	Lbyy	N/A	N/A	Lateral
39	M69	Handrail Angle	13.553	Lbyy	N/A	N/A	Lateral
40	M70	Handrail Angle	13.553	Lbyy	N/A	N/A	Lateral
41	M71	Handrail	160.05	Lbyy	N/A	N/A	Lateral
42	M72	Handrail	160.05	Lbyy	N/A	N/A	Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			29		3
2	Wind Load AZI 0	WLZ					58		
3	Wind Load AZI 30	None					58		
4	Wind Load AZI 60	None					58		
5	Wind Load AZI 90	WLX					58		
6	Wind Load AZI 120	None					58		
7	Wind Load AZI 150	None					58		
8	Wind Load AZI 180	None					58		
9	Wind Load AZI 210	None					58		
10	Wind Load AZI 240	None					58		
11	Wind Load AZI 270	None					58		
12	Wind Load AZI 300	None					58		
13	Wind Load AZI 330	None					58		
14	Distr. Wind Load Z	WLZ						75	
15	Distr. Wind Load X	WLX						75	
16	Ice Weight	OL1					29	75	3
17	Ice Wind Load AZI 0	OL2					58		
18	Ice Wind Load AZI 30	None					58		
19	Ice Wind Load AZI 60	None					58		
20	Ice Wind Load AZI 90	OL3					58		
21	Ice Wind Load AZI 120	None					58		
22	Ice Wind Load AZI 150	None					58		
23	Ice Wind Load AZI 180	None					58		
24	Ice Wind Load AZI 210	None					58		
25	Ice Wind Load AZI 240	None					58		
26	Ice Wind Load AZI 270	None					58		
27	Ice Wind Load AZI 300	None					58		
28	Ice Wind Load AZI 330	None					58		
29	Distr. Ice Wind Load Z	OL2						75	
30	Distr. Ice Wind Load X	OL3						75	
31	Seismic Load Z	ELZ			-0.27		29		
32	Seismic Load X	ELX	-0.27				29		
33	Service Live Loads	LL				1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
34	Maintenance Load Lm1	LL				1			
35	Maintenance Load Lm2	LL				1			
36	Maintenance Load Lm3	LL				1			
37	Maintenance Load Lm4	LL				1			
38	Maintenance Load Lm5	LL				1			
39	Maintenance Load Lm6	LL				1			
40	Maintenance Load Lm7	LL				1			
41	Maintenance Load Lm8	LL				1			
42	Maintenance Load Lm9	LL				1			
43	BLC 1 Transient Area Loads	None						45	
44	BLC 16 Transient Area Loads	None						45	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	0.866	15	0.5		
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	0.5	15	0.866		
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	-0.5	15	0.866		
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-0.866	15	0.5		
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	-0.866	15	-0.5		
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-0.5	15	-0.866		
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1		
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	0.5	15	-0.866		
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	0.866	15	-0.5		
14	0.9DL + 1WL AZI 0	Yes	Y	1	0.9	2	1	14	1	15			
15	0.9DL + 1WL AZI 30	Yes	Y	1	0.9	3	1	14	0.866	15	0.5		
16	0.9DL + 1WL AZI 60	Yes	Y	1	0.9	4	1	14	0.5	15	0.866		
17	0.9DL + 1WL AZI 90	Yes	Y	1	0.9	5	1	14		15	1		
18	0.9DL + 1WL AZI 120	Yes	Y	1	0.9	6	1	14	-0.5	15	0.866		
19	0.9DL + 1WL AZI 150	Yes	Y	1	0.9	7	1	14	-0.866	15	0.5		
20	0.9DL + 1WL AZI 180	Yes	Y	1	0.9	8	1	14	-1	15			
21	0.9DL + 1WL AZI 210	Yes	Y	1	0.9	9	1	14	-0.866	15	-0.5		
22	0.9DL + 1WL AZI 240	Yes	Y	1	0.9	10	1	14	-0.5	15	-0.866		
23	0.9DL + 1WL AZI 270	Yes	Y	1	0.9	11	1	14		15	-1		
24	0.9DL + 1WL AZI 300	Yes	Y	1	0.9	12	1	14	0.5	15	-0.866		
25	0.9DL + 1WL AZI 330	Yes	Y	1	0.9	13	1	14	0.866	15	-0.5		
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	0.866	30	0.5
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	0.5	30	0.866
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	-0.5	30	0.866
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-0.866	30	0.5
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	-0.866	30	-0.5
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-0.5	30	-0.866
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	0.5	30	-0.866
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	0.866	30	-0.5
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.236	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.236	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.236	31	0.5	32	0.866				

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.236	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.236	31	-0.5	32	0.866				
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.236	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.236	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.236	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.236	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.236	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.236	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.236	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.864	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.864	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.864	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.864	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.864	31	-0.5	32	0.866				
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.864	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.864	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.864	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.864	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.864	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.864	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.864	31	0.866	32	-0.5				
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.272	14	0.272	15		33	1.5
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.272	14	0.236	15	0.136	33	1.5
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.272	14	0.136	15	0.236	33	1.5
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.272	14		15	0.272	33	1.5
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.272	14	-0.136	15	0.236	33	1.5
68	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 150	Yes	Y	1	1	7	0.272	14	-0.236	15	0.136	33	1.5
69	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 180	Yes	Y	1	1	8	0.272	14	-0.272	15		33	1.5
70	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 210	Yes	Y	1	1	9	0.272	14	-0.236	15	-0.136	33	1.5
71	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 240	Yes	Y	1	1	10	0.272	14	-0.136	15	-0.236	33	1.5
72	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 270	Yes	Y	1	1	11	0.272	14		15	-0.272	33	1.5
73	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 300	Yes	Y	1	1	12	0.272	14	0.136	15	-0.236	33	1.5
74	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 330	Yes	Y	1	1	13	0.272	14	0.236	15	-0.136	33	1.5
75	1.2DL + 1.5LL	Yes	Y	1	1.2	33	1.5						
76	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.068	14	0.068	15	
77	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.068	14	0.059	15	0.034
78	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.068	14	0.034	15	0.059
79	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.068	14		15	0.068
80	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.068	14	-0.034	15	0.059
81	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.068	14	-0.059	15	0.034
82	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.068	14	-0.068	15	
83	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.068	14	-0.059	15	-0.034
84	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.068	14	-0.034	15	-0.059
85	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.068	14		15	-0.068
86	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.068	14	0.034	15	-0.059
87	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.068	14	0.059	15	-0.034
88	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.068	14	0.068	15	
89	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.068	14	0.059	15	0.034
90	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.068	14	0.034	15	0.059
91	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.068	14		15	0.068
92	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.068	14	-0.034	15	0.059
93	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.068	14	-0.059	15	0.034
94	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.068	14	-0.068	15	
95	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.068	14	-0.059	15	-0.034
96	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.068	14	-0.034	15	-0.059

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
97	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.068	14		15	-0.068
98	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.068	14	0.034	15	-0.059
99	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.068	14	0.059	15	-0.034
100	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.068	14	0.068	15	
101	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.068	14	0.059	15	0.034
102	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.068	14	0.034	15	0.059
103	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.068	14		15	0.068
104	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.068	14	-0.034	15	0.059
105	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.068	14	-0.059	15	0.034
106	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.068	14	-0.068	15	
107	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.068	14	-0.059	15	-0.034
108	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.068	14	-0.034	15	-0.059
109	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.068	14		15	-0.068
110	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.068	14	0.034	15	-0.059
111	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.068	14	0.059	15	-0.034
112	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.068	14	0.068	15	
113	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.068	14	0.059	15	0.034
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.068	14	0.034	15	0.059
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.068	14		15	0.068
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.068	14	-0.034	15	0.059
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.068	14	-0.059	15	0.034
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.068	14	-0.068	15	
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.068	14	-0.059	15	-0.034
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.068	14	-0.034	15	-0.059
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.068	14		15	-0.068
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.068	14	0.034	15	-0.059
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.068	14	0.059	15	-0.034
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.068	14	0.068	15	
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.068	14	0.059	15	0.034
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.068	14	0.034	15	0.059
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.068	14		15	0.068
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.068	14	-0.034	15	0.059
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.068	14	-0.059	15	0.034
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.068	14	-0.068	15	
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.068	14	-0.059	15	-0.034
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.068	14	-0.034	15	-0.059
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.068	14		15	-0.068
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.068	14	0.034	15	-0.059
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.068	14	0.059	15	-0.034
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.068	14	0.068	15	
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.068	14	0.059	15	0.034
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.068	14	0.034	15	0.059
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.068	14		15	0.068
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.068	14	-0.034	15	0.059
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.068	14	-0.059	15	0.034
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.068	14	-0.068	15	
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.068	14	-0.059	15	-0.034
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.068	14	-0.034	15	-0.059
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.068	14		15	-0.068
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.068	14	0.034	15	-0.059
147	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.068	14	0.059	15	-0.034
148	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.068	14	0.068	15	
149	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.068	14	0.059	15	0.034
150	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.068	14	0.034	15	0.059
151	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.068	14		15	0.068

Load Combinations (Continued)

Description		Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
152	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.068	14	-0.034	15	0.059
153	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.068	14	-0.059	15	0.034
154	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.068	14	-0.068	15	
155	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.068	14	-0.059	15	-0.034
156	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.068	14	-0.034	15	-0.059
157	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.068	14		15	-0.068
158	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.068	14	0.034	15	-0.059
159	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.068	14	0.059	15	-0.034
160	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.068	14	0.068	15	
161	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.068	14	0.059	15	0.034
162	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.068	14	0.034	15	0.059
163	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.068	14		15	0.068
164	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.068	14	-0.034	15	0.059
165	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.068	14	-0.059	15	0.034
166	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.068	14	-0.068	15	
167	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.068	14	-0.059	15	-0.034
168	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.068	14	-0.034	15	-0.059
169	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.068	14		15	-0.068
170	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.068	14	0.034	15	-0.059
171	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.068	14	0.059	15	-0.034
172	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.068	14	0.068	15	
173	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.068	14	0.059	15	0.034
174	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.068	14	0.034	15	0.059
175	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.068	14		15	0.068
176	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.068	14	-0.034	15	0.059
177	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.068	14	-0.059	15	0.034
178	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.068	14	-0.068	15	
179	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.068	14	-0.059	15	-0.034
180	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.068	14	-0.034	15	-0.059
181	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.068	14		15	-0.068
182	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.068	14	0.034	15	-0.059
183	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.068	14	0.059	15	-0.034

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[K]
1	General Members				
2	RIGID		33	99	0
3	Total General		33	99	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6X0.5	3	40.7	0.035
7	A36 Gr.36	L2.5X2.5X3	9	418.4	0.107
8	A36 Gr.36	L2X3X3	3	210.7	0.054
9	A36 Gr.36	L2X2X4	6	340.1	0.091
10	A53 Gr.B	PIPE 2.0	15	1290.2	0.373
11	A53 Gr.B	PIPE 3.0	6	694.6	0.408
12	Total HR Steel		42	2994.5	1.067

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC		
1	N13	max	3214.094	16	390.333	29	1929.386	15	41.341	15	1968.038	7	617.464	35
2		min	-3400.872	10	-16.782	23	-2170.741	9	-348.325	34	-1782.357	25	9.918	16
3	N9	max	1739.889	17	378.325	33	3958.087	2	695.472	27	2115.995	11	55.009	131

Envelope Node Reactions (Continued)

Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
4		min	-1802.239	11	-19.93	25	-3737.211	20	-12.361	20	-1995.633	17	-96.866	161
5	N11	max	3336.034	6	412.654	37	2578.661	14	-20.542	24	2675.195	3	18.051	24
6		min	-2961.086	24	2.498	17	-2735.123	8	-444.543	31	-2560.789	21	-653.101	31
7	N104	max	592.018	85	3356.703	33	2878.507	33	140.982	14	148.069	85	0.214	11
8		min	-786.545	103	-560.256	14	-396.485	14	-839.273	33	-196.651	103	-0.179	17
9	N110	max	2015.162	37	2661.19	37	409.427	20	332.702	37	155.94	113	576.125	37
10		min	-367.277	18	-652.014	18	-1135.786	112	-82.028	18	-196.37	143	-141.989	18
11	N116	max	458.191	21	3134.391	29	224.567	23	391.756	29	159.109	149	134.471	22
12		min	-2255.762	29	-617.295	22	-1461.898	29	-77.613	22	-184.7	179	-678.692	29
13	Totals:	max	6213.532	5	9507.114	36	6625.773	14						
14		min	-6213.53	23	2053.514	55	-6625.774	20						

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
1	M50	L2X3X3	0.843	70.228	8	0.211	66.532	y	8	7956.26	29235.938	652.436	1696.852	1.5	H2-1
2	M51	L2X3X3	0.795	70.228	6	0.171	66.532	y	12	7956.26	29235.938	652.436	1498.764	1.5	H2-1
3	M49	L2X3X3	0.78	70.228	10	0.19	66.532	y	4	7956.26	29235.938	652.436	1498.764	1.5	H2-1
4	MP2	PIPE 2.0	0.663	54.947	2	0.076	54.947		9	20866.733	32130	1871.625	1871.625	1	H1-1b
5	MP5	PIPE 2.0	0.658	54.947	10	0.071	54.947		7	20866.733	32130	1871.625	1871.625	1	H1-1b
6	M70	L2.5X2.5X3	0.58	0	8	0.148	0	y	3	27558.134	29192.4	872.574	1971.83	1.028	H2-1
7	MP4	PIPE 2.0	0.497	68.211	3	0.188	68.211		9	14916.096	32130	1871.625	1871.625	1	H1-1b
8	MP8	PIPE 2.0	0.497	54.947	3	0.077	54.947		3	20866.733	32130	1871.625	1871.625	1	H1-1b
9	MP3	PIPE 2.0	0.479	54.947	9	0.18	54.947		2	20866.733	32130	1871.625	1871.625	1	H1-1b
10	M67	L2.5X2.5X3	0.476	13.553	4	0.13	13.553	y	11	27558.134	29192.4	872.574	1971.83	1.5	H2-1
11	SA2	PIPE 3.0	0.467	0	3	0.126	0		3	53922.617	65205	5748.75	5748.75	1	H1-1b
12	MP6	PIPE 2.0	0.435	54.947	5	0.183	54.947		10	20866.733	32130	1871.625	1871.625	1	H1-1b
13	M72	PIPE 2.0	0.432	21.059	21	0.207	8.424		2	5529.629	32130	1871.625	1871.625	1	H1-1b
14	MP7	PIPE 2.0	0.429	68.211	11	0.159	68.211		5	14916.096	32130	1871.625	1871.625	1	H1-1b
15	MP9	PIPE 2.0	0.427	54.947	2	0.146	54.947		6	20866.733	32130	1871.625	1871.625	1	H1-1b
16	MP1	PIPE 2.0	0.426	68.211	7	0.184	68.211		2	14916.096	32130	1871.625	1871.625	1	H1-1b
17	M69	L2.5X2.5X3	0.412	0	12	0.12	0	y	7	27558.134	29192.4	872.574	1971.83	1.027	H2-1
18	M18	L2X2X4	0.403	56.675	8	0.011	56.675	y	7	9943.758	30585.6	690.934	1499.845	1.5	H2-1
19	M71	PIPE 2.0	0.378	21.059	17	0.215	151.626		4	5529.629	32130	1871.625	1871.625	1	H1-1b
20	SA3	PIPE 3.0	0.371	0	11	0.101	71.489		5	53922.617	65205	5748.75	5748.75	1	H1-1b
21	M20	L2X2X4	0.349	0	4	0.009	0	z	3	9943.758	30585.6	690.934	1499.845	1.5	H2-1
22	SA1	PIPE 3.0	0.345	0	7	0.098	71.489		13	53922.617	65205	5748.75	5748.75	1	H1-1b
23	M55	L2.5X2.5X3	0.345	31.477	32	0.011	62.953	z	9	11892.059	29192.4	872.574	1595.509	1.137	H2-1
24	M68	PIPE 2.0	0.34	21.059	25	0.177	147.414		11	5529.629	32130	1871.625	1871.625	1	H1-1b
25	M19	L2X2X4	0.339	0	9	0.011	0	y	9	9943.758	30585.6	690.934	1499.845	1.5	H2-1
26	M16	L2X2X4	0.328	56.675	5	0.011	0	y	32	9943.758	30585.6	690.934	1499.845	1.5	H2-1
27	M21	L2X2X4	0.324	0	11	0.01	0	z	11	9943.758	30585.6	690.934	1499.845	1.5	H2-1
28	M9	6X0.5	0.319	6.776	7	0.177	6.776	y	9	61107.415	97200	1012.5	12150	1.317	H1-1b
29	M4	6X0.5	0.316	6.776	3	0.177	6.776	y	5	61107.415	97200	1012.5	12150	1.358	H1-1b
30	HOR1	PIPE 3.0	0.309	33.695	32	0.127	80.025		8	25134.679	65205	5748.75	5748.75	1	H1-1b
31	M63	L2.5X2.5X3	0.309	31.477	28	0.013	62.953	z	5	11892.059	29192.4	872.574	1595.509	1.137	H2-1
32	M56	L2.5X2.5X3	0.307	31.477	33	0.011	62.953	z	2	11892.059	29192.4	872.574	1595.509	1.137	H2-1
33	M17	L2X2X4	0.306	56.675	13	0.01	56.675	z	13	9943.758	30585.6	690.934	1499.845	1.5	H2-1
34	M8	6X0.5	0.3	6.776	11	0.173	6.776	y	7	61107.415	97200	1012.5	12150	1.26	H1-1b
35	M62	L2.5X2.5X3	0.299	31.477	29	0.011	62.953	z	9	11892.059	29192.4	872.574	1595.509	1.137	H2-1
36	HOR2	PIPE 3.0	0.297	126.355	30	0.129	96.872		4	25134.679	65205	5748.75	5748.75	1	H1-1b
37	M58	L2.5X2.5X3	0.272	31.477	35	0.012	62.953	z	13	11892.059	29192.4	872.574	1595.509	1.137	H2-1
38	M57	L2.5X2.5X3	0.269	31.477	11	0.013	62.953	z	5	11892.059	29192.4	872.574	1595.509	1.137	H2-1
39	HOR3	PIPE 3.0	0.252	126.355	38	0.123	96.872		12	25134.679	65205	5748.75	5748.75	1	H1-1b
40	M48	PIPE 2.0	0.142	27.632	2	0.098	27.632		9	29810.292	32130	1871.625	1871.625	1	H1-1b
41	M30	PIPE 2.0	0.123	27.632	6	0.091	27.632		13	29810.292	32130	1871.625	1871.625	1	H1-1b



Company : Infinigy
Designer : FA
Job Number : 1039-Z0001-B
Model Name : 845564

11/20/2022
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Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear Check	Loc[in]	Dir	LCphi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn		
42	M39	PIPE_2.0	0.121	27.632	10	0.084	27.632	5	29810.292	32130	1871.625	1871.625	1	H1-1b

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

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APPENDIX D
ADDITIONAL CALCUATIONS

INFINIGY

Bolt Calculation Tool, V1.6.4

PROJECT DATA	
Site Name:	CT SUFFIELD 1 CAC 801485
Site Number:	801485
Connection Description:	Mount to Tower

ENVELOPE BOLT LOADS		
(LC8 SA2) Bolt Tension:	3008.34	lbs
(LC3 SA2) Bolt Shear:	591.87	lbs

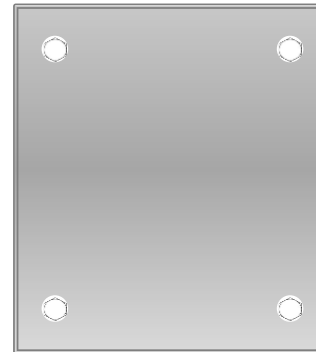
MAX BOLT USAGE LOADS ¹		
Bolt Tension:	3008.34	lbs
Bolt Shear:	462.13	lbs

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

¹ Max bolt usage loads correspond to Load combination #8 on member SA2 in RISA-3D, which causes the maximum demand on the bolts.

Member Information
I nodes of SA3, SA2, SA1,

BOLT CHECK	
Tensile Strength	20340.15
Shear Strength	13805.83
Max Tensile Usage	14.8%
Max Shear Usage	4.3%
Interaction Check (Max Usage)	0.02 ≤1.05
Result	Pass



INFINIGY

Bolt Calculation Tool, V1.6.4

PROJECT DATA	
Site Name:	CT SUFFIELD 1 CAC 801485
Site Number:	801485
Connection Description:	Kicker to Tower

ENVELOPE BOLT LOADS		
(LC18 M61) Bolt Tension:	318.80	lbs
(LC33 M54) Bolt Shear:	844.88	lbs

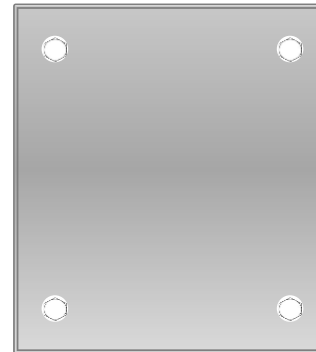
MAX BOLT USAGE LOADS ¹		
Bolt Tension:	21.86	lbs
Bolt Shear:	844.88	lbs

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

¹ Max bolt usage loads correspond to Load combination #33 on member M54 in RISA-3D, which causes the maximum demand on the bolts.

Member Information
I nodes of M54, M61, M66,

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	1.6%	
Max Shear Usage	6.1%	
Interaction Check (Max Usage)	0.00	≤1.05
Result	Pass	



APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD) / SUPPLEMENTAL DRAWINGS

GENERAL NOTES:

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

STEEL CONSTRUCTION NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 15TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVALITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
- ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
 - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
 - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
 - RECTANGULAR HSS TO BE A500, GRADE B. Fy=46 KSI, U.N.O.
 - ROUND HSS TO BE A500, GRADE B. Fy=42 KSI, U.N.O.
 - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
 - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
 - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
- ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
- ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
- ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
 - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
 - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
 - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
 - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
- ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
- BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
- MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
- REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

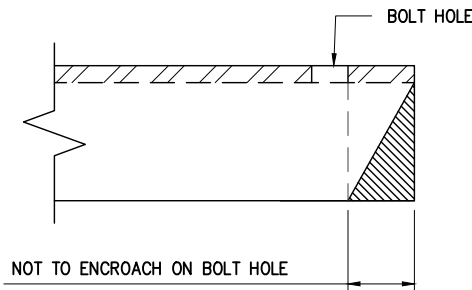
CONCRETE CONSTRUCTION NOTES:

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

SPECIAL INSPECTIONS NOTES:

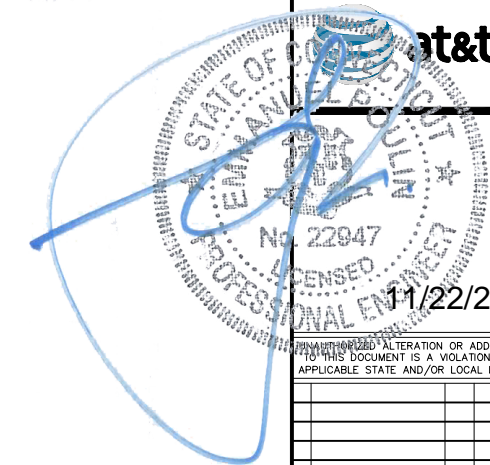
- A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - STRUCTURAL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

MAXIMUM ALLOWABLE ANGLE CLIP



BOLT EDGE DISTANCE TABLE:

BOLT DIAMETER (IN)	MIN. REQUIRED EDGE DISTANCE (IN)
0.375	0.5
0.5	0.75
0.625	0.9375
0.75	1.125
0.875	1.25
1.0	1.5
1.125	1.6875
1.25 & OVER	1.5 x BOLT DIA.



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0	ISSUED FOR REVIEW	FA	11/22/22
No.	Submittal / Revision	App'd	Date

Drawn: BE Date: 11/22/22
 Designed: CK Date: 11/22/22
 Checked: NRD Date: 11/22/22

Project Number:
1039-Z0001-B

Project Title:
BU# 801485

CT SUFFIELD 1 CAC 801485

2715 MOUNTAIN RD.
SUFFIELD, CT 06093

Prepared For:

CROWN CASTLE
 3 Corporate Park, Suite 101
 Clifton Park, NY 12065

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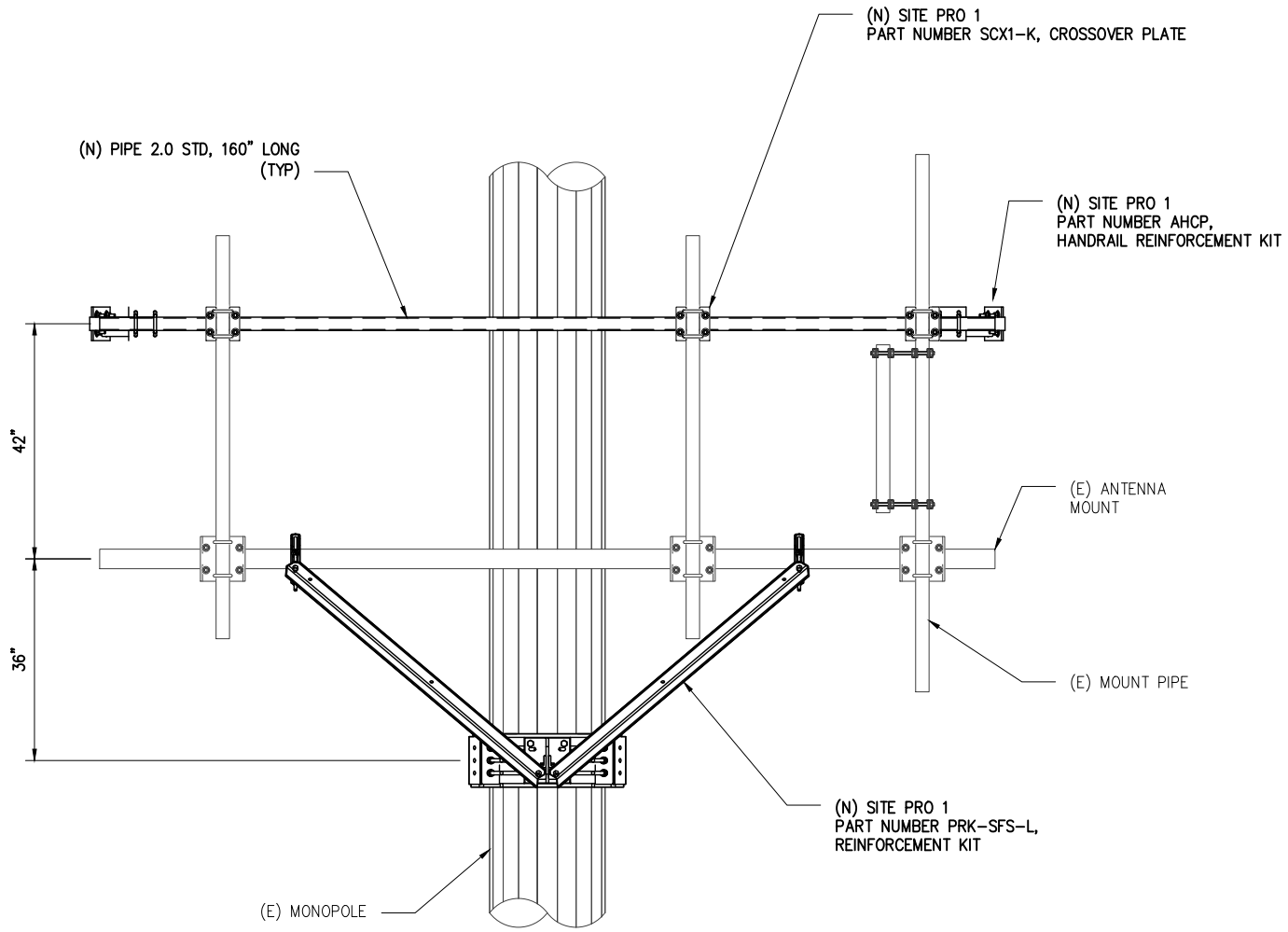
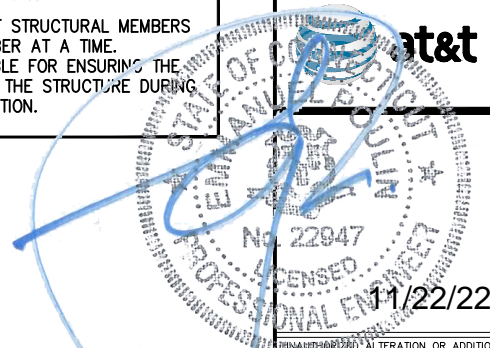
Drawing Scale:
AS NOTED

Date:
11/22/22

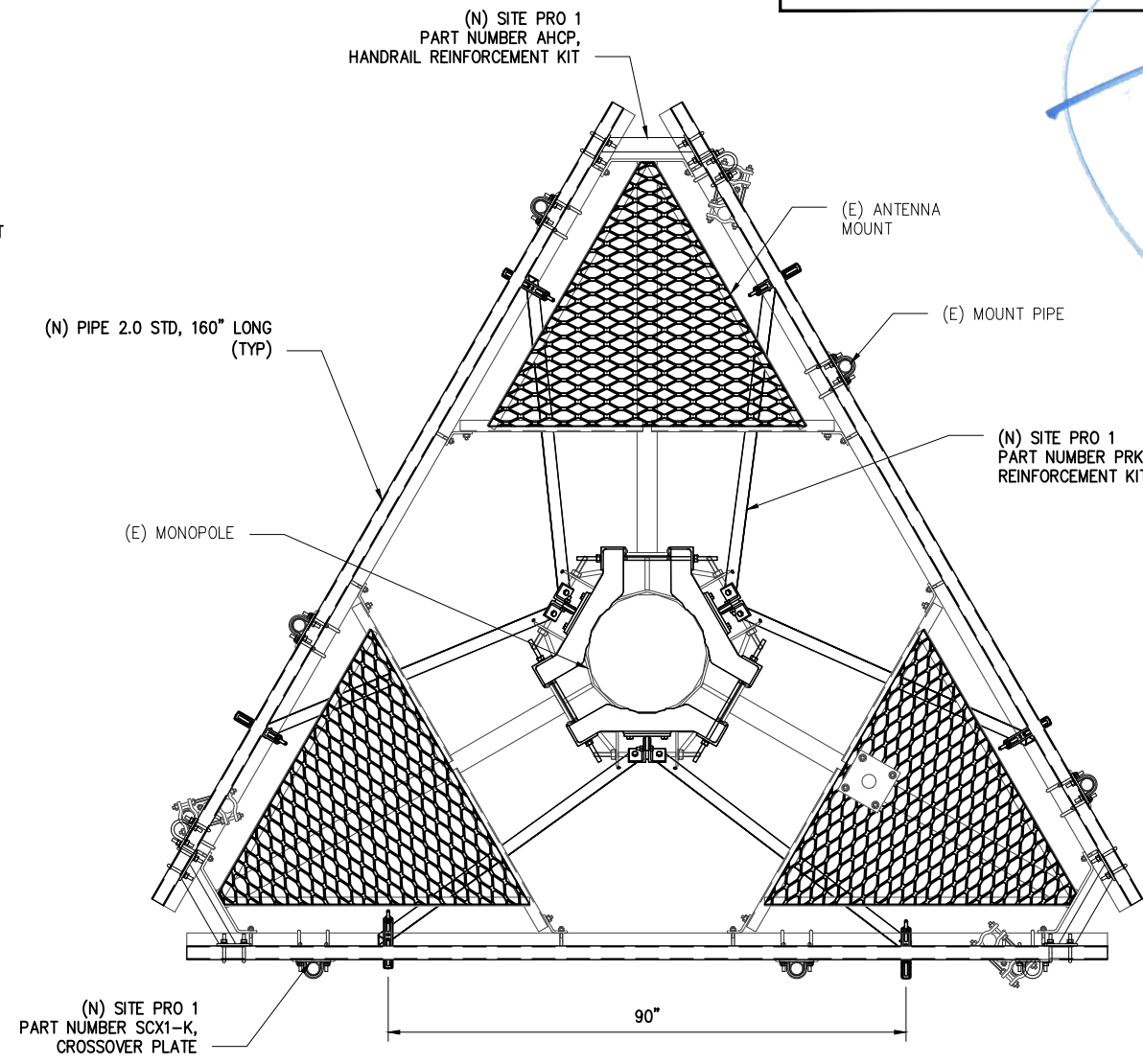
Drawing Title
GENERAL NOTES

Drawing Number
S-1

- NOTES:
1. MODIFICATIONS SHOWN ARE TYPICAL FOR ALL SECTORS.
 2. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.
 3. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.
 4. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES, PIPES & PLATES, AND CUT & DRILL AS NECESSARY.
 5. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.



1 ELEVATION VIEW
 SCALE: NOT TO SCALE



2 PLAN VIEW
 SCALE: NOT TO SCALE

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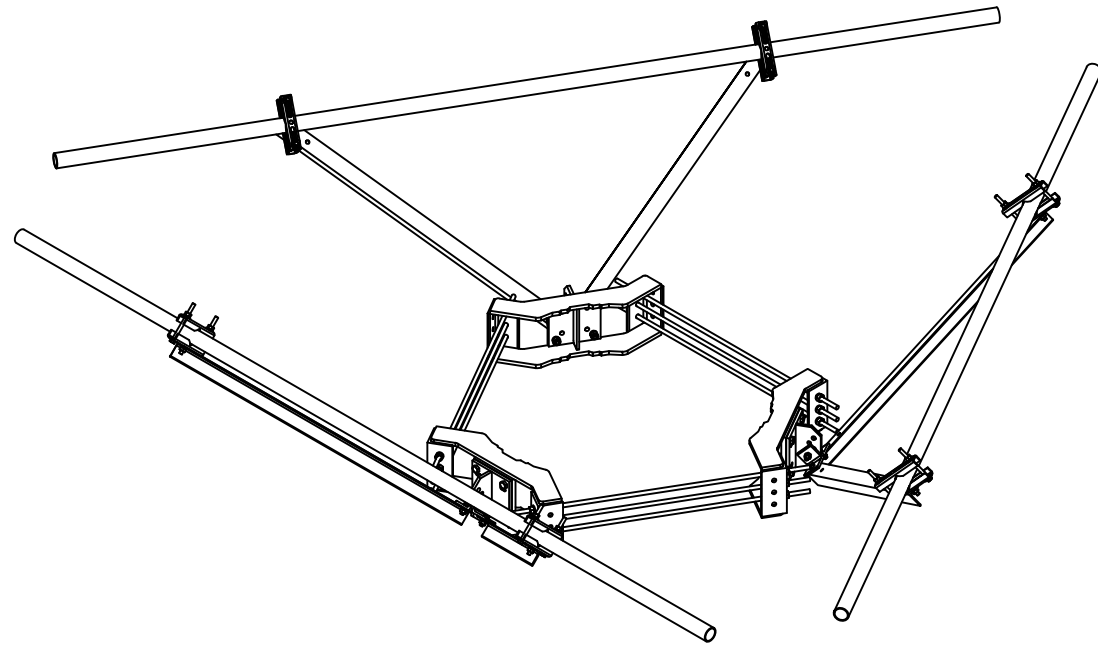
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 Clifton Park, NY 12065

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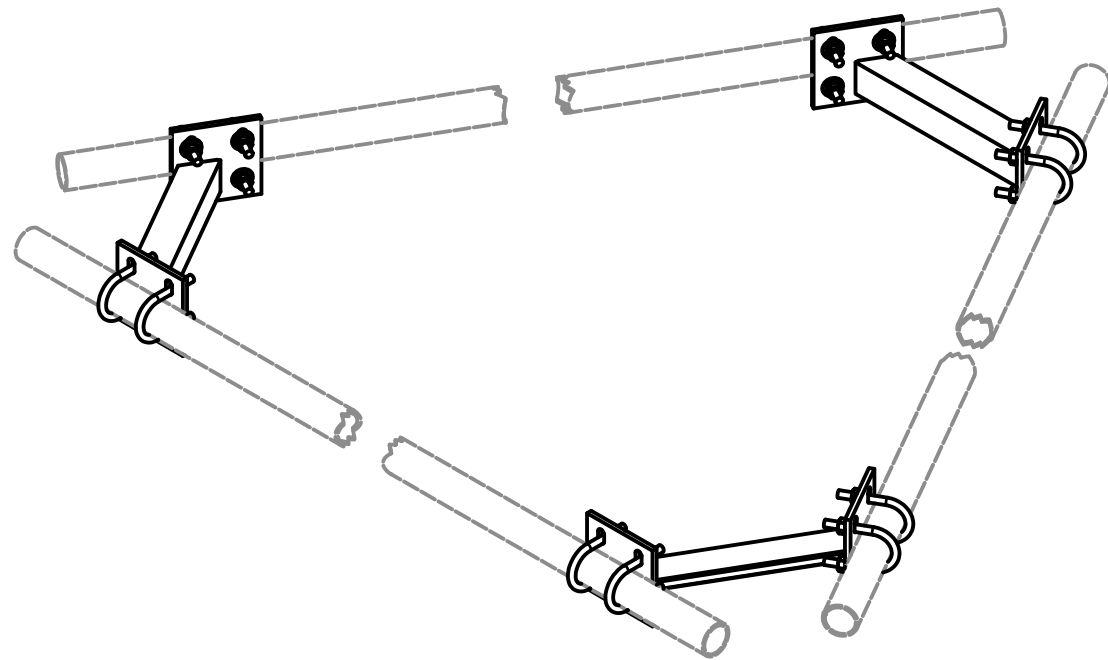
Drawing Scale: AS NOTED
 Date: 11/22/22

Drawing Title
MODIFICATION DETAILS

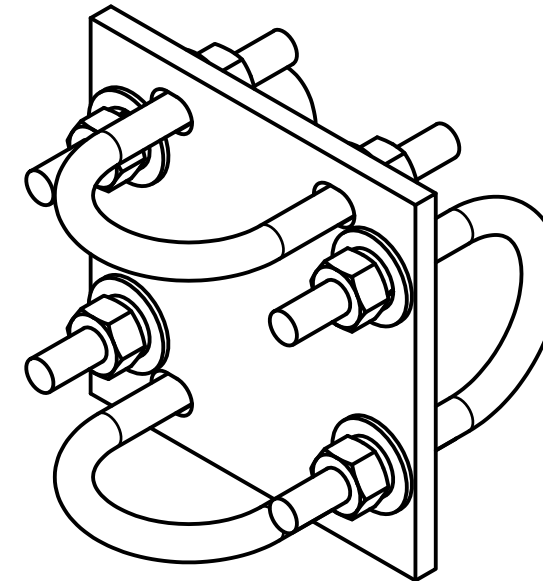
Drawing Number
S-2



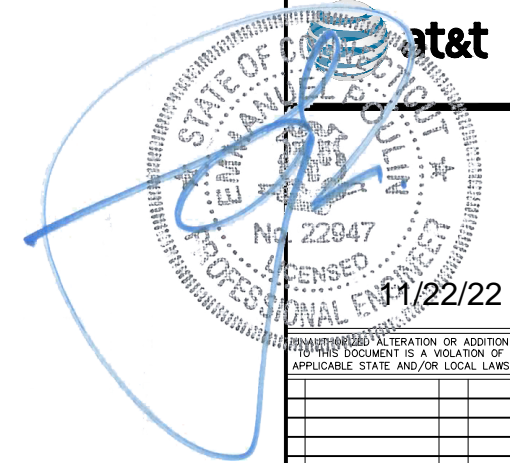
1 SITE PRO 1 P/N PRK-SFS-L
 -- SCALE: NOT TO SCALE



3 SITE PRO 1 P/N AHCP
 -- SCALE: NOT TO SCALE



2 SITE PRO 1 P/N SCX1-K
 -- SCALE: NOT TO SCALE



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Project Number: 1039-Z0001-B
 Project Title: BU# 801485
 CT SUFFIELD 1 CAC 801485
 2715 MOUNTAIN RD.
 SUFFIELD, CT 06093

Prepared For:
CROWN CASTLE
 3 Corporate Park, Suite 101
 Clifton Park, NY 12065
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Drawing Scale: AS NOTED
 Date: 11/22/22

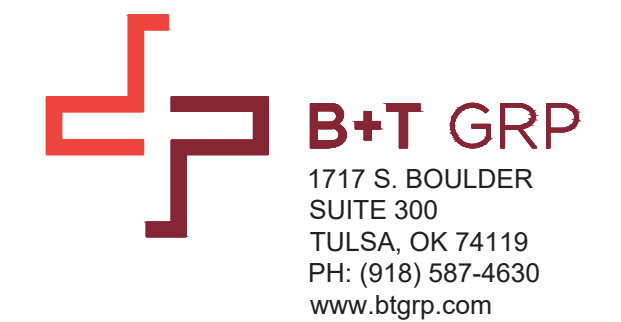
Drawing Title
REQUIRED PARTS

Drawing Number
S-3



AT&T SITE NUMBER: CTL05845
AT&T SITE NAME: SUFFIELD WEST
AT&T FA CODE: 10092225
AT&T PACE NUMBER: MRCTB066229, MRCTB066205, MRCTB066215, MRCTB066261, MRCTB066209
AT&T PROJECT: LTE 2C, 4TX4RX SOFTWARE RETROFIT, 5G NR 1DR-1, 5G NR 1DR-2

BUSINESS UNIT #: 801485
SITE ADDRESS: 2715 MOUNTAIN RD. SUFFIELD, CT 06093
COUNTY: HARTFORD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 190'-6"



AT&T SITE NUMBER:
CTL05845

BU #: 801485
CT SUFFIELD 1 CAC 801485

 2715 MOUNTAIN RD.
 SUFFIELD, CT 06093

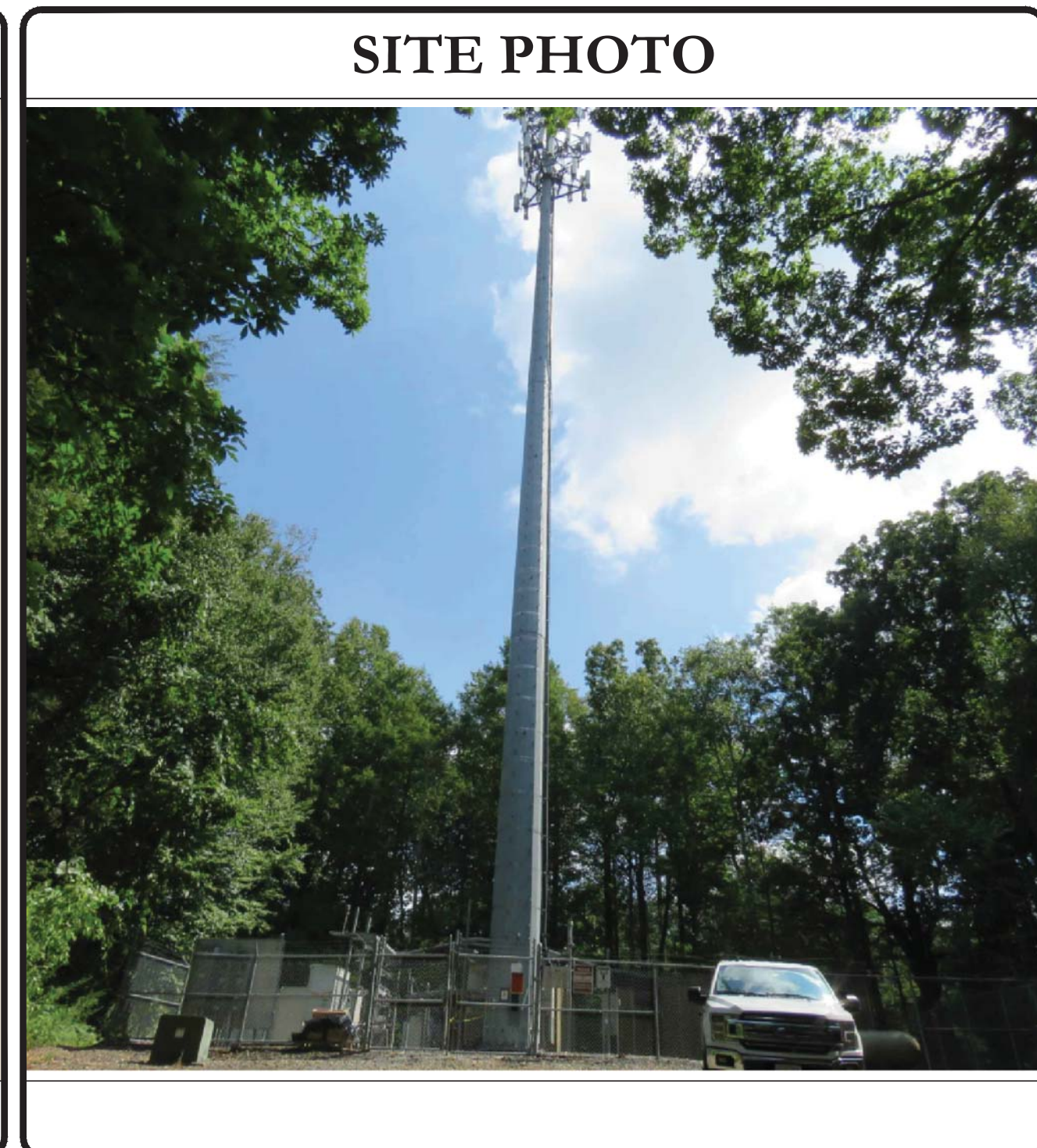
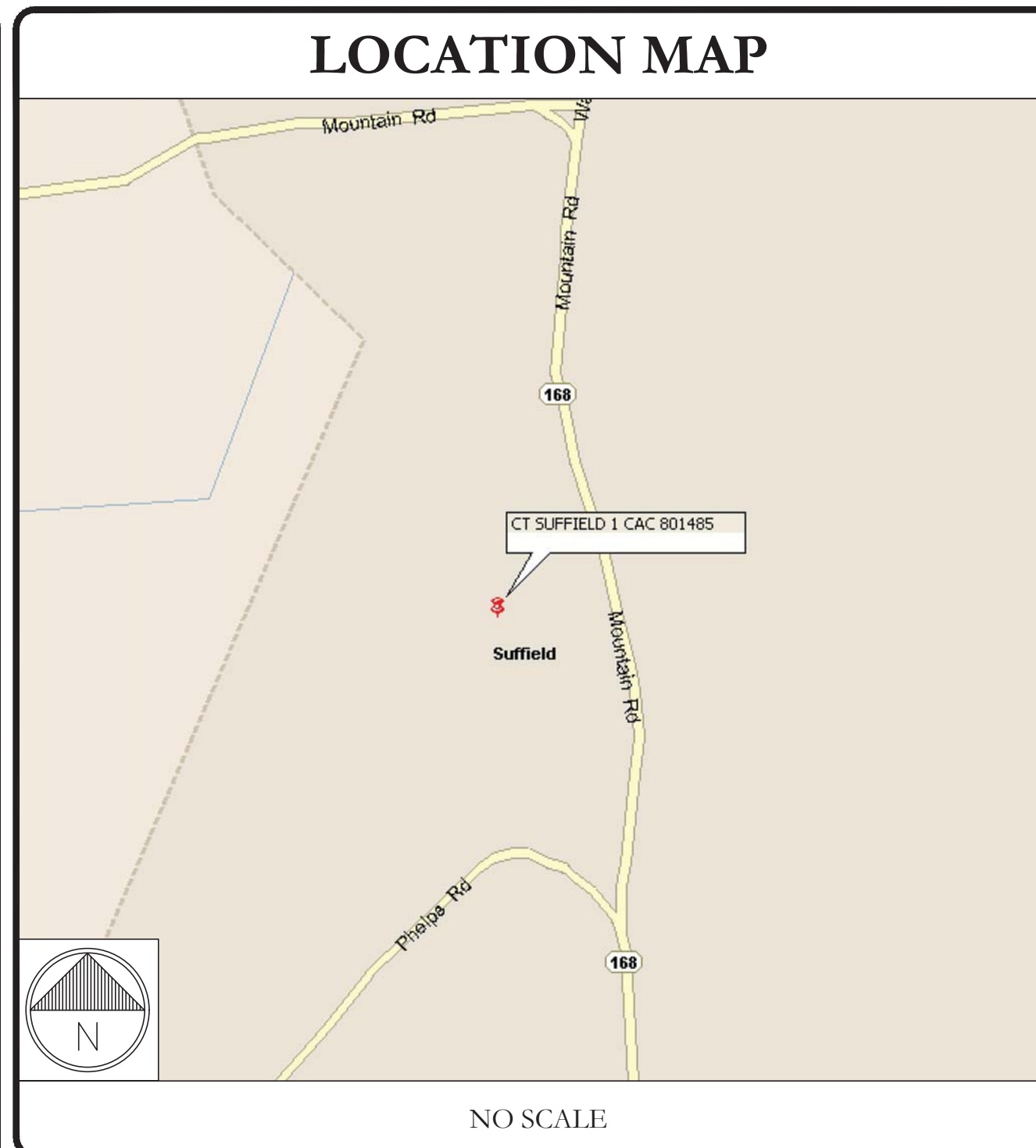
EXISTING
190'-6" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	12/21/22	TDG	PRELIMINARY REVIEW	LR
B	1/6/23	TDG	PRELIMINARY REVIEW	LR
C	1/9/23	TDG	PRELIMINARY REVIEW	LR
D	3/6/23	TDG	PRELIMINARY REVIEW	LR
0	3/23/23	ANP	CONSTRUCTION	LR

SITE INFORMATION	
CROWN CASTLE USA INC.	CT SUFFIELD 1 CAC 801485
SITE NAME:	
SITE ADDRESS:	2715 MOUNTAIN RD. SUFFIELD, CT 06093
COUNTY:	HARTFORD
MAP/PARCEL #:	9-9-9-X
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	42.011611°
LONGITUDE:	-72.728778°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	368'
CURRENT ZONING:	R-90
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	CROWN ATLANTIC COMPANY LLC 4017 WASHINGTON RD MCMURRAY, PA 15317
TOWER OWNER:	CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	NORTHEAST UTILITIES 800-286-2000
TELCO PROVIDER:	AT&T 866-620-6900

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EQUIPMENT PLANS
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	ANTENNA SCHEDULE
C-4	EQUIPMENT DETAILS
C-5	EQUIPMENT SPECS.
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	MOUNT MODIFICATION DRAWINGS



PROJECT TEAM	
A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS MARVIN.PHILLIPS@BTGRP.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 VERONICA CHAPMAN - PROJECT MANAGER VERONICA.CHAPMAN@CROWNCastle.COM JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCastle.COM HEATHER MILLER - AES HEATHER.MILLER@CROWNCastle.COM
NOTE:	PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

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

TOWER SCOPE OF WORK:

- REMOVE (6) POWERWAVE - 7770 ANTENNAS
- REMOVE (6) POWERWAVE - TT19-08BP111-001 TMA's
- REMOVE (3) ERICSSON - RRUS-11 B12 RRHs
- REMOVE (6) 1-5/8" COAX CABLES
- INSTALL MOUNT MODIFICATIONS PER MOUNT MODIFICATION DRAWINGS BY INFNIGY DATED NOVEMBER 22, 2022
- INSTALL (4) CCI - OPA65R-BU8DA ANTENNAS
- INSTALL (2) CCI - OPA65R-BU4DA ANTENNAS
- INSTALL (3) ERICSSON - 4478 B14 RRHs
- INSTALL (3) ERICSSON - 4449 B5/B12 RRHs
- INSTALL (3) ERICSSON - 8843 B2/B66A RRHs
- INSTALL (1) RAYCAP - DC6-48-60-18-8C-EV SQUID
- INSTALL (2) 6AWG DC CABLES (7/8")
- INSTALL (1) 18-PAIR FIBER CABLE (3/8")
- INSTALL (6) Y-CABLES FOR DUAL BAND RADIOS
- INSTALL (6) DUAL RADIO MOUNTS

GROUND SCOPE OF WORK:

- REMOVE (12) POWERWAVE - LGP21901 DIPLEXERS
- INSTALL (1) DC12 BOX
- INSTALL (1) 6648 W/ XCEDE CABLE

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

APPLICABLE CODES & REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2022 CONNECTICUT SBC
MECHANICAL	2022 CONNECTICUT SBC
ELECTRICAL	2022 CONNECTICUT SBC

REFERENCE DOCUMENTS:
 STRUCTURAL ANALYSIS: MORRISON HERSHFIELD
 DATED: 1/12/23
 MOUNT ANALYSIS: INFNIGY
 DATED: 11/22/22
 RFDS REVISION: FINAL
 DATED: 10/21/22
 ORDER ID: 627244
 REVISION: 1

INSTALLER NOTE:
 NO PROPOSED LOADING TO BE ADDED UNTIL MOUNT MODIFICATIONS ARE INSTALLED PER MOUNT MODIFICATION DRAWINGS BY INFNIGY DATED NOVEMBER 22, 2022.

MTS ENGINEERING P.L.L.C.
 BER:2386985
 Expires 3/31/23

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-1	REVISION: 0
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84855.019.01.0001_CT_SUFFIELD 1 CAC 801485.dwg - Sheet:1-1 - User: liso.rider - Mar 23, 2023 - 2:48pm

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
- CONCRETE EXPOSED TO FREEZE--THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER.....40 ksi
#5 BARS AND LARGER.....60 ksi
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER.....2"
#5 BARS AND SMALLER.....1-1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLAB AND WALLS.....3/4"
BEAMS AND COLUMNS.....1-1/2"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

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

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

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

APWA UNIFORM COLOR CODE:

- PROPOSED EXCAVATION
- TEMPORARY SURVEY MARKINGS
- ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
- GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
- COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
- POTABLE WATER
- RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
- SEWERS AND DRAIN LINES

ABBREVIATIONS:


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



575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065



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

AT&T SITE NUMBER:
CTL05845

BU #: **801485**
CT SUFFIELD 1 CAC 801485

2715 MOUNTAIN RD.
SUFFIELD, CT 06093

EXISTING
190'-6" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	12/21/22	TDG	PRELIMINARY REVIEW	LR
B	1/6/23	TDG	PRELIMINARY REVIEW	LR
C	1/9/23	TDG	PRELIMINARY REVIEW	LR
D	3/6/23	TDG	PRELIMINARY REVIEW	LR
0	3/23/23	ANP	CONSTRUCTION	LR



MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

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SHEET NUMBER: **T-2** REVISION: **0**



575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3 CORPORATE PARK DRIVE, SUITE 101
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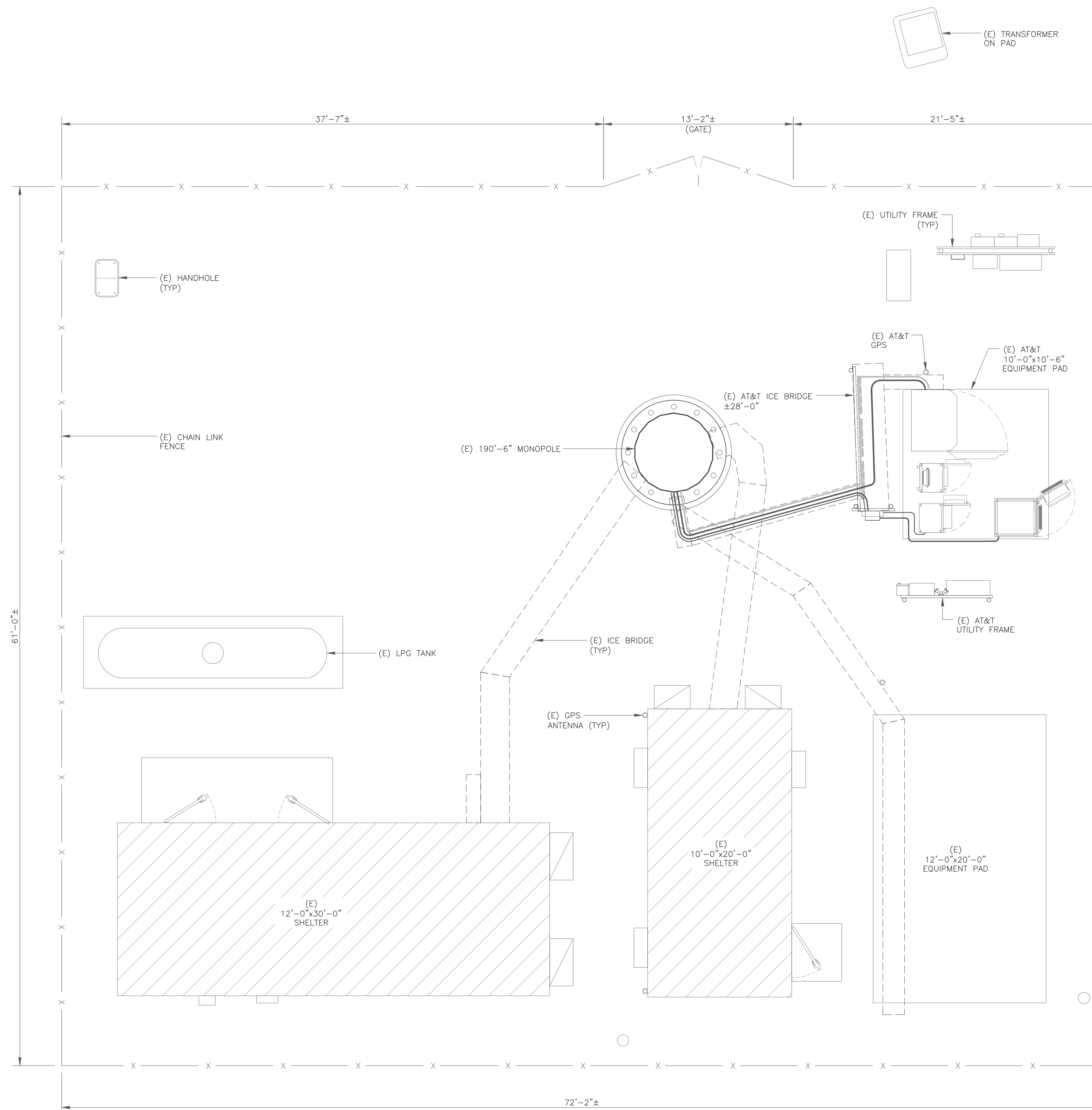
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SHEET NUMBER:

C-1.1

REVISION:

0



1 SITE PLAN

SCALE: 1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)





575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065



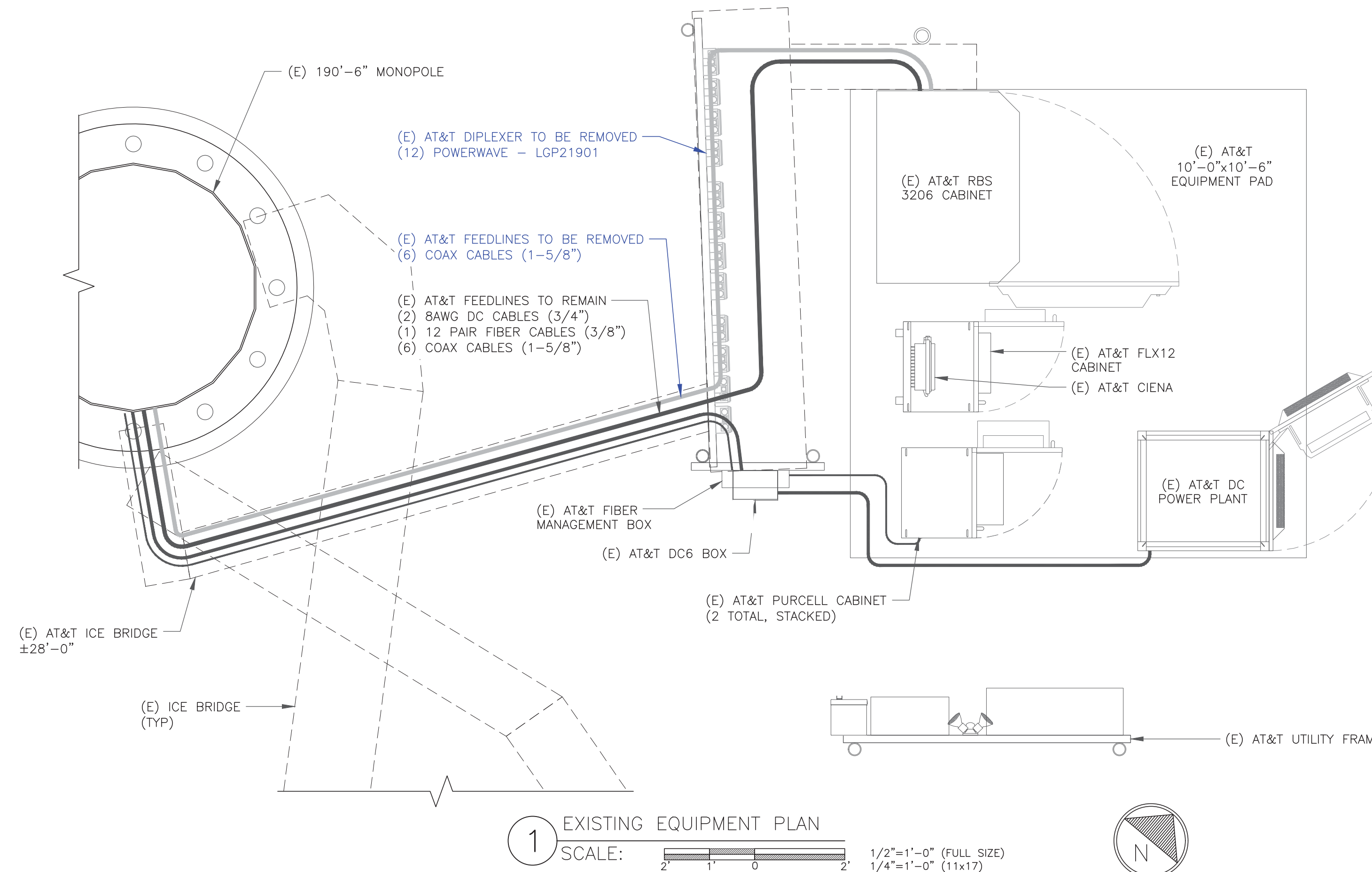
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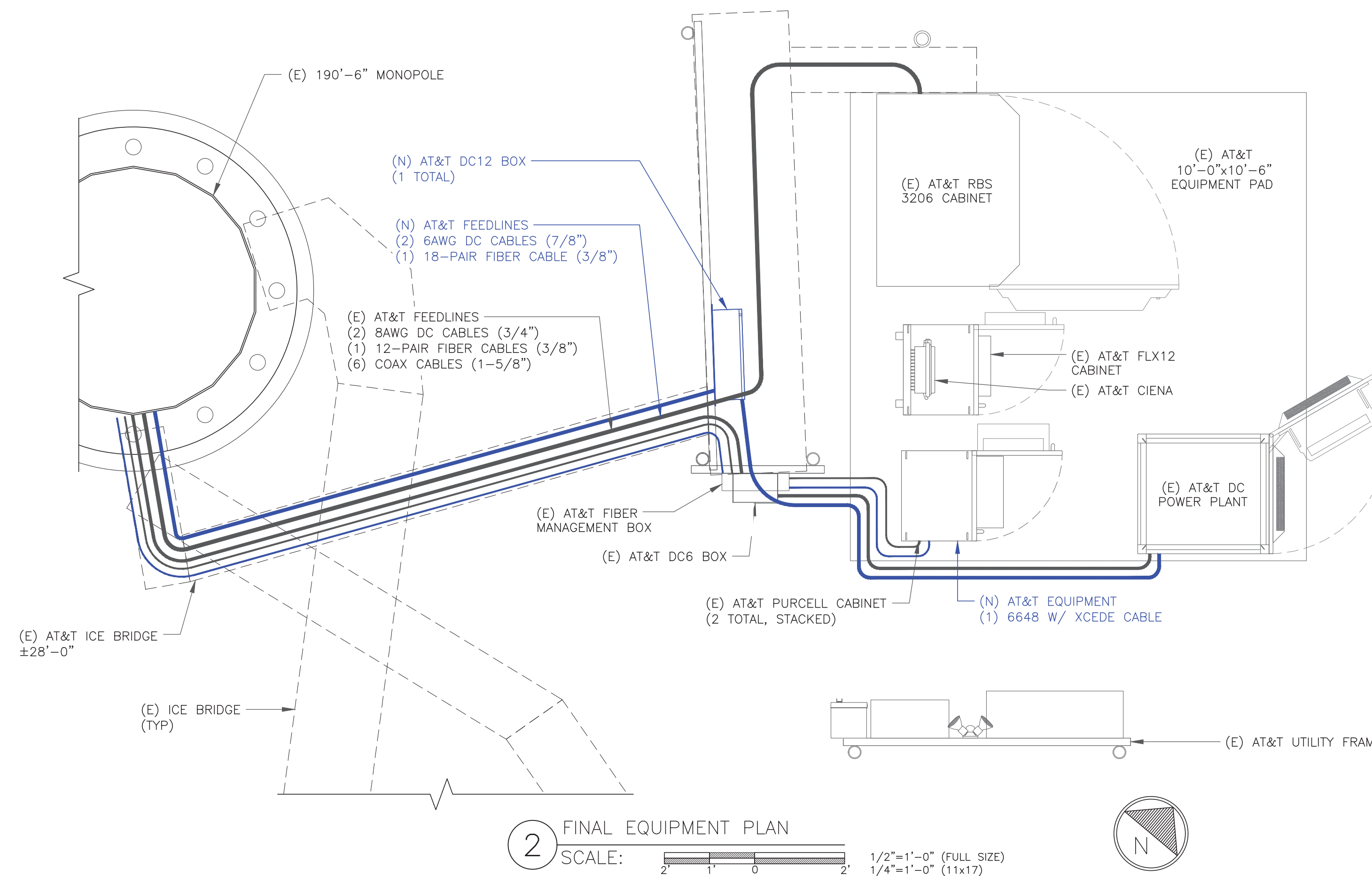
EXISTING
190'-6" MONOPOLE



- GROUND SCOPE OF WORK:**
- REMOVE (12) POWERWAVE - LGP21901 DIPLEXERS
 - INSTALL (1) DC12 BOX
 - INSTALL (1) 6648 W/ XCEDE CABLE

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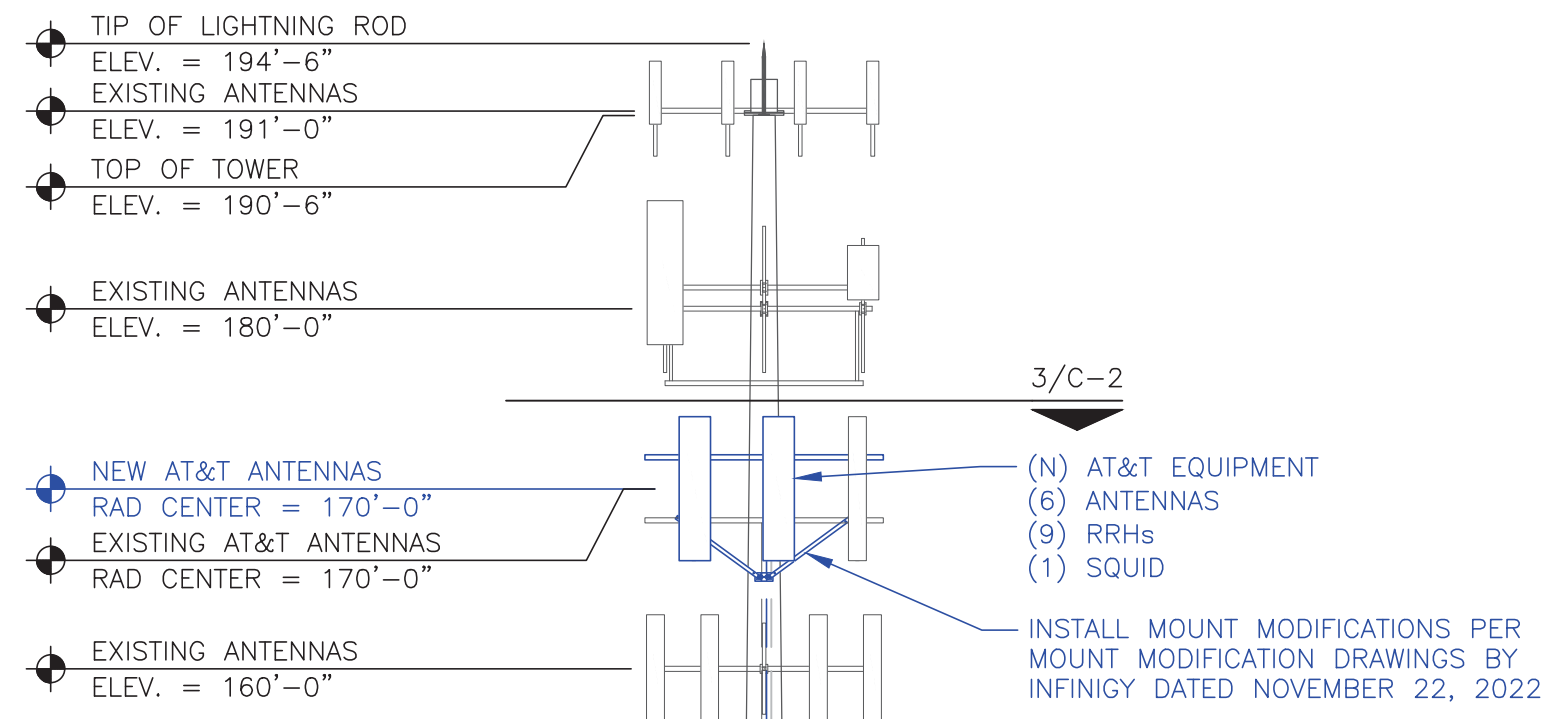


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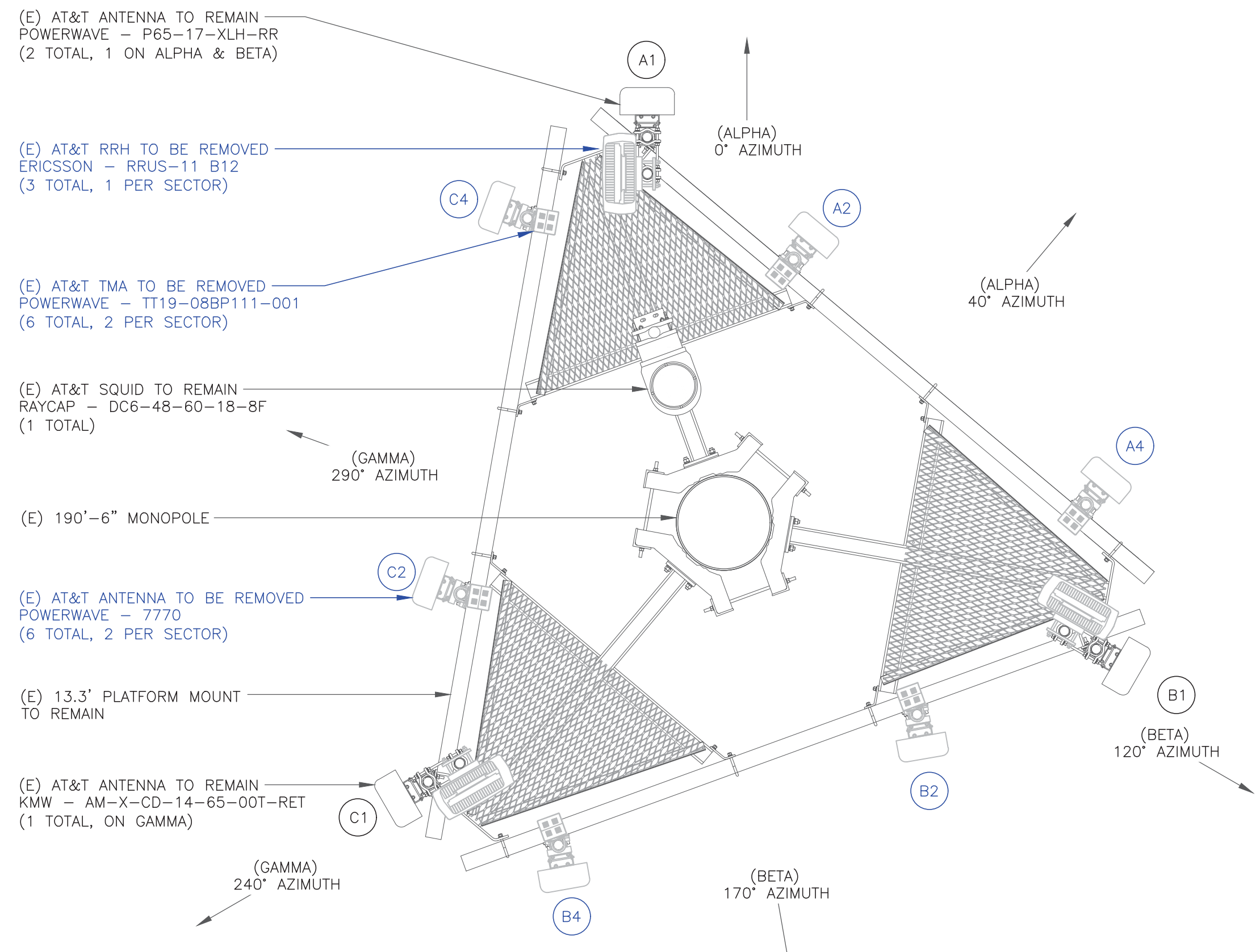
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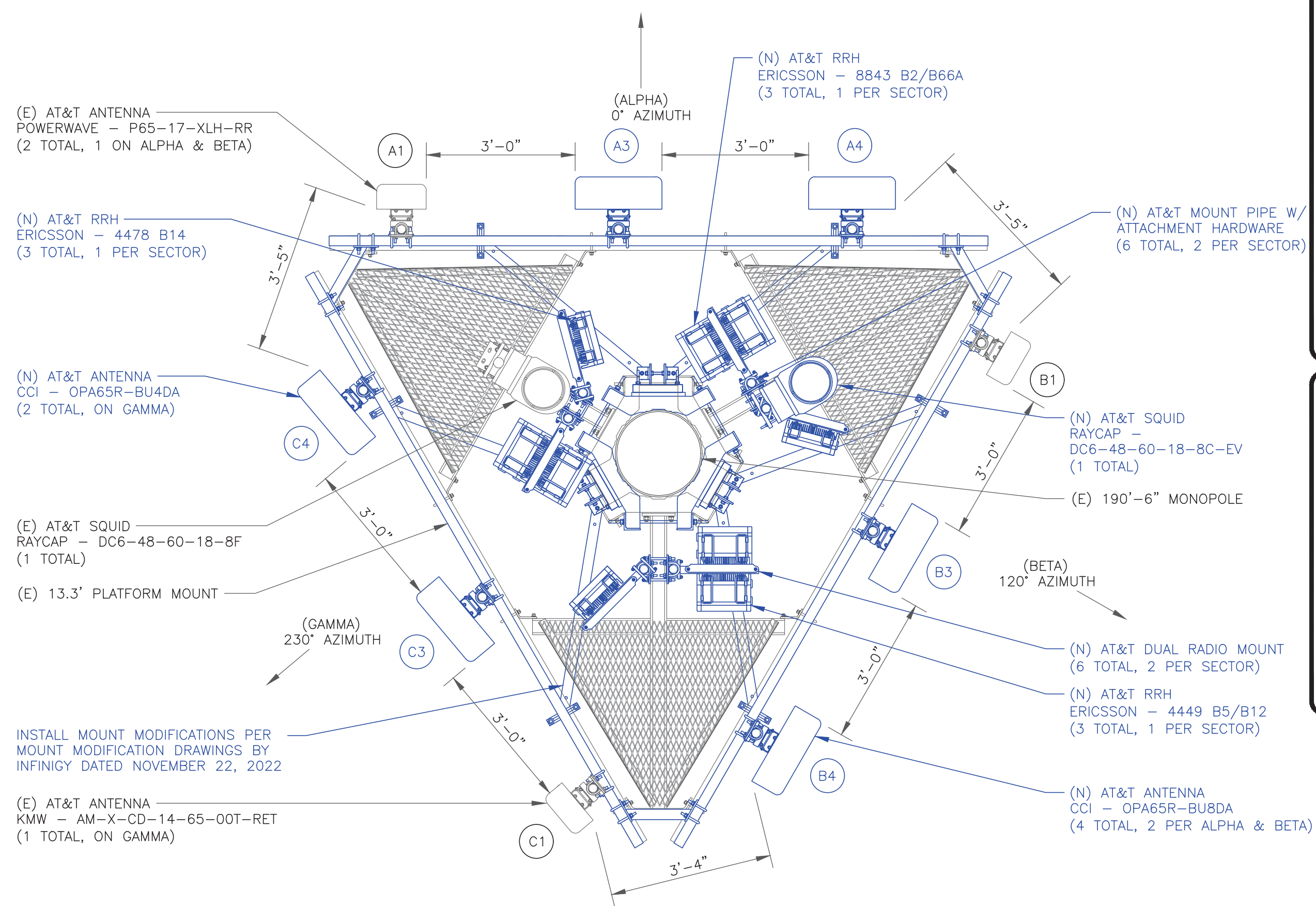
C-1.2 0



1 FINAL ELEVATION
SCALE: NOT TO SCALE



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



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

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

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

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

INSTALLER NOTE:
EXISTING MOUNT SHALL BE ROTATED 40° COUNTERCLOCKWISE TO MINIMIZE ANTENNA SKEWING.

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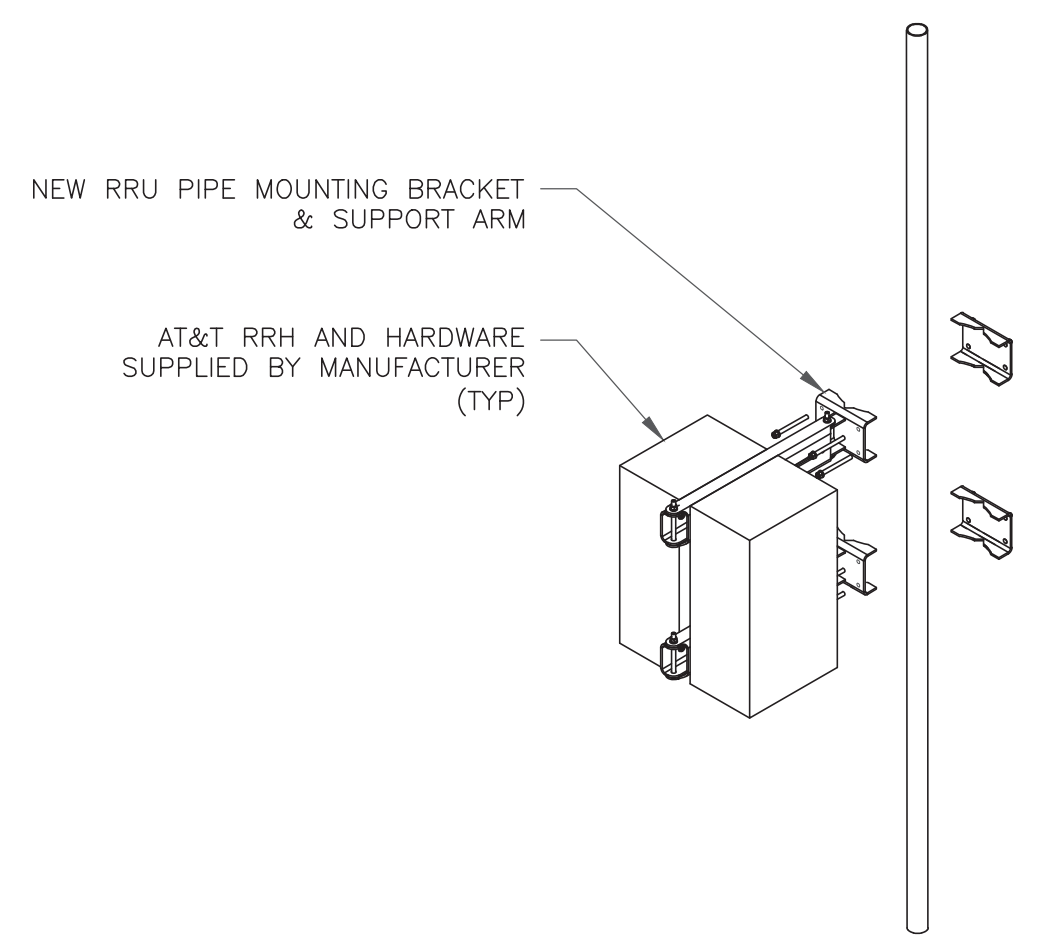
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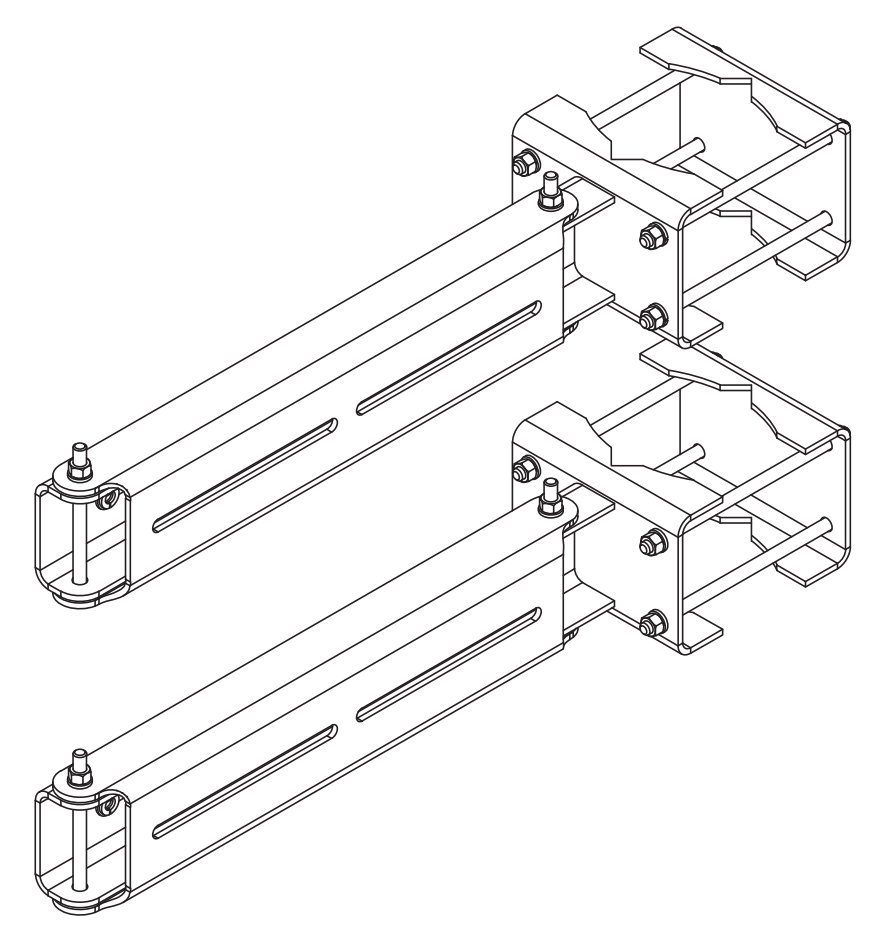
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INSTALLER NOTES:

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



1 DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

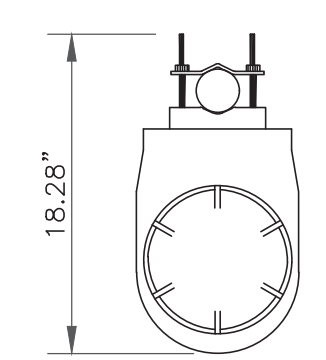


2 DUAL RADIO MOUNT
SCALE: NOT TO SCALE

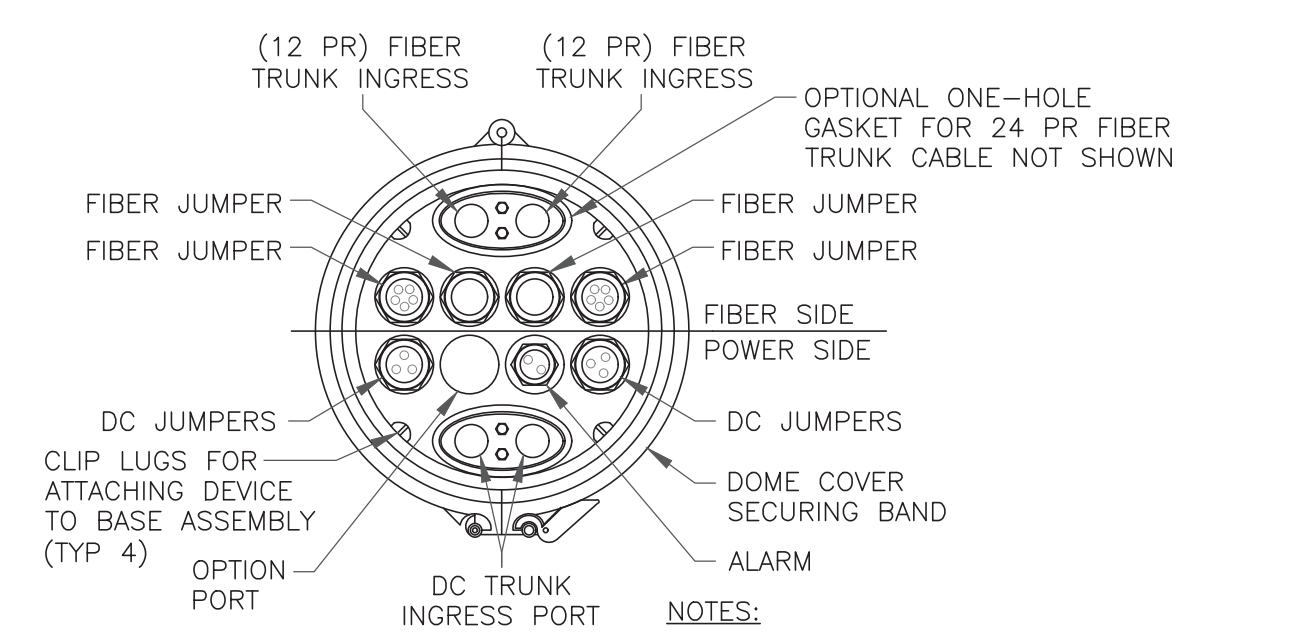
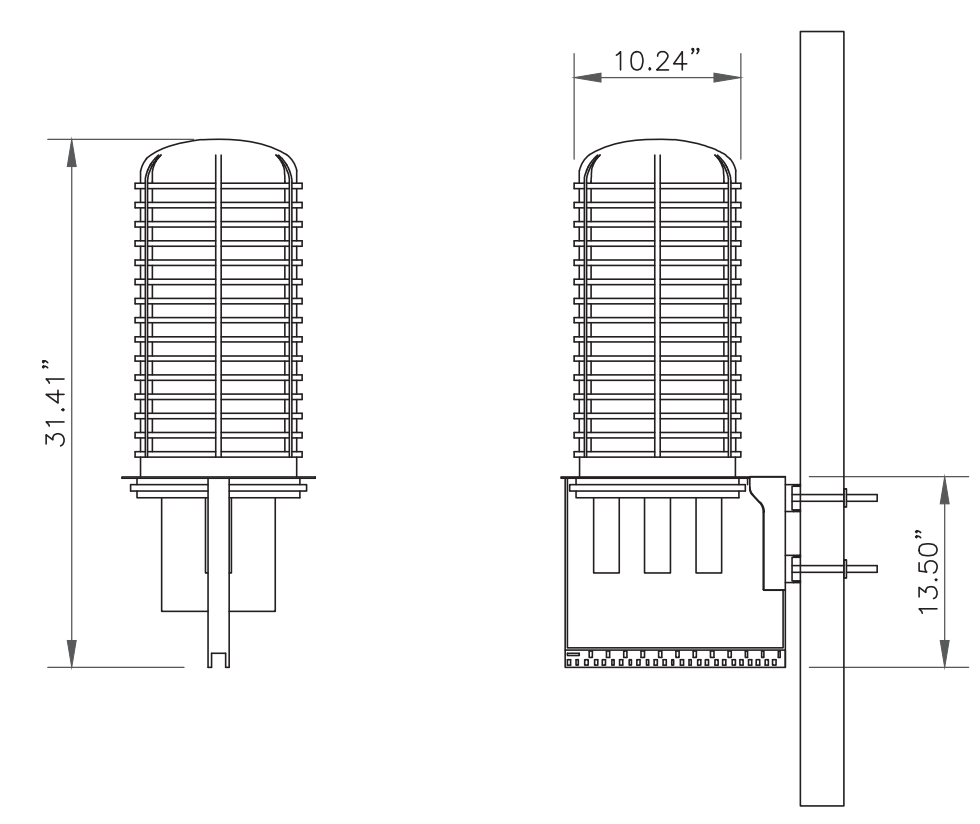
3 NOT USED
SCALE: NOT TO SCALE

RAYCAP
DC6-48-60-24-8C-EV

RAYCAP - DC6-48-60-24-8C-EV
SIZE: 10.24x31.40 IN.
WEIGHT: 26.2 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 330 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)



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



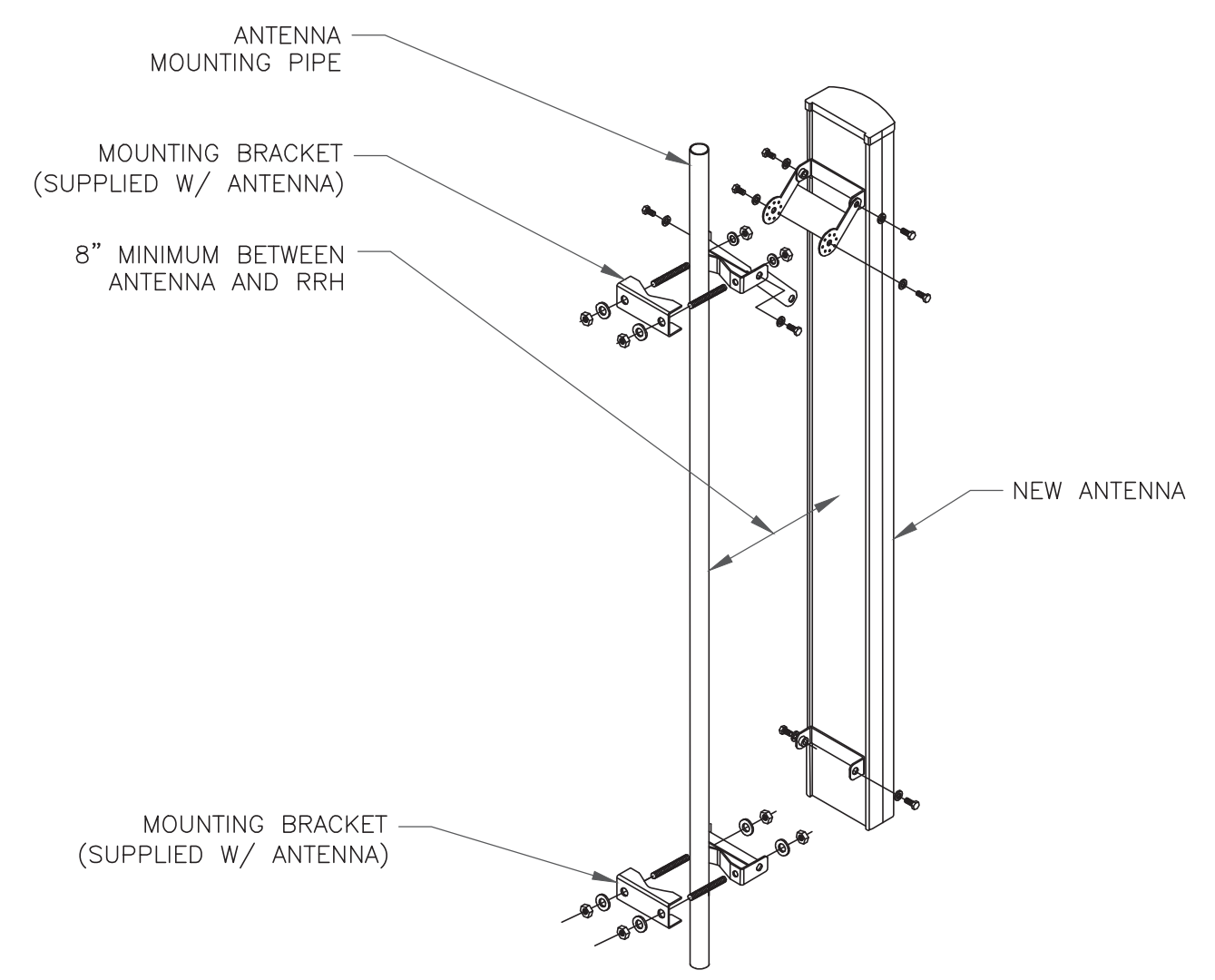
NOTES:

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

6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTE:

ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



5 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.blgrp.com

AT&T SITE NUMBER:
CTL05845

BU #: 801485
CT SUFFIELD 1 CAC 801485

2715 MOUNTAIN RD.
SUFFIELD, CT 06093

EXISTING
190'-6" MONOPOLE

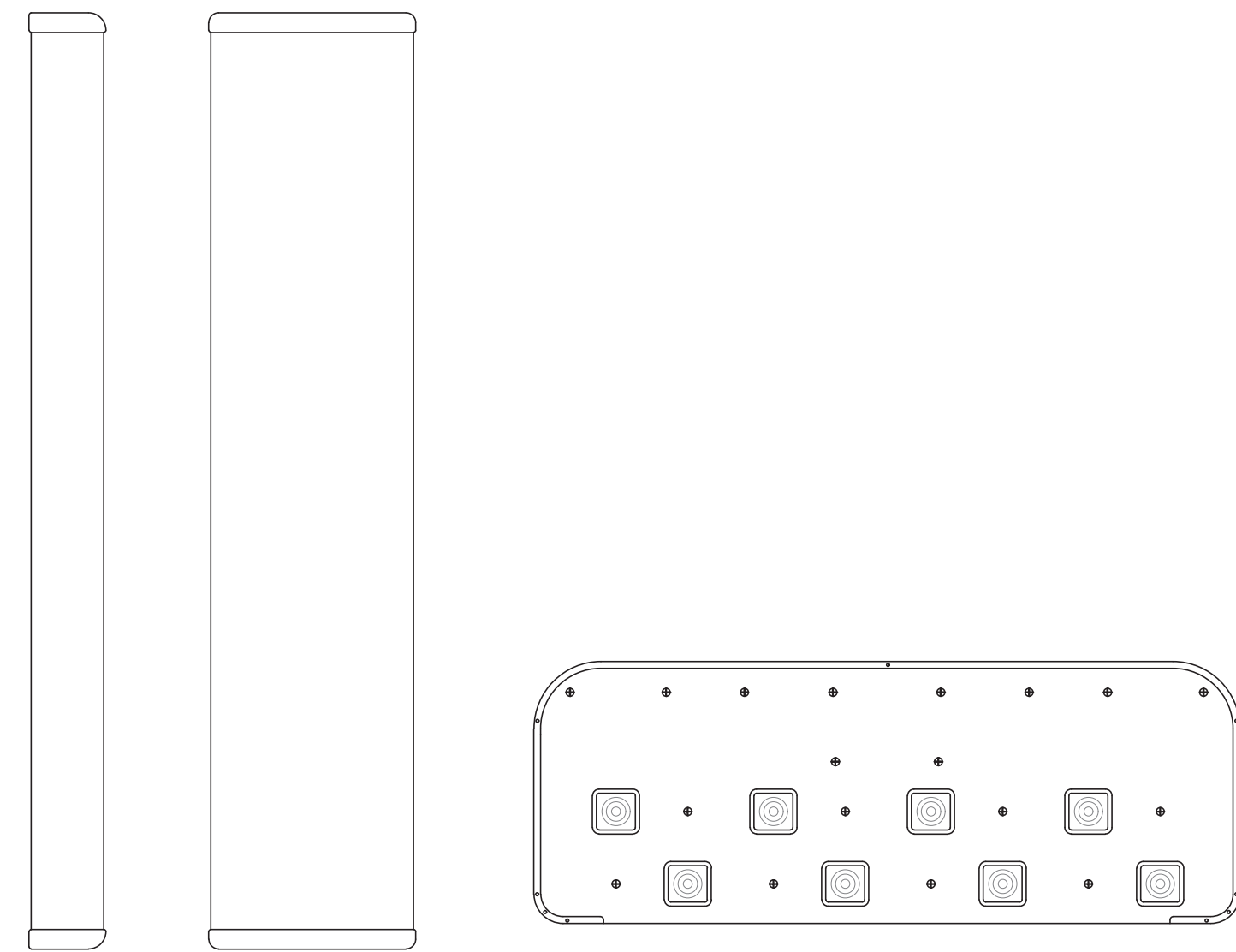
ISSUED FOR:

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0	3/23/23	ANP	CONSTRUCTION	LR

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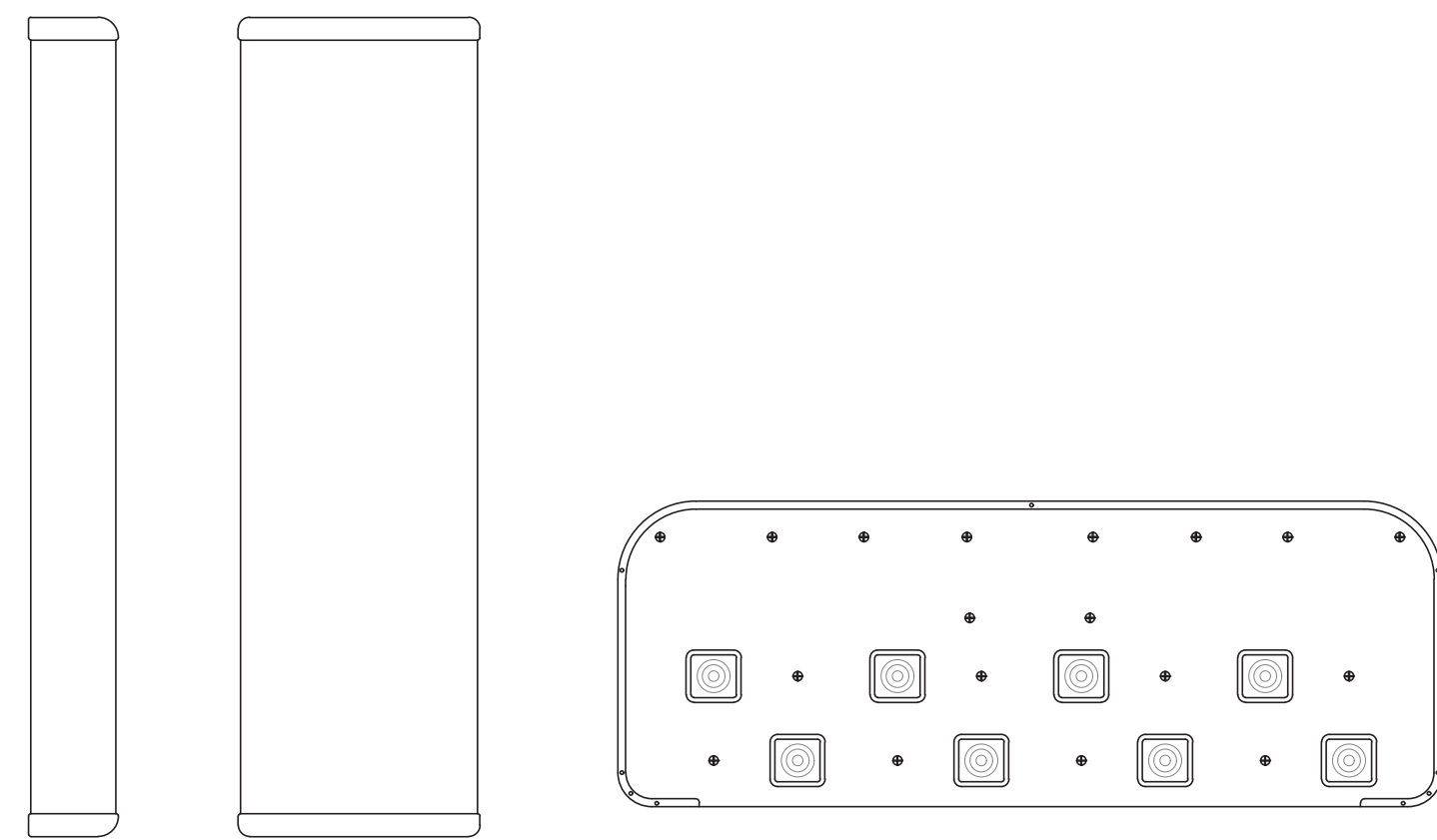
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SHEET NUMBER: **C-4** REVISION: **0**



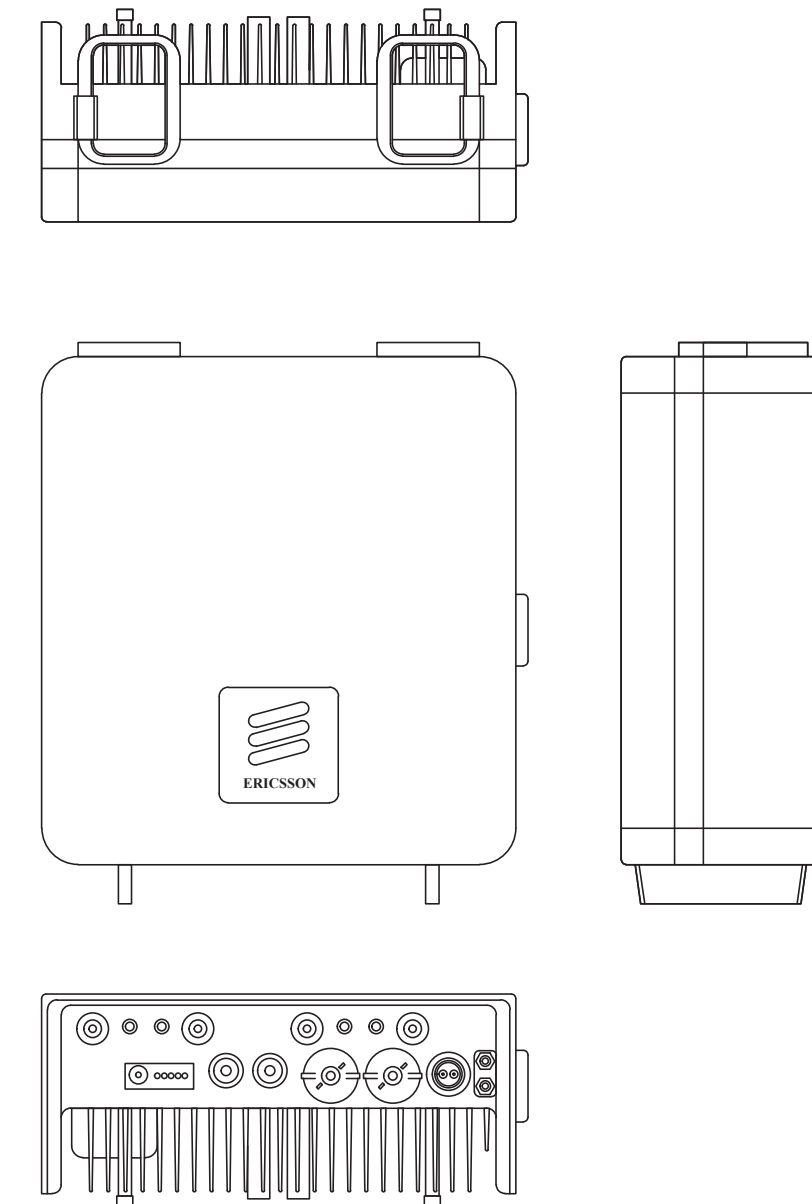
CCI ANTENNAS - OPA65R-BU8DA
 WEIGHT (WITHOUT MOUNTING HARDWARE): 76.5 LBS
 SIZE (HxWxD): 96.0x21.0x7.8 IN.
 MOUNTING HARDWARE P/N: MBK-01
 RATED WIND VELOCITY: 150.0 MPH

1 CCI ANTENNAS - OPA65R-BU8DA
 SCALE: NOT TO SCALE



CCI ANTENNAS - OPA65R-BU4DA
 WEIGHT (WITHOUT MOUNTING HARDWARE): 62.3 LBS
 SIZE (HxWxD): 48x21.0x7.8 IN.
 RATED WIND VELOCITY: 150.0 MPH

2 CCI ANTENNAS - OPA65R-BU4DA
 SCALE: NOT TO SCALE



ERICSSON - RADIO 4478 B14
 WEIGHT: 60.0 LBS
 SIZE (HxWxD): 18.10x13.40x8.26 IN.

3 ERICSSON - RADIO 4478 B14
 SCALE: NOT TO SCALE

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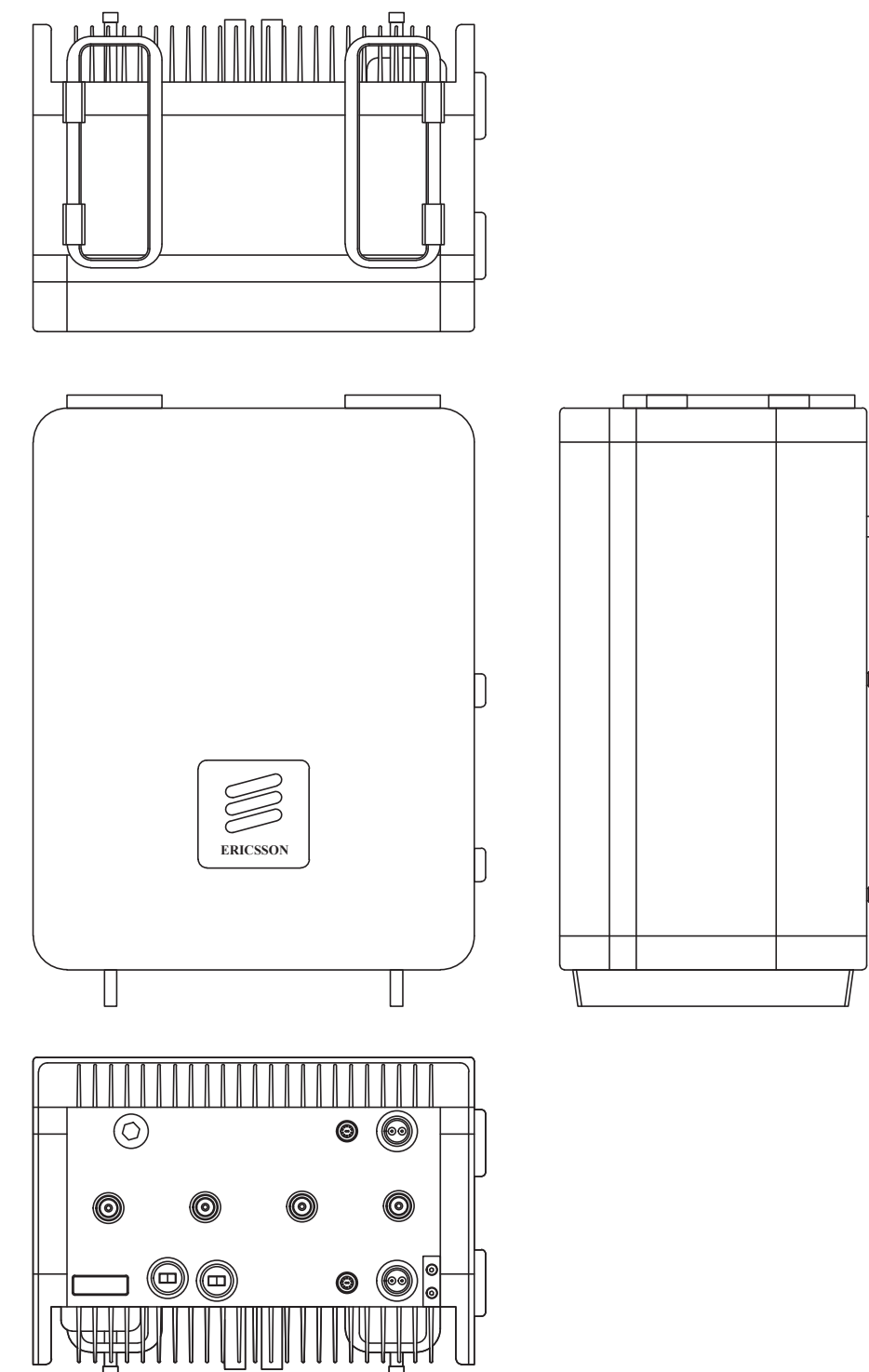
BU #: **801485**
CT SUFFIELD 1 CAC 801485

2715 MOUNTAIN RD.
 SUFFIELD, CT 06093

EXISTING
 190'-6" MONOPOLE

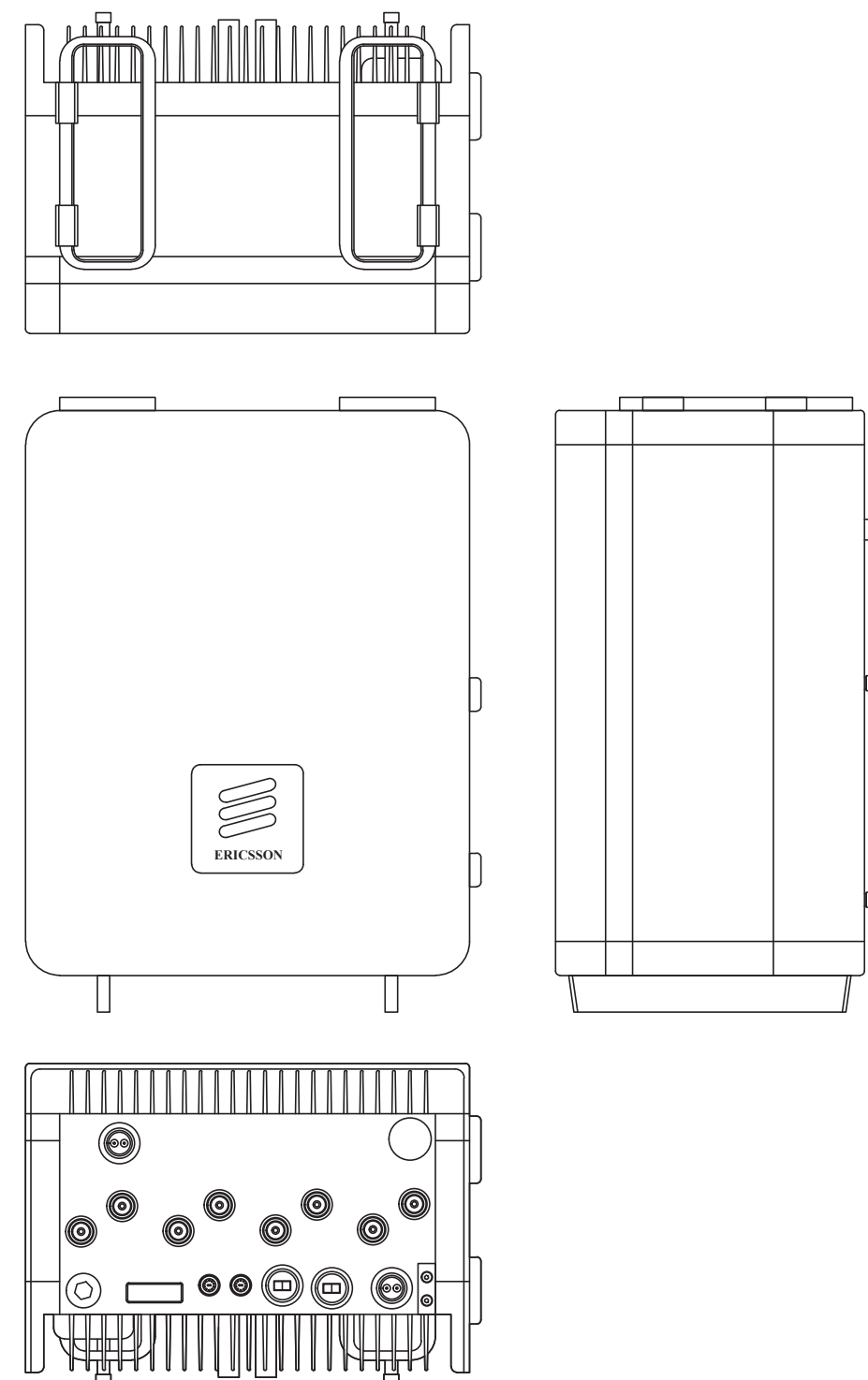
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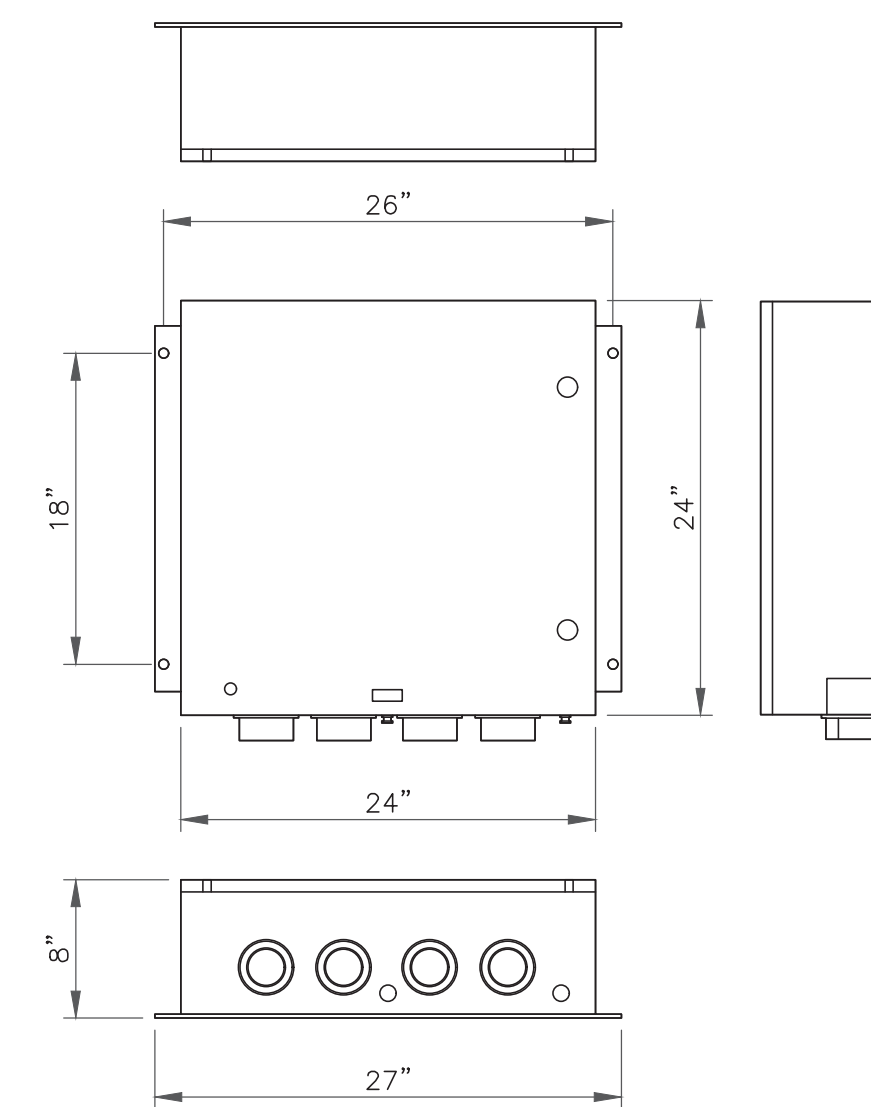
ERICSSON - RADIO 4449 B5/B12
 WEIGHT: 71.0 LBS
 SIZE (HxWxD): 18.0x13.2x9.4 IN.

4 ERICSSON - RADIO 4449 B5/B12
 SCALE: NOT TO SCALE



ERICSSON - RADIO 8843 B2/B66A
 WEIGHT: 75.0 LBS
 SIZE (HxWxD): 18.0x13.2x11.3 IN.

5 ERICSSON - RADIO 8843 B2/B66A
 SCALE: NOT TO SCALE



RAYCAP - DC12-48-60-0-25E
 WEIGHT: 56.3 LBS
 SIZE (LxWxD): 24.0x24.0x8.0 IN.
 OPERATING TEMPERATURE: -40° C TO +100° C
 NOMINAL OPERATING DC VOLTAGE: 48V DC
 VOLTAGE PROTECTION RATING (VRP): 400V

6 RAYCAP - DC12-48-60-0-25E
 SCALE: NOT TO SCALE



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SHEET NUMBER:

C-5

REVISION:

0

GROUNDING PLAN LEGEND:

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

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

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

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

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



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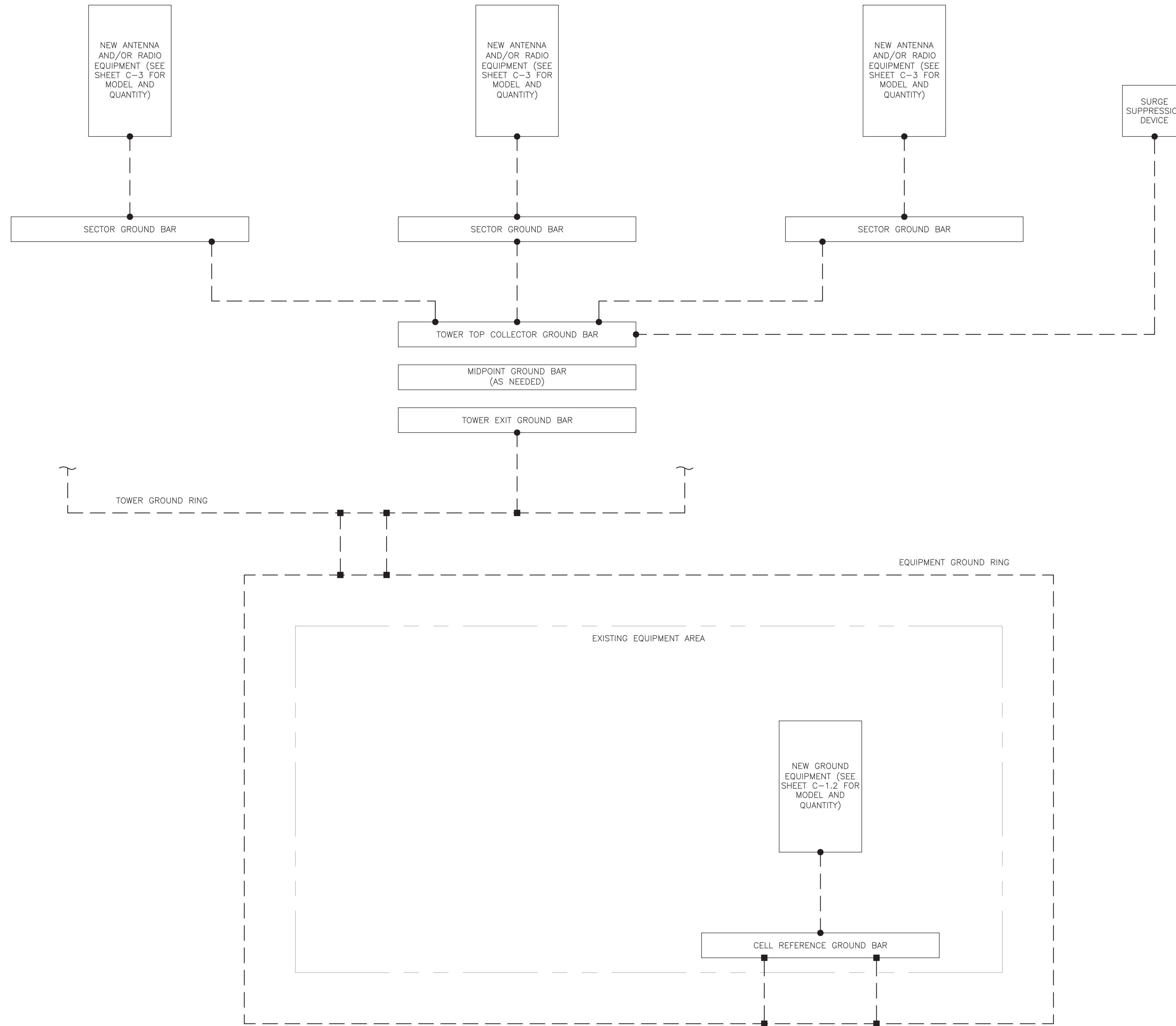
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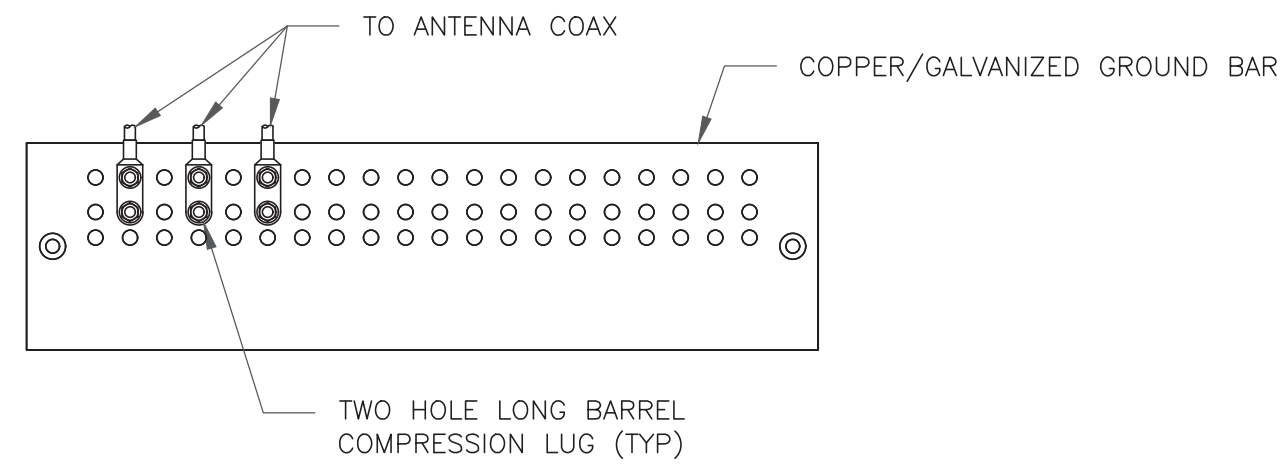
SHEET NUMBER: REVISION:

G-1

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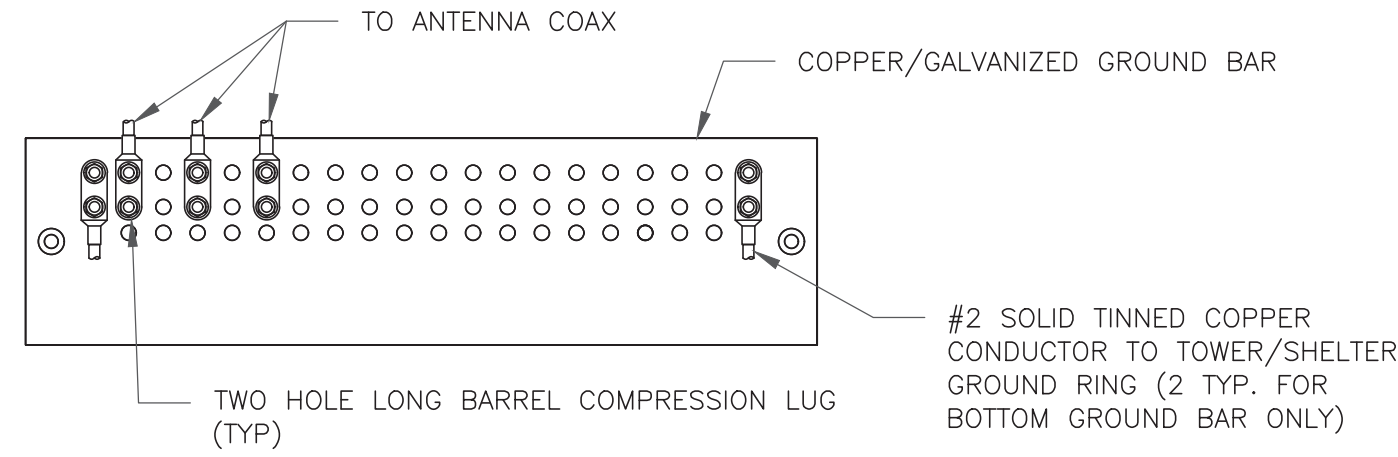
1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

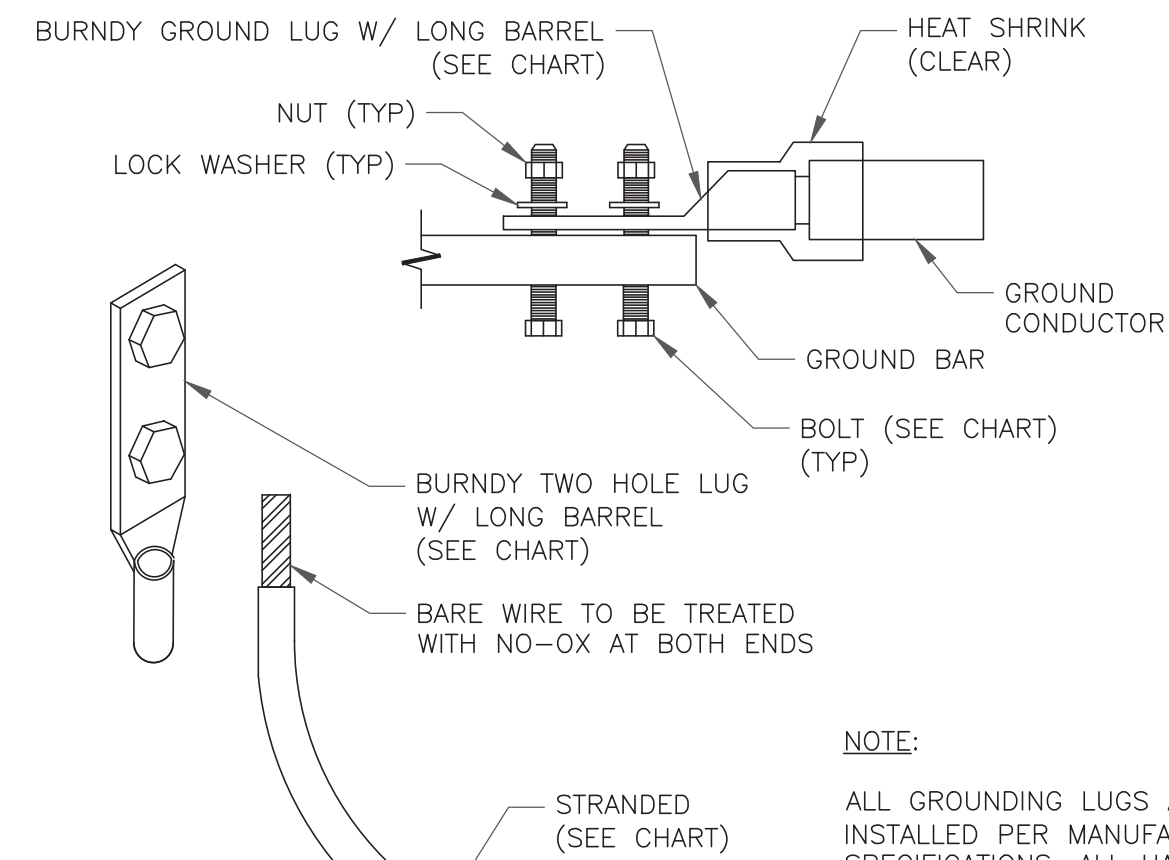


NOTES:

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

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

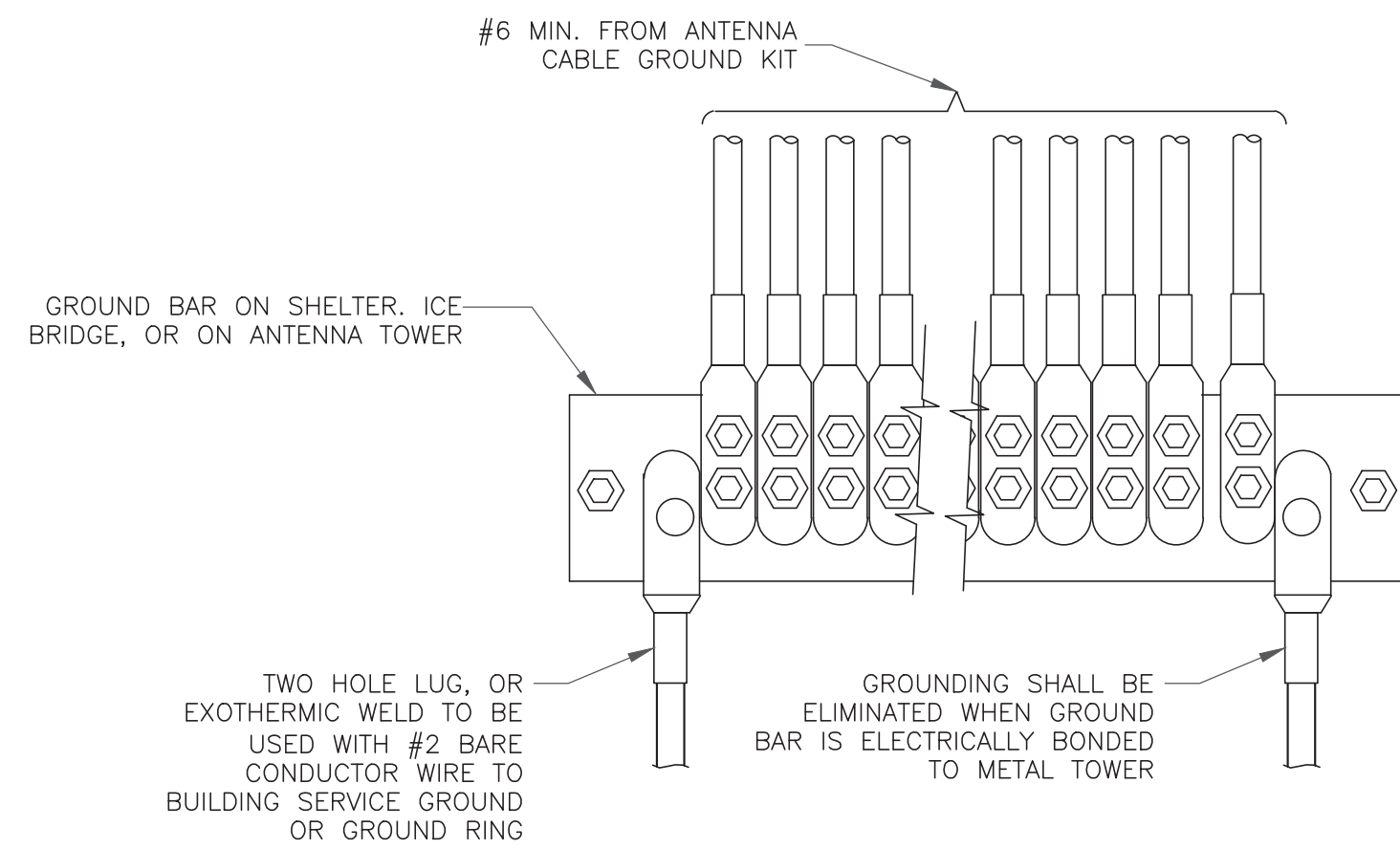
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



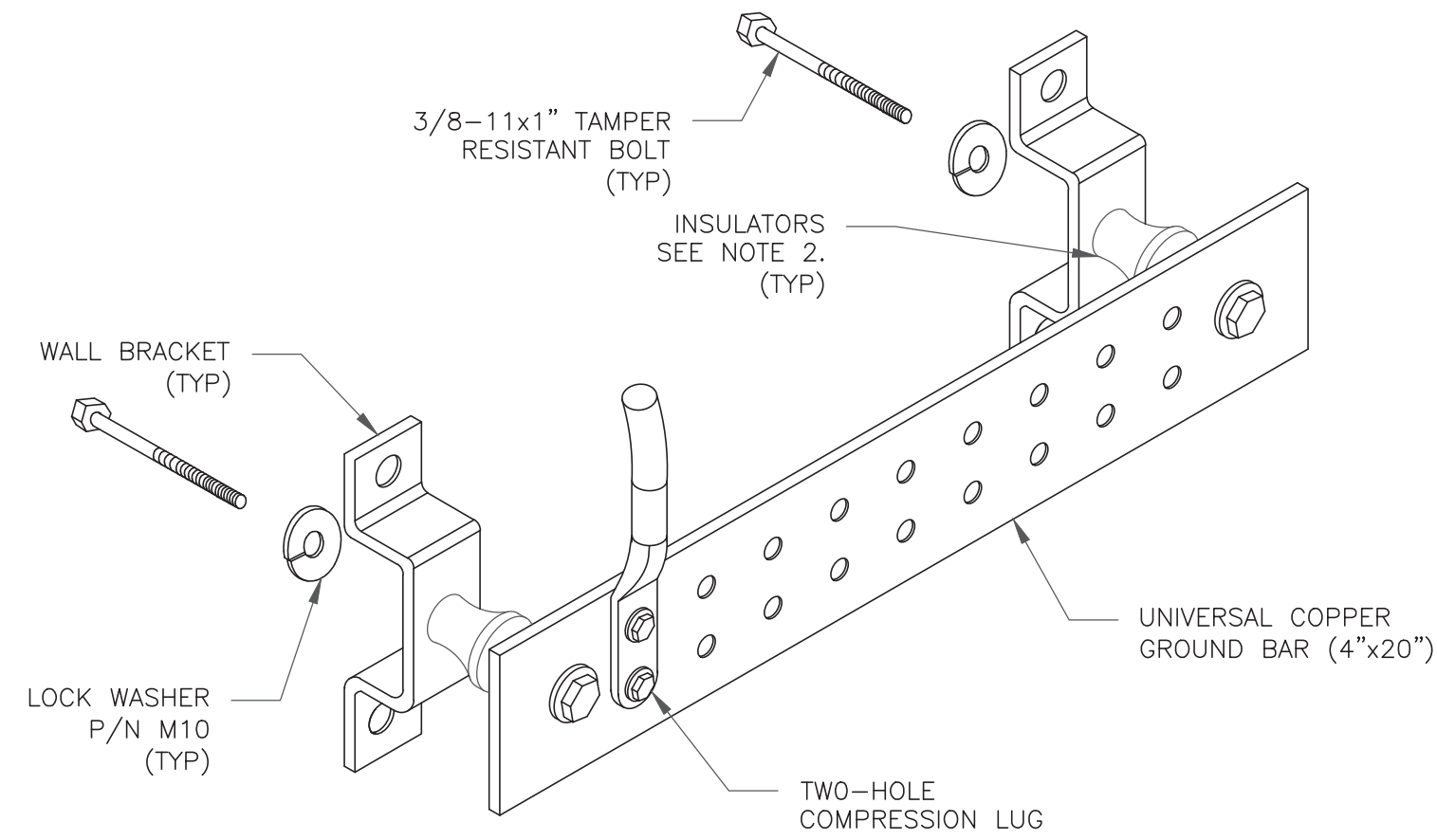
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



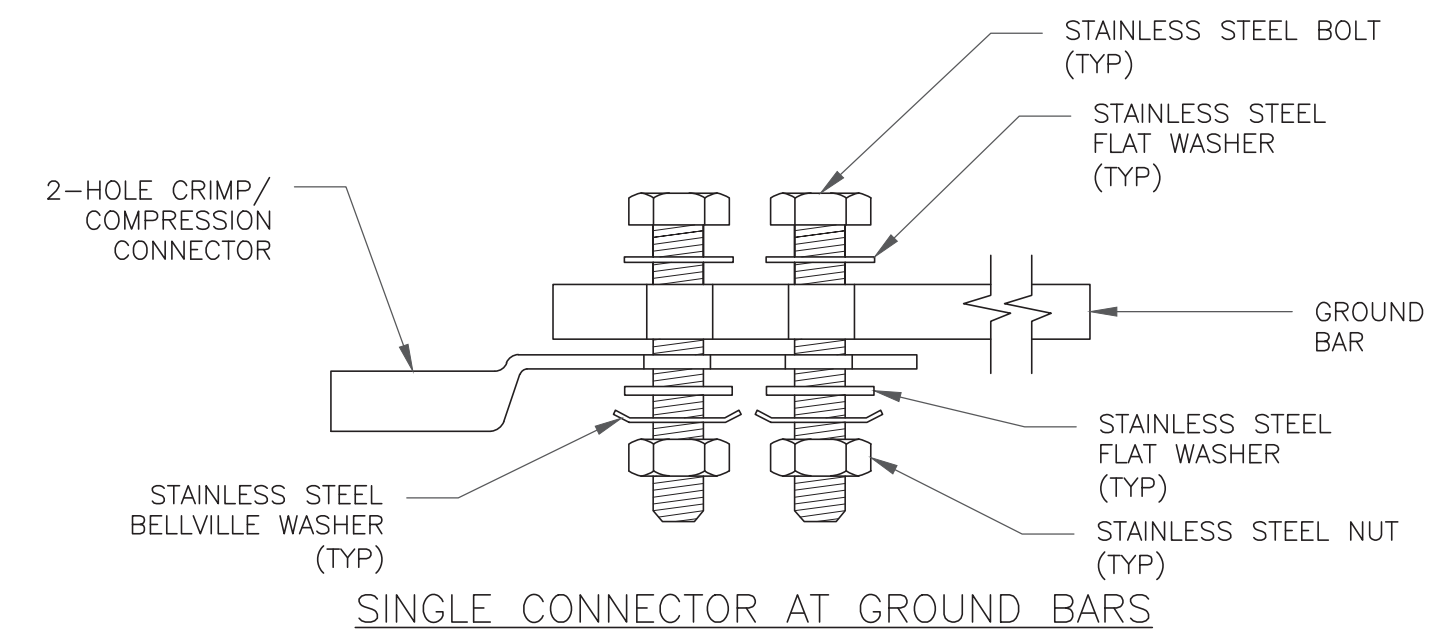
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



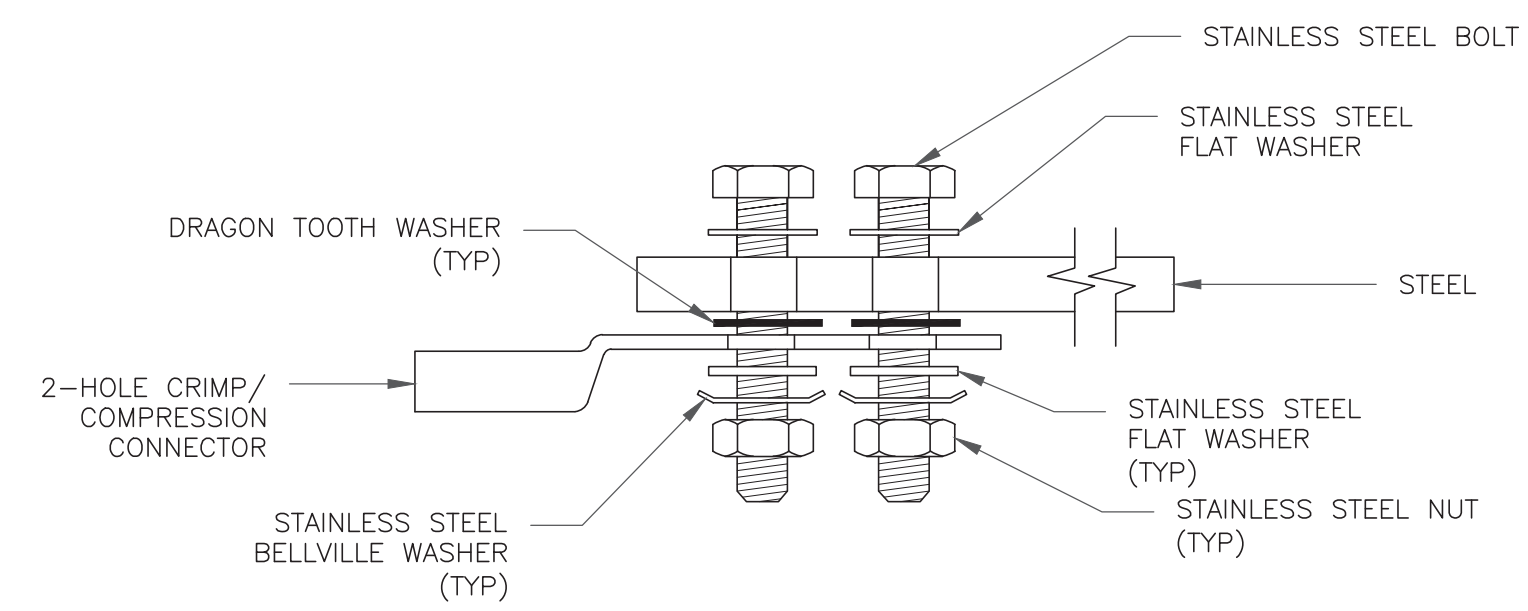
NOTES:

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

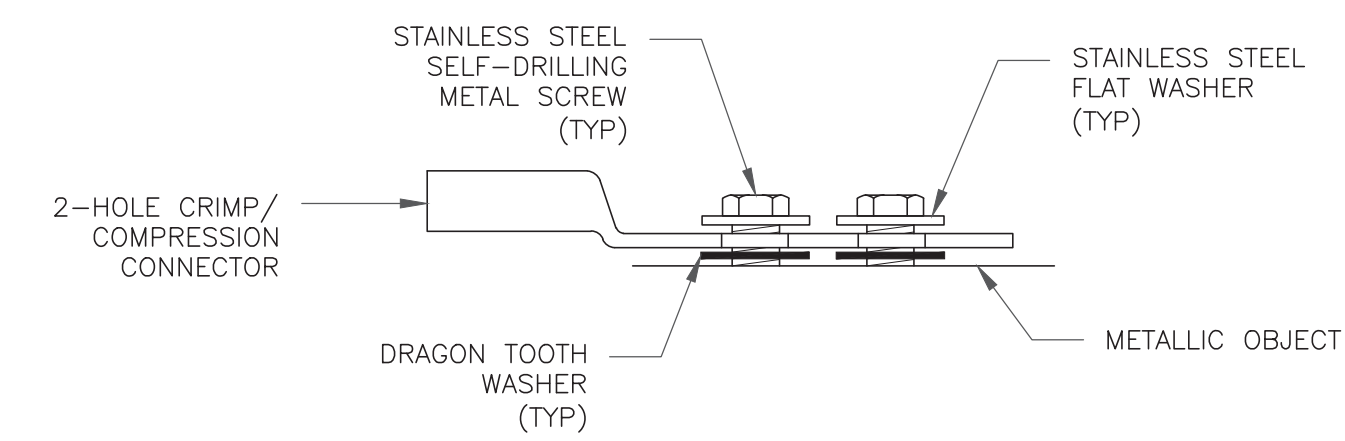
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



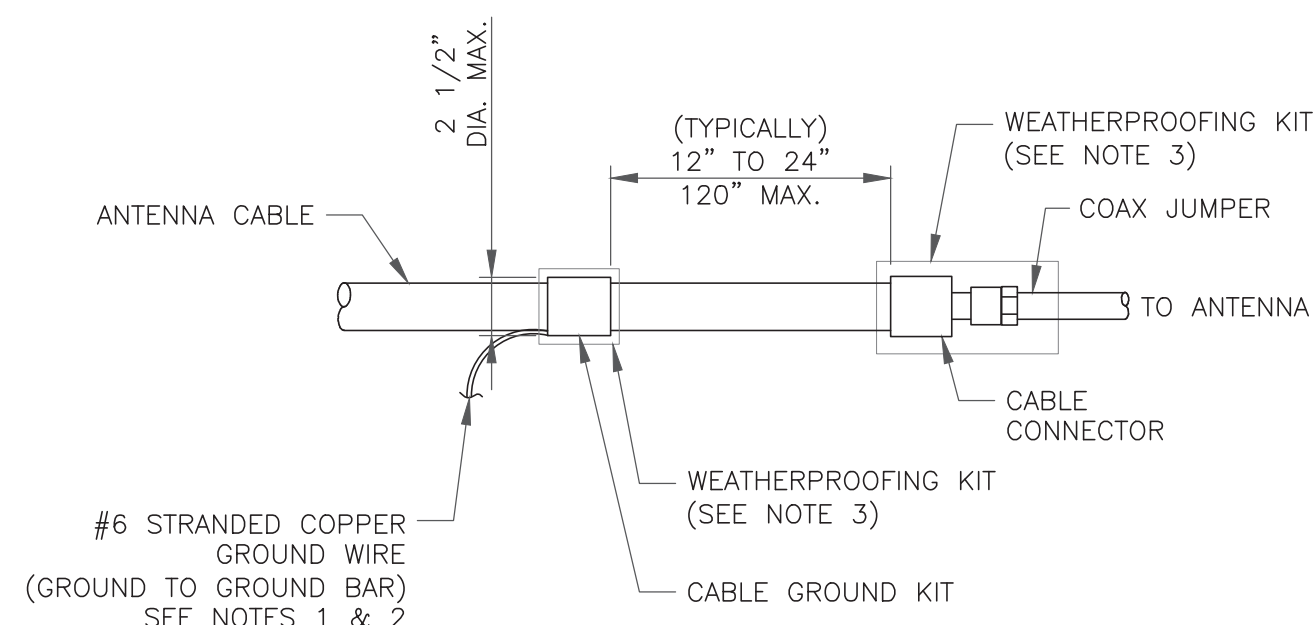
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



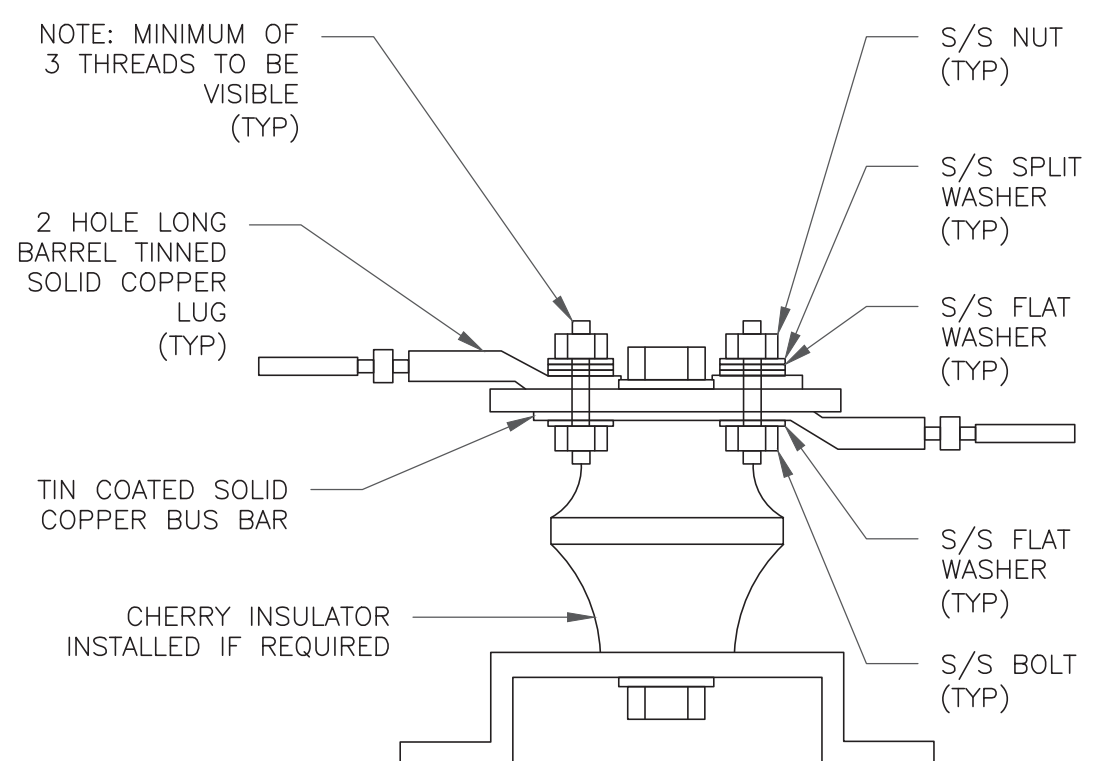
SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



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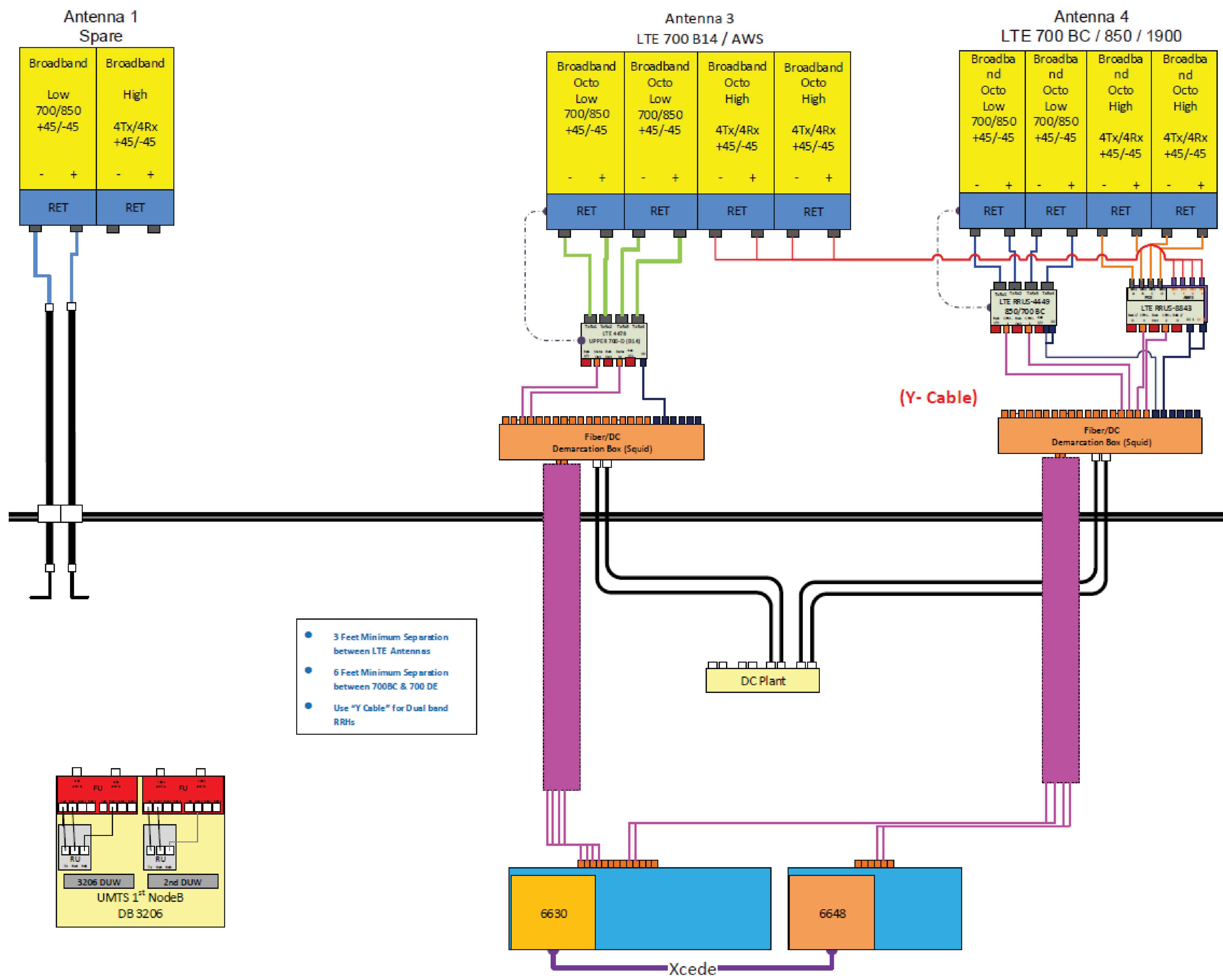
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SHEET NUMBER: **G-2** REVISION: **0**



GENERAL NOTES:

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

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 15TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVALITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
 - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
 - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
 - RECTANGULAR HSS TO BE A500, GRADE B. Fy=46 KSI, U.N.O.
 - ROUND HSS TO BE A500, GRADE B. Fy=42 KSI, U.N.O.
 - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
 - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
 - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
 - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
 - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
 - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
 - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

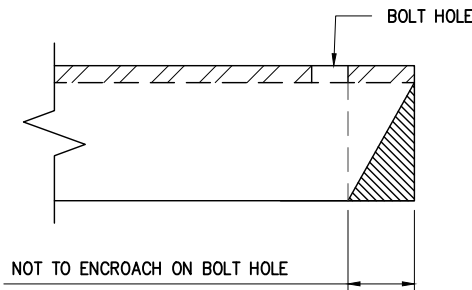
CONCRETE CONSTRUCTION NOTES:

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

SPECIAL INSPECTIONS NOTES:

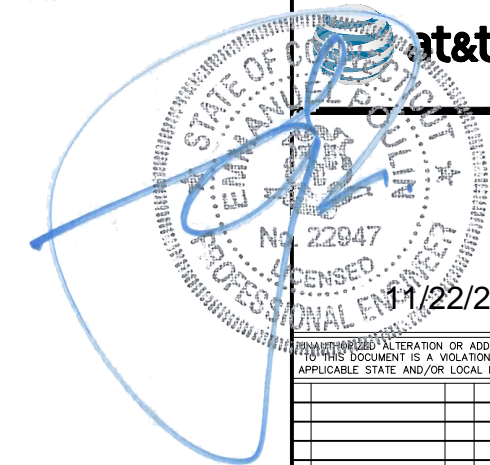
1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - a. STRUCTURAL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

MAXIMUM ALLOWABLE ANGLE CLIP



BOLT EDGE DISTANCE TABLE:

BOLT DIAMETER (IN)	MIN. REQUIRED EDGE DISTANCE (IN)
0.375	0.5
0.5	0.75
0.625	0.9375
0.75	1.125
0.875	1.25
1.0	1.5
1.125	1.6875
1.25 & OVER	1.5 x BOLT DIA.



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

at&t

11/22/22

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0	ISSUED FOR REVIEW	FA	11/22/22
No.	Submittal / Revision	App'd	Date

Drawn: BE Date: 11/22/22
 Designed: CK Date: 11/22/22
 Checked: NRD Date: 11/22/22

Project Number:
1039-Z0001-B

Project Title:
BU# 801485

CT SUFFIELD 1 CAC 801485

2715 MOUNTAIN RD.
 SUFFIELD, CT 06093

Prepared For:

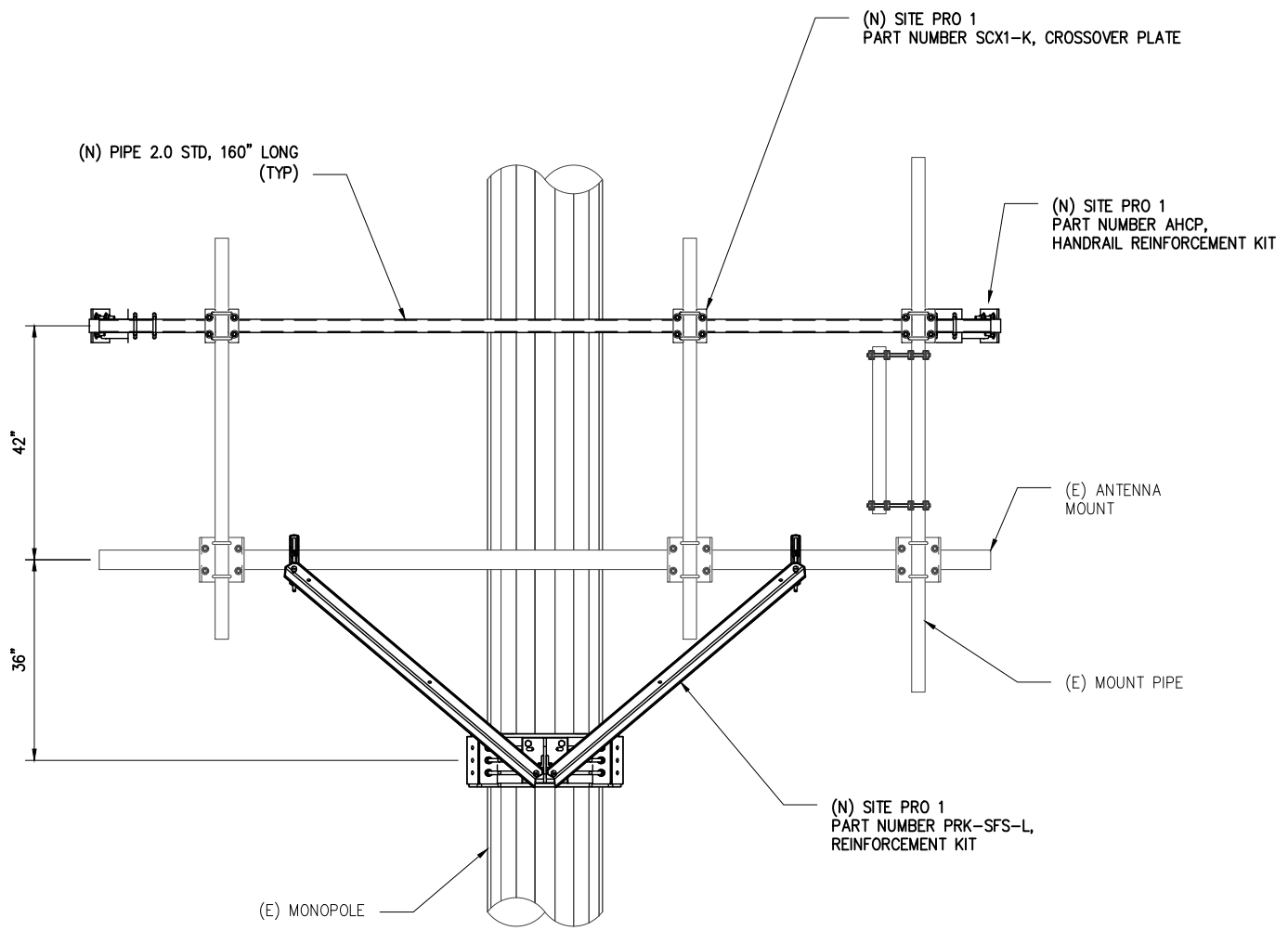
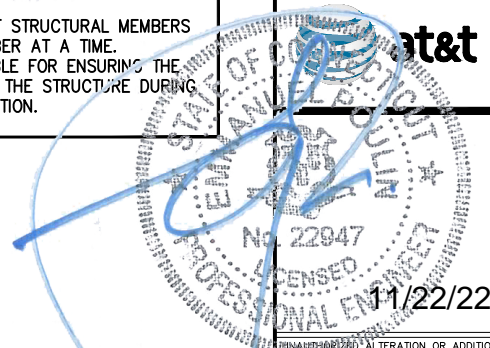
CROWN CASTLE
 3 Corporate Park, Suite 101
 Clifton Park, NY 12065
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Drawing Scale:
AS NOTED
 Date:
11/22/22

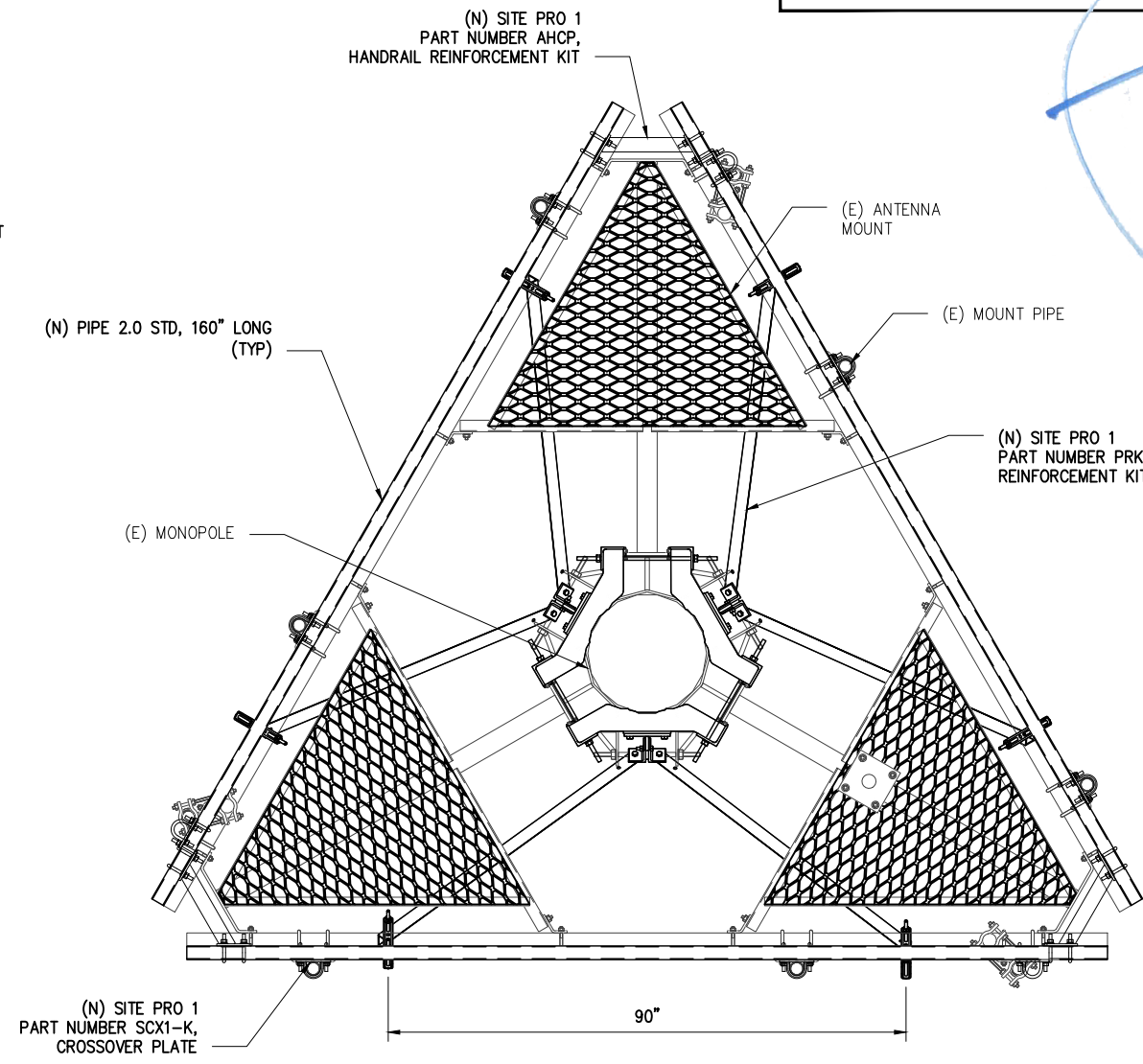
Drawing Title
GENERAL NOTES

Drawing Number
S-1

- NOTES:**
1. MODIFICATIONS SHOWN ARE TYPICAL FOR ALL SECTORS.
 2. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.
 3. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.
 4. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES, PIPES & PLATES, AND CUT & DRILL AS NECESSARY.
 5. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.



1 ELEVATION VIEW
 SCALE: NOT TO SCALE



2 PLAN VIEW
 SCALE: NOT TO SCALE

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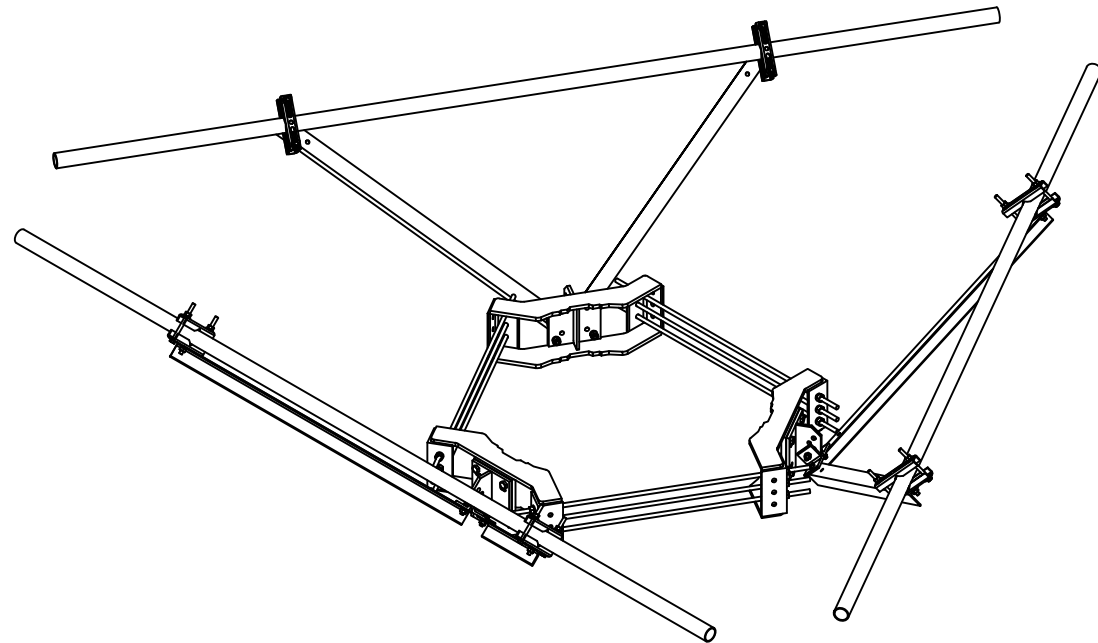
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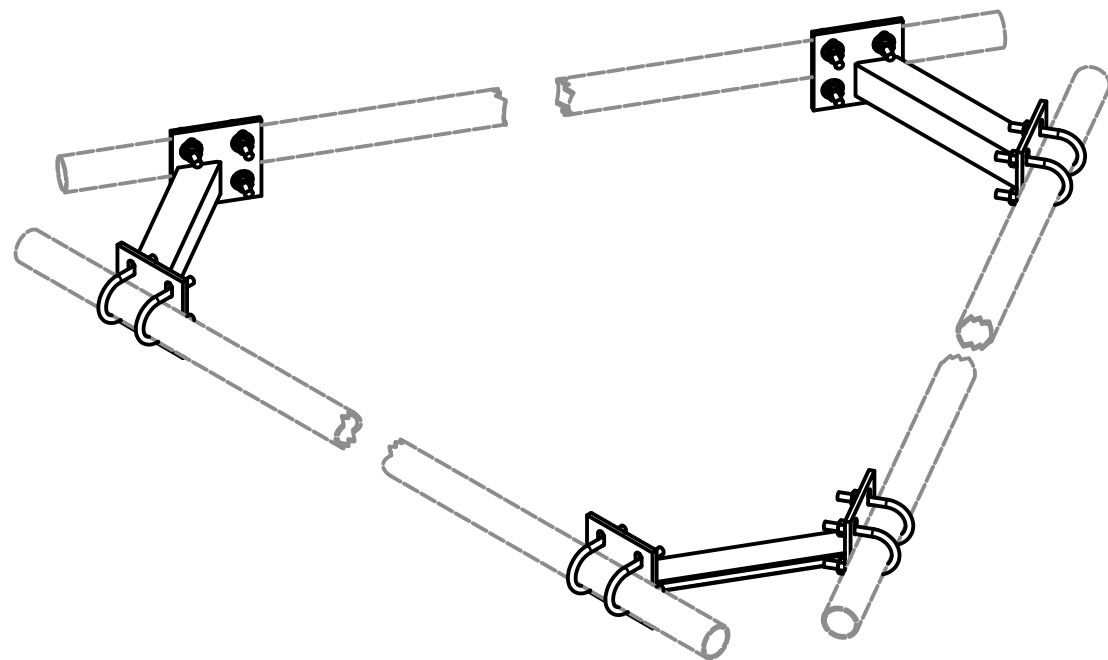
Date: 11/22/22

Drawing Title: **MODIFICATION DETAILS**

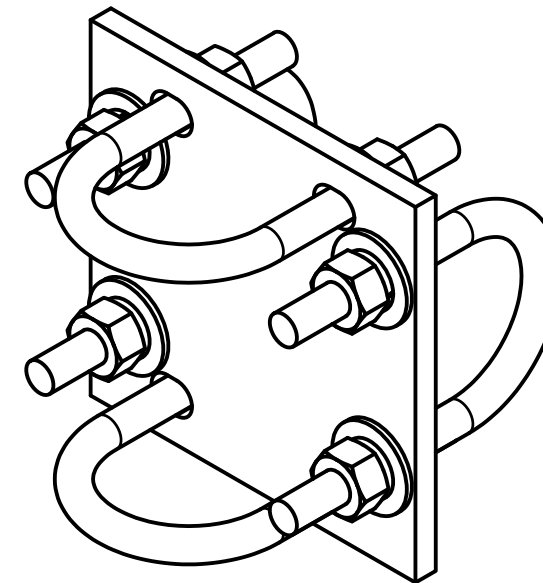
Drawing Number: **S-2**



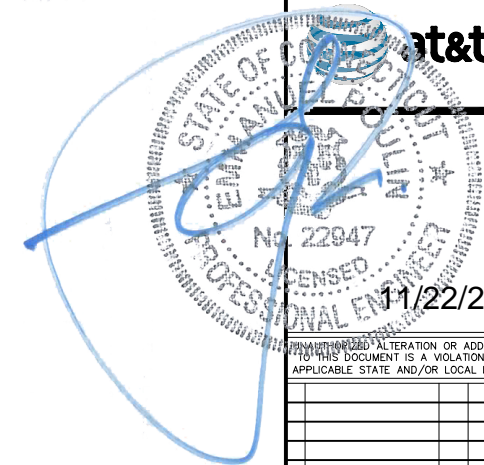
1 SITE PRO 1 P/N PRK-SFS-L
 -- SCALE: NOT TO SCALE



3 SITE PRO 1 P/N AHCP
 -- SCALE: NOT TO SCALE



2 SITE PRO 1 P/N SCX1-K
 -- SCALE: NOT TO SCALE



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at&t

STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 No. 22047
 11/22/22

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Drawing Scale: AS NOTED

Date: 11/22/22

Drawing Title
REQUIRED PARTS

Drawing Number
S-3