



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

October 3, 2022

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

RE: **Notice of Exempt Modification for ATT
Crown #876355; ATT Site ID CTL05186
474-480 Main Street, Monroe, CT 06468
Latitude: 41° 19' 31.99" / Longitude: -73° 15' 57.05"**

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 140-foot level of the existing 194-foot monopole tower at 474-480 Main Street, Monroe, CT. Crown Castle owns both the property and the tower. AT&T now intends to replace six (6) antennas with six (6) new antennas and ancillary equipment at the 140-foot level. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5G NR capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

- (6) CCI-OPA65R-BU6DA Antennas
 - (1) RAYCAP-DC6-48-60-18-8C-EV Squid
 - (3) Ericsson-4449 B5/B12 RRUs
 - (3) Ericsson-8843 B2/B66A RRUs
 - (3) Ericsson-4478 B14 RRUs
 - (1) 18-Pair Fiber Cable (3/8")
 - (2) 6AWG DC Cable (7/8")
 - (6) Y-CABLES for Dual Band Radios
 - (3) Dual Radio Mounts
- Install Mount Modifications per Mount Analysis

Remove:

- (3) P65-16-XLH-RR Antennas
- (3) POWERWAVE-7770 Antennas
- (3) ERICSSON-RRUS-11 B12 RRUs
- (6) POWERWAVE-LGP-21401 TMAs

The Foundation for a Wireless World.

CrownCastle.com

Ground:

Install New:

- (1) Outdoor DC12
- (1) 6630 w/IDLE Cable
- (1) XMU

Remove:

- (1) UMTS Cabinet
- (6) POWERWAVE-LGP-21901 Diplexers

The facility was approved by the Town of Monroe on October 17, 2000 (No. 10461).

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 Kenneth Kellogg for the municipality and Ron Baia, ZEO. Crown Castle owns both the property and the tower

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

Page 3

Attachments

cc:

First Selectman Kenneth Kellogg
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468
203-452-2821

Ron Baia, CZEO
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468
203-452-2809

Sprint/Crown Castle, Property Owner

Crown Castle, Tower Owner

From: TrackingUpdates@fedex.com
To: [Tatasciore, Domenica](#)
Subject: FedEx Shipment 770056397720: Your package has been delivered
Date: Tuesday, October 4, 2022 11:00:41 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 Tue, 10/04/2022 at
10:52am.



Delivered to 7 FAN HILL RD, MONROE, CT 06468
Received by C.CATHERINE S

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [770056397720](#)

FROM Domenica Tatasciore
1800 West Park Drive

Suite 200
WESTBOROUGH, MA, US, 01581

TO Town of Monroe
First Selectman Kenneth Kellogg
7 Fan Hill Road
MONROE, CT, US, 06468

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Mon 10/03/2022 05:29 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

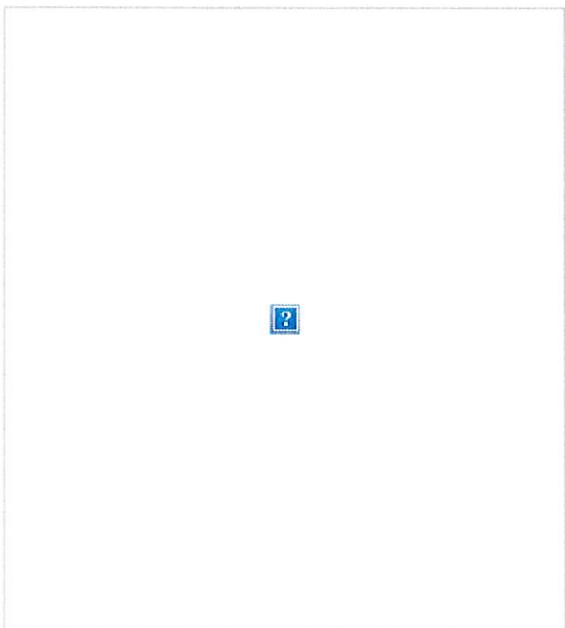
DESTINATION MONROE, CT, US, 06468

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 0.50 LB

SERVICE TYPE FedEx Priority Overnight



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From: TrackingUpdates@fedex.com
To: [Tatasciore, Domenica](#)
Subject: FedEx Shipment 770056408478: Your package has been delivered
Date: Tuesday, October 4, 2022 11:03:09 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.



Hi. Your package was
delivered Tue, 10/04/2022 at
10:53am.



Delivered to 7 FAN HILL RD, MONROE, CT 06468
Received by J.CHAPMAN

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [770056408478](#)

FROM Domenica Tatasciore
1800 West Park Drive

Suite 200
WESTBOROUGH, MA, US, 01581

TO Town of Monroe
Ron Baia, CCEO
7 Fan Hill Road
MONROE, CT, US, 06468

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

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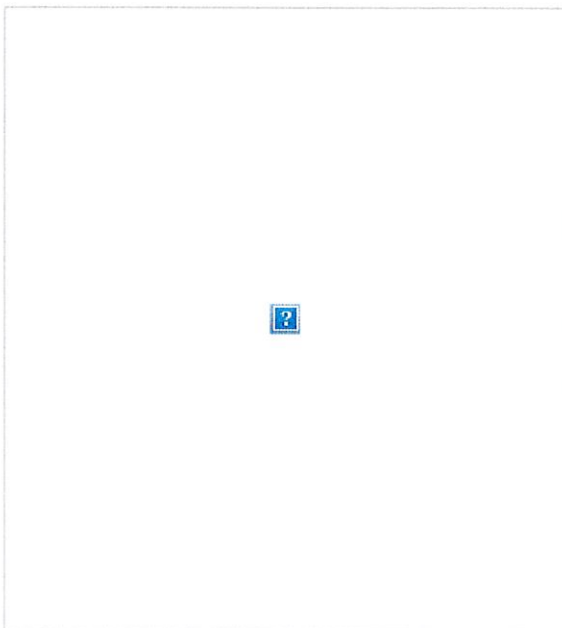
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Town of Monroe



OFFICE OF THE TOWN ENGINEERING DEPARTMENT

Town Hall
7 Fan Hill Road
Monroe, Connecticut 06468
Phone: (203) 452-5437
(203) 452-5438

July 10, 2000

Paul T. Tusch
Cacase, Tusch, Santagam
777 Summer Street
P.O. Box 15859
Stamford, CT. 06901-0859

Re: Sprint PCS
474-480 Main Street
Special Exception Permit

Dear Mr. Tusch:

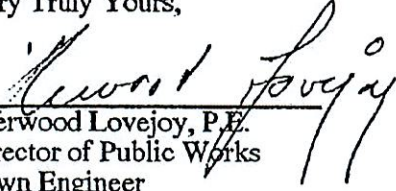
Please be advised that this department has reviewed the plans (4 pages) submitted for the above project and, although the design concept is generally acceptable, the following item should be addressed:

- 1) if the access roadway is to have a gravel surface (ie; not asphalt paved), construct the road using a minimum 6" depth of 3/4" medium coarse process gravel, shaped and crowned to control water runoff and compacted to 95%. Construct sufficient riprap leak offs to control erosion in road shoulder areas.

It is required that installation of the security fencing commence immediately following erection of the tower and continue non stop (without interruption) until completely installed.

If you have any questions, please contact my office at (203) 452-5438.

Very Truly Yours,


Sherwood Lovejoy, P.E.
Director of Public Works
Town Engineer

SL/fjm
JUL 10 2000

Town Hall
7 Fan Hill Road
Monroe, Connecticut 06468-1800



Phone (203) 452-5489
Pager (203) 396-7778

TOWN OF MONROE
OFFICE OF THE FIRE MARSHAL

June 27, 2000

Attorney Paul T. Tusch
Cacase, Tusch, Santagata
777 Summer Street
P. O. Box 15859
Stamford, CT 06901-0859

RE: Sprint PCS Tower , 474-480 Main Street

Dear Attorney Tusch,

I have reviewed the proposed Sprint PCS Tower located at TLC, 474-480 Main Street,
and my only requirements would be:

- Knox box system
- Access road be at least 20' wide

If you have any questions, please call me.

Sincerely,

A handwritten signature in cursive script that reads "Anthony Carpenter".

Anthony Carpenter
Fire Marshal

cd

TOWN OF MONROE, CONNECTICUT
PROVISIONAL CERTIFICATE
OF
ZONING COMPLIANCE



This is to certify that the proposed Commercial Tower - equipment compound
(structure, addition, etc) located at No. 480 (Lot No.) Main (Street, Road, Drive)
Application dated 10/17 2014, made by Andrew Sebestik
has been examined and based on the information contained in said application the proposal conforms to the Zoning Regulations of the Town of Monroe, dated 7-31-00
(Effective date of last amendment)

This provisional certificate expires one year from the date herein, or upon issuance of a permanent certificate of zoning compliance, whichever is first. Failure to obtain said permanent certificate prior to use shall constitute a violation of the Zoning Regulations of the Town of Monroe.

Dated at Monroe, Connecticut this 27th day of October, 2000
By: [Signature] (Zoning Enforcement Officer) (Planning Administrator)

NO 10461



TOWN HALL
7 Fan Hill Road
Monroe, Connecticut 06468
Phone (203) 452-5467
Fax (203) 261-6197

November 16, 2000

CERTIFIED MAIL RETURN RECEIPT REQUESTED 7009 3400 0007 9991 7695

Sprint PCS
1 International Blvd
Suite 800
Mahwah, NJ 07495

CONDITIONAL APPROVAL
Inland Wetlands Permit No. 00-23

Applicant: Sprint PCS

Property Owner " "

Property Location: 474-480 Main Street Assessor's Map No. 45 Parcel No. 21A & 22B

Plans & Preparer: URS Corporation AES 500 Enterprise Drive, Rocky Hill CT

PERMIT APPROVED (date): October 25, 2000. All appropriate conditions must be satisfied prior to site disturbance. **THIS APPROVAL IS NOT AN AUTHORIZATION TO START CONSTRUCTION.**

PERMIT EXPIRES: October 25, 2005

Permit duration is five (5) years. Additional extensions must be requested prior to expiration. A renewal fee will be required. **THIS PERMIT CANNOT BE REINSTATED IF IT EXPIRES.**

THIS PERMIT IS NOT TRANSFERABLE UNLESS THE NEW OWNER PROVIDES THE COMMISSION WITH A SIGNED ACKNOWLEDGMENT THAT HE UNDERSTANDS AND ACCEPTS THE CONDITIONS OF APPROVAL.

Commission's findings and resolution: The following resolution was adopted by the Inland Wetlands Commission.

Condapp-00-23

Be it resolved that Inland Wetland Permit Application No. 00-23 is hereby approved based upon the findings and subject to the modifications and conditions hereinafter set forth.

The Commission reviewed the application and the site plan and determined there will be no significant impact and the application does not warrant a public hearing. There was also no public interest demonstrated.

The Commission finds that the proposed activities are located entirely within the regulated setback and there will be no direct wetland disturbance.

MODIFICATIONS AND CONDITIONS:

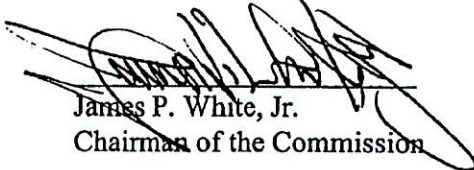
- 1) The excavated trench shall be refilled, seeded and stabilized immediately after completion of the utility installation.
- 2) Access to the construction area will be by existing roads.

STANDARD CONDITIONS:

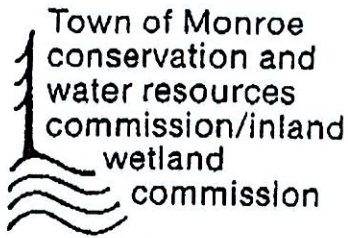
- 1) Regulated activities herein shall be implemented by the permittee in accordance with the timing, location, duration and intent proposed and approved by the Commission.
- 2) Notice of assignment or transfer of the permit must be given to the Commission immediately. Failure to do so may invalidate your permit.
- 3) Install sediment and erosion controls prior to soil disturbance and maintain them during construction and remove them prior to requesting final inspection.
- 4) Any changes in the approved plans must be approved by the Commission. This includes changes required by any other agency.
- 5) The posting of a cash or passbook savings account may be required at any time during construction by the Inland Wetlands Commission for erosion controls or any required wetland mitigation measures, in an amount to be determined by the Commission or its agent.
- 6) For the purpose of making site inspections of sediment and erosion controls, the permittee shall provide forty-eight (48) hours notice prior to site disturbance.
- 7) Anti tracking aprons shall be installed on all road and driveway exits with six (6) inches in depth of crushed stone spread to the traveled width, forty (40) feet long and underlain with construction fabric.
- 8) In the event an appeal is taken from this decision the applicant shall provide the Commission with three (3) sets of all plans, reports and documents in support of the application within thirty (30) days.
- 9) Heating oil tanks will not be buried anywhere on the property.

This application is approved with the above conditions and/or modifications. This decision and these conditions are consistent with the purposes of the wetland regulations which are designed to protect the citizens of Monroe by providing a balance between the need for growth, development and enjoyment of the Town's natural resources with the need to protect its' environment and ecological stability.

cc: Dean Gustafson, Applicants Agent



James P. White, Jr.
Chairman of the Commission



TOWN HALL
7 Fan Hill Road
Monroe, Connecticut 06458
Phone (203) 452-5467
Fax (203) 251-6197

July 11, 2000

URS Greiner Woodward Clyde
500 Enterprise Drive
Rocky Hill, CT 06067

RE: Sprint PCS Upper Stepney

Dear Mr. Clyde:

Based on my review of the site plan for Sprint PCS Upper Stepney dated June 23, 2000, An Inland Wetland permit will not be required for this project.

Please contact me if you have any questions.

Yours truly,

Richard B. Jacobson
Wetland Consultant

gw
cc: Planning and Zoning

Rjclyde

474 MAIN ST

Location 474 MAIN ST

Map/Lot 045/ 022/ 0Z/ /

Acct# 0450220Z

Owner SPRINT PCS

Assessment \$714,000

Appraisal \$1,020,000

PID 16240

Building Count 1

Survey 1676 B

Affordable

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$840,000	\$180,000	\$1,020,000

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$588,000	\$126,000	\$714,000

Owner of Record

Owner	SPRINT PCS	Sale Price	\$0
Co-Owner	GLOBAL SIGNAL ACQ II LLC	Certificate	1
Address	PMB 331 4017 WASHINGTON RD MCMURRAY, PA 15317	Book & Page	0943/0187
		Sale Date	04/27/2001
		Instrument	

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SPRINT PCS	\$0	1	0943/0187		04/27/2001

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Building Attributes

Field	Description
Style:	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Cndtn	
Wdstv Flues	
Basement Gar.	
Num Park	
Fireplaces	
Attic	
Basement	
In Law Apt	
Fndtn Cndtn	
Basement	

Building Photo



(<https://images.vgsi.com/photos/MonroeCTPhotos/A00\01\38\43.jpg>)

Building Layout

(https://images.vgsi.com/photos/MonroeCTPhotos/Sketches/16240_16240.jpg)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

No Data for Extra Features

Parcel Information

Use Code 431
Description TEL REL TW
Deeded Acres 0.06

Land

Land Use

Use Code 431
Description TEL REL TW
Zone B1
Neighborhood
Alt Land Approved No
Category

Land Line Valuation

Size (Acres) 0.06
Appraised Value \$180,000

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CELL	Cell Tower Unit			4.00 UNIT	\$840,000	1

Valuation History

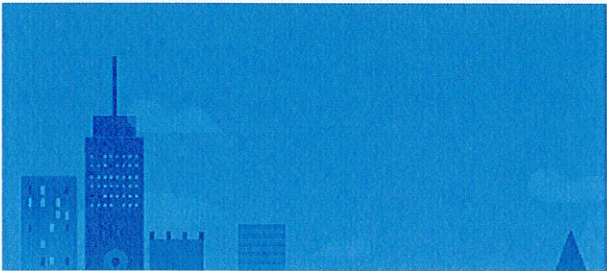
Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$840,000	\$180,000	\$1,020,000

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$588,000	\$126,000	\$714,000

Google Maps 474 Main St



Imagery ©2022 Maxar Technologies, New York GIS, USDA/FPAC/GEO, Map data ©2022 100 ft



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



Site Name:	MONROE-MIAN STREET
Crown Castle Site#	876355
Site ID:	CTL05186
Project Name:	LTE
Address:	474-480 MAIN STREET, MONROE, CT 06468
County:	FAIRFIELD
Latitude:	41.3256919
Longitude:	-73.2663989
Structure Type:	MONOPOLE
Property Owner:	SEVEN FORTY TWO NURSERY LLC
Property Contact:	VERONICA CHAPMAN

AT&T Existing Facility

Report Information

Report Writer:	Sushil Dogra	Report Generated Date:	09-17-2022
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Site Compliance Statement

Compliance Status	Compliant
Cumulative General Population % MPE (Ground Level)	20.71%

September 17, 2022

Emissions Analysis for Site: **CTL05186– MONROE-MIAN STREET**

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **474-480 MAIN STREET, MONROE, CT 06468**, 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/cm²). The number of mW/cm² calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the 700 and 850 MHz Bands are approximately 0.467 mW/cm² and 0.567 mW/cm² respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3450 MHz (DoD Band) and 3840 MHz (C Band) bands is 1 mW/cm². Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure 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

Calculations were done for the proposed AT&T Wireless antenna facility located at **474-480 MAIN STREET, MONROE, CT 06468** using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 4 LTE channels (700 MHz Band 12) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 2) 4 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 LTE/5G channels (2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) 4 LTE channels (700 MHz Band 14) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 4 LTE/5G channels (1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 8) The antennas used in this modeling are the CCI OPA65R-BU6D for the 700 MHz(Band 12) / 850 MHz / 2100 MHz channel(s), the CCI OPA65R-BU6D for the 700 MHz(B14) / 1900 MHz channel(s) in Sector A, CCI OPA65R-BU6D for the 700 MHz(Band 12) / 850 MHz / 2100 MHz channel(s), the CCI OPA65R-BU6D for the 700 MHz(B14) / 1900 MHz channel(s) in Sector B, CCI OPA65R-BU6D for the 700 MHz(Band 12) / 850 MHz / 2100 MHz channel(s), the CCI OPA65R-BU6D for the 700 MHz(B14) / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerline of the proposed antennas is 140 feet above ground level (AGL).
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 11) All calculations were done with respect to uncontrolled / general population threshold limits.

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 (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Total Ant Transmitter Power (Watts)	Total Ant ERP(Watts)	Ant MPE%
A	1	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	30	73	12.15	6	4	160.00	2625.89	4306.46	480	12302.22	3.26%
A	1	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	30	64	13.05	6	4	160.00	3230.55	5298.10			
A	1	AT&T	CCI	OPA65R-BU6D	Panel	2100	LTE/5G	30	69	16.05	6	4	160.00	6445.79	10571.10			
A	2	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B14)	30	73	12.15	6	4	160.00	2625.89	4306.46	320	8924.95	2.19%
A	2	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	30	68	15.95	6	4	160.00	6299.07	10330.47			
B	3	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	150	73	12.15	6	4	160.00	2625.89	4306.46	480	12302.22	3.26%
B	3	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	150	64	13.05	6	4	160.00	3230.55	5298.10			
B	3	AT&T	CCI	OPA65R-BU6D	Panel	2100	LTE/5G	150	69	16.05	6	4	160.00	6445.79	10571.10			
B	4	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B14)	150	73	12.15	6	4	160.00	2625.89	4306.46	320	8924.95	2.19%
B	4	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	150	68	15.95	6	4	160.00	6299.07	10330.47			
C	5	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	270	73	12.15	6	4	160.00	2625.89	4306.46	480	12302.22	3.26%
C	5	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	270	64	13.05	6	4	160.00	3230.55	5298.10			
C	5	AT&T	CCI	OPA65R-BU6D	Panel	2100	LTE/5G	270	69	16.05	6	4	160.00	6445.79	10571.10			
C	6	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B14)	270	73	12.15	6	4	160.00	2625.89	4306.46	320	8924.95	2.19%
C	6	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	270	68	15.95	6	4	160.00	6299.07	10330.47			

Table 2.1: Antenna Inventory & Power Data

Cumulative Site MPE%	
Carrier	MPE%
AT&T (Max MPE% at Sector A)	5.45%
T-Mobile	5.21%
Sprint	2.49%
Verizon	7.56%
Site Total MPE%	20.71%

Table 2.2: Cumulative Site MPE%

AT&T Max MPE% Per Sector	
AT&T Sector A Total	5.45%
AT&T Sector B Total	5.45%
AT&T Sector C Total	5.45%
Site Total MPE%	20.71%

Table 2.3: AT&T MPE% Per Sector

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	FREQ. (MHz)	TECH.	#of Channels	Transmitter Power (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Total Power Density (mW/cm ²)	Allowable MPE (mW/cm ²)	Calculated MPE%
A	1	AT&T	CCI	OPA65R-BU6D	700	LTE(B12)	4	160.00	2625.89	4306.46	140.00	0.004820	0.467	1.03%
A	1	AT&T	CCI	OPA65R-BU6D	850	5G	4	160.00	3230.55	5298.10	140.00	0.005930	0.567	1.05%
A	1	AT&T	CCI	OPA65R-BU6D	2100	LTE/5G	4	160.00	6445.79	10571.10	140.00	0.011831	1.000	1.18%
A	2	AT&T	CCI	OPA65R-BU6D	700	LTE(B14)	4	160.00	2625.89	4306.46	140.00	0.004820	0.467	1.03%
A	2	AT&T	CCI	OPA65R-BU6D	1900	LTE/5G	4	160.00	6299.07	10330.47	140.00	0.011562	1.000	1.16%
													Total	5.45%

Table 2.4: Detailed MPE% at AT&T Sector A

3. Compliance Summary

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

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A	5.45%
Sector B	5.45%
Sector C	5.45%
AT&T Maximum Total (per sector)	5.45%
Site Total MPE%	
	20.71%
Site Compliance Status	
	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is 20.71% of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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: July 19, 2022



MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject: Mount Analysis- Conditional Passing Report

Carrier Designation: AT&T Mobility Equipment Change-Out
Carrier Site Number: 5186
Carrier Site Name: Monroe-Mian Street
Carrier Site FA: 10091776

Crown Castle Designation: BU Number: 876355
Site Name: Upper Stepney - TLC
JDE Job Number: 715660
Order Number: 614869, Rev.0

Engineering Firm Designation: Report Designation: 137165.006.01

Site Data: 474-480 Main St., Monroe, CT, Fairfield County, 06468
Latitude 41° 19' 31.99" Longitude -73° 15' 57.05"

Structure Information: Tower Height & Type: 191.5 ft. Monopole
Mount Elevation: 137 ft.
Mount Type: 12.5 ft. Platform Mount

We are pleased to submit this “Mount Analysis - Conditional Passing Report” to determine the structural integrity of AT&T Mobility’s antenna mounting system with the proposed appurtenance and equipment addition on the above mentioned 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’s stress level. Based on our analysis we have determined the stress level to be:

Platform Mount

Sufficient

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

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 117 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Joseph Variamparampil

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER: 2386985 Expires: 03/31/2023

Chad E. Tuttle, P.E.



TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Documents Provided

3) ANALYSIS PROCEDURE

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

4.1) Recommendations

5) APPENDIX A

Wire Frame and Rendered Models

6) APPENDIX B

Software Input Calculations

7) APPENDIX C

Software Analysis Output

8) APPENDIX D

Additional Calculations

1) INTRODUCTION

This is an existing 3 - sector 12.5 ft. Platform Mount, mapped by MTS Engineering, P.L.L.C.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	117 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s :	0.213
Seismic S_1 :	0.055
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Manufacturer	Model / Type	Mount / Modification Details
137	140	6	CCI Antennas	OPA-65R-BU6DA-K	12.5 ft. Platform Mount
		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	
		1	Raycap	DC6-48-60-18-8F	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 07/13/2022	Crown Castle
RFDS		Date: 06/20/2022	
Mount Mapping	MTS Engineering, P.L.L.C.	Date: 06/22/2022	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 20.0.2), 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.

A tool internally developed by MTS Engineering, P.L.L.C, 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.

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's *Mount Technical Directive*

- R22.0

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Proposed Mount Pipes	2" Std. Pipe	6'-0"	Attached To Support Arms, All Sectors

5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. MTS Engineering, P.L.L.C 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 Mount)

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	137	51	21.8	Pass
	Support Rails		89	65.7	Pass
	Support Arms		1	95.4	Pass
	Support Channels		2	46.9	Pass
	Support Angles		16	31.9	Pass
	Mount Pipes		72	90.7	Pass
	Connection Plates		5	38.0	Pass
	Connection Angles		88	48.6	Pass
3	Mount to Tower Connection		-	37.02	Pass

Structure Rating with Recommendations (max from all components) =	90.7%
--	--------------

Notes:

- 1) Capacities listed are based on recommendations listed in Sec.4.1 being installed.
- 2) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

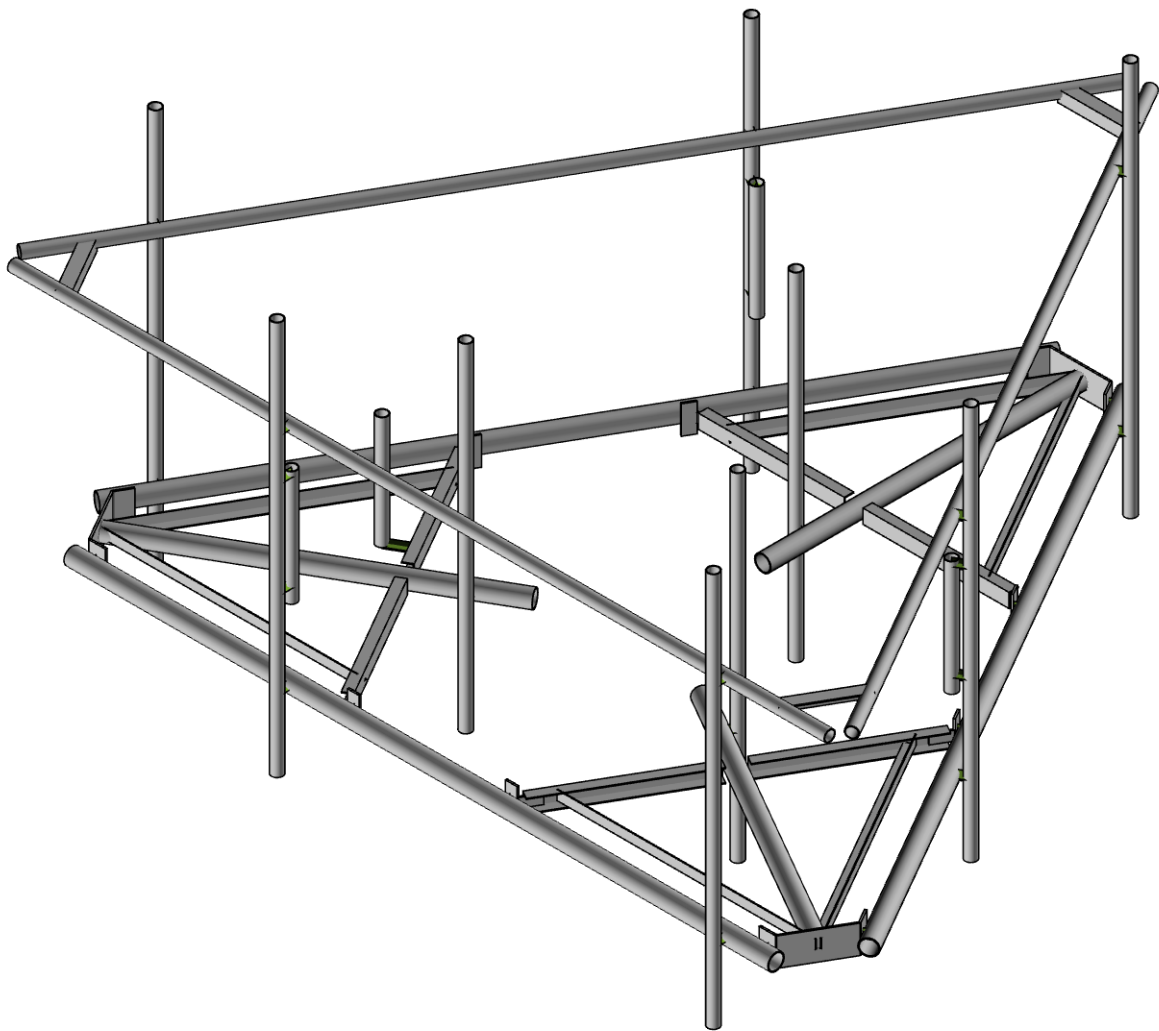
4.1) Recommendations

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 modification listed below must be completed.

1. Install (1) new Support rail kit SitePro1 Part# HRK-14 P/N: ANT.51647, 4'-0" above the existing main horizontals.
2. Install (3) new 2" Std. x 6'-0" long mount pipe (P/N: or equivalent approved Conmat item) attached to support arms in order to accommodate proposed RRHs.
3. Relocate existing mount pipes to achieve the required spacing.

No modifications are required at this time provided that the above-listed changes are completed.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

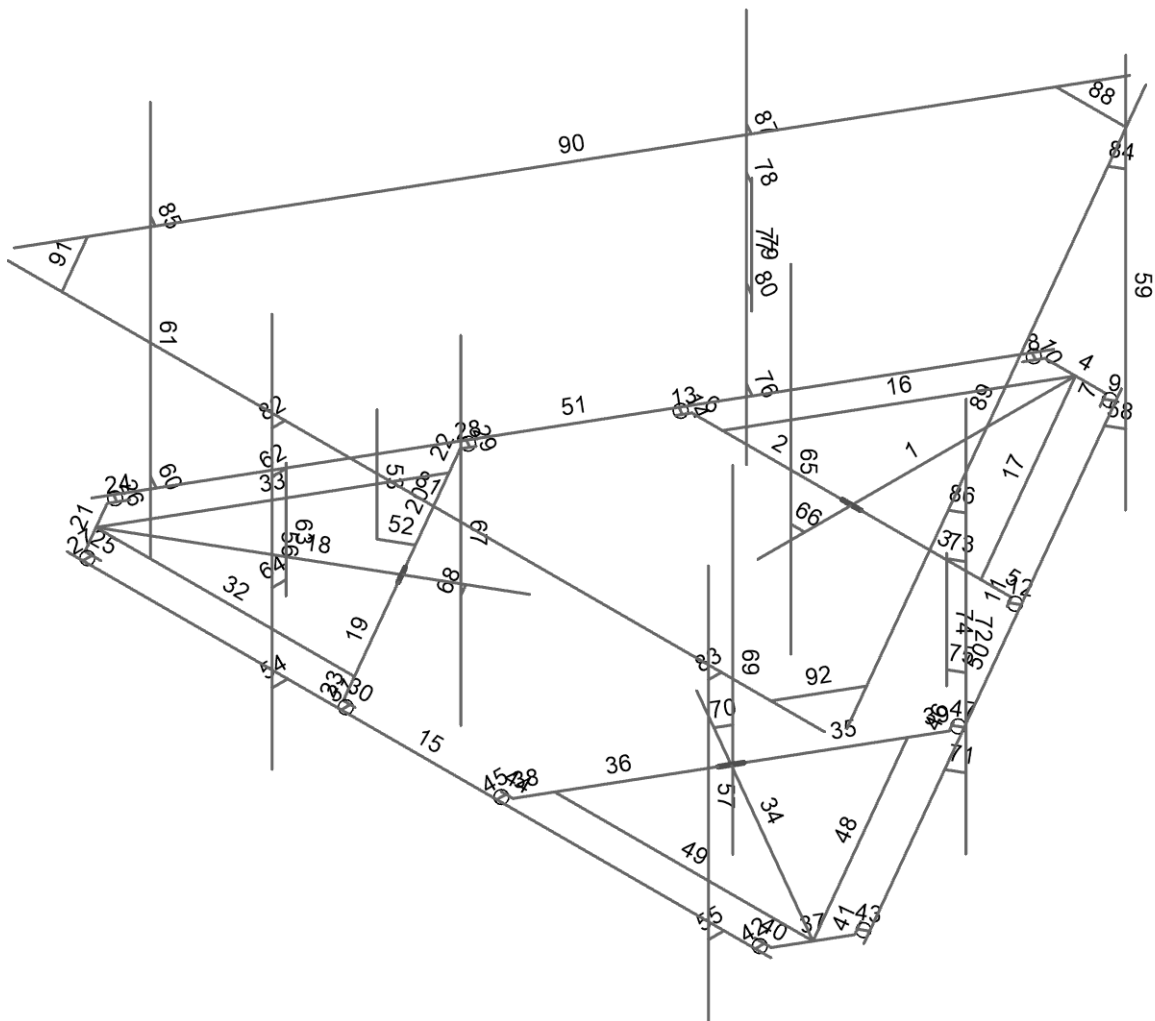
MTS Engineering, P.L.L.C
KP
137165.006.01

876355 - Upper Stepney - TLC

SK-1

Jul 19, 2022

137165_006_01_Upper Stepney - ...



Envelope Only Solution

MTS Engineering, P.L.L.C

KP

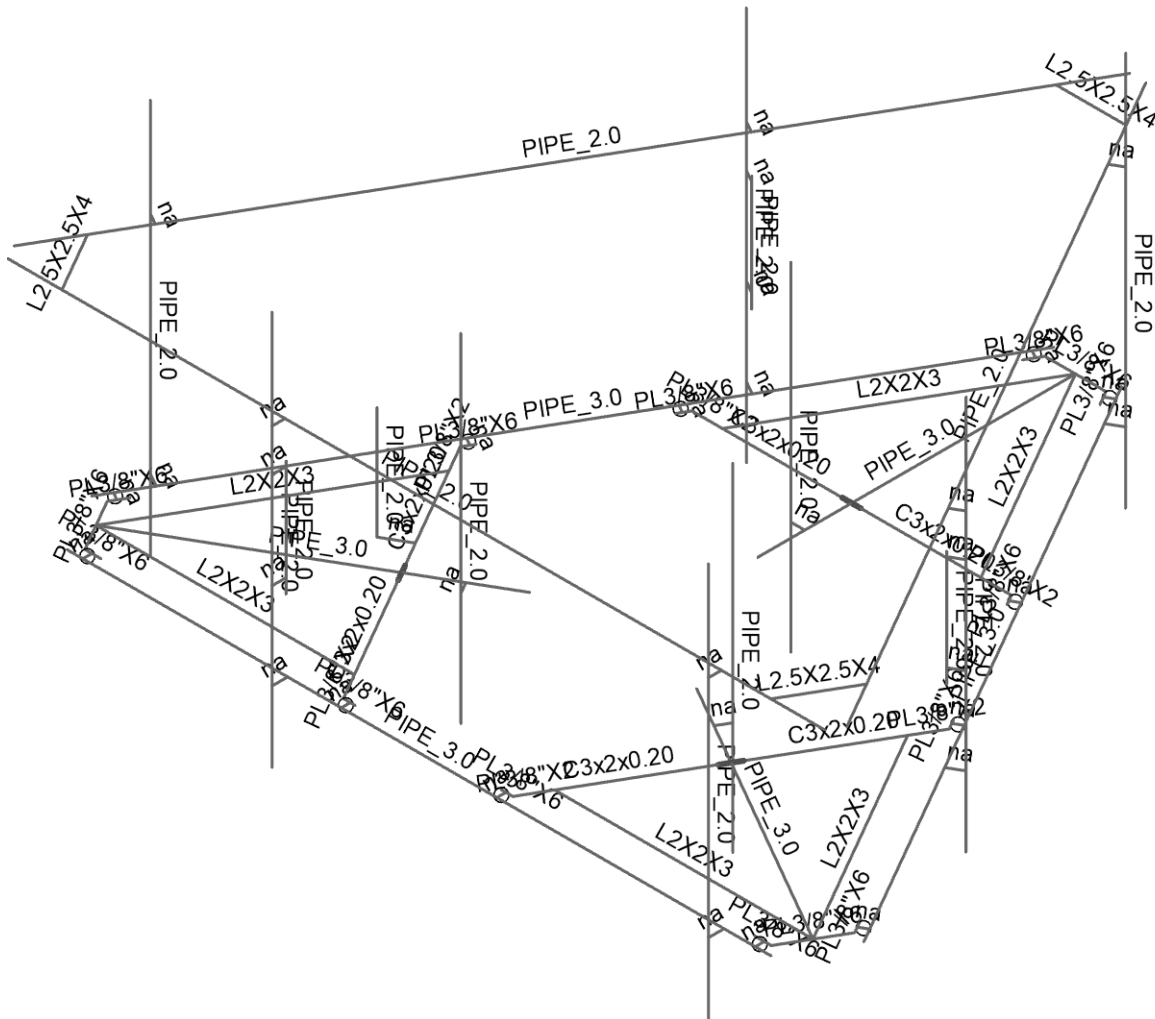
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876355 - Upper Stepney - TLC

SK-2

Jul 19, 2022

137165_006_01_Upper Stepney - ...



Envelope Only Solution

MTS Engineering, P.L.L.C

KP

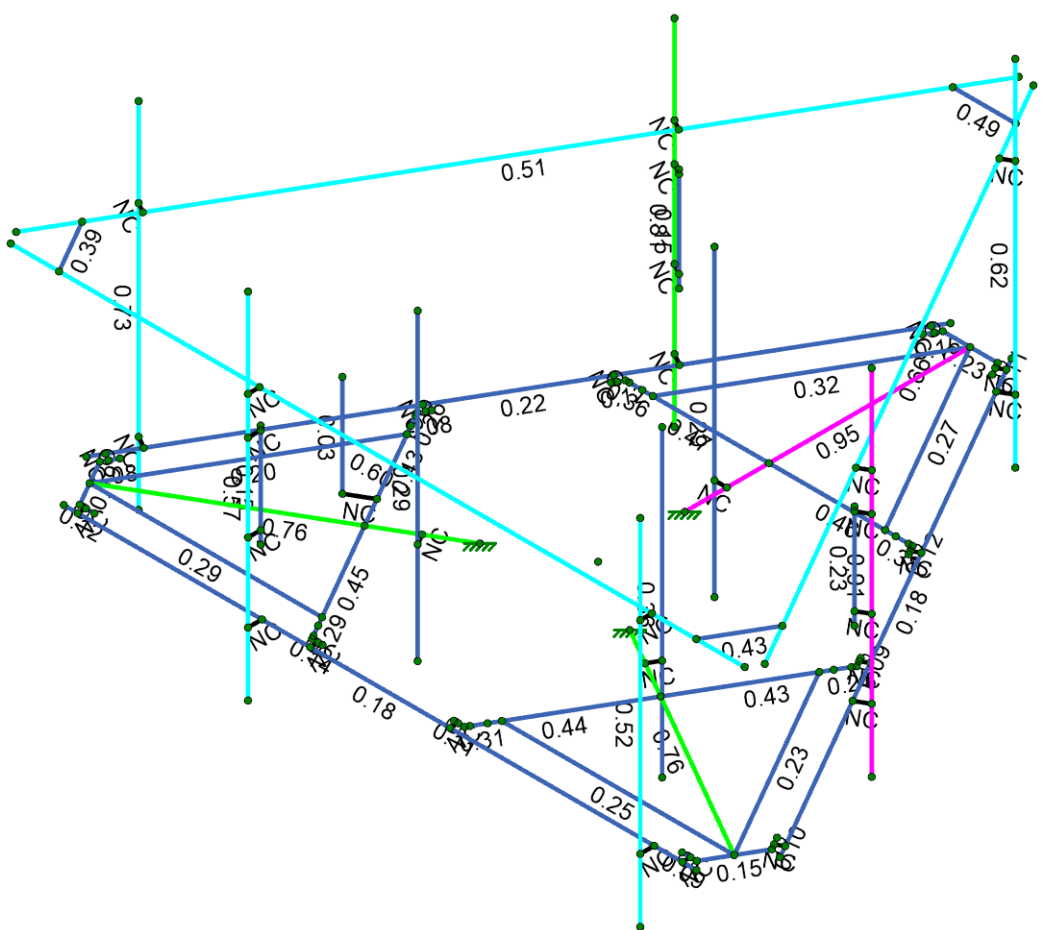
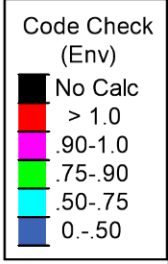
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876355 - Upper Stepney - TLC

SK-3

Jul 19, 2022

137165_006_01_Upper Stepney - ...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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JV
137165.006.01

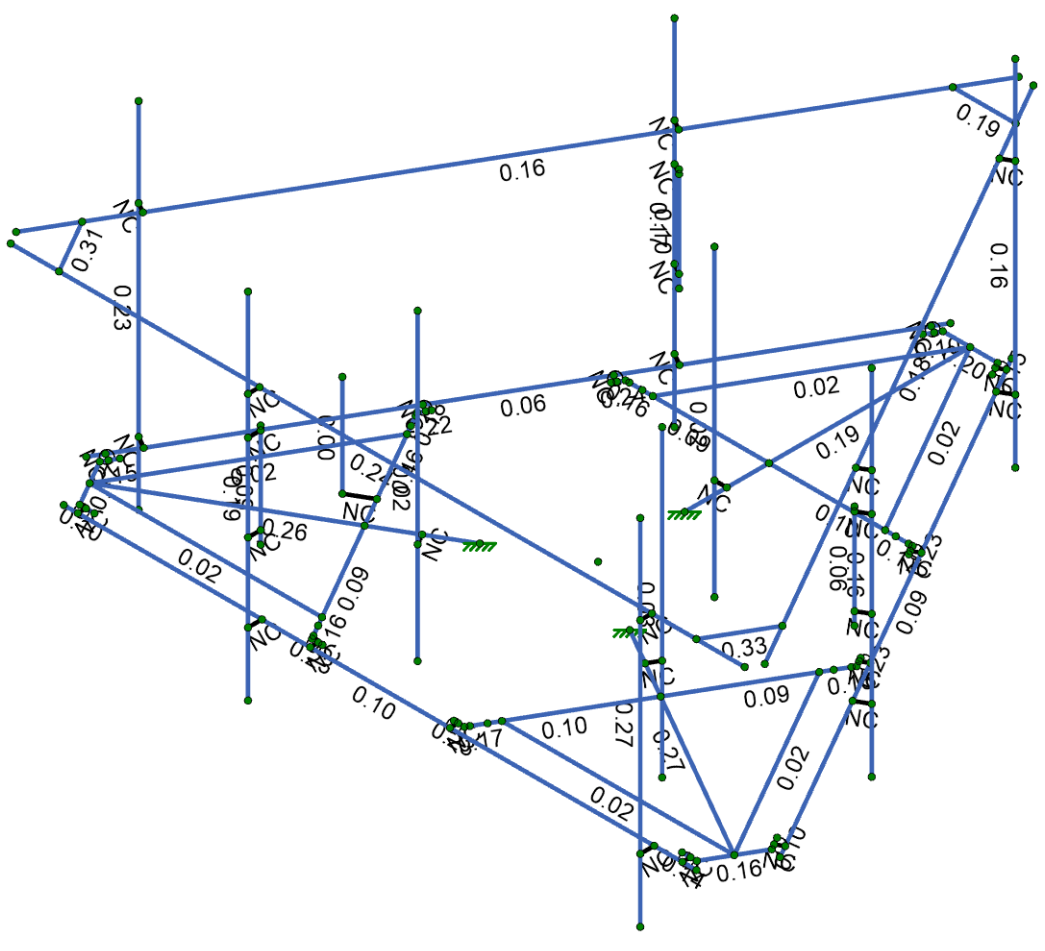
876355 - Upper Stepney - TLC

SK-1
Jul 19, 2022
137165_006_01_Upper Stepney - ...



Shear Check (Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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JV
137165.006.01

876355 - Upper Stepney - TLC

SK-2
Jul 19, 2022
137165_006_01_Upper Stepney - ...

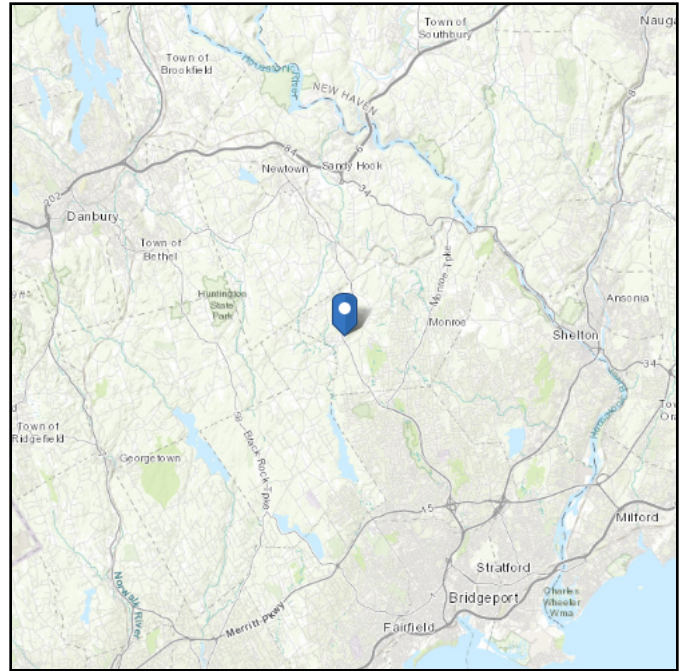
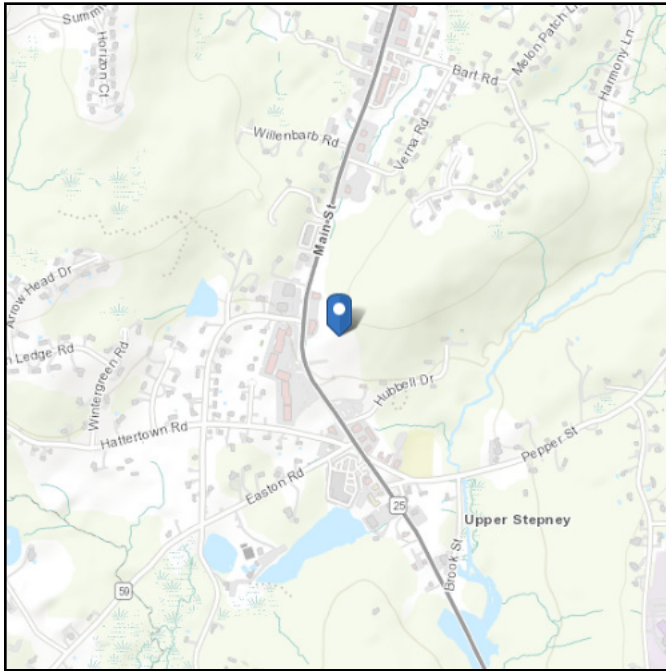
APPENDIX B
SOFTWARE INPUT CALCULATIONS

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: 445.89 ft (NAVD 88)
Latitude: 41.325553
Longitude: -73.265847



Wind

Results:

Wind Speed	117 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Jul 15 2022

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

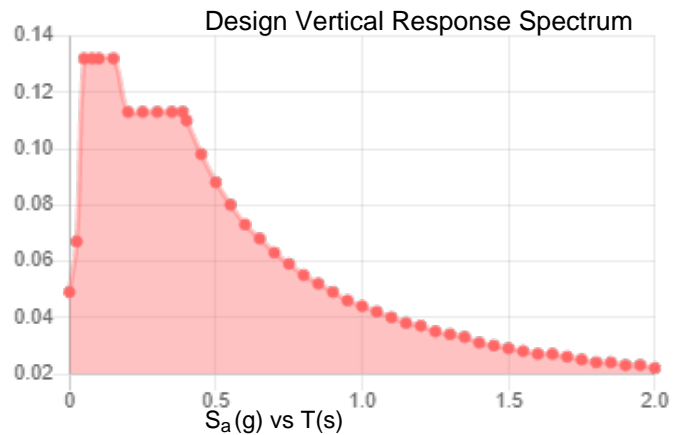
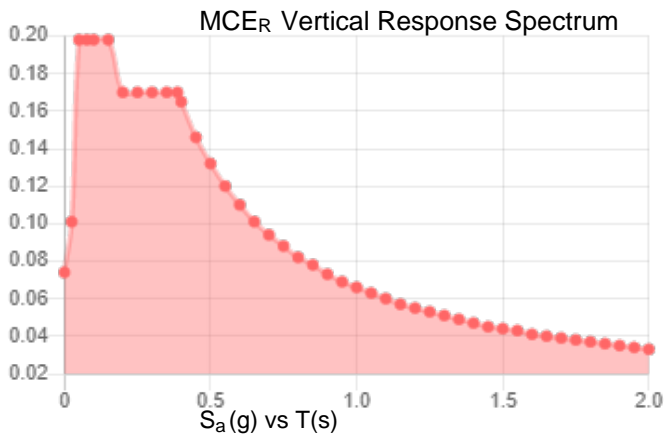
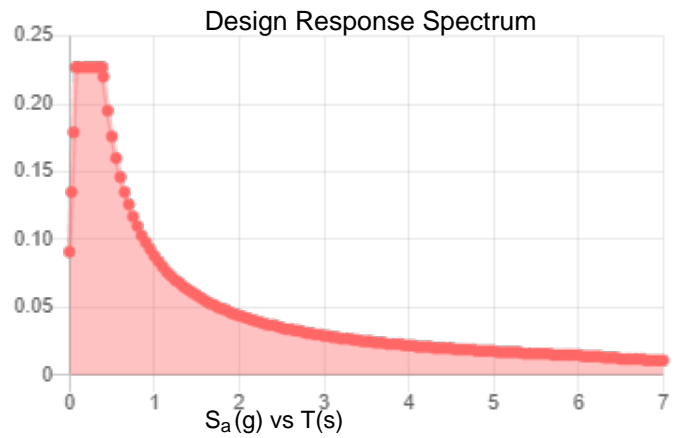
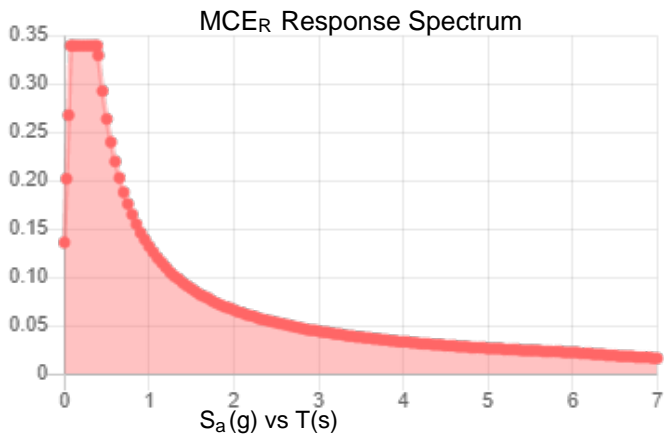
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.213	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.121
F_v :	2.4	PGA _M :	0.189
S_{MS} :	0.34	F_{PGA} :	1.558
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.227	C_v :	0.726

Seismic Design Category B



Data Accessed: Fri Jul 15 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

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

Date Accessed: Fri Jul 15 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.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

PROJECT	137165.006.01 - Upper Stepney - TLC, KSC	
SUBJECT	Platform Mount Analysis	
DATE	07/19/22	



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s	: 446 ft	[ASCE7 Hazard Tool]
Tower Height	:	191.50 ft	
Mount Elevation	:	137.00 ft	
Antenna Elevation	:	140.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	: 117 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	: 50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	: 30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	: 1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S	: 0.21	
	S_1	: 0.06	
	S_{DS}	: 0.23	
	S_{D1}	: 0.09	
Gust Factor	G_h	: 1.00	[Sec. 16.6]
Pressure Coefficient	K_z	: 1.09	[Sec. 2.6.5.2]
Topography Facto	K_{zt}	: 1.00	[Sec. 2.6.6]
Elevation Factor	K_e	: 0.98	[Sec. 2.6.8]
Directionality Factor	K_d	: 0.95	[Sec. 16.6]
Shielding Factor	K_a	: 0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	: 1.16 in	[Sec. 2.6.10]
Importance Factor	I_e	: 1	[Table 2-3]
Response Coefficient	C_s	: 0.114	[Sec. 2.7.7.1]
Amplification	A_s	: 1.861619	[Sec. 16.7]
	q_z	: 35.42 psf	

PROJECT	137165.006.01 - Upper Stepney - TLC, KSC
SUBJECT	Platform Mount Analysis
DATE	07/19/22



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

B+T GRP

Manufacturer	Model	Qty	Height (in ²)	Width (in ²)	Depth (in ²)	Weight (lbs)	C _a A _a (N) (ft ²)	C _a A _a (T) (ft ²)	C _a A _a (N) Ice (ft ²)	C _a A _a (T) Ice (ft ²)	F _A (N) (k)	F _A (T) (k)	F _A (N) Ice (k)	F _A (T) Ice (k)
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
ERICSSON	RRUS 4478 B14_CCIV2	1	18.1	13.4	8.3	59.4	2.02	1.25	2.67	1.80	0.06	0.04	0.01	0.01
ERICSSON	RRUS 8843 B2/ B66A_CCIV	1	18.0	13.2	11.3	75.0	1.98	1.70	2.62	2.30	0.06	0.05	0.01	0.01
ERICSSON	RRUS 4449 B5/B12	1	17.9	13.2	9.4	71.0	1.97	1.41	2.61	1.98	0.06	0.05	0.01	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
ERICSSON	RRUS 4478 B14_CCIV2	1	18.1	13.4	8.3	59.4	2.02	1.25	2.67	1.80	0.06	0.04	0.01	0.01
ERICSSON	RRUS 8843 B2/ B66A_CCIV	1	18.0	13.2	11.3	75.0	1.98	1.70	2.62	2.30	0.06	0.05	0.01	0.01
ERICSSON	RRUS 4449 B5/B12	1	17.9	13.2	9.4	71.0	1.97	1.41	2.61	1.98	0.06	0.05	0.01	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5	71.2	21.0	7.8	60.2	6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01
CCI ANTENNAS	OPA-65R-BU6DA-K	0.5					6.44	2.84	7.37	3.79	0.21	0.08	0.04	0.01

APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.71066	
2	2	0	0	-7.352327	
3	3	0	0	-3.377327	
4	4	2.758333	0	-3.377327	
5	5	-2.758333	0	-3.377327	
6	6	0.541667	0	-7.352327	
7	7	-0.541667	0	-7.352327	
8	8	2.836634	0	-3.377327	
9	9	2.503333	0	-3.377327	
10	10	-2.836634	0	-3.377327	
11	11	-2.503333	0	-3.377327	
12	12	0.604167	0	-7.244073	
13	13	0.6875	0	-7.099736	
14	14	-0.604167	0	-7.244073	
15	15	-0.6875	0	-7.099736	
16	16	0.743994	0	-7.324803	
17	17	-0.743994	0	-7.324803	
18	18	2.899134	0	-3.269073	
19	19	2.940801	0	-3.196905	
20	20	3.038961	0	-3.349803	
21	21	-2.899134	0	-3.269073	
22	22	-2.940801	0	-3.196905	
23	23	-3.038961	0	-3.349803	
24	24	6.25	0	4.306719	
25	25	-6.25	0	4.306719	
26	26	-2.294967	0	-3.377327	
27	27	2.294967	0	-3.377327	
28	28	0	0	0	
29	29	-1.481475	0	0.85533	
30	30	-6.367302	0	3.676163	
31	31	-2.924851	0	1.688663	
32	32	-4.304017	0	-0.700123	
33	33	-1.545684	0	4.07745	
34	34	-6.638135	0	3.207066	
35	35	-6.096468	0	4.14526	
36	36	-4.343168	0	-0.767934	
37	37	-4.176517	0	-0.479287	
38	38	-1.506534	0	4.14526	
39	39	-1.673184	0	3.856614	
40	40	-6.575635	0	3.098813	
41	41	-6.492302	0	2.954475	
42	42	-5.971468	0	4.14526	
43	43	-5.804802	0	4.14526	
44	44	-6.715462	0	3.018084	
45	45	-5.971468	0	4.306719	
46	46	-4.280668	0	-0.876187	
47	47	-4.239001	0	-0.948356	
48	48	-4.420495	0	-0.956916	
49	49	-1.381534	0	4.14526	
50	50	-1.2982	0	4.14526	
51	51	-1.381534	0	4.306719	
52	52	-1.777367	0	3.676163	
53	53	-4.072334	0	-0.298837	
54	54	1.481475	0	0.85533	
55	55	6.367302	0	3.676163	



Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	2.924851	0	1.688663	
57	57	1.545684	0	4.07745	
58	58	4.304017	0	-0.700123	
59	59	6.096468	0	4.14526	
60	60	6.638135	0	3.207066	
61	61	1.506534	0	4.14526	
62	62	1.673184	0	3.856614	
63	63	4.343168	0	-0.767934	
64	64	4.176517	0	-0.479287	
65	65	5.971468	0	4.14526	
66	66	5.804802	0	4.14526	
67	67	6.575635	0	3.098813	
68	68	6.492302	0	2.954475	
69	69	5.971468	0	4.306719	
70	70	6.715462	0	3.018084	
71	71	1.381534	0	4.14526	
72	72	1.2982	0	4.14526	
73	73	1.381534	0	4.306719	
74	74	4.280668	0	-0.876187	
75	75	4.239001	0	-0.948356	
76	76	4.420495	0	-0.956916	
77	77	4.072334	0	-0.298837	
78	78	1.777367	0	3.676163	
79	79	0.604728	0	-7.566018	
80	80	6.854728	0	3.259299	
81	81	-6.854728	0	3.259299	
82	82	-0.604728	0	-7.566018	
83	83	-3.258182	0	1.111317	
84	84	-3.691194	2	1.361316	
85	85	-3.691194	0	1.361316	
86	86	-2.333	0	4.306719	
87	87	-2.333	0	4.58297	
88	88	5.41666	0	4.306719	
89	89	5.41666	0	4.58297	
90	90	-2.333	5.75	4.58297	
91	91	-2.333	-1.25	4.58297	
92	92	5.41666	5.75	4.58297	
93	93	5.41666	-1.25	4.58297	
94	94	1.021398	0	-6.844325	
95	95	1.260638	0	-6.98245	
96	96	1.260638	5.75	-6.98245	
97	97	1.260638	-1.25	-6.98245	
98	98	-6.438058	0	2.537606	
99	99	-6.677298	0	2.39948	
100	100	-6.677298	5.75	2.39948	
101	101	-6.677298	-1.25	2.39948	
102	102	-2.333	3.25	4.58297	
103	103	-2.333	3.25	4.33297	
104	104	-2.333	3.333333	4.33297	
105	105	-2.333	1.291667	4.33297	
106	106	-2.333	1.541667	4.58297	
107	107	-2.333	1.541667	4.33297	
108	108	0	0	-2.54396	
109	109	-0.244792	0	-2.54396	
110	110	-0.244792	4	-2.54396	



Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-0.244792	-2	-2.54396	
112	112	-2.203134	0	1.27198	
113	113	-2.080738	0	1.483976	
114	114	-2.080738	4	1.483976	
115	115	-2.080738	-2	1.483976	
116	116	2.203134	0	1.27198	
117	117	2.32553	0	1.059984	
118	118	2.32553	4	1.059984	
119	119	2.32553	-2	1.059984	
120	120	4.896228	0	-0.132922	
121	121	5.135468	0	-0.271048	
122	122	5.135468	5.75	-0.271048	
123	123	5.135468	-1.25	-0.271048	
124	124	5.135468	3.25	-0.271048	
125	125	4.918962	3.25	-0.146048	
126	126	4.918962	3.333333	-0.146048	
127	127	4.918962	1.291667	-0.146048	
128	128	5.135468	1.541667	-0.271048	
129	129	4.918962	1.541667	-0.146048	
130	130	-2.563228	0	-4.173797	
131	131	-2.802468	0	-4.311922	
132	132	-2.802468	5.75	-4.311922	
133	133	-2.802468	-1.25	-4.311922	
134	134	-2.802468	3.25	-4.311922	
135	135	-2.585962	3.25	-4.186922	
136	136	-2.585962	3.333333	-4.186922	
137	137	-2.585962	1.291667	-4.186922	
138	138	-2.802468	1.541667	-4.311922	
139	139	-2.585962	1.541667	-4.186922	
140	140	-7.25	4	4.353387	
141	141	7.25	4	4.353387	
142	142	-2.333	4	4.353387	
143	143	-2.333	4	4.58297	
144	144	5.41666	4	4.353387	
145	145	5.41666	4	4.58297	
146	146	1.061813	4	-6.867658	
147	147	1.260638	4	-6.98245	
148	148	-6.478473	4	2.514272	
149	149	-6.677298	4	2.39948	
150	150	4.936643	4	-0.156256	
151	151	5.135468	4	-0.271048	
152	152	-2.603643	4	-4.197131	
153	153	-2.802468	4	-4.311922	
154	154	7.395143	4	4.101991	
155	155	0.145143	4	-8.455378	
156	156	-0.145143	4	-8.455378	
157	157	-7.395143	4	4.101991	
158	158	-0.622498	4	-7.628575	
159	159	0.622498	4	-7.628575	
160	160	-6.295291	4	4.353387	
161	161	-6.917782	4	3.275176	
162	162	6.917789	4	3.275189	
163	163	6.295277	4	4.353387	

Node Boundary Conditions

Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction
2	29	Reaction	Reaction	Reaction	Reaction	Reaction
3	54	Reaction	Reaction	Reaction	Reaction	Reaction
4	108					
5	109					
6	110					
7	111					
8	112					
9	113					
10	114					
11	115					
12	116					
13	117					
14	118					
15	119					

Hot Rolled Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt	
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Cold Formed Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Fu [ksi]	
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65

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	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-SR1	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	SF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	SF-H2	C3x2x0.20	Beam	Channel	A36 Gr.36	Typical	1.32	0.524	1.864	0.017
5	SF-H3	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
6	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
7	MF-CP1	PL3/8"X6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
8	MF-CP2	PL3/8"X2	Beam	RECT	A36 Gr.36	Typical	0.75	0.009	0.25	0.031
9	MF-CA1	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026

Cold Formed Steel Section Sets

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]	
1	CF1	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	0.581	0.057	4.41	0.00063



Member Primary Data

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule	
1	1	2	1	SF-H1	Beam	Pipe	A53 Gr.B	Typical	
2	2	5	3	SF-H2	Beam	Channel	A36 Gr.36	Typical	
3	3	3	4	SF-H2	Beam	Channel	A36 Gr.36	Typical	
4	4	7	6	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
5	5	9	8	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
6	6	11	10	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
7	7	13	6	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
8	8	7	15	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
9	9	12	16	RIGID	None	None	RIGID	Typical	
10	10	14	17	RIGID	None	None	RIGID	Typical	
11	11	8	19	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
12	12	18	20	RIGID	None	None	RIGID	Typical	
13	13	10	22	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
14	14	21	23	RIGID	None	None	RIGID	Typical	
15	15	25	24	MF-H1	Beam	Pipe	A53 Gr.B	Typical	
16	16	26	2	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
17	17	2	27	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
18	18	30	29	SF-H1	Beam	Pipe	A53 Gr.B	Typical	
19	19	33	31	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
20	20	31	32	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
21	21	35	34	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
22	22	37	36	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
23	23	39	38	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
24	24	41	34	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
25	25	35	43	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
26	26	40	44	RIGID	None	None	RIGID	Typical	
27	27	42	45	RIGID	None	None	RIGID	Typical	
28	28	36	47	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
29	29	46	48	RIGID	None	None	RIGID	Typical	
30	30	38	50	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
31	31	49	51	RIGID	None	None	RIGID	Typical	
32	32	52	30	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
33	33	30	53	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
34	34	55	54	SF-H1	Beam	Pipe	A53 Gr.B	Typical	
35	35	58	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
36	36	56	57	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
37	37	60	59	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
38	38	62	61	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
39	39	64	63	MF-CP2	Beam	RECT	A36 Gr.36	Typical	
40	40	66	59	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
41	41	60	68	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
42	42	65	69	RIGID	None	None	RIGID	Typical	
43	43	67	70	RIGID	None	None	RIGID	Typical	
44	44	61	72	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
45	45	71	73	RIGID	None	None	RIGID	Typical	
46	46	63	75	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
47	47	74	76	RIGID	None	None	RIGID	Typical	
48	48	77	55	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
49	49	55	78	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
50	50	80	79	MF-H1	Beam	Pipe	A53 Gr.B	Typical	
51	51	82	81	MF-H1	Beam	Pipe	A53 Gr.B	Typical	
52	52	83	85	RIGID	None	None	RIGID	Typical	
53	53	84	85	MF-P1	Column	Pipe	A53 Gr.B	Typical	
54	54	86	87	RIGID	None	None	RIGID	Typical	
55	55	88	89	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	56	90	91		MF-P1	Column	Pipe	A53 Gr.B	Typical
57	57	92	93		MF-P1	Column	Pipe	A53 Gr.B	Typical
58	58	94	95		RIGID	None	None	RIGID	Typical
59	59	96	97		MF-P1	Column	Pipe	A53 Gr.B	Typical
60	60	98	99		RIGID	None	None	RIGID	Typical
61	61	100	101		MF-P1	Column	Pipe	A53 Gr.B	Typical
62	62	102	103		RIGID	None	None	RIGID	Typical
63	63	104	105		MF-P1	Column	Pipe	A53 Gr.B	Typical
64	64	106	107		RIGID	None	None	RIGID	Typical
65	65	110	111		MF-P1	Column	Pipe	A53 Gr.B	Typical
66	66	109	108		RIGID	None	None	RIGID	Typical
67	67	114	115		MF-P1	Column	Pipe	A53 Gr.B	Typical
68	68	113	112		RIGID	None	None	RIGID	Typical
69	69	118	119		MF-P1	Column	Pipe	A53 Gr.B	Typical
70	70	117	116		RIGID	None	None	RIGID	Typical
71	71	120	121		RIGID	None	None	RIGID	Typical
72	72	122	123		MF-P1	Column	Pipe	A53 Gr.B	Typical
73	73	124	125		RIGID	None	None	RIGID	Typical
74	74	126	127		MF-P1	Column	Pipe	A53 Gr.B	Typical
75	75	128	129		RIGID	None	None	RIGID	Typical
76	76	130	131		RIGID	None	None	RIGID	Typical
77	77	132	133		MF-P1	Column	Pipe	A53 Gr.B	Typical
78	78	134	135		RIGID	None	None	RIGID	Typical
79	79	136	137		MF-P1	Column	Pipe	A53 Gr.B	Typical
80	80	138	139		RIGID	None	None	RIGID	Typical
81	81	140	141		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
82	82	142	143		RIGID	None	None	RIGID	Typical
83	83	144	145		RIGID	None	None	RIGID	Typical
84	84	146	147		RIGID	None	None	RIGID	Typical
85	85	148	149		RIGID	None	None	RIGID	Typical
86	86	150	151		RIGID	None	None	RIGID	Typical
87	87	152	153		RIGID	None	None	RIGID	Typical
88	88	158	159	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical
89	89	154	155		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
90	90	156	157		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
91	91	160	161	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical
92	92	162	163	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical

Member Advanced Data

	Label	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	N/A	None
5	5				Yes	N/A	None
6	6				Yes	N/A	None
7	7				Yes	N/A	None
8	8				Yes	N/A	None
9	9	O O O O O X			Yes	** NA **	None
10	10	O O O O O X			Yes	** NA **	None
11	11				Yes	N/A	None
12	12	O O O O O X			Yes	** NA **	None
13	13				Yes	N/A	None
14	14	O O O O O X			Yes	** NA **	None
15	15				Yes	Default	None



Member Advanced Data (Continued)

	Label	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
16	16				Yes	N/A	None
17	17				Yes	N/A	None
18	18				Yes	N/A	None
19	19			2	Yes	N/A	None
20	20		2		Yes	N/A	None
21	21				Yes	N/A	None
22	22				Yes	N/A	None
23	23				Yes	N/A	None
24	24				Yes	N/A	None
25	25				Yes	N/A	None
26	26	O O O O O X			Yes	** NA **	None
27	27	O O O O O X			Yes	** NA **	None
28	28				Yes	N/A	None
29	29	O O O O O X			Yes	** NA **	None
30	30				Yes	N/A	None
31	31	O O O O O X			Yes	** NA **	None
32	32				Yes	N/A	None
33	33				Yes	N/A	None
34	34				Yes	N/A	None
35	35			2	Yes	N/A	None
36	36		2		Yes	N/A	None
37	37				Yes	N/A	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	N/A	None
42	42	O O O O O X			Yes	** NA **	None
43	43	O O O O O X			Yes	** NA **	None
44	44				Yes	N/A	None
45	45	O O O O O X			Yes	** NA **	None
46	46				Yes	N/A	None
47	47	O O O O O X			Yes	** NA **	None
48	48				Yes	N/A	None
49	49				Yes	N/A	None
50	50				Yes	N/A	None
51	51				Yes	N/A	None
52	52				Yes	** NA **	None
53	53				Yes	** NA **	None
54	54				Yes	** NA **	None
55	55				Yes	** NA **	None
56	56				Yes	** NA **	None
57	57				Yes	** NA **	None
58	58				Yes	** NA **	None
59	59				Yes	** NA **	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64				Yes	** NA **	None
65	65				Yes	** NA **	None
66	66				Yes	** NA **	None
67	67				Yes	** NA **	None
68	68				Yes	** NA **	None
69	69				Yes	** NA **	None
70	70				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	** NA **	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	** NA **	None
81	81				Yes	N/A	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	** NA **	None
88	88				Yes	Default	None
89	89				Yes	N/A	None
90	90				Yes	N/A	None
91	91				Yes	Default	None
92	92				Yes	Default	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	5.642	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	1.083	Lbyy	Lateral
5	5	MF-CP2	0.333	Lbyy	Lateral
6	6	MF-CP2	0.333	Lbyy	Lateral
7	7	MF-CP1	0.292	Lbyy	Lateral
8	8	MF-CP1	0.292	Lbyy	Lateral
9	11	MF-CP1	0.208	Lbyy	Lateral
10	13	MF-CP1	0.208	Lbyy	Lateral
11	15	MF-H1	12.5	Lbyy	Lateral
12	16	SF-H3	4.59	Lbyy	Lateral
13	17	SF-H3	4.59	Lbyy	Lateral
14	18	SF-H1	5.642	Lbyy	Lateral
15	19	SF-H2	2.758	Lbyy	Lateral
16	20	SF-H2	2.758	Lbyy	Lateral
17	21	MF-CP1	1.083	Lbyy	Lateral
18	22	MF-CP2	0.333	Lbyy	Lateral
19	23	MF-CP2	0.333	Lbyy	Lateral
20	24	MF-CP1	0.292	Lbyy	Lateral
21	25	MF-CP1	0.292	Lbyy	Lateral
22	28	MF-CP1	0.208	Lbyy	Lateral
23	30	MF-CP1	0.208	Lbyy	Lateral
24	32	SF-H3	4.59	Lbyy	Lateral
25	33	SF-H3	4.59	Lbyy	Lateral
26	34	SF-H1	5.642	Lbyy	Lateral
27	35	SF-H2	2.758	Lbyy	Lateral
28	36	SF-H2	2.758	Lbyy	Lateral
29	37	MF-CP1	1.083	Lbyy	Lateral
30	38	MF-CP2	0.333	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
31	39	MF-CP2	0.333	Lbyy	Lateral
32	40	MF-CP1	0.292	Lbyy	Lateral
33	41	MF-CP1	0.292	Lbyy	Lateral
34	44	MF-CP1	0.208	Lbyy	Lateral
35	46	MF-CP1	0.208	Lbyy	Lateral
36	48	SF-H3	4.59	Lbyy	Lateral
37	49	SF-H3	4.59	Lbyy	Lateral
38	50	MF-H1	12.5	Lbyy	Lateral
39	51	MF-H1	12.5	Lbyy	Lateral
40	53	MF-P1	2	Lbyy	Lateral
41	56	MF-P1	7	Lbyy	Lateral
42	57	MF-P1	7	Lbyy	Lateral
43	59	MF-P1	7	Lbyy	Lateral
44	61	MF-P1	7	Lbyy	Lateral
45	63	MF-P1	2.042	Lbyy	Lateral
46	65	MF-P1	6	Lbyy	Lateral
47	67	MF-P1	6	Lbyy	Lateral
48	69	MF-P1	6	Lbyy	Lateral
49	72	MF-P1	7	Lbyy	Lateral
50	74	MF-P1	2.042	Lbyy	Lateral
51	77	MF-P1	7	Lbyy	Lateral
52	79	MF-P1	2.042	Lbyy	Lateral
53	81	MF-SR1	14.5	Lbyy	Lateral
54	88	MF-CA1	1.245	Lbyy	Lateral
55	89	MF-SR1	14.5	Lbyy	Lateral
56	90	MF-SR1	14.5	Lbyy	Lateral
57	91	MF-CA1	1.245	Lbyy	Lateral
58	92	MF-CA1	1.245	Lbyy	Lateral

Cold Formed Steel Design Parameters

No Data to Print...					
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Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Y	-0.03	%5
2	57	Y	-0.03	%85
3	57	Y	0	0
4	57	Y	0	0
5	57	Y	0	0
6	56	Y	-0.03	%5
7	56	Y	-0.03	%85
8	56	Y	0	0
9	56	Y	0	0
10	56	Y	0	0
11	67	Y	-0.059	%15
12	67	Y	-0.075	%15
13	67	Y	-0.071	%50
14	67	Y	0	0
15	67	Y	0	0
16	61	Y	-0.03	%5
17	61	Y	-0.03	%85
18	61	Y	0	0
19	61	Y	0	0
20	61	Y	0	0



Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
21	77	Y	-0.03	%5
22	77	Y	-0.03	%85
23	77	Y	0	0
24	77	Y	0	0
25	77	Y	0	0
26	65	Y	-0.059	%15
27	65	Y	-0.075	%15
28	65	Y	-0.071	%50
29	65	Y	0	0
30	65	Y	0	0
31	59	Y	-0.03	%5
32	59	Y	-0.03	%85
33	59	Y	0	0
34	59	Y	0	0
35	59	Y	0	0
36	72	Y	-0.03	%5
37	72	Y	-0.03	%85
38	72	Y	0	0
39	72	Y	0	0
40	72	Y	0	0
41	69	Y	-0.059	%15
42	69	Y	-0.075	%15
43	69	Y	-0.071	%50
44	69	Y	0	0
45	69	Y	0	0
46	69	Y	-0.026	%5
47	69	Y	0	0
48	69	Y	0	0
49	69	Y	0	0
50	69	Y	0	0
51	53	Y	-0.019	%15
52	53	Y	0	0
53	53	Y	0	0
54	53	Y	0	0
55	53	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Z	-0.206	%5
2	57	Z	-0.206	%85
3	57	Z	0	0
4	57	Z	0	0
5	57	Z	0	0
6	56	Z	-0.206	%5
7	56	Z	-0.206	%85
8	56	Z	0	0
9	56	Z	0	0
10	56	Z	0	0
11	67	Z	-0.065	%15
12	67	Z	-0.064	%15
13	67	Z	-0.063	%50
14	67	Z	0	0
15	67	Z	0	0
16	61	Z	-0.206	%5
17	61	Z	-0.206	%85

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
18	61	Z	0	0
19	61	Z	0	0
20	61	Z	0	0
21	77	Z	-0.206	%5
22	77	Z	-0.206	%85
23	77	Z	0	0
24	77	Z	0	0
25	77	Z	0	0
26	65	Z	-0.065	%15
27	65	Z	-0.064	%15
28	65	Z	-0.063	%50
29	65	Z	0	0
30	65	Z	0	0
31	59	Z	-0.206	%5
32	59	Z	-0.206	%85
33	59	Z	0	0
34	59	Z	0	0
35	59	Z	0	0
36	72	Z	-0.206	%5
37	72	Z	-0.206	%85
38	72	Z	0	0
39	72	Z	0	0
40	72	Z	0	0
41	69	Z	-0.065	%15
42	69	Z	-0.064	%15
43	69	Z	-0.063	%50
44	69	Z	0	0
45	69	Z	0	0
46	69	Z	-0.037	%5
47	69	Z	0	0
48	69	Z	0	0
49	69	Z	0	0
50	69	Z	0	0
51	53	Z	-0.027	%15
52	53	Z	0	0
53	53	Z	0	0
54	53	Z	0	0
55	53	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	X	-0.077	%5
2	57	X	-0.077	%85
3	57	X	0	0
4	57	X	0	0
5	57	X	0	0
6	56	X	-0.077	%5
7	56	X	-0.077	%85
8	56	X	0	0
9	56	X	0	0
10	56	X	0	0
11	67	X	-0.04	%15
12	67	X	-0.054	%15
13	67	X	-0.045	%50
14	67	X	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
15	67	X	0	0
16	61	X	-0.077	%5
17	61	X	-0.077	%85
18	61	X	0	0
19	61	X	0	0
20	61	X	0	0
21	77	X	-0.077	%5
22	77	X	-0.077	%85
23	77	X	0	0
24	77	X	0	0
25	77	X	0	0
26	65	X	-0.04	%15
27	65	X	-0.054	%15
28	65	X	-0.045	%50
29	65	X	0	0
30	65	X	0	0
31	59	X	-0.077	%5
32	59	X	-0.077	%85
33	59	X	0	0
34	59	X	0	0
35	59	X	0	0
36	72	X	-0.077	%5
37	72	X	-0.077	%85
38	72	X	0	0
39	72	X	0	0
40	72	X	0	0
41	69	X	-0.04	%15
42	69	X	-0.054	%15
43	69	X	-0.045	%50
44	69	X	0	0
45	69	X	0	0
46	69	X	-0.037	%5
47	69	X	0	0
48	69	X	0	0
49	69	X	0	0
50	69	X	0	0
51	53	X	-0.027	%15
52	53	X	0	0
53	53	X	0	0
54	53	X	0	0
55	53	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Z	-0.038	%5
2	57	Z	-0.038	%85
3	57	Z	0	0
4	57	Z	0	0
5	57	Z	0	0
6	56	Z	-0.038	%5
7	56	Z	-0.038	%85
8	56	Z	0	0
9	56	Z	0	0
10	56	Z	0	0
11	67	Z	-0.012	%15

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
12	67	Z	-0.012	%15
13	67	Z	-0.012	%50
14	67	Z	0	0
15	67	Z	0	0
16	61	Z	-0.038	%5
17	61	Z	-0.038	%85
18	61	Z	0	0
19	61	Z	0	0
20	61	Z	0	0
21	77	Z	-0.038	%5
22	77	Z	-0.038	%85
23	77	Z	0	0
24	77	Z	0	0
25	77	Z	0	0
26	65	Z	-0.012	%15
27	65	Z	-0.012	%15
28	65	Z	-0.012	%50
29	65	Z	0	0
30	65	Z	0	0
31	59	Z	-0.038	%5
32	59	Z	-0.038	%85
33	59	Z	0	0
34	59	Z	0	0
35	59	Z	0	0
36	72	Z	-0.038	%5
37	72	Z	-0.038	%85
38	72	Z	0	0
39	72	Z	0	0
40	72	Z	0	0
41	69	Z	-0.012	%15
42	69	Z	-0.012	%15
43	69	Z	-0.012	%50
44	69	Z	0	0
45	69	Z	0	0
46	69	Z	-0.007	%5
47	69	Z	0	0
48	69	Z	0	0
49	69	Z	0	0
50	69	Z	0	0
51	53	Z	-0.005	%15
52	53	Z	0	0
53	53	Z	0	0
54	53	Z	0	0
55	53	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	X	-0.014	%5
2	57	X	-0.014	%85
3	57	X	0	0
4	57	X	0	0
5	57	X	0	0
6	56	X	-0.014	%5
7	56	X	-0.014	%85
8	56	X	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
9	56	X	0	0
10	56	X	0	0
11	67	X	-0.007	%15
12	67	X	-0.01	%15
13	67	X	-0.008	%50
14	67	X	0	0
15	67	X	0	0
16	61	X	-0.014	%5
17	61	X	-0.014	%85
18	61	X	0	0
19	61	X	0	0
20	61	X	0	0
21	77	X	-0.014	%5
22	77	X	-0.014	%85
23	77	X	0	0
24	77	X	0	0
25	77	X	0	0
26	65	X	-0.007	%15
27	65	X	-0.01	%15
28	65	X	-0.008	%50
29	65	X	0	0
30	65	X	0	0
31	59	X	-0.014	%5
32	59	X	-0.014	%85
33	59	X	0	0
34	59	X	0	0
35	59	X	0	0
36	72	X	-0.014	%5
37	72	X	-0.014	%85
38	72	X	0	0
39	72	X	0	0
40	72	X	0	0
41	69	X	-0.007	%15
42	69	X	-0.01	%15
43	69	X	-0.008	%50
44	69	X	0	0
45	69	X	0	0
46	69	X	-0.007	%5
47	69	X	0	0
48	69	X	0	0
49	69	X	0	0
50	69	X	0	0
51	53	X	-0.005	%15
52	53	X	0	0
53	53	X	0	0
54	53	X	0	0
55	53	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Z	-0.014	%5
2	57	Z	-0.014	%85
3	57	Z	0	0
4	57	Z	0	0
5	57	Z	0	0



Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
6	56	Z	-0.014	%5
7	56	Z	-0.014	%85
8	56	Z	0	0
9	56	Z	0	0
10	56	Z	0	0
11	67	Z	-0.004	%15
12	67	Z	-0.004	%15
13	67	Z	-0.004	%50
14	67	Z	0	0
15	67	Z	0	0
16	61	Z	-0.014	%5
17	61	Z	-0.014	%85
18	61	Z	0	0
19	61	Z	0	0
20	61	Z	0	0
21	77	Z	-0.014	%5
22	77	Z	-0.014	%85
23	77	Z	0	0
24	77	Z	0	0
25	77	Z	0	0
26	65	Z	-0.004	%15
27	65	Z	-0.004	%15
28	65	Z	-0.004	%50
29	65	Z	0	0
30	65	Z	0	0
31	59	Z	-0.014	%5
32	59	Z	-0.014	%85
33	59	Z	0	0
34	59	Z	0	0
35	59	Z	0	0
36	72	Z	-0.014	%5
37	72	Z	-0.014	%85
38	72	Z	0	0
39	72	Z	0	0
40	72	Z	0	0
41	69	Z	-0.004	%15
42	69	Z	-0.004	%15
43	69	Z	-0.004	%50
44	69	Z	0	0
45	69	Z	0	0
46	69	Z	-0.002	%5
47	69	Z	0	0
48	69	Z	0	0
49	69	Z	0	0
50	69	Z	0	0
51	53	Z	-0.002	%15
52	53	Z	0	0
53	53	Z	0	0
54	53	Z	0	0
55	53	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	X	-0.005	%5
2	57	X	-0.005	%85



Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
3	57	X	0	0
4	57	X	0	0
5	57	X	0	0
6	56	X	-0.005	%5
7	56	X	-0.005	%85
8	56	X	0	0
9	56	X	0	0
10	56	X	0	0
11	67	X	-0.003	%15
12	67	X	-0.004	%15
13	67	X	-0.003	%50
14	67	X	0	0
15	67	X	0	0
16	61	X	-0.005	%5
17	61	X	-0.005	%85
18	61	X	0	0
19	61	X	0	0
20	61	X	0	0
21	77	X	-0.005	%5
22	77	X	-0.005	%85
23	77	X	0	0
24	77	X	0	0
25	77	X	0	0
26	65	X	-0.003	%15
27	65	X	-0.004	%15
28	65	X	-0.003	%50
29	65	X	0	0
30	65	X	0	0
31	59	X	-0.005	%5
32	59	X	-0.005	%85
33	59	X	0	0
34	59	X	0	0
35	59	X	0	0
36	72	X	-0.005	%5
37	72	X	-0.005	%85
38	72	X	0	0
39	72	X	0	0
40	72	X	0	0
41	69	X	-0.003	%15
42	69	X	-0.004	%15
43	69	X	-0.003	%50
44	69	X	0	0
45	69	X	0	0
46	69	X	-0.002	%5
47	69	X	0	0
48	69	X	0	0
49	69	X	0	0
50	69	X	0	0
51	53	X	-0.002	%15
52	53	X	0	0
53	53	X	0	0
54	53	X	0	0
55	53	X	0	0



Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Y	-0.099	%5
2	57	Y	-0.099	%85
3	57	Y	0	0
4	57	Y	0	0
5	57	Y	0	0
6	56	Y	-0.099	%5
7	56	Y	-0.099	%85
8	56	Y	0	0
9	56	Y	0	0
10	56	Y	0	0
11	67	Y	-0.036	%15
12	67	Y	-0.039	%15
13	67	Y	-0.037	%50
14	67	Y	0	0
15	67	Y	0	0
16	61	Y	-0.099	%5
17	61	Y	-0.099	%85
18	61	Y	0	0
19	61	Y	0	0
20	61	Y	0	0
21	77	Y	-0.099	%5
22	77	Y	-0.099	%85
23	77	Y	0	0
24	77	Y	0	0
25	77	Y	0	0
26	65	Y	-0.036	%15
27	65	Y	-0.039	%15
28	65	Y	-0.037	%50
29	65	Y	0	0
30	65	Y	0	0
31	59	Y	-0.099	%5
32	59	Y	-0.099	%85
33	59	Y	0	0
34	59	Y	0	0
35	59	Y	0	0
36	72	Y	-0.099	%5
37	72	Y	-0.099	%85
38	72	Y	0	0
39	72	Y	0	0
40	72	Y	0	0
41	69	Y	-0.036	%15
42	69	Y	-0.039	%15
43	69	Y	-0.037	%50
44	69	Y	0	0
45	69	Y	0	0
46	69	Y	-0.042	%5
47	69	Y	0	0
48	69	Y	0	0
49	69	Y	0	0
50	69	Y	0	0
51	53	Y	-0.032	%15
52	53	Y	0	0
53	53	Y	0	0
54	53	Y	0	0
55	53	Y	0	0



Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Z	-0.013	%5
2	57	Z	-0.013	%85
3	57	Z	0	0
4	57	Z	0	0
5	57	Z	0	0
6	56	Z	-0.013	%5
7	56	Z	-0.013	%85
8	56	Z	0	0
9	56	Z	0	0
10	56	Z	0	0
11	67	Z	-0.013	%15
12	67	Z	-0.016	%15
13	67	Z	-0.015	%50
14	67	Z	0	0
15	67	Z	0	0
16	61	Z	-0.013	%5
17	61	Z	-0.013	%85
18	61	Z	0	0
19	61	Z	0	0
20	61	Z	0	0
21	77	Z	-0.013	%5
22	77	Z	-0.013	%85
23	77	Z	0	0
24	77	Z	0	0
25	77	Z	0	0
26	65	Z	-0.013	%15
27	65	Z	-0.016	%15
28	65	Z	-0.015	%50
29	65	Z	0	0
30	65	Z	0	0
31	59	Z	-0.013	%5
32	59	Z	-0.013	%85
33	59	Z	0	0
34	59	Z	0	0
35	59	Z	0	0
36	72	Z	-0.013	%5
37	72	Z	-0.013	%85
38	72	Z	0	0
39	72	Z	0	0
40	72	Z	0	0
41	69	Z	-0.013	%15
42	69	Z	-0.016	%15
43	69	Z	-0.015	%50
44	69	Z	0	0
45	69	Z	0	0
46	69	Z	-0.006	%5
47	69	Z	0	0
48	69	Z	0	0
49	69	Z	0	0
50	69	Z	0	0
51	53	Z	-0.004	%15
52	53	Z	0	0
53	53	Z	0	0
54	53	Z	0	0
55	53	Z	0	0



Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	X	-0.013	%5
2	57	X	-0.013	%85
3	57	X	0	0
4	57	X	0	0
5	57	X	0	0
6	56	X	-0.013	%5
7	56	X	-0.013	%85
8	56	X	0	0
9	56	X	0	0
10	56	X	0	0
11	67	X	-0.013	%15
12	67	X	-0.016	%15
13	67	X	-0.015	%50
14	67	X	0	0
15	67	X	0	0
16	61	X	-0.013	%5
17	61	X	-0.013	%85
18	61	X	0	0
19	61	X	0	0
20	61	X	0	0
21	77	X	-0.013	%5
22	77	X	-0.013	%85
23	77	X	0	0
24	77	X	0	0
25	77	X	0	0
26	65	X	-0.013	%15
27	65	X	-0.016	%15
28	65	X	-0.015	%50
29	65	X	0	0
30	65	X	0	0
31	59	X	-0.013	%5
32	59	X	-0.013	%85
33	59	X	0	0
34	59	X	0	0
35	59	X	0	0
36	72	X	-0.013	%5
37	72	X	-0.013	%85
38	72	X	0	0
39	72	X	0	0
40	72	X	0	0
41	69	X	-0.013	%15
42	69	X	-0.016	%15
43	69	X	-0.015	%50
44	69	X	0	0
45	69	X	0	0
46	69	X	-0.006	%5
47	69	X	0	0
48	69	X	0	0
49	69	X	0	0
50	69	X	0	0
51	53	X	-0.004	%15
52	53	X	0	0
53	53	X	0	0
54	53	X	0	0
55	53	X	0	0



Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	15	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	51	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	15	Y	-0.25	%95

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	51	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.25	%5

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	34	Y	-0.25	%5

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%5

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	81	Y	-0.25	%5



Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	89	Y	-0.25	%5

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	90	Y	-0.25	%5

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	81	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	89	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	90	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.01	-0.01	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	4	Z	-0.019	-0.019	0	%100
5	5	Z	-0.006	-0.006	0	%100
6	6	Z	-0.006	-0.006	0	%100
7	7	Z	-0.019	-0.019	0	%100
8	8	Z	-0.019	-0.019	0	%100
9	11	Z	-0.019	-0.019	0	%100
10	13	Z	-0.019	-0.019	0	%100
11	15	Z	-0.011	-0.011	0	%100
12	16	Z	-0.011	-0.011	0	%100
13	17	Z	-0.011	-0.011	0	%100
14	18	Z	-0.01	-0.01	0	%100
15	19	Z	-0.012	-0.012	0	%100
16	20	Z	-0.012	-0.012	0	%100
17	21	Z	-0.019	-0.019	0	%100
18	22	Z	-0.006	-0.006	0	%100
19	23	Z	-0.006	-0.006	0	%100
20	24	Z	-0.019	-0.019	0	%100
21	25	Z	-0.019	-0.019	0	%100
22	28	Z	-0.019	-0.019	0	%100
23	30	Z	-0.019	-0.019	0	%100
24	32	Z	-0.011	-0.011	0	%100
25	33	Z	-0.011	-0.011	0	%100
26	34	Z	-0.01	-0.01	0	%100
27	35	Z	-0.012	-0.012	0	%100
28	36	Z	-0.012	-0.012	0	%100



Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	37	Z	-0.019	-0.019	0	%100
30	38	Z	-0.006	-0.006	0	%100
31	39	Z	-0.006	-0.006	0	%100
32	40	Z	-0.019	-0.019	0	%100
33	41	Z	-0.019	-0.019	0	%100
34	44	Z	-0.019	-0.019	0	%100
35	46	Z	-0.019	-0.019	0	%100
36	48	Z	-0.011	-0.011	0	%100
37	49	Z	-0.011	-0.011	0	%100
38	50	Z	-0.011	-0.011	0	%100
39	51	Z	-0.011	-0.011	0	%100
40	53	Z	-0.006	-0.006	0	%100
41	56	Z	-0.008	-0.008	0	%100
42	57	Z	-0.008	-0.008	0	%100
43	59	Z	-0.008	-0.008	0	%100
44	61	Z	-0.008	-0.008	0	%100
45	63	Z	-0.006	-0.006	0	%100
46	65	Z	-0.008	-0.008	0	%100
47	67	Z	-0.008	-0.008	0	%100
48	69	Z	-0.008	-0.008	0	%100
49	72	Z	-0.008	-0.008	0	%100
50	74	Z	-0.006	-0.006	0	%100
51	77	Z	-0.008	-0.008	0	%100
52	79	Z	-0.006	-0.006	0	%100
53	81	Z	-0.008	-0.008	0	%100
54	88	Z	-0.009	-0.009	0	%100
55	89	Z	-0.008	-0.008	0	%100
56	90	Z	-0.008	-0.008	0	%100
57	91	Z	-0.009	-0.009	0	%100
58	92	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.01	-0.01	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	4	X	-0.019	-0.019	0	%100
5	5	X	-0.006	-0.006	0	%100
6	6	X	-0.006	-0.006	0	%100
7	7	X	-0.019	-0.019	0	%100
8	8	X	-0.019	-0.019	0	%100
9	11	X	-0.019	-0.019	0	%100
10	13	X	-0.019	-0.019	0	%100
11	15	X	-0.011	-0.011	0	%100
12	16	X	-0.011	-0.011	0	%100
13	17	X	-0.011	-0.011	0	%100
14	18	X	-0.01	-0.01	0	%100
15	19	X	-0.012	-0.012	0	%100
16	20	X	-0.012	-0.012	0	%100
17	21	X	-0.019	-0.019	0	%100
18	22	X	-0.006	-0.006	0	%100
19	23	X	-0.006	-0.006	0	%100
20	24	X	-0.019	-0.019	0	%100
21	25	X	-0.019	-0.019	0	%100
22	28	X	-0.019	-0.019	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
23	30	X	-0.019	-0.019	0	%100
24	32	X	-0.011	-0.011	0	%100
25	33	X	-0.011	-0.011	0	%100
26	34	X	-0.01	-0.01	0	%100
27	35	X	-0.012	-0.012	0	%100
28	36	X	-0.012	-0.012	0	%100
29	37	X	-0.019	-0.019	0	%100
30	38	X	-0.006	-0.006	0	%100
31	39	X	-0.006	-0.006	0	%100
32	40	X	-0.019	-0.019	0	%100
33	41	X	-0.019	-0.019	0	%100
34	44	X	-0.019	-0.019	0	%100
35	46	X	-0.019	-0.019	0	%100
36	48	X	-0.011	-0.011	0	%100
37	49	X	-0.011	-0.011	0	%100
38	50	X	-0.011	-0.011	0	%100
39	51	X	-0.011	-0.011	0	%100
40	53	X	-0.006	-0.006	0	%100
41	56	X	-0.008	-0.008	0	%100
42	57	X	-0.008	-0.008	0	%100
43	59	X	-0.008	-0.008	0	%100
44	61	X	-0.008	-0.008	0	%100
45	63	X	-0.006	-0.006	0	%100
46	65	X	-0.008	-0.008	0	%100
47	67	X	-0.008	-0.008	0	%100
48	69	X	-0.008	-0.008	0	%100
49	72	X	-0.008	-0.008	0	%100
50	74	X	-0.006	-0.006	0	%100
51	77	X	-0.008	-0.008	0	%100
52	79	X	-0.006	-0.006	0	%100
53	81	X	-0.008	-0.008	0	%100
54	88	X	-0.009	-0.009	0	%100
55	89	X	-0.008	-0.008	0	%100
56	90	X	-0.008	-0.008	0	%100
57	91	X	-0.009	-0.009	0	%100
58	92	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.004	-0.004	0	%100
4	4	Z	-0.006	-0.006	0	%100
5	5	Z	-0.004	-0.004	0	%100
6	6	Z	-0.004	-0.004	0	%100
7	7	Z	-0.008	-0.008	0	%100
8	8	Z	-0.008	-0.008	0	%100
9	11	Z	-0.009	-0.009	0	%100
10	13	Z	-0.009	-0.009	0	%100
11	15	Z	-0.002	-0.002	0	%100
12	16	Z	-0.004	-0.004	0	%100
13	17	Z	-0.004	-0.004	0	%100
14	18	Z	-0.002	-0.002	0	%100
15	19	Z	-0.004	-0.004	0	%100
16	20	Z	-0.004	-0.004	0	%100



Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
17	21	Z	-0.006	-0.006	0	%100
18	22	Z	-0.004	-0.004	0	%100
19	23	Z	-0.004	-0.004	0	%100
20	24	Z	-0.008	-0.008	0	%100
21	25	Z	-0.008	-0.008	0	%100
22	28	Z	-0.009	-0.009	0	%100
23	30	Z	-0.009	-0.009	0	%100
24	32	Z	-0.004	-0.004	0	%100
25	33	Z	-0.004	-0.004	0	%100
26	34	Z	-0.002	-0.002	0	%100
27	35	Z	-0.004	-0.004	0	%100
28	36	Z	-0.004	-0.004	0	%100
29	37	Z	-0.006	-0.006	0	%100
30	38	Z	-0.004	-0.004	0	%100
31	39	Z	-0.004	-0.004	0	%100
32	40	Z	-0.008	-0.008	0	%100
33	41	Z	-0.008	-0.008	0	%100
34	44	Z	-0.009	-0.009	0	%100
35	46	Z	-0.009	-0.009	0	%100
36	48	Z	-0.004	-0.004	0	%100
37	49	Z	-0.004	-0.004	0	%100
38	50	Z	-0.002	-0.002	0	%100
39	51	Z	-0.002	-0.002	0	%100
40	53	Z	-0.002	-0.002	0	%100
41	56	Z	-0.001	-0.001	0	%100
42	57	Z	-0.001	-0.001	0	%100
43	59	Z	-0.001	-0.001	0	%100
44	61	Z	-0.001	-0.001	0	%100
45	63	Z	-0.002	-0.002	0	%100
46	65	Z	-0.001	-0.001	0	%100
47	67	Z	-0.001	-0.001	0	%100
48	69	Z	-0.001	-0.001	0	%100
49	72	Z	-0.001	-0.001	0	%100
50	74	Z	-0.002	-0.002	0	%100
51	77	Z	-0.001	-0.001	0	%100
52	79	Z	-0.002	-0.002	0	%100
53	81	Z	-0.001	-0.001	0	%100
54	88	Z	-0.004	-0.004	0	%100
55	89	Z	-0.001	-0.001	0	%100
56	90	Z	-0.001	-0.001	0	%100
57	91	Z	-0.004	-0.004	0	%100
58	92	Z	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.004	-0.004	0	%100
4	4	X	-0.006	-0.006	0	%100
5	5	X	-0.004	-0.004	0	%100
6	6	X	-0.004	-0.004	0	%100
7	7	X	-0.008	-0.008	0	%100
8	8	X	-0.008	-0.008	0	%100
9	11	X	-0.009	-0.009	0	%100
10	13	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
11	15	X	-0.002	-0.002	0	%100
12	16	X	-0.004	-0.004	0	%100
13	17	X	-0.004	-0.004	0	%100
14	18	X	-0.002	-0.002	0	%100
15	19	X	-0.004	-0.004	0	%100
16	20	X	-0.004	-0.004	0	%100
17	21	X	-0.006	-0.006	0	%100
18	22	X	-0.004	-0.004	0	%100
19	23	X	-0.004	-0.004	0	%100
20	24	X	-0.008	-0.008	0	%100
21	25	X	-0.008	-0.008	0	%100
22	28	X	-0.009	-0.009	0	%100
23	30	X	-0.009	-0.009	0	%100
24	32	X	-0.004	-0.004	0	%100
25	33	X	-0.004	-0.004	0	%100
26	34	X	-0.002	-0.002	0	%100
27	35	X	-0.004	-0.004	0	%100
28	36	X	-0.004	-0.004	0	%100
29	37	X	-0.006	-0.006	0	%100
30	38	X	-0.004	-0.004	0	%100
31	39	X	-0.004	-0.004	0	%100
32	40	X	-0.008	-0.008	0	%100
33	41	X	-0.008	-0.008	0	%100
34	44	X	-0.009	-0.009	0	%100
35	46	X	-0.009	-0.009	0	%100
36	48	X	-0.004	-0.004	0	%100
37	49	X	-0.004	-0.004	0	%100
38	50	X	-0.002	-0.002	0	%100
39	51	X	-0.002	-0.002	0	%100
40	53	X	-0.002	-0.002	0	%100
41	56	X	-0.001	-0.001	0	%100
42	57	X	-0.001	-0.001	0	%100
43	59	X	-0.001	-0.001	0	%100
44	61	X	-0.001	-0.001	0	%100
45	63	X	-0.002	-0.002	0	%100
46	65	X	-0.001	-0.001	0	%100
47	67	X	-0.001	-0.001	0	%100
48	69	X	-0.001	-0.001	0	%100
49	72	X	-0.001	-0.001	0	%100
50	74	X	-0.002	-0.002	0	%100
51	77	X	-0.001	-0.001	0	%100
52	79	X	-0.002	-0.002	0	%100
53	81	X	-0.001	-0.001	0	%100
54	88	X	-0.004	-0.004	0	%100
55	89	X	-0.001	-0.001	0	%100
56	90	X	-0.001	-0.001	0	%100
57	91	X	-0.004	-0.004	0	%100
58	92	X	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0004	-0.0004	0	%100
2	2	Z	-0.0008	-0.0008	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.001	-0.001	0	%100



Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	5	Z	-0.0004	-0.0004	0	%100
6	6	Z	-0.0004	-0.0004	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	11	Z	-0.001	-0.001	0	%100
10	13	Z	-0.001	-0.001	0	%100
11	15	Z	-0.0004	-0.0004	0	%100
12	16	Z	-0.0007	-0.0007	0	%100
13	17	Z	-0.0007	-0.0007	0	%100
14	18	Z	-0.0004	-0.0004	0	%100
15	19	Z	-0.0008	-0.0008	0	%100
16	20	Z	-0.0008	-0.0008	0	%100
17	21	Z	-0.001	-0.001	0	%100
18	22	Z	-0.0004	-0.0004	0	%100
19	23	Z	-0.0004	-0.0004	0	%100
20	24	Z	-0.001	-0.001	0	%100
21	25	Z	-0.001	-0.001	0	%100
22	28	Z	-0.001	-0.001	0	%100
23	30	Z	-0.001	-0.001	0	%100
24	32	Z	-0.0007	-0.0007	0	%100
25	33	Z	-0.0007	-0.0007	0	%100
26	34	Z	-0.0004	-0.0004	0	%100
27	35	Z	-0.0008	-0.0008	0	%100
28	36	Z	-0.0008	-0.0008	0	%100
29	37	Z	-0.001	-0.001	0	%100
30	38	Z	-0.0004	-0.0004	0	%100
31	39	Z	-0.0004	-0.0004	0	%100
32	40	Z	-0.001	-0.001	0	%100
33	41	Z	-0.001	-0.001	0	%100
34	44	Z	-0.001	-0.001	0	%100
35	46	Z	-0.001	-0.001	0	%100
36	48	Z	-0.0007	-0.0007	0	%100
37	49	Z	-0.0007	-0.0007	0	%100
38	50	Z	-0.0004	-0.0004	0	%100
39	51	Z	-0.0004	-0.0004	0	%100
40	53	Z	-0.0003	-0.0003	0	%100
41	56	Z	-0.0003	-0.0003	0	%100
42	57	Z	-0.0003	-0.0003	0	%100
43	59	Z	-0.0003	-0.0003	0	%100
44	61	Z	-0.0003	-0.0003	0	%100
45	63	Z	-0.0003	-0.0003	0	%100
46	65	Z	-0.0003	-0.0003	0	%100
47	67	Z	-0.0003	-0.0003	0	%100
48	69	Z	-0.0003	-0.0003	0	%100
49	72	Z	-0.0003	-0.0003	0	%100
50	74	Z	-0.0003	-0.0003	0	%100
51	77	Z	-0.0003	-0.0003	0	%100
52	79	Z	-0.0003	-0.0003	0	%100
53	81	Z	-0.0003	-0.0003	0	%100
54	88	Z	-0.0006	-0.0006	0	%100
55	89	Z	-0.0003	-0.0003	0	%100
56	90	Z	-0.0003	-0.0003	0	%100
57	91	Z	-0.0006	-0.0006	0	%100
58	92	Z	-0.0006	-0.0006	0	%100



Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0004	-0.0004	0	%100
2	2	X	-0.0008	-0.0008	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.0004	-0.0004	0	%100
6	6	X	-0.0004	-0.0004	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	11	X	-0.001	-0.001	0	%100
10	13	X	-0.001	-0.001	0	%100
11	15	X	-0.0004	-0.0004	0	%100
12	16	X	-0.0007	-0.0007	0	%100
13	17	X	-0.0007	-0.0007	0	%100
14	18	X	-0.0004	-0.0004	0	%100
15	19	X	-0.0008	-0.0008	0	%100
16	20	X	-0.0008	-0.0008	0	%100
17	21	X	-0.001	-0.001	0	%100
18	22	X	-0.0004	-0.0004	0	%100
19	23	X	-0.0004	-0.0004	0	%100
20	24	X	-0.001	-0.001	0	%100
21	25	X	-0.001	-0.001	0	%100
22	28	X	-0.001	-0.001	0	%100
23	30	X	-0.001	-0.001	0	%100
24	32	X	-0.0007	-0.0007	0	%100
25	33	X	-0.0007	-0.0007	0	%100
26	34	X	-0.0004	-0.0004	0	%100
27	35	X	-0.0008	-0.0008	0	%100
28	36	X	-0.0008	-0.0008	0	%100
29	37	X	-0.001	-0.001	0	%100
30	38	X	-0.0004	-0.0004	0	%100
31	39	X	-0.0004	-0.0004	0	%100
32	40	X	-0.001	-0.001	0	%100
33	41	X	-0.001	-0.001	0	%100
34	44	X	-0.001	-0.001	0	%100
35	46	X	-0.001	-0.001	0	%100
36	48	X	-0.0007	-0.0007	0	%100
37	49	X	-0.0007	-0.0007	0	%100
38	50	X	-0.0004	-0.0004	0	%100
39	51	X	-0.0004	-0.0004	0	%100
40	53	X	-0.0003	-0.0003	0	%100
41	56	X	-0.0003	-0.0003	0	%100
42	57	X	-0.0003	-0.0003	0	%100
43	59	X	-0.0003	-0.0003	0	%100
44	61	X	-0.0003	-0.0003	0	%100
45	63	X	-0.0003	-0.0003	0	%100
46	65	X	-0.0003	-0.0003	0	%100
47	67	X	-0.0003	-0.0003	0	%100
48	69	X	-0.0003	-0.0003	0	%100
49	72	X	-0.0003	-0.0003	0	%100
50	74	X	-0.0003	-0.0003	0	%100
51	77	X	-0.0003	-0.0003	0	%100
52	79	X	-0.0003	-0.0003	0	%100
53	81	X	-0.0003	-0.0003	0	%100
54	88	X	-0.0006	-0.0006	0	%100
55	89	X	-0.0003	-0.0003	0	%100



Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	90	X	-0.0003	-0.0003	0	%100
57	91	X	-0.0006	-0.0006	0	%100
58	92	X	-0.0006	-0.0006	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.007	-0.007	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.004	-0.004	0	%100
6	6	Y	-0.004	-0.004	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	11	Y	-0.01	-0.01	0	%100
10	13	Y	-0.01	-0.01	0	%100
11	15	Y	-0.007	-0.007	0	%100
12	16	Y	-0.006	-0.006	0	%100
13	17	Y	-0.006	-0.006	0	%100
14	18	Y	-0.007	-0.007	0	%100
15	19	Y	-0.007	-0.007	0	%100
16	20	Y	-0.007	-0.007	0	%100
17	21	Y	-0.01	-0.01	0	%100
18	22	Y	-0.004	-0.004	0	%100
19	23	Y	-0.004	-0.004	0	%100
20	24	Y	-0.01	-0.01	0	%100
21	25	Y	-0.01	-0.01	0	%100
22	28	Y	-0.01	-0.01	0	%100
23	30	Y	-0.01	-0.01	0	%100
24	32	Y	-0.006	-0.006	0	%100
25	33	Y	-0.006	-0.006	0	%100
26	34	Y	-0.007	-0.007	0	%100
27	35	Y	-0.007	-0.007	0	%100
28	36	Y	-0.007	-0.007	0	%100
29	37	Y	-0.01	-0.01	0	%100
30	38	Y	-0.004	-0.004	0	%100
31	39	Y	-0.004	-0.004	0	%100
32	40	Y	-0.01	-0.01	0	%100
33	41	Y	-0.01	-0.01	0	%100
34	44	Y	-0.01	-0.01	0	%100
35	46	Y	-0.01	-0.01	0	%100
36	48	Y	-0.006	-0.006	0	%100
37	49	Y	-0.006	-0.006	0	%100
38	50	Y	-0.007	-0.007	0	%100
39	51	Y	-0.007	-0.007	0	%100
40	53	Y	-0.005	-0.005	0	%100
41	56	Y	-0.005	-0.005	0	%100
42	57	Y	-0.005	-0.005	0	%100
43	59	Y	-0.005	-0.005	0	%100
44	61	Y	-0.005	-0.005	0	%100
45	63	Y	-0.005	-0.005	0	%100
46	65	Y	-0.005	-0.005	0	%100
47	67	Y	-0.005	-0.005	0	%100
48	69	Y	-0.005	-0.005	0	%100
49	72	Y	-0.005	-0.005	0	%100



Member Distributed Loads (BLC 8 : Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
50	74	Y	-0.005	-0.005	0	%100
51	77	Y	-0.005	-0.005	0	%100
52	79	Y	-0.005	-0.005	0	%100
53	81	Y	-0.005	-0.005	0	%100
54	88	Y	-0.007	-0.007	0	%100
55	89	Y	-0.005	-0.005	0	%100
56	90	Y	-0.005	-0.005	0	%100
57	91	Y	-0.007	-0.007	0	%100
58	92	Y	-0.007	-0.007	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.0009	-0.0009	0	%100
3	3	Z	-0.0009	-0.0009	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.0005	-0.0005	0	%100
6	6	Z	-0.0005	-0.0005	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	11	Z	-0.002	-0.002	0	%100
10	13	Z	-0.002	-0.002	0	%100
11	15	Z	-0.002	-0.002	0	%100
12	16	Z	-0.0005	-0.0005	0	%100
13	17	Z	-0.0005	-0.0005	0	%100
14	18	Z	-0.002	-0.002	0	%100
15	19	Z	-0.0009	-0.0009	0	%100
16	20	Z	-0.0009	-0.0009	0	%100
17	21	Z	-0.002	-0.002	0	%100
18	22	Z	-0.0005	-0.0005	0	%100
19	23	Z	-0.0005	-0.0005	0	%100
20	24	Z	-0.002	-0.002	0	%100
21	25	Z	-0.002	-0.002	0	%100
22	28	Z	-0.002	-0.002	0	%100
23	30	Z	-0.002	-0.002	0	%100
24	32	Z	-0.0005	-0.0005	0	%100
25	33	Z	-0.0005	-0.0005	0	%100
26	34	Z	-0.002	-0.002	0	%100
27	35	Z	-0.0009	-0.0009	0	%100
28	36	Z	-0.0009	-0.0009	0	%100
29	37	Z	-0.002	-0.002	0	%100
30	38	Z	-0.0005	-0.0005	0	%100
31	39	Z	-0.0005	-0.0005	0	%100
32	40	Z	-0.002	-0.002	0	%100
33	41	Z	-0.002	-0.002	0	%100
34	44	Z	-0.002	-0.002	0	%100
35	46	Z	-0.002	-0.002	0	%100
36	48	Z	-0.0005	-0.0005	0	%100
37	49	Z	-0.0005	-0.0005	0	%100
38	50	Z	-0.002	-0.002	0	%100
39	51	Z	-0.002	-0.002	0	%100
40	53	Z	-0.0008	-0.0008	0	%100
41	56	Z	-0.0008	-0.0008	0	%100
42	57	Z	-0.0008	-0.0008	0	%100
43	59	Z	-0.0008	-0.0008	0	%100



Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
44	61	Z	-0.0008	-0.0008	0	%100
45	63	Z	-0.0008	-0.0008	0	%100
46	65	Z	-0.0008	-0.0008	0	%100
47	67	Z	-0.0008	-0.0008	0	%100
48	69	Z	-0.0008	-0.0008	0	%100
49	72	Z	-0.0008	-0.0008	0	%100
50	74	Z	-0.0008	-0.0008	0	%100
51	77	Z	-0.0008	-0.0008	0	%100
52	79	Z	-0.0008	-0.0008	0	%100
53	81	Z	-0.0008	-0.0008	0	%100
54	88	Z	-0.0009	-0.0009	0	%100
55	89	Z	-0.0008	-0.0008	0	%100
56	90	Z	-0.0008	-0.0008	0	%100
57	91	Z	-0.0009	-0.0009	0	%100
58	92	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.0009	-0.0009	0	%100
3	3	X	-0.0009	-0.0009	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.0005	-0.0005	0	%100
6	6	X	-0.0005	-0.0005	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	11	X	-0.002	-0.002	0	%100
10	13	X	-0.002	-0.002	0	%100
11	15	X	-0.002	-0.002	0	%100
12	16	X	-0.0005	-0.0005	0	%100
13	17	X	-0.0005	-0.0005	0	%100
14	18	X	-0.002	-0.002	0	%100
15	19	X	-0.0009	-0.0009	0	%100
16	20	X	-0.0009	-0.0009	0	%100
17	21	X	-0.002	-0.002	0	%100
18	22	X	-0.0005	-0.0005	0	%100
19	23	X	-0.0005	-0.0005	0	%100
20	24	X	-0.002	-0.002	0	%100
21	25	X	-0.002	-0.002	0	%100
22	28	X	-0.002	-0.002	0	%100
23	30	X	-0.002	-0.002	0	%100
24	32	X	-0.0005	-0.0005	0	%100
25	33	X	-0.0005	-0.0005	0	%100
26	34	X	-0.002	-0.002	0	%100
27	35	X	-0.0009	-0.0009	0	%100
28	36	X	-0.0009	-0.0009	0	%100
29	37	X	-0.002	-0.002	0	%100
30	38	X	-0.0005	-0.0005	0	%100
31	39	X	-0.0005	-0.0005	0	%100
32	40	X	-0.002	-0.002	0	%100
33	41	X	-0.002	-0.002	0	%100
34	44	X	-0.002	-0.002	0	%100
35	46	X	-0.002	-0.002	0	%100
36	48	X	-0.0005	-0.0005	0	%100
37	49	X	-0.0005	-0.0005	0	%100



Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	50	X	-0.002	-0.002	0	%100
39	51	X	-0.002	-0.002	0	%100
40	53	X	-0.0008	-0.0008	0	%100
41	56	X	-0.0008	-0.0008	0	%100
42	57	X	-0.0008	-0.0008	0	%100
43	59	X	-0.0008	-0.0008	0	%100
44	61	X	-0.0008	-0.0008	0	%100
45	63	X	-0.0008	-0.0008	0	%100
46	65	X	-0.0008	-0.0008	0	%100
47	67	X	-0.0008	-0.0008	0	%100
48	69	X	-0.0008	-0.0008	0	%100
49	72	X	-0.0008	-0.0008	0	%100
50	74	X	-0.0008	-0.0008	0	%100
51	77	X	-0.0008	-0.0008	0	%100
52	79	X	-0.0008	-0.0008	0	%100
53	81	X	-0.0008	-0.0008	0	%100
54	88	X	-0.0009	-0.0009	0	%100
55	89	X	-0.0008	-0.0008	0	%100
56	90	X	-0.0008	-0.0008	0	%100
57	91	X	-0.0009	-0.0009	0	%100
58	92	X	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	32	Y	-0.004	-0.006	0	0.918
2	32	Y	-0.006	-0.007	0.918	1.836
3	32	Y	-0.007	-0.006	1.836	2.754
4	32	Y	-0.006	-0.003	2.754	3.672
5	32	Y	-0.003	-0.001	3.672	4.59
6	33	Y	-0.001	-0.003	0	0.918
7	33	Y	-0.003	-0.005	0.918	1.836
8	33	Y	-0.005	-0.006	1.836	2.754
9	33	Y	-0.006	-0.004	2.754	3.672
10	33	Y	-0.004	-0.0002278	3.672	4.59
11	52	Y	-0.04	-0.04	0.35	0.5
12	1	Y	-0.012	-0.012	1.133	2.954
13	2	Y	-0.012	-0.012	1.756	2.592
14	3	Y	-0.012	-0.012	0.167	1.002
15	16	Y	-0.009	-0.005	0	2.295
16	16	Y	-0.005	-0.001	2.295	4.59
17	17	Y	-0.001	-0.005	0	2.295
18	17	Y	-0.005	-0.009	2.295	4.59
19	34	Y	-0.012	-0.012	1.133	2.954
20	35	Y	-0.012	-0.012	1.756	2.592
21	36	Y	-0.012	-0.012	0.167	1.002
22	48	Y	-0.009	-0.005	0	2.295
23	48	Y	-0.005	-0.001	2.295	4.59
24	49	Y	-0.001	-0.005	0	2.295
25	49	Y	-0.005	-0.009	2.295	4.59
26	18	Y	-0.002	-0.004	0	0.903
27	18	Y	-0.004	-0.009	0.903	1.805
28	18	Y	-0.009	-0.014	1.805	2.708
29	18	Y	-0.014	-0.007	2.708	3.611
30	18	Y	-0.007	-0.0001113	3.611	4.513
31	19	Y	-0.0002002	-0.001	0	0.518



Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
32	19	Y	-0.001	-0.003	0.518	1.037
33	19	Y	-0.003	-0.006	1.037	1.555
34	19	Y	-0.006	-0.006	1.555	2.073
35	19	Y	-0.006	-0.003	2.073	2.592
36	20	Y	-0.003	-0.004	0.167	0.75
37	20	Y	-0.004	-0.005	0.75	1.333
38	20	Y	-0.005	-0.004	1.333	1.916
39	20	Y	-0.004	-0.003	1.916	2.499

Member Distributed Loads (BLC 40 : BLC 8 Transient Area Loads)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	18	Y	-0.001	-0.002	0	0.903
2	18	Y	-0.002	-0.005	0.903	1.805
3	18	Y	-0.005	-0.007	1.805	2.708
4	18	Y	-0.007	-0.004	2.708	3.611
5	18	Y	-0.004	-6.102e-05	3.611	4.513
6	19	Y	-0.0001098	-0.0006047	0	0.518
7	19	Y	-0.0006047	-0.001	0.518	1.037
8	19	Y	-0.001	-0.003	1.037	1.555
9	19	Y	-0.003	-0.004	1.555	2.073
10	19	Y	-0.004	-0.002	2.073	2.592
11	20	Y	-0.001	-0.002	0.167	0.75
12	20	Y	-0.002	-0.003	0.75	1.333
13	20	Y	-0.003	-0.002	1.333	1.916
14	20	Y	-0.002	-0.001	1.916	2.499
15	32	Y	-0.002	-0.003	0	0.918
16	32	Y	-0.003	-0.004	0.918	1.836
17	32	Y	-0.004	-0.003	1.836	2.754
18	32	Y	-0.003	-0.002	2.754	3.672
19	32	Y	-0.002	-0.0005514	3.672	4.59
20	33	Y	-0.0006457	-0.001	0	0.918
21	33	Y	-0.001	-0.003	0.918	1.836
22	33	Y	-0.003	-0.003	1.836	2.754
23	33	Y	-0.003	-0.002	2.754	3.672
24	33	Y	-0.002	-0.0001249	3.672	4.59
25	52	Y	-0.022	-0.022	0.35	0.5
26	1	Y	-0.006	-0.006	1.133	2.954
27	2	Y	-0.006	-0.006	1.756	2.592
28	3	Y	-0.006	-0.006	0.167	1.002
29	16	Y	-0.005	-0.003	0	2.295
30	16	Y	-0.003	-0.0006844	2.295	4.59
31	17	Y	-0.0006844	-0.003	0	2.295
32	17	Y	-0.003	-0.005	2.295	4.59
33	34	Y	-0.006	-0.006	1.133	2.954
34	35	Y	-0.006	-0.006	1.756	2.592
35	36	Y	-0.006	-0.006	0.167	1.002
36	48	Y	-0.005	-0.003	0	2.295
37	48	Y	-0.003	-0.0006844	2.295	4.59
38	49	Y	-0.0006844	-0.003	0	2.295
39	49	Y	-0.003	-0.005	2.295	4.59



Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		55		3
2	0 Wind - No Ice	WLZ			55	58	
3	90 Wind - No Ice	WLX			55	58	
4	0 Wind - Ice	WLZ			55	58	
5	90 Wind - Ice	WLX			55	58	
6	0 Wind - Service	WLZ			55	58	
7	90 Wind - Service	WLX			55	58	
8	Ice	OL1			55	58	3
9	0 Seismic	ELZ			55	58	
10	90 Seismic	ELX			55	58	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL					
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	Maint LL 16	LL					
31	Maint LL 17	LL					
32	Maint LL 18	LL					
33	Maint LL 19	LL					
34	Maint LL 20	LL					
35	Maint LL 21	LL					
36	Maint LL 22	LL					
37	Maint LL 23	LL					
38	Maint LL 24	LL					
39	BLC 1 Transient Area Loads	None				39	
40	BLC 8 Transient Area Loads	None				39	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	1	max	0.709	5	2.092	14	2.391	2	5.38	2	0.735	11	0.569	11
2		min	-0.712	11	-0.25	8	-2.374	8	-2.517	8	-0.734	5	-0.684	5
3	29	max	1.492	6	2.104	19	1.454	2	1.029	13	1.05	3	0.969	12
4		min	-1.474	12	0.17	13	-1.457	8	-2.632	7	-1.044	9	-3.562	6
5	54	max	1.493	4	2.088	21	1.342	2	1.278	3	1.005	7	3.622	10
6		min	-1.509	10	0.151	3	-1.356	8	-2.655	9	-1.003	13	-1.013	4
7	Totals:	max	3.474	5	5.778	14	5.186	2						
8		min	-3.474	11	2.732	8	-5.186	8						

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

Member	Shape	Code	CheckLoc[ft]	LC	Shear	CheckLoc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PIPE 3.0	0.954	5.642	2	0.194	5.642	4	54.99	65.205	5.749	5.749	2.624	H1-1b
2	2	C3x2x0.20	0.469	2.592	2	0.088	0.459	y 51	34.747	42.768	1.67	3.937	1.574	H1-1b
3	3	C3x2x0.20	0.458	0	2	0.105	2.133	y 14	34.747	42.768	1.67	3.937	1.578	H1-1b
4	4	PL3/8"X6	0.225	0.542	2	0.205	0.542	y 2	34.12	72.9	0.57	9.113	1.305	H1-1b
5	5	PL3/8"X2	0.38	0.333	2	0.173	0.257	y 14	22.615	24.3	0.19	1.012	3	H1-1b
6	6	PL3/8"X2	0.355	0.333	2	0.163	0.257	y 51	22.615	24.3	0.19	1.012	3	H1-1b
7	7	PL3/8"X6	0.112	0.292	2	0.149	0.292	y 51	68.997	72.9	0.57	9.113	2.894	H1-1b
8	8	PL3/8"X6	0.147	0	2	0.102	0	y 88	68.997	72.9	0.57	9.113	2.35	H1-1b
9	11	PL3/8"X6	0.115	0.124	7	0.227	0	y 38	70.882	72.9	0.57	9.113	2.258	H1-1b
10	13	PL3/8"X6	0.124	0.124	9	0.236	0	y 14	70.882	72.9	0.57	9.113	2.08	H1-1b
11	15	PIPE 3.0	0.185	7.552	20	0.096	4.818	8	28.251	65.205	5.749	5.749	1.608	H1-1b
12	16	L2x2x3	0.319	4.59	2	0.02	4.59	y 15	8.136	23.393	0.558	1.118	1.5	H2-1
13	17	L2x2x3	0.267	0	2	0.018	0	y 25	8.136	23.393	0.558	1.118	1.5	H2-1
14	18	PIPE 3.0	0.755	5.642	7	0.264	5.642	8	54.99	65.205	5.749	5.749	2.733	H1-1b
15	19	C3x2x0.20	0.452	2.592	19	0.088	0.459	y 55	34.747	42.768	1.67	3.937	1.597	H1-1b
16	20	C3x2x0.20	0.432	0	17	0.456	0	y 6	34.747	42.768	1.67	3.937	1.626	H1-1b
17	21	PL3/8"X6	0.185	0.542	7	0.166	0.542	y 7	34.12	72.9	0.57	9.113	1.472	H1-1b
18	22	PL3/8"X2	0.263	0.333	6	0.181	0.257	y 19	22.615	24.3	0.19	1.012	3	H1-1b
19	23	PL3/8"X2	0.295	0.333	7	0.164	0.257	y 56	22.615	24.3	0.19	1.012	3	H1-1b
20	24	PL3/8"X6	0.077	0.292	6	0.148	0.292	y 55	68.997	72.9	0.57	9.113	3	H1-1b
21	25	PL3/8"X6	0.118	0	7	0.102	0	y 86	68.997	72.9	0.57	9.113	2.323	H1-1b
22	28	PL3/8"X6	0.078	0.124	11	0.224	0	y 42	70.882	72.9	0.57	9.113	1.378	H1-1b
23	30	PL3/8"X6	0.141	0.124	2	0.234	0	y 19	70.882	72.9	0.57	9.113	1.948	H1-1b
24	32	L2x2x3	0.294	4.59	7	0.021	4.59	y 19	8.136	23.393	0.558	1.118	1.5	H2-1
25	33	L2x2x3	0.204	0	5	0.018	0	y 16	8.136	23.393	0.558	1.118	1.5	H2-1
26	34	PIPE 3.0	0.763	5.642	9	0.266	5.642	13	54.99	65.205	5.749	5.749	2.786	H1-1b
27	35	C3x2x0.20	0.434	2.592	22	0.087	0.459	y 59	34.747	42.768	1.67	3.937	1.599	H1-1b
28	36	C3x2x0.20	0.436	0	20	0.102	2.133	y 22	34.747	42.768	1.67	3.937	1.601	H1-1b
29	37	PL3/8"X6	0.15	0.542	3	0.157	0.542	y 58	34.12	72.9	0.57	9.113	1.316	H1-1b
30	38	PL3/8"X2	0.307	0.333	9	0.169	0.257	y 22	22.615	24.3	0.19	1.012	3	H1-1b
31	39	PL3/8"X2	0.245	0.333	10	0.162	0.257	y 61	22.615	24.3	0.19	1.012	3	H1-1b
32	40	PL3/8"X6	0.086	0.292	9	0.145	0.292	y 59	68.997	72.9	0.57	9.113	2.399	H1-1b
33	41	PL3/8"X6	0.1	0	10	0.103	0	y 87	68.997	72.9	0.57	9.113	2.384	H1-1b
34	44	PL3/8"X6	0.115	0.124	3	0.226	0	y 45	70.882	72.9	0.57	9.113	2.054	H1-1b
35	46	PL3/8"X6	0.091	0.124	6	0.228	0	y 46	70.882	72.9	0.57	9.113	2.067	H1-1b
36	48	L2x2x3	0.228	4.59	10	0.02	4.59	y 23	8.136	23.393	0.558	1.118	1.5	H2-1
37	49	L2x2x3	0.252	0	9	0.018	0	y 20	8.136	23.393	0.558	1.118	1.5	H2-1
38	50	PIPE 3.0	0.182	7.552	61	0.09	4.818	13	28.251	65.205	5.749	5.749	1.372	H1-1b
39	51	PIPE 3.0	0.218	4.948	2	0.06	4.818	5	28.251	65.205	5.749	5.749	2.067	H1-1b
40	53	PIPE 2.0	0.032	2	6	0.004	2	6	30.625	32.13	1.872	1.872	1.954	H1-1b
41	56	PIPE 2.0	0.567	5.688	10	0.191	5.688	8	17.855	32.13	1.872	1.872	1.653	H1-1b
42	57	PIPE 2.0	0.518	5.688	7	0.268	1.75	8	17.855	32.13	1.872	1.872	1.73	H3-6
43	59	PIPE 2.0	0.621	5.688	9	0.162	1.75	12	17.855	32.13	1.872	1.872	1.763	H1-1b
44	61	PIPE 2.0	0.73	5.688	2	0.232	5.688	3	17.855	32.13	1.872	1.872	1.729	H1-1b
45	63	PIPE 2.0	0.155	0.085	9	0.088	1.786	8	30.564	32.13	1.872	1.872	2.108	H1-1b
46	65	PIPE 2.0	0.289	4	2	0.023	4	2	20.867	32.13	1.872	1.872	1.877	H1-1b
47	67	PIPE 2.0	0.288	4	8	0.023	4	8	20.867	32.13	1.872	1.872	1.877	H1-1b
48	69	PIPE 2.0	0.362	4	8	0.027	4	8	20.867	32.13	1.872	1.872	1.878	H1-1b
49	72	PIPE 2.0	0.907	5.688	2	0.156	5.688	13	17.855	32.13	1.872	1.872	1.576	H1-1b
50	74	PIPE 2.0	0.226	0.085	8	0.062	1.786	4	30.564	32.13	1.872	1.872	2.086	H1-1b
51	77	PIPE 2.0	0.808	5.688	7	0.171	5.688	2	17.855	32.13	1.872	1.872	1.707	H1-1b
52	79	PIPE 2.0	0.149	0.085	13	0.096	1.786	8	30.564	32.13	1.872	1.872	2.122	H1-1b
53	81	PIPE 2.0	0.602	4.833	9	0.245	13.443	2	4.679	32.13	1.872	1.872	2.408	H1-1b
54	88	L2.5x2.5x4	0.486	0	2	0.194	1.245	z 5	36.654	38.556	1.114	2.537	1.301	H2-1
55	89	PIPE 2.0	0.657	4.833	2	0.177	13.443	7	4.679	32.13	1.872	1.872	1.946	H1-1b



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

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	ϕ *Pnc [k]	ϕ *Pnt [k]	ϕ *Mn y-y [k-ft]	ϕ *Mn z-z [k-ft]	Cb	Eqn
56	90	PIPE 2.0	0.514	12.536	2	0.157	13.443	10			4.679	32.13	1.872	1.872	2.043	H1-1b
57	91	L2.5x2.5x4	0.394	1.245	7	0.309	0.597	z	9		36.654	38.556	1.114	2.537	1.41	H2-1
58	92	L2.5x2.5x4	0.426	0	9	0.334	0	z	2		36.654	38.556	1.114	2.537	1.5	H2-1

Envelope NONE Member Cold Formed Steel Code Checks

No Data to Print...

APPENDIX D
ADDITIONAL CALCULATIONS

PROJECT	137165.006.01 - Upper Stepney - TLC KSC			
SUBJECT	Platform Mount Analysis			
DATE	07/19/22	PAGE	1	OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	2.391	k
Vertical Shear	:	2.092	k
Horizontal Shear	:	0.712	k
Torsion	:	0.684	k.ft
Moment from Horizontal Forces	:	0.735	k.ft
Moment from Vertical Forces	:	5.38	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.21	k
Force from Horz. Moment	:	1.33	k
Force from Vert. Moment	:	9.74	k
Shear Load / Bolt	:	0.55	k
Tension Load / Bolt	:	0.60	k
Resultant from Moments / Bolt	:	4.92	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	26.62%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	10.41%		OKAY
Unity Check, Combined	:	37.02%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.59%		OKAY

Date: July 25, 2022



Black & Veatch Corp.
11401 Lamar Avenue
Overland Park, KS 66211
(913) 458-6909

Subject: Structural Analysis Report

Carrier Designation: AT&T Mobility Co-Locate
Site Number: 5186
Site Name: Monroe-Mian Street
Site FA#: 10091776

Crown Castle Designation: BU Number: 876355
Site Name: UPPER STEPNEY - TLC
JDE Job Number: 715660
Work Order Number: 2138141
Order Number: 614869 Rev. 0

Engineering Firm Designation: Black & Veatch Corp. Project Number: 406642

Site Data: 474-480 Main St., Monroe, Fairfield County, CT
Latitude 41° 19' 31.99", Longitude -73° 15' 57.05"
191.5 Foot - Monopole Tower

Black & Veatch Corp. is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

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

LC5: Proposed Equipment Configuration

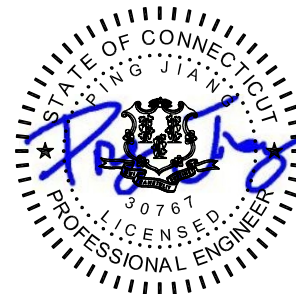
Sufficient Capacity - 50.5%

This analysis utilizes an ultimate 3-second gust wind speed of 117 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Wongsakorn Chanawan / Purich Sangpairoj

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer



Jul 25, 2022

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Table 5 - Tower Component Stresses vs. Capacity - LC5

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 191.5 ft Monopole tower designed by Engineered Endeavors, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	117 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.000 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.213
Seismic S1:	0.055
Service Wind Speed:	60 mph
Seismic Loading:	Does not control per engineering judgment

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	141.0	1	site pro 1	HRK14	2 2 2 6	3/8 13/16 7/8 1-1/4
	140.0	6	cci antennas	OPA-65R-BU6DA-K w/ Mount Pipe		
		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		
		1	raycap	DC6-48-60-18-8F		
	137.0	1	cci tower mounts (v2.1)	Platform Mount [LP 303-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
192.0	194.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
	192.0	1	cci tower mounts (v2.1)	Platform Mount [LP 303-1_HR-1]		
		3	commscope	ATSBT-TOP-MF-4G		
		3	ericsson	RADIO 4415 B66A_CCIV3		
		3	ericsson	RADIO 4424 B25_TMO		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
162.0	162.0	1	cci tower mounts	Platform Mount	7	1-5/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	160.0		(v2.1)	[LP 303-1_HR-1]		
		4	antel	LPA-80063/6CF w/ Mount Pipe		
		2	antel	LPA-80080/4CF w/ Mount Pipe		
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65B-R3B-V3 w/ Mount Pipe		
		1	raycap	RCMDC-6627-PF-48		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
154.0	154.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-
		3	alcatel lucent	800MHZ 2X50W RRH		
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		1	cci tower mounts (v2.1)	Side Arm Mount [SO 102-3]		
150.0	150.0	3	alcatel lucent	TD-RRH8X20-25	4	1-1/4
		1	cci tower mounts (v2.1)	Platform Mount [LP 601-1]		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
50.0	52.0	1	kathrein	OG-860/1920/GPS-A	1	1/2
	50.0	1	cci tower mounts (v2.1)	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1531885	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1631625	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1631582	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	191.5 - 172.46	Pole	TP20.46x15.5x0.1875	1	-4.36	711.71	21.1	Pass
L2	172.46 - 127.753	Pole	TP31.6x19.2819x0.3125	2	-19.20	1835.55	39.1	Pass
L3	127.753 - 83.083	Pole	TP42.49x29.8151x0.4375	3	-29.96	3458.67	39.9	Pass
L4	83.083 - 40.456	Pole	TP52.59x40.1114x0.5	4	-45.06	4900.01	38.8	Pass
L5	40.456 - 0	Pole	TP62x49.7661x0.5	5	-66.38	5995.11	42.1	Pass
							Summary	
						Pole (L5)	42.1	Pass
						Rating =	42.1	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	39.3	Pass
	Base Plate		49.8	Pass
1	Base Foundation (Structure)	0	50.5	Pass
	Base Foundation (Soil Interaction)		44.6	Pass

Structure Rating (max from all components) =	50.5%
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Notes:

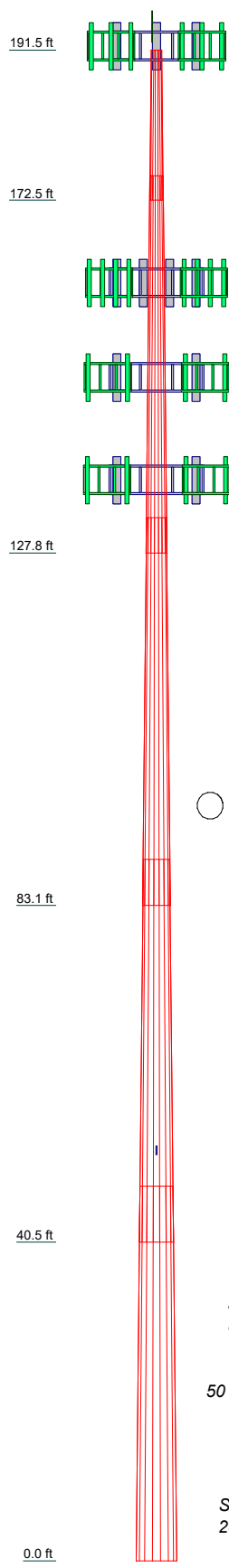
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity. Rating per TIA-222-H Section 15.5.

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

Section	1	2	3	4	5
Length (ft)	19.04	47.79	49.17	48.46	47.54
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.3125	0.4375	0.5000	0.5000
Socket Length (ft)	3.08	4.50	5.83	7.08	49.7661
Top Dia (in)	15.5000	19.2819	29.8151	40.1114	49.7661
Bot Dia (in)	20.4600	31.6000	42.4900	52.5900	62.0000
Grade			A572-65		
Weight (K)	0.7	4.1	8.3	12.0	14.2



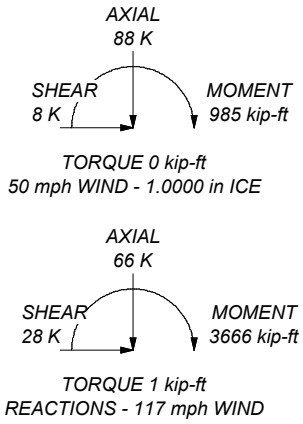
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 117 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 42.1%

ALL REACTIONS ARE FACTORED



 BLACK & VEATCH Building a world of difference.	Black & Veatch Corp. 11401 Lamar Avenue Overland Park, KS 66211 Phone: (913) 458-6909 FAX:		Job: UPPER STEPNEY - TLC(BU# 876355) Project: 406642 (876355.2138141) Client: Crown Castle Code: TIA-222-H Path:	Drawn by: Purich Sangpairo Date: 07/25/22 Scale: NTS Dwg No. E-1
--	---	--	--	---

Tower Input Data

The tower is a monopole.
 This tower is designed using the TIA-222-H standard.
 The following design criteria apply:

- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 446.00 ft.
- Basic wind speed of 117 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
--	---	---

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	191.50-172.46	19.04	3.08	18	15.5000	20.4600	0.1875	0.7500	A572-65 (65 ksi)
L2	172.46-127.75	47.79	4.50	18	19.2819	31.6000	0.3125	1.2500	A572-65 (65 ksi)
L3	127.75-83.08	49.17	5.83	18	29.8151	42.4900	0.4375	1.7500	A572-65 (65 ksi)
L4	83.08-40.46	48.46	7.08	18	40.1114	52.5900	0.5000	2.0000	A572-65 (65 ksi)
L5	40.46-0.00	47.54		18	49.7661	62.0000	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	15.7102	9.1129	269.9504	5.4359	7.8740	34.2838	540.2560	4.5573	2.3980	12.789
	20.7467	12.0647	626.4228	7.1967	10.3937	60.2696	1253.6699	6.0335	3.2710	17.445
L2	20.3380	18.8152	855.3677	6.7341	9.7952	87.3253	1711.8609	9.4094	2.8436	9.1
	32.0393	31.0333	3838.0178	11.1071	16.0528	239.0871	7681.0857	15.5196	5.0116	16.037
L3	31.3854	40.7945	4448.0675	10.4290	15.1461	293.6780	8901.9879	20.4011	4.4775	10.234
	43.0780	58.3952	13046.616	14.9286	21.5849	604.4320	26110.399	29.2031	6.7082	15.333
L4	42.1782	62.8633	12461.619	14.0620	20.3766	611.5657	24939.636	31.4376	6.1796	12.359
	53.3242	82.6668	28338.538	18.4919	26.7157	1060.7440	56714.365	41.3413	8.3758	16.752
L5	52.3076	78.1853	23975.023	17.4895	25.2812	948.3348	47981.593	39.1001	7.8788	15.758
	62.8793	97.6005	46637.979	21.8325	31.4960	1480.7588	93337.325	48.8095	10.0320	20.064

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 191.50- 172.46				1	1	1			
L2 172.46- 127.75				1	1	1			
L3 127.75- 83.08				1	1	1			
L4 83.08- 40.46				1	1	1			
L5 40.46-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	Surface Ar (CaAa)	191.50 - 10.00	1	1	0.000 0.010	0.3750		0.22

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf

HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	191.50 - 0.00	3	No Ice	0.00	2.40
							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40

AVA7-50(1-5/8)	C	No	No	Inside Pole	162.00 - 0.00	6	No Ice	0.00	0.70
							1/2" Ice	0.00	0.70
							1" Ice	0.00	0.70
HB158-1-13U6- S6F18(1-5/8)	C	No	No	Inside Pole	162.00 - 0.00	1	No Ice	0.00	1.90
							1/2" Ice	0.00	1.90
							1" Ice	0.00	1.90

HB114-21U3M12- XXXF(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	1	No Ice	0.00	1.22
							1/2" Ice	0.00	1.22
							1" Ice	0.00	1.22
HB114-1-0813U4- M5J(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	3	No Ice	0.00	1.20
							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20

LDF6-50A(1-1/4)	C	No	No	Inside Pole	137.00 - 0.00	6	No Ice	0.00	0.60
							1/2" Ice	0.00	0.60
							1" Ice	0.00	0.60
FB-L98B-002- XXX(3/8)	C	No	No	Inside Pole	137.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
PWRT-606-S(7/8)	C	No	No	Inside Pole	137.00 - 0.00	2	No Ice	0.00	0.89
							1/2" Ice	0.00	0.89
							1" Ice	0.00	0.89
PWRT-608- S(13/16)	C	No	No	Inside Pole	137.00 - 0.00	2	No Ice	0.00	0.62
							1/2" Ice	0.00	0.62
							1" Ice	0.00	0.62
FB-L98B-034- XXX(3/8)	C	No	No	Inside Pole	137.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06

LDF4-50A(1/2)	C	No	No	Inside Pole	50.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	191.50-172.46	A	0.000	0.000	0.714	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.14
L2	172.46-127.75	A	0.000	0.000	1.677	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.70
L3	127.75-83.08	A	0.000	0.000	1.675	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1.11
L4	83.08-40.46	A	0.000	0.000	1.599	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1.06
L5	40.46-0.00	A	0.000	0.000	1.142	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1.01

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_{A,A}$ In Face ft ²	$C_{A,A}$ Out Face ft ²	Weight K
L1	191.50-172.46	A	1.008	0.000	0.000	4.553	0.000	0.04
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.14
L2	172.46-127.75	A	0.988	0.000	0.000	10.690	0.000	0.09
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.70
L3	127.75-83.08	A	0.954	0.000	0.000	10.503	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1.11
L4	83.08-40.46	A	0.905	0.000	0.000	9.731	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1.06
L5	40.46-0.00	A	0.807	0.000	0.000	6.652	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1.01

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	191.50-172.46	-0.2584	-0.1528	-0.8344	-0.4935
L2	172.46-127.75	-0.2594	-0.1534	-0.8828	-0.5221
L3	127.75-83.08	-0.2601	-0.1538	-0.9050	-0.5352
L4	83.08-40.46	-0.2604	-0.1540	-0.8997	-0.5321
L5	40.46-0.00	-0.1922	-0.1137	-0.6498	-0.3843

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor K_a

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	Safety Line 3/8	172.46 - 191.50	1.0000	1.0000
L2	1	Safety Line 3/8	127.75 - 172.46	1.0000	1.0000
L3	1	Safety Line 3/8	83.08 - 127.75	1.0000	1.0000
L4	1	Safety Line 3/8	40.46 - 83.08	1.0000	1.0000
L5	1	Safety Line 3/8	10.00 - 40.46	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
Lightning Rod 5/8"x6'	C	From Leg	0.00	0.00	0.00	191.50	No Ice	0.38	0.38	0.01
			0.00				1/2"	0.99	0.99	0.01
			3.00				Ice	1.62	1.62	0.02
							1" Ice			

Platform Mount [LP 303-1_HR-1]	C	None			0.00	192.00	No Ice	17.09	17.09	1.50
							1/2"	21.47	21.47	1.88
							Ice	25.72	25.72	2.35
							1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	192.00	No Ice	5.19	2.71	0.13
			0.00				1/2"	5.59	3.04	0.17
			2.00				Ice	6.02	3.38	0.23
							1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	192.00	No Ice	5.19	2.71	0.13
			0.00				1/2"	5.59	3.04	0.17
			2.00				Ice	6.02	3.38	0.23
							1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	192.00	No Ice	5.19	2.71	0.13
			0.00				1/2"	5.59	3.04	0.17
			2.00				Ice	6.02	3.38	0.23
							1" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	192.00	No Ice	14.69	6.87	0.19
			0.00				1/2"	15.46	7.55	0.31
			0.00				Ice	16.23	8.25	0.46
							1" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	192.00	No Ice	14.69	6.87	0.19
			0.00				1/2"	15.46	7.55	0.31
			0.00				Ice	16.23	8.25	0.46
							1" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	192.00	No Ice	14.69	6.87	0.19
			0.00				1/2"	15.46	7.55	0.31
			0.00				Ice	16.23	8.25	0.46
							1" Ice			
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	192.00	No Ice	6.29	2.76	0.06
			0.00				1/2"	6.86	3.27	0.11
			0.00				Ice	7.45	3.79	0.16
							1" Ice			
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	192.00	No Ice	6.29	2.76	0.06
			0.00				1/2"	6.86	3.27	0.11
			0.00				Ice	7.45	3.79	0.16
							1" Ice			
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	192.00	No Ice	6.29	2.76	0.06
			0.00				1/2"	6.86	3.27	0.11
			0.00				Ice	7.45	3.79	0.16
							1" Ice			
RADIO 4449 B12/B71	A	From Leg	4.00	0.00	0.00	192.00	No Ice	1.65	1.30	0.08
			0.00				1/2"	1.81	1.44	0.09
			0.00				Ice	1.98	1.60	0.11
							1" Ice			
RADIO 4449 B12/B71	B	From Leg	4.00	0.00	0.00	192.00	No Ice	1.65	1.30	0.08
			0.00				1/2"	1.81	1.44	0.09
			0.00				Ice	1.98	1.60	0.11
							1" Ice			
RADIO 4449 B12/B71	C	From Leg	4.00	0.00	0.00	192.00	No Ice	1.65	1.30	0.08
			0.00				1/2"	1.81	1.44	0.09
			0.00				Ice	1.98	1.60	0.11
							1" Ice			
RADIO 4424 B25_TMO	A	From Leg	4.00	0.00	0.00	192.00	No Ice	2.05	1.61	0.09
			0.00				1/2"	2.23	1.77	0.11
			0.00				Ice	2.42	1.94	0.13
							1" Ice			
RADIO 4424 B25_TMO	B	From Leg	4.00	0.00	0.00	192.00	No Ice	2.05	1.61	0.09
			0.00				1/2"	2.23	1.77	0.11
			0.00				Ice	2.42	1.94	0.13
							1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
RADIO 4424 B25_TMO	C	From Leg	4.00	0.00	192.00	No Ice	2.05	1.61	0.09
			0.00			1/2"	2.23	1.77	0.11
			0.00			Ice	2.42	1.94	0.13
RADIO 4415 B66A_CCIV3	A	From Leg	4.00	0.00	192.00	1" Ice	1.64	0.68	0.05
			0.00			No Ice	1.64	0.68	0.05
			0.00			1/2"	1.80	0.79	0.06
RADIO 4415 B66A_CCIV3	B	From Leg	4.00	0.00	192.00	Ice	1.97	0.91	0.07
			0.00			1" Ice	1.64	0.68	0.05
			0.00			No Ice	1.64	0.68	0.05
RADIO 4415 B66A_CCIV3	C	From Leg	4.00	0.00	192.00	1/2"	1.80	0.79	0.06
			0.00			Ice	1.97	0.91	0.07
			0.00			1" Ice	1.64	0.68	0.05
ATSBT-TOP-MF-4G	A	From Leg	4.00	0.00	192.00	No Ice	0.17	0.09	0.00
			0.00			1/2"	0.23	0.14	0.00
			0.00			Ice	0.29	0.19	0.01
ATSBT-TOP-MF-4G	B	From Leg	4.00	0.00	192.00	1" Ice	0.17	0.09	0.00
			0.00			No Ice	0.17	0.09	0.00
			0.00			1/2"	0.23	0.14	0.00
ATSBT-TOP-MF-4G	C	From Leg	4.00	0.00	192.00	Ice	0.29	0.19	0.01
			0.00			1" Ice	0.17	0.09	0.00
			0.00			No Ice	0.17	0.09	0.00
*** Platform Mount [LP 303-1_HR-1]	C	None		0.00	162.00	1/2"	17.09	17.09	1.50
						Ice	25.72	25.72	2.35
						1" Ice			
6'x2" Mount Pipe	A	From Leg	2.00	0.00	162.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6'x2" Mount Pipe	A	From Leg	4.00	0.00	162.00	1" Ice	1.43	1.43	0.02
			0.00			No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
6'x2" Mount Pipe	B	From Leg	4.00	0.00	162.00	Ice	2.29	2.29	0.05
			0.00			1" Ice	1.43	1.43	0.02
			0.00			No Ice	1.43	1.43	0.02
6'x2" Mount Pipe	C	From Leg	4.00	0.00	162.00	1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
			0.00			1" Ice	1.43	1.43	0.02
(2) LPA-80063/6CF w/ Mount Pipe	A	From Leg	4.00	0.00	162.00	No Ice	9.83	10.22	0.05
			0.00			1/2"	10.40	11.38	0.14
			-2.00			Ice	10.93	12.27	0.25
(2) LPA-80063/6CF w/ Mount Pipe	B	From Leg	4.00	0.00	162.00	1" Ice	9.83	10.22	0.05
			0.00			No Ice	9.83	10.22	0.05
			-2.00			1/2"	10.40	11.38	0.14
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.00	0.00	162.00	Ice	10.93	12.27	0.25
			0.00			1" Ice	2.04	5.22	0.04
			-2.00			No Ice	2.04	5.22	0.04
MT6407-77A w/ Mount Pipe	A	From Leg	4.00	0.00	162.00	1/2"	2.42	5.67	0.08
			0.00			Ice	2.82	6.13	0.13
			-2.00			1" Ice	2.04	5.22	0.04
			4.00	0.00	162.00	No Ice	4.91	2.68	0.10
			0.00			1/2"	5.26	3.14	0.14
			-2.00			Ice	5.61	3.62	0.18
						1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
MT6407-77A w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	4.91	2.68	0.10
						1/2"	5.26	3.14	0.14
						Ice	5.61	3.62	0.18
						1" Ice			
MT6407-77A w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	4.91	2.68	0.10
						1/2"	5.26	3.14	0.14
						Ice	5.61	3.62	0.18
						1" Ice			
(2) JAHH-65B-R3B-V3 w/ Mount Pipe	A	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	5.50	4.38	0.10
						1/2"	5.97	4.84	0.17
						Ice	6.45	5.30	0.25
						1" Ice			
(2) JAHH-65B-R3B-V3 w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	5.50	4.38	0.10
						1/2"	5.97	4.84	0.17
						Ice	6.45	5.30	0.25
						1" Ice			
(2) JAHH-65B-R3B-V3 w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	5.50	4.38	0.10
						1/2"	5.97	4.84	0.17
						Ice	6.45	5.30	0.25
						1" Ice			
CBC78T-DS-43-2X	A	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	0.37	0.51	0.02
						1/2"	0.45	0.60	0.03
						Ice	0.53	0.70	0.04
						1" Ice			
CBC78T-DS-43-2X	B	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	0.37	0.51	0.02
						1/2"	0.45	0.60	0.03
						Ice	0.53	0.70	0.04
						1" Ice			
CBC78T-DS-43-2X	C	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	0.37	0.51	0.02
						1/2"	0.45	0.60	0.03
						Ice	0.53	0.70	0.04
						1" Ice			
RFV01U-D1A	A	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D1A	B	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D1A	C	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D2A	A	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.01	0.07
						1/2"	2.05	1.14	0.09
						Ice	2.22	1.28	0.11
						1" Ice			
RFV01U-D2A	B	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.01	0.07
						1/2"	2.05	1.14	0.09
						Ice	2.22	1.28	0.11
						1" Ice			
RFV01U-D2A	C	From Leg	4.00 0.00 -2.00	0.00	162.00	No Ice	1.88	1.01	0.07
						1/2"	2.05	1.14	0.09
						Ice	2.22	1.28	0.11
						1" Ice			
RCMDC-6627-PF-48	A	From Leg	2.00 0.00 -2.00	0.00	162.00	No Ice	4.06	3.10	0.03
						1/2"	4.32	3.34	0.07
						Ice	4.58	3.58	0.11
						1" Ice			
*** Side Arm Mount [SO 102-3]	C	None		0.00	154.00	No Ice	3.60	3.60	0.07
1/2"						4.18	4.18	0.11	
Ice						4.75	4.75	0.14	
1" Ice									

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.00		0.00	154.00	No Ice	2.32	2.24	0.06
			0.00				1/2"	2.53	2.44	0.08
			0.00				Ice	2.74	2.65	0.11
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.00		0.00	154.00	No Ice	2.32	2.24	0.06
			0.00				1/2"	2.53	2.44	0.08
			0.00				Ice	2.74	2.65	0.11
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.00		0.00	154.00	No Ice	2.32	2.24	0.06
			0.00				1/2"	2.53	2.44	0.08
			0.00				Ice	2.74	2.65	0.11
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00		0.00	154.00	No Ice	0.66	0.32	0.01
			0.00				1/2"	0.76	0.40	0.02
			0.00				Ice	0.87	0.48	0.02
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00		0.00	154.00	No Ice	0.66	0.32	0.01
			0.00				1/2"	0.76	0.40	0.02
			0.00				Ice	0.87	0.48	0.02
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00		0.00	154.00	No Ice	0.66	0.32	0.01
			0.00				1/2"	0.76	0.40	0.02
			0.00				Ice	0.87	0.48	0.02
800MHZ 2X50W RRH	A	From Leg	4.00		0.00	154.00	No Ice	2.13	1.77	0.05
			0.00				1/2"	2.32	1.95	0.07
			0.00				Ice	2.51	2.13	0.10
800MHZ 2X50W RRH	B	From Leg	4.00		0.00	154.00	No Ice	2.13	1.77	0.05
			0.00				1/2"	2.32	1.95	0.07
			0.00				Ice	2.51	2.13	0.10
800MHZ 2X50W RRH	C	From Leg	4.00		0.00	154.00	No Ice	2.13	1.77	0.05
			0.00				1/2"	2.32	1.95	0.07
			0.00				Ice	2.51	2.13	0.10

Platform Mount [LP 601-1]	C	None			0.00	150.00	No Ice	28.50	28.50	1.12
							1/2"	31.69	31.69	1.68
							Ice	34.87	34.87	2.28
Transition Ladder	C	From Leg	2.00		0.00	150.00	No Ice	6.00	6.00	0.16
			0.00				1/2"	8.00	8.00	0.24
			-3.00				Ice	10.00	10.00	0.32
6'x2" Mount Pipe	A	From Leg	4.00		0.00	150.00	No Ice	1.43	1.43	0.02
			0.00				1/2"	1.92	1.92	0.03
			0.00				Ice	2.29	2.29	0.05
6'x2" Mount Pipe	B	From Leg	4.00		0.00	150.00	No Ice	1.43	1.43	0.02
			0.00				1/2"	1.92	1.92	0.03
			0.00				Ice	2.29	2.29	0.05
6'x2" Mount Pipe	C	From Leg	4.00		0.00	150.00	No Ice	1.43	1.43	0.02
			0.00				1/2"	1.92	1.92	0.03
			0.00				Ice	2.29	2.29	0.05
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00		0.00	150.00	No Ice	4.09	2.86	0.08
			0.00				1/2"	4.48	3.23	0.13
			0.00				Ice	4.88	3.61	0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00		0.00	150.00	No Ice	4.09	2.86	0.08
			0.00				1/2"	4.48	3.23	0.13
			0.00				Ice	4.88	3.61	0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00	0.00	150.00	No Ice	4.09	2.86	0.08
			0.00			1/2"	4.48	3.23	0.13
			0.00			Ice	4.88	3.61	0.19
APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	4.00	0.00	150.00	No Ice	4.60	4.01	0.10
			0.00			1/2"	5.05	4.45	0.16
			0.00			Ice	5.50	4.89	0.23
APXVSP18-C-A20 w/ Mount Pipe	B	From Leg	4.00	0.00	150.00	No Ice	4.60	4.01	0.10
			0.00			1/2"	5.05	4.45	0.16
			0.00			Ice	5.50	4.89	0.23
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.00	0.00	150.00	No Ice	4.60	4.01	0.10
			0.00			1/2"	5.05	4.45	0.16
			0.00			Ice	5.50	4.89	0.23
TD-RRH8X20-25	A	From Leg	4.00	0.00	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
TD-RRH8X20-25	B	From Leg	4.00	0.00	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
TD-RRH8X20-25	C	From Leg	4.00	0.00	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13

6'x2" Mount Pipe	A	From Leg	0.00	0.00	140.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6'x2" Mount Pipe	B	From Leg	0.00	0.00	140.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6'x2" Mount Pipe	C	From Leg	0.00	0.00	140.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05

Platform Mount [LP 303-1]	C	None		0.00	137.00	No Ice	14.69	14.69	1.25
						1/2"	18.01	18.01	1.57
						Ice	21.34	21.34	1.94
HRK14	C	From Leg	0.00	0.00	137.00	No Ice	6.36	6.36	0.26
			0.00			1/2"	8.52	8.52	0.34
			4.00			Ice	10.62	10.62	0.46
6'x2" Mount Pipe	A	From Leg	2.00	0.00	137.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			3.00			Ice	2.29	2.29	0.05
6'x2" Mount Pipe	B	From Leg	2.00	0.00	137.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			3.00			Ice	2.29	2.29	0.05
6'x2" Mount Pipe	C	From Leg	2.00	0.00	137.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			3.00			Ice	2.29	2.29	0.05
2'x2" Mount Pipe	A	From Leg	4.00	0.00	137.00	No Ice	0.34	0.34	0.01
			0.00			1/2"	0.47	0.47	0.01
			0.00			Ice	0.61	0.61	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
2'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	137.00	1" Ice			
						No Ice	0.34	0.34	0.01
						1/2" Ice	0.47	0.47	0.01
2'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	137.00	1" Ice			
						No Ice	0.34	0.34	0.01
						1/2" Ice	0.47	0.47	0.01
(2) OPA-65R-BU6DA-K w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	13.11	7.32	0.09
						1/2" Ice	13.71	8.49	0.18
(2) OPA-65R-BU6DA-K w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	13.11	7.32	0.09
						1/2" Ice	13.71	8.49	0.18
(2) OPA-65R-BU6DA-K w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	13.11	7.32	0.09
						1/2" Ice	13.71	8.49	0.18
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	1.97	1.41	0.07
						1/2" Ice	2.14	1.56	0.09
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	1.97	1.41	0.07
						1/2" Ice	2.14	1.56	0.09
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	1.97	1.41	0.07
						1/2" Ice	2.14	1.56	0.09
RRUS 4478 B14_CCIV2	A	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	2.02	1.25	0.06
						1/2" Ice	2.20	1.40	0.08
RRUS 4478 B14_CCIV2	B	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	2.02	1.25	0.06
						1/2" Ice	2.20	1.40	0.08
RRUS 4478 B14_CCIV2	C	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	2.02	1.25	0.06
						1/2" Ice	2.20	1.40	0.08
(2) RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	1.98	1.70	0.08
						1/2" Ice	2.16	1.86	0.10
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	1.98	1.70	0.08
						1/2" Ice	2.16	1.86	0.10
DC6-48-60-18-8C-EV	C	From Leg	2.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	2.74	2.74	0.03
						1/2" Ice	2.96	2.96	0.05
DC6-48-60-18-8F	C	From Leg	2.00 0.00 3.00	0.00	137.00	1" Ice			
						No Ice	0.92	0.92	0.02
						1/2" Ice	1.46	1.46	0.04
*** Side Arm Mount [SO 701-1]	A	From Leg	1.50 0.00 0.00	0.00	50.00	1" Ice			
						No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						Ice	1.43	3.01	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight K	
OG-860/1920/GPS-A	A	From Leg	3.00 0.00 2.00	0.00	50.00	1" Ice No Ice 1/2" Ice 1" Ice	0.31 0.40 0.49	0.37 0.46 0.55	0.00 0.01 0.01

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service

Comb. No.	Description
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	191.5 - 172.46	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-7.78	0.03	0.02
			Max. Mx	20	-4.36	72.27	0.03
			Max. My	2	-4.36	0.02	72.29
			Max. Vy	20	-4.73	72.27	0.03
			Max. Vx	2	-4.74	0.02	72.29
			Max. Torque	24			0.01
L2	172.46 - 127.753	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.74	0.41	1.10
			Max. Mx	20	-19.22	539.11	2.66
			Max. My	2	-19.21	2.82	542.56
			Max. Vy	20	-18.53	539.11	2.66
			Max. Vx	2	-18.67	2.82	542.56
			Max. Torque	25			-1.72
L3	127.753 - 83.083	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.28	0.52	1.17
			Max. Mx	20	-29.97	1410.35	6.33
			Max. My	2	-29.96	6.47	1419.71
			Max. Vy	8	21.71	-1409.22	-5.48
			Max. Vx	2	-21.85	6.47	1419.71
			Max. Torque	23			-0.95
L4	83.083 - 40.456	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.60	0.65	1.65
			Max. Mx	20	-45.06	2376.26	10.07
			Max. My	2	-45.06	9.92	2391.44
			Max. Vy	8	24.95	-2375.06	-8.59
			Max. Vx	2	-25.06	9.92	2391.44
			Max. Torque	23			-1.14
L5	40.456 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.61	0.77	1.73
			Max. Mx	20	-66.38	3639.61	13.92
			Max. My	2	-66.38	13.78	3659.88
			Max. Vy	8	28.12	-3638.36	-12.40
			Max. Vx	2	-28.23	13.78	3659.88
			Max. Torque	23			-1.14

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	38	87.61	3.85	6.67
	Max. H _x	21	49.79	28.09	0.08
	Max. H _z	2	66.39	0.08	28.20
	Max. M _x	2	3659.88	0.08	28.20
	Max. M _z	8	3638.36	-28.09	-0.08
	Max. Torsion	11	1.13	-24.37	-14.17
	Min. Vert	7	49.79	-24.29	14.03
	Min. H _x	8	66.39	-28.09	-0.08
	Min. H _z	14	66.39	-0.08	-28.20
	Min. M _x	14	-3658.35	-0.08	-28.20

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. M _z	20	-3639.61	28.09	0.08
	Min. Torsion	23	-1.14	24.37	14.17

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	55.32	0.00	0.00	-0.60	0.46	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	66.39	-0.08	-28.20	-3659.88	13.78	0.35
0.9 Dead+1.0 Wind 0 deg - No Ice	49.79	-0.08	-28.20	-3614.51	13.44	0.36
1.2 Dead+1.0 Wind 30 deg - No Ice	66.39	13.98	-24.38	-3163.14	-1807.49	-0.25
0.9 Dead+1.0 Wind 30 deg - No Ice	49.79	13.98	-24.38	-3123.88	-1785.34	-0.24
1.2 Dead+1.0 Wind 60 deg - No Ice	66.39	24.29	-14.03	-1818.97	-3144.29	-0.78
0.9 Dead+1.0 Wind 60 deg - No Ice	49.79	24.29	-14.03	-1796.32	-3105.64	-0.78
1.2 Dead+1.0 Wind 90 deg - No Ice	66.39	28.09	0.08	12.40	-3638.36	-1.10
0.9 Dead+1.0 Wind 90 deg - No Ice	49.79	28.09	0.08	12.43	-3593.62	-1.10
1.2 Dead+1.0 Wind 120 deg - No Ice	66.39	24.37	14.17	1840.22	-3157.41	-1.12
0.9 Dead+1.0 Wind 120 deg - No Ice	49.79	24.37	14.17	1817.67	-3118.58	-1.13
1.2 Dead+1.0 Wind 150 deg - No Ice	66.39	14.12	24.46	3174.73	-1830.25	-0.85
0.9 Dead+1.0 Wind 150 deg - No Ice	49.79	14.12	24.46	3135.70	-1807.81	-0.86
1.2 Dead+1.0 Wind 180 deg - No Ice	66.39	0.08	28.20	3658.35	-12.54	-0.35
0.9 Dead+1.0 Wind 180 deg - No Ice	49.79	0.08	28.20	3613.38	-12.53	-0.36
1.2 Dead+1.0 Wind 210 deg - No Ice	66.39	-13.98	24.38	3161.60	1808.71	0.24
0.9 Dead+1.0 Wind 210 deg - No Ice	49.79	-13.98	24.38	3122.75	1786.24	0.24
1.2 Dead+1.0 Wind 240 deg - No Ice	66.39	-24.29	14.03	1817.44	3145.51	0.77
0.9 Dead+1.0 Wind 240 deg - No Ice	49.79	-24.29	14.03	1795.19	3106.53	0.77
1.2 Dead+1.0 Wind 270 deg - No Ice	66.39	-28.09	-0.08	-13.92	3639.61	1.10
0.9 Dead+1.0 Wind 270 deg - No Ice	49.79	-28.09	-0.08	-13.55	3594.51	1.10
1.2 Dead+1.0 Wind 300 deg - No Ice	66.39	-24.37	-14.17	-1841.74	3158.63	1.13
0.9 Dead+1.0 Wind 300 deg - No Ice	49.79	-24.37	-14.17	-1818.79	3119.48	1.14
1.2 Dead+1.0 Wind 330 deg - No Ice	66.39	-14.12	-24.46	-3176.25	1831.49	0.85
0.9 Dead+1.0 Wind 330 deg - No Ice	49.79	-14.12	-24.46	-3136.82	1808.71	0.86
1.2 Dead+1.0 Ice+1.0 Temp	87.61	-0.00	-0.00	-1.73	0.77	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	87.61	-0.01	-7.70	-984.03	2.64	-0.01
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	87.61	3.83	-6.66	-851.56	-487.22	-0.12
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	87.61	6.65	-3.84	-491.42	-846.30	-0.19
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	87.61	7.69	0.01	-0.12	-978.38	-0.21

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120	87.61	6.66	3.86	490.70	-848.08	-0.18
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 150	87.61	3.85	6.67	849.53	-490.32	-0.10
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	87.61	0.01	7.70	980.21	-0.94	0.01
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	87.61	-3.83	6.66	847.74	488.91	0.12
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	87.61	-6.65	3.84	487.60	847.99	0.19
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	87.61	-7.69	-0.01	-3.70	980.07	0.21
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	87.61	-6.66	-3.86	-494.52	849.78	0.18
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	87.61	-3.85	-6.67	-853.35	492.01	0.10
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	55.32	-0.02	-6.99	-900.39	3.73	0.09
Dead+Wind 30 deg - Service	55.32	3.46	-6.04	-778.23	-444.10	-0.06
Dead+Wind 60 deg - Service	55.32	6.02	-3.48	-447.71	-772.80	-0.19
Dead+Wind 90 deg - Service	55.32	6.96	0.02	2.60	-894.30	-0.27
Dead+Wind 120 deg - Service	55.32	6.04	3.51	452.04	-776.03	-0.28
Dead+Wind 150 deg - Service	55.32	3.50	6.06	780.19	-449.70	-0.21
Dead+Wind 180 deg - Service	55.32	0.02	6.99	899.12	-2.73	-0.09
Dead+Wind 210 deg - Service	55.32	-3.46	6.04	776.96	445.10	0.06
Dead+Wind 240 deg - Service	55.32	-6.02	3.48	446.44	773.80	0.19
Dead+Wind 270 deg - Service	55.32	-6.96	-0.02	-3.87	895.30	0.27
Dead+Wind 300 deg - Service	55.32	-6.04	-3.51	-453.31	777.03	0.28
Dead+Wind 330 deg - Service	55.32	-3.50	-6.06	-781.46	450.70	0.21

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-55.32	0.00	0.00	55.32	0.00	0.000%
2	-0.08	-66.39	-28.20	0.08	66.39	28.20	0.000%
3	-0.08	-49.79	-28.20	0.08	49.79	28.20	0.000%
4	13.98	-66.39	-24.38	-13.98	66.39	24.38	0.000%
5	13.98	-49.79	-24.38	-13.98	49.79	24.38	0.000%
6	24.29	-66.39	-14.03	-24.29	66.39	14.03	0.000%
7	24.29	-49.79	-14.03	-24.29	49.79	14.03	0.000%
8	28.09	-66.39	0.08	-28.09	66.39	-0.08	0.000%
9	28.09	-49.79	0.08	-28.09	49.79	-0.08	0.000%
10	24.37	-66.39	14.17	-24.37	66.39	-14.17	0.000%
11	24.37	-49.79	14.17	-24.37	49.79	-14.17	0.000%
12	14.12	-66.39	24.46	-14.12	66.39	-24.46	0.000%
13	14.12	-49.79	24.46	-14.12	49.79	-24.46	0.000%
14	0.08	-66.39	28.20	-0.08	66.39	-28.20	0.000%
15	0.08	-49.79	28.20	-0.08	49.79	-28.20	0.000%
16	-13.98	-66.39	24.38	13.98	66.39	-24.38	0.000%
17	-13.98	-49.79	24.38	13.98	49.79	-24.38	0.000%
18	-24.29	-66.39	14.03	24.29	66.39	-14.03	0.000%
19	-24.29	-49.79	14.03	24.29	49.79	-14.03	0.000%
20	-28.09	-66.39	-0.08	28.09	66.39	0.08	0.000%
21	-28.09	-49.79	-0.08	28.09	49.79	0.08	0.000%
22	-24.37	-66.39	-14.17	24.37	66.39	14.17	0.000%
23	-24.37	-49.79	-14.17	24.37	49.79	14.17	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
24	-14.12	-66.39	-24.46	14.12	66.39	24.46	0.000%
25	-14.12	-49.79	-24.46	14.12	49.79	24.46	0.000%
26	0.00	-87.61	0.00	0.00	87.61	0.00	0.000%
27	-0.01	-87.61	-7.70	0.01	87.61	7.70	0.000%
28	3.83	-87.61	-6.66	-3.83	87.61	6.66	0.000%
29	6.65	-87.61	-3.84	-6.65	87.61	3.84	0.000%
30	7.69	-87.61	0.01	-7.69	87.61	-0.01	0.000%
31	6.66	-87.61	3.86	-6.66	87.61	-3.86	0.000%
32	3.85	-87.61	6.67	-3.85	87.61	-6.67	0.000%
33	0.01	-87.61	7.70	-0.01	87.61	-7.70	0.000%
34	-3.83	-87.61	6.66	3.83	87.61	-6.66	0.000%
35	-6.65	-87.61	3.84	6.65	87.61	-3.84	0.000%
36	-7.69	-87.61	-0.01	7.69	87.61	0.01	0.000%
37	-6.66	-87.61	-3.86	6.66	87.61	3.86	0.000%
38	-3.85	-87.61	-6.67	3.85	87.61	6.67	0.000%
39	-0.02	-55.32	-6.99	0.02	55.32	6.99	0.000%
40	3.46	-55.32	-6.04	-3.46	55.32	6.04	0.000%
41	6.02	-55.32	-3.48	-6.02	55.32	3.48	0.000%
42	6.96	-55.32	0.02	-6.96	55.32	-0.02	0.000%
43	6.04	-55.32	3.51	-6.04	55.32	-3.51	0.000%
44	3.50	-55.32	6.06	-3.50	55.32	-6.06	0.000%
45	0.02	-55.32	6.99	-0.02	55.32	-6.99	0.000%
46	-3.46	-55.32	6.04	3.46	55.32	-6.04	0.000%
47	-6.02	-55.32	3.48	6.02	55.32	-3.48	0.000%
48	-6.96	-55.32	-0.02	6.96	55.32	0.02	0.000%
49	-6.04	-55.32	-3.51	6.04	55.32	3.51	0.000%
50	-3.50	-55.32	-6.06	3.50	55.32	6.06	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00066382
3	Yes	4	0.00000001	0.00029503
4	Yes	6	0.00000001	0.00006718
5	Yes	5	0.00000001	0.00052329
6	Yes	6	0.00000001	0.00006783
7	Yes	5	0.00000001	0.00052863
8	Yes	4	0.00000001	0.00078579
9	Yes	4	0.00000001	0.00041635
10	Yes	6	0.00000001	0.00006662
11	Yes	5	0.00000001	0.00051845
12	Yes	6	0.00000001	0.00006985
13	Yes	5	0.00000001	0.00054446
14	Yes	4	0.00000001	0.00083645
15	Yes	4	0.00000001	0.00045712
16	Yes	6	0.00000001	0.00006712
17	Yes	5	0.00000001	0.00052265
18	Yes	6	0.00000001	0.00006627
19	Yes	5	0.00000001	0.00051601
20	Yes	5	0.00000001	0.00005437
21	Yes	4	0.00000001	0.00061342
22	Yes	6	0.00000001	0.00007009
23	Yes	5	0.00000001	0.00054619
24	Yes	6	0.00000001	0.00006706
25	Yes	5	0.00000001	0.00052149
26	Yes	4	0.00000001	0.00000342
27	Yes	5	0.00000001	0.00028549
28	Yes	5	0.00000001	0.00033122
29	Yes	5	0.00000001	0.00033136
30	Yes	5	0.00000001	0.00028323
31	Yes	5	0.00000001	0.00032960
32	Yes	5	0.00000001	0.00033128
33	Yes	5	0.00000001	0.00028343

34	Yes	5	0.00000001	0.00032975
35	Yes	5	0.00000001	0.00032876
36	Yes	5	0.00000001	0.00028386
37	Yes	5	0.00000001	0.00033399
38	Yes	5	0.00000001	0.00033314
39	Yes	4	0.00000001	0.00005620
40	Yes	4	0.00000001	0.00029367
41	Yes	4	0.00000001	0.00030346
42	Yes	4	0.00000001	0.00006357
43	Yes	4	0.00000001	0.00027969
44	Yes	4	0.00000001	0.00032013
45	Yes	4	0.00000001	0.00005816
46	Yes	4	0.00000001	0.00029302
47	Yes	4	0.00000001	0.00028297
48	Yes	4	0.00000001	0.00006684
49	Yes	4	0.00000001	0.00032517
50	Yes	4	0.00000001	0.00028485

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.5 - 172.46	26.1965	50	1.36	0.00
L2	175.543 - 127.753	21.7729	50	1.27	0.00
L3	132.253 - 83.083	11.6803	50	0.91	0.00
L4	88.916 - 40.456	4.9791	50	0.55	0.00
L5	47.539 - 0	1.3922	50	0.27	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.00	Platform Mount [LP 303-1_HR-1]	50	26.1965	1.36	0.00	25243
191.50	Lightning Rod 5/8"x6'	50	26.1965	1.36	0.00	25243
162.00	Platform Mount [LP 303-1_HR-1]	50	18.2709	1.17	0.00	7255
154.00	Side Arm Mount [SO 102-3]	50	16.3433	1.10	0.00	6912
150.00	Platform Mount [LP 601-1]	50	15.4208	1.07	0.00	6752
140.00	6"x2" Mount Pipe	50	13.2406	0.98	0.00	6383
137.00	Platform Mount [LP 303-1]	50	12.6227	0.96	0.00	6280
50.00	Side Arm Mount [SO 701-1]	50	1.5308	0.28	0.00	7615

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.5 - 172.46	106.5698	24	5.54	0.01
L2	175.543 - 127.753	88.5813	24	5.16	0.01
L3	132.253 - 83.083	47.5289	24	3.73	0.00
L4	88.916 - 40.456	20.2582	24	2.23	0.00
L5	47.539 - 0	5.6622	24	1.10	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.00	Platform Mount [LP 303-1_HR-1]	24	106.5698	5.54	0.01	6280
191.50	Lightning Rod 5/8"x6'	24	106.5698	5.54	0.01	6280
162.00	Platform Mount [LP 303-1_HR-1]	24	74.3390	4.76	0.01	1801
154.00	Side Arm Mount [SO 102-3]	24	66.4985	4.50	0.01	1715
150.00	Platform Mount [LP 601-1]	24	62.7462	4.36	0.01	1675
140.00	6'x2" Mount Pipe	24	53.8769	4.01	0.00	1582
137.00	Platform Mount [LP 303-1]	24	51.3632	3.90	0.00	1556
50.00	Side Arm Mount [SO 701-1]	24	6.2261	1.16	0.00	1872

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	191.5 - 172.46 (1)	TP20.46x15.5x0.1875	19.04	0.00	0.0	11.586 7	-4.36	677.82	0.006
L2	172.46 - 127.753 (2)	TP31.6x19.2819x0.3125	47.79	0.00	0.0	29.882 8	-19.20	1748.14	0.011
L3	127.753 - 83.083 (3)	TP42.49x29.8151x0.4375	49.17	0.00	0.0	56.307 2	-29.96	3293.97	0.009
L4	83.083 - 40.456 (4)	TP52.59x40.1114x0.5	48.46	0.00	0.0	79.772 3	-45.06	4666.68	0.010
L5	40.456 - 0 (5)	TP62x49.7661x0.5	47.54	0.00	0.0	97.600 5	-66.38	5709.63	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	191.5 - 172.46 (1)	TP20.46x15.5x0.1875	72.31	336.46	0.215	0.00	336.46	0.000
L2	172.46 - 127.753 (2)	TP31.6x19.2819x0.3125	543.85	1367.38	0.398	0.00	1367.38	0.000
L3	127.753 - 83.083 (3)	TP42.49x29.8151x0.4375	1422.68	3478.03	0.409	0.00	3478.03	0.000
L4	83.083 - 40.456 (4)	TP52.59x40.1114x0.5	2395.96	6029.52	0.397	0.00	6029.52	0.000
L5	40.456 - 0 (5)	TP62x49.7661x0.5	3666.46	8525.50	0.430	0.00	8525.50	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	191.5 - 172.46 (1)	TP20.46x15.5x0.1875	4.74	203.35	0.023	0.01	346.71	0.000
L2	172.46 - 127.753 (2)	TP31.6x19.2819x0.3125	18.70	524.44	0.036	0.75	1383.70	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L3	127.753 - 83.083 (3)	TP42.49x29.8151x0.4375	21.88	988.19	0.022	0.75	3509.13	0.000
L4	83.083 - 40.456 (4)	TP52.59x40.1114x0.5	25.11	1400.00	0.018	0.86	6162.89	0.000
L5	40.456 - 0 (5)	TP62x49.7661x0.5	28.27	1712.89	0.017	0.85	9225.42	0.000

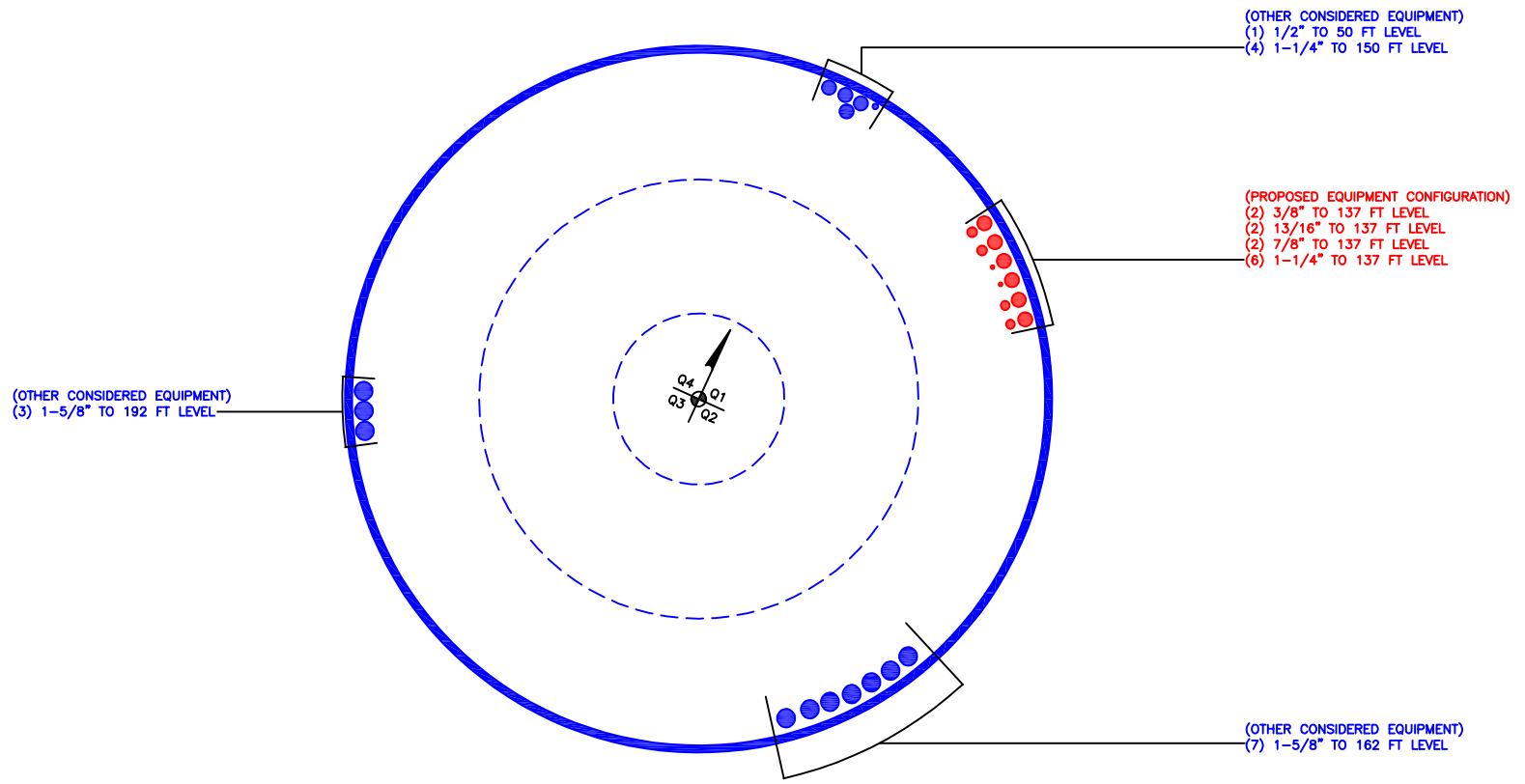
Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	191.5 - 172.46 (1)	0.006	0.215	0.000	0.023	0.000	0.222	1.050	4.8.2
L2	172.46 - 127.753 (2)	0.011	0.398	0.000	0.036	0.001	0.410	1.050	4.8.2
L3	127.753 - 83.083 (3)	0.009	0.409	0.000	0.022	0.000	0.419	1.050	4.8.2
L4	83.083 - 40.456 (4)	0.010	0.397	0.000	0.018	0.000	0.407	1.050	4.8.2
L5	40.456 - 0 (5)	0.012	0.430	0.000	0.017	0.000	0.442	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	191.5 - 172.46	Pole	TP20.46x15.5x0.1875	1	-4.36	711.71	21.1	Pass
L2	172.46 - 127.753	Pole	TP31.6x19.2819x0.3125	2	-19.20	1835.55	39.1	Pass
L3	127.753 - 83.083	Pole	TP42.49x29.8151x0.4375	3	-29.96	3458.67	39.9	Pass
L4	83.083 - 40.456	Pole	TP52.59x40.1114x0.5	4	-45.06	4900.01	38.8	Pass
L5	40.456 - 0	Pole	TP62x49.7661x0.5	5	-66.38	5995.11	42.1	Pass
Summary								
Pole (L5)							42.1	Pass
RATING =							42.1	Pass

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

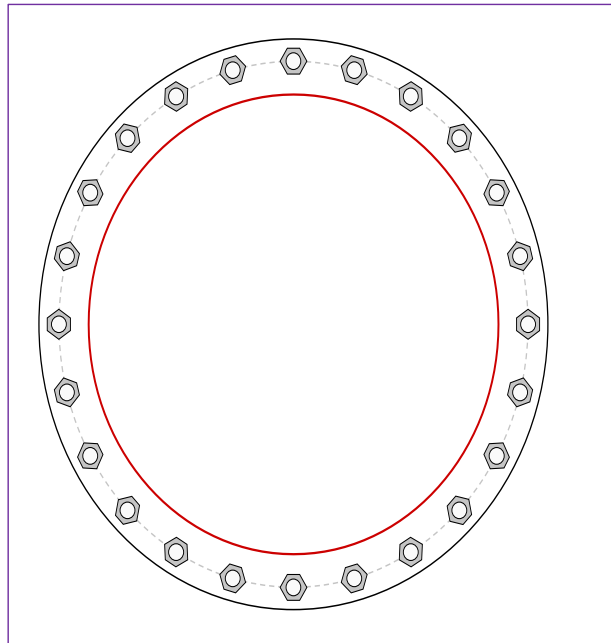


Site Info	
BU #	876355
Site Name	UPPER STEPNEY - TLC
Order #	614869 Rev.0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
I_{ar} (in)	1.8125

Applied Loads	
Moment (kip-ft)	3666.46
Axial Force (kips)	66.38
Shear Force (kips)	28.27

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(24) 2-1/4" ϕ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 71" BC
Base Plate Data
77" OD x 2.25" Plate (A871-60; Fy=60 ksi, Fu=75 ksi)
Stiffener Data
N/A
Pole Data
62" x 0.5" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Anchor Rod Summary		<i>(units of kips, kip-in)</i>	
$Pu_t = 100.47$	$\phi Pn_t = 243.75$		Stress Rating
$Vu = 1.18$	$\phi Vn = 149.1$		39.3%
$Mu = n/a$	$\phi Mn = n/a$		Pass
Base Plate Summary			
Max Stress (ksi):	28.21		(Flexural)
Allowable Stress (ksi):	54		
Stress Rating:	49.8%		Pass

Pier and Pad Foundation



BU # : 876355
 Site Name: UPPER STEPNEY
 App. Number: 614869 Rev.0

TIA-222 Revision: H
 Tower Type: Monopole

Top & Bot. Pad Rein. Different?:
 Block Foundation?:
 Rectangular Pad?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	66.39	kips
Base Shear, V_{u_comp} :	28.24	kips
Moment, M_u :	3666.46	ft-kips
Tower Height, H :	191.5	ft
BP Dist. Above Fdn, bp_{dist} :	6.5	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	364.51	28.24	7.4%	Pass
<i>Bearing Pressure (ksf)</i>	18.41	1.75	9.5%	Pass
<i>Overturing (kip*ft)</i>	8636.50	3851.20	44.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	7071.33	3751.18	50.5%	Pass
<i>Pier Compression (kip)</i>	35802.00	96.77	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	5427.04	1391.33	24.4%	Pass
<i>Pad Shear - 1-way (kips)</i>	1075.81	181.33	16.1%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.034	17.1%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	4528.92	2250.71	47.3%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	7.5	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	51	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	4	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Structural Rating*:	50.5%
Soil Rating*:	44.6%

Pad Properties		
Depth, D :	5	ft
Pad Width, W_1 :	30	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Top dir. 2), Sp_{top2} :	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2} :	26	
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	50	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	110	pcf
Ultimate Net Bearing, Q_{net} :	24.000	ksf
Cohesion, C_u :		ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.7	
Neglected Depth, N :	3.50	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, gw :	N/A	ft

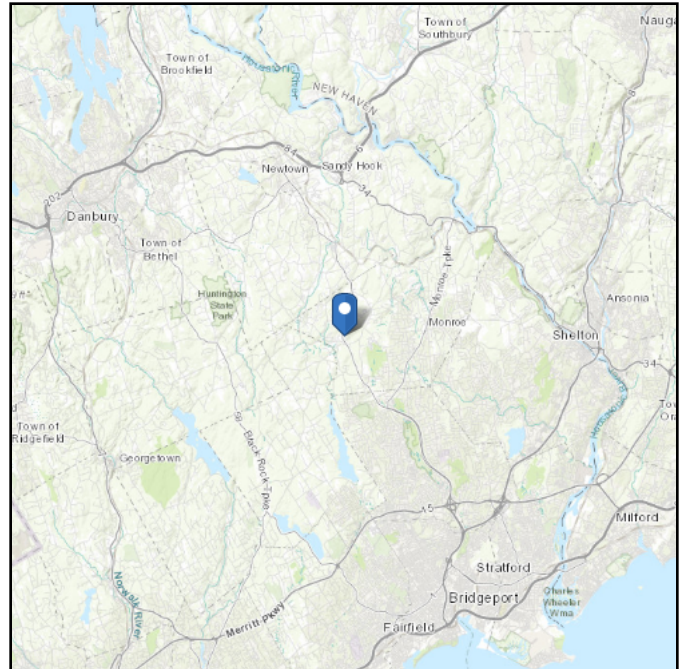
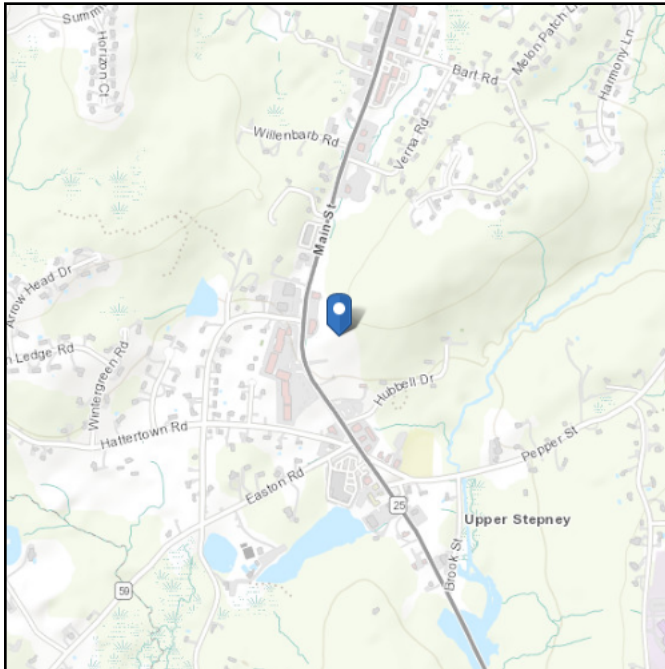
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ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 445.89 ft (NAVD 88)
Latitude: 41.325553
Longitude: -73.265847



Wind

Results:

Wind Speed	117 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Jul 22 2022

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

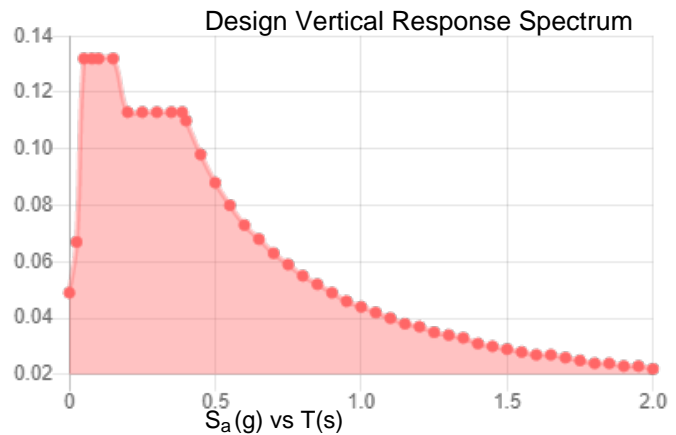
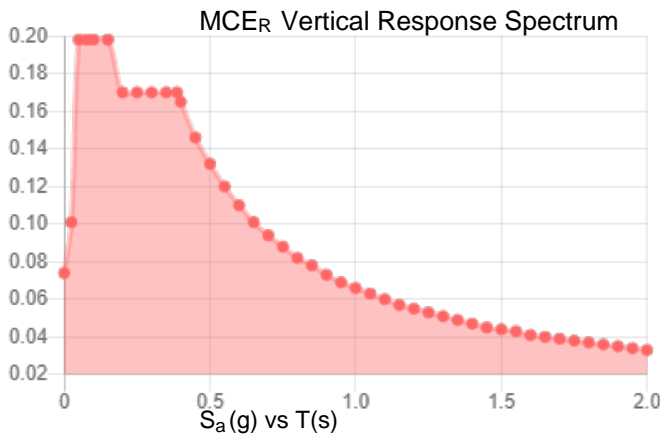
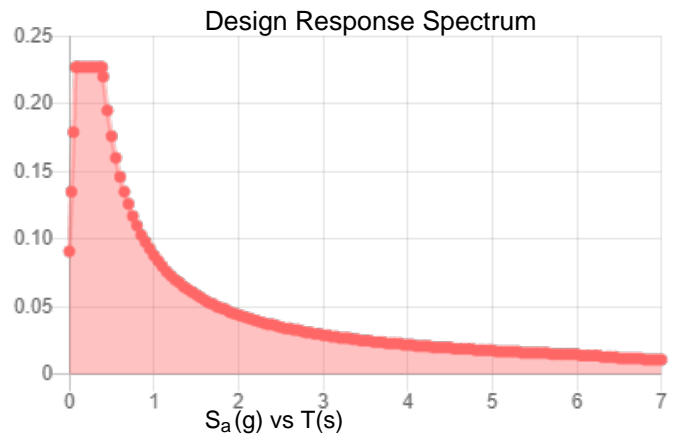
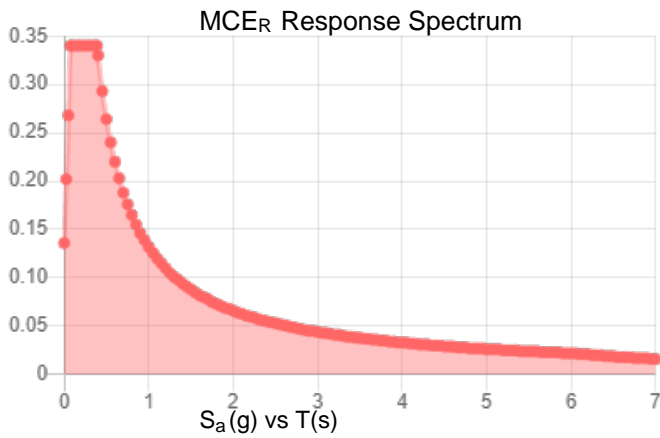
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.213	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.121
F_v :	2.4	PGA _M :	0.189
S_{MS} :	0.34	F_{PGA} :	1.558
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.227	C_v :	0.726

Seismic Design Category B



Data Accessed: Fri Jul 22 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

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

Date Accessed: Fri Jul 22 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.

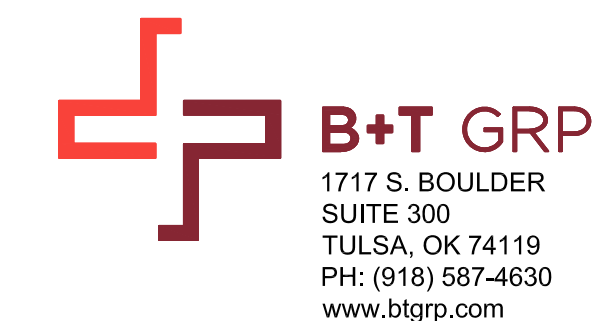
ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting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

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



AT&T SITE NUMBER: CTL05186
AT&T SITE NAME: MONROE-MIAN STREET
AT&T FA CODE: 10091776
AT&T PACE NUMBER: MRCTB062254, MRCTB062139, MRCTB062302, MRCTB062151, MRCTB062230, MRCTB062225
AT&T PROJECT: 4TX4RX SOFTWARE RETROFIT, LTE 3C, 5G NR 1DR-2, LTE 2C, 5G NR 1DR-1

BUSINESS UNIT #: 876355
SITE ADDRESS: 474-480 MAIN ST. MONROE, CT 06468
COUNTY: FAIRFIELD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 194'-0"



AT&T SITE NUMBER: CTL05186
BU #: 876355
UPPER STEPNEY - TLC
 474-480 MAIN ST. MONROE, CT 06468
 EXISTING 194'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	8/2/22	TDG	PRELIMINARY REVIEW	MTJ
B	8/5/22	TDG	PRELIMINARY REVIEW	MTJ
0	9/14/22	TDG	CONSTRUCTION	MTJ

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	UPPER STEPNEY - TLC
SITE ADDRESS:	474-480 MAIN ST. MONROE, CT 06468
COUNTY:	FAIRFIELD
MAP/PARCEL #:	045 021 00
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.325517
LONGITUDE:	-73.265807
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	446'
CURRENT ZONING:	B1
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:	SEVEN FORTY TWO NURSERY LLC 742 MAIN ST MONROE, CT 06468
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:	CONNECTICUT LIGHT & POWER CO 800-286-2000
TELCO PROVIDER:	AT&T 866-620-6900

PROJECT TEAM

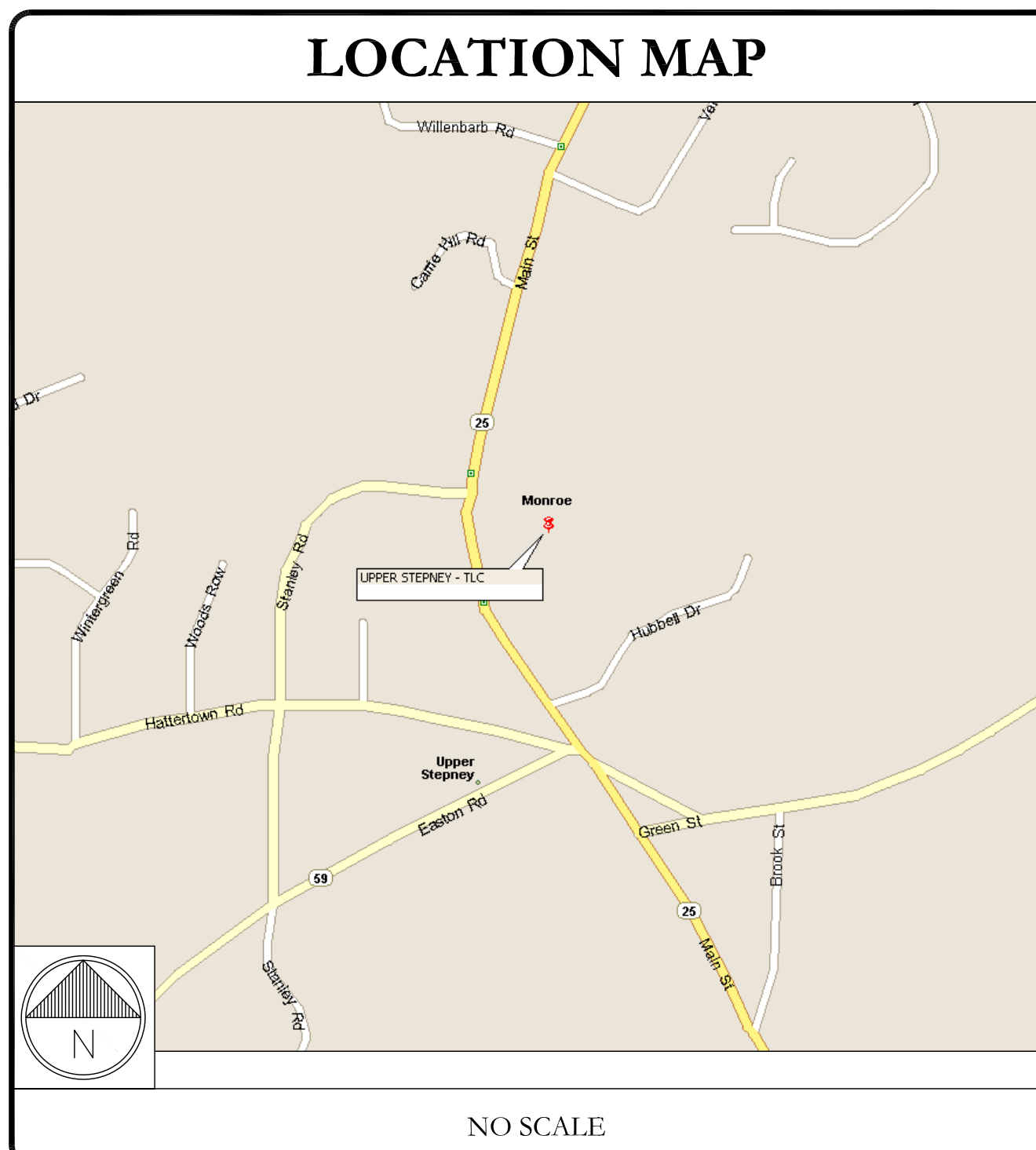
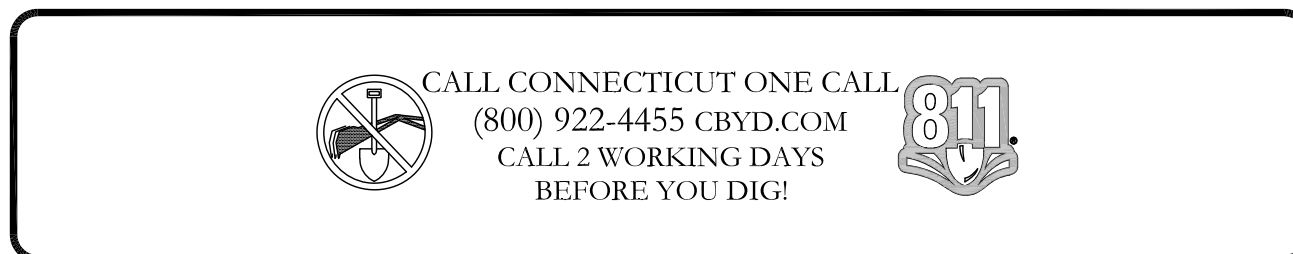
A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277
	VERONICA CHAPMAN - PROJECT MANAGER VERONICA.CHAPMAN@CROWNCastle.COM
	ISRAEL CAREY - CONSTRUCTION MANAGER ISRAEL.CAREY@CROWNCastle.COM
	HEATHER SIMEONE - AES HEATHER.SIMEONE@CROWNCastle.COM

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

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	HRK14 SPEC

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.



PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:

- REMOVE (3) P65-16-XLH-RR ANTENNAS
- REMOVE (3) POWERWAVE - 7770 ANTENNAS
- REMOVE (3) ERICSSON - RRUS-11 B12 RRU's
- REMOVE (6) POWERWAVE - LGP-21401 TMAs
- INSTALL (6) CCI - OPA65R-BU6DA ANTENNAS
- INSTALL (1) RAYCAP - DC6-48-60-18-8C-EV SQUID
- INSTALL (3) ERICSSON - 4449 B5/B12 RRU's
- INSTALL (3) ERICSSON - 8843 B2/B66A RRU's
- INSTALL (3) ERICSSON - 4478 B14 RRU's
- INSTALL (1) 18-PAIR FIBER CABLE (3/8")
- INSTALL (2) 6AWG DC CABLE (7/8")
- INSTALL (6) Y-CABLES FOR DUAL BAND RADIOS
- INSTALL (3) DUAL RADIO MOUNTS
- INSTALL MOUNT MODIFICATIONS PER MOUNT ANALYSIS BY B+T GROUP DATED JULY 19, 2022

GROUND SCOPE OF WORK:

- REMOVE (1) UMTS CABINET
- REMOVE (6) POWERWAVE - LGP-21901 DIPLEXERS
- INSTALL (1) OUTDOOR DC12
- INSTALL (1) 6630 W/ IDLE CABLE
- INSTALL (1) XMU



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	2018 CONNECTICUT SBC/2015 IBC
MECHANICAL	2018 CONNECTICUT SBC/2015 IMC
ELECTRICAL	2018 CONNECTICUT SBC/2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BLACK & VEATCH
DATED:	7/25/22
MOUNT ANALYSIS:	B+T GROUP
DATED:	7/19/22
RFDS REVISION:	FINAL
DATED:	6/20/22
ORDER ID:	614869
REVISION:	0

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:	REVISION:
T-1	0

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.
- 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 GROUNDING 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 (Fy) 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.
4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 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 WITH ANY ARCS NOT OCCURABLE.
- 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 LOCKNUT 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
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (-)	BLACK**

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

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

- ANT ANTENNA
- (E) EXISTING
- FIF FACILITY INTERFACE FRAME
- GEN GENERATOR
- GPS GLOBAL POSITIONING SYSTEM
- GSM GLOBAL SYSTEM FOR MOBILE
- LTE LONG TERM EVOLUTION
- MGB MASTER GROUND BAR
- MW MICROWAVE
- (N) NEW
- NEC NATIONAL ELECTRIC CODE
- (P) PROPOSED
- PP POWER PLANT
- QTY QUANTITY
- RECT RECTIFIER
- RBS RADIO BASE STATION
- RET REMOTE ELECTRIC TILT
- RFDS RADIO FREQUENCY DATA SHEET
- RRH REMOTE RADIO HEAD
- RRI 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:
CTL05186

BU #: **876355**
UPPER STEPNEY - TLC

474-480 MAIN ST.
MONROE, CT 06468

EXISTING
194'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	8/2/22	TDG	PRELIMINARY REVIEW	MTJ
B	8/5/22	TDG	PRELIMINARY REVIEW	MTJ
0	9/14/22	TDG	CONSTRUCTION	MTJ



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
CLIFTON PARK, NY 12065



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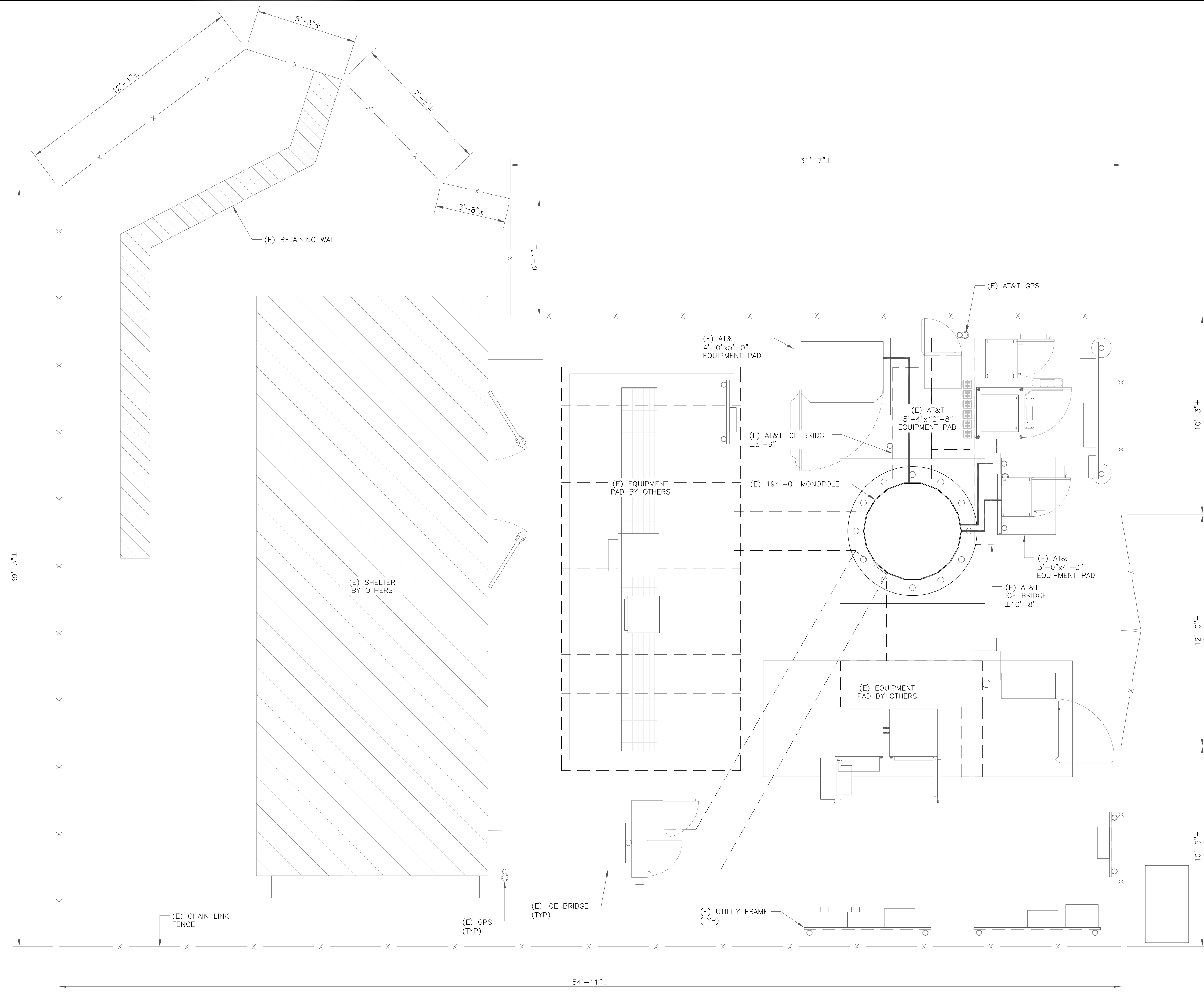
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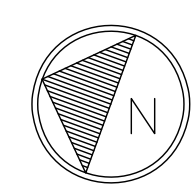
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REVISION:

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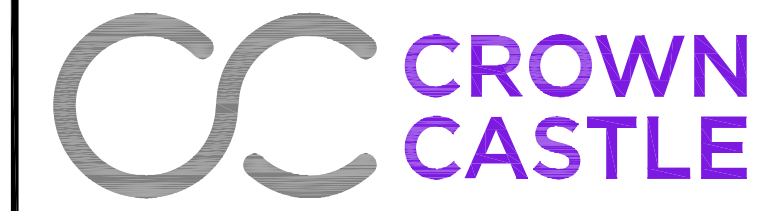
1 SITE PLAN
SCALE: 3/8"=1'-0" (FULL SIZE)
3/16"=1'-0" (11x17)



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575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



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



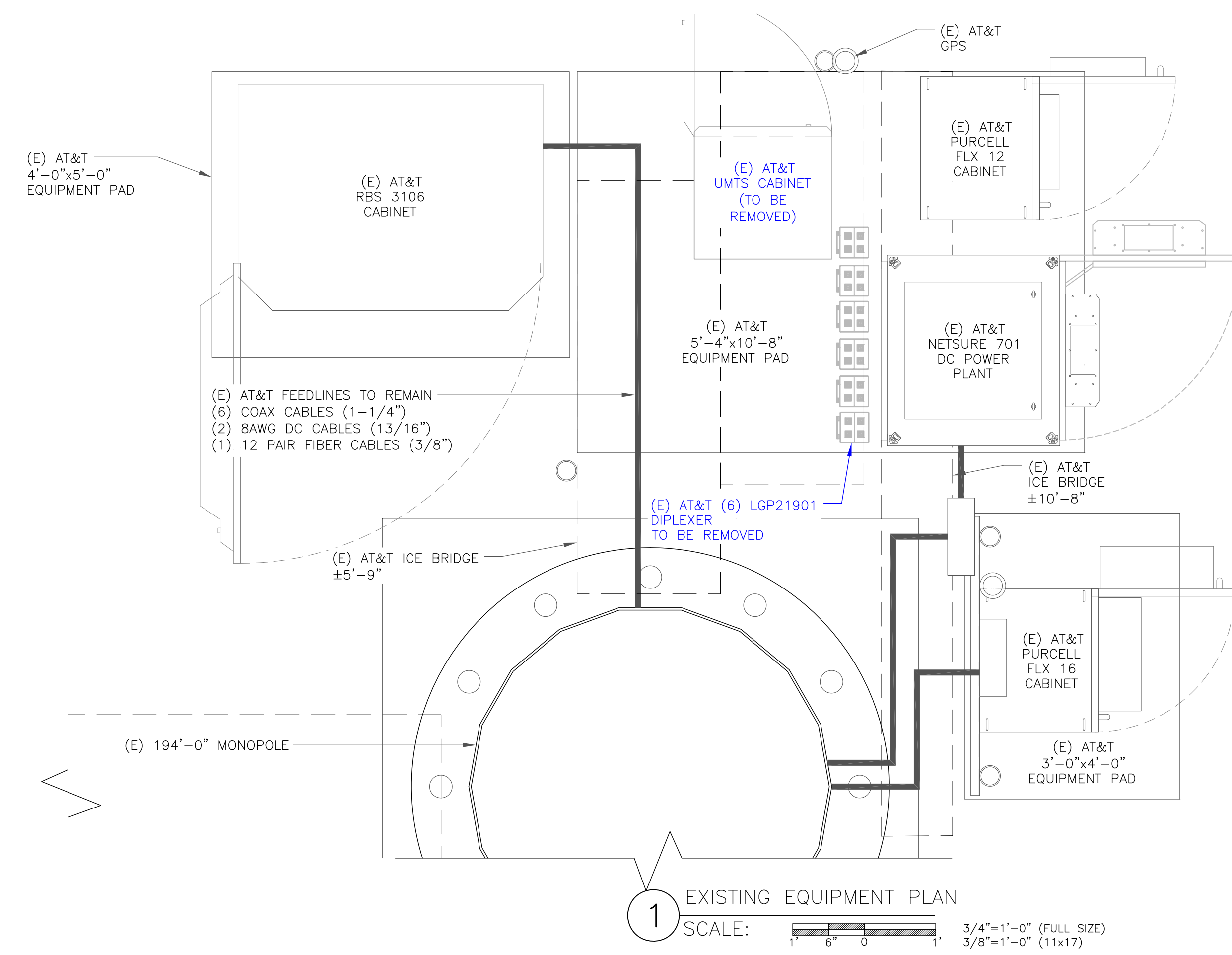
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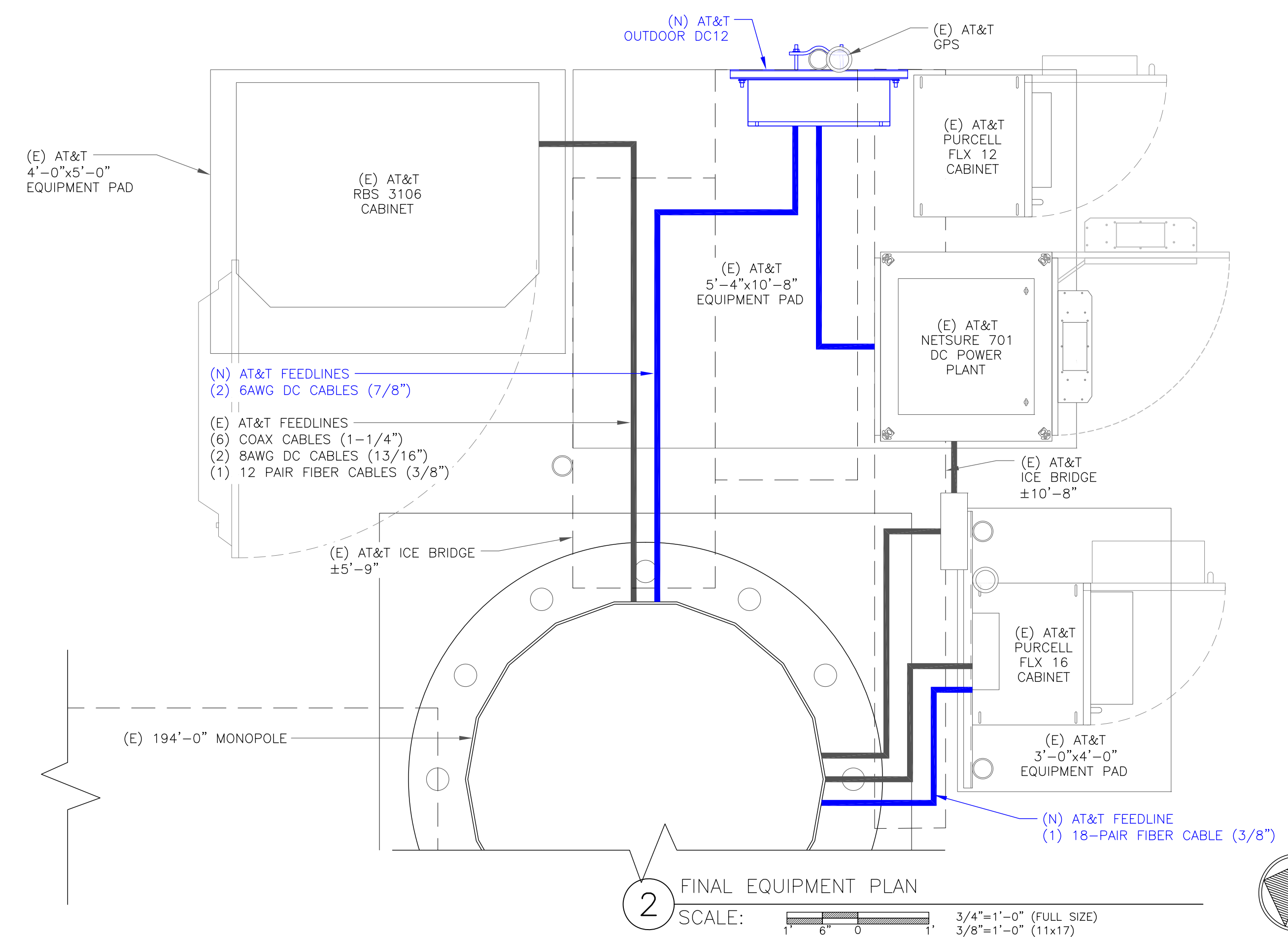
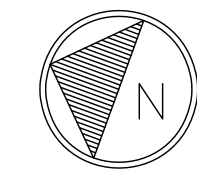
BU #: **876355**
UPPER STEPNEY - TLC

474-480 MAIN ST.
MONROE, CT 06468

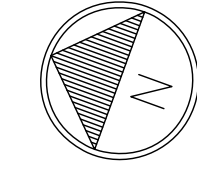
EXISTING
194'-0" MONOPOLE



1 EXISTING EQUIPMENT PLAN
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)



2 FINAL EQUIPMENT PLAN
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)



- GROUND SCOPE OF WORK:**
- REMOVE (1) UMTS CABINET
 - REMOVE (6) POWERWAVE - LGP-21901 DIPLEXERS
 - INSTALL (1) OUTDOOR DC12
 - INSTALL (1) 6630 W/ IDLE CABLE
 - INSTALL (1) XMU

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

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SHEET NUMBER: C-1.2
REVISION: 0

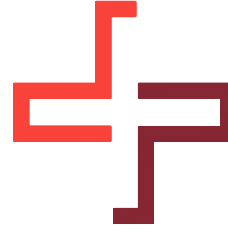
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AT&T
575 MOROSGO DRIVE
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474-480 MAIN ST.
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EXISTING
194'-0" MONOPOLE

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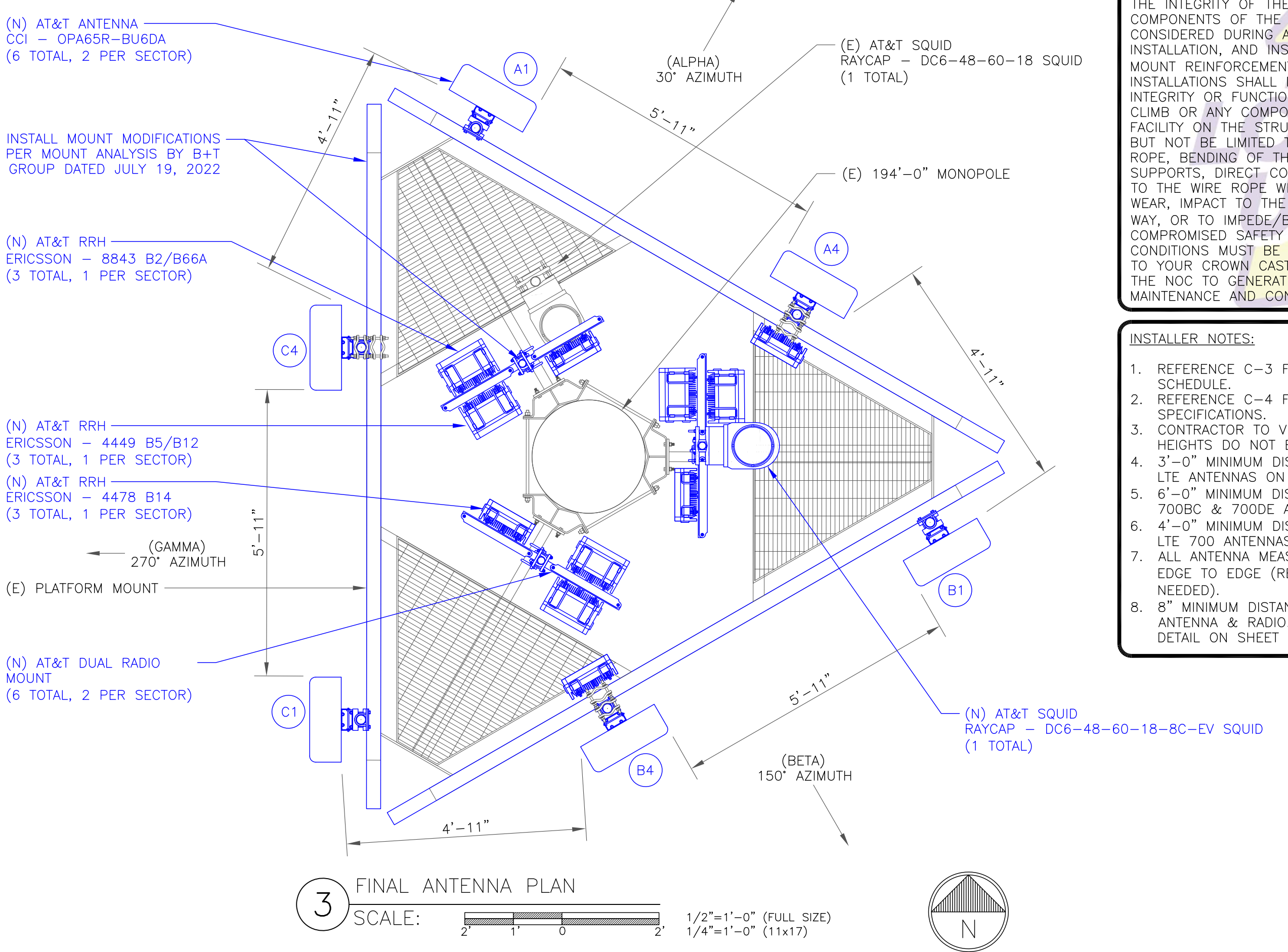
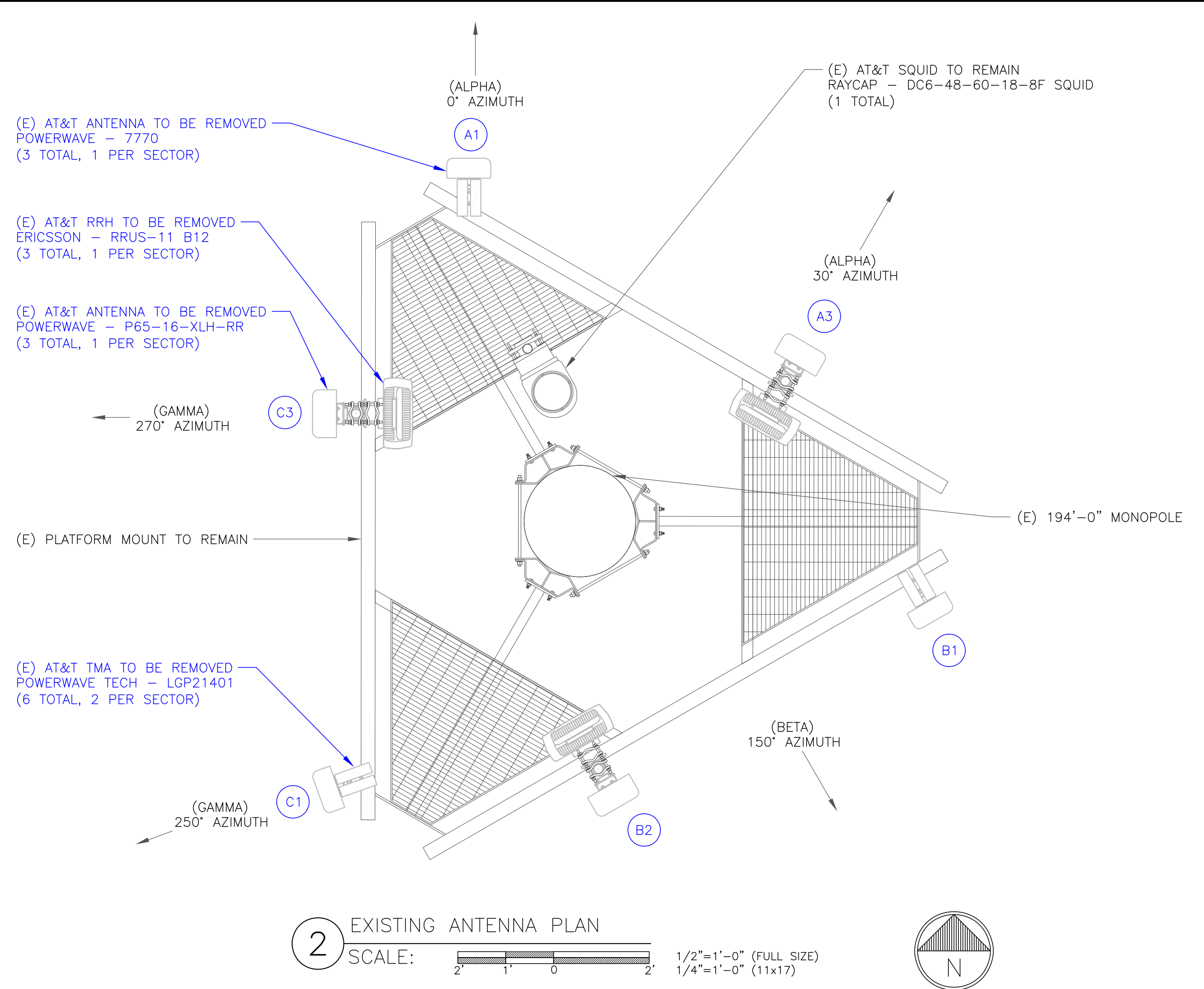
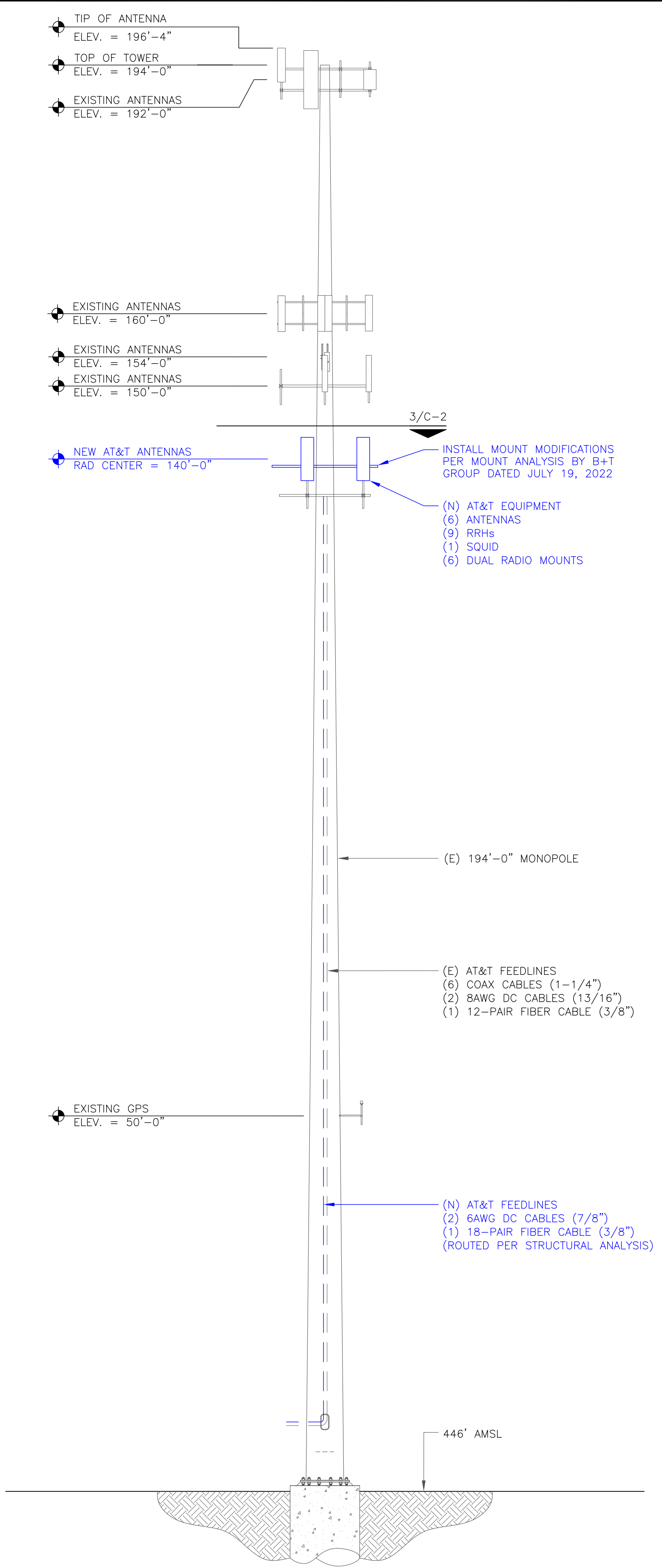
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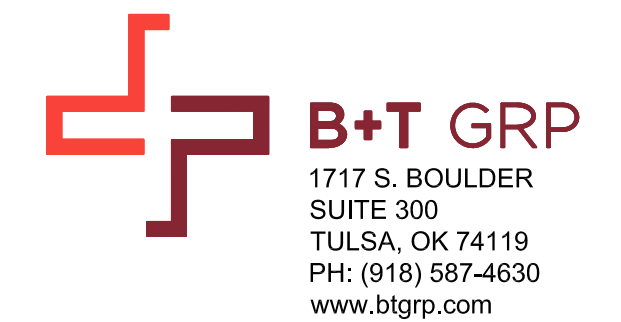


"LOOK UP" - CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

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.

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AT&T SITE NUMBER:
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BU #: **876355**
UPPER STEPNEY - TLC

474-480 MAIN ST.
MONROE, CT 06468

EXISTING
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SHEET NUMBER: **C-3** REVISION: **0**

FINAL EQUIPMENT SCHEDULE
(VERIFY WITH CURRENT RFDS)

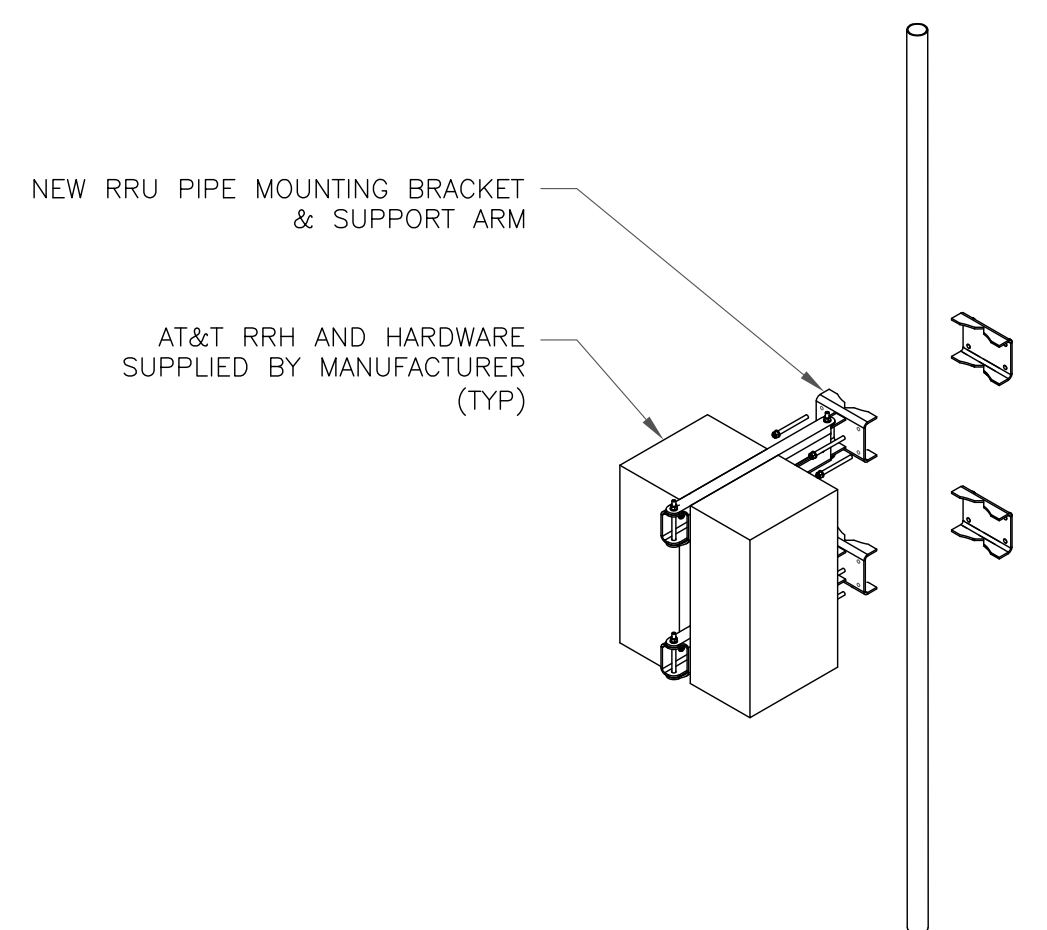
ALPHA																								
POSITION	ANTENNA					RADIO			DIPLEXER			TMA			SURGE PROTECTION		CABLES							
	TECH.	STATUS/MANUFACTURER MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL	LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS/MANUFACTURER MODEL	QTY.	STATUS/MODEL	QTY.	STATUS/TYPE	SIZE	LENGTH						
A1	LTE/5G	(N) CCI - OPA65R-BU6DA	30°	140'-0"	1	(N) 4449 B5/B12	TOWER	-	-	-	-	-	-	-	1	(E) DC6-48-60-18-8F	1	(E) FIBER	3/8"	-				
					1	(N) Y-CABLE											2	(E) DC	13/16"	-				
					1	(N) 8843 B2/B66A																		
					1	(N) Y-CABLE	TOWER																	
A4	LTE/5G	(N) CCI - OPA65R-BU6DA	30°	140'-0"	1	(N) 4478 B14	TOWER	-	-	-	-	-	-	-	-	-	-	-	-					
BETA																								
B1	LTE/5G	(N) CCI - OPA65R-BU6DA	150°	140'-0"	1	(N) 4449 B5/B12	TOWER	-	-	-	-	-	-	-	1	(N) DC6-48-60-18-8C-EV	1	(N) FIBER	3/8"	-				
					1	(N) Y-CABLE											2	(N) DC	7/8"	-				
					1	(N) 8843 B2/B66A																		
					1	(N) Y-CABLE	TOWER																	
B4	LTE/5G	(N) CCI - OPA65R-BU6DA	150°	140'-0"	1	(N) 4478 B14	TOWER	-	-	-	-	-	-	-	-	-	-	-	-					
GAMMA																								
C1	LTE/5G	(N) CCI - OPA65R-BU6DA	270°	140'-0"	1	(N) 4449 B5/B12	TOWER	-	-	-	-	-	-	-	-	-	-	-	-	-				
					1	(N) Y-CABLE																		
					1	(N) 8843 B2/B66A																		
					1	(N) Y-CABLE	TOWER																	
C4	LTE/5G	(N) CCI - OPA65R-BU6DA	270°	140'-0"	1	(N) 4478 B14	TOWER	-	-	-	-	-	-	-	-	-	-	-	-					
															UNUSED FEEDLINES:	6	COAX	1-1/4"	190'-0"					

NOTE:
(E) - EXISTING
(N) - NEW

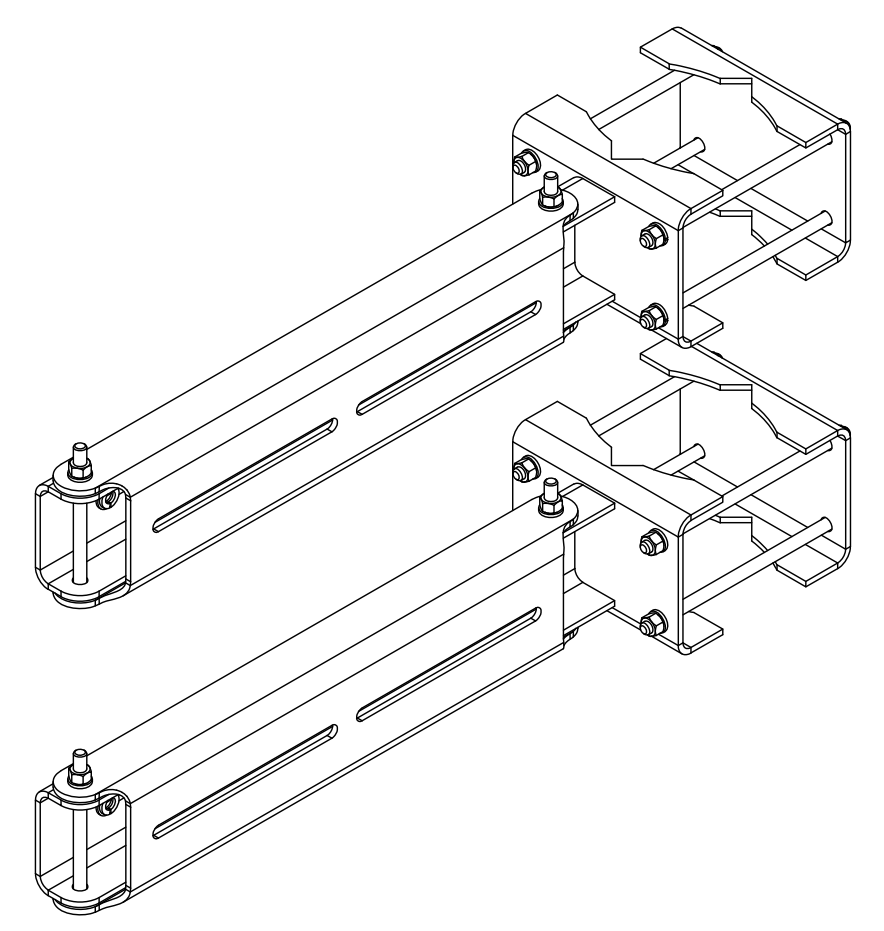
1 FINAL ANTENNA AND FEEDLINE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



1 DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

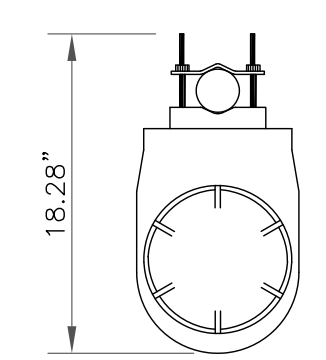


2 DUAL RADIO MOUNT
SCALE: NOT TO SCALE

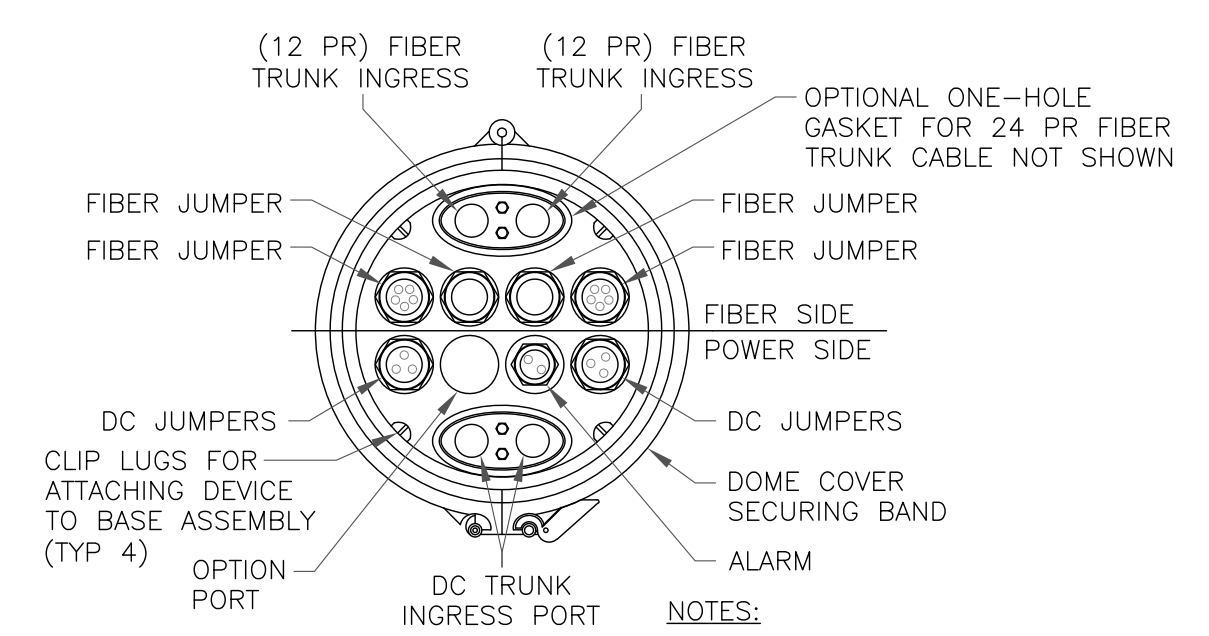
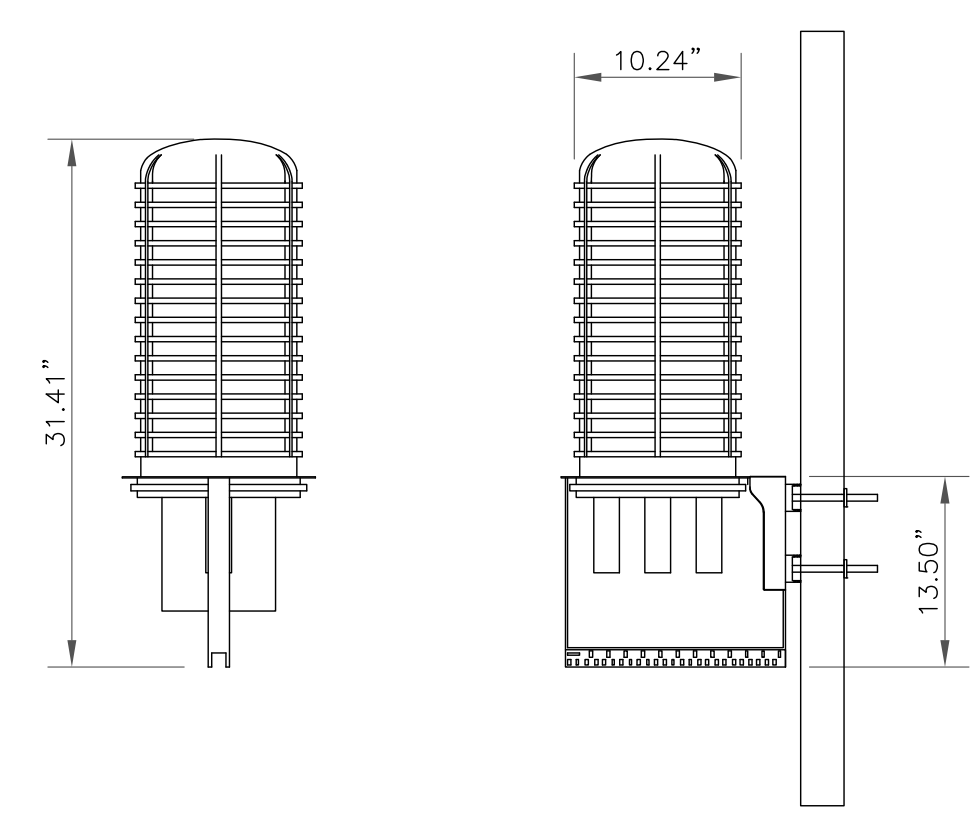
3 NOT USED
SCALE: NOT TO SCALE

RAYCAP
DC6-48-60-18-8C-EV

RAYCAP - DC6-48-60-18-8C-EV
SIZE: 10.24x31.40 IN.
WEIGHT: 26.2 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 330 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)



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



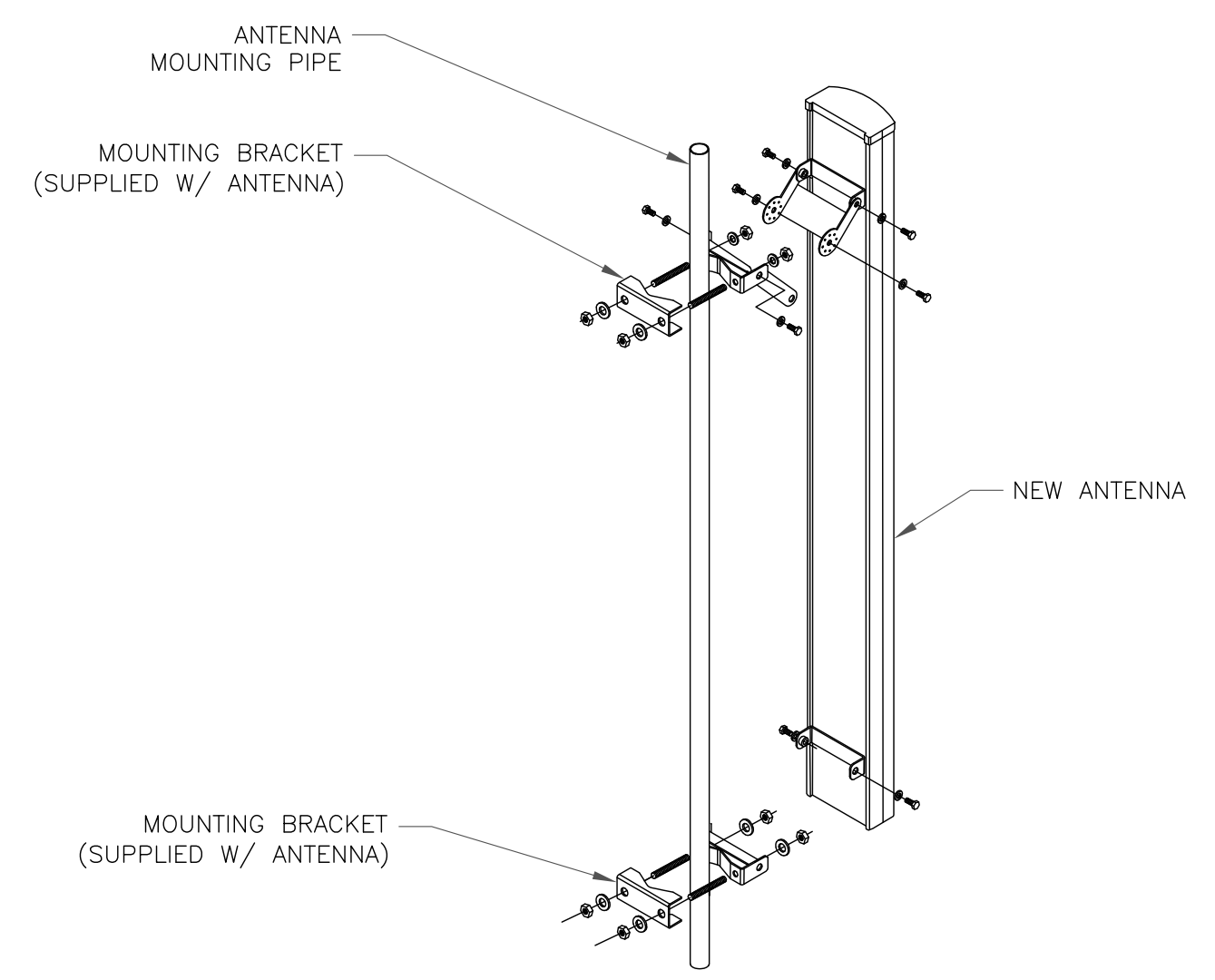
NOTES:

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

6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
2. EQUIPMENT SHALL NOT BE INSTALLED CLOSER THAN 8" TO ANTENNAS.



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:
CTL05186

BU #: **876355**
UPPER STEPNEY - TLC

474-480 MAIN ST.
MONROE, CT 06468

EXISTING
194'-0" MONOPOLE

ISSUED FOR:

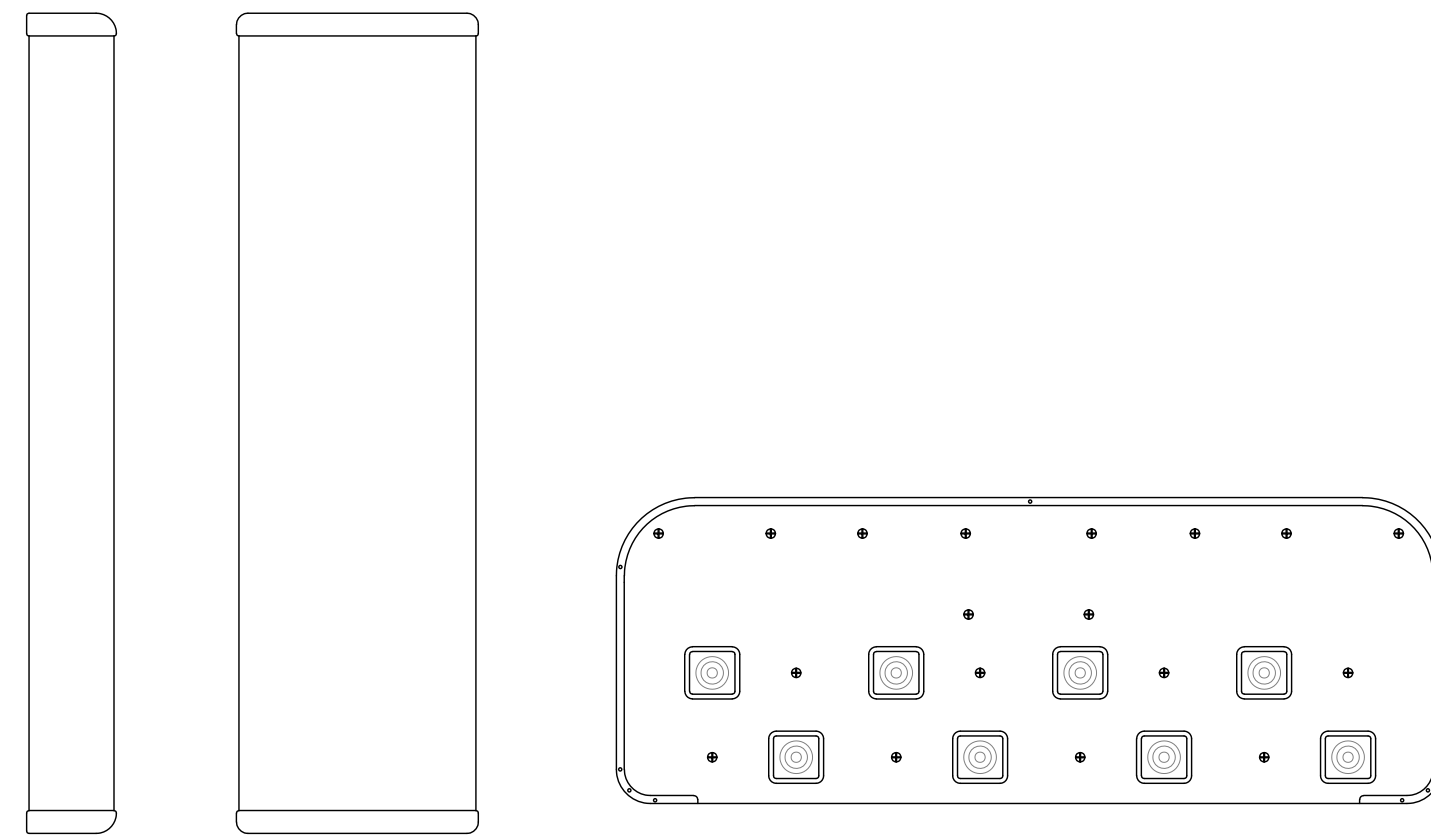
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B	8/5/22	TDG	PRELIMINARY REVIEW	MTJ
0	9/14/22	TDG	CONSTRUCTION	MTJ

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BER:2386985
Expires 3/31/23

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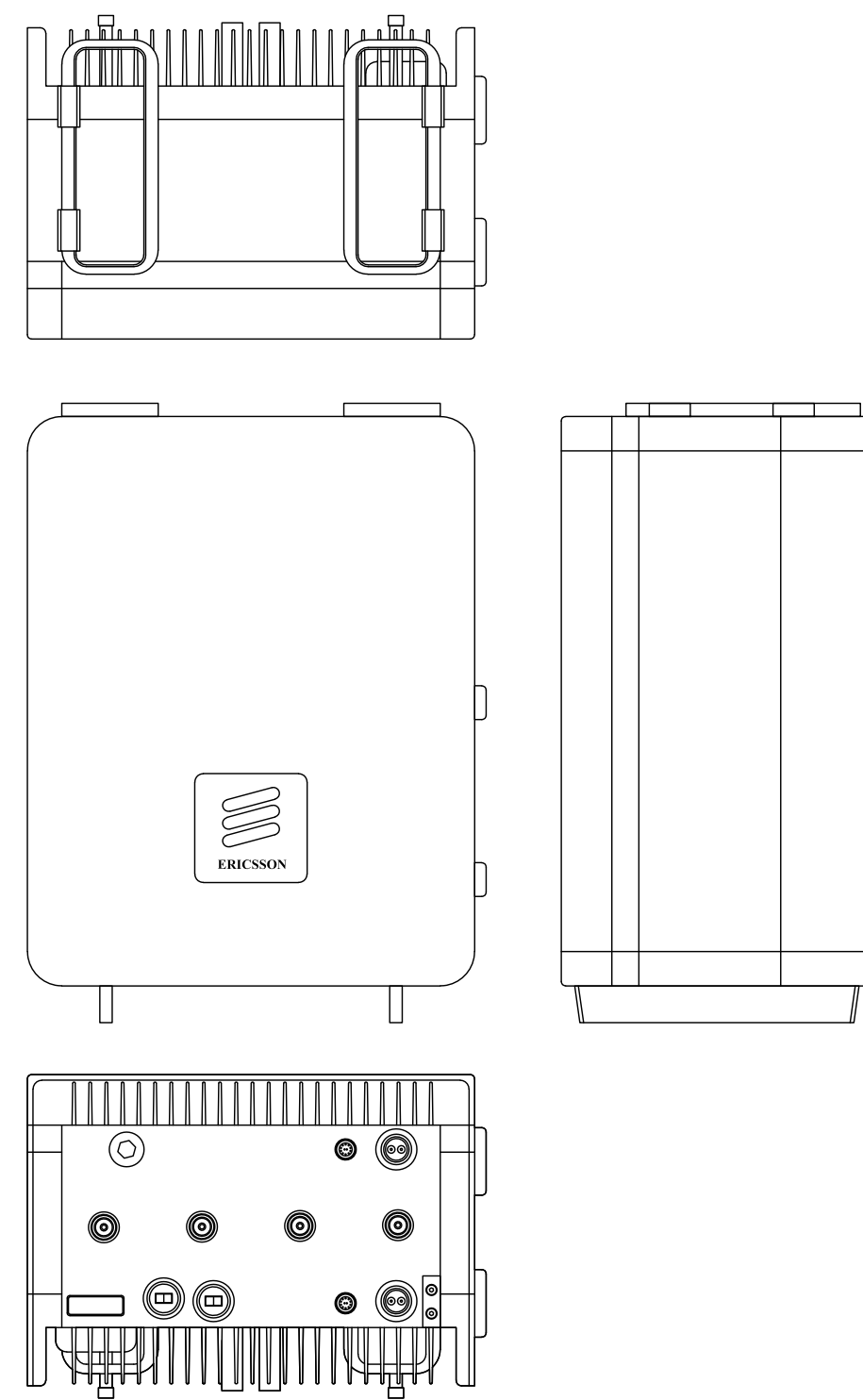
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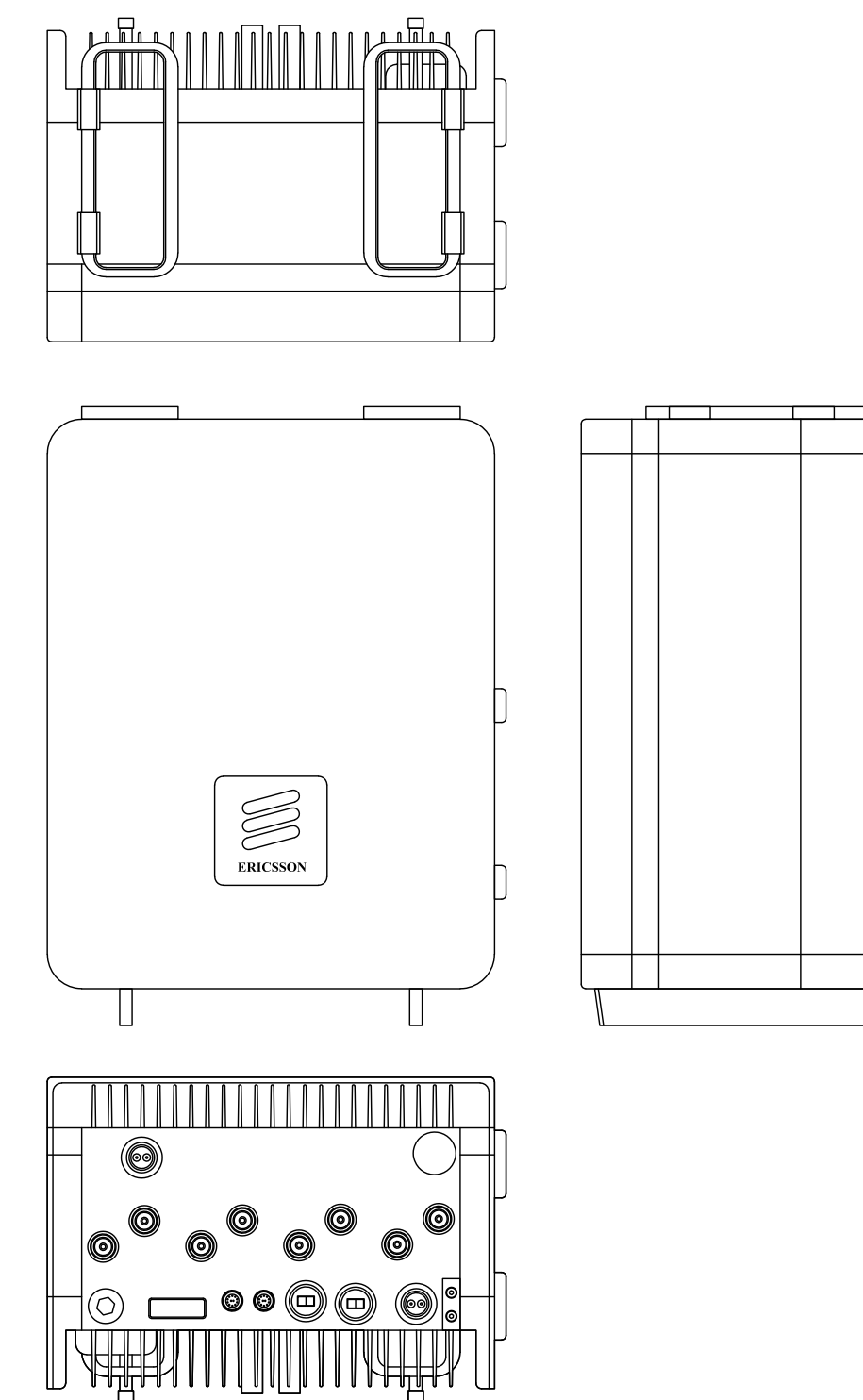
CCI ANTENNAS - OPA65R-BU6DA
 WEIGHT (WITHOUT MOUNTING HARDWARE): 60.2 LBS
 SIZE (HxWxD): 71.2x21.0x7.8 IN.
 MOUNTING HARDWARE P/N: MBK-01
 RATED WIND VELOCITY: 150.0 MPH

1 CCI ANTENNAS - OPA65R-BU6DA
 SCALE: NOT TO SCALE



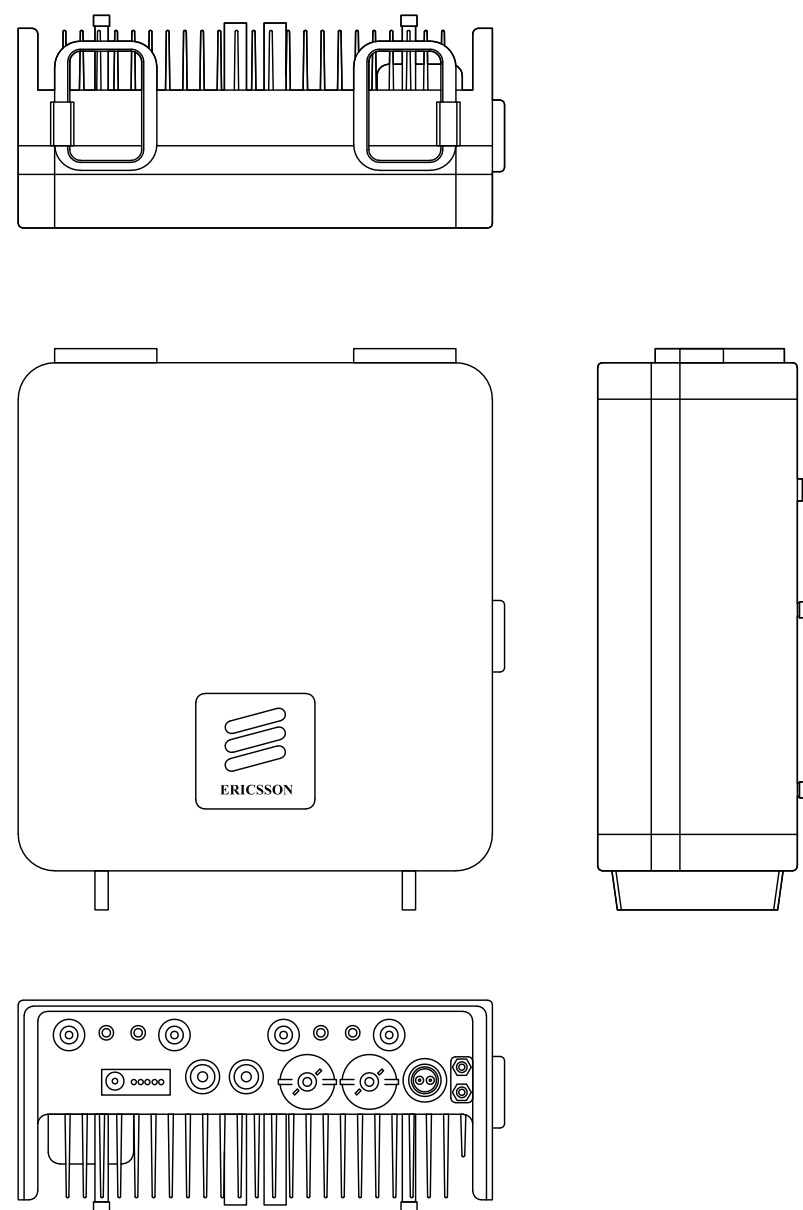
ERICSSON - RADIO 4449 B5/B12
 WEIGHT: 70.0 LBS
 SIZE (HxWxD): 18.0x13.2x9.4 IN.

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



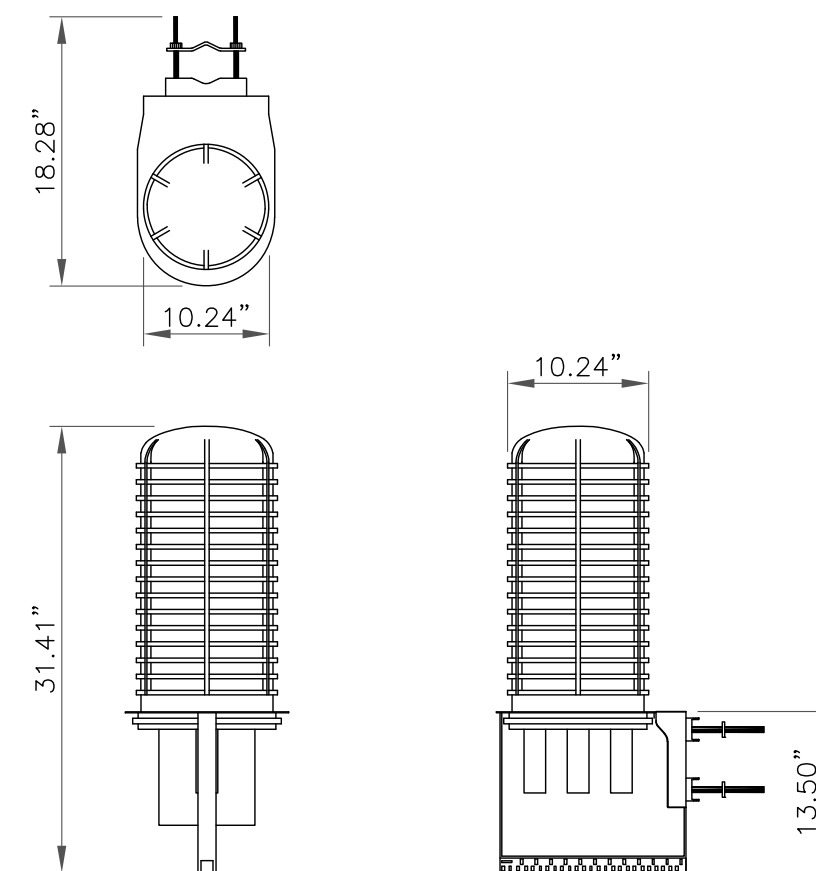
ERICSSON - RADIO 8843 B2/B66A
 WEIGHT: 75.0 LBS
 SIZE (HxWxD): 18.0x13.2x11.3 IN.

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



ERICSSON - RADIO 4478 B14
 WEIGHT: 60.0 LBS
 SIZE (HxWxD): 15.0x13.0x8.0 IN.

4 ERICSSON - RADIO 4478 B14
 SCALE: NOT TO SCALE



RAYCAP - DC6-48-60-18-8C-EV
 WEIGHT (WITHOUT MOUNTING HARDWARE): 26.2 LBS
 SIZE (HxWxD): 31.4x10.24x10.24 IN.

5 RAYCAP - DC6-48-60-18-8C-EV
 SCALE: NOT TO SCALE

6 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:
CTL05186

BU #: **876355**
UPPER STEPNEY - TLC

474-480 MAIN ST.
 MONROE, CT 06468

EXISTING
 194'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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B	8/5/22	TDG	PRELIMINARY REVIEW	MTJ
0	9/14/22	TDG	CONSTRUCTION	MTJ



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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).

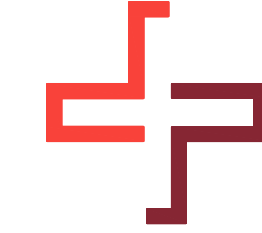
DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS 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.



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



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



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1717 S. BOULDER
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AT&T SITE NUMBER:
CTL05186


BU #: 876355
UPPER STEPNEY - TLC

474-480 MAIN ST.
MONROE, CT 06468

EXISTING
194'-0" MONOPOLE

ISSUED FOR:

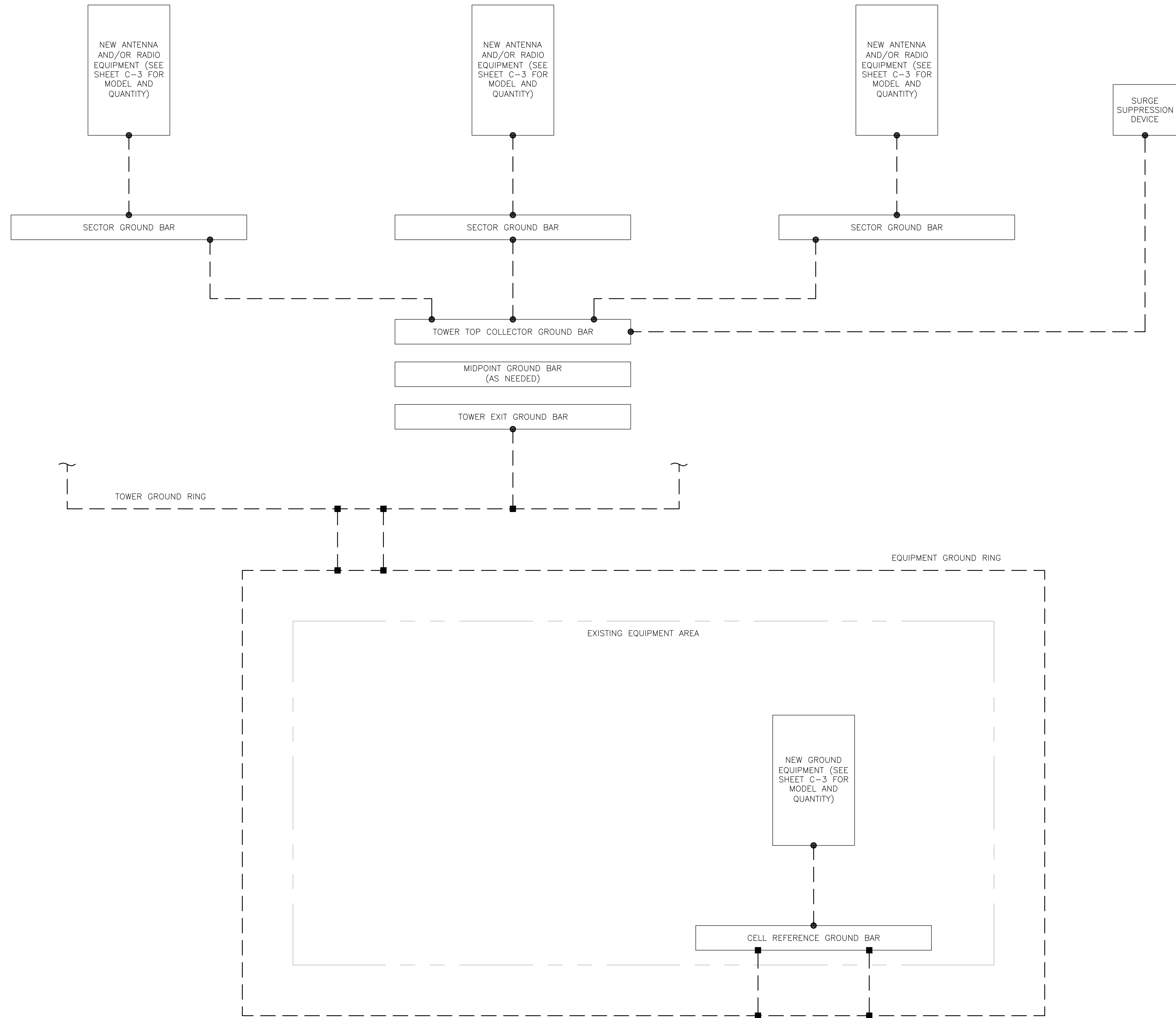
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MTS ENGINEERING P.L.L.C.
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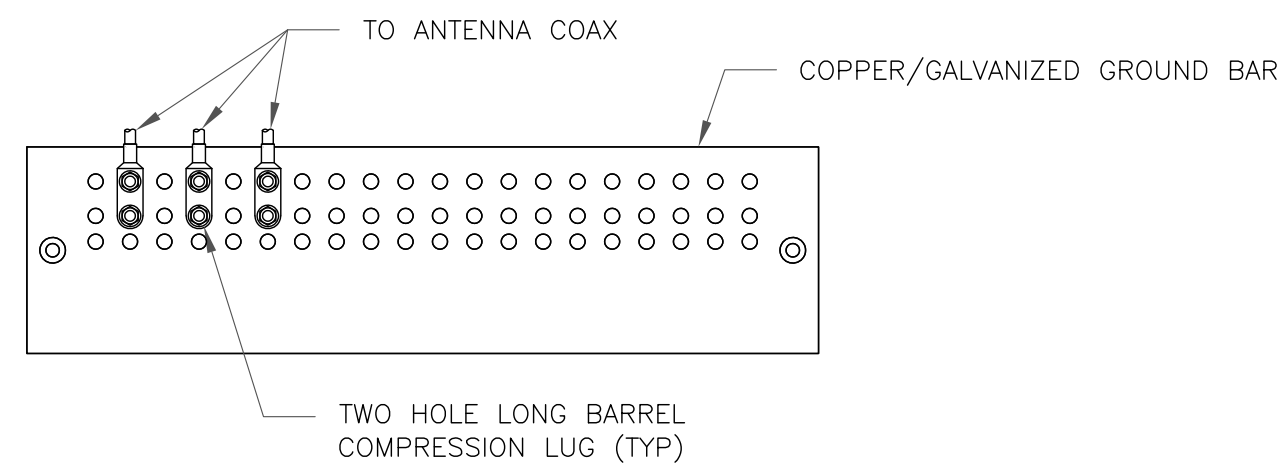
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SHEET NUMBER: **G-1** **REVISION:** **0**



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

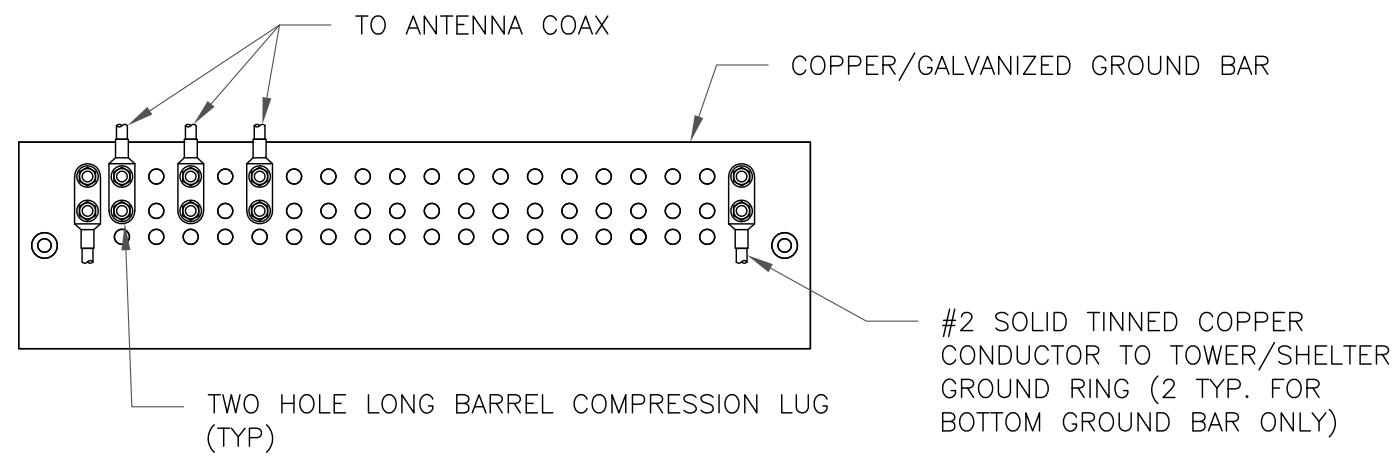
1:37165.007.01_876355_UPPER_STEPNEY-TLC.dwg - Sheet:G-1 - User: m.jones - Sep 14, 2022 - 3:41pm



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

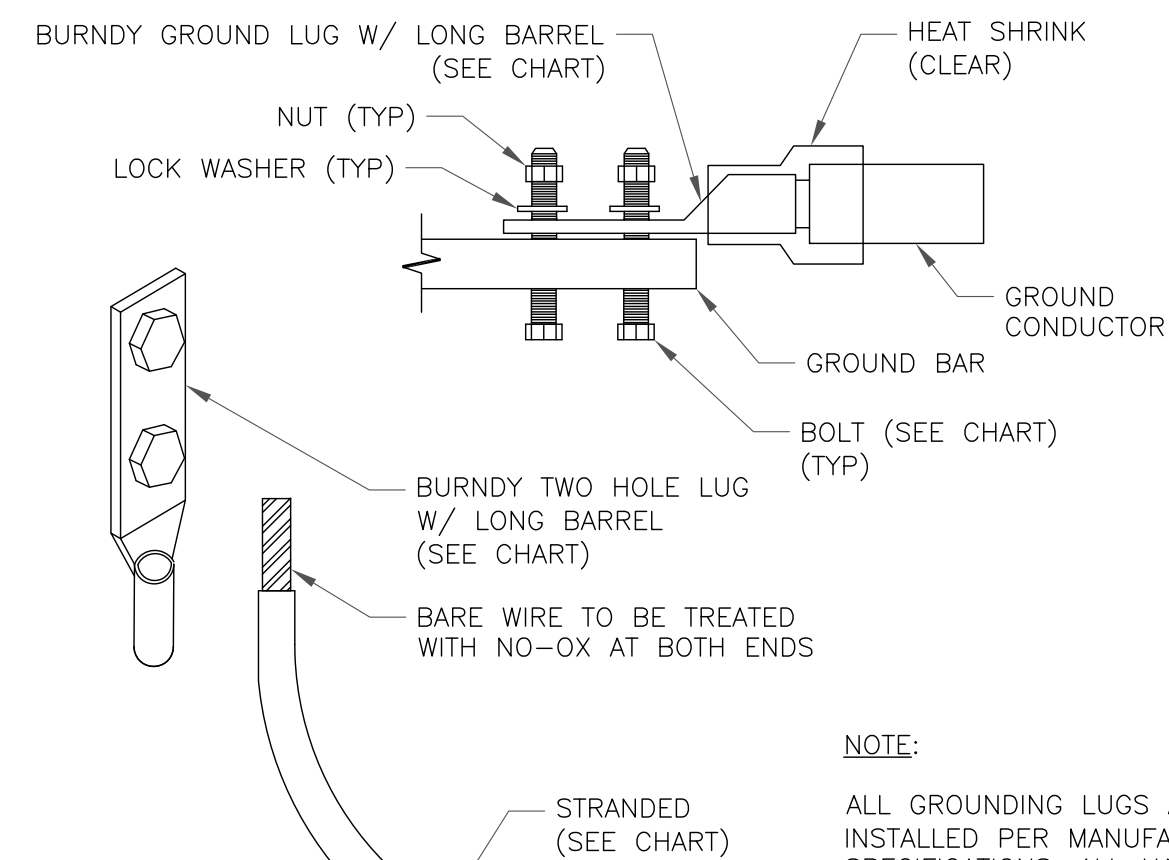


NOTES:

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

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

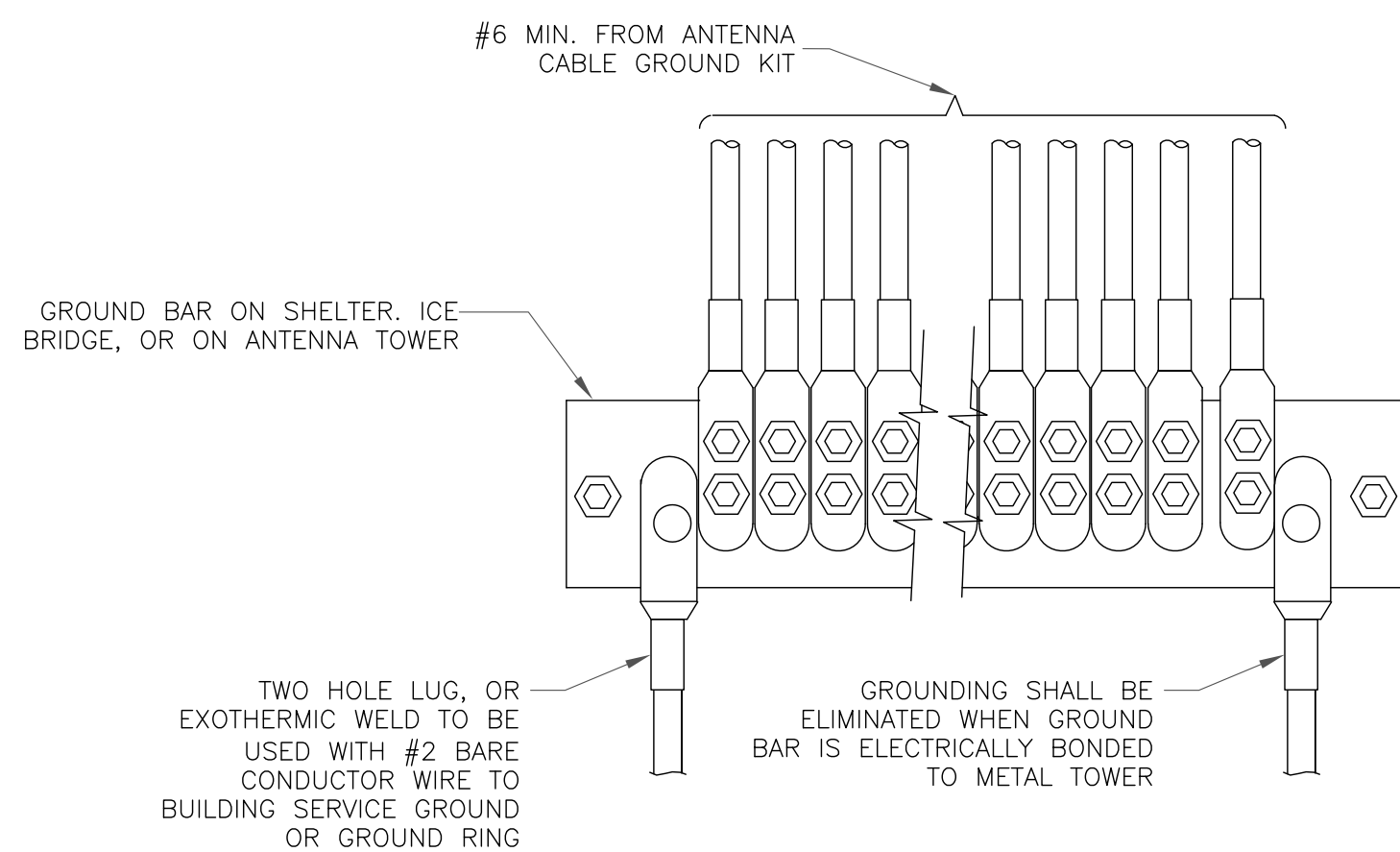
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



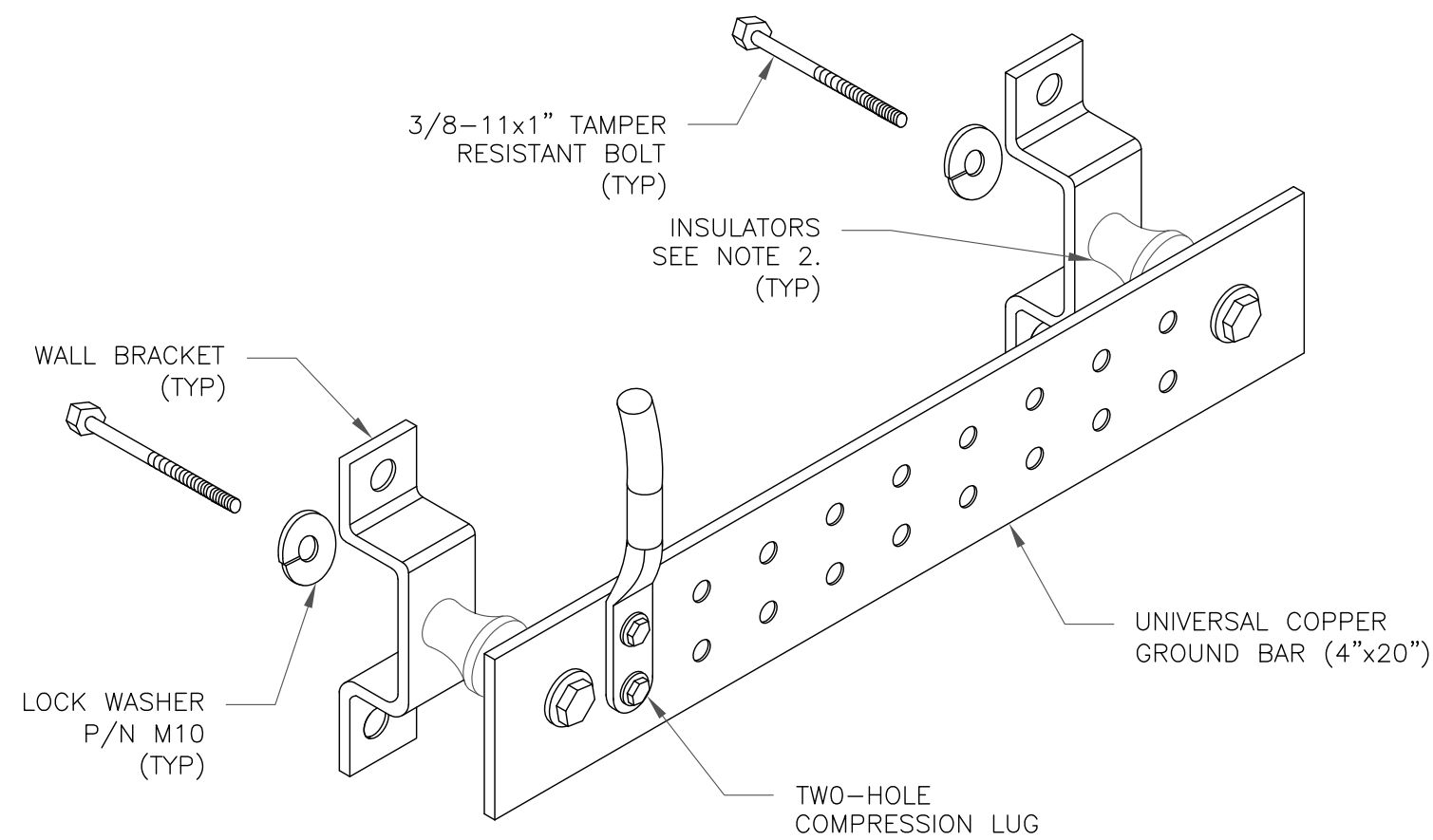
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



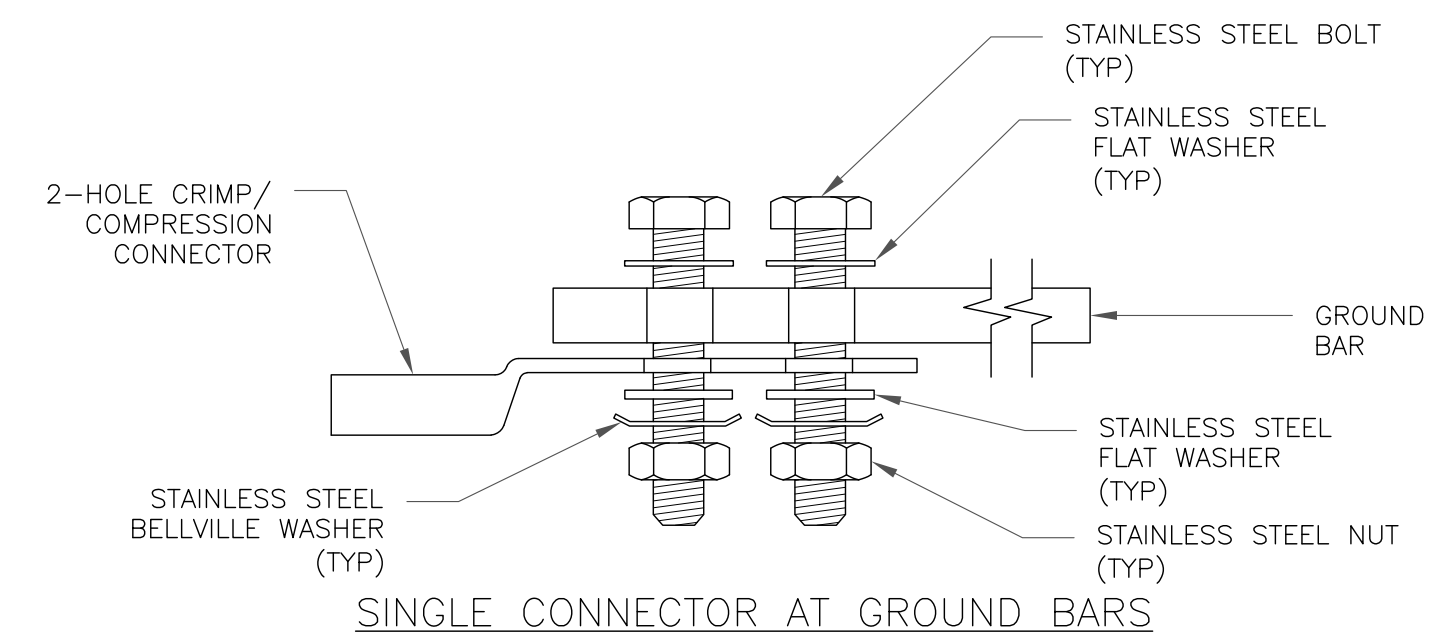
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



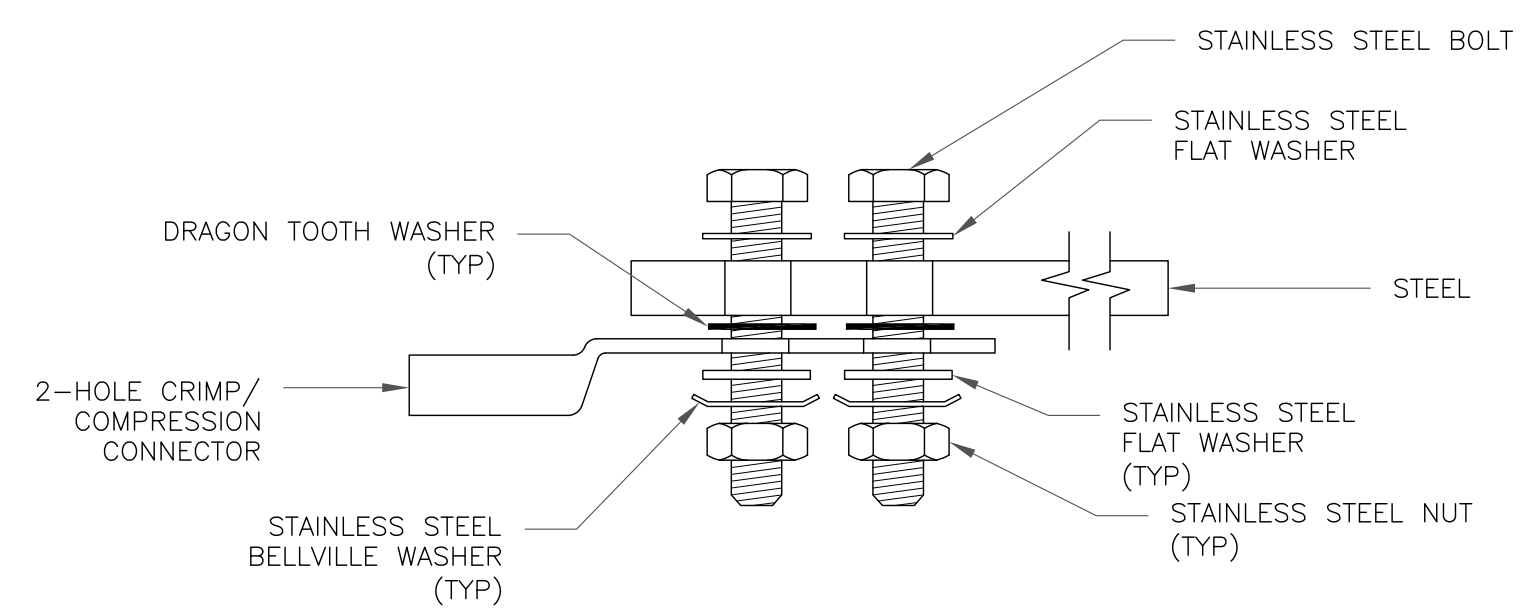
NOTES:

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

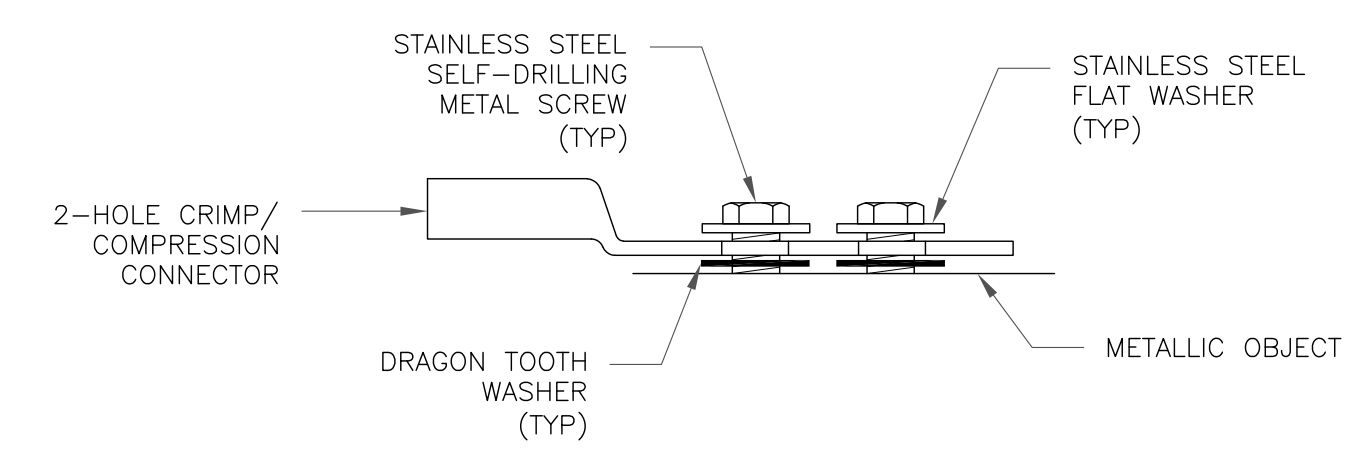
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

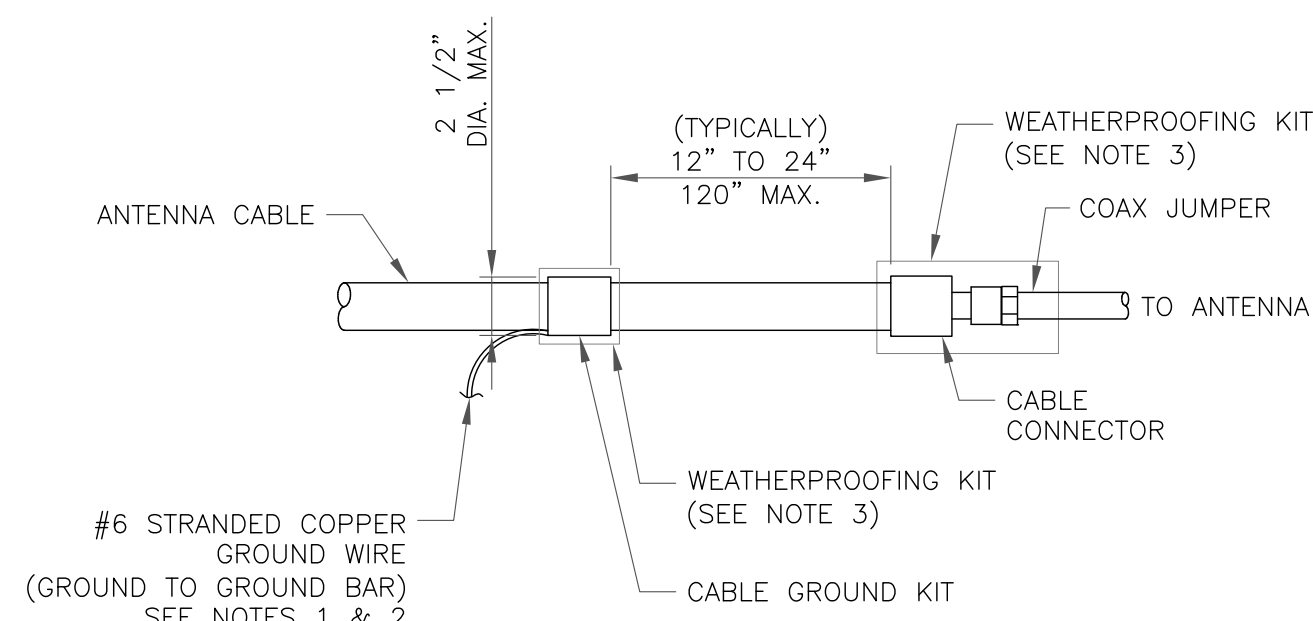


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

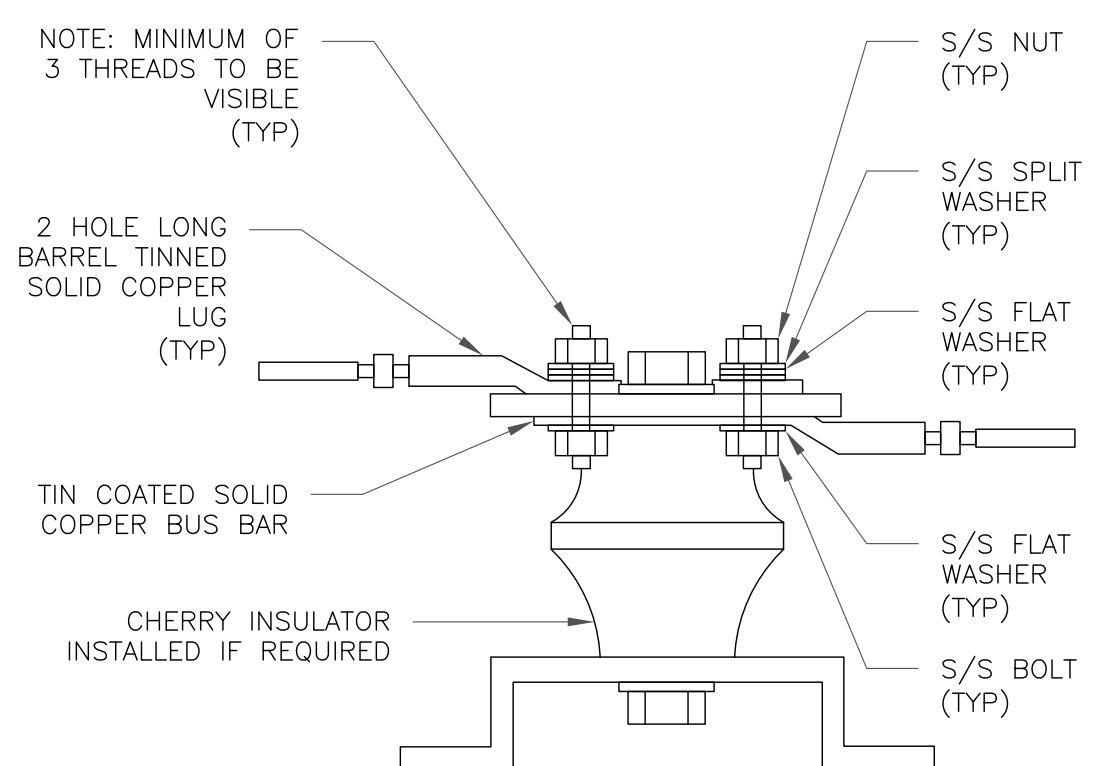
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

575 MOROSGO DRIVE
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UPPER STEPNEY - TLC

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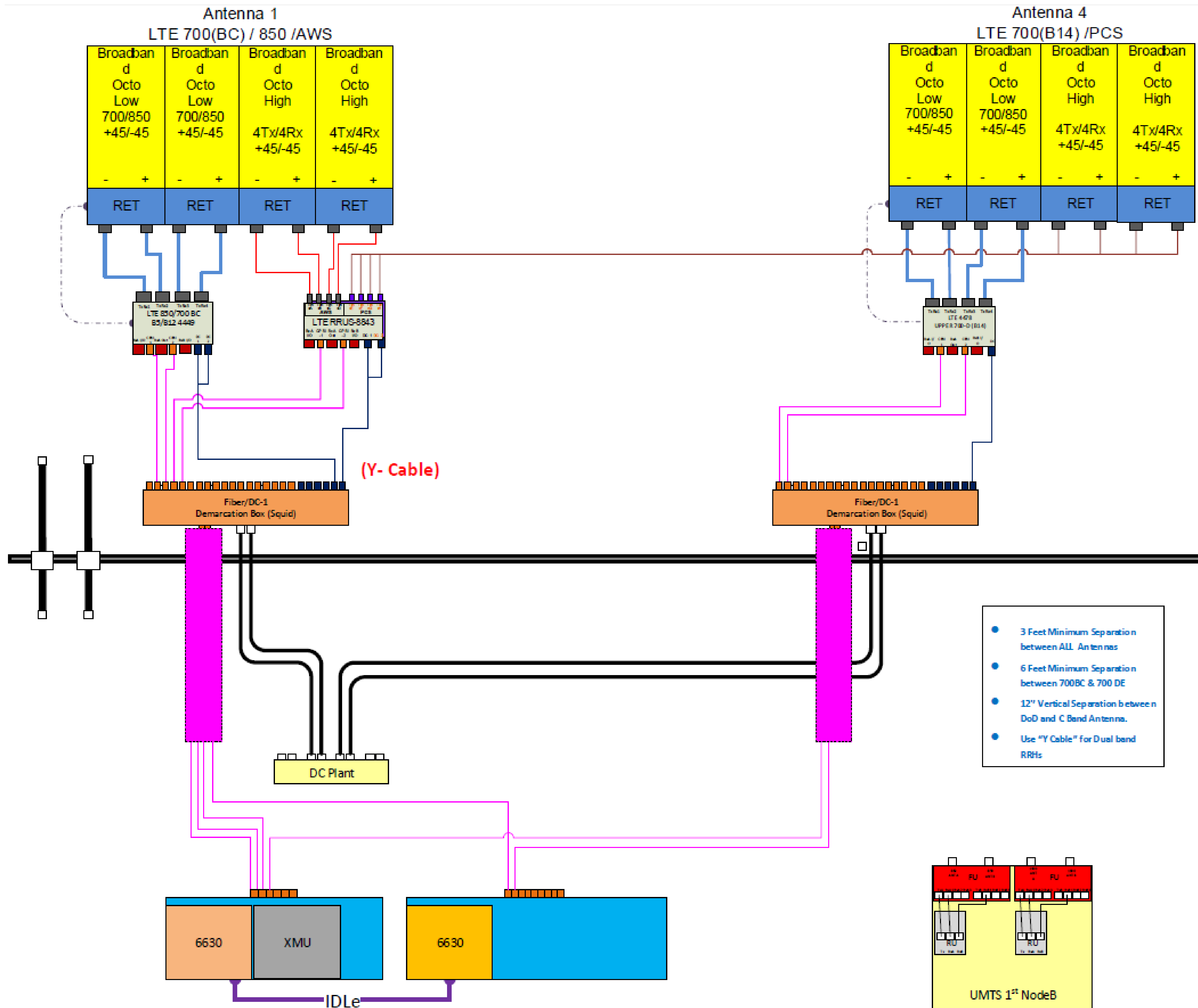
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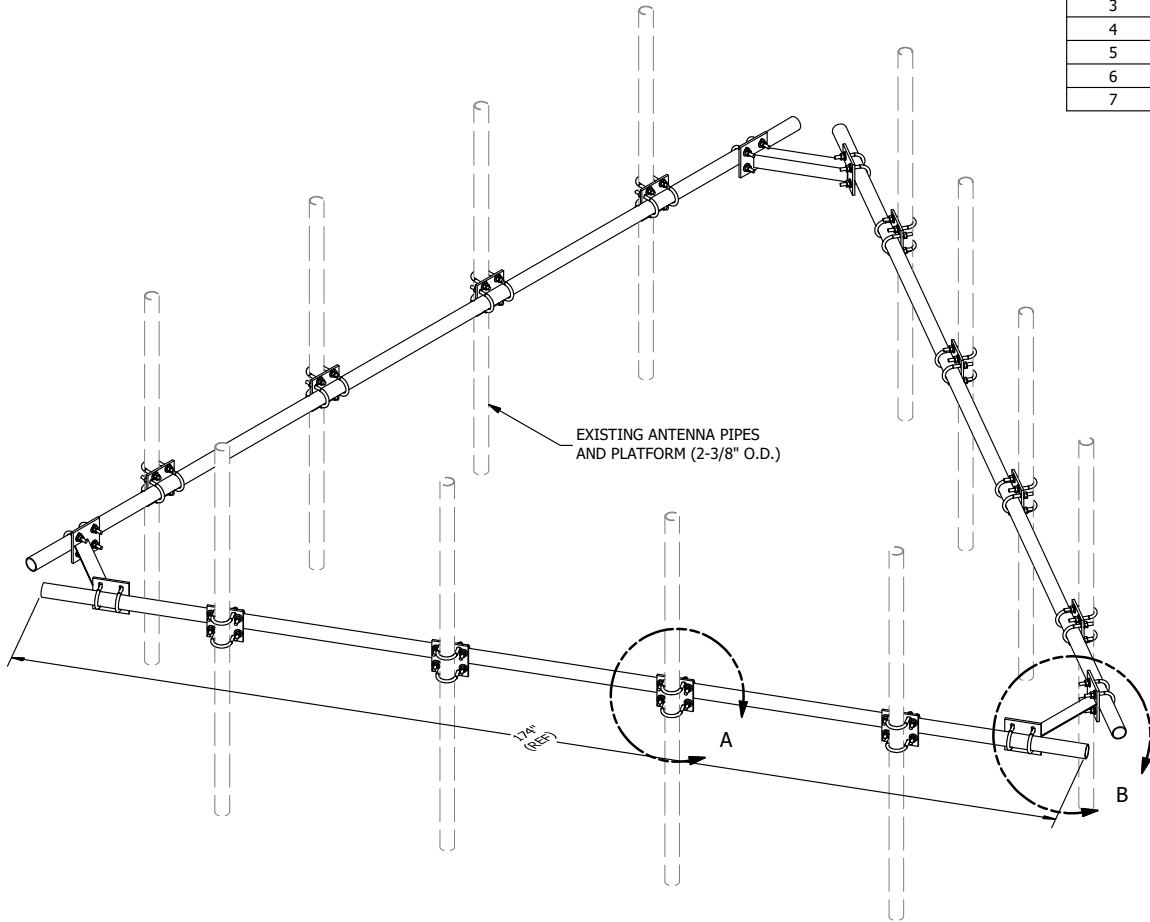


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BER:2386985
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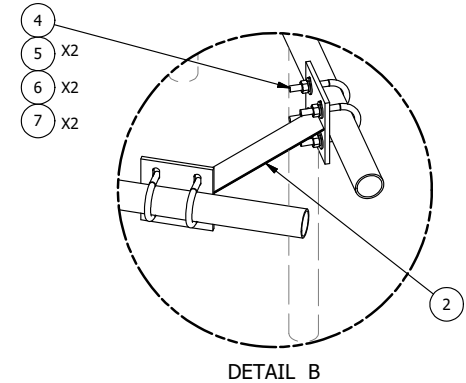
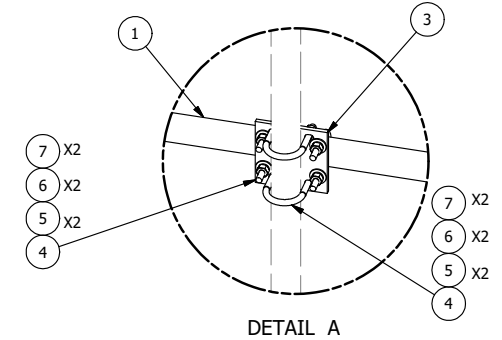
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SHEET NUMBER: **G-2** REVISION: **0**





PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2174	2-3/8" OD X 174" SCH 40 GALVANIZED PIPE	174 in	55.75	167.24
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
TOTAL WT. #						302.36



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP	CEK		7/11/2014
REVISION HISTORY				

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

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION			
HANDRAIL KIT FOR 14'-6" FACE			
CPD NO.	DRAWN BY	ENG. APPROVAL	
	KC8 5/30/2012		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 7/13/2014

 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX	
	Engineering Support Team: 1-888-753-7446	
PART NO.	HRK14	
DWG. NO.	HRK14	