



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

May 13, 2022

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

RE: **Notice of Exempt Modification for T-Mobile: CT11542A**
Crown Site# 876399
60 South Main, East Granby, CT 06026
Latitude: 41° 56' 29.59" / Longitude: -72° 44' 19.25"

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 87-foot mount on the existing 98-foot monopole tower located at 60 South Main Street, East Granby, CT. The property is owned Galasso Holdings LLC and the tower is owned by Crown Castle. T-Mobile now intends to replace three (3) antennas and ancillary equipment at the 87ft level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

- (3) Ericsson – AIR6419 B41 Antennas
- (3) Ericsson- Radio 4460 B25+B66
- (3) 6x24 4AWG Hybrid Trunks
- Mount Modification per USA Engineering Report od 4/5/2022

Remove:

- (3) Ericsson – APXV18-209014-C-A20 Antennas
- (3) Generic Twin Style 1A- PCS
- (1) 6x12 HCS 6AWG

Ground:

Install New:

- (1) Enclosure 6160 AC V1 Cabinet
- (1.) B160 Battery Cabinet
- (1.) RP 6651
- (1) PSU 4813 Voltage Booster
- (1.) CSR IXRE V2
- (1.) RBS 6601

The Foundation for a Wireless World.
CrownCastle.com

- (4.) Rectifiers
- (6^) 40 AMP breaker
- (3^) 50 AMP Breakers
- (1.) 25 AMP Breaker
- (1.) DCDCU

Remove:

- (1) RBS 6102MU AC Cabinet
- (3^) Ericsson RUS01 B2 RRU's
- (1) PTS Battery Cabinet


The facility was approved by the Town of East Granby on November 29, 2000. The approval was given with conditions which this proposed exempt modification complies with.

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 Eden Wimpfheimer, First Selectwoman, Town of East Granby, CT, Mark Goderre, Assistant Zoning Enforcement, Town of East Granby, CT. Galasso Holdings LLC is the Property Owner and Crown Castle is the tower owner.

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

For the foregoing reasons, T-Mobile 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: Jeffrey Barbadora.

Sincerely,


Jeffrey Barbadora
Site Acquisition Specialist
1800 W. Park Drive
Westborough, MA 01581

Melanie A. Bachman

Page 3

(781) 970-0053

Jeff.Barbadora@crowncastle.com

Attachments

cc:

Eden Wimpfheimer, First Selectwoman
Selectman's Office
9 Center Street
East Granby, CT 06026
(860) 653-2576

Mark Goderre, Assistant Zoning Enforcement
Zoning Enforcement Office
9 Center Street
East Granby, CT 06026
(860) 653-3444

Galasso Holdings LLC- Property Owner
PO Box 1776
East Granby, CT 06026

Crown Castle, Tower Owner



Sprint PCS™
Sprint Personal Communication Services™

Site Development Northeast
Crossroads Corporate Center
1 International Boulevard, Suite 800
Mahwah, New Jersey 07495
Mailstop: NJMAHA0101
Telephone: 201-684-4000

Wayne Medlin, Property Specialist
Office: (201) 684-4063
Cell: (516) 850-5897
Fax: (201) 684-4070

December 26, 2000

VIA FEDEX

Rosalie McKenney
Town of East Granby
9 Center Street
P.O. Box 1858
East Granby, Connecticut 06026

Re: Tower removal bond for property located at 60 South Main Street, East Granby, CT 06026

Dear Rosalie:

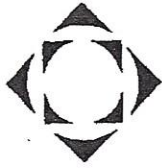
Enclosed please a Tower removal bond, in the amount of (\$50,000) fifty thousand dollars, prepared and executed in accordance with the conditions of zoning approved for Sprint's proposed site located at the above referenced location. Should you have any questions, or require something further, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in cursive script that reads "Wayne Medlin".

Wayne Medlin
Property Specialist

Enclosures



Planimetrics

MEMORANDUM

To: East Granby Planning & Zoning Commission
From: Glenn Chalder, AICP *Glenn*
Date: October 8, 1997
Subject: Adopted Zoning Regulation Changes
Personal Communication Service (PCS) Towers

I am enclosing a copy of the PCS regulation as adopted by the Planning and Zoning Commission at their meeting on October 7, 1997.

It has been a pleasure working with the Commission on this. If we can be of additional service, please let us know.

The East Granby Planning & Zoning Commission approved the attached Zoning Regulation changes on 10/7/97 to be effective 10/17/97.

Frederick O'Brien

Frederick O'Brien, Chairman

10/12/97

Date

ZONING REGULATION AMENDMENT

Personal Communication Service (PCS) Towers

(add the following)

II. INTERPRETATION C. DEFINITIONS

Antenna - A device used to transmit or receive telecommunications or radio signals.

Concealed Antenna - A communication facility and associated antenna(s) that are designed to blend into the surrounding environment by being mounted and screened on buildings or being similarly disguised in the natural environment.

Communications Tower - A structure (including monopoles, guyed towers, or lattice structures) that is used to support one or more antenna as part of a communication facility.

Communication Facility - towers or antennas and accessory structures used in connection with the provision of telecommunication services such as cellular telephone service, personal communication services, paging services, radio or television broadcasting services, and similar broadcast services.

(modify the following)

III. GENERAL REGULATIONS B. GENERAL PROVISIONS

4. Height Exceptions

The provisions of these Regulations limiting the maximum height of buildings shall not restrict the height of a spire, flagpole, (antenna), chimney, water tank, elevator bulkhead, solar panel or similar uses provided such uses shall not interfere with an airport approach surface.

(add the following)

III. GENERAL REGULATIONS B. GENERAL PROVISIONS

6. Antennas

The provisions of these Regulations limiting the maximum height of buildings shall not restrict the height of an antenna that is erected solely for municipal purposes or that is clearly accessory to a permitted principal use in a residential zone, provided such antennae shall not interfere with an airport approach surface. The Commission may allow other proposed antennae in accordance with the requirements of Section IX. G. of these Regulations.

(add the following)

IX. SPECIAL REGULATIONS
G. ANTENNAE

1. Purpose

This section is intended to provide for telecommunications facilities within East Granby while protecting the public health, safety, and welfare and minimizing adverse visual and environmental impacts.

2. Application Process

a) An application for a new tower or a new antenna shall be processed as follows:

Zone Type	Communication Tower Type	Tower/Antenna Type	Application Type
Residential, Agricultural, and Quarry zones	No tower proposed	Concealed antenna on a non-residential building	Special Permit
		On an existing non-residential building or structure (such as a water tower or utility pole)	Special Permit
	Existing tower	New Antenna	Special Permit
	Concealed tower	Concealed Antenna	Special Permit
	New tower	Monopole (lower than or equal to 100 feet)	Special Permit
		Monopole (more than 100 feet)	Special Permit
Lattice or Guyed		Special Permit	
All other zones B Business P Professional I Industrial	No tower proposed	Concealed antenna	Site Plan
		On an existing non-residential building or structure (such as a water tower or utility pole)	Site Plan
	Existing tower	New Antenna	Site Plan
	Concealed tower	Concealed Antenna	Site Plan
	New tower	Monopole (lower than or equal to 100 feet)	Site Plan
		Monopole (more than 100 feet)	Special Permit
Lattice or Guyed		Special Permit	

- b) The proposed height of an antenna shall be measured from the prevailing ground elevation at the base of the tower, antenna, or any other supporting structure (including existing buildings) to the top of any antenna or other appurtenances attached to the tower or antenna.
- c) The Commission may retain its own experts, at the applicant's expense, to verify any information submitted in conjunction with any application.
- d) The application fee for a tower or antenna proposed under this section as part of a communications facility shall be \$250 plus the cost of any outside experts retained by the Commission. To cover these potential costs, the applicant shall submit a certified check for \$250 plus \$100 per foot of proposed tower/antenna height with the application. Any fees not utilized by the Commission shall be returned to the applicant following disposition of the application.

3. Required Information

- a) The applicant shall submit documentation to demonstrate that it is a licensed provider authorized by the Federal Communications Commission to operate the proposed type of facility.
- b) Any application under this section shall include the following site selection information:
- a map showing:
 - the extent of planned coverage in East Granby and in adjacent communities,
 - the location and service area of the proposed antenna and/or tower.
 - a written statement describing:
 - the need for the proposed facility (coverage, signal strength, other),
 - the siting and design criteria used for the proposed facility,
 - the location of the site search area and sites identified (alternatives),
 - the process by which other possible sites in the search area were considered and/or eliminated for legal, technological, economic, or other reasons,
 - technological alternatives to the proposed facility and the economic or other implications associated with those alternatives, and
 - reasons for the selection of the proposed site and design (tower, antenna).
- c) Any application under this section shall include the following design information:
- a description of the proposed tower, antennae and any associated equipment (transformer, generator),
 - a site plan clearly locating the proposed facilities, proposed access, and any other activities on the proposed site,
 - plan and elevation drawings showing the proposed tower, antenna, mounting locations (proposed and future), associated equipment, and other structures on the site,
 - topographic profiles (running up/down slope and cross slope, at a minimum) showing the location of the proposed facilities in relation to surrounding areas and structures,
 - architectural or photographic rendering of the proposed facility from a location designated by the Zoning Enforcement Officer, and
 - a colored plan or plans clearly indicating the proposed color of any existing features or proposed facilities or equipment.
- d) Any application under this section shall include the following additional information:
- a copy of any proposed lease(s) or agreements for the proposed facilities and required appurtenances,
 - a written statement describing how the proposed facility complies with the concept of multiple use and/or concealment,
 - written statements by competent professional describing the impact on public health and safety associated with the proposed activity with particular emphasis on radio emissions (signal frequency, intensity, and power density) and structural integrity, and
 - a written statement describing any requirements of other government agencies regarding illumination, colors, airport approach surfaces, or other requirements.

6. Site & Building Design

- a) Any facility shall be surrounded by a fence of appropriate design at least eight feet in height. Landscaping around the facility may be required by the Commission depending on site location and characteristics.
- b) All utilities shall be located underground unless otherwise approved by the Commission.
- c) Unless waived by the Commission, any accessory equipment building shall:
 - shall not exceed 750 square feet of gross floor area,
 - shall not exceed 12 feet in height, and
 - shall have a gable roof and be architecturally finished to look like a residential or agricultural structure.
- d) If located on the roof of a building, equipment building shall be screened or concealed.

7. Maintenance and Abandonment

- a) The improvements associated with any facility shall be regularly inspected and maintained. Any facility that is not being maintained will be considered abandoned.
- b) The facility owner shall submit an annual report (by the anniversary date of the approval of the application) to the Commission or its designee indicating:
 - whether the facility is in use,
 - that the facility has been inspected on a regular basis and the inspection dates of the facility during the past year,
 - whether the facility is in compliance with governmental standards for radio frequency emissions at the designated frequencies and power levels,
 - whether the facility is in compliance with the conditions of any approval, and
 - that contact was made with the Building Department at Town Hall to identify any issues with regard to the tower, who was contacted, what the issues are, and detailing the proposed responses to any issues.
- c) In the event that the Building Official shall determine that any component of a facility is unsafe, the applicant shall, within 30 days, repair or replace or remove the facility or the unsafe condition.
- d) Any facility not in use for twelve months shall be considered abandoned. Any facility that fails to file an annual report shall be considered abandoned. An abandoned facility shall be removed within ninety days and the site restored.
- e) A bond shall be required prior to the construction of any facility to ensure that any required repair, replacement, or removal shall be accomplished. Prior to using the bond to remove or repair the facility, the Commission shall notify the applicant that the bond will be utilized. Such bond or any remaining bond amount shall be returned to the applicant upon removal of the facility and restoration of the site.

Adopted: October 7, 1997
Effective Date: October 17, 1997

- e) Any application for a new tower shall also include the following information:
- a description of the proposed tower and any associated equipment (including height, construction type, purpose, design features, means of power supply),
 - a written statement describing the extent to which the proposed tower has been designed to be extended and/or accommodate additional service providers in the future,
 - a plan showing the number and type of antennas that can be accommodated (proposed and future) as well as the proposed location of all mounting positions for co-located antennas and the minimum separating distances for antennas,
 - a written statement that indicates how additional service providers will be accommodated on the proposed tower in the future, and
 - a written statement indicating that local municipal and public safety departments were offered the opportunity to locate their facilities on the proposed tower.

4. Tower Location & Design

- a) To maintain the natural state surrounding the public trail system and to avoid a negative visual impact on a large area of the town, no tower shall, unless modified by the Commission, be located within:
- 500 feet of the Metacomet Ridge if it extends above the existing tree line,
 - one mile of the Metacomet Ridge if it extends above the top of the ridge,
 - three miles of another tower.
- b) In reviewing an application, the Commission may require the applicant to:
- simulate the tower height by balloon or other method that will evaluate scenic impact,
 - investigate alternative locations and report back to the Commission on their feasibility.
- c) Any proposed tower shall be located on a conforming lot. A tower shall be set back from property lines 125 percent of the height of the tower and all appendages unless the applicant has submitted, and the Commission has accepted, engineering data to show that the tower is collapsible and will fall within the property lines of the lot on which it is located.
- d) Unless waived by the Commission, each tower shall be designed and built to accommodate the equipment of at least two other service providers:
- when initially built, or
 - by vertically extension in the future.
- e) No illumination of any tower shall be permitted unless specifically requested by the applicant and specifically approved by the Commission. Limitations on illumination shall be made a condition of any approval.

5. Antenna Limitations

- a) Unless waived by the Commission:
- no more than two dish antennas shall be placed on any tower,
 - all dish antenna be mesh design,
 - no dish antenna shall be more than:
 - two feet in diameter in residential zones, or
 - six feet in diameter in non-residential zones.

60 SOUTH MAIN STREET

Location 60 SOUTH MAIN STREET

Mblu 11/ 11/ / /

Acct# 100819

Owner GALASSO HOLDINGS LLC

Assessment \$1,365,600

Appraisal \$1,950,700

PID 341

Building Count 3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$1,410,600	\$540,100	\$1,950,700
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$987,500	\$378,100	\$1,365,600

Owner of Record

Owner GALASSO HOLDINGS LLC
Co-Owner
Address PO BOX 1776
 EAST GRANBY, CT 06026

Sale Price \$0
Certificate
Book & Page 0112/0814
Sale Date 03/06/1997

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
GALASSO HOLDINGS LLC	\$0		0112/0814	03/06/1997

Building Information

Building 1 : Section 1

Year Built: 1969
Living Area: 43,230
Replacement Cost: \$1,509,592
Building Percent Good: 61
Replacement Cost
Less Depreciation: \$920,900

Building Attributes

Field	Description
Style:	Garage
Model	Industrial
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall A	Concr/Cinder
Exterior Wall B	
Roof Structure	Gable/Hip
Roof Cover	Tar & Gravel
Interior Wall A	Unfin/Minimum
Interior Wall B	
Interior Floor A	Concr-Finished
Interior Floor B	
Heating Fuel	Oil
Heating Type	Steam
AC Type	None
Struct Class	
Bldg Use	Industrial C
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3-1C
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	16.00
% Comn Wall	0.00

Building 2 : Section 1

Year Built: 1969
Living Area: 5,720
Replacement Cost: \$273,597
Building Percent Good: 61
Replacement Cost
Less Depreciation: \$166,900

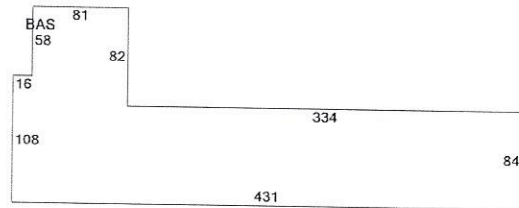
Building Attributes : Bldg 2 of 3	
Field	Description
Style:	Service Shop
Model	Industrial

Building Photo



(<https://images.vgsi.com/photos/EastGranbyCTPhotos/A00\01\17\92.jpg>)

Building Layout

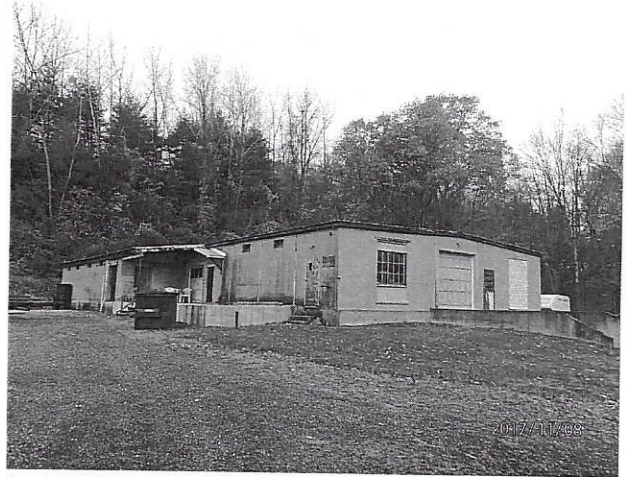


(ParcelSketch.ashx?pid=341&bid=341)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	43,230	43,230
		43,230	43,230

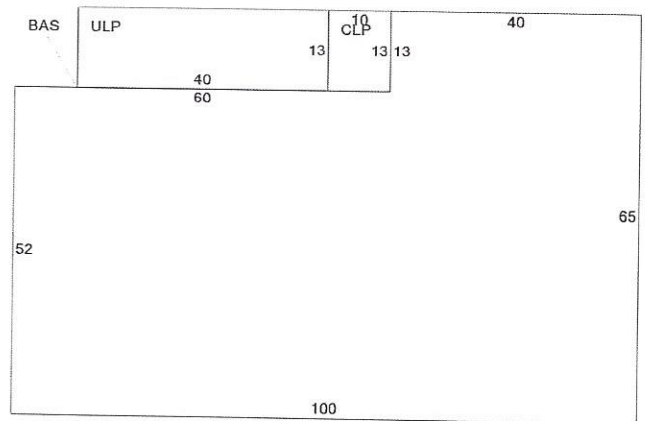
Grade	Below Average
Stories:	1
Occupancy	1.00
Exterior Wall A	Concr/Cinder
Exterior Wall B	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall A	Unfin/Minimum
Interior Wall B	
Interior Floor A	Concr-Finished
Interior Floor B	Minimum/Plywd
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	Industrial C
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3-1
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	-DESCRIPTION-
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo



(<https://images.vgsi.com/photos/EastGranbyCTPhotos//00/01/17/94.jpg>)

Building Layout



(ParcelSketch.ashx?pid=341&bid=2485)

Building Sub-Areas (sq ft)			Legend	
Code	Description	Gross Area	Living Area	
BAS	First Floor	5,720	5,720	
CLP	Loading Platform, Finished	130	0	
ULP	Loading Platform, Unfinished	520	0	
		6,370	5,720	

Building 3 : Section 1

Year Built: 1972
Living Area: 8,000
Replacement Cost: \$404,000
Building Percent Good: 61
Replacement Cost
Less Depreciation: \$246,400

Building Attributes : Bldg 3 of 3	
Field	Description
Style:	Light Indust
Model	Industrial

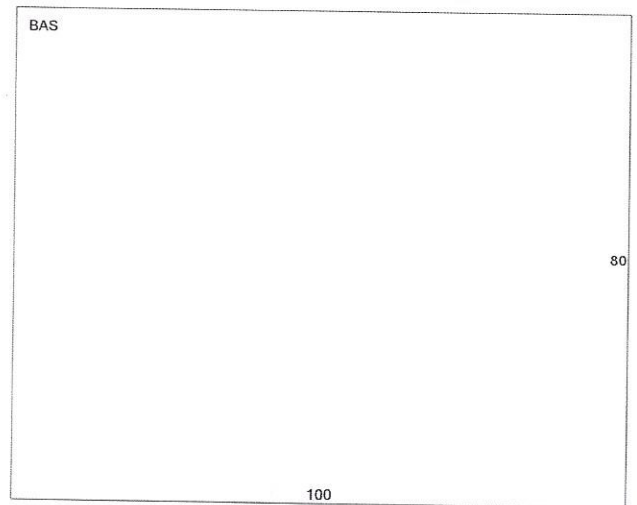
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall A	Concr/Cinder
Exterior Wall B	
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall A	Unfin/Minimum
Interior Wall B	
Interior Floor A	Concr-Finished
Interior Floor B	
Heating Fuel	Oil
Heating Type	Steam
AC Type	None
Struct Class	
Bldg Use	Industrial C
Total Rooms	0
Total Bedrms	0
Total Baths	0
1st Floor Use:	
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	16.00
% Comn Wall	0.00

Building Photo



(<https://images.vgsi.com/photos/EastGranbyCTPhotos/A00\01\17\93.jpg>)

Building Layout



(ParcelSketch.ashx?pid=341&bid=103821)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	8,000	8,000
		8,000	8,000

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
MEZ	Mezzanine	960.00 S.F.	\$8,800	3

Land

Land Use

Use Code 3-1
Description Industrial C
Zone I

Land Line Valuation

Size (Acres) 89.97
Frontage 0
Depth 0

Neighborhood
 Alt Land Appr No
 Category

Assessed Value \$378,100
 Appraised Value \$540,100

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHED	Shed	A	Average	180.00 S.F.	\$1,300	1
SHED	Shed	A	Average	640.00 S.F.	\$3,500	2
LNT	Lean-To			350.00 S.F.	\$1,400	1
SHED	Shed	A	Average	100.00 S.F.	\$500	2
SHED	Shed	A	Average	200.00 S.F.	\$2,200	3
LNT	Lean-To			240.00 S.F.	\$1,000	2
SHED	Shed	A	Average	1250.00 S.F.	\$11,300	1
GAR1	Garage	A	Average	1280.00 S.F.	\$19,200	2
LNT	Lean-To			1472.00 S.F.	\$8,800	1
SHED	Shed	A	Average	160.00 S.F.	\$1,700	1
SHED	Shed	A	Average	252.00 S.F.	\$1,400	2
SHED	Shed	A	Average	140.00 S.F.	\$1,000	2
SHED	Shed	G	Good	360.00 S.F.	\$5,200	1
SHED	Shed	A	Average	360.00 S.F.	\$4,500	1
FNC	Chain Link Fence	06	6 Ft. Height	600.00 L.F.	\$4,600	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$1,293,500	\$536,600	\$1,830,100
2012	\$1,409,400	\$359,400	\$1,768,800
2007	\$818,700	\$429,800	\$1,248,500

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$905,600	\$375,600	\$1,281,200
2012	\$986,700	\$251,600	\$1,238,300
2007	\$573,100	\$300,900	\$874,000

Google Maps 60 S Main St

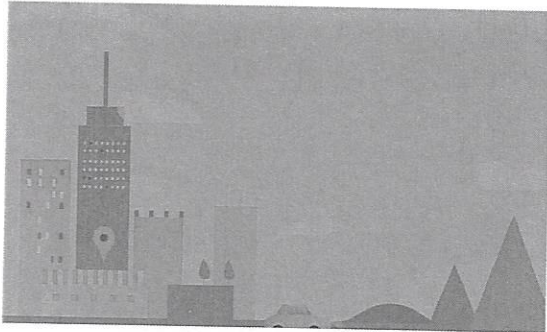


60 S Main St, East Granby, CT 06026

Google

Galasso Mate

Map data ©2022 200 ft



60 S Main St

East Granby, CT 06026
Building



Directions



Save



Nearby



Send to your phone



Share

At this location

Galasso Materials LLC

4.2 (19)

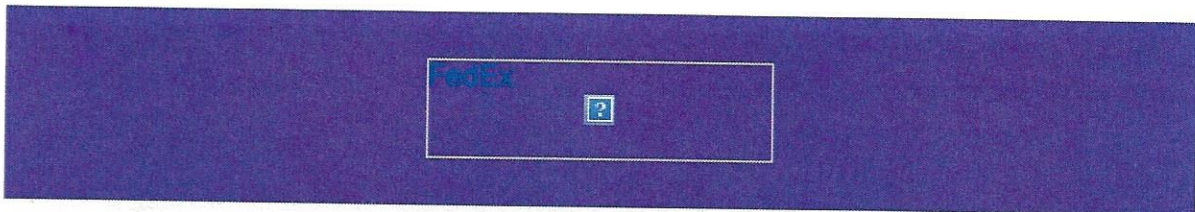
Crushed stone supplier · 60 S Main St

Open · Closes 3:30PM

Tilcon Connecticut | East Granby

From: TrackingUpdates@fedex.com
To: [Barbadora, Jeff](#)
Subject: FedEx Shipment 776857345248: Your package has been delivered
Date: Monday, May 16, 2022 10:07:59 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 Mon, 05/16/2022 at
10:05am.



Delivered to 9 CENTER STREET, EAST GRANBY, CT 06026
Received by D.DONAI

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [776857345248](#)

FROM Jeff Barbadora
1800 W. Park Drive

WESTBOROUGH, MA, US, 01581

TO Town of East Granby-Selectman's off
Eden Wimpfheimer-First Selectwoman
9 Center Street
EAST GRANBY, CT, US, 06026

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Fri 5/13/2022 05:31 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

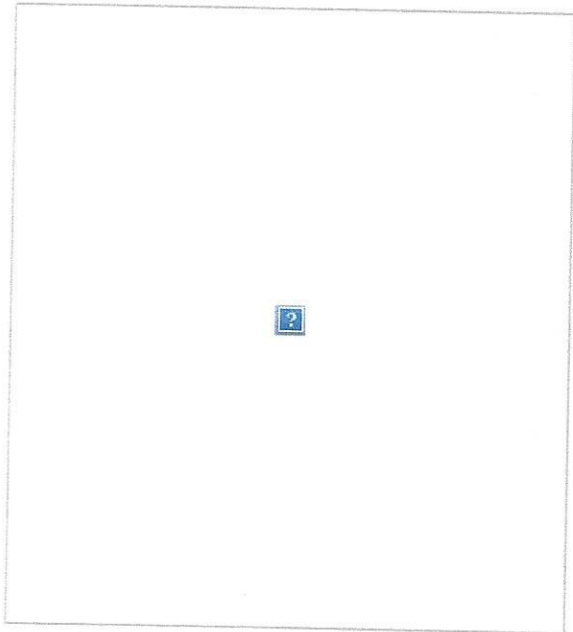
DESTINATION EAST GRANBY, CT, US, 06026

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



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From: TrackingUpdates@fedex.com
To: [Barbadora, Jeff](#)
Subject: FedEx Shipment 776857381533: Your package has been delivered
Date: Monday, May 16, 2022 10:12:02 AM

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Hi. Your package was
delivered Mon, 05/16/2022 at
10:05am.



Delivered to 9 CENTER STREET, EAST GRANBY, CT 06026
Received by D.DONAI

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [776857381533](#)

FROM Jeff Barbadora
1800 W. Park Drive

WESTBOROUGH, MA, US, 01581

TO Town of East Granby-Zone Enforce Of
Mark Goderre, Assistant Zone Enforc
9 Center Street
EAST GRANBY, CT, US, 06026

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Fri 5/13/2022 05:31 PM

DELIVERED TO Receptionist/Front Desk

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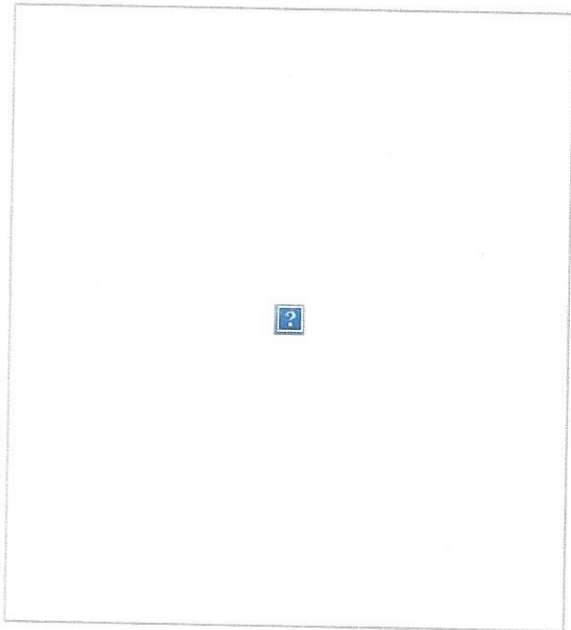
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Product	Qty	Unit Price	Price
PM Express 1-Day	1		\$26.95
Flat Rate Env			
East Granby, CT 06026			
Flat Rate			
Signature Waiver			
Scheduled Delivery Date			
Tue 05/17/2022 06:00 PM			
Money Back Guarantee			
Tracking #:			
EI063981358US			
Insurance			\$0.00
Up to \$100.00 included			
Total			\$26.95

Grand Total: \$26.95

Credit Card Remitted \$26.95

Card Name: VISA
 Account #: XXXXXXXXXXXX5201
 Approval #: 246389
 Transaction #: 367
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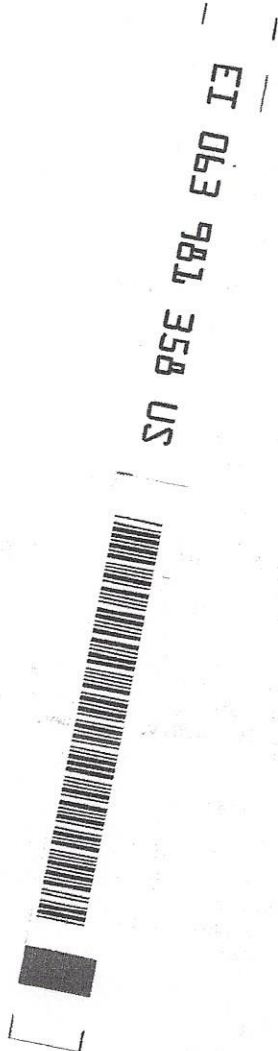
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Property owner

Date: **April 07, 2022**



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

Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Site Number: CT11542A
Site Name: E. Granby - Sprint

Crown Castle Designation: **BU Number:** 876399
Site Name: (F) E. GRANBY 4Q2000 /
GALASSO

JDE Job Number: 710330
Work Order Number: 2097312
Order Number: 609932 Rev. 0

Engineering Firm Designation: **B+T Group Project Number:** 127643.011.01

Site Data: **60 South Main St., East Granby, Hartford County, CT**
Latitude 41° 56' 29.59", Longitude -72° 44' 19.248"
98 Foot - Monopole

B+T Group is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above-mentioned tower.

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

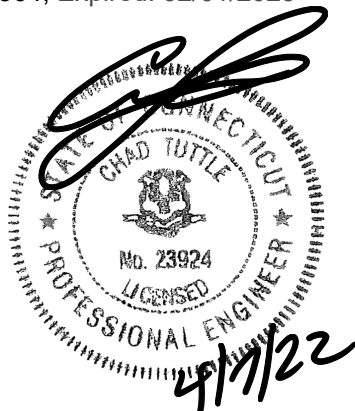
LC7: Proposed Equipment Configuration

Sufficient Capacity - 99.3%

This analysis utilizes an ultimate 3-second gust wind speed of 115 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: Massood Sattari

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expired: 02/01/2023



Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

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1) INTRODUCTION

This tower is a 98 ft Monopole designed by Engineered Endeavors, Inc.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	115 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
89.0	90.0	3	Ericsson	AIR 6419 B41_TMO	3	1-5/8
		3	Ericsson	Radio 4449 B71 B85A_T-Mobile		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
	89.0	1	--	Miscellaneous [NA 510-1]		
		1	--	Platform Mount [LP 305-1]		

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)
96.0	98.0	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz	3 1	1-1/4 7/8
		6	Alcatel Lucent	RRH2X50-800		
		3	Commscope	NNVV-65B-R4		
		3	Nokia	FZHN		
		3	RFS Celwave	APXVTM14-ALU-I20		
	96.0	1	--	Miscellaneous [NA 510-1]		
		1	--	Platform Mount [LP 714-1]		
77.0	77.0	1	Andrew	SBNH-1D6565C	12 4 2	7/8 3/4 3/8
		3	CCI Antennas	TPA-65R-LCUUUU-H8		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 32 B30		
		3	Kaelus	DBC0061F1V51-2		
		3	Powerwave Tech	7770.00		
		2	Powerwave Tech	P65-17-XLH-RR		
		3	Powerwave Tech	TT19-08BP111-001		
		2	Raycap	DC6-48-60-18-8F		
67.0	67.0	1	--	Platform Mount [LP 303-1_KCKR-HR-1]		
		6	Commscope	SBNHH-1D65B		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom	MT6407-77A		
		3	Samsung Telecom	RF4439D-25A		
		3	Samsung Telecom	RF4440D-13A		
		1	--	Platform Mount [LP 303-1_KCKR]		
52.0	54.0	1	Lucent	KS24019-L112A	1	7/8
	52.0	1	--	Side Arm Mount [SO 701-1]		
48.0	48.0	3	Fujitsu	TA08025-B604	1	1-3/8
		3	Fujitsu	TA08025-B605		
		3	JMA Wireless	MX08FRO665-21		
		1	Raycap	RDIDC-9181-PF-48		
		1	--	Commscope MC-PK8-DSH		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawings	1613691	CCI Sites
Mount Analysis Report	10276901	CCI Sites
Tower Modification Drawing	2529017	CCI Sites
Post Modification Inspection	2682749	CCI Sites
Tower Modification Drawing	3713021	CCI Sites
Post Modification Inspection	3713020	CCI Sites
Tower Modification Drawing	5803194	CCI Sites
Post Modification Inspection	6139057	CCI Sites
Tower Modification Drawing	8420875	CCI Sites
Post Modification Inspection	9024342	CCI Sites
Foundation Drawings	2066334	CCI Sites
Geotech Report	1531971	CCI Sites
Antenna Configuration	Date: 03/29/2022	CCI Sites

3.1) Analysis Method

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

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

3.2) Assumptions

- 1) The 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. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	98 - 93	Pole	TP13.078x12x0.1875	1	-3.361	--	12.1	Pass
L2	93 - 88	Pole	TP14.156x13.078x0.1875	2	-6.587	--	26.9	Pass
L3	88 - 85.21	Pole	TP15.28x14.156x0.1875	3	-6.735	--	36.3	Pass
L4	85.21 - 80.21	Pole	TP15.445x14.384x0.25	4	-7.151	--	39.7	Pass
L5	80.21 - 75.21	Pole	TP16.507x15.445x0.25	5	-10.735	--	50.5	Pass
L6	75.21 - 70.21	Pole	TP17.569x16.507x0.25	6	-11.236	--	61.6	Pass
L7	70.21 - 65.21	Pole	TP18.63x17.569x0.25	7	-15.022	--	72.2	Pass
L8	65.21 - 60.21	Pole	TP19.692x18.63x0.25	8	-15.695	--	82.5	Pass
L9	60.21 - 59.17	Pole	TP19.912x19.692x0.25	9	-15.838	--	84.4	Pass
L10	59.17 - 58.9	Pole + Reinf.	TP19.97x19.912x0.5125	10	-15.905	--	76.0	Pass
L11	58.9 - 58.75	Pole + Reinf.	TP20.001x19.97x0.5125	11	-15.933	--	76.3	Pass
L12	58.75 - 54	Pole + Reinf.	TP21.01x20.001x0.5	12	-16.752	--	85.1	Pass
L13	54 - 53.75	Pole + Reinf.	TP21.063x21.01x0.5125	13	-16.815	--	76.3	Pass
L14	53.75 - 52.91	Pole + Reinf.	TP21.241x21.063x0.5	14	-16.979	--	77.6	Pass
L15	52.91 - 52.66	Pole + Reinf.	TP21.294x21.241x0.675	15	-17.042	--	74.9	Pass
L16	52.66 - 52.17	Pole + Reinf.	TP21.399x21.294x0.675	16	-17.146	--	75.7	Pass
L17	52.17 - 51.92	Pole + Reinf.	TP21.452x21.399x0.525	17	-17.278	--	81.0	Pass
L18	51.92 - 48.7	Pole + Reinf.	TP22.86x21.452x0.5125	18	-17.935	--	85.8	Pass
L19	48.7 - 44.29	Pole + Reinf.	TP22.575x21.634x0.5625	19	-22.175	--	83.9	Pass
L20	44.29 - 39.29	Pole + Reinf.	TP23.639x22.575x0.55	20	-23.358	--	90.2	Pass
L21	39.29 - 34.29	Pole + Reinf.	TP24.703x23.639x0.5375	21	-24.575	--	95.7	Pass
L22	34.29 - 33.5	Pole + Reinf.	TP24.87x24.703x0.525	22	-24.774	--	96.5	Pass
L23	33.5 - 33.25	Pole + Reinf.	TP24.923x24.87x0.8375	23	-24.862	--	65.4	Pass
L24	33.25 - 33	Pole + Reinf.	TP24.977x24.923x0.8375	24	-24.940	--	65.6	Pass
L25	33 - 32.75	Pole + Reinf.	TP25.03x24.977x0.8125	25	-25.012	--	71.1	Pass
L26	32.75 - 32	Pole + Reinf.	TP25.19x25.03x0.8	26	-25.222	--	71.8	Pass
L27	32 - 31.75	Pole + Reinf.	TP25.243x25.19x0.5875	27	-25.286	--	86.7	Pass
L28	31.75 - 28.5	Pole + Reinf.	TP25.934x25.243x0.575	28	-26.062	--	89.5	Pass
L29	28.5 - 28.25	Pole + Reinf.	TP25.988x25.934x0.8625	29	-26.153	--	62.3	Pass
L30	28.25 - 27.5	Pole + Reinf.	TP26.147x25.988x0.85	30	-26.380	--	62.8	Pass
L31	27.5 - 27.25	Pole + Reinf.	TP26.2x26.147x0.575	31	-26.446	--	90.5	Pass
L32	27.25 - 22.25	Pole + Reinf.	TP27.265x26.2x0.5625	32	-27.675	--	94.2	Pass
L33	22.25 - 18	Pole + Reinf.	TP28.169x27.265x0.55	33	-28.753	--	96.9	Pass
L34	18 - 17.75	Pole + Reinf.	TP28.222x28.169x0.5625	34	-28.837	--	88.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L35	17.75 - 15.45	Pole + Reinf.	TP28.712x28.222x0.425	35	-29.433	--	89.9	Pass
L36	15.45 - 15.2	Pole + Reinf.	TP28.765x28.712x0.6875	36	-29.529	--	88.4	Pass
L37	15.2 - 13.41	Pole + Reinf.	TP29.146x28.765x0.675	37	-30.053	--	89.4	Pass
L38	13.41 - 13.16	Pole + Reinf.	TP29.199x29.146x0.5625	38	-30.144	--	93.2	Pass
L39	13.16 - 8.16	Pole + Reinf.	TP30.263x29.199x0.55	39	-31.572	--	95.8	Pass
L40	8.16 - 6.5	Pole + Reinf.	TP30.617x30.263x0.55	40	-32.046	--	96.5	Pass
L41	6.5 - 6.25	Pole + Reinf.	TP30.67x30.617x0.6625	41	-32.147	--	92.9	Pass
L42	6.25 - 4.45	Pole + Reinf.	TP31.053x30.67x0.65	42	-32.690	--	93.7	Pass
L43	4.45 - 4.2	Pole + Reinf.	TP31.106x31.053x0.5125	43	-32.778	--	95.1	Pass
L44	4.2 - 0	Pole + Reinf.	TP32x31.106x0.5	44	-33.920	--	96.8	Pass
							Summary	
						Pole (L9)	90.0	Pass
						Reinforcement	96.9	Pass
						Rating =	96.9	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rod Brackets	Base	61.5	Pass
1,2	Anchor Rods	Base	61.2	Pass
1,2	Base Plate	Base	99.3	Pass
1,2	Base Foundation (Structure)	Base	60.9	Pass
1,2	Base Foundation (Soil Interaction)	Base	80.5	Pass

Structure Rating (max from all components) =	99.3%
---	--------------

Notes:

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

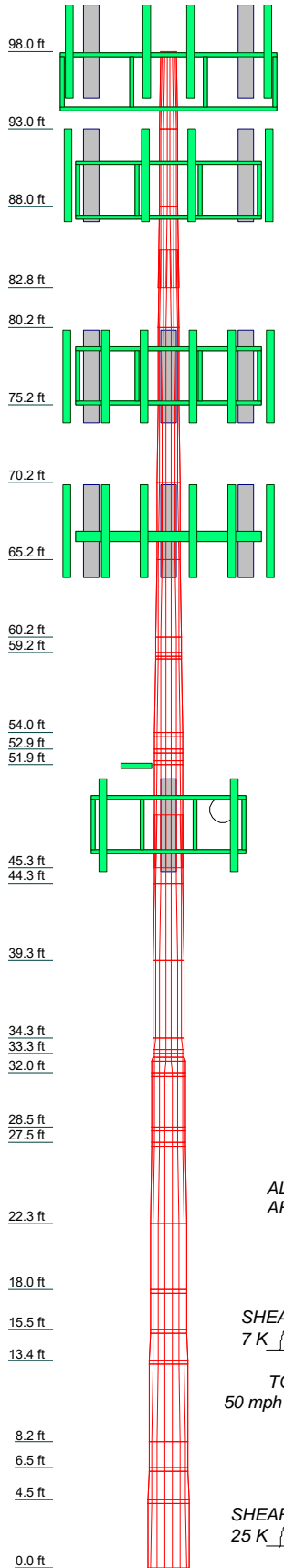
4.1) Recommendations

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	6	7	8	12	18	20	21	28	32	33	34	39	40	44	
Length (ft)	5.000	5.000	5.000-5.210	5.000-5.210	5.000	5.000	5.000	5.000	4.750	4.750	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	4.200	
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
Thickness (in)	0.188	0.188	0.188	0.250	0.250	0.250	0.250	0.250	0.512	0.512	0.550	0.537	0.537	0.563	0.563	0.563	0.550	0.550	0.500	
Socket Length (ft)	2.417																			
Top Dia (in)	12.000	13.078	14.156	14.384	15.445	16.507	17.569	18.630	19.692	20.754	21.816	22.878	23.940	25.002	26.064	27.126	28.188	29.250	30.312	
Bot Dia (in)	13.078	14.156	15.234	16.312	17.390	18.468	19.546	20.624	21.702	22.780	23.858	24.936	26.014	27.092	28.170	29.248	30.326	31.404	32.482	
Grade	A572-65																			
Weight (K)	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.9	0.9	1.1	



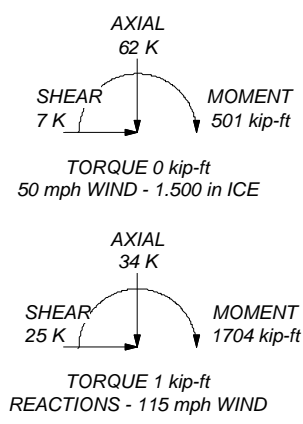
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 115 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 96.9%

ALL REACTIONS ARE FACTORED



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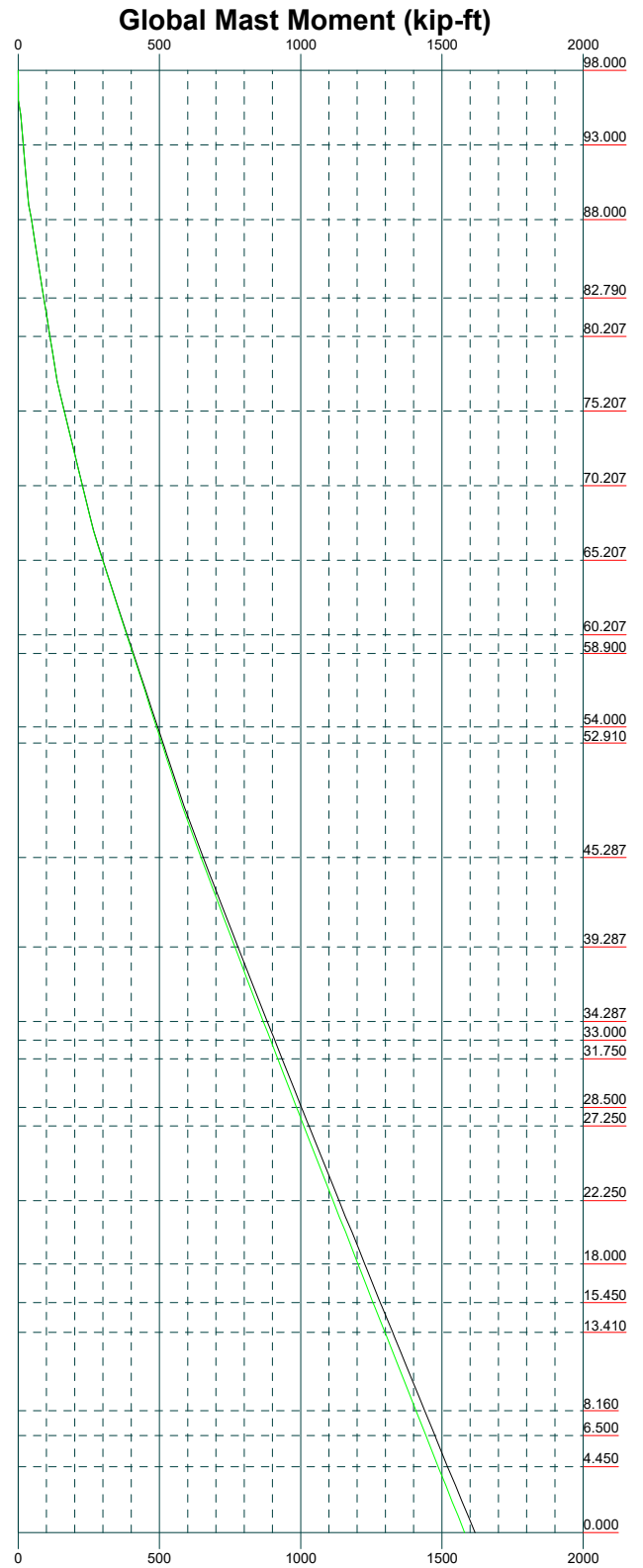
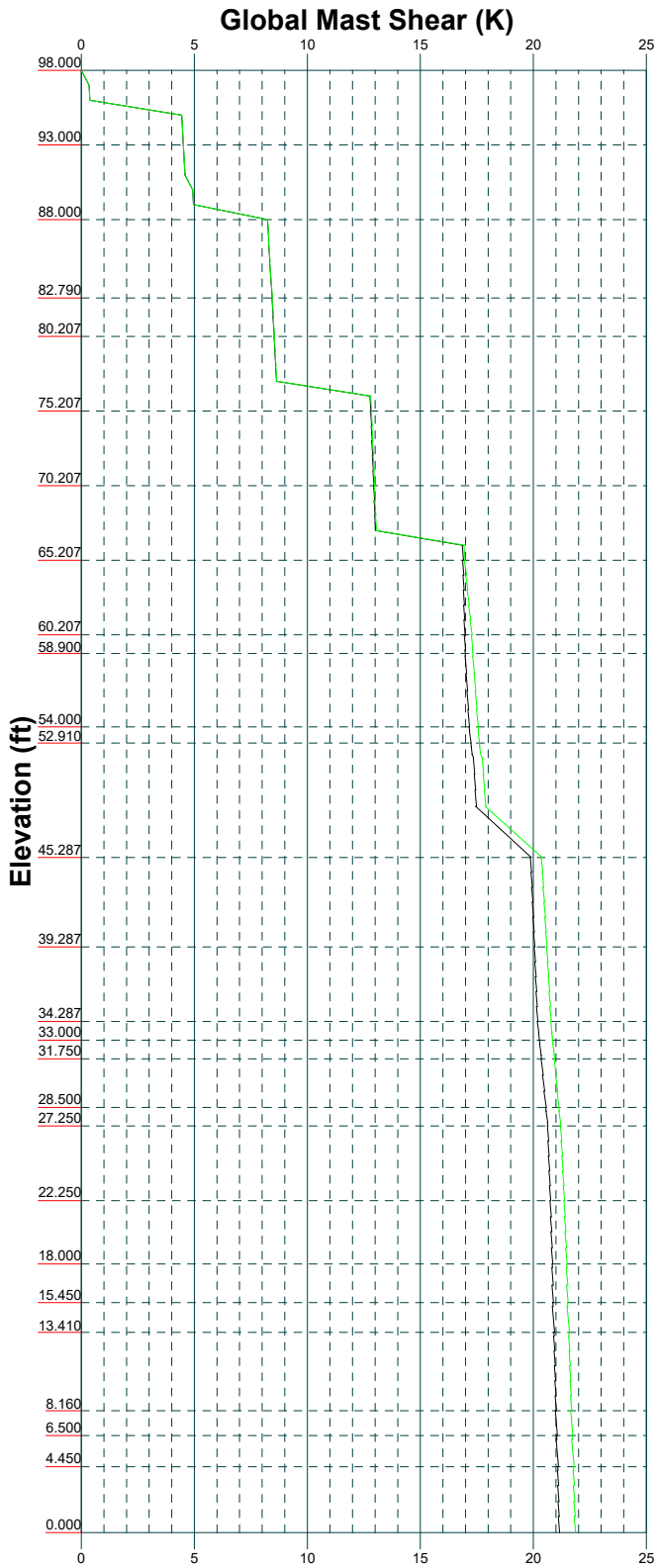
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Project:			
Client:	Crown Castle	Drawn by:	JD Prabhu
Code:	TIA-222-H	Date:	04/07/22
Path:			Scale: NTS
			Dwg No. E-1

Vx

Vz

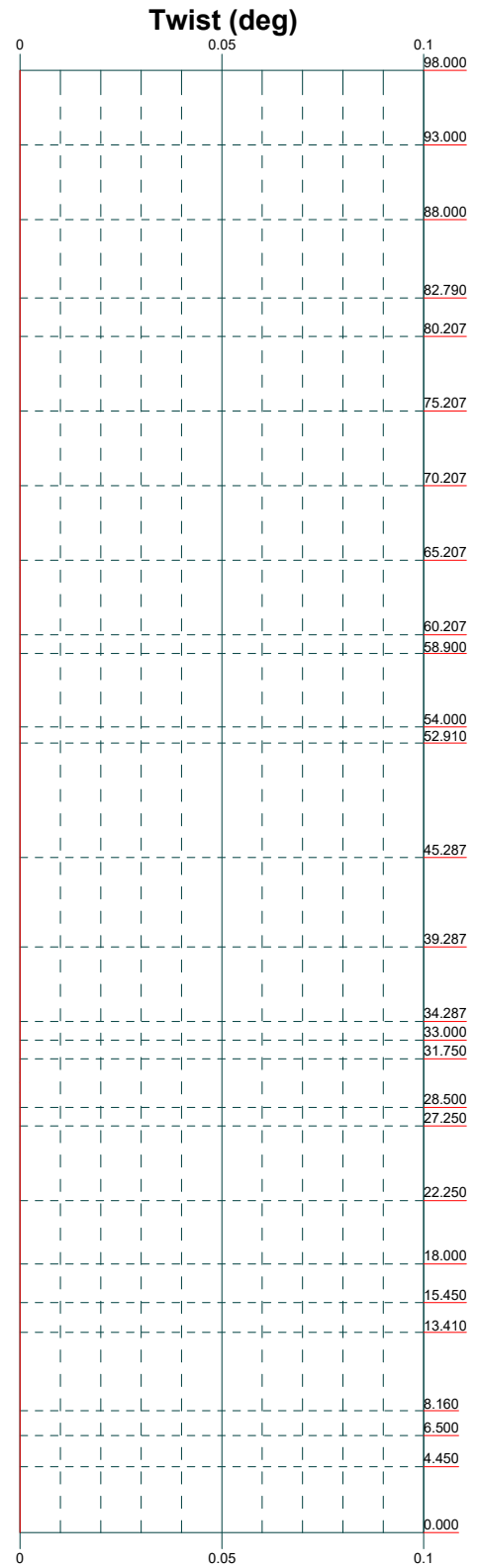
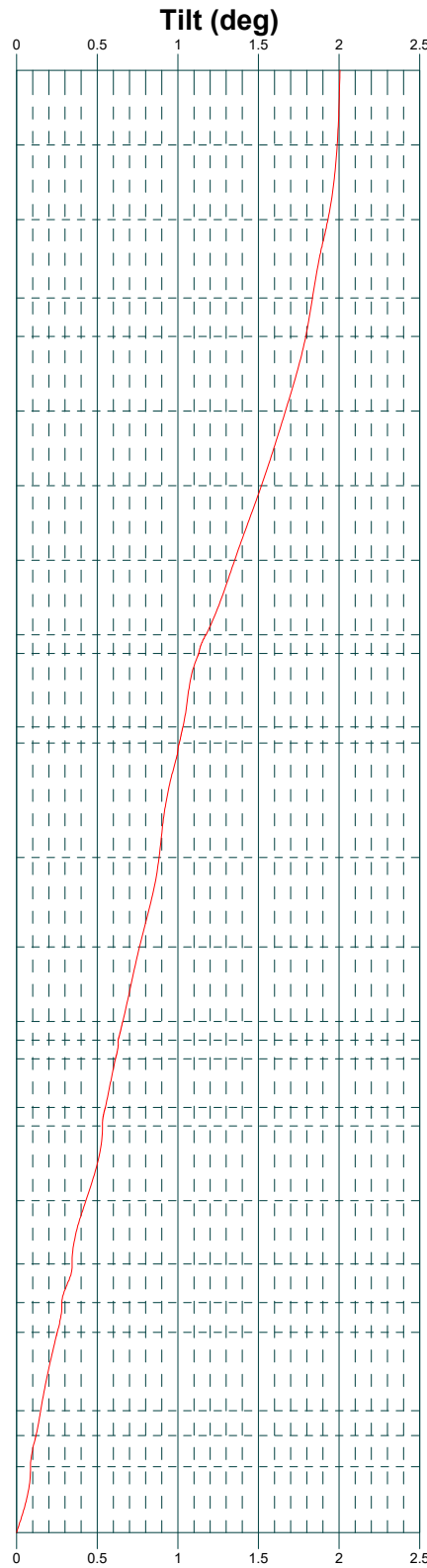
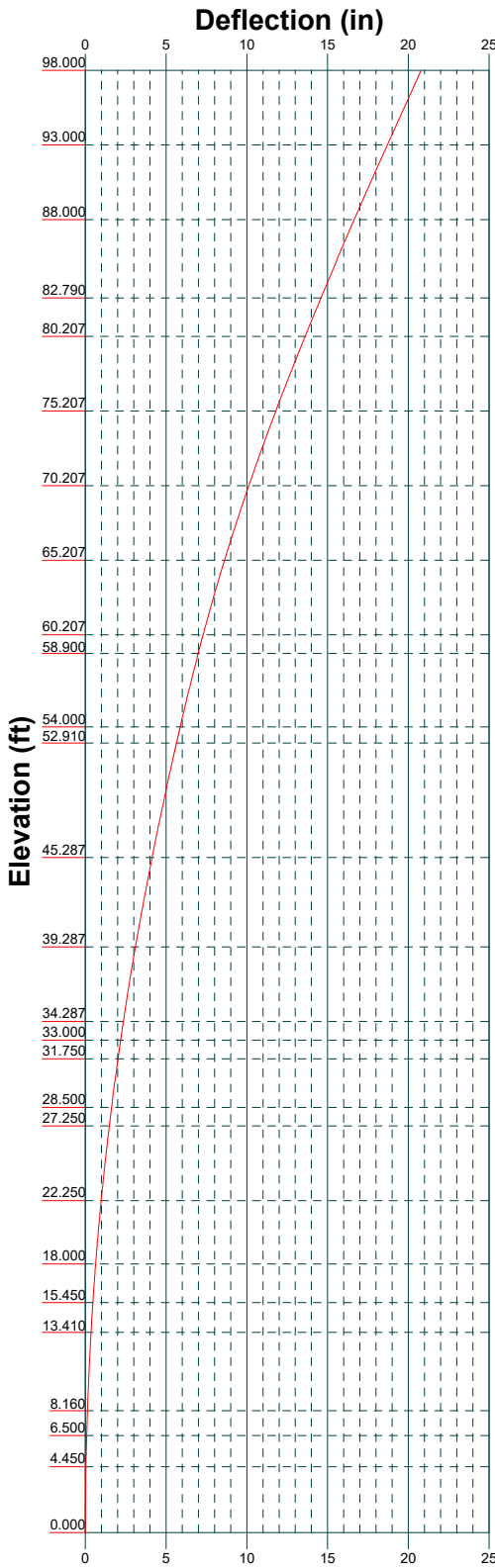
Mx

Mz



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Project:		
Client: Crown Castle	Drawn by: JD Prabhu	App'd:
Code: TIA-222-H	Date: 04/07/22	Scale: NTS
Path:	Dwg No. E-4	



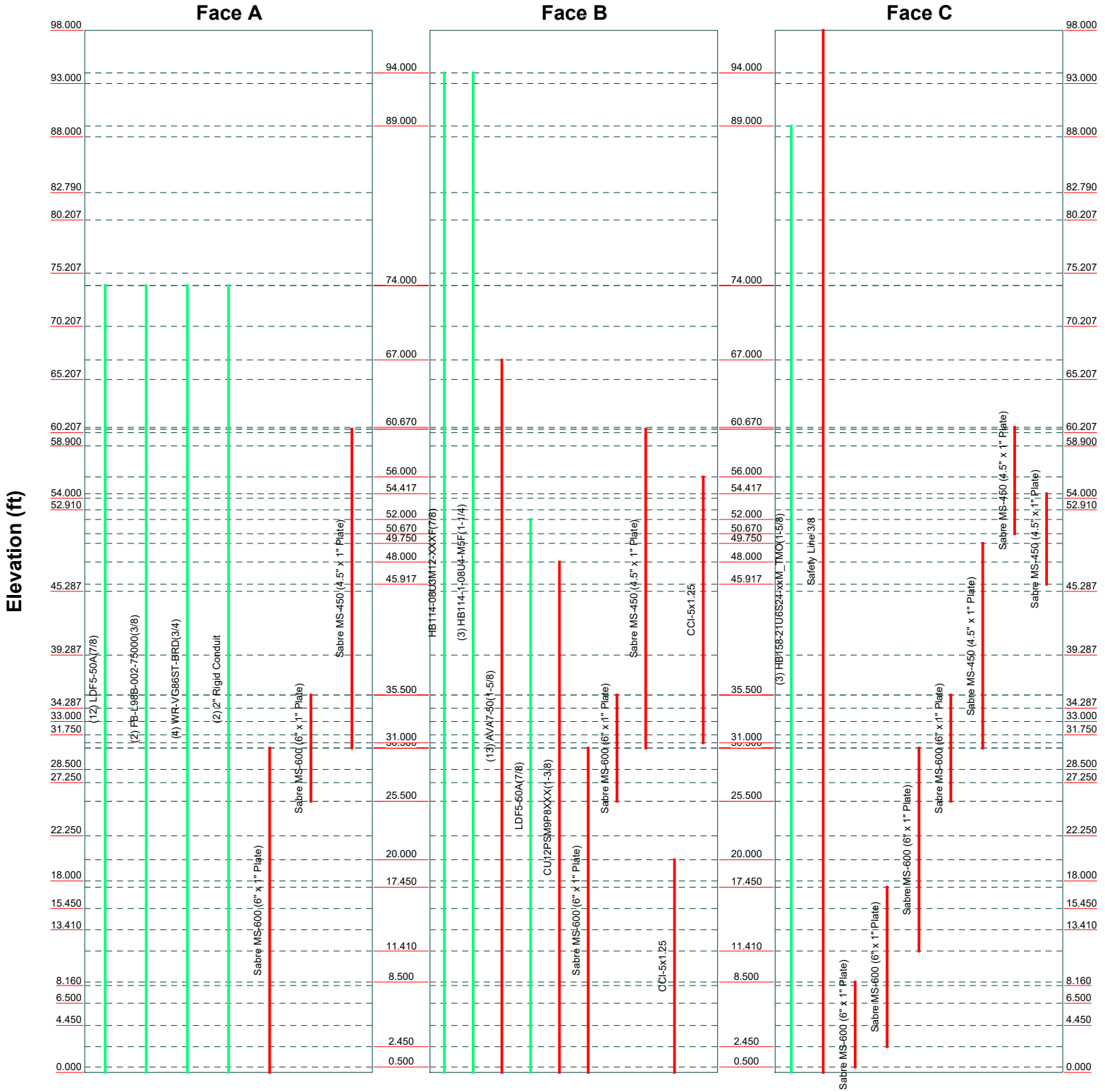
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Job: 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 87639)		
Project:		
Client: Crown Castle	Drawn by: JD Prabhu	App'd:
Code: TIA-222-H	Date: 04/07/22	Scale: NTS
Path:	Dwg No. E-5	

Feed Line Distribution Chart

0' - 98'

— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg




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Project:		
Client: Crown Castle	Drawn by: JD Prabhu	App'd:
Code: TIA-222-H	Date: 04/07/22	Scale: NTS
Path:	Dwg No. E-7	

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 1 of 51
	Project	Date 15:42:44 04/07/22
	Client Crown Castle	Designed by JD Prabhu

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 Hartford County, Connecticut.

Tower base elevation above sea level: 256.000 ft.

Basic wind speed of 115 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.500 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

TIA-222-H Annex S.

TOWER RATING: 96.9%.

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

<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 <li style="background-color: #e0e0e0;">Poles √ 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
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<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 2 of 51</p>
	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

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	98.000-93.000	5.000	0.000	18	12.000	13.078	0.188	0.750	A572-65 (65 ksi)
L2	93.000-88.000	5.000	0.000	18	13.078	14.156	0.188	0.750	A572-65 (65 ksi)
L3	88.000-82.790	5.210	2.417	18	14.156	15.280	0.188	0.750	A572-65 (65 ksi)
L4	82.790-80.207	5.000	0.000	18	14.384	15.445	0.250	1.000	A572-65 (65 ksi)
L5	80.207-75.207	5.000	0.000	18	15.445	16.507	0.250	1.000	A572-65 (65 ksi)
L6	75.207-70.207	5.000	0.000	18	16.507	17.569	0.250	1.000	A572-65 (65 ksi)
L7	70.207-65.207	5.000	0.000	18	17.569	18.630	0.250	1.000	A572-65 (65 ksi)
L8	65.207-60.207	5.000	0.000	18	18.630	19.692	0.250	1.000	A572-65 (65 ksi)
L9	60.207-59.170	1.037	0.000	18	19.692	19.912	0.250	1.000	A572-65 (65 ksi)
L10	59.170-58.900	0.270	0.000	18	19.912	19.970	0.512	2.050	A572-65 (65 ksi)
L11	58.900-58.750	0.150	0.000	18	19.970	20.001	0.512	2.050	A572-65 (65 ksi)
L12	58.750-54.000	4.750	0.000	18	20.001	21.010	0.500	2.000	A572-65 (65 ksi)
L13	54.000-53.750	0.250	0.000	18	21.010	21.063	0.512	2.050	A572-65 (65 ksi)
L14	53.750-52.910	0.840	0.000	18	21.063	21.241	0.500	2.000	A572-65 (65 ksi)
L15	52.910-52.660	0.250	0.000	18	21.241	21.294	0.675	2.700	A572-65 (65 ksi)
L16	52.660-52.170	0.490	0.000	18	21.294	21.399	0.675	2.700	A572-65 (65 ksi)
L17	52.170-51.920	0.250	0.000	18	21.399	21.452	0.525	2.100	A572-65 (65 ksi)
L18	51.920-45.287	6.633	3.417	18	21.452	22.860	0.512	2.050	A572-65 (65 ksi)
L19	45.287-44.287	4.417	0.000	18	21.634	22.575	0.563	2.250	A572-65 (65 ksi)
L20	44.287-39.287	5.000	0.000	18	22.575	23.639	0.550	2.200	A572-65 (65 ksi)
L21	39.287-34.287	5.000	0.000	18	23.639	24.703	0.537	2.150	A572-65 (65 ksi)
L22	34.287-33.500	0.787	0.000	18	24.703	24.870	0.525	2.100	A572-65 (65 ksi)
L23	33.500-33.250	0.250	0.000	18	24.870	24.923	0.838	3.350	A572-65 (65 ksi)
L24	33.250-33.000	0.250	0.000	18	24.923	24.977	0.838	3.350	A572-65 (65 ksi)
L25	33.000-32.750	0.250	0.000	18	24.977	25.030	0.813	3.250	A572-65 (65 ksi)
L26	32.750-32.000	0.750	0.000	18	25.030	25.190	0.800	3.200	A572-65 (65 ksi)
L27	32.000-31.750	0.250	0.000	18	25.190	25.243	0.588	2.350	A572-65 (65 ksi)
L28	31.750-28.500	3.250	0.000	18	25.243	25.934	0.575	2.300	A572-65 (65 ksi)

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	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

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
L29	28.500-28.250	0.250	0.000	18	25.934	25.988	0.863	3.450	A572-65 (65 ksi)
L30	28.250-27.500	0.750	0.000	18	25.988	26.147	0.850	3.400	A572-65 (65 ksi)
L31	27.500-27.250	0.250	0.000	18	26.147	26.200	0.575	2.300	A572-65 (65 ksi)
L32	27.250-22.250	5.000	0.000	18	26.200	27.265	0.563	2.250	A572-65 (65 ksi)
L33	22.250-18.000	4.250	0.000	18	27.265	28.169	0.550	2.200	A572-65 (65 ksi)
L34	18.000-17.750	0.250	0.000	18	28.169	28.222	0.563	2.250	A572-65 (65 ksi)
L35	17.750-15.450	2.300	0.000	18	28.222	28.712	0.425	1.700	A572-65 (65 ksi)
L36	15.450-15.200	0.250	0.000	18	28.712	28.765	0.688	2.750	A572-65 (65 ksi)
L37	15.200-13.410	1.790	0.000	18	28.765	29.146	0.675	2.700	A572-65 (65 ksi)
L38	13.410-13.160	0.250	0.000	18	29.146	29.199	0.563	2.250	A572-65 (65 ksi)
L39	13.160-8.160	5.000	0.000	18	29.199	30.263	0.550	2.200	A572-65 (65 ksi)
L40	8.160-6.500	1.660	0.000	18	30.263	30.617	0.550	2.200	A572-65 (65 ksi)
L41	6.500-6.250	0.250	0.000	18	30.617	30.670	0.662	2.650	A572-65 (65 ksi)
L42	6.250-4.450	1.800	0.000	18	30.670	31.053	0.650	2.600	A572-65 (65 ksi)
L43	4.450-4.200	0.250	0.000	18	31.053	31.106	0.512	2.050	A572-65 (65 ksi)
L44	4.200-0.000	4.200		18	31.106	32.000	0.500	2.000	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	12.156	7.030	123.928	4.193	6.096	20.329	248.020	3.516	1.782	9.504
	13.251	7.672	161.057	4.576	6.644	24.242	322.325	3.837	1.972	10.516
L2	13.251	7.672	161.057	4.576	6.644	24.242	322.325	3.837	1.972	10.516
	14.346	8.313	204.946	4.959	7.191	28.498	410.162	4.157	2.162	11.528
L3	14.346	8.313	204.946	4.959	7.191	28.498	410.162	4.157	2.162	11.528
	15.487	8.982	258.481	5.358	7.762	33.300	517.303	4.492	2.359	12.583
L4	15.487	8.982	258.481	5.358	7.762	33.300	517.303	4.492	2.359	12.583
	15.088	11.215	283.048	5.017	7.307	38.737	566.467	5.609	2.092	8.366
	15.645	12.058	351.741	5.394	7.846	44.829	703.946	6.030	2.278	9.114
L5	15.645	12.058	351.741	5.394	7.846	44.829	703.946	6.030	2.278	9.114
	16.723	12.900	430.737	5.771	8.386	51.366	862.041	6.451	2.465	9.861
L6	16.723	12.900	430.737	5.771	8.386	51.366	862.041	6.451	2.465	9.861
	17.801	13.742	520.754	6.148	8.925	58.348	1042.193	6.873	2.652	10.608
L7	17.801	13.742	520.754	6.148	8.925	58.348	1042.193	6.873	2.652	10.608
	18.879	14.585	622.512	6.525	9.464	65.775	1245.844	7.294	2.839	11.356
L8	18.879	14.585	622.512	6.525	9.464	65.775	1245.844	7.294	2.839	11.356
	19.957	15.427	736.732	6.902	10.004	73.647	1474.433	7.715	3.026	12.103
L9	19.957	15.427	736.732	6.902	10.004	73.647	1474.433	7.715	3.026	12.103
	20.181	15.602	762.048	6.980	10.115	75.335	1525.098	7.802	3.065	12.258
L10	20.181	15.602	762.048	6.980	10.115	75.335	1525.098	7.802	3.065	12.258
	20.140	31.557	1500.461	6.887	10.115	148.334	3002.896	15.782	2.603	5.078

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	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L11	20.199	31.650	1513.802	6.907	10.145	149.223	3029.597	15.828	2.613	5.098
	20.199	31.650	1513.802	6.907	10.145	149.223	3029.597	15.828	2.613	5.098
	20.231	31.702	1521.248	6.919	10.161	149.719	3044.499	15.854	2.618	5.109
L12	20.233	30.949	1487.002	6.923	10.161	146.348	2975.962	15.477	2.640	5.28
	21.257	32.549	1729.853	7.281	10.673	162.077	3461.983	16.278	2.818	5.636
L13	21.255	33.343	1769.860	7.277	10.673	165.825	3542.048	16.675	2.796	5.455
	21.309	33.429	1783.646	7.295	10.700	166.695	3569.638	16.718	2.805	5.473
L14	21.311	32.634	1743.319	7.300	10.700	162.927	3488.933	16.320	2.827	5.654
	21.492	32.917	1789.077	7.363	10.791	165.799	3580.508	16.461	2.858	5.717
L15	21.465	44.062	2354.634	7.301	10.791	218.211	4712.367	22.035	2.550	3.779
	21.519	44.176	2372.913	7.320	10.818	219.357	4748.949	22.092	2.560	3.792
L16	21.519	44.176	2372.913	7.320	10.818	219.357	4748.949	22.092	2.560	3.792
	21.625	44.399	2409.015	7.357	10.870	221.611	4821.199	22.204	2.578	3.819
L17	21.648	34.783	1914.659	7.410	10.870	176.134	3831.838	17.395	2.842	5.414
	21.702	34.871	1929.304	7.429	10.897	177.042	3861.146	17.439	2.851	5.431
L18	21.703	34.061	1886.745	7.433	10.897	173.137	3775.972	17.034	2.873	5.607
	23.134	36.352	2293.639	7.933	11.613	197.508	4590.296	18.180	3.121	6.09
L19	22.620	37.621	2110.485	7.481	10.990	192.031	4223.746	18.814	2.818	5.009
	22.836	39.300	2405.730	7.814	11.468	209.780	4814.626	19.654	2.983	5.303
L20	22.838	38.448	2356.279	7.819	11.468	205.468	4715.659	19.228	3.005	5.464
	23.918	40.306	2714.584	8.196	12.008	226.056	5432.740	20.157	3.192	5.804
L21	23.920	39.411	2657.200	8.201	12.008	221.278	5317.897	19.709	3.214	5.98
	25.001	41.227	3041.580	8.579	12.549	242.376	6087.162	20.617	3.402	6.329
L22	25.003	40.289	2975.458	8.583	12.549	237.107	5954.831	20.148	3.424	6.521
	25.173	40.568	3037.726	8.643	12.634	240.439	6079.449	20.288	3.453	6.577
L23	25.125	63.885	4661.673	8.532	12.634	368.975	9329.481	31.948	2.903	3.466
	25.179	64.026	4692.704	8.551	12.661	370.638	9391.582	32.019	2.913	3.478
L24	25.179	64.026	4692.704	8.551	12.661	370.638	9391.582	32.019	2.913	3.478
	25.233	64.167	4723.871	8.569	12.688	372.305	9453.959	32.090	2.922	3.489
L25	25.237	62.316	4597.114	8.578	12.688	362.315	9200.277	31.164	2.966	3.65
	25.291	62.454	4627.548	8.597	12.715	363.938	9261.185	31.233	2.975	3.662
L26	25.293	61.525	4563.414	8.602	12.715	358.895	9132.832	30.768	2.997	3.747
	25.455	61.930	4654.197	8.658	12.796	363.715	9314.518	30.971	3.025	3.782
L27	25.487	45.876	3508.045	8.734	12.796	274.146	7020.706	22.942	3.399	5.786
	25.542	45.975	3530.855	8.753	12.823	275.347	7066.356	22.992	3.409	5.802
L28	25.543	45.020	3460.989	8.757	12.823	269.898	6926.532	22.514	3.431	5.966
	26.246	46.282	3760.370	9.003	13.175	285.424	7525.687	23.146	3.552	6.178
L29	26.201	68.636	5450.880	8.901	13.175	413.739	10908.932	34.325	3.046	3.532
	26.255	68.782	5485.657	8.919	13.202	415.526	10978.532	34.398	3.056	3.543
L30	26.257	67.819	5414.227	8.924	13.202	410.115	10835.579	33.916	3.078	3.621
	26.419	68.249	5518.022	8.981	13.283	415.426	11043.305	34.131	3.106	3.654
L31	26.462	46.671	3855.842	9.078	13.283	290.288	7716.758	23.340	3.590	6.243
	26.516	46.768	3879.960	9.097	13.310	291.511	7765.026	23.388	3.599	6.26
L32	26.518	45.773	3801.170	9.101	13.310	285.591	7607.343	22.891	3.621	6.438
	27.598	47.673	4294.405	9.479	13.850	310.056	8594.460	23.841	3.809	6.771
L33	27.600	46.636	4204.873	9.484	13.850	303.592	8415.280	23.322	3.831	6.965
	28.519	48.215	4646.610	9.805	14.310	324.713	9299.333	24.112	3.990	7.254
L34	28.517	49.288	4745.765	9.800	14.310	331.642	9497.774	24.649	3.968	7.054
	28.571	49.383	4773.258	9.819	14.337	332.934	9552.796	24.696	3.977	7.07
L35	28.592	37.497	3660.514	9.868	14.337	255.320	7325.844	18.752	4.219	9.927
	29.089	38.158	3857.321	10.042	14.586	264.461	7719.717	19.082	4.305	10.13
L36	29.049	61.153	6067.676	9.949	14.586	416.004	12143.336	30.582	3.843	5.59
	29.103	61.269	6102.302	9.968	14.613	417.604	12212.633	30.640	3.853	5.604
L37	29.105	60.181	5999.356	9.972	14.613	410.560	12006.607	30.096	3.875	5.74
	29.491	60.998	6246.774	10.107	14.806	421.904	12501.767	30.505	3.942	5.84
L38	29.509	51.032	5267.598	10.147	14.806	355.771	10542.126	25.521	4.140	7.359
	29.563	51.127	5297.068	10.166	14.833	357.109	10601.107	25.568	4.149	7.376
L39	29.565	50.013	5186.141	10.170	14.833	349.631	10379.106	25.011	4.171	7.584
	30.645	51.871	5785.769	10.548	15.374	376.340	11579.151	25.940	4.358	7.924
L40	30.645	51.871	5785.769	10.548	15.374	376.340	11579.151	25.940	4.358	7.924
	31.004	52.487	5994.612	10.674	15.553	385.425	11997.111	26.249	4.421	8.037
L41	30.987	62.987	7140.031	10.634	15.553	459.070	14289.458	31.499	4.223	6.374

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 5 of 51
	Project	Date 15:42:44 04/07/22
	Client Crown Castle	Designed by JD Prabhu

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
L42	31.041	63.099	7178.147	10.653	15.580	460.720	14365.739	31.555	4.232	6.388
	31.043	61.934	7051.515	10.657	15.580	452.592	14112.309	30.973	4.254	6.544
	31.432	62.724	7324.932	10.793	15.775	464.341	14659.502	31.368	4.321	6.648
L43	31.453	49.679	5854.142	10.842	15.775	371.105	11715.986	24.844	4.563	8.904
	31.507	49.766	5884.792	10.861	15.802	372.410	11777.327	24.888	4.573	8.922
L44	31.509	48.572	5748.301	10.865	15.802	363.772	11504.165	24.291	4.595	9.189
	32.417	49.990	6266.803	11.182	16.256	385.507	12541.852	25.000	4.752	9.504

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
98.000-93.000				1	1	1			
L2				1	1	1			
93.000-88.000				1	1	1			
L3				1	1	1			
88.000-82.790				1	1	1			
L4				1	1	1			
82.790-80.207				1	1	1			
L5				1	1	1			
80.207-75.207				1	1	1			
L6				1	1	1			
75.207-70.207				1	1	1			
L7				1	1	1			
70.207-65.207				1	1	1			
L8				1	1	1			
65.207-60.207				1	1	1			
L9				1	1	1			
60.207-59.170				1	1	0.920938			
L10				1	1	0.92023			
59.170-58.900				1	1	0.92023			
L11				1	1	0.92023			
58.900-58.750				1	1	0.920865			
L12				1	1	0.920865			
58.750-54.000				1	1	1.08486			
L13				1	1	1.08486			
54.000-53.750				1	1	1.10605			
L14				1	1	1.10605			
53.750-52.910				1	1	0.926962			
L15				1	1	0.926962			
52.910-52.660				1	1	0.924168			
L16				1	1	0.924168			
52.660-52.170				1	1	1.04884			
L17				1	1	1.04884			
52.170-51.920				1	1	1.05527			
L18				1	1	1.05527			
51.920-45.287				1	1	1.06443			
L19				1	1	1.06443			
45.287-44.287				1	1	1.06405			
L20				1	1	1.06405			
44.287-39.287				1	1	1.06589			
L21				1	1	1.06589			
39.287-34.287				1	1	1.08729			
L22				1	1	1.08729			
34.287-33.500				1	1	0.970893			
L23				1	1	0.970893			
33.500-33.250				1	1	0.969575			
L24				1	1	0.969575			
33.250-33.000				1	1	0.969575			

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 6 of 51</p>
	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L25				1	1	0.896948			
33.000-32.750									
L26				1	1	0.907091			
32.750-32.000									
L27				1	1	0.929377			
32.000-31.750									
L28				1	1	0.938036			
31.750-28.500									
L29				1	1	0.893662			
28.500-28.250									
L30				1	1	0.902954			
28.250-27.500									
L31				1	1	0.93394			
27.500-27.250									
L32				1	1	0.938341			
27.250-22.250									
L33				1	1	0.946411			
22.250-18.000									
L34				1	1	1.05165			
18.000-17.750									
L35				1	1	1.21652			
17.750-15.450									
L36				1	1	0.954361			
15.450-15.200									
L37				1	1	0.964796			
15.200-13.410									
L38				1	1	1.03473			
13.410-13.160									
L39				1	1	1.04025			
13.160-8.160									
L40				1	1	1.0347			
8.160-6.500									
L41				1	1	0.956625			
6.500-6.250									
L42				1	1	0.968393			
6.250-4.450									
L43				1	1	0.980473			
4.450-4.200									
L44				1	1	0.993803			
4.200-0.000									

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 klf
* AVA7-50(1-5/8)	B	No	Surface Ar (CaAa)	67.000 - 0.000	13	7	-0.100 0.200	2.010		0.001
* CU12PSM9P8XXX(1-3/8)	B	No	Surface Ar (CaAa)	48.000 - 0.000	1	1	-0.100 -0.050	1.411		0.002
* Safety Line 3/8	C	No	Surface Ar	98.000 -	1	1	0.100	0.375		0.000

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 klf
*			(CaAa)	0.000			0.100			
Sabre MS-600 (6" x 1" Plate)	A	No	Surface Af (CaAa)	30.500 - 0.000	1	1	-0.500 -0.500	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	B	No	Surface Af (CaAa)	30.500 - 0.000	1	1	-0.500 -0.500	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	8.500 - 0.500	1	1	-0.500 -0.500	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	17.450 - 2.450	1	1	-0.300 -0.300	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	30.500 - 11.410	1	1	-0.500 -0.500	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	A	No	Surface Af (CaAa)	35.500 - 25.500	1	1	-0.300 -0.300	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	B	No	Surface Af (CaAa)	35.500 - 25.500	1	1	-0.300 -0.300	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	35.500 - 25.500	1	1	-0.300 -0.300	6.000	14.000	0.000
Sabre MS-450 (4.5" x 1" Plate)	C	No	Surface Af (CaAa)	49.750 - 30.500	1	1	-0.500 -0.500	4.500	11.000	0.000
Sabre MS-450 (4.5" x 1" Plate)	A	No	Surface Af (CaAa)	60.500 - 30.500	1	1	-0.500 -0.500	4.500	11.000	0.000
Sabre MS-450 (4.5" x 1" Plate)	B	No	Surface Af (CaAa)	60.500 - 30.500	1	1	-0.500 -0.500	4.500	11.000	0.000
Sabre MS-450 (4.5" x 1" Plate)	C	No	Surface Af (CaAa)	60.670 - 50.670	1	1	-0.500 -0.500	4.500	11.000	0.000
Sabre MS-450 (4.5" x 1" Plate)	C	No	Surface Af (CaAa)	54.417 - 45.917	1	1	-0.300 -0.300	4.500	11.000	0.000
CCI-5x1.25	B	No	Surface Af (CaAa)	20.000 - 0.000	1	1	0.000 0.000	5.000	12.500	0.000
CCI-5x1.25	B	No	Surface Af (CaAa)	56.000 - 31.000	1	1	0.000 0.000	5.000	12.500	0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _{AA} ft ² /ft	Weight klf
HB114-08U3M12-X XXF(7/8)	B	No	No	Inside Pole	94.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.001
HB114-1-08U4-M5 F(1-1/4)	B	No	No	Inside Pole	94.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.001 0.001
HB158-21U6S24-xx M_TMO(1-5/8)	C	No	No	Inside Pole	89.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.003 0.003

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
*									
LDF5-50A(7/8)	A	No	No	Inside Pole	74.000 - 0.000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
FB-L98B-002-75000 (3/8)	A	No	No	Inside Pole	74.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	74.000 - 0.000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
2" Rigid Conduit	A	No	No	Inside Pole	74.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.003 0.003 0.003 0.003
*									
LDF5-50A(7/8)	B	No	No	Inside Pole	52.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
*									

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	98.000-93.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.004
		C	0.000	0.000	0.188	0.000	0.001
L2	93.000-88.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.020
		C	0.000	0.000	0.188	0.000	0.009
L3	88.000-82.790	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.020
		C	0.000	0.000	0.195	0.000	0.040
L4	82.790-80.207	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.010
		C	0.000	0.000	0.097	0.000	0.020
L5	80.207-75.207	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.020
		C	0.000	0.000	0.188	0.000	0.039
L6	75.207-70.207	A	0.000	0.000	0.000	0.000	0.046
		B	0.000	0.000	0.000	0.000	0.020
		C	0.000	0.000	0.188	0.000	0.039
L7	70.207-65.207	A	0.000	0.000	0.000	0.000	0.060
		B	0.000	0.000	2.523	0.000	0.036
		C	0.000	0.000	0.188	0.000	0.039
L8	65.207-60.207	A	0.000	0.000	0.220	0.000	0.060
		B	0.000	0.000	7.255	0.000	0.065
		C	0.000	0.000	0.535	0.000	0.039
L9	60.207-59.170	A	0.000	0.000	0.778	0.000	0.012

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
		B	0.000	0.000	2.237	0.000	0.014
		C	0.000	0.000	0.817	0.000	0.008
L10	59.170-58.900	A	0.000	0.000	0.203	0.000	0.003
		B	0.000	0.000	0.582	0.000	0.004
		C	0.000	0.000	0.213	0.000	0.002
L11	58.900-58.750	A	0.000	0.000	0.113	0.000	0.002
		B	0.000	0.000	0.324	0.000	0.002
		C	0.000	0.000	0.118	0.000	0.001
L12	58.750-54.000	A	0.000	0.000	3.563	0.000	0.057
		B	0.000	0.000	11.912	0.000	0.062
		C	0.000	0.000	4.038	0.000	0.037
L13	54.000-53.750	A	0.000	0.000	0.188	0.000	0.003
		B	0.000	0.000	0.748	0.000	0.003
		C	0.000	0.000	0.375	0.000	0.002
L14	53.750-52.910	A	0.000	0.000	0.630	0.000	0.010
		B	0.000	0.000	2.512	0.000	0.011
		C	0.000	0.000	1.261	0.000	0.006
L15	52.910-52.660	A	0.000	0.000	0.188	0.000	0.003
		B	0.000	0.000	0.748	0.000	0.003
		C	0.000	0.000	0.375	0.000	0.002
L16	52.660-52.170	A	0.000	0.000	0.367	0.000	0.006
		B	0.000	0.000	1.465	0.000	0.006
		C	0.000	0.000	0.736	0.000	0.004
L17	52.170-51.920	A	0.000	0.000	0.188	0.000	0.003
		B	0.000	0.000	0.748	0.000	0.003
		C	0.000	0.000	0.375	0.000	0.002
L18	51.920-45.287	A	0.000	0.000	4.975	0.000	0.080
		B	0.000	0.000	20.218	0.000	0.093
		C	0.000	0.000	8.820	0.000	0.051
L19	45.287-44.287	A	0.000	0.000	0.750	0.000	0.012
		B	0.000	0.000	3.131	0.000	0.015
		C	0.000	0.000	0.787	0.000	0.008
L20	44.287-39.287	A	0.000	0.000	3.750	0.000	0.060
		B	0.000	0.000	15.657	0.000	0.075
		C	0.000	0.000	3.938	0.000	0.039
L21	39.287-34.287	A	0.000	0.000	4.856	0.000	0.060
		B	0.000	0.000	16.764	0.000	0.075
		C	0.000	0.000	5.044	0.000	0.039
L22	34.287-33.500	A	0.000	0.000	1.308	0.000	0.009
		B	0.000	0.000	3.182	0.000	0.012
		C	0.000	0.000	1.338	0.000	0.006
L23	33.500-33.250	A	0.000	0.000	0.416	0.000	0.003
		B	0.000	0.000	1.011	0.000	0.004
		C	0.000	0.000	0.425	0.000	0.002
L24	33.250-33.000	A	0.000	0.000	0.416	0.000	0.003
		B	0.000	0.000	1.011	0.000	0.004
		C	0.000	0.000	0.425	0.000	0.002
L25	33.000-32.750	A	0.000	0.000	0.416	0.000	0.003
		B	0.000	0.000	1.011	0.000	0.004
		C	0.000	0.000	0.425	0.000	0.002
L26	32.750-32.000	A	0.000	0.000	1.247	0.000	0.009
		B	0.000	0.000	3.033	0.000	0.011
		C	0.000	0.000	1.275	0.000	0.006
L27	32.000-31.750	A	0.000	0.000	0.416	0.000	0.003
		B	0.000	0.000	1.011	0.000	0.004
		C	0.000	0.000	0.425	0.000	0.002
L28	31.750-28.500	A	0.000	0.000	5.902	0.000	0.039
		B	0.000	0.000	11.558	0.000	0.049
		C	0.000	0.000	6.024	0.000	0.025
L29	28.500-28.250	A	0.000	0.000	0.478	0.000	0.003
		B	0.000	0.000	0.865	0.000	0.004

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L30	28.250-27.500	C	0.000	0.000	0.487	0.000	0.002
		A	0.000	0.000	1.434	0.000	0.009
		B	0.000	0.000	2.595	0.000	0.011
L31	27.500-27.250	C	0.000	0.000	1.462	0.000	0.006
		A	0.000	0.000	0.478	0.000	0.003
		B	0.000	0.000	0.865	0.000	0.004
L32	27.250-22.250	C	0.000	0.000	0.487	0.000	0.002
		A	0.000	0.000	6.596	0.000	0.060
		B	0.000	0.000	14.337	0.000	0.075
L33	22.250-18.000	C	0.000	0.000	6.784	0.000	0.039
		A	0.000	0.000	4.250	0.000	0.051
		B	0.000	0.000	12.496	0.000	0.064
L34	18.000-17.750	C	0.000	0.000	4.409	0.000	0.033
		A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.845	0.000	0.004
L35	17.750-15.450	C	0.000	0.000	0.259	0.000	0.002
		A	0.000	0.000	2.300	0.000	0.028
		B	0.000	0.000	7.777	0.000	0.035
L36	15.450-15.200	C	0.000	0.000	4.386	0.000	0.018
		A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.845	0.000	0.004
L37	15.200-13.410	C	0.000	0.000	0.509	0.000	0.002
		A	0.000	0.000	1.790	0.000	0.022
		B	0.000	0.000	6.053	0.000	0.027
L38	13.410-13.160	C	0.000	0.000	3.647	0.000	0.014
		A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.845	0.000	0.004
L39	13.160-8.160	C	0.000	0.000	0.509	0.000	0.002
		A	0.000	0.000	5.000	0.000	0.060
		B	0.000	0.000	16.907	0.000	0.075
L40	8.160-6.500	C	0.000	0.000	7.225	0.000	0.039
		A	0.000	0.000	1.660	0.000	0.020
		B	0.000	0.000	5.613	0.000	0.025
L41	6.500-6.250	C	0.000	0.000	3.127	0.000	0.013
		A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.845	0.000	0.004
L42	6.250-4.450	C	0.000	0.000	0.471	0.000	0.002
		A	0.000	0.000	1.800	0.000	0.022
		B	0.000	0.000	6.087	0.000	0.027
L43	4.450-4.200	C	0.000	0.000	3.391	0.000	0.014
		A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.845	0.000	0.004
L44	4.200-0.000	C	0.000	0.000	0.471	0.000	0.002
		A	0.000	0.000	4.200	0.000	0.050
		B	0.000	0.000	14.202	0.000	0.063
		C	0.000	0.000	5.039	0.000	0.032

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	98.000-93.000	A	1.418	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.004
		C		0.000	0.000	1.605	0.000	0.017
L2	93.000-88.000	A	1.410	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.020
		C		0.000	0.000	1.598	0.000	0.024

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L3	88.000-82.790	A	1.402	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.020
		C		0.000	0.000	1.656	0.000	0.056
L4	82.790-80.207	A	1.396	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.010
		C		0.000	0.000	0.821	0.000	0.028
L5	80.207-75.207	A	1.389	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.020
		C		0.000	0.000	1.576	0.000	0.054
L6	75.207-70.207	A	1.380	0.000	0.000	0.000	0.000	0.046
		B		0.000	0.000	0.000	0.000	0.020
		C		0.000	0.000	1.567	0.000	0.053
L7	70.207-65.207	A	1.370	0.000	0.000	0.000	0.000	0.060
		B		0.000	0.000	3.768	0.000	0.079
		C		0.000	0.000	1.557	0.000	0.053
L8	65.207-60.207	A	1.359	0.000	0.000	0.299	0.000	0.063
		B		0.000	0.000	10.793	0.000	0.188
		C		0.000	0.000	1.966	0.000	0.057
L9	60.207-59.170	A	1.353	0.000	0.000	1.058	0.000	0.021
		B		0.000	0.000	3.233	0.000	0.047
		C		0.000	0.000	1.257	0.000	0.020
L10	59.170-58.900	A	1.351	0.000	0.000	0.275	0.000	0.006
		B		0.000	0.000	0.842	0.000	0.012
		C		0.000	0.000	0.327	0.000	0.005
L11	58.900-58.750	A	1.351	0.000	0.000	0.153	0.000	0.003
		B		0.000	0.000	0.467	0.000	0.007
		C		0.000	0.000	0.182	0.000	0.003
L12	58.750-54.000	A	1.345	0.000	0.000	4.840	0.000	0.097
		B		0.000	0.000	16.996	0.000	0.233
		C		0.000	0.000	6.104	0.000	0.094
L13	54.000-53.750	A	1.339	0.000	0.000	0.254	0.000	0.005
		B		0.000	0.000	1.053	0.000	0.014
		C		0.000	0.000	0.516	0.000	0.007
L14	53.750-52.910	A	1.338	0.000	0.000	0.855	0.000	0.017
		B		0.000	0.000	3.538	0.000	0.046
		C		0.000	0.000	1.733	0.000	0.023
L15	52.910-52.660	A	1.336	0.000	0.000	0.254	0.000	0.005
		B		0.000	0.000	1.053	0.000	0.014
		C		0.000	0.000	0.516	0.000	0.007
L16	52.660-52.170	A	1.335	0.000	0.000	0.498	0.000	0.010
		B		0.000	0.000	2.063	0.000	0.027
		C		0.000	0.000	1.010	0.000	0.013
L17	52.170-51.920	A	1.334	0.000	0.000	0.254	0.000	0.005
		B		0.000	0.000	1.052	0.000	0.014
		C		0.000	0.000	0.515	0.000	0.007
L18	51.920-45.287	A	1.325	0.000	0.000	6.733	0.000	0.134
		B		0.000	0.000	28.984	0.000	0.376
		C		0.000	0.000	12.790	0.000	0.166
L19	45.287-44.287	A	1.315	0.000	0.000	1.015	0.000	0.020
		B		0.000	0.000	4.610	0.000	0.060
		C		0.000	0.000	1.318	0.000	0.019
L20	44.287-39.287	A	1.305	0.000	0.000	5.055	0.000	0.101
		B		0.000	0.000	22.964	0.000	0.297
		C		0.000	0.000	6.548	0.000	0.092
L21	39.287-34.287	A	1.289	0.000	0.000	6.312	0.000	0.111
		B		0.000	0.000	24.166	0.000	0.306
		C		0.000	0.000	7.788	0.000	0.103
L22	34.287-33.500	A	1.278	0.000	0.000	1.616	0.000	0.023
		B		0.000	0.000	4.421	0.000	0.053
		C		0.000	0.000	1.847	0.000	0.022
L23	33.500-33.250	A	1.276	0.000	0.000	0.513	0.000	0.007

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 12 of 51</p>
	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B		0.000	0.000	1.404	0.000	0.017
		C		0.000	0.000	0.587	0.000	0.007
L24	33.250-33.000	A	1.275	0.000	0.000	0.513	0.000	0.007
		B		0.000	0.000	1.404	0.000	0.017
		C		0.000	0.000	0.586	0.000	0.007
L25	33.000-32.750	A	1.275	0.000	0.000	0.513	0.000	0.007
		B		0.000	0.000	1.404	0.000	0.017
		C		0.000	0.000	0.586	0.000	0.007
L26	32.750-32.000	A	1.273	0.000	0.000	1.539	0.000	0.022
		B		0.000	0.000	4.209	0.000	0.051
		C		0.000	0.000	1.758	0.000	0.021
L27	32.000-31.750	A	1.271	0.000	0.000	0.513	0.000	0.007
		B		0.000	0.000	1.403	0.000	0.017
		C		0.000	0.000	0.586	0.000	0.007
L28	31.750-28.500	A	1.263	0.000	0.000	7.161	0.000	0.097
		B		0.000	0.000	15.997	0.000	0.200
		C		0.000	0.000	8.104	0.000	0.091
L29	28.500-28.250	A	1.256	0.000	0.000	0.574	0.000	0.008
		B		0.000	0.000	1.191	0.000	0.015
		C		0.000	0.000	0.646	0.000	0.007
L30	28.250-27.500	A	1.254	0.000	0.000	1.722	0.000	0.023
		B		0.000	0.000	3.570	0.000	0.045
		C		0.000	0.000	1.939	0.000	0.021
L31	27.500-27.250	A	1.251	0.000	0.000	0.574	0.000	0.008
		B		0.000	0.000	1.190	0.000	0.015
		C		0.000	0.000	0.646	0.000	0.007
L32	27.250-22.250	A	1.239	0.000	0.000	8.066	0.000	0.121
		B		0.000	0.000	20.353	0.000	0.266
		C		0.000	0.000	9.492	0.000	0.112
L33	22.250-18.000	A	1.213	0.000	0.000	5.281	0.000	0.088
		B		0.000	0.000	17.828	0.000	0.226
		C		0.000	0.000	6.472	0.000	0.080
L34	18.000-17.750	A	1.199	0.000	0.000	0.310	0.000	0.005
		B		0.000	0.000	1.188	0.000	0.014
		C		0.000	0.000	0.379	0.000	0.005
L35	17.750-15.450	A	1.190	0.000	0.000	2.848	0.000	0.047
		B		0.000	0.000	10.913	0.000	0.130
		C		0.000	0.000	5.883	0.000	0.060
L36	15.450-15.200	A	1.181	0.000	0.000	0.309	0.000	0.005
		B		0.000	0.000	1.184	0.000	0.014
		C		0.000	0.000	0.677	0.000	0.007
L37	15.200-13.410	A	1.173	0.000	0.000	2.210	0.000	0.037
		B		0.000	0.000	8.467	0.000	0.100
		C		0.000	0.000	4.843	0.000	0.048
L38	13.410-13.160	A	1.164	0.000	0.000	0.308	0.000	0.005
		B		0.000	0.000	1.181	0.000	0.014
		C		0.000	0.000	0.675	0.000	0.007
L39	13.160-8.160	A	1.139	0.000	0.000	6.139	0.000	0.101
		B		0.000	0.000	23.505	0.000	0.273
		C		0.000	0.000	9.782	0.000	0.107
L40	8.160-6.500	A	1.097	0.000	0.000	2.024	0.000	0.033
		B		0.000	0.000	7.745	0.000	0.088
		C		0.000	0.000	4.005	0.000	0.042
L41	6.500-6.250	A	1.082	0.000	0.000	0.304	0.000	0.005
		B		0.000	0.000	1.163	0.000	0.013
		C		0.000	0.000	0.602	0.000	0.006
L42	6.250-4.450	A	1.063	0.000	0.000	2.183	0.000	0.035
		B		0.000	0.000	8.346	0.000	0.093
		C		0.000	0.000	4.318	0.000	0.044
L43	4.450-4.200	A	1.041	0.000	0.000	0.302	0.000	0.005
		B		0.000	0.000	1.154	0.000	0.013

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	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L44	4.200-0.000	C	0.968	0.000	0.000	0.598	0.000	0.006
		A		0.000	0.000	5.013	0.000	0.078
		B		0.000	0.000	19.134	0.000	0.203
		C		0.000	0.000	6.551	0.000	0.075

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	98.000-93.000	-0.062	0.292	-0.230	1.082
L2	93.000-88.000	-0.062	0.293	-0.235	1.104
L3	88.000-82.790	-0.062	0.293	-0.239	1.123
L4	82.790-80.207	-0.062	0.293	-0.241	1.133
L5	80.207-75.207	-0.062	0.293	-0.242	1.140
L6	75.207-70.207	-0.062	0.294	-0.245	1.153
L7	70.207-65.207	3.079	-1.186	2.106	-0.185
L8	65.207-60.207	4.282	-1.795	4.048	-1.296
L9	60.207-59.170	2.892	-1.224	2.501	-0.819
L10	59.170-58.900	2.907	-1.230	2.512	-0.822
L11	58.900-58.750	2.911	-1.232	2.516	-0.823
L12	58.750-54.000	3.460	-1.444	2.999	-1.031
L13	54.000-53.750	4.709	-1.122	4.098	-0.851
L14	53.750-52.910	4.729	-1.127	4.114	-0.854
L15	52.910-52.660	4.414	-1.051	4.128	-0.856
L16	52.660-52.170	4.424	-1.053	4.139	-0.858
L17	52.170-51.920	4.776	-1.137	4.151	-0.861
L18	51.920-45.287	4.702	-1.247	4.217	-1.025
L19	45.287-44.287	4.218	-2.071	3.938	-1.734
L20	44.287-39.287	4.305	-2.115	4.012	-1.768
L21	39.287-34.287	4.009	-1.970	3.844	-1.695
L22	34.287-33.500	3.125	-1.535	3.212	-1.417
L23	33.500-33.250	2.952	-1.450	3.217	-1.419
L24	33.250-33.000	2.957	-1.453	3.222	-1.422
L25	33.000-32.750	2.962	-1.455	3.228	-1.424
L26	32.750-32.000	2.971	-1.460	3.238	-1.429
L27	32.000-31.750	3.167	-1.556	3.251	-1.435
L28	31.750-28.500	2.302	-1.066	2.630	-1.060
L29	28.500-28.250	2.065	-0.930	2.415	-0.935
L30	28.250-27.500	2.071	-0.933	2.422	-0.938
L31	27.500-27.250	2.083	-0.939	2.436	-0.943
L32	27.250-22.250	2.838	-1.278	2.929	-1.135
L33	22.250-18.000	3.896	-1.847	3.770	-1.578
L34	18.000-17.750	4.467	-2.196	4.261	-1.888
L35	17.750-15.450	5.669	-1.248	5.253	-1.147
L36	15.450-15.200	5.867	-1.130	5.421	-1.053
L37	15.200-13.410	5.901	-1.136	5.449	-1.059
L38	13.410-13.160	5.935	-1.143	5.478	-1.064
L39	13.160-8.160	4.902	-0.851	4.591	-0.818
L40	8.160-6.500	5.856	-1.102	5.319	-1.008
L41	6.500-6.250	5.887	-1.108	5.346	-1.013
L42	6.250-4.450	5.919	-1.113	5.374	-1.018
L43	4.450-4.200	5.950	-1.119	5.402	-1.024
L44	4.200-0.000	4.946	-1.741	4.570	-1.526

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 14 of 51
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	Client Crown Castle	Designed by JD Prabhu

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	22	Safety Line 3/8	93.00 - 98.00	1.0000	1.0000
L2	22	Safety Line 3/8	88.00 - 93.00	1.0000	1.0000
L3	22	Safety Line 3/8	82.79 - 88.00	1.0000	1.0000
L4	22	Safety Line 3/8	80.21 - 82.79	1.0000	1.0000
L5	22	Safety Line 3/8	75.21 - 80.21	1.0000	1.0000
L6	22	Safety Line 3/8	70.21 - 75.21	1.0000	1.0000
L7	15	AVA7-50(1-5/8)	65.21 - 67.00	1.0000	1.0000
L7	22	Safety Line 3/8	65.21 - 70.21	1.0000	1.0000
L8	15	AVA7-50(1-5/8)	60.21 - 65.21	1.0000	1.0000
L8	22	Safety Line 3/8	60.21 - 65.21	1.0000	1.0000
L8	35	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.50	1.0000	1.0000
L8	36	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.50	1.0000	1.0000
L8	37	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.67	1.0000	1.0000
L9	15	AVA7-50(1-5/8)	59.17 - 60.21	1.0000	1.0000
L9	22	Safety Line 3/8	59.17 - 60.21	1.0000	1.0000
L9	35	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	1.0000	1.0000
L9	36	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	1.0000	1.0000
L9	37	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	1.0000	1.0000
L10	15	AVA7-50(1-5/8)	58.90 - 59.17	1.0000	1.0000
L10	22	Safety Line 3/8	58.90 - 59.17	1.0000	1.0000
L10	35	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	1.0000	1.0000
L10	36	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	1.0000	1.0000
L10	37	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	1.0000	1.0000
L11	15	AVA7-50(1-5/8)	58.75 - 58.90	1.0000	1.0000
L11	22	Safety Line 3/8	58.75 - 58.90	1.0000	1.0000
L11	35	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	1.0000	1.0000
L11	36	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	1.0000	1.0000
L11	37	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	1.0000	1.0000
L12	15	AVA7-50(1-5/8)	54.00 - 58.75	1.0000	1.0000
L12	22	Safety Line 3/8	54.00 - 58.75	1.0000	1.0000
L12	35	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	1.0000	1.0000
L12	36	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	1.0000	1.0000
L12	37	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	1.0000	1.0000
L12	38	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 54.42	1.0000	1.0000
L12	42	CCI-5x1.25	54.00 - 56.00	1.0000	1.0000
L13	15	AVA7-50(1-5/8)	53.75 - 54.00	1.0000	1.0000
L13	22	Safety Line 3/8	53.75 - 54.00	1.0000	1.0000

tnxTower

B+T Group
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Job
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(BU# 876399)

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Project
Date
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Client
Crown Castle
Designed by
JD Prabhu

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L13	35	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	1.0000	1.0000
L13	36	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	1.0000	1.0000
L13	37	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	1.0000	1.0000
L13	38	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	1.0000	1.0000
L13	42	CCI-5x1.25	53.75 - 54.00	1.0000	1.0000
L14	15	AVA7-50(1-5/8)	52.91 - 53.75	1.0000	1.0000
L14	22	Safety Line 3/8	52.91 - 53.75	1.0000	1.0000
L14	35	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	1.0000	1.0000
L14	36	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	1.0000	1.0000
L14	37	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	1.0000	1.0000
L14	38	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	1.0000	1.0000
L14	42	CCI-5x1.25	52.91 - 53.75	1.0000	1.0000
L15	15	AVA7-50(1-5/8)	52.66 - 52.91	1.0000	1.0000
L15	22	Safety Line 3/8	52.66 - 52.91	1.0000	1.0000
L15	35	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	1.0000	1.0000
L15	36	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	1.0000	1.0000
L15	37	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	1.0000	1.0000
L15	38	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	1.0000	1.0000
L15	42	CCI-5x1.25	52.66 - 52.91	1.0000	1.0000
L16	15	AVA7-50(1-5/8)	52.17 - 52.66	1.0000	1.0000
L16	22	Safety Line 3/8	52.17 - 52.66	1.0000	1.0000
L16	35	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	1.0000	1.0000
L16	36	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	1.0000	1.0000
L16	37	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	1.0000	1.0000
L16	38	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	1.0000	1.0000
L16	42	CCI-5x1.25	52.17 - 52.66	1.0000	1.0000
L17	15	AVA7-50(1-5/8)	51.92 - 52.17	1.0000	1.0000
L17	22	Safety Line 3/8	51.92 - 52.17	1.0000	1.0000
L17	35	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	1.0000	1.0000
L17	36	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	1.0000	1.0000
L17	37	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	1.0000	1.0000
L17	38	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	1.0000	1.0000
L17	42	CCI-5x1.25	51.92 - 52.17	1.0000	1.0000
L18	15	AVA7-50(1-5/8)	45.29 - 51.92	1.0000	1.0000
L18	20	CU12PSM9P8XXX(1-3/8)	45.29 - 48.00	1.0000	1.0000
L18	22	Safety Line 3/8	45.29 - 51.92	1.0000	1.0000
L18	34	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 49.75	1.0000	1.0000
L18	35	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 51.92	1.0000	1.0000
L18	36	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 51.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L18	37	Sabre MS-450 (4.5" x 1" Plate)	50.67 - 51.92	1.0000	1.0000
L18	38	Sabre MS-450 (4.5" x 1" Plate)	45.92 - 51.92	1.0000	1.0000
L18	42	CCI-5x1.25	45.29 - 51.92	1.0000	1.0000
L19	15	AVA7-50(1-5/8)	44.29 - 45.29	1.0000	1.0000
L19	20	CU12PSM9P8XXX(1-3/8)	44.29 - 45.29	1.0000	1.0000
L19	22	Safety Line 3/8	44.29 - 45.29	1.0000	1.0000
L19	34	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	1.0000	1.0000
L19	35	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	1.0000	1.0000
L19	36	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	1.0000	1.0000
L19	42	CCI-5x1.25	44.29 - 45.29	1.0000	1.0000
L20	15	AVA7-50(1-5/8)	39.29 - 44.29	1.0000	1.0000
L20	20	CU12PSM9P8XXX(1-3/8)	39.29 - 44.29	1.0000	1.0000
L20	22	Safety Line 3/8	39.29 - 44.29	1.0000	1.0000
L20	34	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	1.0000	1.0000
L20	35	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	1.0000	1.0000
L20	36	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	1.0000	1.0000
L20	42	CCI-5x1.25	39.29 - 44.29	1.0000	1.0000
L21	15	AVA7-50(1-5/8)	34.29 - 39.29	1.0000	1.0000
L21	20	CU12PSM9P8XXX(1-3/8)	34.29 - 39.29	1.0000	1.0000
L21	22	Safety Line 3/8	34.29 - 39.29	1.0000	1.0000
L21	30	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	1.0000	1.0000
L21	31	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	1.0000	1.0000
L21	32	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	1.0000	1.0000
L21	34	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	1.0000	1.0000
L21	35	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	1.0000	1.0000
L21	36	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	1.0000	1.0000
L21	42	CCI-5x1.25	34.29 - 39.29	1.0000	1.0000
L22	15	AVA7-50(1-5/8)	33.50 - 34.29	1.0000	1.0000
L22	20	CU12PSM9P8XXX(1-3/8)	33.50 - 34.29	1.0000	1.0000
L22	22	Safety Line 3/8	33.50 - 34.29	1.0000	1.0000
L22	30	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	31	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	32	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	34	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	35	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	36	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	1.0000	1.0000
L22	42	CCI-5x1.25	33.50 - 34.29	1.0000	1.0000
L23	15	AVA7-50(1-5/8)	33.25 - 33.50	1.0000	1.0000
L23	20	CU12PSM9P8XXX(1-3/8)	33.25 - 33.50	1.0000	1.0000
L23	22	Safety Line 3/8	33.25 - 33.50	1.0000	1.0000
L23	30	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	1.0000	1.0000
L23	31	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	1.0000	1.0000
L23	32	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	1.0000	1.0000
L23	34	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	1.0000	1.0000
L23	35	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	1.0000	1.0000
L23	36	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	42	CCI-5x1.25 Plate)	33.25 - 33.50	1.0000	1.0000
L24	15	AVA7-50(1-5/8)	33.00 - 33.25	1.0000	1.0000
L24	20	CU12PSM9P8XXX(1-3/8)	33.00 - 33.25	1.0000	1.0000
L24	22	Safety Line 3/8	33.00 - 33.25	1.0000	1.0000
L24	30	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	31	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	32	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	34	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	35	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	36	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	1.0000	1.0000
L24	42	CCI-5x1.25	33.00 - 33.25	1.0000	1.0000
L25	15	AVA7-50(1-5/8)	32.75 - 33.00	1.0000	1.0000
L25	20	CU12PSM9P8XXX(1-3/8)	32.75 - 33.00	1.0000	1.0000
L25	22	Safety Line 3/8	32.75 - 33.00	1.0000	1.0000
L25	30	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	31	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	32	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	34	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	35	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	36	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	1.0000	1.0000
L25	42	CCI-5x1.25	32.75 - 33.00	1.0000	1.0000
L26	15	AVA7-50(1-5/8)	32.00 - 32.75	1.0000	1.0000
L26	20	CU12PSM9P8XXX(1-3/8)	32.00 - 32.75	1.0000	1.0000
L26	22	Safety Line 3/8	32.00 - 32.75	1.0000	1.0000
L26	30	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	31	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	32	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	34	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	35	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	36	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	1.0000	1.0000
L26	42	CCI-5x1.25	32.00 - 32.75	1.0000	1.0000
L27	15	AVA7-50(1-5/8)	31.75 - 32.00	1.0000	1.0000
L27	20	CU12PSM9P8XXX(1-3/8)	31.75 - 32.00	1.0000	1.0000
L27	22	Safety Line 3/8	31.75 - 32.00	1.0000	1.0000
L27	30	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	31	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	32	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	34	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	35	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	36	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	1.0000	1.0000
L27	42	CCI-5x1.25	31.75 - 32.00	1.0000	1.0000
L28	15	AVA7-50(1-5/8)	28.50 - 31.75	1.0000	1.0000
L28	20	CU12PSM9P8XXX(1-3/8)	28.50 - 31.75	1.0000	1.0000
L28	22	Safety Line 3/8	28.50 - 31.75	1.0000	1.0000
L28	24	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	1.0000	1.0000
L28	25	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	1.0000	1.0000
L28	28	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	1.0000	1.0000
L28	30	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	1.0000	1.0000
L28	31	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	32	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	1.0000	1.0000
L28	34	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	1.0000	1.0000
L28	35	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	1.0000	1.0000
L28	36	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	1.0000	1.0000
L28	42	CCI-5x1.25	31.00 - 31.75	1.0000	1.0000
L29	15	AVA7-50(1-5/8)	28.25 - 28.50	1.0000	1.0000
L29	20	CU12PSM9P8XXX(1-3/8)	28.25 - 28.50	1.0000	1.0000
L29	22	Safety Line 3/8	28.25 - 28.50	1.0000	1.0000
L29	24	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L29	25	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L29	28	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L29	30	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L29	31	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L29	32	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	1.0000	1.0000
L30	15	AVA7-50(1-5/8)	27.50 - 28.25	1.0000	1.0000
L30	20	CU12PSM9P8XXX(1-3/8)	27.50 - 28.25	1.0000	1.0000
L30	22	Safety Line 3/8	27.50 - 28.25	1.0000	1.0000
L30	24	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L30	25	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L30	28	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L30	30	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L30	31	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L30	32	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	1.0000	1.0000
L31	15	AVA7-50(1-5/8)	27.25 - 27.50	1.0000	1.0000
L31	20	CU12PSM9P8XXX(1-3/8)	27.25 - 27.50	1.0000	1.0000
L31	22	Safety Line 3/8	27.25 - 27.50	1.0000	1.0000
L31	24	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L31	25	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L31	28	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L31	30	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L31	31	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L31	32	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	1.0000	1.0000
L32	15	AVA7-50(1-5/8)	22.25 - 27.25	1.0000	1.0000
L32	20	CU12PSM9P8XXX(1-3/8)	22.25 - 27.25	1.0000	1.0000
L32	22	Safety Line 3/8	22.25 - 27.25	1.0000	1.0000
L32	24	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	1.0000	1.0000
L32	25	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	1.0000	1.0000
L32	28	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	1.0000	1.0000
L32	30	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	1.0000	1.0000
L32	31	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	1.0000	1.0000
L32	32	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	1.0000	1.0000
L33	15	AVA7-50(1-5/8)	18.00 - 22.25	1.0000	1.0000
L33	20	CU12PSM9P8XXX(1-3/8)	18.00 - 22.25	1.0000	1.0000
L33	22	Safety Line 3/8	18.00 - 22.25	1.0000	1.0000
L33	24	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	1.0000	1.0000
L33	25	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	1.0000	1.0000
L33	28	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	1.0000	1.0000
L33	40	CCI-5x1.25	18.00 - 20.00	1.0000	1.0000
L34	15	AVA7-50(1-5/8)	17.75 - 18.00	1.0000	1.0000
L34	20	CU12PSM9P8XXX(1-3/8)	17.75 - 18.00	1.0000	1.0000
L34	22	Safety Line 3/8	17.75 - 18.00	1.0000	1.0000
L34	24	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	1.0000	1.0000
L34	25	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	1.0000	1.0000
L34	28	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	1.0000	1.0000
L34	40	CCI-5x1.25	17.75 - 18.00	1.0000	1.0000
L35	15	AVA7-50(1-5/8)	15.45 - 17.75	1.0000	1.0000
L35	20	CU12PSM9P8XXX(1-3/8)	15.45 - 17.75	1.0000	1.0000
L35	22	Safety Line 3/8	15.45 - 17.75	1.0000	1.0000
L35	24	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	1.0000	1.0000

tnxTower

B+T Group
1717 S. Boulder, Suite 300
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Job
127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT
(BU# 876399)

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Project
Date
15:42:44 04/07/22

Client
Crown Castle
Designed by
JD Prabhu

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L35	25	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	1.0000	1.0000
L35	27	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.45	1.0000	1.0000
L35	28	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	1.0000	1.0000
L35	40	CCI-5x1.25	15.45 - 17.75	1.0000	1.0000
L36	15	AVA7-50(1-5/8)	15.20 - 15.45	1.0000	1.0000
L36	20	CU12PSM9P8XXX(1-3/8)	15.20 - 15.45	1.0000	1.0000
L36	22	Safety Line 3/8	15.20 - 15.45	1.0000	1.0000
L36	24	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	1.0000	1.0000
L36	25	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	1.0000	1.0000
L36	27	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	1.0000	1.0000
L36	28	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	1.0000	1.0000
L36	40	CCI-5x1.25	15.20 - 15.45	1.0000	1.0000
L37	15	AVA7-50(1-5/8)	13.41 - 15.20	1.0000	1.0000
L37	20	CU12PSM9P8XXX(1-3/8)	13.41 - 15.20	1.0000	1.0000
L37	22	Safety Line 3/8	13.41 - 15.20	1.0000	1.0000
L37	24	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	1.0000	1.0000
L37	25	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	1.0000	1.0000
L37	27	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	1.0000	1.0000
L37	28	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	1.0000	1.0000
L37	40	CCI-5x1.25	13.41 - 15.20	1.0000	1.0000
L38	15	AVA7-50(1-5/8)	13.16 - 13.41	1.0000	1.0000
L38	20	CU12PSM9P8XXX(1-3/8)	13.16 - 13.41	1.0000	1.0000
L38	22	Safety Line 3/8	13.16 - 13.41	1.0000	1.0000
L38	24	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	1.0000	1.0000
L38	25	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	1.0000	1.0000
L38	27	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	1.0000	1.0000
L38	28	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	1.0000	1.0000
L38	40	CCI-5x1.25	13.16 - 13.41	1.0000	1.0000
L39	15	AVA7-50(1-5/8)	8.16 - 13.16	1.0000	1.0000
L39	20	CU12PSM9P8XXX(1-3/8)	8.16 - 13.16	1.0000	1.0000
L39	22	Safety Line 3/8	8.16 - 13.16	1.0000	1.0000
L39	24	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	1.0000	1.0000
L39	25	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	1.0000	1.0000
L39	26	Sabre MS-600 (6" x 1" Plate)	8.16 - 8.50	1.0000	1.0000
L39	27	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	1.0000	1.0000
L39	28	Sabre MS-600 (6" x 1" Plate)	11.41 - 13.16	1.0000	1.0000
L39	40	CCI-5x1.25	8.16 - 13.16	1.0000	1.0000
L40	15	AVA7-50(1-5/8)	6.50 - 8.16	1.0000	1.0000
L40	20	CU12PSM9P8XXX(1-3/8)	6.50 - 8.16	1.0000	1.0000
L40	22	Safety Line 3/8	6.50 - 8.16	1.0000	1.0000
L40	24	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	1.0000	1.0000
L40	25	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	1.0000	1.0000
L40	26	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	1.0000	1.0000
L40	27	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	1.0000	1.0000
L40	40	CCI-5x1.25	6.50 - 8.16	1.0000	1.0000
L41	15	AVA7-50(1-5/8)	6.25 - 6.50	1.0000	1.0000
L41	20	CU12PSM9P8XXX(1-3/8)	6.25 - 6.50	1.0000	1.0000
L41	22	Safety Line 3/8	6.25 - 6.50	1.0000	1.0000
L41	24	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	1.0000	1.0000
L41	25	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	1.0000	1.0000
L41	26	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	1.0000	1.0000
L41	27	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	1.0000	1.0000
L41	40	CCI-5x1.25	6.25 - 6.50	1.0000	1.0000
L42	15	AVA7-50(1-5/8)	4.45 - 6.25	1.0000	1.0000
L42	20	CU12PSM9P8XXX(1-3/8)	4.45 - 6.25	1.0000	1.0000
L42	22	Safety Line 3/8	4.45 - 6.25	1.0000	1.0000
L42	24	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	1.0000	1.0000
L42	25	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	1.0000	1.0000
L42	26	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	1.0000	1.0000
L42	27	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	1.0000	1.0000
L42	40	CCI-5x1.25	4.45 - 6.25	1.0000	1.0000
L43	15	AVA7-50(1-5/8)	4.20 - 4.45	1.0000	1.0000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 20 of 51
	Project	Date 15:42:44 04/07/22
	Client Crown Castle	Designed by JD Prabhu

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L43	20	CU12PSM9P8XXX(1-3/8)	4.20 - 4.45	1.0000	1.0000
L43	22	Safety Line 3/8	4.20 - 4.45	1.0000	1.0000
L43	24	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	1.0000	1.0000
L43	25	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	1.0000	1.0000
L43	26	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	1.0000	1.0000
L43	27	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	1.0000	1.0000
L43	40	CCI-5x1.25	4.20 - 4.45	1.0000	1.0000
L44	15	AVA7-50(1-5/8)	0.00 - 4.20	1.0000	1.0000
L44	20	CU12PSM9P8XXX(1-3/8)	0.00 - 4.20	1.0000	1.0000
L44	22	Safety Line 3/8	0.00 - 4.20	1.0000	1.0000
L44	24	Sabre MS-600 (6" x 1" Plate)	0.00 - 4.20	1.0000	1.0000
L44	25	Sabre MS-600 (6" x 1" Plate)	0.00 - 4.20	1.0000	1.0000
L44	26	Sabre MS-600 (6" x 1" Plate)	0.50 - 4.20	1.0000	1.0000
L44	27	Sabre MS-600 (6" x 1" Plate)	2.45 - 4.20	1.0000	1.0000
L44	40	CCI-5x1.25	0.00 - 4.20	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L8	35	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.50	Auto	0.3288
L8	36	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.50	Auto	0.3288
L8	37	Sabre MS-450 (4.5" x 1" Plate)	60.21 - 60.67	Auto	0.3295
L9	35	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	Auto	0.3233
L9	36	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	Auto	0.3233
L9	37	Sabre MS-450 (4.5" x 1" Plate)	59.17 - 60.21	Auto	0.3233
L10	35	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	Auto	0.4205
L10	36	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	Auto	0.4205
L10	37	Sabre MS-450 (4.5" x 1" Plate)	58.90 - 59.17	Auto	0.4205
L11	35	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	Auto	0.4188
L11	36	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	Auto	0.4188
L11	37	Sabre MS-450 (4.5" x 1" Plate)	58.75 - 58.90	Auto	0.4188
L12	35	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	Auto	0.3936
L12	36	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	Auto	0.3936
L12	37	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 58.75	Auto	0.3936
L12	38	Sabre MS-450 (4.5" x 1" Plate)	54.00 - 54.42	Auto	0.3756
L12	42	CCI-5x1.25	54.00 - 56.00	Auto	0.4439

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 21 of 51</p>
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	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	35	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	Auto	0.3777
L13	36	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	Auto	0.3777
L13	37	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	Auto	0.3777
L13	38	Sabre MS-450 (4.5" x 1" Plate)	53.75 - 54.00	Auto	0.3777
L13	42	CCI-5x1.25	53.75 - 54.00	Auto	0.4399
L14	35	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	Auto	0.3683
L14	36	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	Auto	0.3683
L14	37	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	Auto	0.3683
L14	38	Sabre MS-450 (4.5" x 1" Plate)	52.91 - 53.75	Auto	0.3683
L14	42	CCI-5x1.25	52.91 - 53.75	Auto	0.4314
L15	35	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	Auto	0.4322
L15	36	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	Auto	0.4322
L15	37	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	Auto	0.4322
L15	38	Sabre MS-450 (4.5" x 1" Plate)	52.66 - 52.91	Auto	0.4322
L15	42	CCI-5x1.25	52.66 - 52.91	Auto	0.4890
L16	35	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	Auto	0.4291
L16	36	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	Auto	0.4291
L16	37	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	Auto	0.4291
L16	38	Sabre MS-450 (4.5" x 1" Plate)	52.17 - 52.66	Auto	0.4291
L16	42	CCI-5x1.25	52.17 - 52.66	Auto	0.4862
L17	35	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	Auto	0.3674
L17	36	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	Auto	0.3674
L17	37	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	Auto	0.3674
L17	38	Sabre MS-450 (4.5" x 1" Plate)	51.92 - 52.17	Auto	0.3674
L17	42	CCI-5x1.25	51.92 - 52.17	Auto	0.4306
L18	34	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 49.75	Auto	0.3249
L18	35	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 51.92	Auto	0.3339
L18	36	Sabre MS-450 (4.5" x 1" Plate)	45.29 - 51.92	Auto	0.3339
L18	37	Sabre MS-450 (4.5" x 1" Plate)	50.67 - 51.92	Auto	0.3563
L18	38	Sabre MS-450 (4.5" x 1" Plate)	45.92 - 51.92	Auto	0.3365
L18	42	CCI-5x1.25	45.29 - 51.92	Auto	0.4005
L19	34	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	Auto	0.3412
L19	35	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	Auto	0.3412
L19	36	Sabre MS-450 (4.5" x 1" Plate)	44.29 - 45.29	Auto	0.3412

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 22 of 51
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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	42	Plate) CCI-5x1.25	44.29 - 45.29	Auto	0.4071
L20	34	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	Auto	0.3114
L20	35	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	Auto	0.3114
L20	36	Sabre MS-450 (4.5" x 1" Plate)	39.29 - 44.29	Auto	0.3114
L20	42	CCI-5x1.25	39.29 - 44.29	Auto	0.3802
L21	30	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	Auto	0.4368
L21	31	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	Auto	0.4368
L21	32	Sabre MS-600 (6" x 1" Plate)	34.29 - 35.50	Auto	0.4368
L21	34	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	Auto	0.2649
L21	35	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	Auto	0.2649
L21	36	Sabre MS-450 (4.5" x 1" Plate)	34.29 - 39.29	Auto	0.2649
L21	42	CCI-5x1.25	34.29 - 39.29	Auto	0.3384
L22	30	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	Auto	0.4269
L22	31	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	Auto	0.4269
L22	32	Sabre MS-600 (6" x 1" Plate)	33.50 - 34.29	Auto	0.4269
L22	34	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	Auto	0.2359
L22	35	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	Auto	0.2359
L22	36	Sabre MS-450 (4.5" x 1" Plate)	33.50 - 34.29	Auto	0.2359
L22	42	CCI-5x1.25	33.50 - 34.29	Auto	0.3123
L23	30	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	Auto	0.5154
L23	31	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	Auto	0.5154
L23	32	Sabre MS-600 (6" x 1" Plate)	33.25 - 33.50	Auto	0.5154
L23	34	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	Auto	0.3538
L23	35	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	Auto	0.3538
L23	36	Sabre MS-450 (4.5" x 1" Plate)	33.25 - 33.50	Auto	0.3538
L23	42	CCI-5x1.25	33.25 - 33.50	Auto	0.4184
L24	30	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	Auto	0.5138
L24	31	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	Auto	0.5138
L24	32	Sabre MS-600 (6" x 1" Plate)	33.00 - 33.25	Auto	0.5138
L24	34	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	Auto	0.3517
L24	35	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	Auto	0.3517
L24	36	Sabre MS-450 (4.5" x 1" Plate)	33.00 - 33.25	Auto	0.3517
L24	42	CCI-5x1.25	33.00 - 33.25	Auto	0.4166
L25	30	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	Auto	0.5049
L25	31	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	Auto	0.5049
L25	32	Sabre MS-600 (6" x 1" Plate)	32.75 - 33.00	Auto	0.5049
L25	34	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	Auto	0.3399
L25	35	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	Auto	0.3399
L25	36	Sabre MS-450 (4.5" x 1" Plate)	32.75 - 33.00	Auto	0.3399
L25	42	CCI-5x1.25	32.75 - 33.00	Auto	0.4059
L26	30	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	Auto	0.4981
L26	31	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	Auto	0.4981

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	32	Sabre MS-600 (6" x 1" Plate)	32.00 - 32.75	Auto	0.4981
L26	34	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	Auto	0.3308
L26	35	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	Auto	0.3308
L26	36	Sabre MS-450 (4.5" x 1" Plate)	32.00 - 32.75	Auto	0.3308
L26	42	CCI-5x1.25	32.00 - 32.75	Auto	0.3977
L27	30	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	Auto	0.4327
L27	31	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	Auto	0.4327
L27	32	Sabre MS-600 (6" x 1" Plate)	31.75 - 32.00	Auto	0.4327
L27	34	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	Auto	0.2435
L27	35	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	Auto	0.2435
L27	36	Sabre MS-450 (4.5" x 1" Plate)	31.75 - 32.00	Auto	0.2435
L27	42	CCI-5x1.25	31.75 - 32.00	Auto	0.3192
L28	24	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	Auto	0.4142
L28	25	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	Auto	0.4142
L28	28	Sabre MS-600 (6" x 1" Plate)	28.50 - 30.50	Auto	0.4142
L28	30	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	Auto	0.4181
L28	31	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	Auto	0.4181
L28	32	Sabre MS-600 (6" x 1" Plate)	28.50 - 31.75	Auto	0.4181
L28	34	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	Auto	0.2324
L28	35	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	Auto	0.2324
L28	36	Sabre MS-450 (4.5" x 1" Plate)	30.50 - 31.75	Auto	0.2324
L28	42	CCI-5x1.25	31.00 - 31.75	Auto	0.3110
L29	24	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L29	25	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L29	28	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L29	30	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L29	31	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L29	32	Sabre MS-600 (6" x 1" Plate)	28.25 - 28.50	Auto	0.4915
L30	24	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L30	25	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L30	28	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L30	30	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L30	31	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L30	32	Sabre MS-600 (6" x 1" Plate)	27.50 - 28.25	Auto	0.4847
L31	24	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L31	25	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L31	28	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L31	30	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L31	31	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L31	32	Sabre MS-600 (6" x 1" Plate)	27.25 - 27.50	Auto	0.4009
L32	24	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	Auto	0.3808
L32	25	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	Auto	0.3808
L32	28	Sabre MS-600 (6" x 1" Plate)	22.25 - 27.25	Auto	0.3808
L32	30	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	Auto	0.3910
L32	31	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	Auto	0.3910
L32	32	Sabre MS-600 (6" x 1" Plate)	25.50 - 27.25	Auto	0.3910
L33	24	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	Auto	0.3483
L33	25	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	Auto	0.3483
L33	28	Sabre MS-600 (6" x 1" Plate)	18.00 - 22.25	Auto	0.3483
L33	40	CCI-5x1.25	18.00 - 20.00	Auto	0.2095
L34	24	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	Auto	0.3379
L34	25	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	Auto	0.3379

tnxTower

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	28	Sabre MS-600 (6" x 1" Plate)	17.75 - 18.00	Auto	0.3379
L34	40	CCI-5x1.25	17.75 - 18.00	Auto	0.2055
L35	24	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	Auto	0.2896
L35	25	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	Auto	0.2896
L35	27	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.45	Auto	0.2887
L35	28	Sabre MS-600 (6" x 1" Plate)	15.45 - 17.75	Auto	0.2896
L35	40	CCI-5x1.25	15.45 - 17.75	Auto	0.1476
L36	24	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	Auto	0.3587
L36	25	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	Auto	0.3587
L36	27	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	Auto	0.3587
L36	28	Sabre MS-600 (6" x 1" Plate)	15.20 - 15.45	Auto	0.3587
L36	40	CCI-5x1.25	15.20 - 15.45	Auto	0.2304
L37	24	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	Auto	0.3486
L37	25	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	Auto	0.3486
L37	27	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	Auto	0.3486
L37	28	Sabre MS-600 (6" x 1" Plate)	13.41 - 15.20	Auto	0.3486
L37	40	CCI-5x1.25	13.41 - 15.20	Auto	0.2184
L38	24	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	Auto	0.3093
L38	25	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	Auto	0.3093
L38	27	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	Auto	0.3093
L38	28	Sabre MS-600 (6" x 1" Plate)	13.16 - 13.41	Auto	0.3093
L38	40	CCI-5x1.25	13.16 - 13.41	Auto	0.1711
L39	24	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	Auto	0.2892
L39	25	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	Auto	0.2892
L39	26	Sabre MS-600 (6" x 1" Plate)	8.16 - 8.50	Auto	0.2747
L39	27	Sabre MS-600 (6" x 1" Plate)	8.16 - 13.16	Auto	0.2892
L39	28	Sabre MS-600 (6" x 1" Plate)	11.41 - 13.16	Auto	0.2994
L39	40	CCI-5x1.25	8.16 - 13.16	Auto	0.1471
L40	24	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	Auto	0.2684
L40	25	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	Auto	0.2684
L40	26	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	Auto	0.2684
L40	27	Sabre MS-600 (6" x 1" Plate)	6.50 - 8.16	Auto	0.2684
L40	40	CCI-5x1.25	6.50 - 8.16	Auto	0.1221
L41	24	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	Auto	0.2955
L41	25	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	Auto	0.2955
L41	26	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	Auto	0.2955
L41	27	Sabre MS-600 (6" x 1" Plate)	6.25 - 6.50	Auto	0.2955
L41	40	CCI-5x1.25	6.25 - 6.50	Auto	0.1546
L42	24	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	Auto	0.2854
L42	25	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	Auto	0.2854
L42	26	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	Auto	0.2854
L42	27	Sabre MS-600 (6" x 1" Plate)	4.45 - 6.25	Auto	0.2854
L42	40	CCI-5x1.25	4.45 - 6.25	Auto	0.1425
L43	24	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	Auto	0.2387
L43	25	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	Auto	0.2387
L43	26	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	Auto	0.2387
L43	27	Sabre MS-600 (6" x 1" Plate)	4.20 - 4.45	Auto	0.2387
L43	40	CCI-5x1.25	4.20 - 4.45	Auto	0.0864
L44	24	Sabre MS-600 (6" x 1" Plate)	0.00 - 4.20	Auto	0.2211
L44	25	Sabre MS-600 (6" x 1" Plate)	0.00 - 4.20	Auto	0.2211
L44	26	Sabre MS-600 (6" x 1" Plate)	0.50 - 4.20	Auto	0.2227
L44	27	Sabre MS-600 (6" x 1" Plate)	2.45 - 4.20	Auto	0.2288
L44	40	CCI-5x1.25	0.00 - 4.20	Auto	0.0653

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	Client Crown Castle	Designed by JD Prabhu

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft ²	ft ²	K	
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	96.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	96.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	96.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	96.000	No Ice	7.550	4.230	0.110
			0.000				1/2" Ice	8.040	4.670	0.197
			2.000				1" Ice	8.530	5.120	0.296
							2" Ice	9.560	6.050	0.529
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	96.000	No Ice	7.550	4.230	0.110
			0.000				1/2" Ice	8.040	4.670	0.197
			2.000				1" Ice	8.530	5.120	0.296
							2" Ice	9.560	6.050	0.529
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	96.000	No Ice	7.550	4.230	0.110
			0.000				1/2" Ice	8.040	4.670	0.197
			2.000				1" Ice	8.530	5.120	0.296
							2" Ice	9.560	6.050	0.529
(2) RRH2X50-800	A	From Leg	4.000	0.000	0.000	96.000	No Ice	1.701	1.282	0.053
			0.000				1/2" Ice	1.864	1.428	0.070
			2.000				1" Ice	2.035	1.580	0.090
							2" Ice	2.398	1.908	0.138
(2) RRH2X50-800	B	From Leg	4.000	0.000	0.000	96.000	No Ice	1.701	1.282	0.053
			0.000				1/2" Ice	1.864	1.428	0.070
			2.000				1" Ice	2.035	1.580	0.090
							2" Ice	2.398	1.908	0.138
(2) RRH2X50-800	C	From Leg	4.000	0.000	0.000	96.000	No Ice	1.701	1.282	0.053
			0.000				1/2" Ice	1.864	1.428	0.070
			2.000				1" Ice	2.035	1.580	0.090
							2" Ice	2.398	1.908	0.138
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.000	0.000	0.000	96.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			2.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.000	0.000	0.000	96.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			2.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.000	0.000	0.000	96.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			2.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
FZHN	A	From Leg	4.000	0.000	0.000	96.000	No Ice	2.020	0.607	0.044
			0.000				1/2" Ice	2.197	0.715	0.058
			2.000				1" Ice	2.381	0.829	0.075
							2" Ice	2.772	1.089	0.116
FZHN	B	From Leg	4.000	0.000	0.000	96.000	No Ice	2.020	0.607	0.044
			0.000				1/2" Ice	2.197	0.715	0.058

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			2.000			1" Ice 2.381	0.829	0.075
						2" Ice 2.772	1.089	0.116
FZHN	C	From Leg	4.000	0.000	96.000	No Ice 2.020	0.607	0.044
			0.000			1/2" Ice 2.197	0.715	0.058
			2.000			1" Ice 2.381	0.829	0.075
						2" Ice 2.772	1.089	0.116
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	96.000	No Ice 1.425	1.425	0.022
			0.000			1/2" Ice 1.925	1.925	0.033
			0.000			1" Ice 2.294	2.294	0.048
						2" Ice 3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	96.000	No Ice 1.425	1.425	0.022
			0.000			1/2" Ice 1.925	1.925	0.033
			0.000			1" Ice 2.294	2.294	0.048
						2" Ice 3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	96.000	No Ice 1.425	1.425	0.022
			0.000			1/2" Ice 1.925	1.925	0.033
			0.000			1" Ice 2.294	2.294	0.048
						2" Ice 3.060	3.060	0.090
4' x 2" Horizontal Mount Pipe	A	From Leg	2.000	0.000	96.000	No Ice 0.866	0.866	0.015
			0.000			1/2" Ice 1.111	1.111	0.022
			2.000			1" Ice 1.365	1.365	0.032
						2" Ice 1.901	1.901	0.062
4' x 2" Horizontal Mount Pipe	B	From Leg	2.000	0.000	96.000	No Ice 0.866	0.866	0.015
			0.000			1/2" Ice 1.111	1.111	0.022
			2.000			1" Ice 1.365	1.365	0.032
						2" Ice 1.901	1.901	0.062
4' x 2" Horizontal Mount Pipe	C	From Leg	2.000	0.000	96.000	No Ice 0.866	0.866	0.015
			0.000			1/2" Ice 1.111	1.111	0.022
			2.000			1" Ice 1.365	1.365	0.032
						2" Ice 1.901	1.901	0.062
Miscellaneous [NA 510-1]	C	None		0.000	98.000	No Ice 6.360	6.360	0.256
						1/2" Ice 8.520	8.520	0.344
						1" Ice 10.620	10.620	0.459
						2" Ice 14.640	14.640	0.769
Platform Mount [LP 714-1]	C	None		0.000	96.000	No Ice 37.510	37.510	1.600
						1/2" Ice 41.700	41.700	2.496
						1" Ice 45.890	45.890	3.458
						2" Ice 54.290	54.290	5.583
*								
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000	0.000	89.000	No Ice 14.690	6.870	0.186
			0.000			1/2" Ice 15.460	7.550	0.315
			1.000			1" Ice 16.230	8.250	0.458
						2" Ice 17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000	0.000	89.000	No Ice 14.690	6.870	0.186
			0.000			1/2" Ice 15.460	7.550	0.315
			1.000			1" Ice 16.230	8.250	0.458
						2" Ice 17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000	0.000	89.000	No Ice 14.690	6.870	0.186
			0.000			1/2" Ice 15.460	7.550	0.315
			1.000			1" Ice 16.230	8.250	0.458
						2" Ice 17.820	9.670	0.788
AIR 6419 B41_TMO w/ Mount Pipe	A	From Leg	4.000	0.000	89.000	No Ice 6.580	3.500	0.111
			0.000			1/2" Ice 7.060	3.900	0.162
			1.000			1" Ice 7.570	4.320	0.220
						2" Ice 8.620	5.200	0.359
AIR 6419 B41_TMO w/ Mount Pipe	B	From Leg	4.000	0.000	89.000	No Ice 6.580	3.500	0.111
			0.000			1/2" Ice 7.060	3.900	0.162

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)		Page		27 of 51	
	Project				Date		15:42:44 04/07/22	
	Client		Crown Castle		Designed by		JD Prabhu	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
			1.000				1" Ice 7.570	4.320	0.220
							2" Ice 8.620	5.200	0.359
AIR 6419 B41_TMO w/ Mount Pipe	C	From Leg	4.000	0.000	89.000		No Ice 6.580	3.500	0.111
			0.000				1/2" Ice 7.060	3.900	0.162
			1.000				1" Ice 7.570	4.320	0.220
							2" Ice 8.620	5.200	0.359
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000	0.000	89.000		No Ice 1.970	1.587	0.073
			0.000				1/2" Ice 2.147	1.749	0.093
			1.000				1" Ice 2.331	1.918	0.116
							2" Ice 2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000	0.000	89.000		No Ice 1.970	1.587	0.073
			0.000				1/2" Ice 2.147	1.749	0.093
			1.000				1" Ice 2.331	1.918	0.116
							2" Ice 2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000	0.000	89.000		No Ice 1.970	1.587	0.073
			0.000				1/2" Ice 2.147	1.749	0.093
			1.000				1" Ice 2.331	1.918	0.116
							2" Ice 2.721	2.280	0.170
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000	0.000	89.000		No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			1.000				1" Ice 2.511	2.022	0.156
							2" Ice 2.912	2.387	0.217
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000	0.000	89.000		No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			1.000				1" Ice 2.511	2.022	0.156
							2" Ice 2.912	2.387	0.217
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000	0.000	89.000		No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			1.000				1" Ice 2.511	2.022	0.156
							2" Ice 2.912	2.387	0.217
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	89.000		No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
							2" Ice 4.396	4.396	0.119
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	89.000		No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
							2" Ice 4.396	4.396	0.119
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	89.000		No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
							2" Ice 4.396	4.396	0.119
Miscellaneous [NA 510-1]	C	None		0.000	91.000		No Ice 6.360	6.360	0.256
							1/2" Ice 8.520	8.520	0.344
							1" Ice 10.620	10.620	0.459
							2" Ice 14.640	14.640	0.769
Platform Mount [LP 305-1]	C	None		0.000	89.000		No Ice 18.040	18.040	1.121
							1/2" Ice 22.040	22.040	1.470
							1" Ice 26.060	26.060	1.882
							2" Ice 34.160	34.160	2.896
* 7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	77.000		No Ice 5.746	4.254	0.055
			0.000				1/2" Ice 6.179	5.014	0.103
			0.000				1" Ice 6.607	5.711	0.157
							2" Ice 7.488	7.155	0.287
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	77.000		No Ice 5.746	4.254	0.055
			0.000				1/2" Ice 6.179	5.014	0.103

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)	Page 28 of 51
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
			0.000						
						1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	77.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.000	0.000	77.000	No Ice	7.480	5.290	0.095
			0.000			1/2" Ice	8.170	5.960	0.173
			0.000			1" Ice	8.880	6.640	0.264
						2" Ice	10.330	8.050	0.489
SBNH-1D6565C w/ Mount Pipe	B	From Leg	4.000	0.000	77.000	No Ice	5.560	4.470	0.085
			0.000			1/2" Ice	6.070	4.970	0.167
			0.000			1" Ice	6.590	5.470	0.262
						2" Ice	7.650	6.520	0.495
P65-17-XLH-RR w/ Mount Pipe	C	From Leg	4.000	0.000	77.000	No Ice	7.480	5.290	0.095
			0.000			1/2" Ice	8.170	5.960	0.173
			0.000			1" Ice	8.880	6.640	0.264
						2" Ice	10.330	8.050	0.489
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Leg	4.000	0.000	77.000	No Ice	11.850	8.990	0.115
			0.000			1/2" Ice	12.770	9.880	0.210
			0.000			1" Ice	13.710	10.790	0.319
						2" Ice	15.640	12.660	0.580
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Leg	4.000	0.000	77.000	No Ice	11.850	8.990	0.115
			0.000			1/2" Ice	12.770	9.880	0.210
			0.000			1" Ice	13.710	10.790	0.319
						2" Ice	15.640	12.660	0.580
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.000	0.000	77.000	No Ice	11.850	8.990	0.115
			0.000			1/2" Ice	12.770	9.880	0.210
			0.000			1" Ice	13.710	10.790	0.319
						2" Ice	15.640	12.660	0.580
RRUS 32 B2	A	From Leg	4.000	0.000	77.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			0.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	B	From Leg	4.000	0.000	77.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			0.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	C	From Leg	4.000	0.000	77.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			0.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B30	A	From Leg	4.000	0.000	77.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	B	From Leg	4.000	0.000	77.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	C	From Leg	4.000	0.000	77.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
DBC0061F1V51-2	A	From Leg	4.000	0.000	77.000	No Ice	0.433	0.413	0.025
			0.000			1/2" Ice	0.518	0.496	0.031
			0.000			1" Ice	0.609	0.586	0.038

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	Project	Date 15:42:44 04/07/22
	Client Crown Castle	Designed by JD Prabhu

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			Horz Lateral ft	Vert ft						
DBC0061F1V51-2	B	From Leg	4.000	0.000	0.000	77.000	2" Ice	0.815	0.788	0.057
							No Ice	0.433	0.413	0.025
							1/2" Ice	0.518	0.496	0.031
							1" Ice	0.609	0.586	0.038
DBC0061F1V51-2	C	From Leg	4.000	0.000	0.000	77.000	2" Ice	0.815	0.788	0.057
							No Ice	0.433	0.413	0.025
							1/2" Ice	0.518	0.496	0.031
							1" Ice	0.609	0.586	0.038
TT19-08BP111-001	A	From Leg	4.000	0.000	0.000	77.000	2" Ice	0.815	0.788	0.057
							No Ice	0.545	0.442	0.016
							1/2" Ice	0.641	0.530	0.022
							1" Ice	0.743	0.626	0.029
TT19-08BP111-001	B	From Leg	4.000	0.000	0.000	77.000	2" Ice	0.971	0.840	0.049
							No Ice	0.545	0.442	0.016
							1/2" Ice	0.641	0.530	0.022
							1" Ice	0.743	0.626	0.029
TT19-08BP111-001	C	From Leg	4.000	0.000	0.000	77.000	2" Ice	0.971	0.840	0.049
							No Ice	0.545	0.442	0.016
							1/2" Ice	0.641	0.530	0.022
							1" Ice	0.743	0.626	0.029
DC6-48-60-18-8F	A	From Leg	1.000	0.000	0.000	77.000	2" Ice	0.971	0.840	0.049
							No Ice	0.850	0.850	0.019
							1/2" Ice	1.356	1.356	0.036
							1" Ice	1.532	1.532	0.055
DC6-48-60-18-8F	B	From Leg	1.000	0.000	0.000	77.000	2" Ice	1.914	1.914	0.101
							No Ice	0.850	0.850	0.019
							1/2" Ice	1.356	1.356	0.036
							1" Ice	1.532	1.532	0.055
Platform Mount [LP 303-1_KCKR-HR-1]	C	None			0.000	77.000	2" Ice	1.914	1.914	0.101
							No Ice	28.310	28.310	1.770
							1/2" Ice	35.690	35.690	2.297
							1" Ice	43.110	43.110	2.943
* (2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	67.000	2" Ice	5.720	4.870	0.386
							No Ice	4.090	3.300	0.066
							1/2" Ice	4.490	3.680	0.130
							1" Ice	4.890	4.070	0.204
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	67.000	2" Ice	5.720	4.870	0.386
							No Ice	4.090	3.300	0.066
							1/2" Ice	4.490	3.680	0.130
							1" Ice	4.890	4.070	0.204
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	67.000	2" Ice	5.720	4.870	0.386
							No Ice	4.090	3.300	0.066
							1/2" Ice	4.490	3.680	0.130
							1" Ice	4.890	4.070	0.204
MT6407-77A w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	67.000	2" Ice	5.720	4.870	0.386
							No Ice	4.907	2.682	0.096
							1/2" Ice	5.256	3.145	0.136
							1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	67.000	2" Ice	6.362	4.631	0.288
							No Ice	4.907	2.682	0.096
							1/2" Ice	5.256	3.145	0.136
							1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	67.000	2" Ice	6.362	4.631	0.288
							No Ice	4.907	2.682	0.096
							1/2" Ice	5.256	3.145	0.136
							1" Ice	5.615	3.624	0.180

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA}		Weight K	
			Horz Lateral ft	Vert ft			Front ft ²	Side ft ²		
RF4440D-13A	A	From Leg	4.000	0.000	0.000	67.000	2" Ice	6.362	4.631	0.288
			0.000	No Ice			1.865	1.129	0.073	
			0.000	1/2" Ice			2.035	1.267	0.090	
			0.000	1" Ice			2.212	1.411	0.110	
RF4440D-13A	B	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.723	0.159
			0.000	No Ice			1.865	1.129	0.073	
			0.000	1/2" Ice			2.035	1.267	0.090	
			0.000	1" Ice			2.212	1.411	0.110	
RF4440D-13A	C	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.723	0.159
			0.000	No Ice			1.865	1.129	0.073	
			0.000	1/2" Ice			2.035	1.267	0.090	
			0.000	1" Ice			2.212	1.411	0.110	
RF4439D-25A	A	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.723	0.159
			0.000	No Ice			1.865	1.252	0.075	
			0.000	1/2" Ice			2.035	1.394	0.093	
			0.000	1" Ice			2.212	1.544	0.114	
RF4439D-25A	B	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.866	0.165
			0.000	No Ice			1.865	1.252	0.075	
			0.000	1/2" Ice			2.035	1.394	0.093	
			0.000	1" Ice			2.212	1.544	0.114	
RF4439D-25A	C	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.866	0.165
			0.000	No Ice			1.865	1.252	0.075	
			0.000	1/2" Ice			2.035	1.394	0.093	
			0.000	1" Ice			2.212	1.544	0.114	
RVZDC-6627-PF-48	A	From Leg	4.000	0.000	0.000	67.000	2" Ice	2.589	1.866	0.165
			0.000	No Ice			3.792	2.514	0.032	
			0.000	1/2" Ice			4.044	2.727	0.063	
			0.000	1" Ice			4.303	2.947	0.099	
Platform Mount [LP 303-1_KCKR]	C	None			0.000	67.000	2" Ice	4.844	3.417	0.181
				No Ice			25.910	25.910	1.525	
				1/2" Ice			32.230	32.230	1.986	
				1" Ice			38.730	38.730	2.540	
Mount Reinforcement Specifications	C	None			0.000	67.000	2" Ice	52.330	52.330	3.937
				No Ice			28.630	28.630	0.280	
				1/2" Ice			37.310	37.310	0.670	
				1" Ice			45.800	45.800	0.940	
* KS24019-L112A	C	From Leg	3.000	0.000	0.000	52.000	2" Ice	62.380	62.380	1.630
			0.000	No Ice			0.141	0.141	0.005	
			2.000	1/2" Ice			0.198	0.198	0.007	
				1" Ice			0.262	0.262	0.009	
Side Arm Mount [SO 701-1]	C	From Leg	1.500	0.000	0.000	52.000	2" Ice	0.415	0.415	0.018
			0.000	No Ice			0.850	1.670	0.065	
			0.000	1/2" Ice			1.140	2.340	0.079	
				1" Ice			1.430	3.010	0.093	
* MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	48.000	2" Ice	2.010	4.350	0.121
			0.000	No Ice			8.010	4.230	0.108	
			0.000	1/2" Ice			8.520	4.690	0.194	
				1" Ice			9.040	5.160	0.292	
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	48.000	2" Ice	10.110	6.120	0.522
			0.000	No Ice			8.010	4.230	0.108	
			0.000	1/2" Ice			8.520	4.690	0.194	
				1" Ice			9.040	5.160	0.292	
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	48.000	2" Ice	10.110	6.120	0.522
			0.000	No Ice			8.010	4.230	0.108	
						1/2" Ice	8.520	4.690	0.194	

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			0.000				1" Ice 9.040	5.160	0.292
							2" Ice 10.110	6.120	0.522
TA08025-B604	A	From Leg	4.000		0.000	48.000	No Ice 1.964	0.981	0.064
			0.000				1/2" Ice 2.138	1.112	0.081
			0.000				1" Ice 2.320	1.250	0.100
							2" Ice 2.705	1.548	0.148
TA08025-B604	B	From Leg	4.000		0.000	48.000	No Ice 1.964	0.981	0.064
			0.000				1/2" Ice 2.138	1.112	0.081
			0.000				1" Ice 2.320	1.250	0.100
							2" Ice 2.705	1.548	0.148
TA08025-B604	C	From Leg	4.000		0.000	48.000	No Ice 1.964	0.981	0.064
			0.000				1/2" Ice 2.138	1.112	0.081
			0.000				1" Ice 2.320	1.250	0.100
							2" Ice 2.705	1.548	0.148
TA08025-B605	A	From Leg	4.000		0.000	48.000	No Ice 1.964	1.129	0.075
			0.000				1/2" Ice 2.138	1.267	0.093
			0.000				1" Ice 2.320	1.411	0.114
							2" Ice 2.705	1.723	0.164
TA08025-B605	B	From Leg	4.000		0.000	48.000	No Ice 1.964	1.129	0.075
			0.000				1/2" Ice 2.138	1.267	0.093
			0.000				1" Ice 2.320	1.411	0.114
							2" Ice 2.705	1.723	0.164
TA08025-B605	C	From Leg	4.000		0.000	48.000	No Ice 1.964	1.129	0.075
			0.000				1/2" Ice 2.138	1.267	0.093
			0.000				1" Ice 2.320	1.411	0.114
							2" Ice 2.705	1.723	0.164
RDIDC-9181-PF-48	A	From Leg	4.000		0.000	48.000	No Ice 2.012	1.168	0.022
			0.000				1/2" Ice 2.189	1.311	0.040
			0.000				1" Ice 2.373	1.461	0.060
							2" Ice 2.763	1.784	0.110
(2) 6' x 2" Mount Pipe	A	From Leg	4.000		0.000	48.000	No Ice 1.425	1.425	0.022
			0.000				1/2" Ice 1.925	1.925	0.033
			0.000				1" Ice 2.294	2.294	0.048
							2" Ice 3.060	3.060	0.090
(2) 6' x 2" Mount Pipe	B	From Leg	4.000		0.000	48.000	No Ice 1.425	1.425	0.022
			0.000				1/2" Ice 1.925	1.925	0.033
			0.000				1" Ice 2.294	2.294	0.048
							2" Ice 3.060	3.060	0.090
(2) 6' x 2" Mount Pipe	C	From Leg	4.000		0.000	48.000	No Ice 1.425	1.425	0.022
			0.000				1/2" Ice 1.925	1.925	0.033
			0.000				1" Ice 2.294	2.294	0.048
							2" Ice 3.060	3.060	0.090
Platform Mount [LP 716-1]	C	None			0.000	48.000	No Ice 26.800	26.800	1.509
							1/2" Ice 32.200	32.200	1.811
							1" Ice 37.600	37.600	2.113
							2" Ice 48.400	48.400	2.717

*

Load Combinations

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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
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	98 - 93	Pole	Max Tension	2	0.000	-0.000	-0.000
			Max. Compression	26	-9.460	-0.005	-0.003
			Max. Mx	20	-3.375	17.791	0.001

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	93 - 88	Pole	Max. My	2	-3.369	-0.001	17.805
			Max. Vy	20	-4.513	17.791	0.001
			Max. Vx	2	-4.518	-0.001	17.805
			Max. Torque	24			0.001
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.091	-0.014	-0.002
			Max. Mx	20	-6.613	46.888	0.003
			Max. My	2	-6.602	-0.002	46.928
			Max. Vy	20	-8.245	46.888	0.003
			Max. Vx	2	-8.253	-0.002	46.928
L3	88 - 82.79	Pole	Max. Torque	24			0.001
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.314	-0.021	0.002
			Max. Mx	20	-6.762	70.036	0.004
			Max. My	2	-6.751	-0.003	70.101
			Max. Vy	20	-8.341	70.036	0.004
			Max. Vx	2	-8.350	-0.003	70.101
			Max. Torque	24			0.001
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.934	-0.035	0.009
L4	82.79 - 80.207	Pole	Max. Mx	20	-7.178	112.229	0.007
			Max. My	2	-7.167	-0.005	112.339
			Max. Vy	20	-8.538	112.229	0.007
			Max. Vx	2	-8.547	-0.005	112.339
			Max. Torque	24			0.001
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-26.690	-0.157	0.085
			Max. Mx	20	-10.776	162.689	0.021
			Max. My	2	-10.757	-0.027	162.917
			Max. Vy	20	-12.815	162.689	0.021
L5	80.207 - 75.207	Pole	Max. Vx	2	-12.847	-0.027	162.917
			Max. Torque	19			-0.106
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-27.258	-0.177	0.100
			Max. Mx	20	-11.277	227.059	-0.051
			Max. My	2	-11.258	-0.107	227.445
			Max. Vy	20	-12.953	227.059	-0.051
			Max. Vx	2	-12.985	-0.107	227.445
			Max. Torque	19			-0.106
			Max Tension	1	0.000	0.000	0.000
L6	75.207 - 70.207	Pole	Max. Compression	26	-35.971	-0.249	0.791
			Max. Mx	20	-15.078	298.932	0.035
			Max. My	2	-15.051	-0.203	299.763
			Max. Vy	20	-16.906	298.932	0.035
			Max. Vx	2	-16.983	-0.203	299.763
			Max. Torque	21			-0.452
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.790	-0.419	0.891
			Max. Mx	8	-15.772	-383.554	0.536
			Max. My	2	-15.724	-0.322	385.395
L7	70.207 - 65.207	Pole	Max. Vy	20	-16.983	383.521	-0.012
			Max. Vx	2	-17.298	-0.322	385.395
			Max. Torque	21			-0.452
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.987	-0.455	0.911
			Max. Mx	8	-15.919	-401.159	0.559
			Max. My	2	-15.871	-0.349	403.332
			Max. Vy	20	-16.983	383.521	-0.012
			Max. Vx	2	-17.298	-0.322	385.395
			Max. Torque	21			-0.452
L8	65.207 - 60.207	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.790	-0.419	0.891
			Max. Mx	8	-15.772	-383.554	0.536
			Max. My	2	-15.724	-0.322	385.395
			Max. Vy	20	-16.983	383.521	-0.012
			Max. Vx	2	-17.298	-0.322	385.395
			Max. Torque	21			-0.452
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.987	-0.455	0.911
			Max. Mx	8	-15.919	-401.159	0.559
L9	60.207 - 59.17	Pole	Max. My	2	-15.871	-0.349	403.332

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L10	59.17 - 58.9	Pole	Max. Vy	20	-16.998	401.109	-0.022
			Max. Vx	2	-17.326	-0.349	403.332
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.054	-0.465	0.918
			Max. Mx	8	-15.986	-405.746	0.565
			Max. My	2	-15.939	-0.355	408.007
			Max. Vy	20	-16.989	405.692	-0.024
L11	58.9 - 58.75	Pole	Max. Vx	2	-17.323	-0.355	408.007
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.091	-0.472	0.922
			Max. Mx	8	-16.014	-408.295	0.569
			Max. My	2	-15.967	-0.359	410.607
			Max. Vy	20	-16.994	408.239	-0.026
			Max. Vx	2	-17.334	-0.359	410.607
L12	58.75 - 54	Pole	Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.285	-0.652	1.020
			Max. Mx	8	-16.850	-489.440	0.675
			Max. My	2	-16.801	-0.481	493.473
			Max. Vy	20	-17.175	489.305	-0.069
			Max. Vx	2	-17.569	-0.481	493.473
			Max. Torque	21			-0.451
L13	54 - 53.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.359	-0.665	1.026
			Max. Mx	8	-16.913	-493.733	0.681
			Max. My	2	-16.864	-0.487	497.865
			Max. Vy	20	-17.181	493.595	-0.072
			Max. Vx	2	-17.572	-0.487	497.865
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
L14	53.75 - 52.91	Pole	Max. Compression	26	-38.605	-0.704	1.039
			Max. Mx	8	-17.080	-508.174	0.700
			Max. My	2	-17.031	-0.509	512.643
			Max. Vy	20	-17.245	508.040	-0.079
			Max. Vx	2	-17.619	-0.509	512.643
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.683	-0.717	1.045
L15	52.91 - 52.66	Pole	Max. Mx	8	-17.143	-512.478	0.705
			Max. My	2	-17.094	-0.515	517.049
			Max. Vy	20	-17.257	512.349	-0.082
			Max. Vx	2	-17.632	-0.515	517.049
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.836	-0.740	1.052
			Max. Mx	8	-17.250	-520.920	0.716
L16	52.66 - 52.17	Pole	Max. My	2	-17.199	-0.528	525.697
			Max. Vy	20	-17.296	520.808	-0.086
			Max. Vx	2	-17.669	-0.528	525.697
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.039	-0.469	0.893
			Max. Mx	20	-17.377	525.326	-0.187
			Max. My	2	-17.333	-0.361	530.027
L17	52.17 - 51.92	Pole	Max. Vy	20	-17.361	525.326	-0.187
			Max. Vx	2	-17.746	-0.361	530.027
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.992	-0.627	0.956
			Max. Mx	20	-17.377	525.326	-0.187
			Max. My	2	-17.333	-0.361	530.027
			Max. Vy	20	-17.361	525.326	-0.187
L18	51.92 - 45.287	Pole	Max. Vx	2	-17.746	-0.361	530.027
			Max. Torque	21			-0.451
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.992	-0.627	0.956

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L19	45.287 - 44.287	Pole	Max. Mx	20	-18.043	581.301	-0.172
			Max. My	2	-17.999	-0.406	587.341
			Max. Vy	20	-17.487	581.301	-0.172
			Max. Vx	2	-17.904	-0.406	587.341
			Max. Torque	19			-0.424
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.107	-0.848	1.452
			Max. Mx	20	-22.303	667.184	-0.031
			Max. My	2	-22.254	-0.469	675.489
			Max. Vy	20	-19.925	667.184	-0.031
L20	44.287 - 39.287	Pole	Max. Vx	2	-20.420	-0.469	675.489
			Max. Torque	19			-0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.684	-1.104	1.596
			Max. Mx	20	-23.492	767.030	-0.005
			Max. My	2	-23.446	-0.546	778.030
			Max. Vy	20	-20.070	767.030	-0.005
			Max. Vx	2	-20.616	-0.546	778.030
			Max. Torque	19			-0.567
			Max Tension	1	0.000	0.000	0.000
L21	39.287 - 34.287	Pole	Max. Compression	26	-50.319	-1.365	1.740
			Max. Mx	20	-24.709	867.565	0.023
			Max. My	2	-24.666	-0.625	881.519
			Max. Vy	20	-20.203	867.565	0.023
			Max. Vx	2	-20.800	-0.625	881.519
			Max. Torque	19			-0.567
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.596	-1.406	1.763
			Max. Mx	20	-24.905	883.459	0.027
			Max. My	2	-24.864	-0.638	897.893
L22	34.287 - 33.5	Pole	Max. Vy	20	-20.246	883.459	0.027
			Max. Vx	2	-20.828	-0.638	897.893
			Max. Torque	12			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.703	-1.421	1.773
			Max. Mx	20	-24.992	888.516	0.028
			Max. My	2	-24.952	-0.642	903.101
			Max. Vy	20	-20.254	888.516	0.028
			Max. Vx	2	-20.837	-0.642	903.101
			Max. Torque	12			0.573
L24	33.25 - 33	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.809	-1.435	1.780
			Max. Mx	20	-25.070	893.578	0.030
			Max. My	2	-25.029	-0.646	908.313
			Max. Vy	20	-20.273	893.578	0.030
			Max. Vx	2	-20.856	-0.646	908.313
			Max. Torque	12			0.576
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.909	-1.448	1.787
			Max. Mx	20	-25.141	898.644	0.031
L25	33 - 32.75	Pole	Max. My	2	-25.101	-0.650	913.529
			Max. Vy	20	-20.291	898.644	0.031
			Max. Vx	2	-20.873	-0.650	913.529
			Max. Torque	12			0.579
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.210	-1.486	1.807
			Max. Mx	20	-25.351	913.871	0.035
			Max. My	2	-25.311	-0.662	929.206

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L27	32 - 31.75	Pole	Max. Vy	20	-20.352	913.871	0.035
			Max. Vx	2	-20.931	-0.662	929.206
			Max. Torque	12			0.588
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.297	-1.499	1.815
			Max. Mx	20	-25.415	918.955	0.037
			Max. My	2	-25.376	-0.666	934.439
			Max. Vy	20	-20.363	918.955	0.037
L28	31.75 - 28.5	Pole	Max. Vx	2	-20.938	-0.666	934.439
			Max. Torque	12			0.591
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.412	-1.639	1.885
			Max. Mx	20	-26.183	985.388	0.055
			Max. My	2	-26.148	-0.720	1002.802
			Max. Vy	20	-20.570	985.388	0.055
			Max. Vx	2	-21.142	-0.720	1002.802
L29	28.5 - 28.25	Pole	Max. Torque	12			0.616
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.517	-1.652	1.892
			Max. Mx	20	-26.272	990.525	0.057
			Max. My	2	-26.238	-0.724	1008.087
			Max. Vy	20	-20.572	990.525	0.057
			Max. Vx	2	-21.147	-0.724	1008.087
			Max. Torque	12			0.617
L30	28.25 - 27.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.831	-1.682	1.907
			Max. Mx	20	-26.499	1005.961	0.061
			Max. My	2	-26.464	-0.736	1023.969
			Max. Vy	20	-20.633	1005.961	0.061
			Max. Vx	2	-21.206	-0.736	1023.969
			Max. Torque	12			0.622
			Max Tension	1	0.000	0.000	0.000
L31	27.5 - 27.25	Pole	Max. Compression	26	-52.917	-1.693	1.913
			Max. Mx	20	-26.563	1011.116	0.063
			Max. My	2	-26.529	-0.740	1029.272
			Max. Vy	20	-20.643	1011.116	0.063
			Max. Vx	2	-21.218	-0.740	1029.272
			Max. Torque	12			0.624
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.560	-1.906	2.019
L32	27.25 - 22.25	Pole	Max. Mx	20	-27.783	1114.524	0.092
			Max. My	2	-27.753	-0.825	1135.759
			Max. Vy	20	-20.771	1114.524	0.092
			Max. Vx	2	-21.387	-0.825	1135.759
			Max. Torque	12			0.667
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.947	-2.108	2.123
			Max. Mx	20	-28.848	1202.846	0.118
L33	22.25 - 18	Pole	Max. My	2	-28.823	-0.899	1226.840
			Max. Vy	20	-20.859	1202.846	0.118
			Max. Vx	2	-21.498	-0.899	1226.840
			Max. Torque	12			0.722
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.036	-2.122	2.131
			Max. Mx	20	-28.928	1208.052	0.120
			Max. My	2	-28.904	-0.903	1232.212
L34	18 - 17.75	Pole	Max. Vy	20	-20.848	1208.052	0.120
			Max. Vx	2	-21.490	-0.903	1232.212
			Max. Torque	12			0.725
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.822	-2.253	2.171
			Max. Mx	20	-28.928	1208.052	0.120
			Max. My	2	-28.904	-0.903	1232.212
			Max. Vy	20	-20.848	1208.052	0.120
L35	17.75 - 15.45	Pole	Max. Vx	2	-21.490	-0.903	1232.212
			Max. Torque	12			0.725
			Max Tension	1	0.000	0.000	0.000
Max. Compression	26	-56.822	-2.253	2.171			

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L36	15.45 - 15.2	Pole	Max. Mx	20	-29.516	1255.979	0.134
			Max. My	2	-29.495	-0.943	1281.676
			Max. Vy	20	-20.889	1255.979	0.134
			Max. Vx	2	-21.540	-0.943	1281.676
			Max. Torque	12			0.763
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.920	-2.269	2.177
			Max. Mx	20	-29.608	1261.192	0.135
			Max. My	2	-29.588	-0.948	1287.058
			Max. Vy	20	-20.872	1261.192	0.135
L37	15.2 - 13.41	Pole	Max. Vx	2	-21.525	-0.948	1287.058
			Max. Torque	12			0.767
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.623	-2.373	2.206
			Max. Mx	20	-30.130	1298.558	0.147
			Max. My	2	-30.111	-0.979	1325.640
			Max. Vy	20	-20.940	1298.558	0.147
			Max. Vx	2	-21.600	-0.979	1325.640
			Max. Torque	12			0.797
			Max Tension	1	0.000	0.000	0.000
L38	13.41 - 13.16	Pole	Max. Compression	26	-57.715	-2.389	2.211
			Max. Mx	20	-30.216	1303.783	0.148
			Max. My	2	-30.198	-0.984	1331.036
			Max. Vy	20	-20.921	1303.783	0.148
			Max. Vx	2	-21.584	-0.984	1331.036
			Max. Torque	12			0.801
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.529	-2.653	2.326
			Max. Mx	20	-31.622	1408.503	0.181
			Max. My	2	-31.610	-1.074	1439.234
L39	13.16 - 8.16	Pole	Max. Vy	20	-21.021	1408.503	0.181
			Max. Vx	2	-21.703	-1.074	1439.234
			Max. Torque	12			0.871
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.140	-2.750	2.355
			Max. Mx	20	-32.090	1443.365	0.192
			Max. My	2	-32.080	-1.104	1475.273
			Max. Vy	20	-21.063	1443.365	0.192
			Max. Vx	2	-21.751	-1.104	1475.273
			Max. Torque	12			0.899
L40	8.16 - 6.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.238	-2.765	2.360
			Max. Mx	20	-32.185	1448.620	0.193
			Max. My	2	-32.176	-1.109	1480.706
			Max. Vy	20	-21.042	1448.620	0.193
			Max. Vx	2	-21.731	-1.109	1480.706
			Max. Torque	12			0.903
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.942	-2.868	2.390
			Max. Mx	20	-32.725	1486.496	0.205
L41	6.5 - 6.25	Pole	Max. My	2	-32.717	-1.142	1519.872
			Max. Vy	20	-21.109	1486.496	0.205
			Max. Vx	2	-21.804	-1.142	1519.872
			Max. Torque	12			0.934
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.027	-2.883	2.395
			Max. Mx	20	-32.807	1491.763	0.207
			Max. My	2	-32.801	-1.147	1525.318
			Max. Vy	20	-21.088	1491.763	0.207
			Max. Vx	2	-21.784	-1.147	1525.318
L42	6.25 - 4.45	Pole	Max. Torque	12			0.938
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.027	-2.883	2.395
			Max. Mx	20	-32.807	1491.763	0.207
			Max. My	2	-32.801	-1.147	1525.318
			Max. Vy	20	-21.088	1491.763	0.207
L43	4.45 - 4.2	Pole	Max. Vx	2	-21.784	-1.147	1525.318
			Max. Torque	12			0.938

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L44	4.2 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.416	-3.096	2.494
			Max. M _x	20	-33.923	1580.361	0.236
			Max. M _y	2	-33.923	-1.225	1616.969
			Max. V _y	20	-21.161	1580.361	0.236
			Max. V _x	2	-21.869	-1.225	1616.969
			Max. Torque	12			1.004

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	38	62.416	3.305	5.741
	Max. H _x	21	25.453	21.139	-0.002
	Max. H _z	2	33.937	-0.002	21.846
	Max. M _x	2	1616.969	-0.002	21.846
	Max. M _z	8	1571.480	-20.866	0.002
	Max. Torsion	12	1.004	-12.374	-21.518
	Min. Vert	7	25.453	-18.072	10.483
	Min. H _x	9	25.453	-20.866	0.002
	Min. H _z	14	33.937	0.002	-21.761
	Min. M _x	14	-1612.472	0.002	-21.761
	Min. M _z	20	-1580.361	21.139	-0.002
	Min. Torsion	24	-1.002	12.373	21.517

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	28.281	0.000	0.000	-0.609	-0.556	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	33.937	0.002	-21.846	-1616.969	-1.225	-0.133
0.9 Dead+1.0 Wind 0 deg - No Ice	25.453	0.002	-21.846	-1592.426	-1.036	-0.134
1.2 Dead+1.0 Wind 30 deg - No Ice	33.937	10.464	-18.206	-1368.444	-787.508	-0.443
0.9 Dead+1.0 Wind 30 deg - No Ice	25.453	10.464	-18.206	-1347.465	-775.366	-0.444
1.2 Dead+1.0 Wind 60 deg - No Ice	33.937	18.072	-10.483	-789.743	-1361.298	-0.563
0.9 Dead+1.0 Wind 60 deg - No Ice	25.453	18.072	-10.483	-777.545	-1340.419	-0.563
1.2 Dead+1.0 Wind 90 deg - No Ice	33.937	20.866	-0.002	-1.302	-1571.480	-0.532
0.9 Dead+1.0 Wind 90 deg - No Ice	25.453	20.866	-0.002	-1.090	-1547.404	-0.532
1.2 Dead+1.0 Wind 120 deg - No Ice	33.937	18.596	10.784	798.384	-1379.996	-0.360
0.9 Dead+1.0 Wind 120 deg - No Ice	25.453	18.596	10.784	786.520	-1358.975	-0.359
1.2 Dead+1.0 Wind 150 deg - No Ice	33.937	12.374	21.518	1475.961	-849.849	-1.004

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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
No Ice						
0.9 Dead+1.0 Wind 150 deg - No Ice	25.453	12.374	21.518	1454.502	-837.211	-1.003
1.2 Dead+1.0 Wind 180 deg - No Ice	33.937	-0.002	21.761	1612.472	-0.158	0.132
0.9 Dead+1.0 Wind 180 deg - No Ice	25.453	-0.002	21.761	1588.355	0.008	0.133
1.2 Dead+1.0 Wind 210 deg - No Ice	33.937	-10.482	18.237	1368.123	786.826	0.445
0.9 Dead+1.0 Wind 210 deg - No Ice	25.453	-10.482	18.237	1347.538	775.034	0.446
1.2 Dead+1.0 Wind 240 deg - No Ice	33.937	-18.310	10.621	793.377	1368.872	0.565
0.9 Dead+1.0 Wind 240 deg - No Ice	25.453	-18.310	10.621	781.543	1348.281	0.566
1.2 Dead+1.0 Wind 270 deg - No Ice	33.937	-21.139	0.002	-0.236	1580.361	0.533
0.9 Dead+1.0 Wind 270 deg - No Ice	25.453	-21.139	0.002	-0.045	1556.562	0.533
1.2 Dead+1.0 Wind 300 deg - No Ice	33.937	-18.579	-10.773	-800.249	1379.177	0.358
0.9 Dead+1.0 Wind 300 deg - No Ice	25.453	-18.579	-10.773	-787.972	1358.494	0.357
1.2 Dead+1.0 Wind 330 deg - No Ice	33.937	-12.373	-21.517	-1477.468	848.459	1.002
0.9 Dead+1.0 Wind 330 deg - No Ice	25.453	-12.373	-21.517	-1455.605	836.173	1.001
1.2 Dead+1.0 Ice+1.0 Temp	62.416	0.000	-0.000	-2.494	-3.096	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	62.416	-0.003	-6.098	-486.023	-3.113	-0.059
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	62.416	3.023	-5.258	-419.752	-243.240	-0.125
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	62.416	5.238	-3.034	-243.389	-419.031	-0.144
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	62.416	6.050	0.003	-2.503	-483.395	-0.124
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	62.416	5.241	3.039	238.381	-419.104	-0.071
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	62.416	3.305	5.741	431.403	-252.978	-0.255
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	62.416	0.003	6.097	480.895	-3.220	0.059
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	62.416	-3.023	5.258	414.649	236.912	0.125
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	62.416	-5.240	3.035	238.324	412.778	0.144
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	62.416	-6.052	-0.003	-2.609	477.138	0.124
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	62.416	-5.241	-3.039	-243.500	412.783	0.071
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	62.416	-3.305	-5.741	-436.509	246.643	0.255
Dead+Wind 0 deg - Service	28.281	0.001	-5.606	-412.134	-0.707	-0.033
Dead+Wind 30 deg - Service	28.281	2.686	-4.673	-348.830	-200.883	-0.114
Dead+Wind 60 deg - Service	28.281	4.638	-2.690	-201.499	-346.958	-0.146
Dead+Wind 90 deg - Service	28.281	5.355	-0.001	-0.776	-400.465	-0.139
Dead+Wind 120 deg - Service	28.281	4.772	2.767	202.820	-351.737	-0.094
Dead+Wind 150 deg - Service	28.281	3.175	5.521	375.419	-216.818	-0.260
Dead+Wind 180 deg - Service	28.281	-0.001	5.585	410.096	-0.437	0.033
Dead+Wind 210 deg - Service	28.281	-2.690	4.680	347.859	199.919	0.115
Dead+Wind 240 deg - Service	28.281	-4.699	2.726	201.539	348.103	0.146

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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+Wind 270 deg - Service	28.281	-5.425	0.001	-0.506	401.943	0.139
Dead+Wind 300 deg - Service	28.281	-4.768	-2.765	-204.184	350.734	0.094
Dead+Wind 330 deg - Service	28.281	-3.175	-5.521	-376.692	215.669	0.260

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	0.000	-28.281	0.000	0.000	28.281	0.000	0.000%
2	0.002	-33.937	-21.846	-0.002	33.937	21.846	0.000%
3	0.002	-25.453	-21.846	-0.002	25.453	21.846	0.000%
4	10.464	-33.937	-18.206	-10.464	33.937	18.206	0.000%
5	10.464	-25.453	-18.206	-10.464	25.453	18.206	0.000%
6	18.072	-33.937	-10.483	-18.072	33.937	10.483	0.000%
7	18.072	-25.453	-10.483	-18.072	25.453	10.483	0.000%
8	20.866	-33.937	-0.002	-20.866	33.937	0.002	0.000%
9	20.866	-25.453	-0.002	-20.866	25.453	0.002	0.000%
10	18.596	-33.937	10.784	-18.596	33.937	-10.784	0.000%
11	18.596	-25.453	10.784	-18.596	25.453	-10.784	0.000%
12	12.374	-33.937	21.518	-12.374	33.937	-21.518	0.000%
13	12.374	-25.453	21.518	-12.374	25.453	-21.518	0.000%
14	-0.002	-33.937	21.761	0.002	33.937	-21.761	0.000%
15	-0.002	-25.453	21.761	0.002	25.453	-21.761	0.000%
16	-10.482	-33.937	18.237	10.482	33.937	-18.237	0.000%
17	-10.482	-25.453	18.237	10.482	25.453	-18.237	0.000%
18	-18.310	-33.937	10.621	18.310	33.937	-10.621	0.000%
19	-18.310	-25.453	10.621	18.310	25.453	-10.621	0.000%
20	-21.139	-33.937	0.002	21.139	33.937	-0.002	0.000%
21	-21.139	-25.453	0.002	21.139	25.453	-0.002	0.000%
22	-18.579	-33.937	-10.773	18.579	33.937	10.773	0.000%
23	-18.579	-25.453	-10.773	18.579	25.453	10.773	0.000%
24	-12.373	-33.937	-21.517	12.373	33.937	21.517	0.000%
25	-12.373	-25.453	-21.517	12.373	25.453	21.517	0.000%
26	0.000	-62.416	0.000	-0.000	62.416	0.000	0.000%
27	-0.003	-62.416	-6.098	0.003	62.416	6.098	0.000%
28	3.023	-62.416	-5.258	-3.023	62.416	5.258	0.000%
29	5.238	-62.416	-3.034	-5.238	62.416	3.034	0.000%
30	6.050	-62.416	0.003	-6.050	62.416	-0.003	0.000%
31	5.241	-62.416	3.039	-5.241	62.416	-3.039	0.000%
32	3.305	-62.416	5.741	-3.305	62.416	-5.741	0.000%
33	0.003	-62.416	6.097	-0.003	62.416	-6.097	0.000%
34	-3.023	-62.416	5.258	3.023	62.416	-5.258	0.000%
35	-5.240	-62.416	3.035	5.240	62.416	-3.035	0.000%
36	-6.051	-62.416	-0.003	6.052	62.416	0.003	0.000%
37	-5.241	-62.416	-3.039	5.241	62.416	3.039	0.000%
38	-3.305	-62.416	-5.741	3.305	62.416	5.741	0.000%
39	0.001	-28.281	-5.606	-0.001	28.281	5.606	0.000%
40	2.686	-28.281	-4.673	-2.686	28.281	4.673	0.000%
41	4.638	-28.281	-2.690	-4.638	28.281	2.690	0.000%
42	5.355	-28.281	-0.001	-5.355	28.281	0.001	0.000%
43	4.772	-28.281	2.767	-4.772	28.281	-2.767	0.000%
44	3.175	-28.281	5.521	-3.175	28.281	-5.521	0.000%
45	-0.001	-28.281	5.585	0.001	28.281	-5.585	0.000%
46	-2.690	-28.281	4.680	2.690	28.281	-4.680	0.000%
47	-4.699	-28.281	2.726	4.699	28.281	-2.726	0.000%
48	-5.425	-28.281	0.001	5.425	28.281	-0.001	0.000%
49	-4.768	-28.281	-2.765	4.768	28.281	2.765	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
50	-3.175	-28.281	-5.521	3.175	28.281	5.521	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.0000001	0.00049042
3	Yes	5	0.0000001	0.00018520
4	Yes	7	0.0000001	0.00022527
5	Yes	7	0.0000001	0.00005201
6	Yes	7	0.0000001	0.00023225
7	Yes	7	0.0000001	0.00005394
8	Yes	6	0.0000001	0.00010094
9	Yes	5	0.0000001	0.00062385
10	Yes	7	0.0000001	0.00022718
11	Yes	7	0.0000001	0.00005238
12	Yes	7	0.0000001	0.00024510
13	Yes	7	0.0000001	0.00005576
14	Yes	5	0.0000001	0.00052977
15	Yes	5	0.0000001	0.00020876
16	Yes	7	0.0000001	0.00023102
17	Yes	7	0.0000001	0.00005362
18	Yes	7	0.0000001	0.00022471
19	Yes	7	0.0000001	0.00005185
20	Yes	6	0.0000001	0.00009443
21	Yes	5	0.0000001	0.00058219
22	Yes	7	0.0000001	0.00023294
23	Yes	7	0.0000001	0.00005388
24	Yes	7	0.0000001	0.00023709
25	Yes	7	0.0000001	0.00005363
26	Yes	4	0.0000001	0.00080487
27	Yes	7	0.0000001	0.00061397
28	Yes	7	0.0000001	0.00083838
29	Yes	7	0.0000001	0.00084352
30	Yes	7	0.0000001	0.00061098
31	Yes	7	0.0000001	0.00082644
32	Yes	7	0.0000001	0.00085790
33	Yes	7	0.0000001	0.00060722
34	Yes	7	0.0000001	0.00082303
35	Yes	7	0.0000001	0.00081716
36	Yes	7	0.0000001	0.00060547
37	Yes	7	0.0000001	0.00083298
38	Yes	7	0.0000001	0.00085213
39	Yes	5	0.0000001	0.00010619
40	Yes	5	0.0000001	0.00085146
41	Yes	5	0.0000001	0.00091754
42	Yes	5	0.0000001	0.00013320
43	Yes	5	0.0000001	0.00085989
44	Yes	6	0.0000001	0.00006863
45	Yes	5	0.0000001	0.00010599
46	Yes	5	0.0000001	0.00090142
47	Yes	5	0.0000001	0.00084020
48	Yes	5	0.0000001	0.00013233
49	Yes	5	0.0000001	0.00091638
50	Yes	5	0.0000001	0.00093257

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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	98 - 93	20.794	50	2.004	0.002
L2	93 - 88	18.700	50	1.988	0.002
L3	88 - 82.79	16.647	50	1.929	0.002
L4	85.207 - 80.207	15.534	50	1.875	0.002
L5	80.207 - 75.207	13.607	50	1.792	0.002
L6	75.207 - 70.207	11.794	50	1.667	0.002
L7	70.207 - 65.207	10.124	50	1.519	0.001
L8	65.207 - 60.207	8.618	50	1.354	0.001
L9	60.207 - 59.17	7.294	50	1.172	0.001
L10	59.17 - 58.9	7.044	50	1.133	0.001
L11	58.9 - 58.75	6.980	50	1.128	0.001
L12	58.75 - 54	6.945	50	1.125	0.001
L13	54 - 53.75	5.873	50	1.028	0.001
L14	53.75 - 52.91	5.820	50	1.023	0.001
L15	52.91 - 52.66	5.641	50	1.006	0.001
L16	52.66 - 52.17	5.588	50	1.002	0.001
L17	52.17 - 51.92	5.486	50	0.995	0.001
L18	51.92 - 45.287	5.434	50	0.990	0.001
L19	48.704 - 44.287	4.790	50	0.924	0.001
L20	44.287 - 39.287	3.957	50	0.868	0.001
L21	39.287 - 34.287	3.102	50	0.764	0.001
L22	34.287 - 33.5	2.358	50	0.657	0.001
L23	33.5 - 33.25	2.252	50	0.640	0.000
L24	33.25 - 33	2.218	50	0.636	0.000
L25	33 - 32.75	2.185	50	0.633	0.000
L26	32.75 - 32	2.152	50	0.629	0.000
L27	32 - 31.75	2.054	50	0.618	0.000
L28	31.75 - 28.5	2.022	50	0.613	0.000
L29	28.5 - 28.25	1.626	50	0.549	0.000
L30	28.25 - 27.5	1.598	50	0.545	0.000
L31	27.5 - 27.25	1.513	50	0.535	0.000
L32	27.25 - 22.25	1.485	50	0.530	0.000
L33	22.25 - 18	0.982	50	0.431	0.000
L34	18 - 17.75	0.637	50	0.346	0.000
L35	17.75 - 15.45	0.619	50	0.341	0.000
L36	15.45 - 15.2	0.469	50	0.283	0.000
L37	15.2 - 13.41	0.454	50	0.279	0.000
L38	13.41 - 13.16	0.354	50	0.251	0.000
L39	13.16 - 8.16	0.341	50	0.246	0.000
L40	8.16 - 6.5	0.133	50	0.151	0.000
L41	6.5 - 6.25	0.086	50	0.121	0.000
L42	6.25 - 4.45	0.080	50	0.117	0.000
L43	4.45 - 4.2	0.041	50	0.089	0.000
L44	4.2 - 0	0.037	50	0.084	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
98.000	Miscellaneous [NA 510-1]	50	20.794	2.004	0.002	7495
96.000	APXVTM14-ALU-120 w/ Mount Pipe	50	19.954	2.000	0.002	7495
91.000	Miscellaneous [NA 510-1]	50	17.871	1.971	0.002	5078
89.000	APXVAARR24 43-U-NA20 w/ Mount Pipe	50	17.052	1.945	0.002	4059
77.000	7770.00 w/ Mount Pipe	50	12.429	1.717	0.002	2242
67.000	(2) SBNHH-1D65B w/ Mount Pipe	50	9.138	1.414	0.001	1708
52.000	KS24019-L112A	50	5.451	0.991	0.001	3043
48.000	MX08FRO665-21 w/ Mount Pipe	50	4.653	0.913	0.001	3705

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	98 - 93	81.575	24	7.889	0.006
L2	93 - 88	73.375	24	7.825	0.006
L3	88 - 82.79	65.332	24	7.592	0.006
L4	85.207 - 80.207	60.971	24	7.380	0.006
L5	80.207 - 75.207	53.417	24	7.055	0.006
L6	75.207 - 70.207	46.309	24	6.563	0.006
L7	70.207 - 65.207	39.758	24	5.979	0.005
L8	65.207 - 60.207	33.849	24	5.328	0.005
L9	60.207 - 59.17	28.652	24	4.610	0.004
L10	59.17 - 58.9	27.669	24	4.457	0.003
L11	58.9 - 58.75	27.418	24	4.437	0.003
L12	58.75 - 54	27.279	24	4.425	0.003
L13	54 - 53.75	23.071	24	4.045	0.003
L14	53.75 - 52.91	22.860	24	4.025	0.003
L15	52.91 - 52.66	22.159	24	3.957	0.003
L16	52.66 - 52.17	21.952	24	3.942	0.003
L17	52.17 - 51.92	21.550	24	3.912	0.003
L18	51.92 - 45.287	21.346	24	3.892	0.003
L19	48.704 - 44.287	18.814	24	3.633	0.003
L20	44.287 - 39.287	15.543	24	3.415	0.003
L21	39.287 - 34.287	12.185	24	3.002	0.002
L22	34.287 - 33.5	9.264	24	2.581	0.002
L23	33.5 - 33.25	8.845	24	2.514	0.002
L24	33.25 - 33	8.713	24	2.500	0.002
L25	33 - 32.75	8.583	24	2.486	0.002
L26	32.75 - 32	8.453	24	2.472	0.002
L27	32 - 31.75	8.068	24	2.429	0.002
L28	31.75 - 28.5	7.942	24	2.410	0.002
L29	28.5 - 28.25	6.389	24	2.156	0.002
L30	28.25 - 27.5	6.276	24	2.143	0.002
L31	27.5 - 27.25	5.943	24	2.102	0.002
L32	27.25 - 22.25	5.833	24	2.083	0.002
L33	22.25 - 18	3.858	24	1.692	0.001
L34	18 - 17.75	2.501	24	1.358	0.001
L35	17.75 - 15.45	2.431	24	1.339	0.001
L36	15.45 - 15.2	1.840	24	1.113	0.001
L37	15.2 - 13.41	1.782	24	1.097	0.001
L38	13.41 - 13.16	1.392	24	0.986	0.001
L39	13.16 - 8.16	1.340	24	0.968	0.001
L40	8.16 - 6.5	0.524	24	0.593	0.000

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L41	6.5 - 6.25	0.338	24	0.473	0.000
L42	6.25 - 4.45	0.314	24	0.458	0.000
L43	4.45 - 4.2	0.162	24	0.348	0.000
L44	4.2 - 0	0.144	24	0.329	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
98.000	Miscellaneous [NA 510-1]	24	81.575	7.889	0.006	1971
96.000	APXVTM14-ALU-I20 w/ Mount Pipe	24	78.287	7.874	0.006	1971
91.000	Miscellaneous [NA 510-1]	24	70.128	7.759	0.006	1334
89.000	APXVAARR24_43-U-NA20 w/ Mount Pipe	24	66.918	7.658	0.006	1065
77.000	7770.00 w/ Mount Pipe	24	48.799	6.757	0.006	583
67.000	(2) SBNHH-1D65B w/ Mount Pipe	24	35.890	5.564	0.005	441
52.000	KS24019-L112A	24	21.411	3.899	0.003	781
48.000	MX08FRO665-21 w/ Mount Pipe	24	18.278	3.592	0.003	950

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 P _u / φP _n
L1	98 - 93 (1)	TP13.078x12x0.188	5.000	0.000	0.0	7.672	-3.361	448.789	0.007
L2	93 - 88 (2)	TP14.156x13.078x0.188	5.000	0.000	0.0	8.313	-6.587	486.327	0.014
L3	88 - 82.79 (3)	TP15.28x14.156x0.188	5.210	0.000	0.0	8.672	-6.735	507.296	0.013
L4	82.79 - 80.207 (4)	TP15.445x14.384x0.25	5.000	0.000	0.0	12.058	-7.151	705.368	0.010
L5	80.207 - 75.207 (5)	TP16.507x15.445x0.25	5.000	0.000	0.0	12.900	-10.735	754.650	0.014
L6	75.207 - 70.207 (6)	TP17.569x16.507x0.25	5.000	0.000	0.0	13.742	-11.236	803.931	0.014
L7	70.207 - 65.207 (7)	TP18.63x17.569x0.25	5.000	0.000	0.0	14.585	-15.022	853.213	0.018
L8	65.207 - 60.207 (8)	TP19.692x18.63x0.25	5.000	0.000	0.0	15.427	-15.695	902.494	0.017
L9	60.207 - 59.17 (9)	TP19.912x19.692x0.25	1.037	0.000	0.0	15.602	-15.838	912.715	0.017
L10	59.17 - 58.9 (10)	TP19.97x19.912x0.513	0.270	0.000	0.0	31.650	-15.905	1851.540	0.009
L11	58.9 - 58.75 (11)	TP20.001x19.97x0.513	0.150	0.000	0.0	31.702	-15.933	1854.570	0.009
L12	58.75 - 54 (12)	TP21.01x20.001x0.5	4.750	0.000	0.0	32.549	-16.752	1904.140	0.009
L13	54 - 53.75 (13)	TP21.063x21.01x0.513	0.250	0.000	0.0	33.429	-16.815	1955.600	0.009
L14	53.75 - 52.91	TP21.241x21.063x0.5	0.840	0.000	0.0	32.917	-16.979	1925.620	0.009

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	Client Crown Castle	Designed by JD Prabhu

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L15	52.91 - 52.66 (14)	TP21.294x21.241x0.675	0.250	0.000	0.0	44.176	-17.042	2584.310	0.007
L16	52.66 - 52.17 (15)	TP21.399x21.294x0.675	0.490	0.000	0.0	44.399	-17.146	2597.350	0.007
L17	52.17 - 51.92 (16)	TP21.452x21.399x0.525	0.250	0.000	0.0	34.871	-17.278	2039.960	0.008
L18	51.92 - 45.287 (17)	TP22.86x21.452x0.513	6.633	0.000	0.0	35.172	-17.935	2057.560	0.009
L19	45.287 - (18)	TP22.575x21.634x0.563	4.417	0.000	0.0	39.300	-22.175	2299.030	0.010
L20	44.287 (19)	TP23.639x22.575x0.55	5.000	0.000	0.0	40.306	-23.358	2357.890	0.010
L21	39.287 (20)	TP24.703x23.639x0.538	5.000	0.000	0.0	41.227	-24.575	2411.760	0.010
L22	34.287 (21)	TP24.87x24.703x0.525	0.787	0.000	0.0	40.568	-24.774	2373.220	0.010
L23	33.5 - 33.25 (22)	TP24.923x24.87x0.838	0.250	0.000	0.0	64.026	-24.862	3745.520	0.007
L24	33.25 - 33 (24)	TP24.977x24.923x0.838	0.250	0.000	0.0	64.167	-24.940	3753.800	0.007
L25	33 - 32.75 (25)	TP25.03x24.977x0.813	0.250	0.000	0.0	62.454	-25.012	3653.540	0.007
L26	32.75 - 32 (26)	TP25.19x25.03x0.8	0.750	0.000	0.0	61.930	-25.222	3622.900	0.007
L27	32 - 31.75 (27)	TP25.243x25.19x0.588	0.250	0.000	0.0	45.975	-25.286	2689.550	0.009
L28	31.75 - 28.5 (28)	TP25.934x25.243x0.575	3.250	0.000	0.0	46.282	-26.062	2707.510	0.010
L29	28.5 - 28.25 (29)	TP25.988x25.934x0.863	0.250	0.000	0.0	68.782	-26.153	4023.740	0.006
L30	28.25 - 27.5 (30)	TP26.147x25.988x0.85	0.750	0.000	0.0	68.249	-26.380	3992.590	0.007
L31	27.5 - 27.25 (31)	TP26.2x26.147x0.575	0.250	0.000	0.0	46.768	-26.446	2735.910	0.010
L32	27.25 - 22.25 (32)	TP27.265x26.2x0.563	5.000	0.000	0.0	47.673	-27.675	2788.890	0.010
L33	22.25 - 18 (33)	TP28.169x27.265x0.55	4.250	0.000	0.0	48.215	-28.753	2820.560	0.010
L34	18 - 17.75 (34)	TP28.222x28.169x0.563	0.250	0.000	0.0	49.383	-28.837	2888.910	0.010
L35	17.75 - 15.45 (35)	TP28.712x28.222x0.425	2.300	0.000	0.0	38.158	-29.433	2232.210	0.013
L36	15.45 - 15.2 (36)	TP28.765x28.712x0.688	0.250	0.000	0.0	61.269	-29.529	3584.220	0.008
L37	15.2 - 13.41 (37)	TP29.146x28.765x0.675	1.790	0.000	0.0	60.998	-30.053	3568.360	0.008
L38	13.41 - 13.16 (38)	TP29.199x29.146x0.563	0.250	0.000	0.0	51.127	-30.144	2990.940	0.010
L39	13.16 - 8.16 (39)	TP30.263x29.199x0.55	5.000	0.000	0.0	51.871	-31.572	3034.430	0.010
L40	8.16 - 6.5 (40)	TP30.617x30.263x0.55	1.660	0.000	0.0	52.487	-32.046	3070.510	0.010
L41	6.5 - 6.25 (41)	TP30.67x30.617x0.663	0.250	0.000	0.0	63.099	-32.147	3691.270	0.009
L42	6.25 - 4.45 (42)	TP31.053x30.67x0.65	1.800	0.000	0.0	62.724	-32.690	3669.370	0.009
L43	4.45 - 4.2 (43)	TP31.106x31.053x0.513	0.250	0.000	0.0	49.766	-32.778	2911.300	0.011
L44	4.2 - 0 (44)	TP32x31.106x0.5	4.200	0.000	0.0	49.991	-33.920	2924.440	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
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<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 46 of 51</p>
	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

Section No.	Elevation ft	Size	M_{ux}	ϕM_{rx}	Ratio	M_{uy}	ϕM_{ry}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{rx}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{ry}}$
L1	98 - 93 (1)	TP13.078x12x0.188	17.825	150.088	0.119	0.000	150.088	0.000
L2	93 - 88 (2)	TP14.156x13.078x0.188	46.987	176.441	0.266	0.000	176.441	0.000
L3	88 - 82.79 (3)	TP15.28x14.156x0.188	70.194	192.089	0.365	0.000	192.089	0.000
L4	82.79 - 80.207 (4)	TP15.445x14.384x0.25	112.498	277.548	0.405	0.000	277.548	0.000
L5	80.207 - 75.207 (5)	TP16.507x15.445x0.25	163.124	318.022	0.513	0.000	318.022	0.000
L6	75.207 - 70.207 (6)	TP17.569x16.507x0.25	227.666	361.249	0.630	0.000	361.249	0.000
L7	70.207 - 65.207 (7)	TP18.63x17.569x0.25	299.961	407.231	0.737	0.000	407.231	0.000
L8	65.207 - 60.207 (8)	TP19.692x18.63x0.25	385.578	455.967	0.846	0.000	455.967	0.000
L9	60.207 - 59.17 (9)	TP19.912x19.692x0.25	403.536	466.420	0.865	0.000	466.420	0.000
L10	59.17 - 58.9 (10)	TP19.97x19.912x0.513	408.224	923.883	0.442	0.000	923.883	0.000
L11	58.9 - 58.75 (11)	TP20.001x19.97x0.513	410.831	926.950	0.443	0.000	926.950	0.000
L12	58.75 - 54 (12)	TP21.01x20.001x0.5	494.462	1003.458	0.493	0.000	1003.458	0.000
L13	54 - 53.75 (13)	TP21.063x21.01x0.513	498.923	1032.050	0.483	0.000	1032.050	0.000
L14	53.75 - 52.91 (14)	TP21.241x21.063x0.5	513.951	1026.500	0.501	0.000	1026.500	0.000
L15	52.91 - 52.66 (15)	TP21.294x21.241x0.675	518.437	1358.092	0.382	0.000	1358.092	0.000
L16	52.66 - 52.17 (16)	TP21.399x21.294x0.675	527.248	1372.050	0.384	0.000	1372.050	0.000
L17	52.17 - 51.92 (17)	TP21.452x21.399x0.525	531.770	1096.117	0.485	0.000	1096.117	0.000
L18	51.92 - 45.287 (18)	TP22.86x21.452x0.513	590.498	1143.850	0.516	0.000	1143.850	0.000
L19	45.287 - 44.287 (19)	TP22.575x21.634x0.563	681.443	1298.800	0.525	0.000	1298.800	0.000
L20	44.287 - 39.287 (20)	TP23.639x22.575x0.55	788.446	1399.575	0.563	0.000	1399.575	0.000
L21	39.287 - 34.287 (21)	TP24.703x23.639x0.538	897.767	1500.608	0.598	0.000	1500.608	0.000
L22	34.287 - 33.5 (22)	TP24.87x24.703x0.525	915.183	1488.617	0.615	0.000	1488.617	0.000
L23	33.5 - 33.25 (23)	TP24.923x24.87x0.838	920.725	2294.717	0.401	0.000	2294.717	0.000
L24	33.25 - 33 (24)	TP24.977x24.923x0.838	926.275	2305.033	0.402	0.000	2305.033	0.000
L25	33 - 32.75 (25)	TP25.03x24.977x0.813	931.833	2253.233	0.414	0.000	2253.233	0.000
L26	32.75 - 32 (26)	TP25.19x25.03x0.8	948.542	2251.850	0.421	0.000	2251.850	0.000
L27	32 - 31.75 (27)	TP25.243x25.19x0.588	954.125	1704.742	0.560	0.000	1704.742	0.000
L28	31.75 - 28.5 (28)	TP25.934x25.243x0.575	1027.175	1767.133	0.581	0.000	1767.133	0.000
L29	28.5 - 28.25 (29)	TP25.988x25.934x0.863	1032.833	2572.625	0.401	0.000	2572.625	0.000
L30	28.25 - 27.5 (30)	TP26.147x25.988x0.85	1049.842	2572.008	0.408	0.000	2572.008	0.000
L31	27.5 - 27.25 (31)	TP26.2x26.147x0.575	1055.525	1804.817	0.585	0.000	1804.817	0.000
L32	27.25 - 22.25 (32)	TP27.265x26.2x0.563	1170.200	1919.633	0.610	0.000	1919.633	0.000
L33	22.25 - 18 (33)	TP28.169x27.265x0.55	1269.233	2010.375	0.631	0.000	2010.375	0.000
L34	18 - 17.75 (34)	TP28.222x28.169x0.563	1275.100	2061.283	0.619	0.000	2061.283	0.000
L35	17.75 - 15.45 (35)	TP28.712x28.222x0.425	1329.292	1637.342	0.812	0.000	1637.342	0.000
L36	15.45 - 15.2	TP28.765x28.712x0.688	1335.208	2585.492	0.516	0.000	2585.492	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
L37	15.2 - 13.41 (36)	TP29.146x28.765x0.675	1377.683	2612.108	0.527	0.000	2612.108	0.000
L38	13.41 - 13.16 (37)	TP29.199x29.146x0.563	1383.642	2210.950	0.626	0.000	2210.950	0.000
L39	13.16 - 8.16 (38)	TP30.263x29.199x0.55	1503.700	2330.017	0.645	0.000	2330.017	0.000
L40	8.16 - 6.5 (40)	TP30.617x30.263x0.55	1543.983	2386.267	0.647	0.000	2386.267	0.000
L41	6.5 - 6.25 (41)	TP30.67x30.617x0.663	1550.067	2852.433	0.543	0.000	2852.433	0.000
L42	6.25 - 4.45 (42)	TP31.053x30.67x0.65	1594.025	2874.850	0.554	0.000	2874.850	0.000
L43	4.45 - 4.2 (43)	TP31.106x31.053x0.513	1600.158	2305.683	0.694	0.000	2305.683	0.000
L44	4.2 - 0 (44)	TP32x31.106x0.5	1703.758	2386.767	0.714	0.000	2386.767	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	98 - 93 (1)	TP13.078x12x0.188	4.524	134.637	0.034	0.000	151.992	0.000
L2	93 - 88 (2)	TP14.156x13.078x0.188	8.266	145.898	0.057	0.001	178.482	0.000
L3	88 - 82.79 (3)	TP15.28x14.156x0.188	8.363	152.189	0.055	0.001	194.205	0.000
L4	82.79 - 80.207 (4)	TP15.445x14.384x0.25	8.560	211.610	0.040	0.001	281.598	0.000
L5	80.207 - 75.207 (5)	TP16.507x15.445x0.25	12.849	226.395	0.057	0.017	322.322	0.000
L6	75.207 - 70.207 (6)	TP17.569x16.507x0.25	12.988	241.179	0.054	0.017	365.794	0.000
L7	70.207 - 65.207 (7)	TP18.63x17.569x0.25	16.983	255.964	0.066	0.167	412.015	0.000
L8	65.207 - 60.207 (8)	TP19.692x18.63x0.25	17.302	270.748	0.064	0.249	460.986	0.001
L9	60.207 - 59.17 (9)	TP19.912x19.692x0.25	17.373	273.815	0.063	0.258	471.487	0.001
L10	59.17 - 58.9 (10)	TP19.97x19.912x0.513	17.380	555.463	0.031	0.260	946.483	0.000
L11	58.9 - 58.75 (11)	TP20.001x19.97x0.513	17.394	556.372	0.031	0.261	949.583	0.000
L12	58.75 - 54 (12)	TP21.01x20.001x0.5	17.840	571.241	0.031	0.314	1026.042	0.000
L13	54 - 53.75 (13)	TP21.063x21.01x0.513	17.855	586.680	0.030	0.317	1055.858	0.000
L14	53.75 - 52.91 (14)	TP21.241x21.063x0.5	17.942	577.687	0.031	0.330	1049.325	0.000
L15	52.91 - 52.66 (15)	TP21.294x21.241x0.675	17.962	775.293	0.023	0.333	1399.983	0.000
L16	52.66 - 52.17 (16)	TP21.399x21.294x0.675	18.014	779.205	0.023	0.341	1414.150	0.000
L17	52.17 - 51.92 (17)	TP21.452x21.399x0.525	18.109	611.987	0.030	0.341	1121.558	0.000
L18	51.92 - 45.287 (18)	TP22.86x21.452x0.513	18.433	617.267	0.030	0.232	1168.825	0.000
L19	45.287 - 44.287 (19)	TP22.575x21.634x0.563	21.182	689.710	0.031	0.388	1329.558	0.000
L20	44.287 - 39.287 (20)	TP23.639x22.575x0.55	21.654	707.368	0.031	0.479	1430.292	0.000
L21	39.287 - 34.287 (21)	TP24.703x23.639x0.538	22.111	723.527	0.031	0.559	1531.183	0.000
L22	34.287 - 33.5	TP24.87x24.703x0.525	22.177	711.965	0.031	0.568	1517.933	0.000

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 127643.011.01 - (F) E. GRANBY 4Q2000 / GALASSO, CT (BU# 876399)</p>	<p>Page 48 of 51</p>
	<p>Project</p>	<p>Date 15:42:44 04/07/22</p>
	<p>Client Crown Castle</p>	<p>Designed by JD Prabhu</p>

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 $\frac{T_u}{\phi T_n}$
L23	33.5 - 33.25 (22)	TP24.923x24.87x0.838	22.193	1123.660	0.020	0.571	2370.167	0.000
L24	33.25 - 33 (24)	TP24.977x24.923x0.838	22.219	1126.140	0.020	0.573	2380.650	0.000
L25	33 - 32.75 (25)	TP25.03x24.977x0.813	22.245	1096.060	0.020	0.576	2324.575	0.000
L26	32.75 - 32 (26)	TP25.19x25.03x0.8	22.327	1086.870	0.021	0.585	2321.458	0.000
L27	32 - 31.75 (27)	TP25.243x25.19x0.588	22.345	806.865	0.028	0.588	1742.167	0.000
L28	31.75 - 28.5 (28)	TP25.934x25.243x0.575	22.637	812.253	0.028	0.613	1803.892	0.000
L29	28.5 - 28.25 (29)	TP25.988x25.934x0.863	22.646	1207.120	0.019	0.615	2656.075	0.000
L30	28.25 - 27.5 (30)	TP26.147x25.988x0.85	22.724	1197.780	0.019	0.620	2653.567	0.000
L31	27.5 - 27.25 (31)	TP26.2x26.147x0.575	22.741	820.774	0.028	0.621	1841.942	0.000
L32	27.25 - 22.25 (32)	TP27.265x26.2x0.563	23.155	836.666	0.028	0.664	1956.492	0.000
L33	22.25 - 18 (33)	TP28.169x27.265x0.55	23.488	846.168	0.028	0.719	2046.658	0.000
L34	18 - 17.75 (34)	TP28.222x28.169x0.563	23.492	866.674	0.027	0.723	2099.350	0.000
L35	17.75 - 15.45 (35)	TP28.712x28.222x0.425	23.666	669.664	0.035	0.761	1658.900	0.000
L36	15.45 - 15.2 (36)	TP28.765x28.712x0.688	23.662	1075.270	0.022	0.765	2643.958	0.000
L37	15.2 - 13.41 (37)	TP29.146x28.765x0.675	23.835	1070.510	0.022	0.794	2669.150	0.000
L38	13.41 - 13.16 (38)	TP29.199x29.146x0.563	23.830	897.283	0.027	0.799	2250.258	0.000
L39	13.16 - 8.16 (39)	TP30.263x29.199x0.55	24.222	910.328	0.027	0.869	2368.808	0.000
L40	8.16 - 6.5 (40)	TP30.617x30.263x0.55	24.362	921.152	0.026	0.896	2425.475	0.000
L41	6.5 - 6.25 (41)	TP30.67x30.617x0.663	24.353	1107.380	0.022	0.900	2910.075	0.000
L42	6.25 - 4.45 (42)	TP31.053x30.67x0.65	24.529	1100.810	0.022	0.931	2930.950	0.000
L43	4.45 - 4.2 (43)	TP31.106x31.053x0.513	24.522	873.391	0.028	0.935	2340.025	0.000
L44	4.2 - 0 (44)	TP32x31.106x0.5	24.845	877.333	0.028	1.002	2420.225	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	98 - 93 (1)	0.007	0.119	0.000	0.034	0.000	0.127	1.050	4.8.2 ✓
L2	93 - 88 (2)	0.014	0.266	0.000	0.057	0.000	0.283	1.050	4.8.2 ✓
L3	88 - 82.79 (3)	0.013	0.365	0.000	0.055	0.000	0.382	1.050	4.8.2 ✓
L4	82.79 - 80.207 (4)	0.010	0.405	0.000	0.040	0.000	0.417	1.050	4.8.2 ✓
L5	80.207 - 75.207 (5)	0.014	0.513	0.000	0.057	0.000	0.530	1.050	4.8.2 ✓
L6	75.207 - 70.207 (6)	0.014	0.630	0.000	0.054	0.000	0.647	1.050	4.8.2 ✓

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L7	70.207 - 65.207 (7)	0.018	0.737	0.000	0.066	0.000	0.759	1.050	4.8.2 ✓
L8	65.207 - 60.207 (8)	0.017	0.846	0.000	0.064	0.001	0.867	1.050	4.8.2 ✓
L9	60.207 - 59.17 (9)	0.017	0.865	0.000	0.063	0.001	0.887	1.050	4.8.2 ✓
L10	59.17 - 58.9 (10)	0.009	0.442	0.000	0.031	0.000	0.451	1.050	4.8.2 ✓
L11	58.9 - 58.75 (11)	0.009	0.443	0.000	0.031	0.000	0.453	1.050	4.8.2 ✓
L12	58.75 - 54 (12)	0.009	0.493	0.000	0.031	0.000	0.503	1.050	4.8.2 ✓
L13	54 - 53.75 (13)	0.009	0.483	0.000	0.030	0.000	0.493	1.050	4.8.2 ✓
L14	53.75 - 52.91 (14)	0.009	0.501	0.000	0.031	0.000	0.510	1.050	4.8.2 ✓
L15	52.91 - 52.66 (15)	0.007	0.382	0.000	0.023	0.000	0.389	1.050	4.8.2 ✓
L16	52.66 - 52.17 (16)	0.007	0.384	0.000	0.023	0.000	0.391	1.050	4.8.2 ✓
L17	52.17 - 51.92 (17)	0.008	0.485	0.000	0.030	0.000	0.495	1.050	4.8.2 ✓
L18	51.92 - 45.287 (18)	0.009	0.516	0.000	0.030	0.000	0.526	1.050	4.8.2 ✓
L19	45.287 - 44.287 (19)	0.010	0.525	0.000	0.031	0.000	0.535	1.050	4.8.2 ✓
L20	44.287 - 39.287 (20)	0.010	0.563	0.000	0.031	0.000	0.574	1.050	4.8.2 ✓
L21	39.287 - 34.287 (21)	0.010	0.598	0.000	0.031	0.000	0.609	1.050	4.8.2 ✓
L22	34.287 - 33.5 (22)	0.010	0.615	0.000	0.031	0.000	0.626	1.050	4.8.2 ✓
L23	33.5 - 33.25 (23)	0.007	0.401	0.000	0.020	0.000	0.408	1.050	4.8.2 ✓
L24	33.25 - 33 (24)	0.007	0.402	0.000	0.020	0.000	0.409	1.050	4.8.2 ✓
L25	33 - 32.75 (25)	0.007	0.414	0.000	0.020	0.000	0.421	1.050	4.8.2 ✓
L26	32.75 - 32 (26)	0.007	0.421	0.000	0.021	0.000	0.429	1.050	4.8.2 ✓
L27	32 - 31.75 (27)	0.009	0.560	0.000	0.028	0.000	0.570	1.050	4.8.2 ✓
L28	31.75 - 28.5 (28)	0.010	0.581	0.000	0.028	0.000	0.592	1.050	4.8.2 ✓
L29	28.5 - 28.25 (29)	0.006	0.401	0.000	0.019	0.000	0.408	1.050	4.8.2 ✓
L30	28.25 - 27.5 (30)	0.007	0.408	0.000	0.019	0.000	0.415	1.050	4.8.2 ✓
L31	27.5 - 27.25 (31)	0.010	0.585	0.000	0.028	0.000	0.595	1.050	4.8.2 ✓
L32	27.25 - 22.25 (32)	0.010	0.610	0.000	0.028	0.000	0.620	1.050	4.8.2 ✓

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Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L33	22.25 - 18 (33)	0.010	0.631	0.000	0.028	0.000	0.642	1.050	4.8.2 ✓
L34	18 - 17.75 (34)	0.010	0.619	0.000	0.027	0.000	0.629	1.050	4.8.2 ✓
L35	17.75 - 15.45 (35)	0.013	0.812	0.000	0.035	0.000	0.826	1.050	4.8.2 ✓
L36	15.45 - 15.2 (36)	0.008	0.516	0.000	0.022	0.000	0.525	1.050	4.8.2 ✓
L37	15.2 - 13.41 (37)	0.008	0.527	0.000	0.022	0.000	0.536	1.050	4.8.2 ✓
L38	13.41 - 13.16 (38)	0.010	0.626	0.000	0.027	0.000	0.637	1.050	4.8.2 ✓
L39	13.16 - 8.16 (39)	0.010	0.645	0.000	0.027	0.000	0.656	1.050	4.8.2 ✓
L40	8.16 - 6.5 (40)	0.010	0.647	0.000	0.026	0.000	0.658	1.050	4.8.2 ✓
L41	6.5 - 6.25 (41)	0.009	0.543	0.000	0.022	0.000	0.553	1.050	4.8.2 ✓
L42	6.25 - 4.45 (42)	0.009	0.554	0.000	0.022	0.000	0.564	1.050	4.8.2 ✓
L43	4.45 - 4.2 (43)	0.011	0.694	0.000	0.028	0.000	0.706	1.050	4.8.2 ✓
L44	4.2 - 0 (44)	0.012	0.714	0.000	0.028	0.000	0.726	1.050	4.8.2 ✓

Section Capacity Table

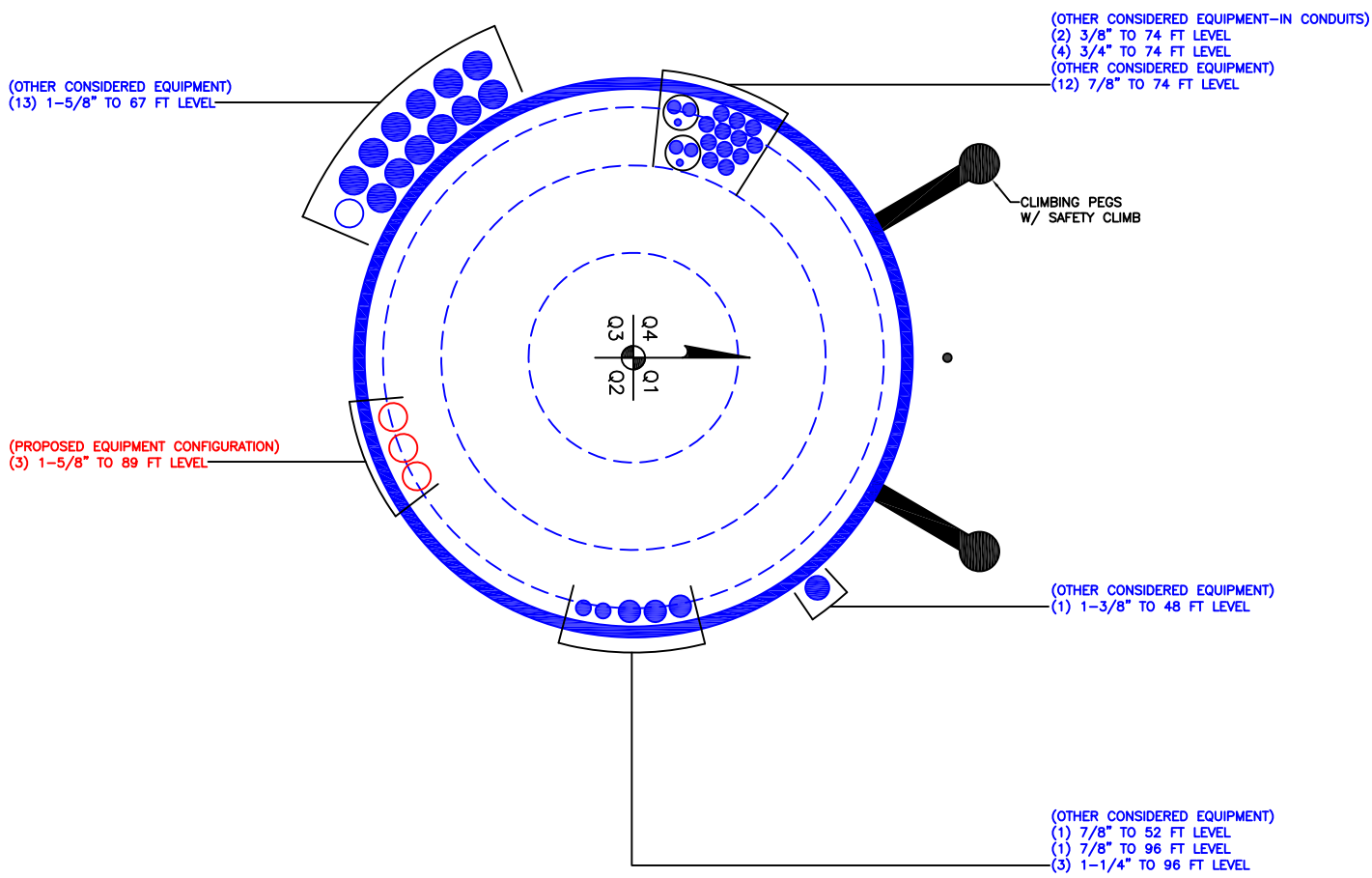
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	98 - 93	Pole	TP13.078x12x0.188	1	-3.361	471.228	**	**
L2	93 - 88	Pole	TP14.156x13.078x0.188	2	-6.587	510.643	**	**
L3	88 - 82.79	Pole	TP15.28x14.156x0.188	3	-6.735	532.661	**	**
L4	82.79 - 80.207	Pole	TP15.445x14.384x0.25	4	-7.151	740.636	**	**
L5	80.207 - 75.207	Pole	TP16.507x15.445x0.25	5	-10.735	792.382	**	**
L6	75.207 - 70.207	Pole	TP17.569x16.507x0.25	6	-11.236	844.128	**	**
L7	70.207 - 65.207	Pole	TP18.63x17.569x0.25	7	-15.022	895.874	**	**
L8	65.207 - 60.207	Pole	TP19.692x18.63x0.25	8	-15.695	947.619	**	**
L9	60.207 - 59.17	Pole	TP19.912x19.692x0.25	9	-15.838	958.351	**	**
L10	59.17 - 58.9	Pole	TP19.97x19.912x0.513	10	-15.905	1944.117	**	**
L11	58.9 - 58.75	Pole	TP20.001x19.97x0.513	11	-15.933	1947.298	**	**
L12	58.75 - 54	Pole	TP21.01x20.001x0.5	12	-16.752	1999.347	**	**
L13	54 - 53.75	Pole	TP21.063x21.01x0.513	13	-16.815	2053.380	**	**
L14	53.75 - 52.91	Pole	TP21.241x21.063x0.5	14	-16.979	2021.901	**	**
L15	52.91 - 52.66	Pole	TP21.294x21.241x0.675	15	-17.042	2713.525	**	**
L16	52.66 - 52.17	Pole	TP21.399x21.294x0.675	16	-17.146	2727.217	**	**
L17	52.17 - 51.92	Pole	TP21.452x21.399x0.525	17	-17.278	2141.958	**	**
L18	51.92 - 45.287	Pole	TP22.86x21.452x0.513	18	-17.935	2160.438	**	**
L19	45.287 - 44.287	Pole	TP22.575x21.634x0.563	19	-22.175	2413.981	**	**
L20	44.287 - 39.287	Pole	TP23.639x22.575x0.55	20	-23.358	2475.784	**	**
L21	39.287 - 34.287	Pole	TP24.703x23.639x0.538	21	-24.575	2532.348	**	**

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L22	34.287 - 33.5	Pole	TP24.87x24.703x0.525	22	-24.774	2491.881	**	**
L23	33.5 - 33.25	Pole	TP24.923x24.87x0.838	23	-24.862	3932.796	**	**
L24	33.25 - 33	Pole	TP24.977x24.923x0.838	24	-24.940	3941.490	**	**
L25	33 - 32.75	Pole	TP25.03x24.977x0.813	25	-25.012	3836.217	**	**
L26	32.75 - 32	Pole	TP25.19x25.03x0.8	26	-25.222	3804.045	**	**
L27	32 - 31.75	Pole	TP25.243x25.19x0.588	27	-25.286	2824.027	**	**
L28	31.75 - 28.5	Pole	TP25.934x25.243x0.575	28	-26.062	2842.885	**	**
L29	28.5 - 28.25	Pole	TP25.988x25.934x0.863	29	-26.153	4224.927	**	**
L30	28.25 - 27.5	Pole	TP26.147x25.988x0.85	30	-26.380	4192.219	**	**
L31	27.5 - 27.25	Pole	TP26.2x26.147x0.575	31	-26.446	2872.705	**	**
L32	27.25 - 22.25	Pole	TP27.265x26.2x0.563	32	-27.675	2928.334	**	**
L33	22.25 - 18	Pole	TP28.169x27.265x0.55	33	-28.753	2961.588	**	**
L34	18 - 17.75	Pole	TP28.222x28.169x0.563	34	-28.837	3033.355	**	**
L35	17.75 - 15.45	Pole	TP28.712x28.222x0.425	35	-29.433	2343.820	**	**
L36	15.45 - 15.2	Pole	TP28.765x28.712x0.688	36	-29.529	3763.431	**	**
L37	15.2 - 13.41	Pole	TP29.146x28.765x0.675	37	-30.053	3746.778	**	**
L38	13.41 - 13.16	Pole	TP29.199x29.146x0.563	38	-30.144	3140.487	**	**
L39	13.16 - 8.16	Pole	TP30.263x29.199x0.55	39	-31.572	3186.151	**	**
L40	8.16 - 6.5	Pole	TP30.617x30.263x0.55	40	-32.046	3224.035	**	**
L41	6.5 - 6.25	Pole	TP30.67x30.617x0.663	41	-32.147	3875.833	**	**
L42	6.25 - 4.45	Pole	TP31.053x30.67x0.65	42	-32.690	3852.838	**	**
L43	4.45 - 4.2	Pole	TP31.106x31.053x0.513	43	-32.778	3056.865	**	**
L44	4.2 - 0	Pole	TP32x31.106x0.5	44	-33.920	3070.662	**	**
						Summary		
						Pole (L9)	**	**
						RATING =	**	**

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

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876399

APPENDIX C
ADDITIONAL CALCULATIONS

TNX Geometry Input

Increment (ft): [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	98 - 93	5		18	12.000	13.078	0.1875	A572-65	1.000
2	93 - 88	5		18	13.078	14.156	0.1875	A572-65	1.000
3	88 - 85.207	5.21	2.417	18	14.156	15.280	0.1875	A572-65	1.000
4	85.207 - 80.207	5		18	14.384	15.445	0.25	A572-65	1.000
5	80.207 - 75.207	5		18	15.445	16.507	0.25	A572-65	1.000
6	75.207 - 70.207	5		18	16.507	17.569	0.25	A572-65	1.000
7	70.207 - 65.207	5		18	17.569	18.630	0.25	A572-65	1.000
8	65.207 - 60.207	5		18	18.630	19.692	0.25	A572-65	1.000
9	60.207 - 59.17	1.037		18	19.692	19.912	0.25	A572-65	1.000
10	59.17 - 58.9	0.27		18	19.912	19.970	0.5125	A572-65	0.921
11	58.9 - 58.75	0.15		18	19.970	20.001	0.5125	A572-65	0.920
12	58.75 - 54	4.75		18	20.001	21.010	0.5	A572-65	0.921
13	54 - 53.75	0.25		18	21.010	21.063	0.5125	A572-65	1.085
14	53.75 - 52.91	0.84		18	21.063	21.241	0.5	A572-65	1.106
15	52.91 - 52.66	0.25		18	21.241	21.294	0.675	A572-65	0.927
16	52.66 - 52.17	0.49		18	21.294	21.399	0.675	A572-65	0.924
17	52.17 - 51.92	0.25		18	21.399	21.452	0.525	A572-65	1.049
18	51.92 - 48.704	6.633	3.417	18	21.452	22.860	0.5125	A572-65	1.055
19	48.704 - 44.287	4.417		18	21.634	22.575	0.5625	A572-65	1.064
20	44.287 - 39.287	5		18	22.575	23.639	0.55	A572-65	1.064
21	39.287 - 34.287	5		18	23.639	24.703	0.5375	A572-65	1.066
22	34.287 - 33.5	0.787		18	24.703	24.870	0.525	A572-65	1.087
23	33.5 - 33.25	0.25		18	24.870	24.923	0.8375	A572-65	0.971
24	33.25 - 33	0.25		18	24.923	24.977	0.8375	A572-65	0.970
25	33 - 32.75	0.25		18	24.977	25.030	0.8125	A572-65	0.897
26	32.75 - 32	0.75		18	25.030	25.190	0.8	A572-65	0.907
27	32 - 31.75	0.25		18	25.190	25.243	0.5875	A572-65	0.929
28	31.75 - 28.5	3.25		18	25.243	25.934	0.575	A572-65	0.938
29	28.5 - 28.25	0.25		18	25.934	25.988	0.8625	A572-65	0.894
30	28.25 - 27.5	0.75		18	25.988	26.147	0.85	A572-65	0.903
31	27.5 - 27.25	0.25		18	26.147	26.200	0.575	A572-65	0.934
32	27.25 - 22.25	5		18	26.200	27.265	0.5625	A572-65	0.938
33	22.25 - 18	4.25		18	27.265	28.169	0.55	A572-65	0.946
34	18 - 17.75	0.25		18	28.169	28.222	0.5625	A572-65	1.052
35	17.75 - 15.45	2.3		18	28.222	28.712	0.425	A572-65	1.217
36	15.45 - 15.2	0.25		18	28.712	28.765	0.6875	A572-65	0.954
37	15.2 - 13.41	1.79		18	28.765	29.146	0.675	A572-65	0.965
38	13.41 - 13.16	0.25		18	29.146	29.199	0.5625	A572-65	1.035
39	13.16 - 8.16	5		18	29.199	30.263	0.55	A572-65	1.040
40	8.16 - 6.5	1.66		18	30.263	30.617	0.55	A572-65	1.035
41	6.5 - 6.25	0.25		18	30.617	30.670	0.6625	A572-65	0.957
42	6.25 - 4.45	1.8		18	30.670	31.053	0.65	A572-65	0.968
43	4.45 - 4.2	0.25		18	31.053	31.106	0.5125	A572-65	0.980
44	4.2 - 0	4.2		18	31.106	32.000	0.5	A572-65	0.994

TNX Section Forces

Increment (ft):		TNX Output		
	5	P _u	M _{ux} (kip-ft)	V _u (K)
	Section Height (ft)	(K)		
1	98 - 93	3.36	17.82	4.52
2	93 - 88	6.59	46.99	8.27
3	88 - 85.207	6.74	70.19	8.36
4	85.207 - 80.207	7.15	112.50	8.56
5	80.207 - 75.207	10.74	163.12	12.85
6	75.207 - 70.207	11.24	227.67	12.99
7	70.207 - 65.207	15.02	299.96	16.98
8	65.207 - 60.207	15.70	385.58	17.30
9	60.207 - 59.17	15.84	403.54	17.37
10	59.17 - 58.9	15.91	408.22	17.38
11	58.9 - 58.75	15.93	410.83	17.39
12	58.75 - 54	16.75	494.46	17.84
13	54 - 53.75	16.81	498.92	17.85
14	53.75 - 52.91	16.98	513.95	17.94
15	52.91 - 52.66	17.04	518.44	17.96
16	52.66 - 52.17	17.15	527.25	18.01
17	52.17 - 51.92	17.28	531.77	18.11
18	51.92 - 48.704	17.94	590.50	18.43
19	48.704 - 44.287	22.17	681.44	21.18
20	44.287 - 39.287	23.36	788.45	21.65
21	39.287 - 34.287	24.57	897.77	22.11
22	34.287 - 33.5	24.77	915.18	22.18
23	33.5 - 33.25	24.86	920.72	22.19
24	33.25 - 33	24.94	926.27	22.22
25	33 - 32.75	25.01	931.83	22.24
26	32.75 - 32	25.22	948.54	22.33
27	32 - 31.75	25.29	954.12	22.34
28	31.75 - 28.5	26.06	1027.18	22.64
29	28.5 - 28.25	26.15	1032.84	22.65
30	28.25 - 27.5	26.38	1049.84	22.72
31	27.5 - 27.25	26.45	1055.53	22.74
32	27.25 - 22.25	27.68	1170.20	23.16
33	22.25 - 18	28.75	1269.23	23.49
34	18 - 17.75	28.84	1275.10	23.49
35	17.75 - 15.45	29.43	1329.29	23.67
36	15.45 - 15.2	29.53	1335.20	23.66
37	15.2 - 13.41	30.05	1377.69	23.84
38	13.41 - 13.16	30.14	1383.64	23.83
39	13.16 - 8.16	31.57	1503.70	24.22
40	8.16 - 6.5	32.05	1543.98	24.36
41	6.5 - 6.25	32.15	1550.07	24.35
42	6.25 - 4.45	32.69	1594.03	24.53
43	4.45 - 4.2	32.78	1600.15	24.52
44	4.2 - 0	33.92	1703.76	24.84

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
98 - 93	Pole	TP13.078x12x0.1875	Pole	12.1%	Pass
93 - 88	Pole	TP14.156x13.078x0.1875	Pole	26.9%	Pass
88 - 85.21	Pole	TP15.28x14.156x0.1875	Pole	36.3%	Pass
85.21 - 80.21	Pole	TP15.445x14.384x0.25	Pole	39.7%	Pass
80.21 - 75.21	Pole	TP16.507x15.445x0.25	Pole	50.5%	Pass
75.21 - 70.21	Pole	TP17.569x16.507x0.25	Pole	61.6%	Pass
70.21 - 65.21	Pole	TP18.63x17.569x0.25	Pole	72.2%	Pass
65.21 - 60.21	Pole	TP19.692x18.63x0.25	Pole	82.5%	Pass
60.21 - 59.17	Pole	TP19.912x19.692x0.25	Pole	84.4%	Pass
59.17 - 58.9	Pole + Reinf.	TP19.97x19.912x0.5125	Reinf. 10 Compression	76.0%	Pass
58.9 - 58.75	Pole + Reinf.	TP20.001x19.97x0.5125	Reinf. 10 Compression	76.3%	Pass
58.75 - 54	Pole + Reinf.	TP21.01x20.001x0.5	Reinf. 10 Compression	85.1%	Pass
54 - 53.75	Pole + Reinf.	TP21.063x21.01x0.5125	Reinf. 10 Compression	76.3%	Pass
53.75 - 52.91	Pole + Reinf.	TP21.241x21.063x0.5	Reinf. 10 Compression	77.6%	Pass
52.91 - 52.66	Pole + Reinf.	TP21.294x21.241x0.675	Reinf. 8 Compression	74.9%	Pass
52.66 - 52.17	Pole + Reinf.	TP21.399x21.294x0.675	Reinf. 8 Compression	75.7%	Pass
52.17 - 51.92	Pole + Reinf.	TP21.452x21.399x0.525	Reinf. 9 Compression	81.0%	Pass
51.92 - 48.7	Pole + Reinf.	TP22.86x21.452x0.5125	Reinf. 9 Compression	85.8%	Pass
48.7 - 44.29	Pole + Reinf.	TP22.575x21.634x0.5625	Reinf. 7 Compression	83.9%	Pass
44.29 - 39.29	Pole + Reinf.	TP23.639x22.575x0.55	Reinf. 7 Compression	90.2%	Pass
39.29 - 34.29	Pole + Reinf.	TP24.703x23.639x0.5375	Reinf. 7 Compression	95.7%	Pass
34.29 - 33.5	Pole + Reinf.	TP24.87x24.703x0.525	Reinf. 7 Compression	96.5%	Pass
33.5 - 33.25	Pole + Reinf.	TP24.923x24.87x0.8375	Reinf. 7 Compression	65.4%	Pass
33.25 - 33	Pole + Reinf.	TP24.977x24.923x0.8375	Reinf. 7 Compression	65.6%	Pass
33 - 32.75	Pole + Reinf.	TP25.03x24.977x0.8125	Reinf. 7 Compression	71.1%	Pass
32.75 - 32	Pole + Reinf.	TP25.19x25.03x0.8	Reinf. 7 Compression	71.8%	Pass
32 - 31.75	Pole + Reinf.	TP25.243x25.19x0.5875	Reinf. 6 Tension Rupture	86.7%	Pass
31.75 - 28.5	Pole + Reinf.	TP25.934x25.243x0.575	Reinf. 6 Tension Rupture	89.5%	Pass
28.5 - 28.25	Pole + Reinf.	TP25.988x25.934x0.8625	Reinf. 6 Tension Rupture	62.3%	Pass
28.25 - 27.5	Pole + Reinf.	TP26.147x25.988x0.85	Reinf. 6 Tension Rupture	62.8%	Pass
27.5 - 27.25	Pole + Reinf.	TP26.2x26.147x0.575	Reinf. 5 Tension Rupture	90.5%	Pass
27.25 - 22.25	Pole + Reinf.	TP27.265x26.2x0.5625	Reinf. 5 Tension Rupture	94.2%	Pass
22.25 - 18	Pole + Reinf.	TP28.169x27.265x0.55	Reinf. 5 Tension Rupture	96.9%	Pass
18 - 17.75	Pole + Reinf.	TP28.222x28.169x0.5625	Reinf. 5 Tension Rupture	88.9%	Pass
17.75 - 15.45	Pole + Reinf.	TP28.712x28.222x0.425	Pole	89.9%	Pass
15.45 - 15.2	Pole + Reinf.	TP28.765x28.712x0.6875	Reinf. 3 Tension Rupture	88.4%	Pass
15.2 - 13.41	Pole + Reinf.	TP29.146x28.765x0.675	Reinf. 3 Tension Rupture	89.4%	Pass
13.41 - 13.16	Pole + Reinf.	TP29.199x29.146x0.5625	Reinf. 4 Tension Rupture	93.2%	Pass
13.16 - 8.16	Pole + Reinf.	TP30.263x29.199x0.55	Reinf. 4 Tension Rupture	95.8%	Pass
8.16 - 6.5	Pole + Reinf.	TP30.617x30.263x0.55	Reinf. 4 Tension Rupture	96.5%	Pass
6.5 - 6.25	Pole + Reinf.	TP30.67x30.617x0.6625	Reinf. 3 Tension Rupture	92.9%	Pass
6.25 - 4.45	Pole + Reinf.	TP31.053x30.67x0.65	Reinf. 3 Tension Rupture	93.7%	Pass
4.45 - 4.2	Pole + Reinf.	TP31.106x31.053x0.5125	Reinf. 1 Tension Rupture	95.1%	Pass
4.2 - 0	Pole + Reinf.	TP32x31.106x0.5	Reinf. 2 Tension Rupture	96.8%	Pass
				Summary	
			Pole	90.0%	Pass
			Reinforcement	96.9%	Pass
			Overall	96.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity* (100% Max. Allowable)												
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
98 - 93	161	n/a	161	7.67	n/a	7.67	12.1%												
93 - 88	205	n/a	205	8.31	n/a	8.31	26.9%												
88 - 85.21	233	n/a	233	8.67	n/a	8.67	36.3%												
85.21 - 80.21	352	n/a	352	12.06	n/a	12.06	39.7%												
80.21 - 75.21	431	n/a	431	12.90	n/a	12.90	50.5%												
75.21 - 70.21	521	n/a	521	13.74	n/a	13.74	61.6%												
70.21 - 65.21	622	n/a	622	14.58	n/a	14.58	72.2%												
65.21 - 60.21	736	n/a	736	15.43	n/a	15.43	82.5%												
60.21 - 59.17	762	n/a	762	15.60	n/a	15.60	84.4%												
59.17 - 58.9	768	754	1522	15.65	13.50	29.15	42.3%								76.0%		76.0%		
58.9 - 58.75	772	756	1528	15.67	13.50	29.17	42.4%								76.3%		76.3%		
58.75 - 54	897	829	1726	16.47	13.50	29.97	47.4%								85.1%		85.1%		
54 - 53.75	905	864	1769	16.51	19.75	36.26	48.1%								76.3%		76.3%		50.0%
53.75 - 52.91	929	877	1806	16.66	19.75	36.41	48.9%								77.6%		77.6%		51.0%
52.91 - 52.66	1003	1447	2449	16.70	24.25	40.95	42.5%								74.9%	60.0%	56.0%		51.5%
52.66 - 52.17	1018	1460	2478	16.78	24.25	41.03	42.9%								75.7%	60.6%	56.6%		52.0%
52.17 - 51.92	958	956	1914	16.82	19.75	36.57	48.6%								76.5%	81.0%			56.5%
51.92 - 48.7	1054	1013	2067	17.36	19.75	37.11	51.5%								81.1%	85.8%			60.1%
48.7 - 44.29	1387	1008	2395	22.08	19.75	41.83	53.0%								83.9%	83.9%			57.8%
44.29 - 39.29	1595	1099	2694	23.14	19.75	42.89	57.0%								90.2%	90.2%			62.7%
39.29 - 34.29	1823	1194	3017	24.19	19.75	43.94	60.4%								95.7%	95.7%			67.0%
34.29 - 33.5	1861	1209	3070	24.36	19.75	44.11	60.9%								96.5%	96.5%			67.7%
33.5 - 33.25	1872	2805	4677	24.41	37.75	62.16	40.4%						62.8%	65.4%	65.4%				50.7%
33.25 - 33	1885	2816	4701	24.46	37.75	62.21	40.6%						62.9%	65.6%	65.6%				50.8%
33 - 32.75	1892	2708	4599	24.52	31.50	56.02	39.9%						64.3%	71.1%	71.1%				
32.75 - 32	1929	2740	4669	24.67	31.50	56.17	40.2%						64.9%	71.8%	71.8%				
32 - 31.75	1941	1577	3518	24.73	18.00	42.73	53.7%						86.7%						
31.75 - 28.5	2107	1660	3767	25.41	18.00	43.41	55.5%						89.5%						
28.5 - 28.25	2120	3333	5453	25.47	36.00	61.47	38.7%		62.3%	62.3%		62.3%	62.3%						
28.25 - 27.5	2160	3372	5532	25.62	36.00	61.62	39.0%		62.8%	62.8%		62.8%	62.8%						
27.5 - 27.25	2173	1692	3866	25.68	18.00	43.68	56.1%		90.5%	90.5%		90.5%							
27.25 - 22.25	2453	1825	4278	26.73	18.00	44.73	58.5%		94.2%	94.2%		94.2%							
22.25 - 18	2708	1942	4650	27.63	18.00	45.63	60.3%		96.9%	96.9%		96.9%							
18 - 17.75	2729	2035	4765	27.68	24.25	51.93	61.7%		88.9%	86.7%		88.9%							72.6%
17.75 - 15.45	3303	945	4247	28.17	18.25	46.42	90.0%		89.6%			89.6%							89.0%
15.45 - 15.2	2998	3180	6178	28.22	30.25	58.47	55.9%		82.9%	88.4%	70.5%	67.3%							73.8%
15.2 - 13.41	3118	3262	6380	28.60	30.25	58.85	56.6%		83.8%	89.4%	71.3%	68.1%							74.7%
13.41 - 13.16	3024	2280	5304	28.65	24.25	52.90	61.3%		86.4%	90.2%	93.2%								81.2%
13.16 - 8.16	3371	2441	5812	29.71	24.25	53.96	63.1%		88.8%	92.7%	95.8%								83.7%
8.16 - 6.5	3492	2496	5987	30.06	24.25	54.31	63.8%		89.6%	93.5%	96.5%								84.5%
6.5 - 6.25	3632	3601	7233	30.11	30.25	60.36	59.2%	71.3%	87.3%	92.9%	74.6%								78.1%
6.25 - 4.45	3769	3689	7458	30.49	30.25	60.74	59.9%	72.0%	88.1%	93.7%	75.3%								78.9%
4.45 - 4.2	3716	2201	5918	30.54	18.25	48.79	73.3%	95.1%	95.1%										94.3%
4.2 - 0	4047	2326	6373	31.43	18.25	49.68	75.0%	96.8%	96.8%										96.0%

Note: Section capacity checked using 5 degree increments.
 *Rating per TIA-222-H Section 15.5.

Monopole Base Plate Connection

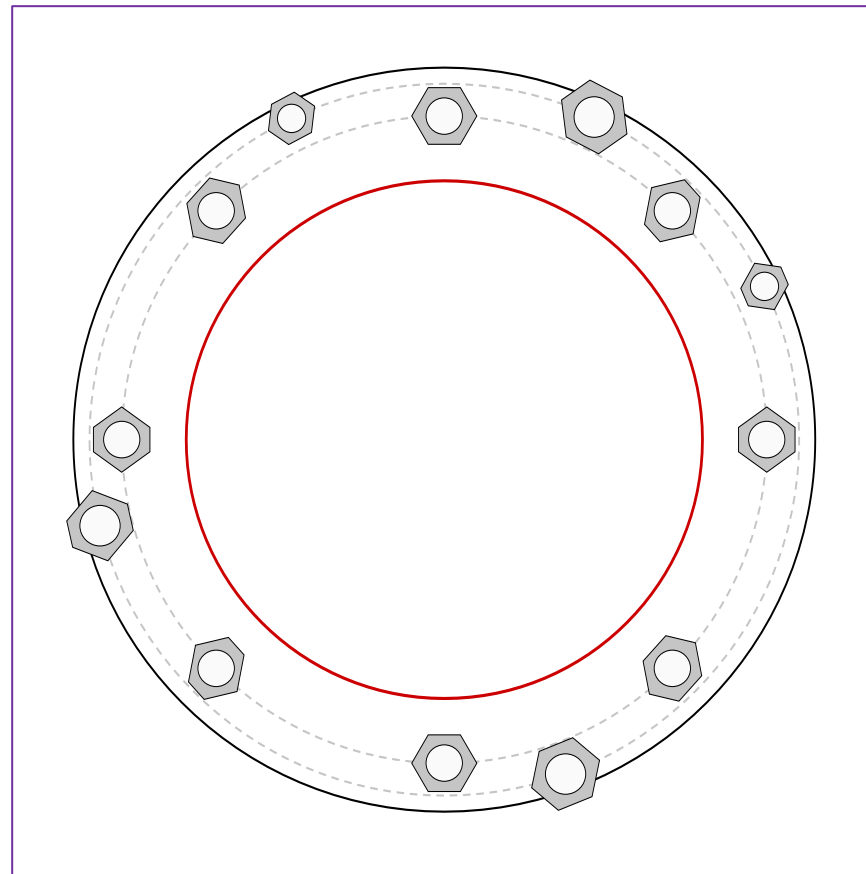


Site Info	
BU #	876399
Site Name	GRANBY 4Q2000 / GAL
Order #	609932, Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	1703.76
Axial Force (kips)	33.92
Shear Force (kips)	24.84

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data

GROUP 1: (8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 40" BC
 GROUP 2: (3) 2-1/2" ϕ bolts (A722 N; $F_y=127.7$ ksi, $F_u=125$ ksi) on 44" BC
pos. (deg): 65, 194, 290

GROUP 3: (2) 1-3/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 44" BC

Base Plate Data

46" OD x 1.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)

Stiffener Data

N/A

Pole Data

32" x 0.3125" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary (units of kips, kip-in)		
GROUP 1:		
$P_{u,t} = 156.59$	$\phi P_{n,t} = 243.75$	Stress Rating
$V_u = 3.11$	$\phi V_n = 149.1$	61.2%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u,t} = 210.58$	$\phi P_{n,t} = 382.5$	Stress Rating
$V_u = 0$	$\phi V_n = 191.25$	52.4%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 3:		
$P_{u,t} = 94.2$	$\phi P_{n,t} = 178.13$	Stress Rating
$V_u = 0$	$\phi V_n = 112.75$	50.4%
$M_u = n/a$	$\phi M_n = n/a$	Pass

Base Plate Summary		
Max Stress (ksi):	56.32	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	99.3%	Pass

CCIplate

Elevation (ft) (Base)

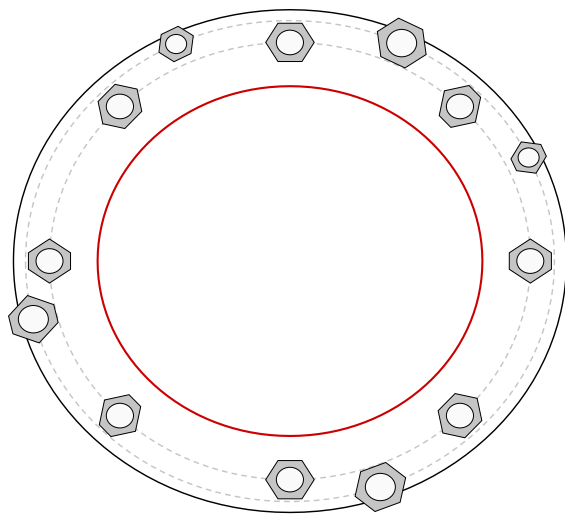
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	
3	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	I_{ar} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	2.25	A615-75	40	0.5	0	N-Included		No
2	1	45	2.25	A615-75	40	0.5	0	N-Included		No
3	1	90	2.25	A615-75	40	0.5	0	N-Included		No
4	1	135	2.25	A615-75	40	0.5	0	N-Included		No
5	1	180	2.25	A615-75	40	0.5	0	N-Included		No
6	1	225	2.25	A615-75	40	0.5	0	N-Included		No
7	1	270	2.25	A615-75	40	0.5	0	N-Included		No
8	1	315	2.25	A615-75	40	0.5	0	N-Included		No
9	2	65	2.5	A722	44	0.5	0	N-Included	4.08	No
10	2	194	2.5	A722	44	0.5	0	N-Included	4.08	No
11	2	290	2.5	A722	44	0.5	0	N-Included	4.08	No
12	3	25.5	1.75	A193 Gr. B7	44	0.5	0	N-Included		No
13	3	115.5	1.75	A193 Gr. B7	44	0.5	0	N-Included		No

Plot Graphic



PROJECT **127643.011.01 - (F) E.GRANBY 4Q2000 GALASSO, CT**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **04/07/22**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



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

Analysis Criteria	
Design/Analysis	Analysis
Load Type	Current Load
Current load	210.58 kips
AR Capacity	683.6 kips

Tower Type	Monopole
------------	----------

Manufacturers Tower Prop.	
Pole Thickness	0.3125 in
Pole Grade	A572-65
Fy	65 ksi
Fu	80 ksi
Base Plate Gr.	A633/A871
Fy	60 ksi
Fu	80 ksi

Post-Installed Adhesive AR Mod.	
ARB Type	Welded
Size	2 1/2 - 150 in
Grade	'22-150 (William
Fy	127.7 ksi
Fu	150 ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	41.0%	-
Tube Compression	61.5%	-
Gusset Shear	24.8%	-
Gusset Flexure	N/A	-
Welds	Gusset to Tower and BP	56.0% -
	Gusset to Tube	25.0% -
	Geometry	N/A -
Tower Punching	24.8%	-
Tube Punching	35.6%	-
Utilization		61.5%

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness	1.25 in	FEXX
Width at Tube	3.5 in	70 ksi
Height at Pole	36 in	Weld Type
Height at Tube	18 in	CJP - Double Bevel
Grade	A572-65	Fillet Size
Fy	65 ksi	5/8 in
Fu	80 ksi	Bevel Depth
		1/2 in
Weld - Gusset to Tower		Weld - Gusset to Base Plate
FEXX	70 ksi	FEXX
Weld Type	Double Fillet	70 ksi
Fillet Size	3/8 in	Weld Type
		CJP - Double Bevel
		Fillet Size
		5/8 in
		Bevel Depth
		1/2 in
		Gap
		0 in
		Notch (horiz)
		0.75 in
		Notch (vert)
		0.75 in
		Pipe/Tube Welded to
		Base/Footpad?
		Yes
		Fillet Size
		3/8 in

Pile Foundation

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



BU #: 876399
 Site Name: (F) E. GRANBY 4Q2000 / GAL
 Order: 609932, Rev. 0

Tower Type: Monopole
 TIA Revision: H

Top & Bot. Pad Rein. Different?:

Factored Design Reactions At Base		
Moment, M:	1703.76	ft-kips
Axial, Pu:	33.92	kips
Shear, Sc:	24.84	kips
Load Eccentricity, Ecc:	0	in
Bolt Circle / Bearing Plate Width, BC:	40	in

Pile Properties		
Pile Shape:	Round	
Pile Material:	Steel	
Length of Pile, Lpile:	32	ft
Pile Diameter:	1.8	in
Pile (Soil) Capacity Given?	Yes	
Steel Grade, Fy:	150	ksi

Pile Group		
Group Configuration:	Rectangular	
Number of Columns, Nx:	2	
Number of Rows, Ny:	2	
Column Spacing, Dx:	120	in
Row Spacing, Dy:	120	in
Orientation of Neutral Axis, θ:	0	deg
Group Efficiency Given in Geotech?	No	

Program Calculated Group Efficiency, Eg: 1.00

Pile Cap		
Cap Type:	Block	
Depth to Bottom of Block, D:	3.00	ft
Thickness of Block, T:	3.00	ft
Block Width, Wx:	14.00	ft
Block Length, Wy:	14.00	ft
Pad Rebar Size (Bot.), Spad:	8	
Pad Rebar Quantity (X-direction) (Bot.), Mpad:	15	
Pad Rebar Quantity (Y-direction) (Bot.), Mpad _y :	15	

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Strength, Fc:	4	ksi
Clear Cover, cc:	3	in

Soil Properties		
Groundwater Depth, GW:	99.00	ft
Soil Unit Weight:	105	pcf
Cohesion, Co:	0	ksf
Friction Angle, φ:	0	deg
Neglected Depth, ND:	2	ft
Negative Friction Force (per pile), Sw:	0	kips
SPT Blow Count, N _{blows} :	10	

Design Checks				
	Capacity	Demand	Rating*	Check
PILE CHECKS				
Soil Compression (kips per pile):	190.00	160.59	80.5%	Pass
Soil Uplift (kips per pile):	190.00	99.30	49.8%	Pass
Pile Tensile Strength (kips):	203.00	99.30	46.6%	Pass
PAD CHECKS				
One-Way Shear (kips):	502.04	194.66	36.9%	Pass
Pad Shear - Comp Two-Way (ksi):	0.164	0.004	2.3%	Pass
Flexural Two-Way (Comp) (kip*ft):	2062.85	0.00	0.0%	Pass
Pad Flexure (kip*ft):	1646.55	1052.68	60.9%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating:	60.9%
Soil Rating:	80.5%

Ultimate Pile Capacities		
Ultimate Compression, Cn:	253.3333333	kips
Ultimate Tension, Tn:	253.3333333	kips

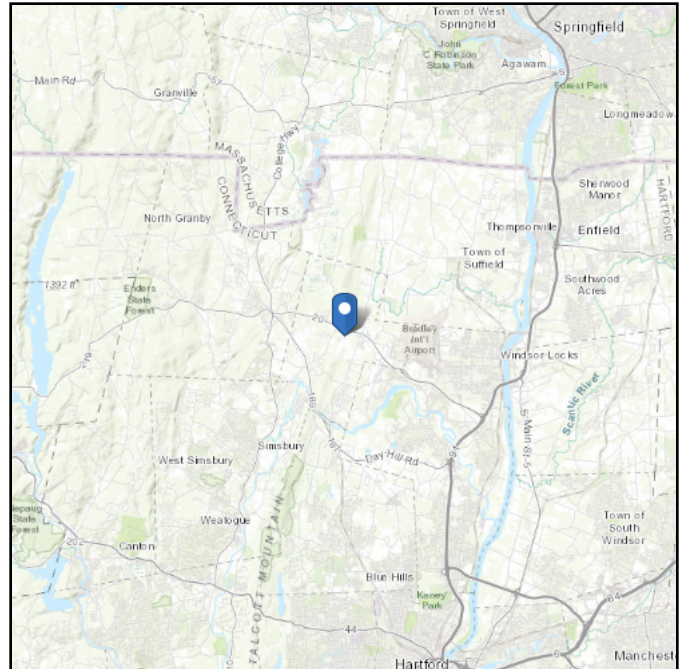
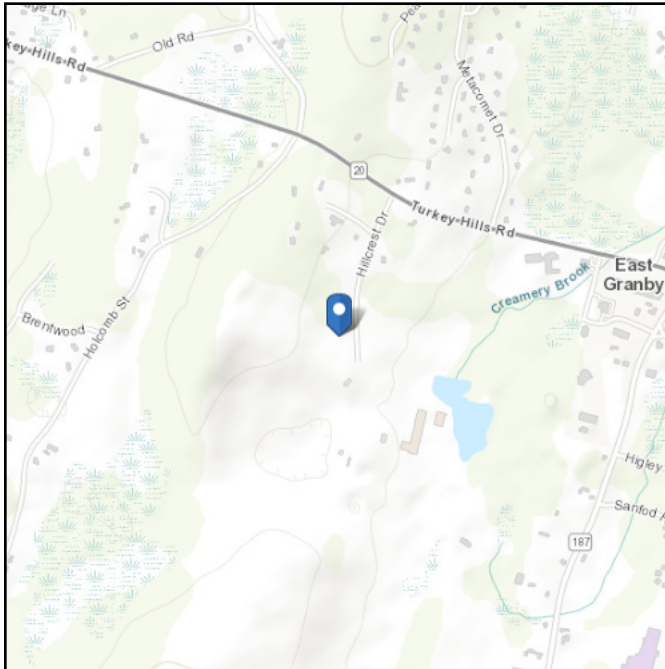
Per CCIsites Doc. # 8420875 (p-7/11)

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: 255.76 ft (NAVD 88)
Latitude: 41.941553
Longitude: -72.73868



Wind

Results:

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

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Apr 07 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).

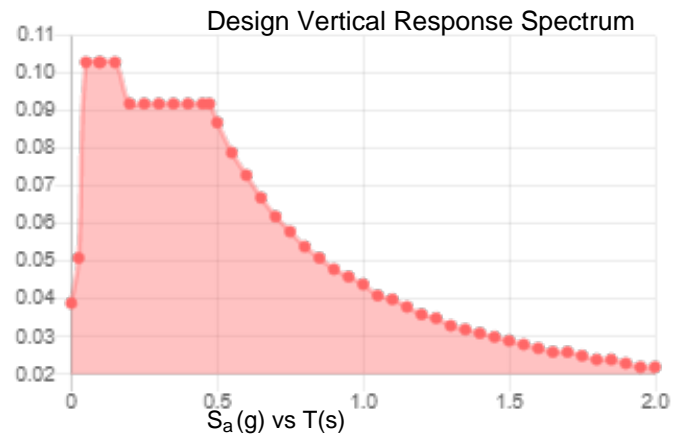
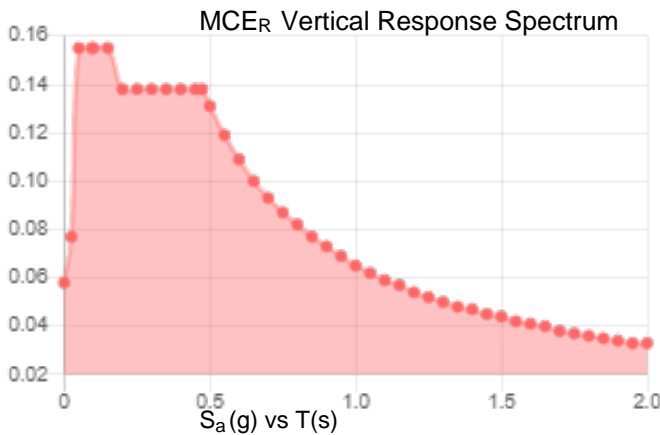
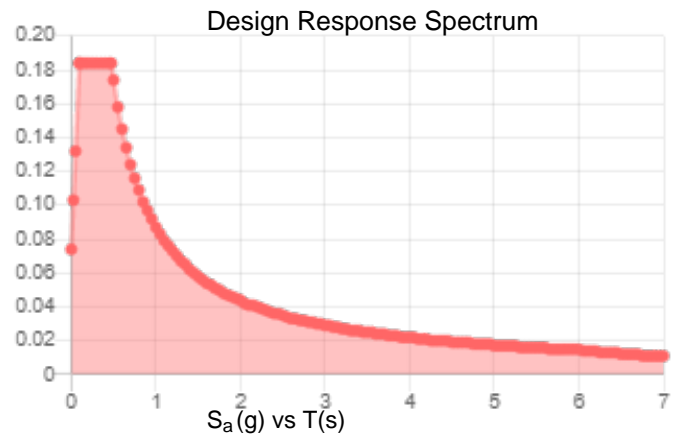
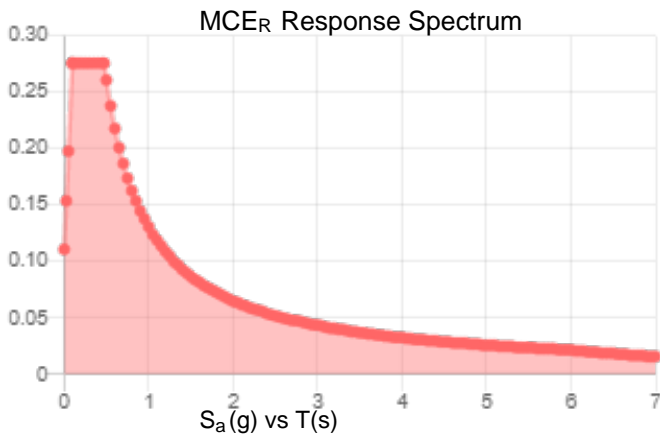
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.173	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.091
F_v :	2.4	PGA _M :	0.145
S_{MS} :	0.276	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.184	C_v :	0.7

Seismic Design Category B



Data Accessed: Thu Apr 07 2022

Date Source:

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

Ice

Results:

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

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

Date Accessed: Thu Apr 07 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.

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Date: April 5, 2022



USA Engineering, Inc.
2818 Cypress Ridge Blvd., Suite 110
Wesley Chapel, FL 33544
(813) 994-0365

Subject: Mount Analysis Report

Carrier Designation: T-Mobile Anchor_4
Carrier Site Number: CT11542A
Carrier Site Name: E. Granby - Sprint

Crown Castle Designation: **Crown Castle BU Number:** 876399
Crown Castle Site Name: (F) E. GRANBY 4Q2000 / GALASSO
Crown Castle JDE Job Number: 710330
Crown Castle Order Number: 609932, Rev. 0

Engineering Firm Designation: **USA Engineering Designation:** 22-00395

Site Data: **60 South Main St., East Granby, Hartford County, CT, 06026**
Latitude 41° 56' 29.59" Longitude -72° 44' 19.25"

Structure Information: **Tower Height & Type:** 98 ft Monopole
Mount Elevation: 89 ft
Mount Type: 12.5 ft Low Profile Mount

USA Engineering is pleased to submit this “Mount Analysis Report” to determine the structural integrity of T-Mobile’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 stress level. Based on our analysis we have determined the mount stress level to be:

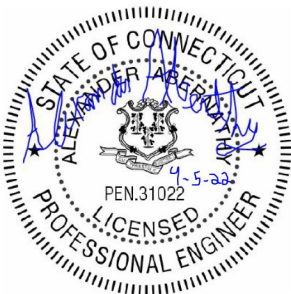
Low Profile Mount

Sufficient

***Sufficient upon completion of the changes listed in the ‘Recommendations’ section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 115 mph as required by the 2018 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria."

Mount structural analysis prepared by: Jad Bitar, EI.
Respectfully Submitted by:



Alexander Abernathy, PE
CT PE No: PEN.0031022

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- 2) **ANALYSIS CRITERIA**
 - Table 1 - Final Equipment Configuration
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1) INTRODUCTION

This is an existing 3-sector 12.5' Low Profile Mount.

2) ANALYSIS CRITERIA

Building Code:	2018 International Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	115 mph
Exposure Category:	C
Ice Thickness:	1.5 in
Wind Speed with Ice:	30 mph
Seismic S_s:	0.173
Seismic S₁:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	250 lb

Table 1 - Final Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
89	90	3	Ericsson	AIR 6419 B41_TMO	12.5' Low Profile Mount
		3	RFS	APXVAARR24_43-UNA20	
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
RFDS	CT11542A_Anchor_4_2022-03-10	Dated 03/10/22	CCI Site
Crown App	Order Number 609932, Rev. 0	Dated 03/28/22	CCI Site
Structural Analysis Report	B+T GRP	Dated 10/11/21	CCI Site
Antenna Mount Pictures	-	-	CCI Site
Mount Mapping	-	Dated 09/14/18	Tower Engineering Professionals

3.1) Analysis Method

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

A tool internally developed, using Microsoft Excel, by USA Engineering was used to calculate wind loading on all appurtenances, dishes, and mount members for various load 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).

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
- 5) The structure and all components are assumed to be plumb, in good condition; and free from deformation, rust, corrosion, and cracks.
- 6) The supporting documents and drawings provided to *USA Engineering, Inc.* resemble the actual field conditions.

This analysis may be affected if any assumptions are not valid or have been made in error. USA Engineering 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 (Low Profile Mount)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,4	Plate	SUPPORT 2	89	65.6	Pass
1,4	Antenna Pipe	B3	89	61.7	Pass
2,4	Tower Connection	-	89	74.5	Pass

Structure Rating (max from all components) =	74.5%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed
- 2) See additional documentation in "Appendix D - Additional Calculations" supporting the % capacity consumed
- 3) All sectors are typical
- 4) A structure rating of 105% or less is within engineering tolerances and considered acceptable

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 loading modification listed below must be completed.

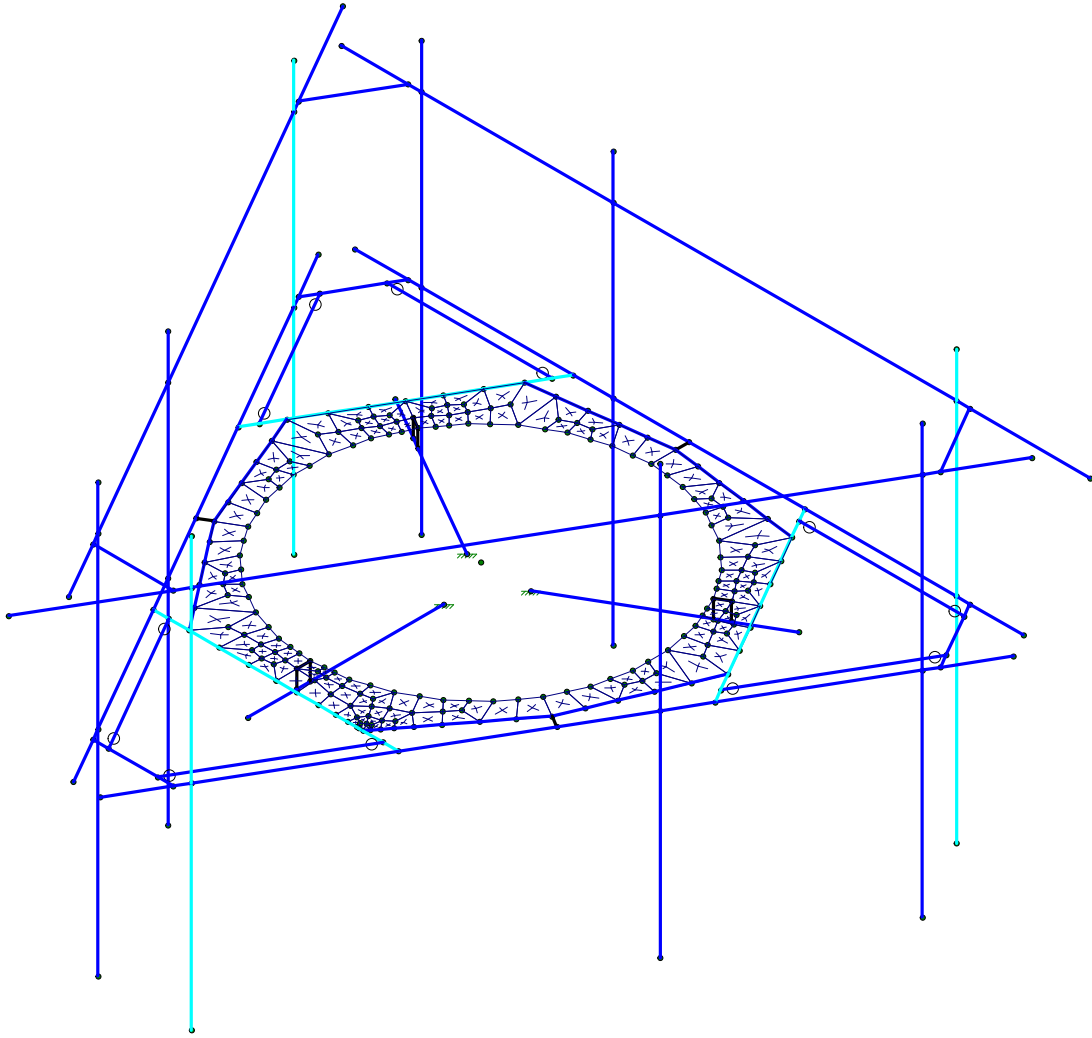
1. Remove antenna pipes at position 1 and 3 for all sectors and replace with (2 per sector, 6 total) 2.375"O.D. sch.40 galv. pipes. Match spacings of the previous antenna pipes and use the same clamping system and replace any untensioned threaded rods (Match diameter, Gr. A 36).

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

APPENDIX A
WIRE FRAME AND RENDERED MODELS



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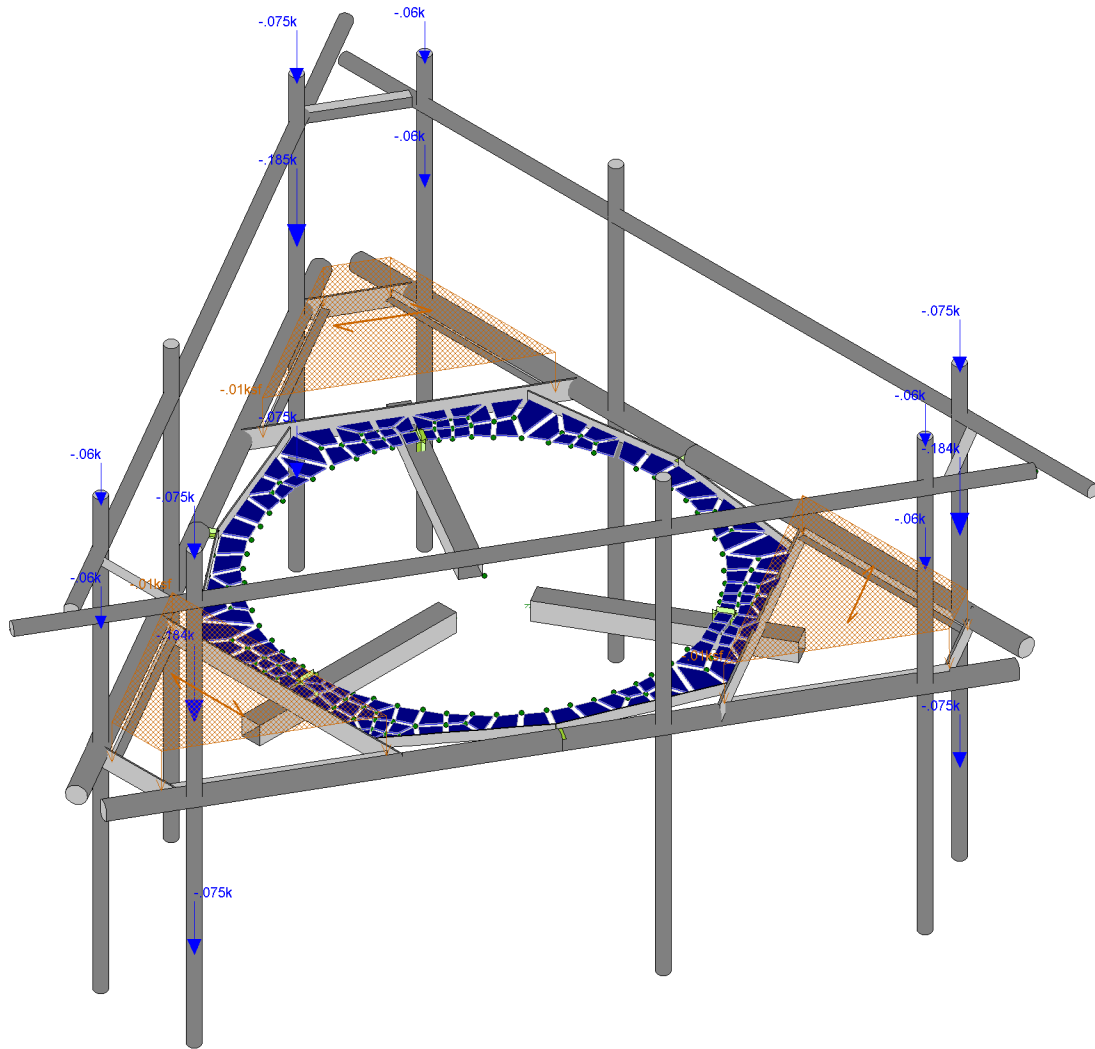
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Loads: BLC 1, DEAD LOAD
Envelope Only Solution

USA Engineering, Inc.

Jad Bitar, EI

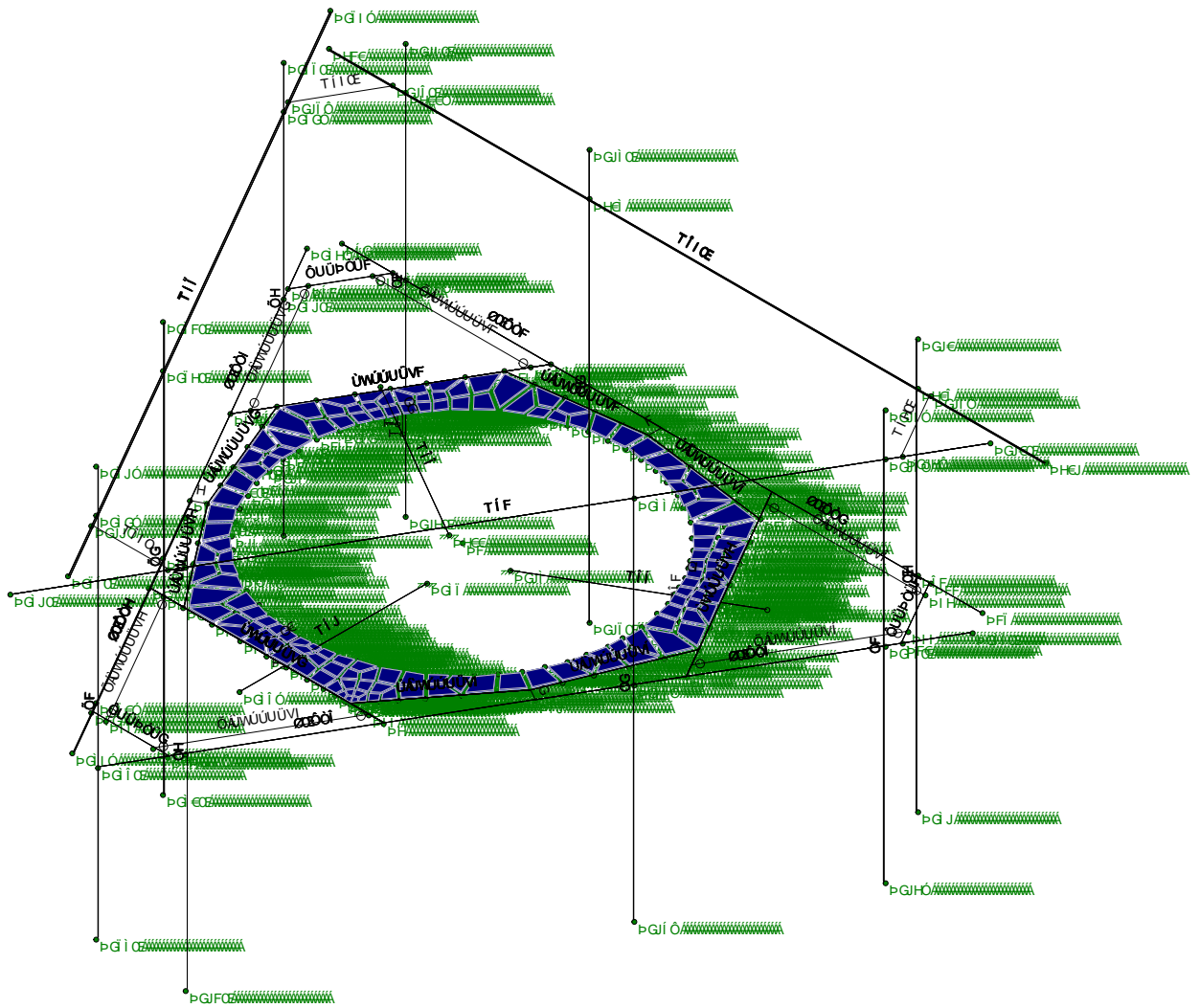
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Mount

SK - 2

Apr 5, 2022 at 12:40 PM

(PL14) 13' Platform (Circular Steel P...

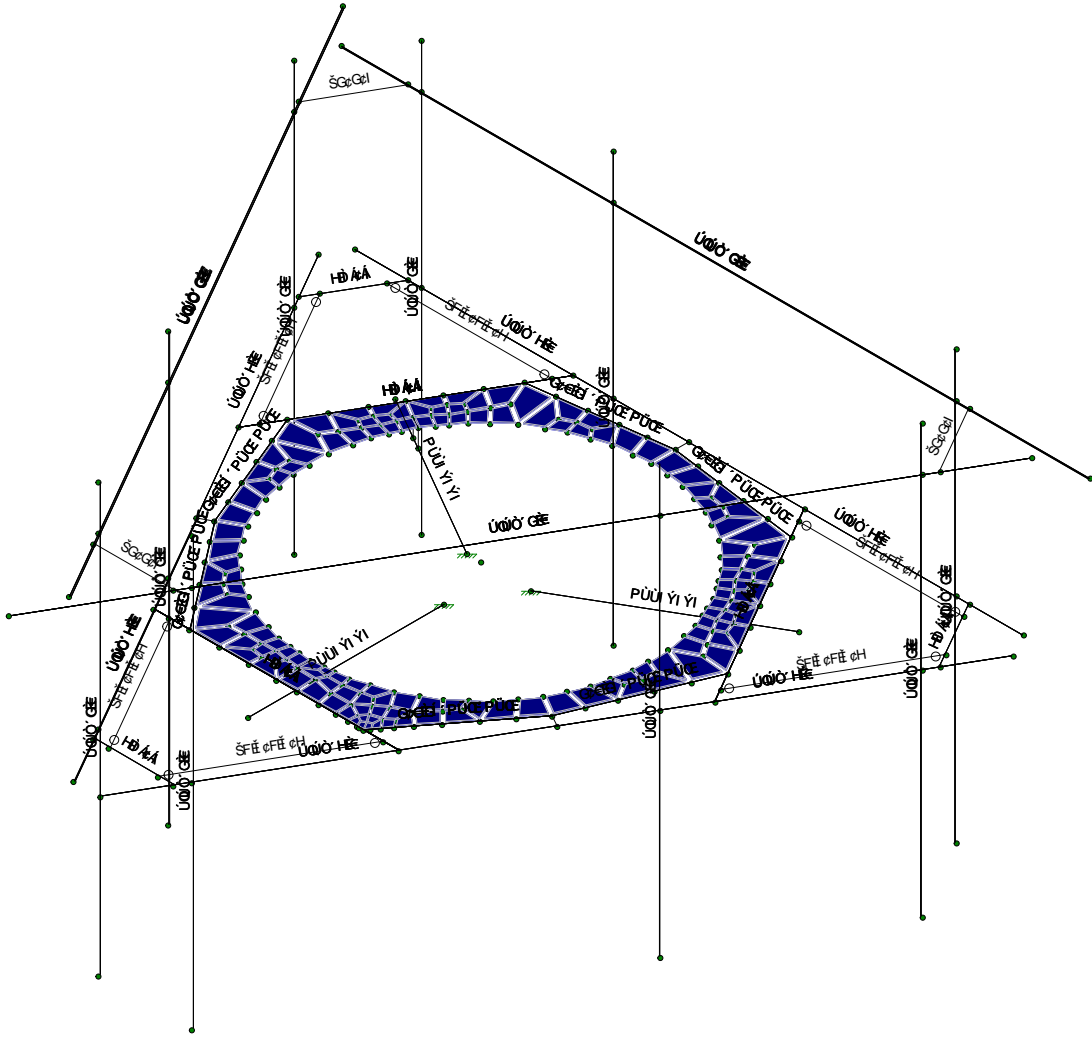


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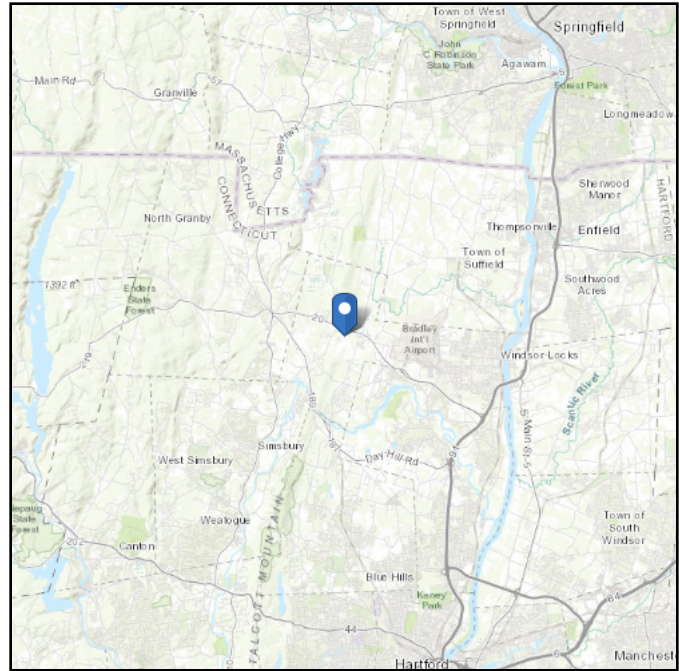
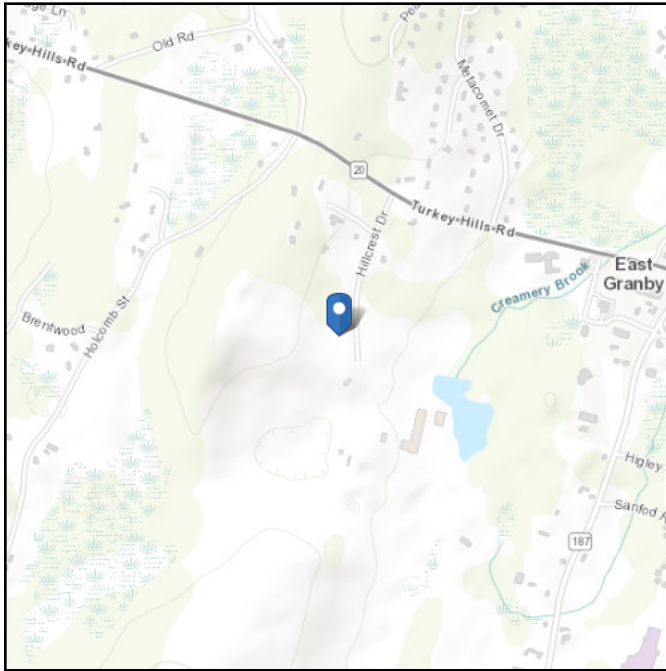
APPENDIX B
SOFTWARE INPUT CALCULATIONS

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: 255.76 ft (NAVD 88)
Latitude: 41.941553
Longitude: -72.738681



Wind

Results:

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

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Apr 04 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).

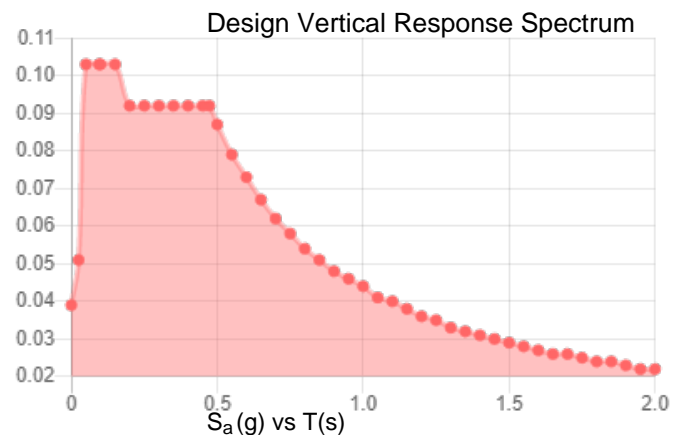
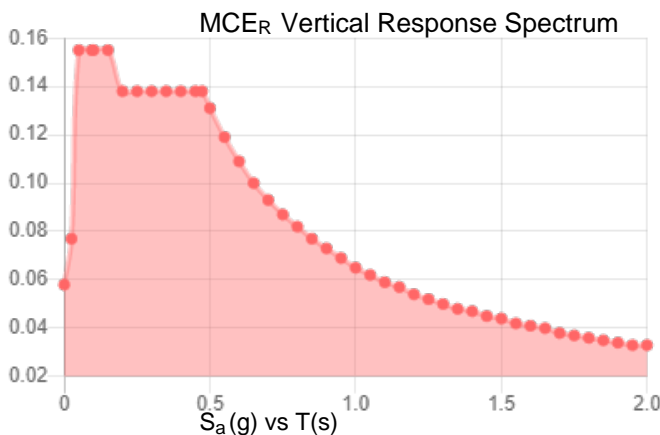
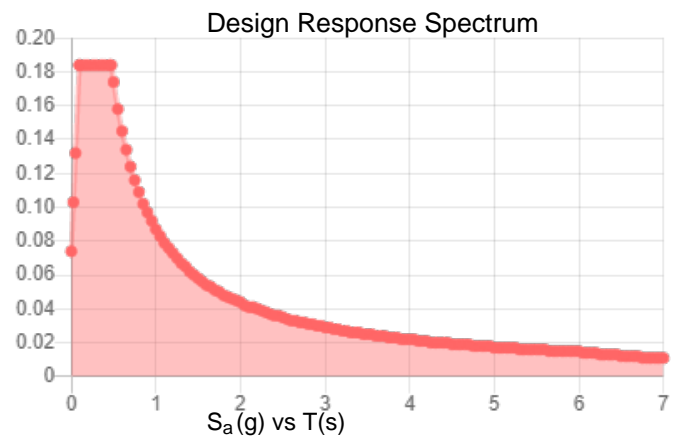
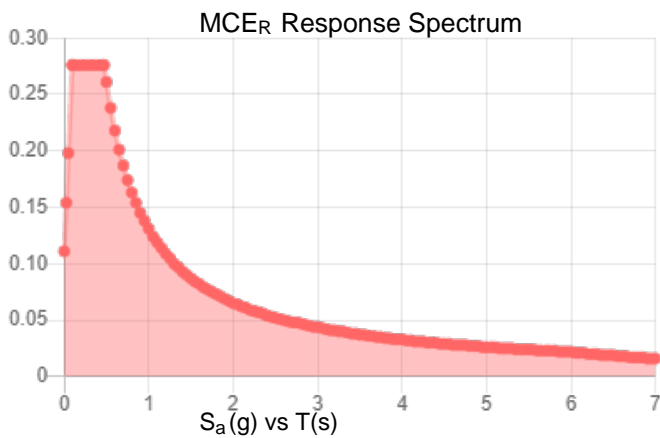
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.173	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.091
F_v :	2.4	PGA _M :	0.145
S_{MS} :	0.276	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.184	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon Apr 04 2022

Date Source:

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

Ice

Results:

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

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

Date Accessed: Mon Apr 04 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.

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TIA-222-H : 2.7 Seismic Load Effects



Design Parameters

Table 2-3: Importance Factors	
Structure Risk Category	II
Importance Factor, I	1.00

2.7.4 Seismic Design Parameters	
Short Periods, S_S	0.173
Period of 1 Second, S_1	0.054
Long-Period Transition Period, T_L	8
Fundamental Period of Structure, T	0.237

2.7.5 Design Spectral Response Acceleration Parameters	
Short-period Site Coefficients, F_a	1.6
Long-period Site Coefficients, F_v	2.4
Design spectral response acceleration parameters at short periods, S_{DS}	0.184
Design spectral response acceleration parameters at a period of 1 second, S_{D1}	0.087

2.7.8.1 Amplification Factor	
Structure Height (ft)	98
Mount Rad Center (ft)	89
Amplification Factor, A_s	1.00

Loads	
Dead Load of Structures and Appurtenances, D (lb)	2474
Dead Load of Guy Assemblies, D_g (lb)	0

2.7.6 Vertical Seismic Load Effect

Vertical Seismic Load Effect, E_v (lb) = $0.2 S_{DS} (D + D_g)$ =	91.04
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2.7.7 Horizontal Seismic Load Effect

Redundancy Factor, ρ	1.00		
Effects of Horizontal Seismic Forces, Q_E	227.61	Total Weight, W (lb)	2474
		Seismic Response Coefficient, C_s	0.092
		Response Modification Coefficient, R	2
		Total Seismic Shear Force, V_s	227.61
Horizontal Seismic Load Effect, E_h (lb) = ρQ_E			227.61

Note: Seismic loads do not control.

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

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VAY^G^&D	P[cÁ) c!^á
VAZ^G^&D	P[cÁ) c!^á
UAY	H
UAZ	H
ÓcÁc] ÈY	ÈÍ
ÓcÁc] ÈZ	ÈÍ
UOF	F
UOU	F
UF	F
VSA^G^&D	I
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FÌ	pFÌ	Í J È	€È	È È GG Í	€	
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G€	pG€	F J È	ÈÈ	Í È JJH Í	€	
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GG	pGG	È H Í È F J G	ÈÈ	G È Í G Í	€	
GH	pGH	È J È	€È	È È GG Í	€	
G	pI€	È Í È H G È F	€È	È H È Í Í H G	€	
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G€	TÍH OE	ÚÝ	ÉÉFG	ÉÉFG	€	€
GF	TÍI OE	ÚÝ	ÉÉFG	ÉÉFG	€	€
GG	ÖÅWUUUVF	ÚÝ	ÉÉJ	ÉÉJ	€	€
GH	ÖÅWUUUVG	ÚÝ	ÉÉJ	ÉÉJ	€	€
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G	ÖÅWUUUVI	ÚÝ	ÉÉJ	ÉÉJ	€	€
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G	ÖÅWUUUVÍ	ÚÝ	ÉÉJ	ÉÉJ	€	€
G	TÍJ	ÚÝ	ÉÉFÍ	ÉÉFÍ	€	€
GJ	TÍI	ÚÝ	ÉÉFÍ	ÉÉFÍ	€	€
H€	TÍI	ÚÝ	ÉÉFÍ	ÉÉFÍ	€	€
HF	ØUÜPØÜF	ÚÝ	ÉÉG	ÉÉG	€	€
HG	ØUÜPØÜG	ÚÝ	ÉÉG	ÉÉG	€	€
HH	ØUÜPØÜH	ÚÝ	ÉÉG	ÉÉG	€	€
HI	ØUÜPØÜF	ÚÝ	ÉÉG	ÉÉG	€	€
HÍ	ØUÜPØÜG	ÚÝ	ÉÉG	ÉÉG	€	€
HÌ	ØUÜPØÜH	ÚÝ	ÉÉG	ÉÉG	€	€
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HĪ	ØUÜPØÜG	ÚÝ	ÉÉFG	ÉÉFG	€	€
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IF	ØUÜPØÜÍ	ÚÝ	ÉÉFG	ÉÉFG	€	€
IG	ØUÜPØÜÍ	ÚÝ	ÉÉFG	ÉÉFG	€	€

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H	ØØØØH	ÚZ	ÉÉJHF	ÉÉJHF	€	€
I	ØØØØI	ÚZ	ÉÉJHF	ÉÉJHF	€	€
Í	ØØØØÍ	ÚZ	ÉÉJHF	ÉÉJHF	€	€
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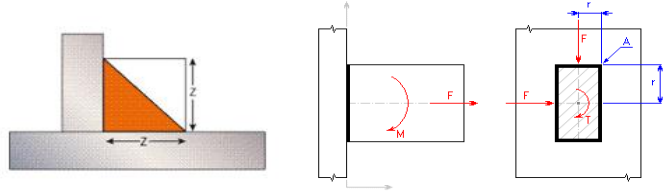
APPENDIX D
ADDITIONAL CALCULATIONS



TUBE FILLET WELD STRENGTH CALCULATIONS

RISA Joint Reaction					
Shear (k)	Shear (k)	Axial (k)	M bending (k-ft)	M Bending (k-ft)	M Torsion (k-ft)
0.032	3.1	6.874	7.059	0.05	0.006

Design Parameters	
Tube Short Dimension, (in)	4
Tube Long Dimension, (in)	4
Weld Leg Length, Z (in)	0.2500
Distance to centroid, rx (in)	2
Distance to centroid, ry (in)	2
Weld Throat Thickness, a (in)	0.1768
Weld Length, L (in)	16.000
Weld Throat Area, A_w (in ²)	2.828
Moment of Inertia of Weld, I_w (in ⁴)	8.057
Polar Moment of Inertia, I_p (in ⁴)	16.114



Stress Calculation (ksi)		
Load with Normal Force, σ_v	2.430	ksi
Load with Bending Moment, σ_{xz}	21.027	ksi
Load with Shear Force, τ_{yz}	1.096	ksi
Load with Torsion, τ_y	0.009	ksi
Resultant Stress	23.484	

Design Stress	
F_{EXX} (ksi)	70
Φ	0.75
$\Phi\sigma_w * 0.6$ (ksi)	31.500
Check	74.55%
	PASS

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

T-Mobile Existing Facility

Site ID: CT11542A

E. Granby - Sprint
60 South Main Street
East Granby, Connecticut 06026

April 28, 2022

EBI Project Number: 6222002864

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	74.84%

April 28, 2022

T-Mobile

Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11542A - E. Granby - Sprint

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **60 South Main Street** in **East Granby, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile 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 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general population 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 population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 60 South Main Street in East Granby, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile 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) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 11) 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.
- 12) 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.
- 13) The antennas used in this modeling are the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 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.

- 14) The antenna mounting height centerline of the proposed antennas is 90 feet above ground level (AGL).
- 15) 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.
- 16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	90 feet	Height (AGL):	90 feet	Height (AGL):	90 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A1 MPE %:	15.80%	Antenna B1 MPE %:	15.80%	Antenna C1 MPE %:	15.80%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	90 feet	Height (AGL):	90 feet	Height (AGL):	90 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts
ERP (W):	18,052.03	ERP (W):	18,052.03	ERP (W):	18,052.03
Antenna A2 MPE %:	12.06%	Antenna B2 MPE %:	12.06%	Antenna C2 MPE %:	12.06%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	27.86%
Dish	8.99%
AT&T	10.66%
Metro PCS	1.36%
Verizon	17.97%
Sprint	8%
Site Total MPE % :	74.84%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	27.86%
T-Mobile Sector B Total:	27.86%
T-Mobile Sector C Total:	27.86%
Site Total MPE % :	74.84%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	9619.47	90.0	49.01	2500 MHz LTE IC & 2C Traffic	1000	4.90%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	717.84	90.0	3.66	2500 MHz LTE IC & 2C Broadcast	1000	0.37%
T-Mobile 2500 MHz NR Traffic	1	19238.94	90.0	98.03	2500 MHz NR Traffic	1000	9.80%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	90.0	7.32	2500 MHz NR Broadcast	1000	0.73%
T-Mobile 600 MHz LTE	2	591.73	90.0	6.03	600 MHz LTE	400	1.51%
T-Mobile 600 MHz NR	1	1577.94	90.0	8.04	600 MHz NR	400	2.01%
T-Mobile 700 MHz LTE	2	648.82	90.0	6.61	700 MHz LTE	467	1.42%
T-Mobile 1900 MHz GSM	4	1101.85	90.0	22.46	1900 MHz GSM	1000	2.25%
T-Mobile 1900 MHz LTE	2	2203.69	90.0	22.46	1900 MHz LTE	1000	2.25%
T-Mobile 2100 MHz LTE	2	2589.11	90.0	26.38	2100 MHz LTE	1000	2.64%
						Total:	27.86%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	27.86%
Sector B:	27.86%
Sector C:	27.86%
T-Mobile Maximum MPE % (Sector A):	27.86%
Site Total:	74.84%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **74.84%** of the allowable FCC established general population 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 well within the allowable 100% threshold standard per the federal government.

T-Mobile

T-MOBILE SITE NUMBER: CT11542A
T-MOBILE SITE NAME: E. GRANBY - SPRINT
SITE TYPE: MONOPOLE
TOWER HEIGHT: 98'-0"

BUSINESS UNIT #: 876399
SITE ADDRESS: 60 SOUTH MAIN ST. EAST GRANBY, CT 06026
COUNTY: HARTFORD
JURISDICTION: CONNECTICUT
SITING COUNCIL

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5D998E 6160

T-Mobile
 4 SYLVAN WAY
 PARSIPPANY, NJ 07054

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

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

**T-MOBILE
 SITE NUMBER: CT11542A**

**BU #: 876399
 (F) E. GRANBY 4Q2000
 /GALASSO**

**60 SOUTH MAIN ST.
 EAST GRANBY, CT 06026**

**EXISTING
 98'-0" MONOPOLE**

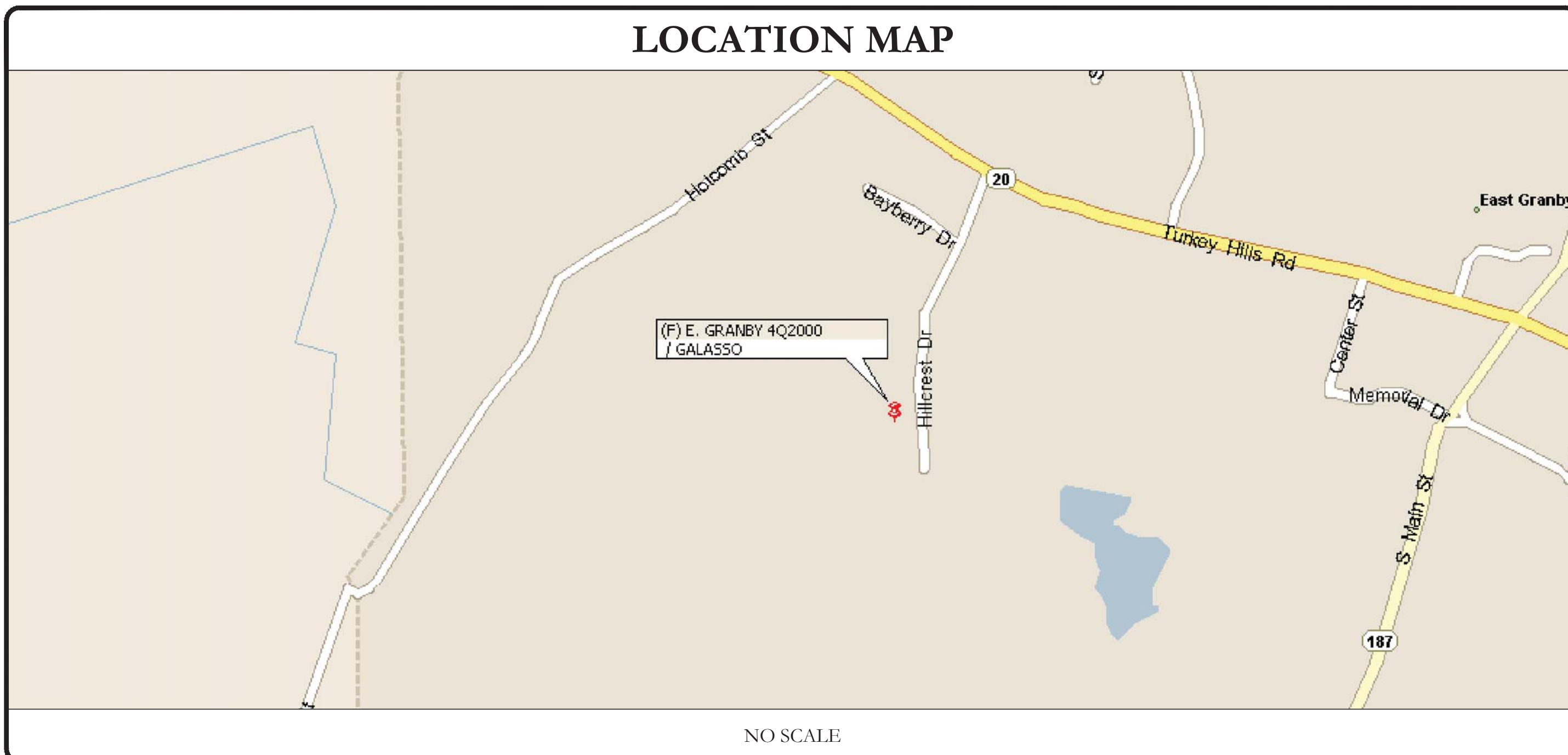
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/28/22	MEH	PRELIMINARY REVIEW	KT
0	5/12/22	MEH	CONSTRUCTION	LR

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	(F) E. GRANBY 4Q2000 /GALASSO
SITE ADDRESS:	60 SOUTH MAIN ST. EAST GRANBY, CT 06026
COUNTY:	HARTFORD
MAP/PARCEL #:	341
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.941553°
LONGITUDE:	-72.738681°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	262 FT
CURRENT ZONING:	I (INDUSTRIAL)
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:	GALASSO HOLDINGS LLC PO BOX 1776 EAST GRANBY, CT 06026
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	NORTHEAST UTILITIES 800-286-5000
TELCO PROVIDER:	AT&T 866-620-6900

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

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 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
	TRICIA PELON - PROJECT MANAGER TRICIA.PELON@CROWNCastle.COM
	JASON D'AMICO - CONSTRUCTION MANAGER JASON.D'AMICO@CROWNCastle.COM

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

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.
TOWER SCOPE OF WORK:
<ul style="list-style-type: none"> REMOVE (3) ANTENNAS REMOVE (3) TMA's REMOVE (1) 6x12 HCS 6AWG RELOCATE (3) ANTENNAS RELOCATE (3) RRH's INSTALL MOUNT MODIFICATIONS PER MOUNT ANALYSIS BY USA ENGINEERING DATED 4/5/22 INSTALL (3) ANTENNAS INSTALL (3) RRH's INSTALL (3) 6/24 4AWG HYBRID TRUNKS
GROUND SCOPE OF WORK:
<ul style="list-style-type: none"> REMOVE (1) RBS 6102MU AC CABINET REMOVE (3) ERICSSON - RU501 B2 RRU's REMOVE (1) PTS BATTERY CABINET RELOCATE (1) DUG20 (2) BB 6630 TO ENCLOSURE 6160 AC V1 CABINET INSTALL (1) ENCLOSURE 6160 AC V1 CABINET WITH (1) RP 6651, (1) PSU 4813 vR4A (KIT), (1) CSR IXRE V2 (GEN2), (1) RBS6601, (4) RECTIFIERS, (6) 40 AMP BREAKERS, (1) DCU, AND (3) 50AMP SPD'S INSTALL 125A BREAKER FOR 6160
NOTE: THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	IBC 2015 WITH AMENDMENTS
MECHANICAL	IMC 2015 WITH AMENDMENTS
ELECTRICAL	NEC 2017 WITH AMENDMENTS
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	B+T GRP
DATED:	4/7/22
MOUNT ANALYSIS:	USA ENGINEERING
DATED:	4/5/22
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	4
DATED:	3/10/22
ORDER ID:	609932
REVISION:	0

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

APPROVALS		
APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.	_____	_____
LAND USE PLANNER	_____	_____
T-MOBILE	_____	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	_____	_____

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

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

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

SHEET NUMBER: T-1	REVISION: 0
------------------------------------	------------------------------

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

Table with 3 columns: SYSTEM, CONDUCTOR, COLOR. It lists conductor color codes for various systems like 120/240V, 120/208V, 277/480V, and DC VOLTAGE.

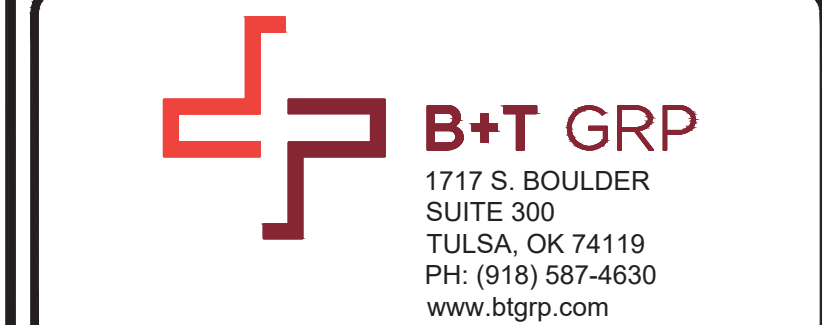
* SEE NEC 210.5(C)(1) AND (2) ** POLARITY MARKED AT TERMINATION

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 PLAN
QTY QUANTITY
RECT RECTIFIER
RBS RADIO BASE STATION
RETS REMOTE ELECTRIC TILT
RFDS RADIO FREQUENCY DATA SHEET
RRH REMOTE RADIO HEAD
RRU REMOTE RADIO UNIT
SIAD SMART INTEGRATED DEVICE
TMA TOWER MOUNTED AMPLIFIER
TYP TYPICAL
UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P. WORK POINT

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



T-MOBILE SITE NUMBER: CT11542A

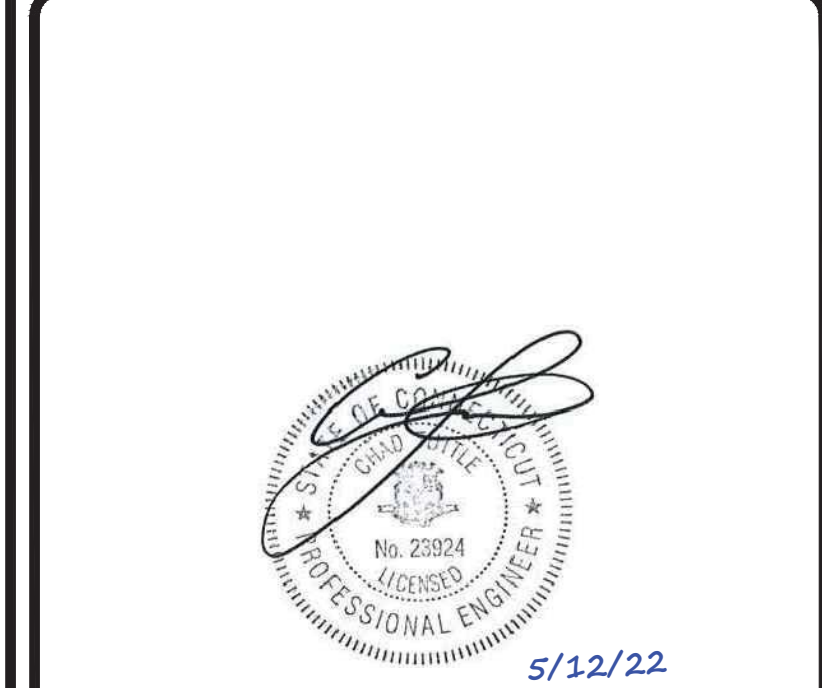
BU #: 876399 (F) E. GRANBY 4Q2000 /GALASSO

60 SOUTH MAIN ST. EAST GRANBY, CT 06026

EXISTING 98'-0" MONOPOLE

ISSUED FOR:

Table with 5 columns: REV, DATE, DRWN, DESCRIPTION, DES./QA. It shows revision history for preliminary review and construction.



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

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

SHEET NUMBER: T-2 REVISION: 0

SITE PLAN DISCLAIMER:
 PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.



T-Mobile

4 SYLVAN WAY
 PARSIPPANY, NJ 07054

CROWN CASTLE

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B+T GRP

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T-MOBILE
 SITE NUMBER: **CT11542A**

BU #: **876399**
(F) E. GRANBY 4Q2000
/GALASSO

60 SOUTH MAIN ST.
 EAST GRANBY, CT 06026

EXISTING
 98'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/28/22	MEH	PRELIMINARY REVIEW	KT
0	5/12/22	MEH	CONSTRUCTION	LR

5/12/22

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

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1 OVERALL SITE PLAN

SCALE:

1" = 80'-0" (FULL SIZE)
 1" = 160'-0" (11x17)

SHEET NUMBER: **C-1.1** REVISION: **0**

T-Mobile

4 SYLVAN WAY
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B+T GRP

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

T-MOBILE
SITE NUMBER: CT11542A

BU #: 876399
(F) E. GRANBY 4Q2000
/GALASSO

60 SOUTH MAIN ST.
EAST GRANBY, CT 06026

EXISTING
98'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/28/22	MEH	PRELIMINARY REVIEW	KT
0	5/12/22	MEH	CONSTRUCTION	LR



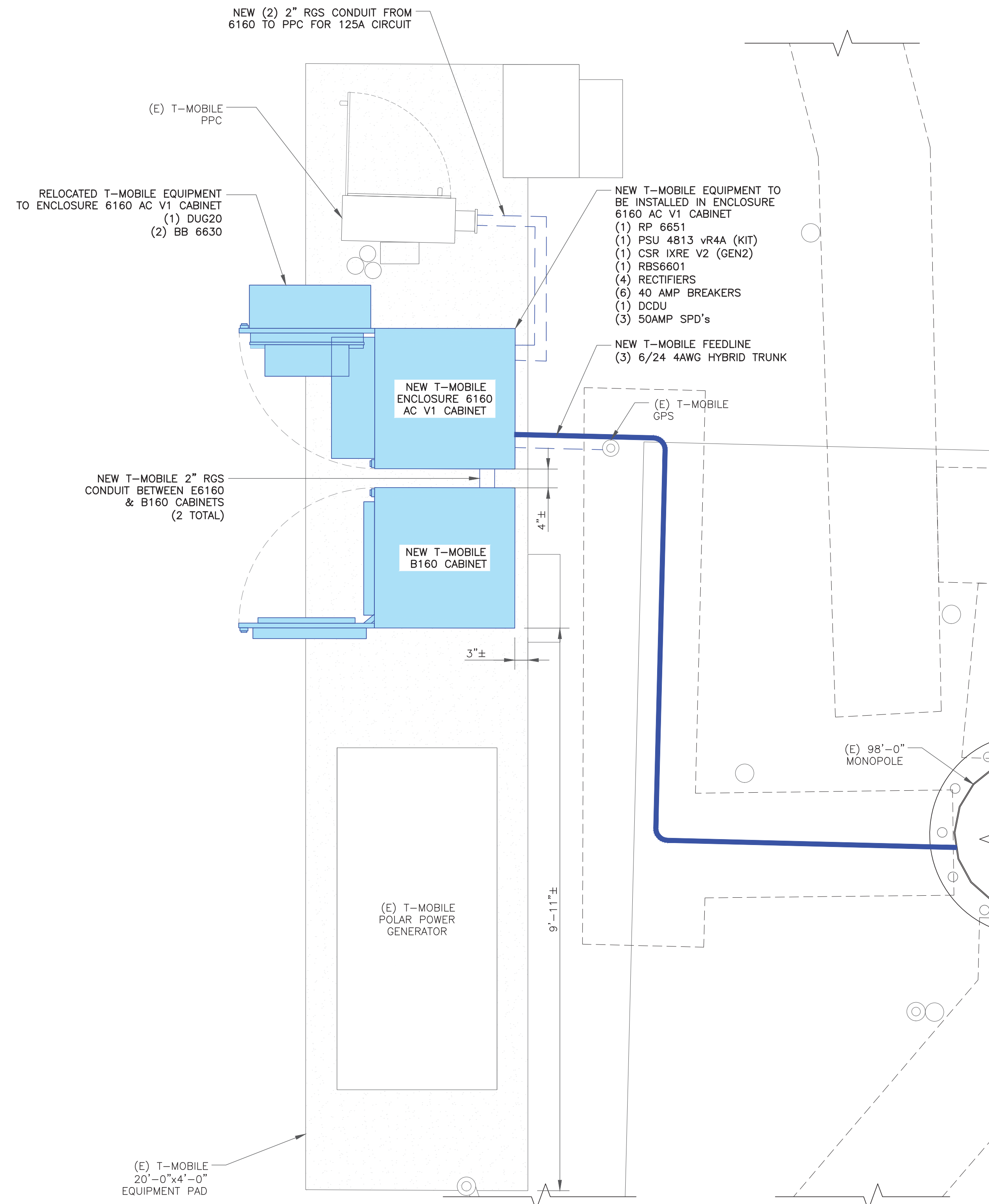
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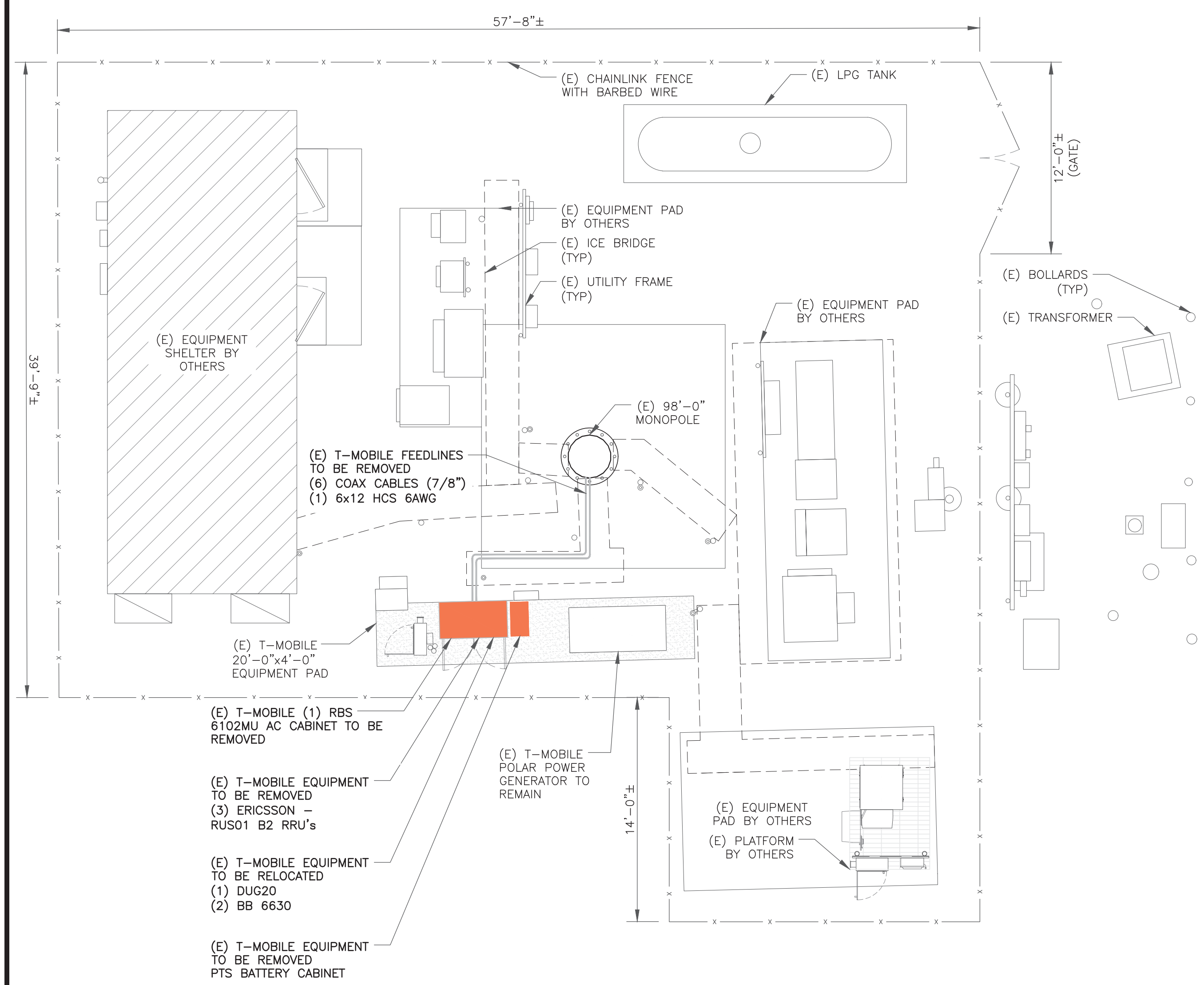
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SHEET NUMBER: **C-1.2** REVISION: **0**

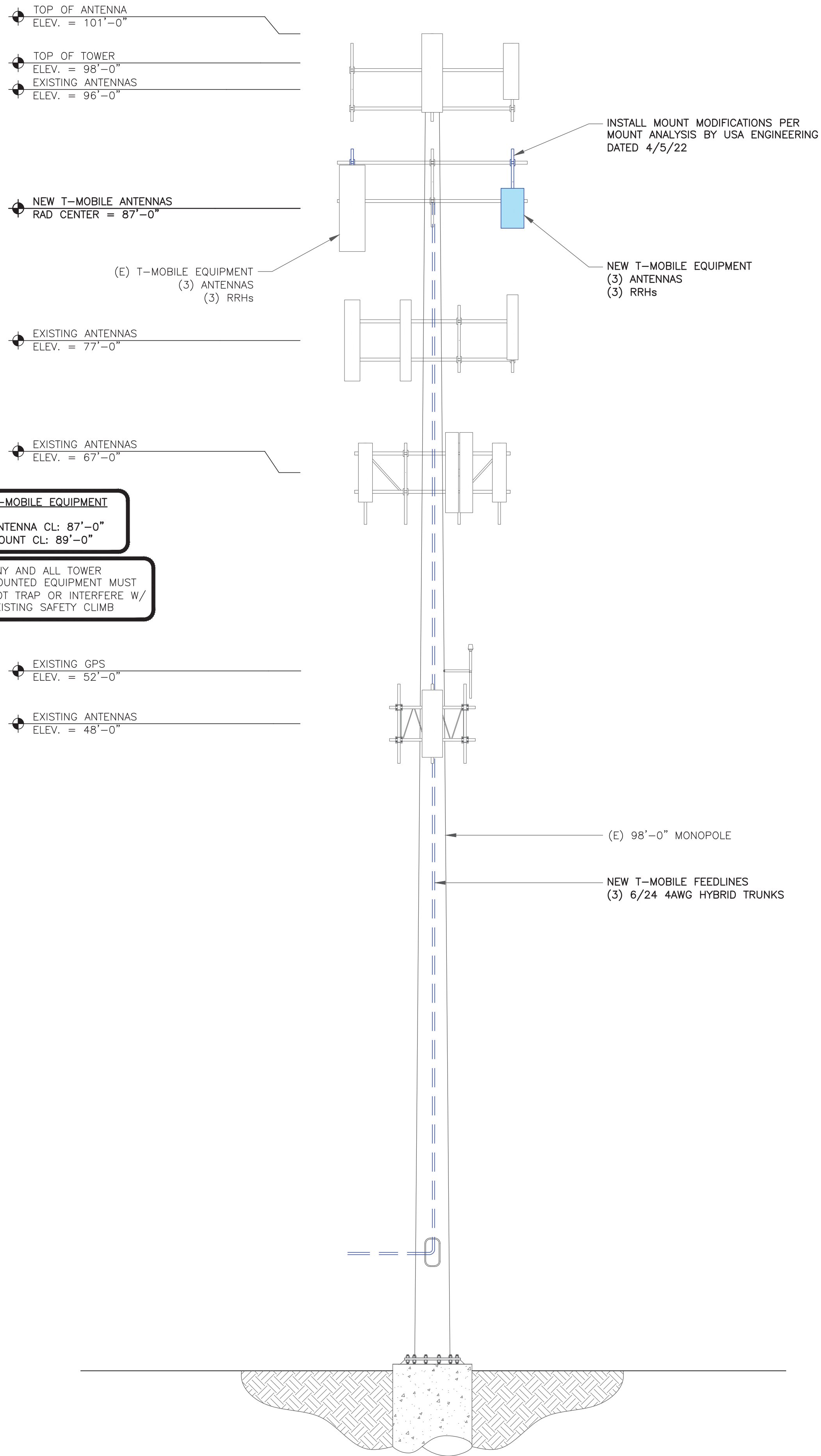
NOTES:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.



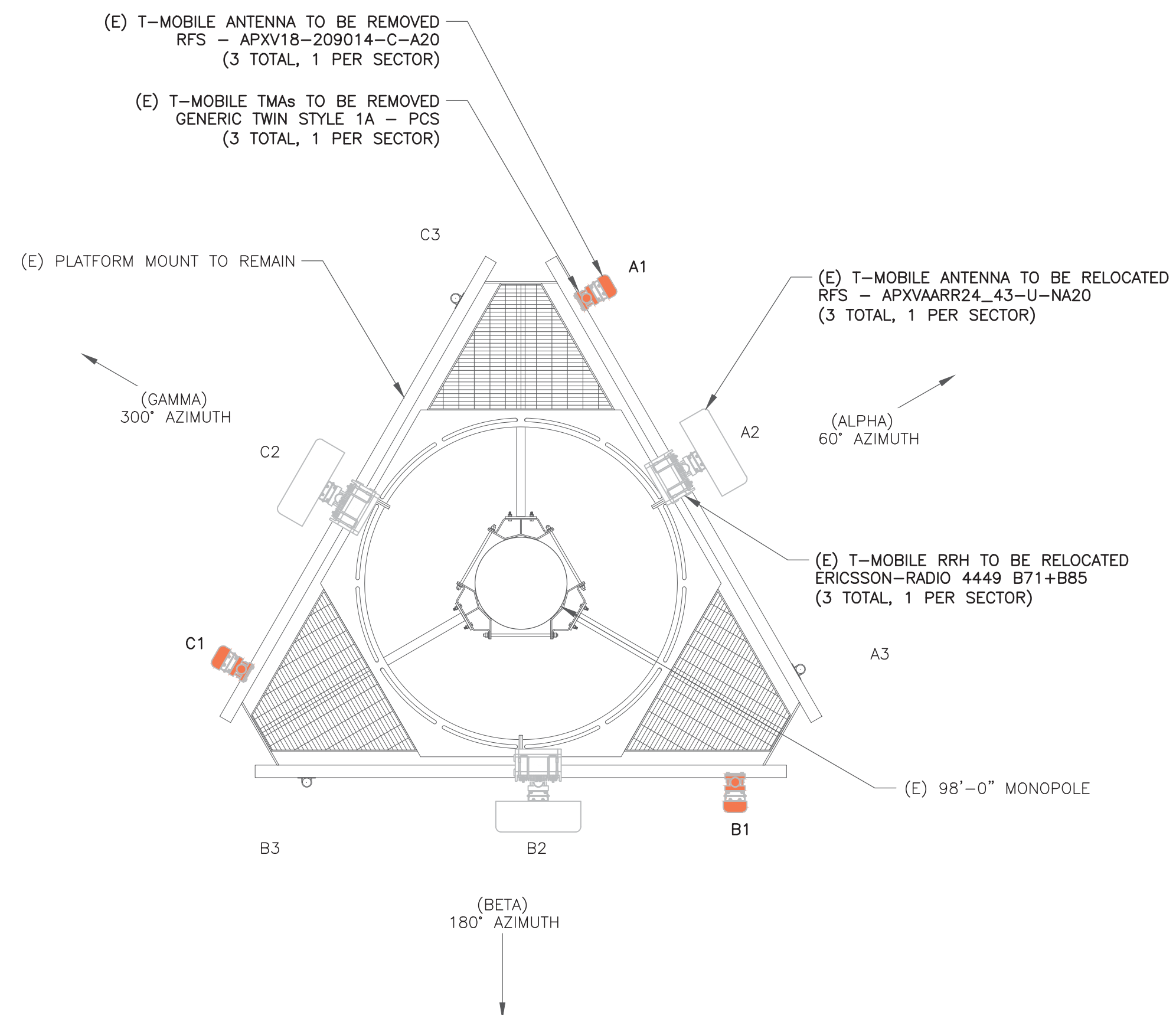
2 ENLARGED SITE PLAN
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)



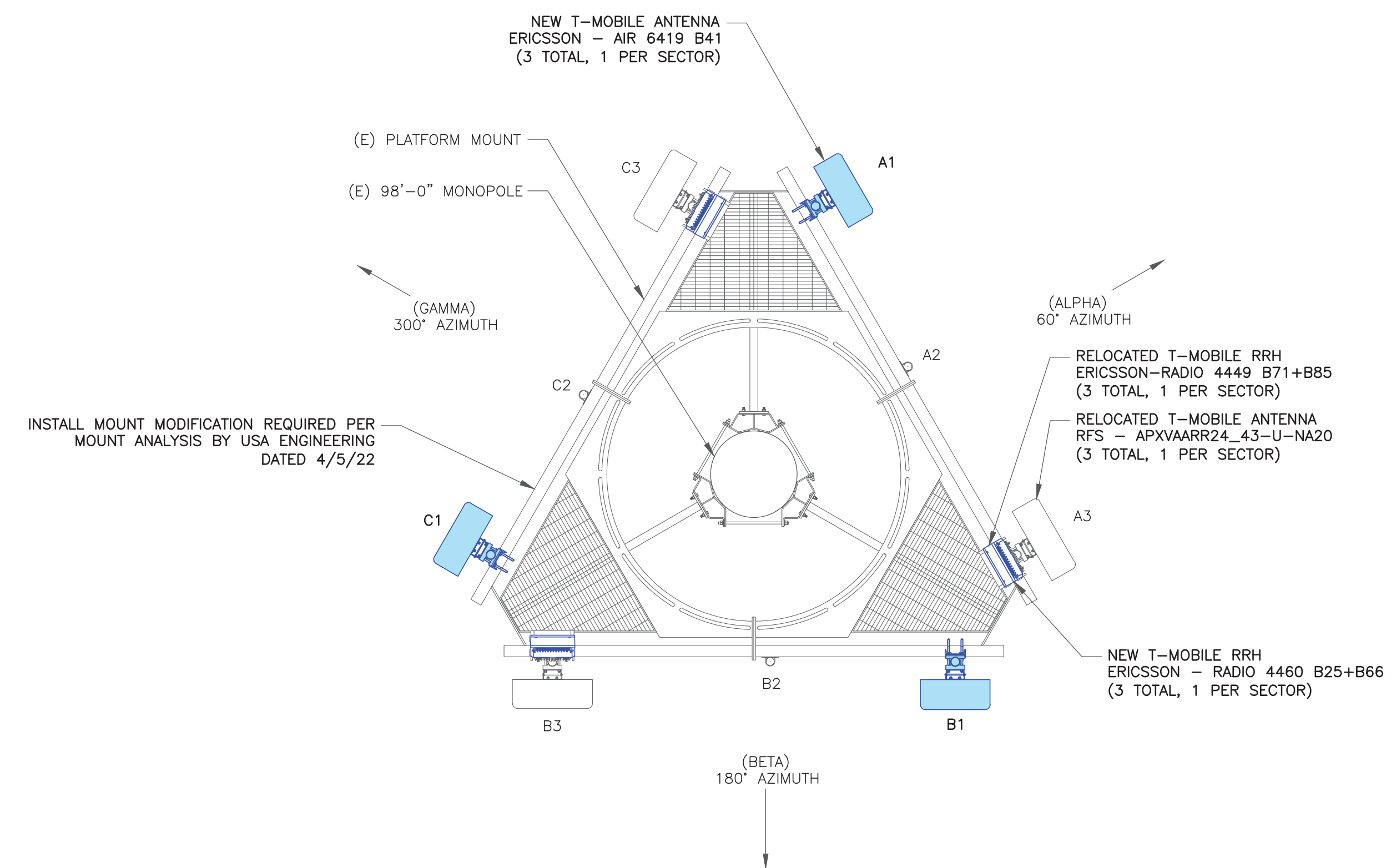
1 SITE PLAN
SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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T-MOBILE
 SITE NUMBER: CT11542A
 BU #: 876399
 (F) E. GRANBY 4Q2000 /GALASSO
 60 SOUTH MAIN ST.
 EAST GRANBY, CT 06026
 EXISTING
 98'-0" MONOPOLE

ISSUED FOR:

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T-MOBILE
SITE NUMBER: **CT11542A**

BU #: **876399**
(F) E. GRANBY 4Q2000
/GALASSO

60 SOUTH MAIN ST.
EAST GRANBY, CT 06026

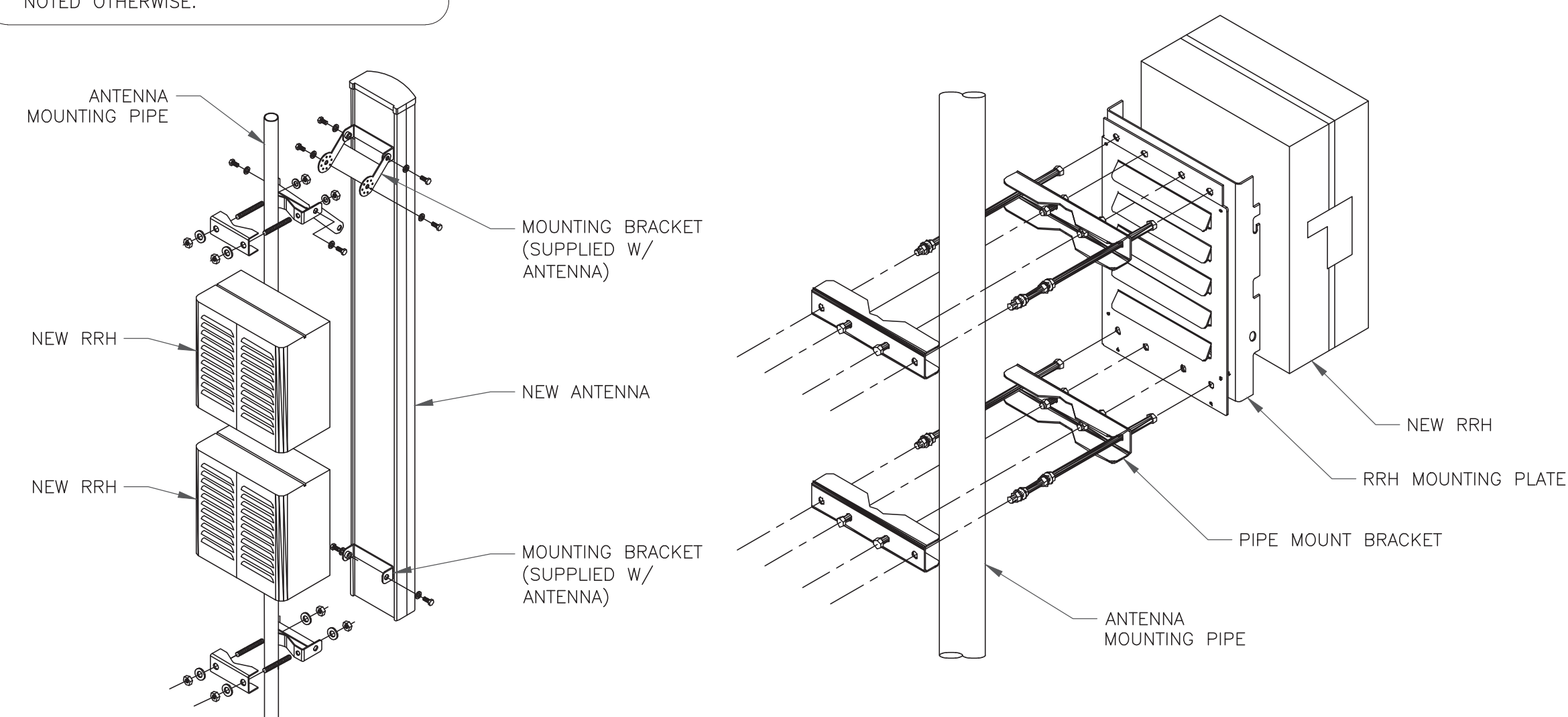
EXISTING
98'-0" MONOPOLE

RF SYSTEM SCHEDULE										
SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	N2500/L2500	ERICSSON	AIR 6419 B41	60°	0°	2°/2°	87'-0"	-	-
	A2	-	EMPTY MOUNT PIPE	-	-	-	-	-	-	(1) 6/24 4AWG HYBRID TRUNK
	A3	L700/L600/N600/L2100/L1900/G1900	RFS	APXVAARR24_43-U-NA20	60°	0°	2°/2°/2°/2°	87'-0"	RADIO 4449 B71+B85 RADIO 4460 B25+B66	-
BETA	B1	N2500/L2500	ERICSSON	AIR 6419 B41	180°	0°	2°/2°	87'-0"	-	-
	B2	-	EMPTY MOUNT PIPE	-	-	-	-	-	-	(1) 6/24 4AWG HYBRID TRUNK
	B3	L700/L600/N600/L2100/L1900/G1900	RFS	APXVAARR24_43-U-NA20	180°	0°	2°/2°/2°/2°	87'-0"	RADIO 4449 B71+B85 RADIO 4460 B25+B66	-
GAMMA	C1	N2500/L2500	ERICSSON	AIR 6419 B41	300°	0°	2°/2°	87'-0"	-	-
	C2	-	EMPTY MOUNT PIPE	-	-	-	-	-	-	(1) 6/24 4AWG HYBRID TRUNK
	C3	L700/L600/N600/L2100/L1900/G1900	RFS	APXVAARR24_43-U-NA20	300°	0°	2°/2°/2°/2°	87'-0"	RADIO 4449 B71+B85 RADIO 4460 B25+B66	-

1 ANTENNA AND CABLE 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.



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

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SHEET NUMBER:

C-3

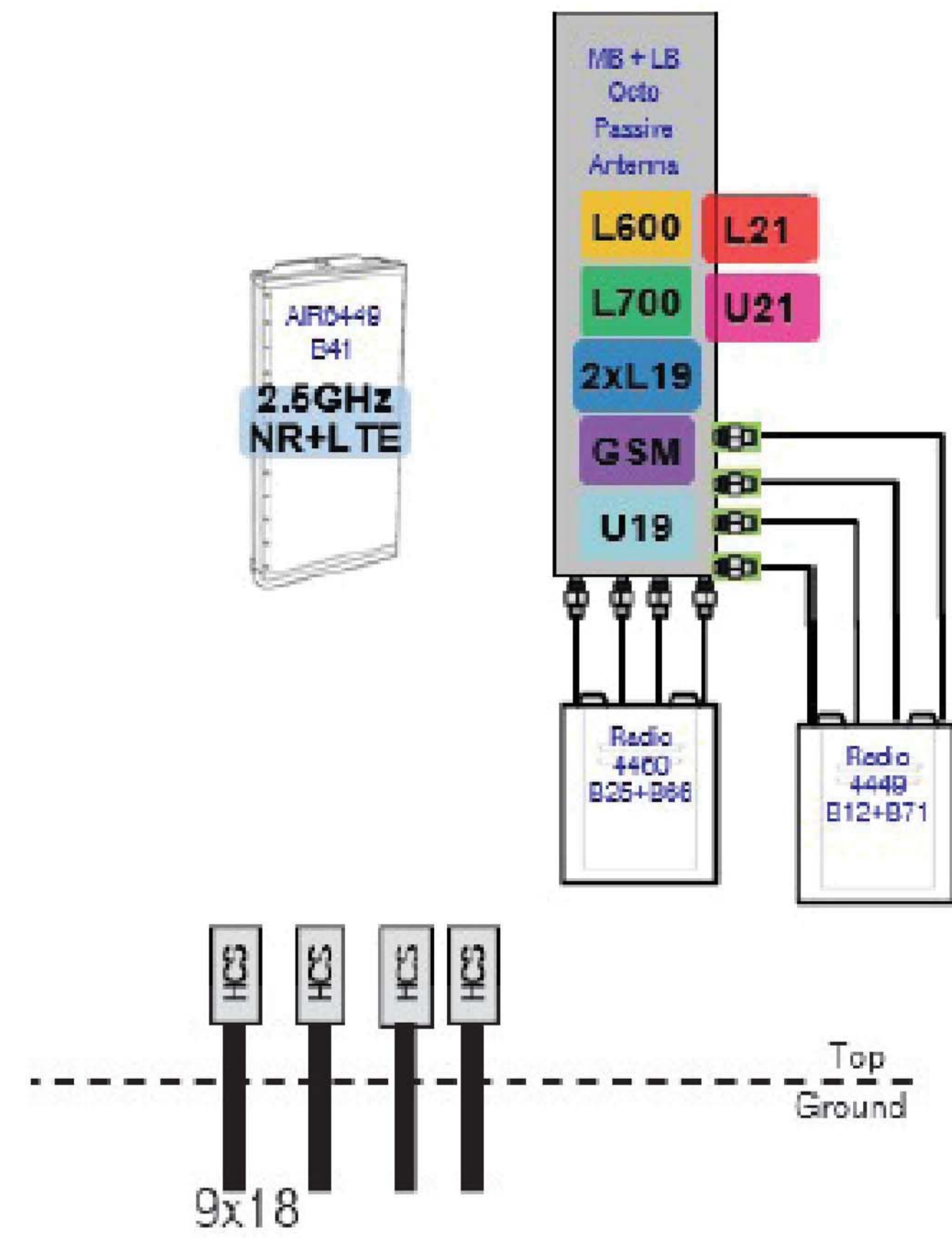
REVISION:

0

Section 3 - Proposed Template Images

67D5A998E.jpg

Final Config: 67D5A998E



Notes:

T-Mobile

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PARSIPPANY, NJ 07054

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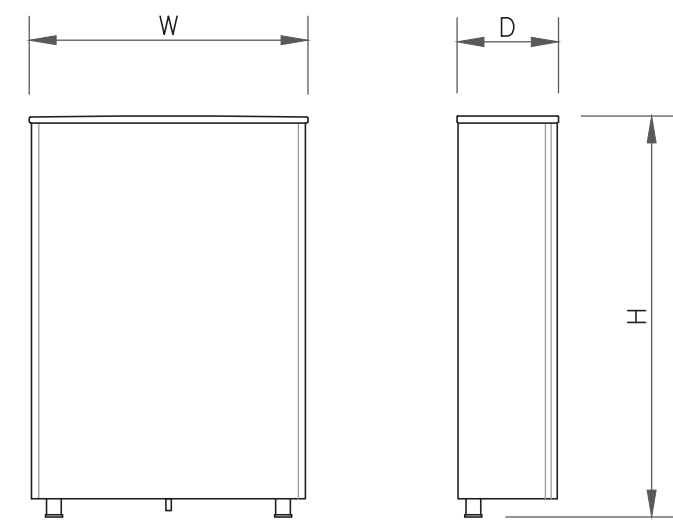
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SHEET NUMBER:

C-4

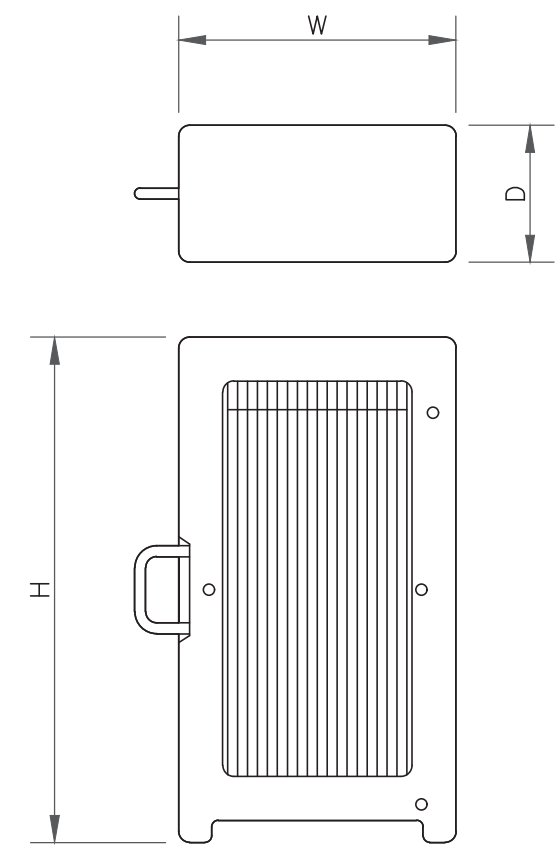
REVISION:

0



ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6419 B41
WIDTH	20.91"
DEPTH	9.02"
HEIGHT	36.25"
WEIGHT	96.50 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4460 B2/B25 B66
WIDTH	15.10"
DEPTH	11.90"
HEIGHT	17.00"
WEIGHT	109.00 LBS

2 RRU SPECS
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

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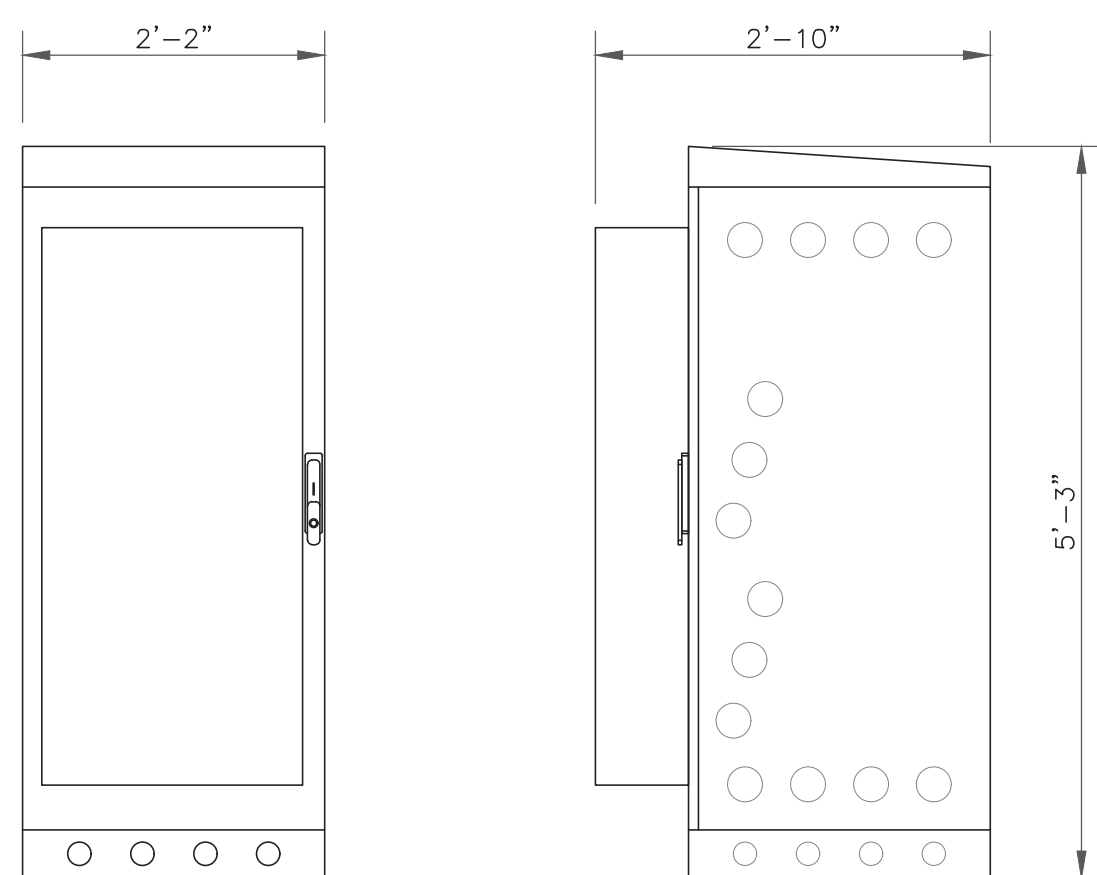


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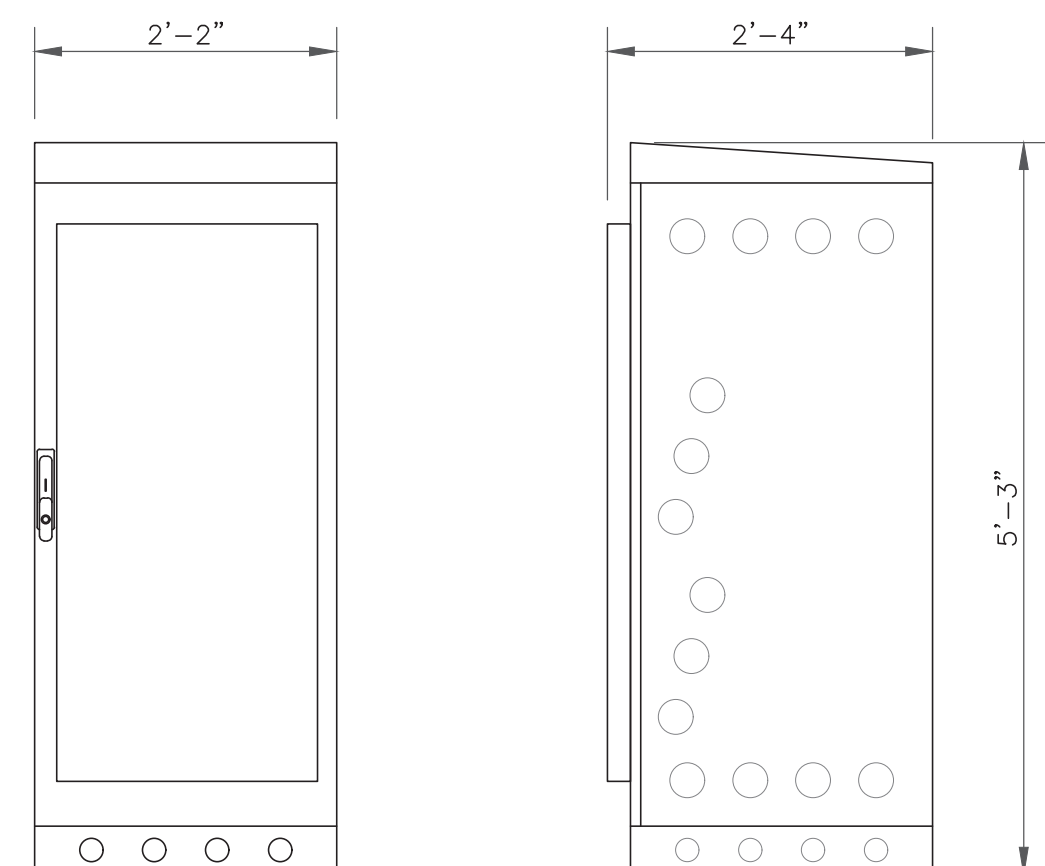
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SHEET NUMBER: **C-5** REVISION: **0**



EQUIPMENT NOTES:	
HEIGHTxWIDTHxDEPTH:	63.0" x 26.0" x 34.0" (1600.0mm x 660.0mm x 864.0mm)
WEIGHT (EMPTY):	320 LBS (145 kg)
WEIGHT (FULLY LOADED):	1000 LBS (454 kg)

4 ERICSSON 6160 SSC
SCALE: NOT TO SCALE



EQUIPMENT NOTES:	
HEIGHTxWIDTHxDEPTH:	63.0" x 26.0" x 28.0" (1600.0mm x 660.0mm x 711.0mm)
WEIGHT (EMPTY):	295 LBS (134 kg)
WEIGHT (FULLY LOADED):	2000 LBS (908 kg)

5 ERICSSON B160 BATTERY CABINET
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

7 NOT USED
SCALE: NOT TO SCALE

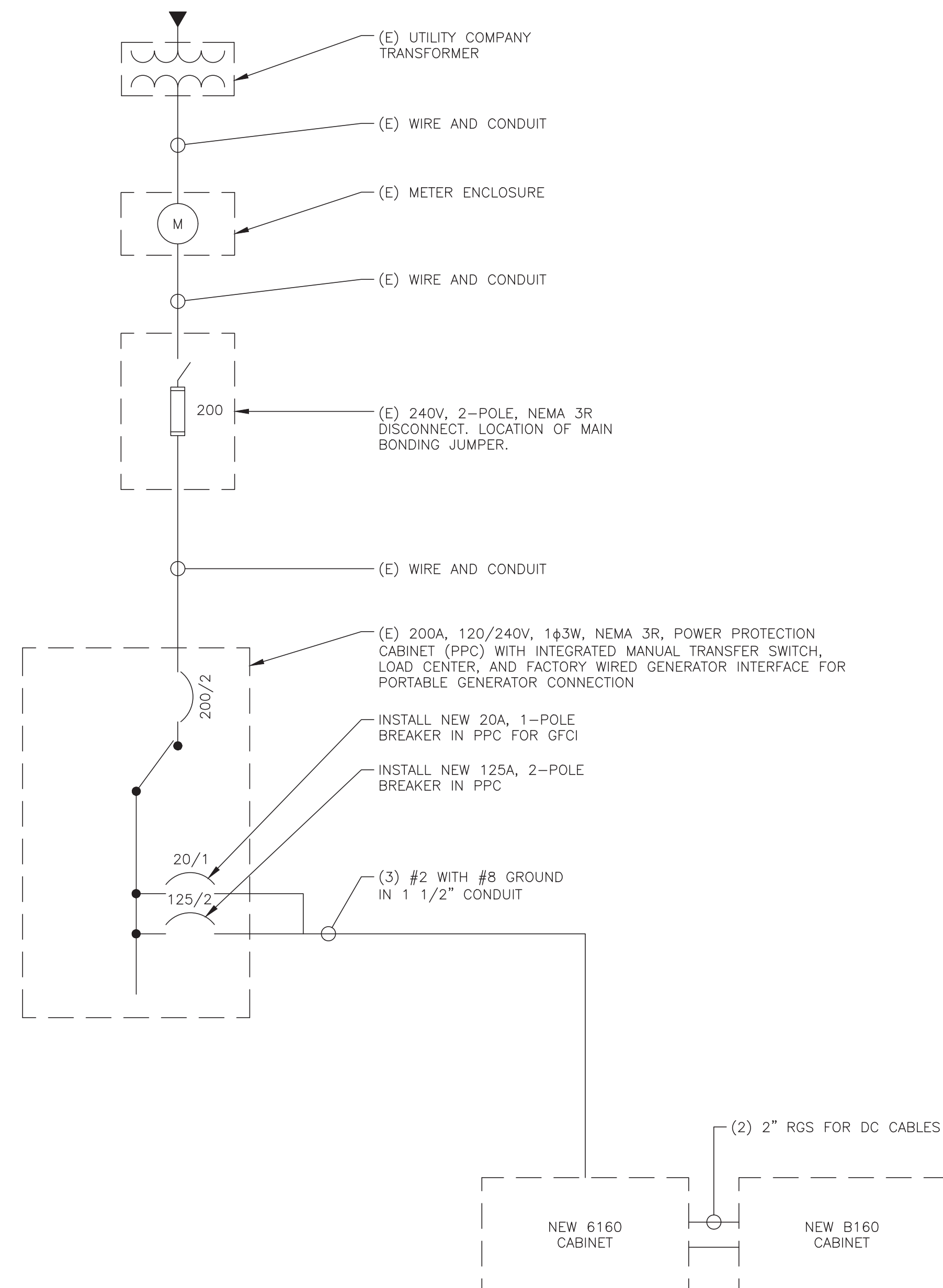
NOTE:
PANEL SCHEDULE PENDING FIELD VERIFICATION

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS		AMPS	POLES	LOAD
			L1	L2			
E6160 CABINET	2	125	1	2			
			3	4			
GFI	1	20	5	6			
			7	8			
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			

RATED VOLTAGE: 120/240 _____ 1 PHASE, 3 WIRE BRANCH POLES: 12 24 30 42 APPROVED MF'RS _____
RATED AMPS: 100 200 400 _____ CABINET: SURFACE FLUSH NEMA 1 3R 4X
 MAIN LUGS ONLY | MAIN 200 AMPS BREAKER FUSED SWITCH HINGED DOOR KEYPED DOOR LATCH
 FUSED CIRCUIT BREAKER BRANCH DEVICES _____ TO BE GFCI BREAKERS FULL NEUTRAL BUS GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL

REPLACE EXISTING BREAKER IN POSITION 1 AND 3 WITH A NEW 2P 150A BREAKER
REPLACE EXISTING BREAKER IN POSITION 5 WITH A NEW 1P 20A BREAKER
IF 125A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL Q012040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 FINAL T-MOBILE PANEL DETAIL
SCALE: NOT TO SCALE



NOTES:

- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL GROUNDING AND BONDING PER THE NEC.

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

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T-MOBILE
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SHEET NUMBER:

E-1

REVISION:

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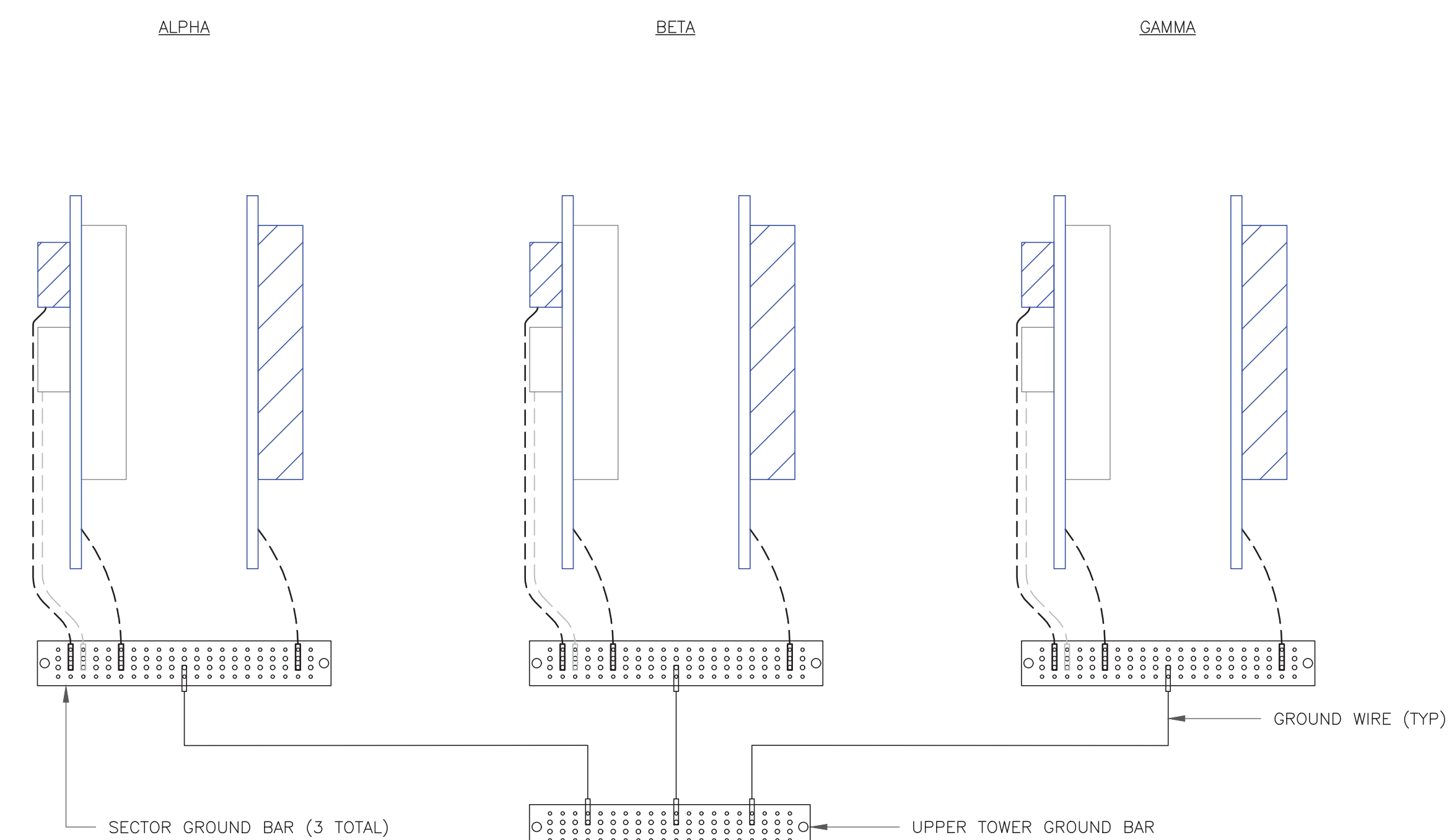


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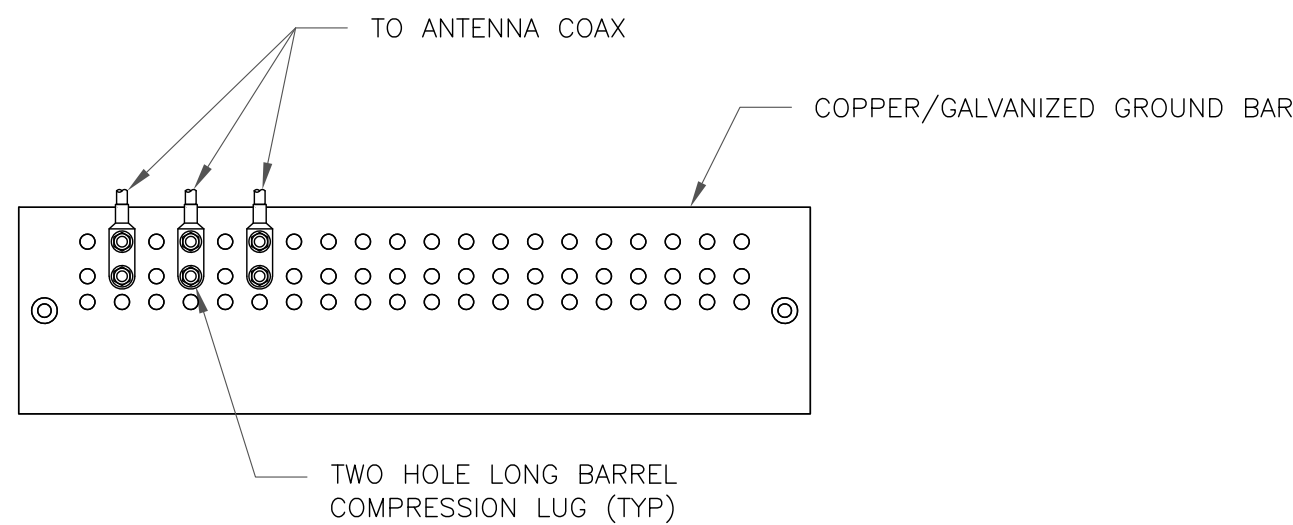
SHEET NUMBER: REVISION:

G-1 **0**



NOTE:
ALL NEW GROUNDS TO BE #6 STRANDED
COPPER WITH GREEN INSULATION UNLESS
NOTED OTHERWISE.

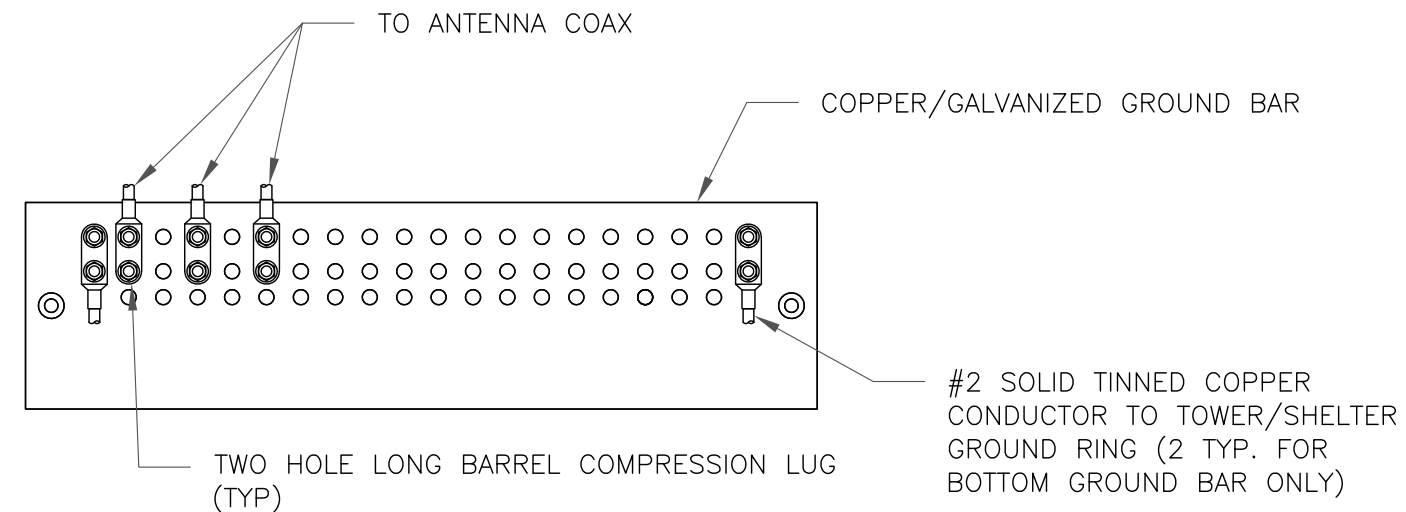
1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



NOTES:

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

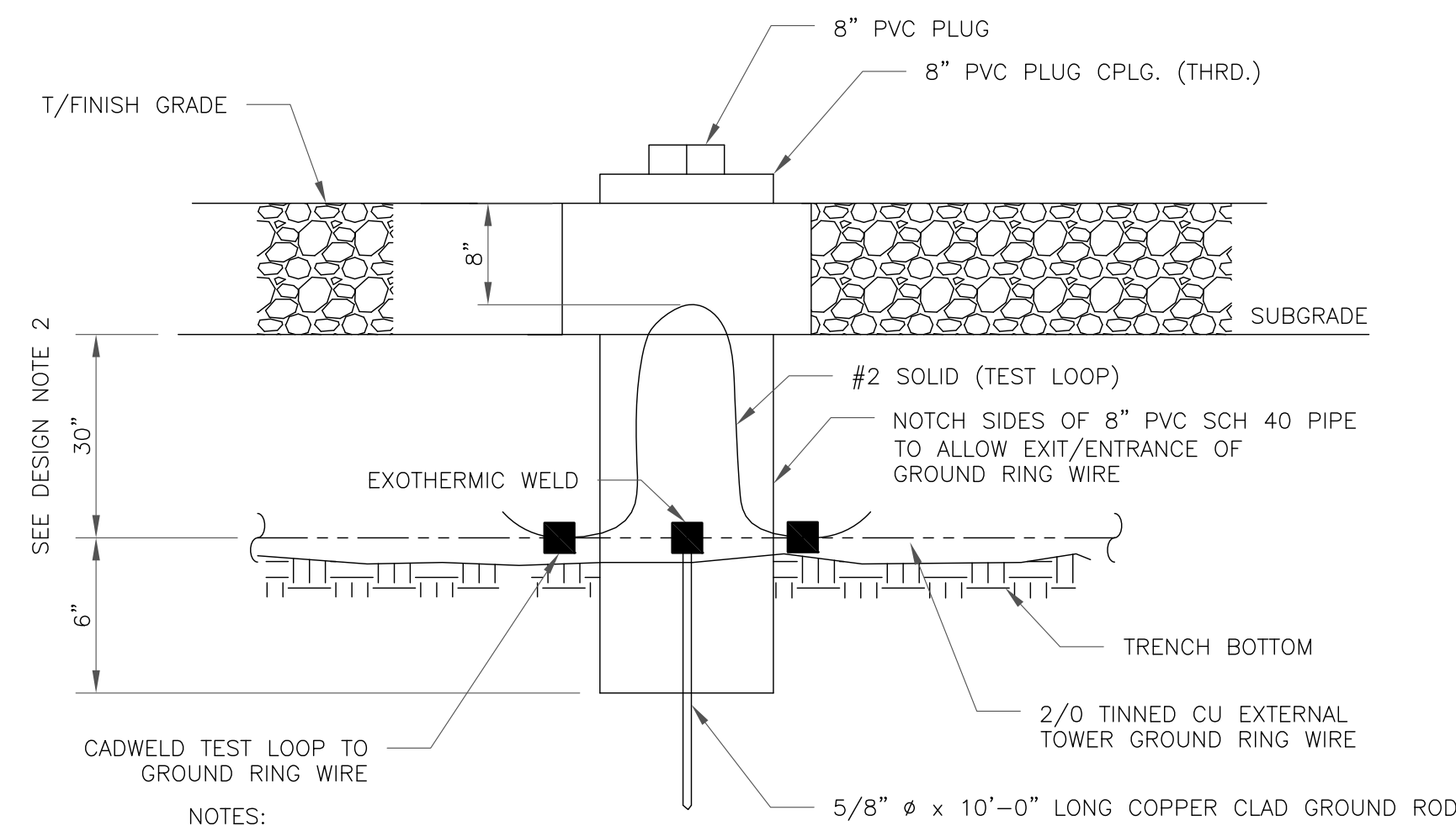
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

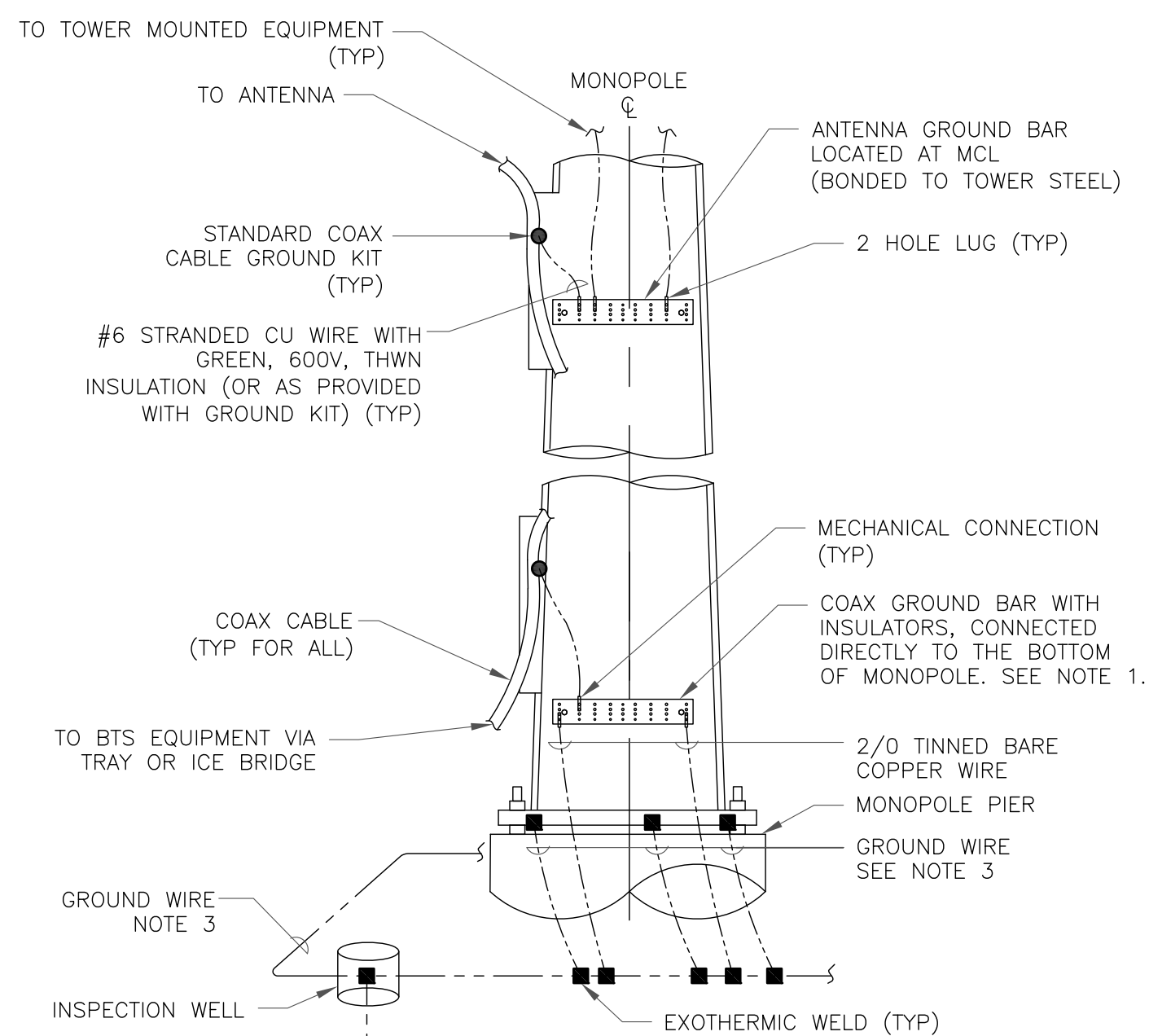
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

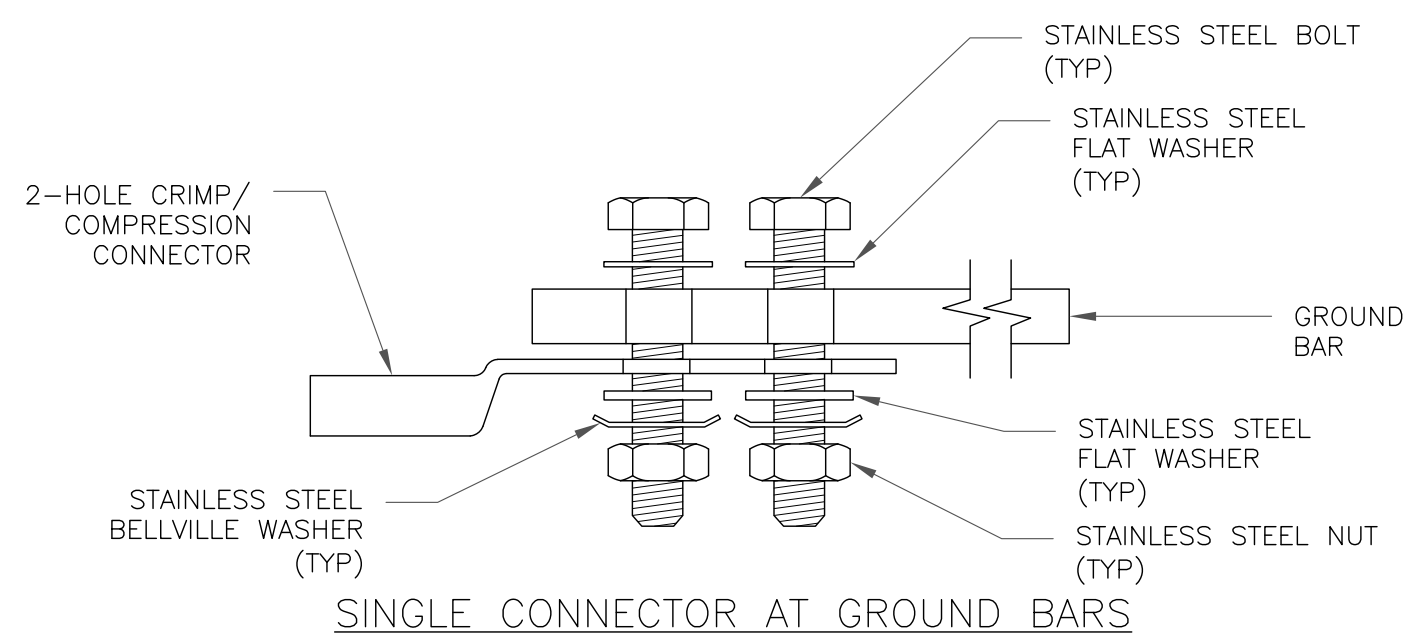
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



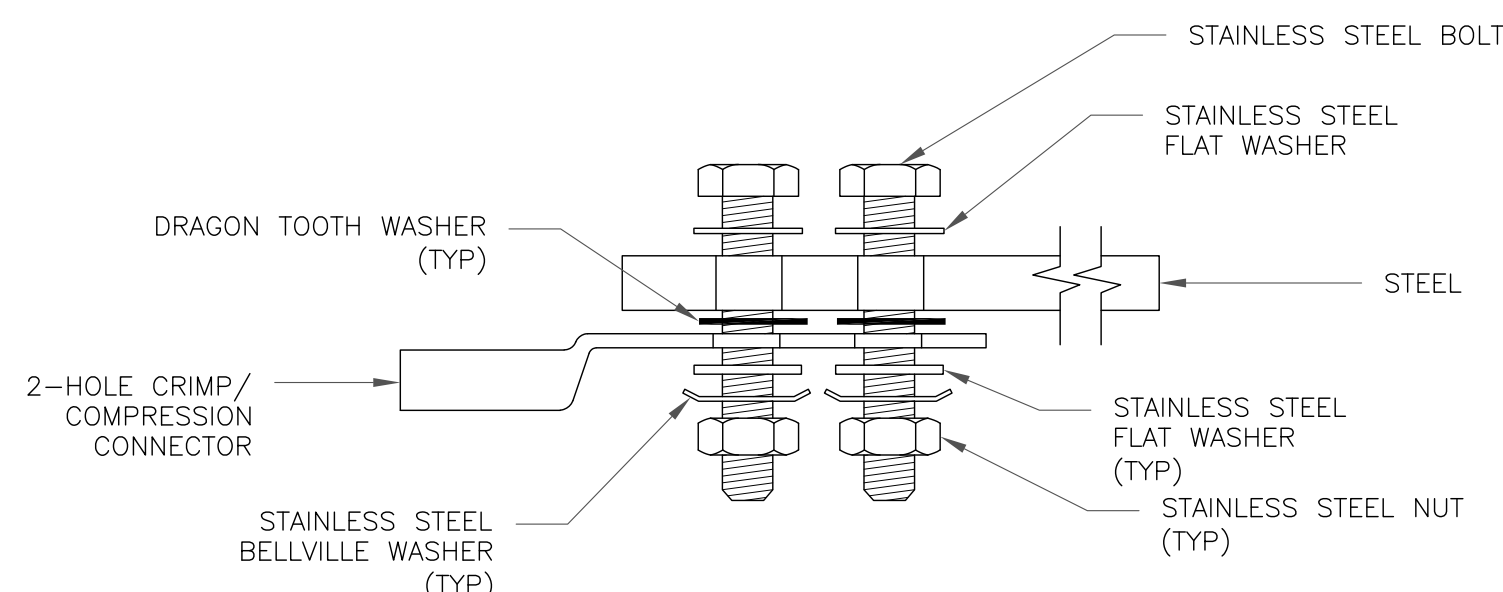
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

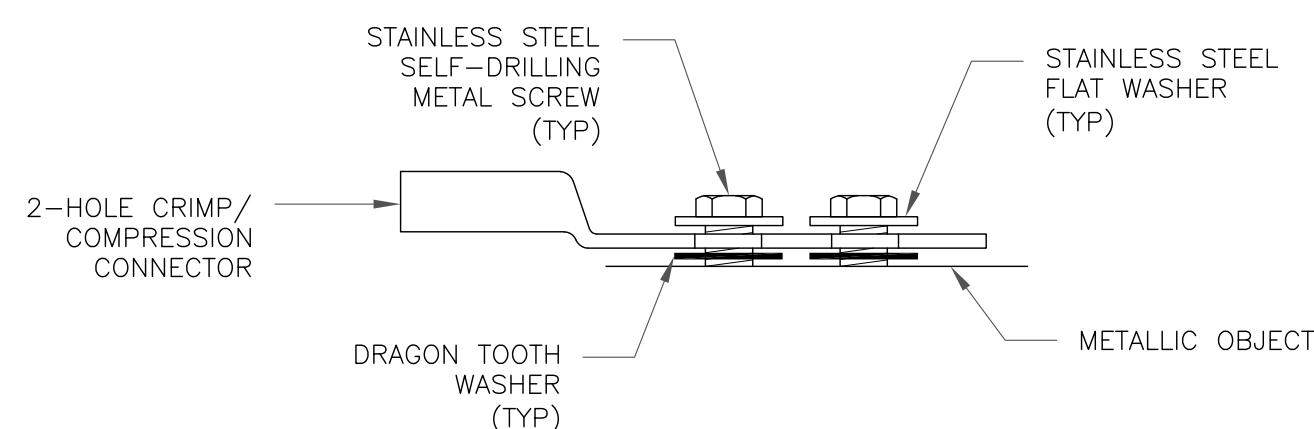
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

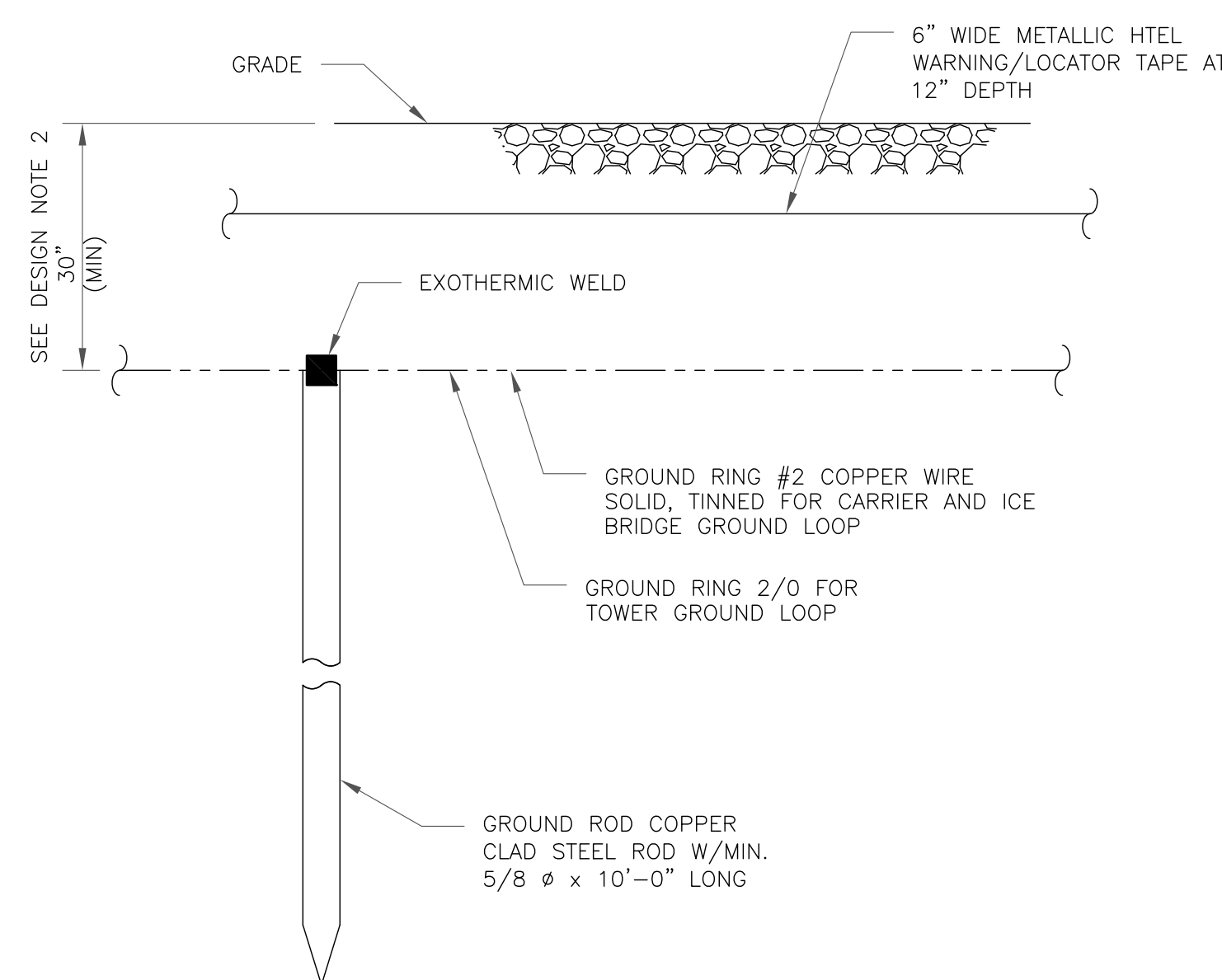


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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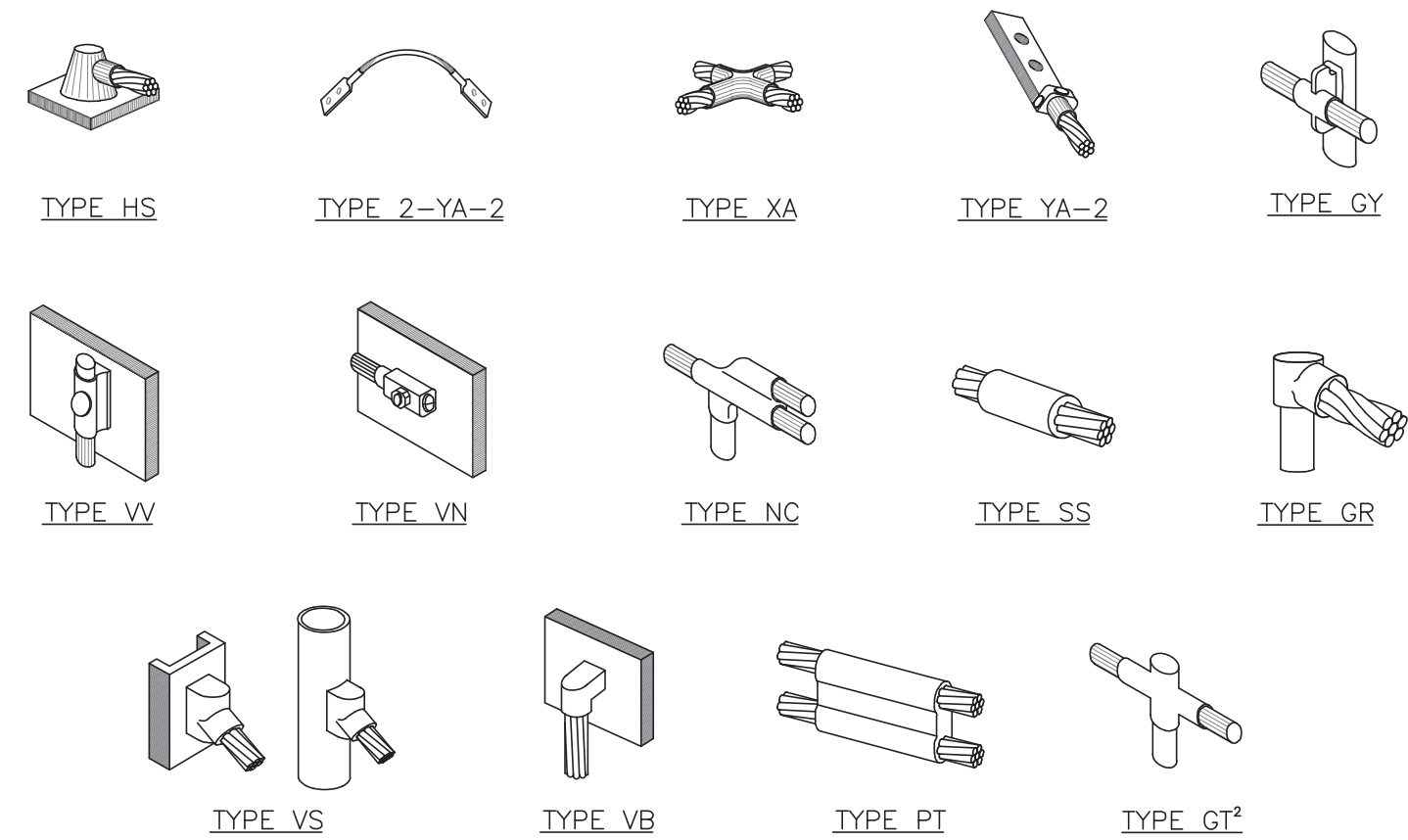
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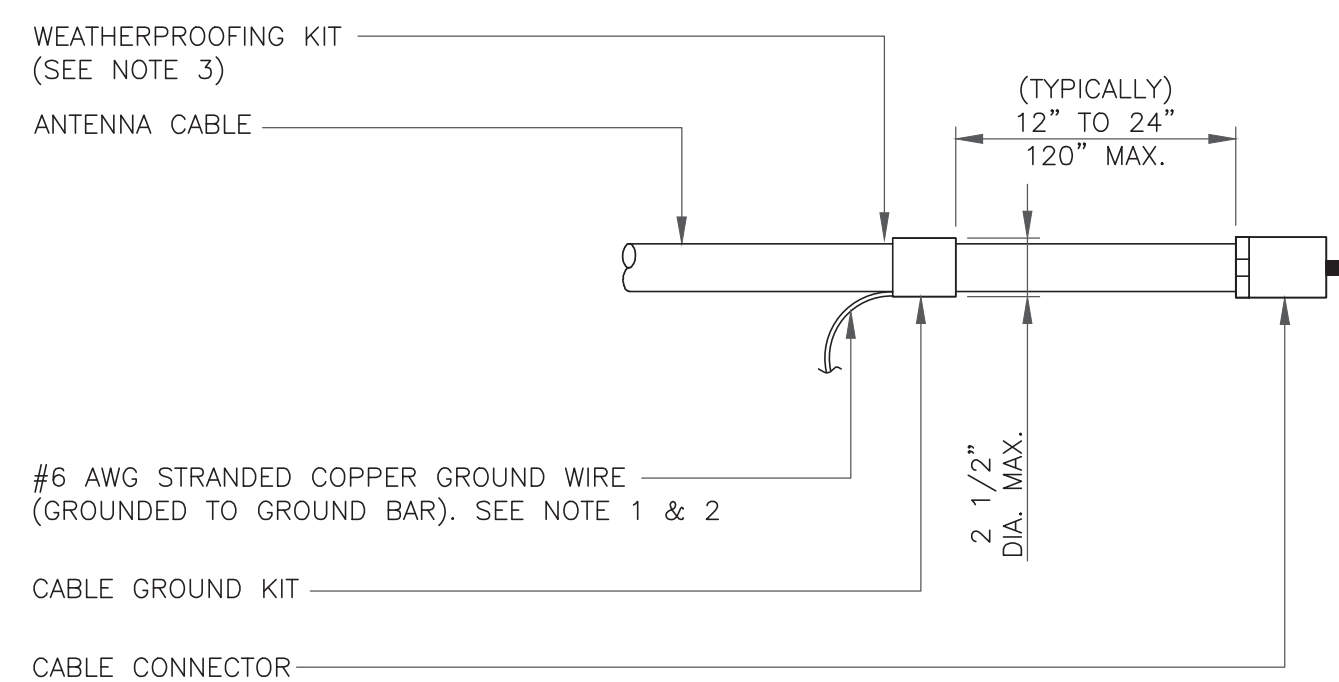
127643.010.01 (F) E.GRANBY 4Q2000 - GALASSO.dwg - Sheet:G-2 - User: lisc.rider - May 12, 2022 - 8:03pm



NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

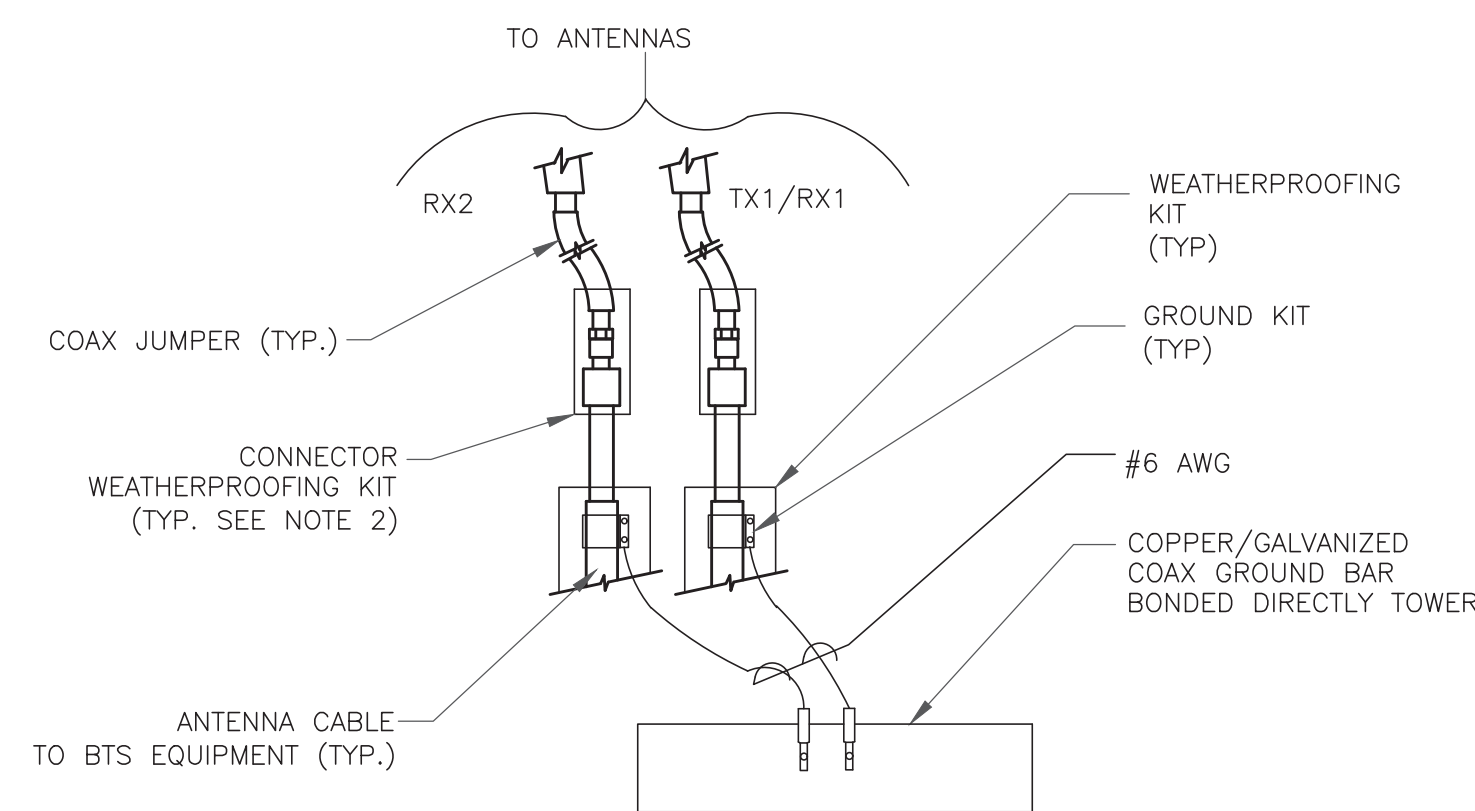
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



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.

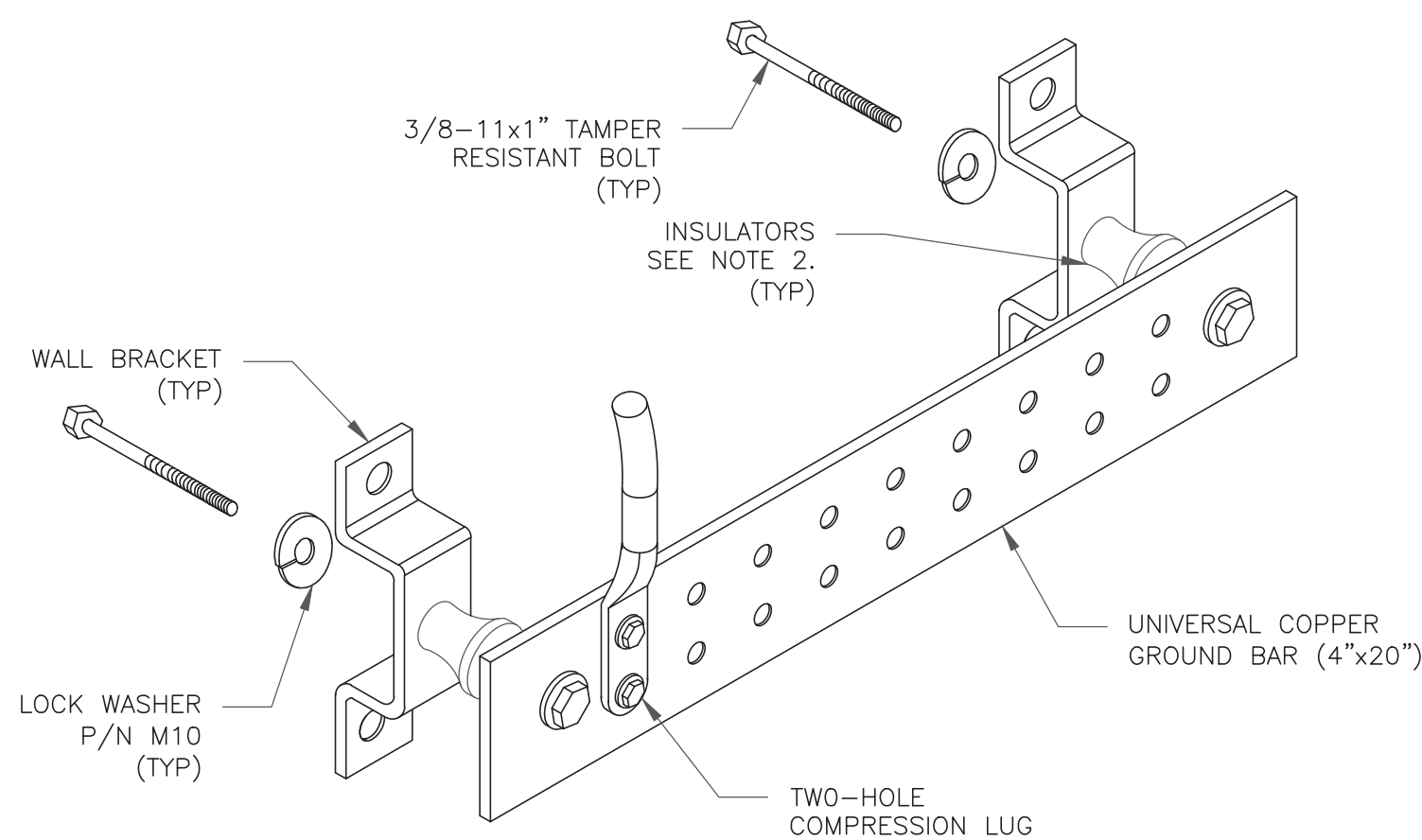
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

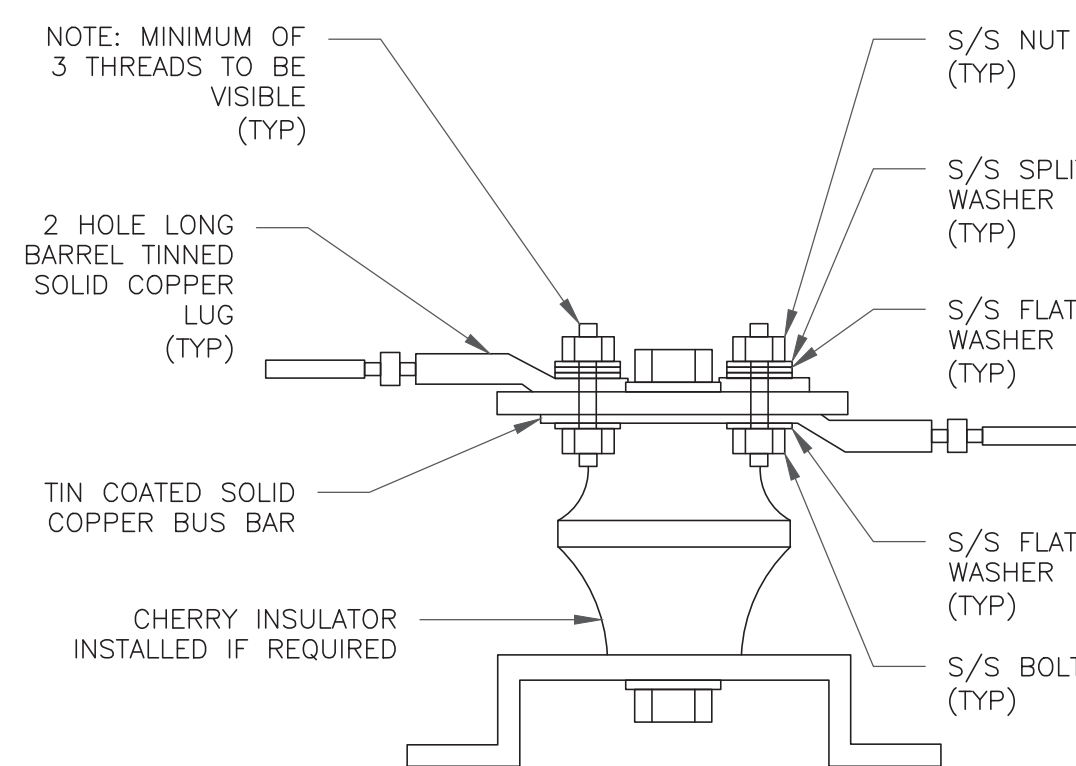
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

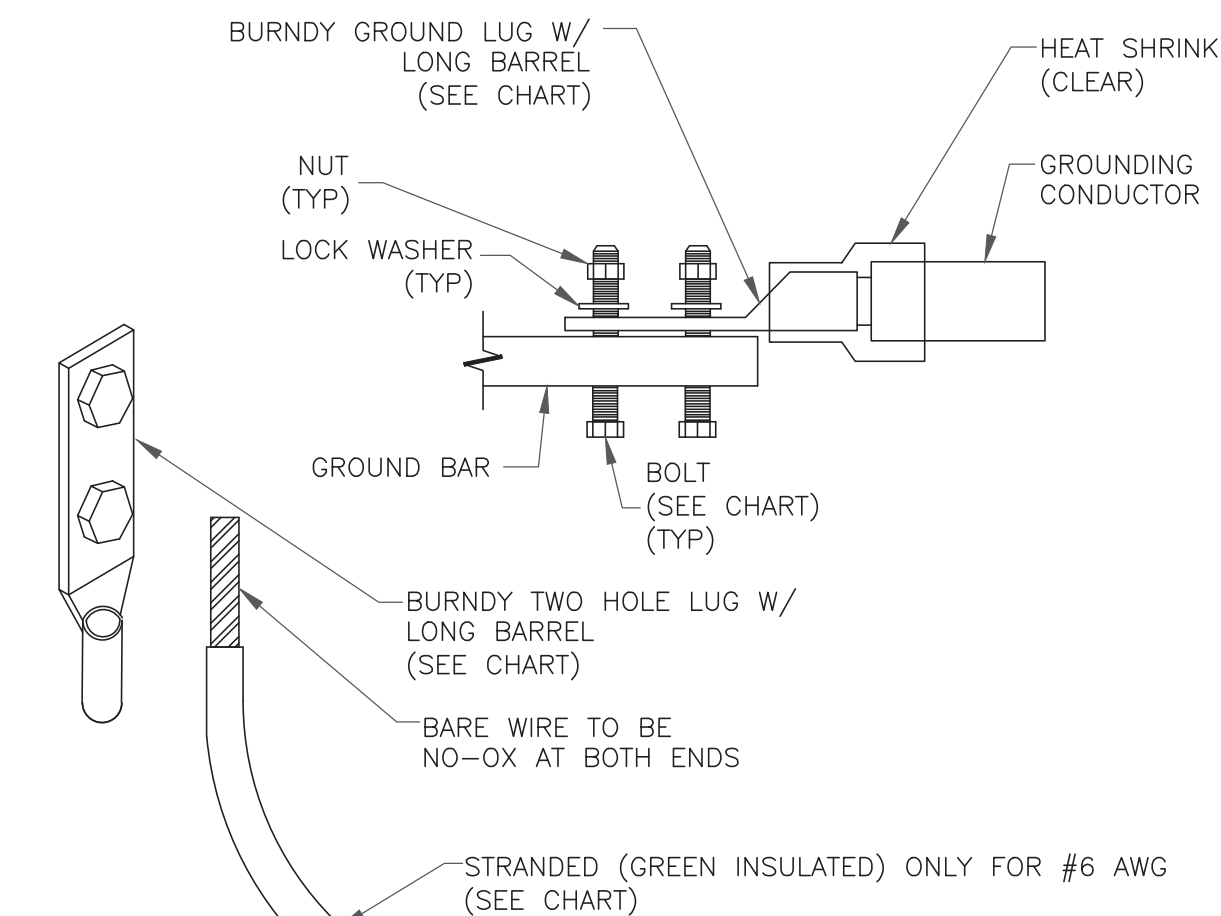
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

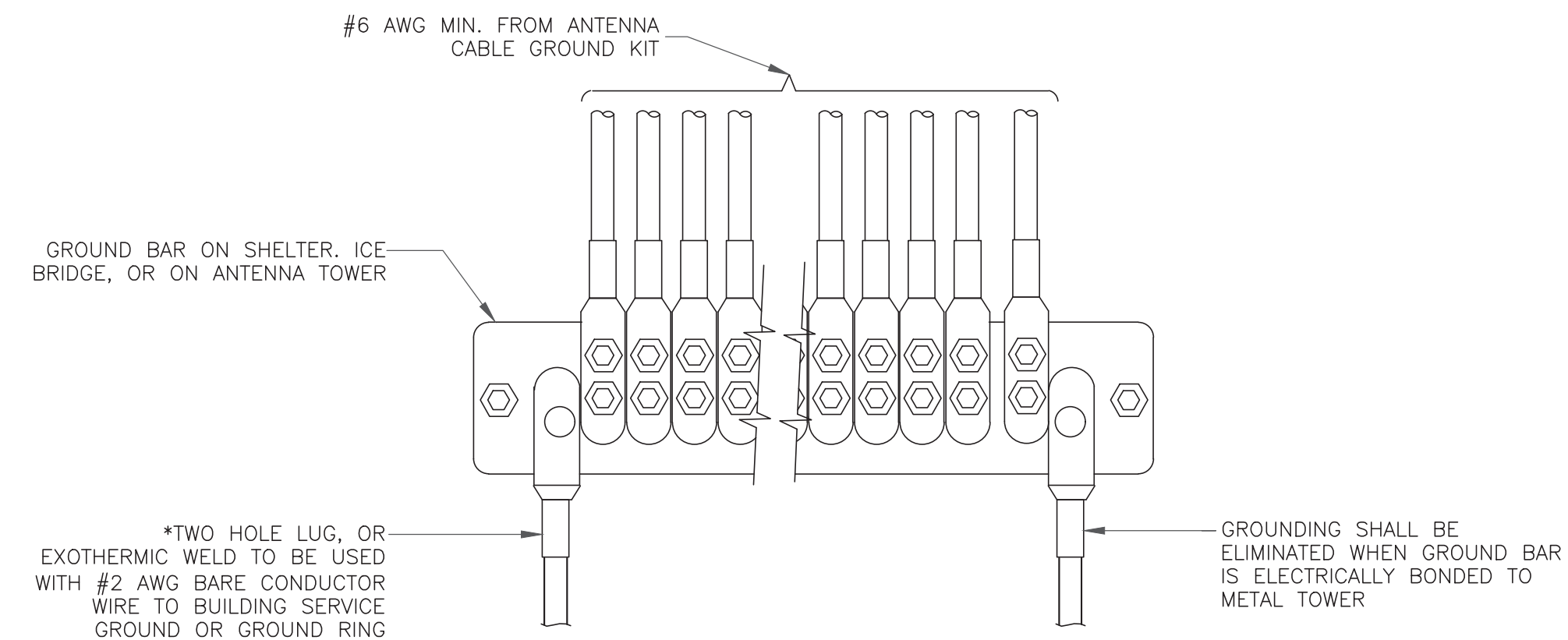
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



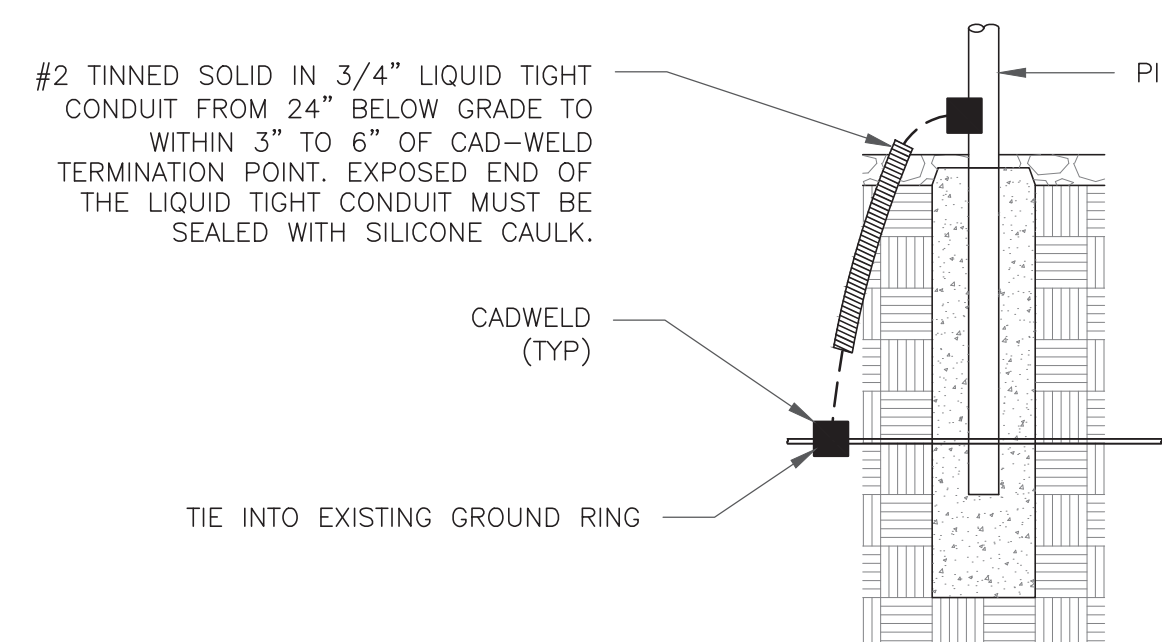
NOTES:

1. 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.

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE

3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
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www.btgrp.com

T-MOBILE
SITE NUMBER: CT11542A

BU #: 876399
(F) E. GRANBY 4Q2000
/GALASSO

60 SOUTH MAIN ST.
EAST GRANBY, CT 06026

EXISTING
98'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/28/22	MEH	PRELIMINARY REVIEW	KT
0	5/12/22	MEH	CONSTRUCTION	LR



5/12/22

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

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:

G-3

REVISION:

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