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

October 11, 2021

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

RE: **Notice of Exempt Modification for T-Mobile: CTHA354A**
Crown Site ID: 876365
3 Carion Road, Union, CT 06076
Latitude: 41° 59" 16.56" / Longitude: -72° 6' 48.96"

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 178-foot mount on the existing 180-foot monopole tower located at 3 Carion Road, Union, CT. The property is owned by Sherwood Bauer and Crown Castle is the tower owner. T-Mobile now intends to replace six (6) antennas and ancillary equipment at the 178ft 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) RFS – APX16VAALL24_43-U-NA20 Antenna
(3) Ericsson- AIR6449 B41 Antenna
(3) Ericsson Radio 4460 B25 + B66 Remote Radios
(3) Ericsson – Radio 4480 B71+B85
(3) Hybrid Cables 6X24
(3) Handrail Kit Site Pro 1 – HRK12

Remove:
(3) RFS/Celwave – APXVTM14-ALU-120 Antennas
(3) Commscope – NNVV-65B-R4 Antennas
(3) Alcatel lucent – 1900MHZ 4x45W-65MHZ
(6) Alcatel Lucent – RRH2x50-800
(3) Alcatel Lucent – TD-RRH8x20-25

Ground:

Install New:
(1) 6160 Site Support Cabinet
(1) B160 Battery Cabinet
(1) RBS 6601 IN SSC
(1) DUG20 IN SSC

(1.) CSR IXRE V2 Transport System
(1) PSU4813 Voltage Booster
(1) BB6648 IN 6160 SSC Cabinet

Remove:
(1) (E) MBTS Cabinet
(1) (E) Equipment Cabinet

The facility was originally approved by the Town of Unison on December 27th, 2000. No conditions were included with the approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to The First Selectman, Mr. David Eaton, for the Town of Union, Mr. Joe Pajak, Building Officer for the Town of Union and Mr. Sherwood Bauer, the property owner. Crown Castle is the 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
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments
cc:

David Eaton, First Selectman
Town of Union
1043 Buckley Hwy
Union, CT 06070
860-684-8830

Joe Pajak, Building Official
Town of Union
1043 Buckley Hwy
Union, CT 06070
860-234-1053

Sherwood Bauer, Property Owner
1 Carion Road
Union, CT 06070

Crown Castle Tower Owner

1 CARION RD

Location 1 CARION RD

Mblu 23/ 19/ 005/ /

Acct# 00003600

Owner BAUER SHERWOOD R & JOAN M

Assessment $293,490

Appraisal $466,050

PID 241

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	$120,200	$345,850	$466,050
Assessment			
Valuation Year	Improvements	Land	Total
2018	$84,140	$209,350	$293,490

Owner of Record

Owner BAUER SHERWOOD R & JOAN M
Co-Owner
Address 1 CARION RD
UNION, CT 06076

Sale Price $0
Certificate
Book & Page 64/50
Sale Date 12/09/2015
Instrument 01

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
BAUER SHERWOOD R & JOAN M	$0		64/50	01	12/09/2015
BAUER SHERWOOD R	$0		32/638		05/31/1998

Building Information

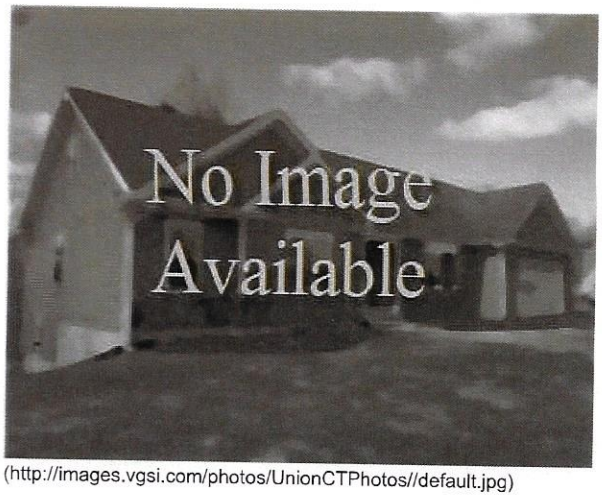
Building 1 : Section 1

Year Built: 2015
Living Area: 1,008
Replacement Cost: $123,914
Building Percent Good: 97

Replacement Cost
Less Depreciation: $120,200

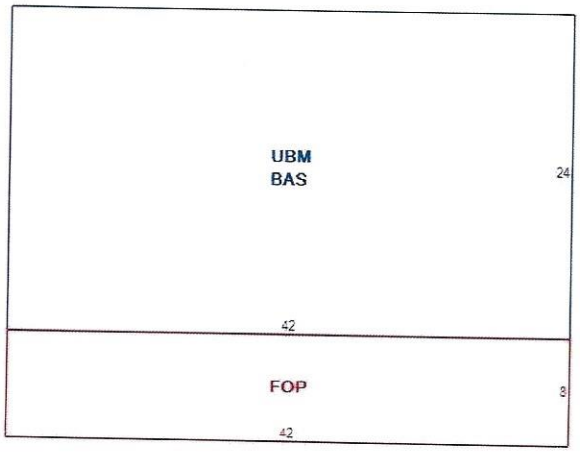
Building Attributes	
Field	**Description**
Style	Ranch
Model	Residential
Grade:	C
Stories:	
Occupancy	
Exterior Wall 1	Cedar or Redwd
Exterior Wall 2	
Roof Structure:	Gable or Hip
Roof Cover	Archit Shingle
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Pergo/Laminate
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	Central
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	4
Bath Style:	Average
Kitchen Style:	Average

Building Photo



(http://images.vgsi.com/photos/UnionCTPhotos//default.jpg)

Building Layout



(ParcelSketch.ashx?pid=241&bid=241)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,008	1,008
FOP	Open Porch	336	0
UBM	Unfinished Basement	1,008	0
		2,352	1,008

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use **Land Line Valuation**

Land Use

Use Code	1010
Description	Single Fam MDL-01
Zone	RT
Neighborhood	12
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	44.50
Frontage	0
Depth	0
Assessed Value	$209,350
Appraised Value	$345,850

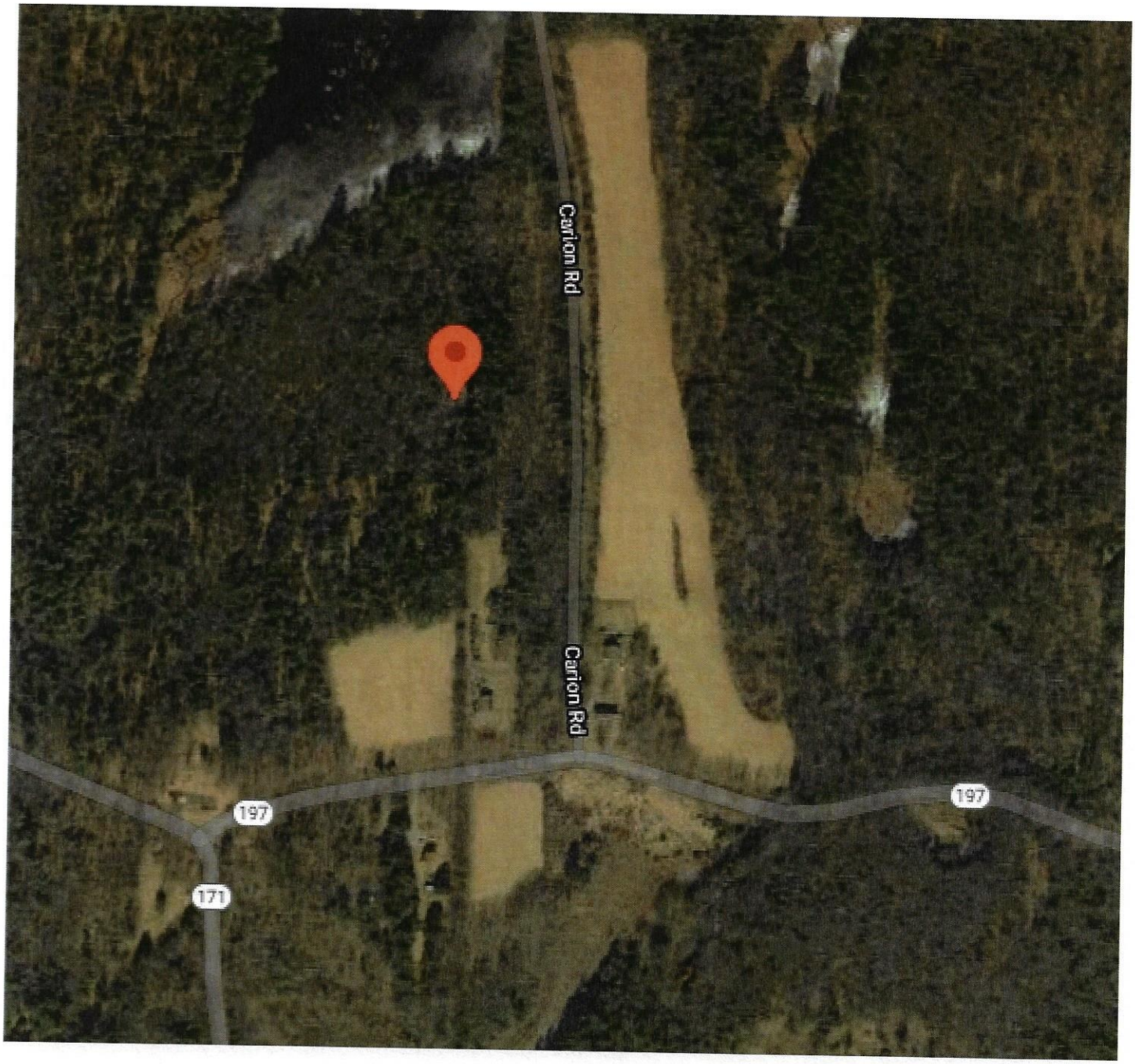
Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$120,200	$345,850	$466,050
2017	$122,240	$370,650	$492,890
2013	$0	$370,650	$370,650

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$84,140	$209,350	$293,490
2017	$85,570	$223,830	$309,400
2013	$0	$176,910	$176,910


Carlon Rd
Carlon Rd
197
197
171

Paid - Check #25867
Amt 2530.00
E. Stovesky

TOWN OF UNION

BUILDING PERMIT

Date 12/27/00

NO. 0047

Est. Value $ 253,000
Bldg. Permit Fee 2530 00
Land Use
TOTAL FEE 2,530 00

Paid 25867 2530.00 E.K.

A PERMIT MUST BE OBTAINED AND FEE PAID BEFORE BEGINNING WORK.
This card must be kept posted until final inspection has been made and bottom half returned to the Building Inspector's Office before the building is occupied and a Certificate of Occupancy is issued.

The undersigned hereby applies for permit to do work according to the following specifications, same to be in all respects in accordance with the laws and building regulations of the State of Connecticut, Basic Building Code, Land Use regulations and ordinances of the Town of Union, Connecticut. A final inspection is required before the building can be occupied or a Certificate of Use or Occupancy is issued.

APPLICATION MUST BE TYPED OR PRINTED

Owner Sprint Spectrum L.P. Street 1 International Blvd. Phone (201) 684-4000

Lot No. 5 House No. 3 Road Carion Road

Owner of land Sherwood Randy Baver Address 3 Carion Road Union CT Phone (860) 974-0000

Builder McPhee Electric Address 505 Main St. Farmington CT Phone (860) 677-9797

Architect SEA Consultants Address 2080 Silas Deane Highway Suite 302 Rocky Hill CT Phone (860) 563-7975

Type of building 180' monopole + Related Facility Size of building

Floor area 1st floor 2nd floor Total

Type of heat: Hot Water ☐ Hot Air ☐ Steam ☐ Electric ☐ Wood ☐

Type of work: Original ☐ Alteration ☐ Addition ☐ Repair ☐ Demolish ☐

Approvals: Septic Perc ☐ Wetlands ☐ Driveway ☐ Fire Marshal ☐ Planning ☐

Signature Erich Dixon the Agent of Sprint PCS Building Official Edward F Stovesky

DO NOT DESTROY OR MUTILATE.
POST THIS CARD SO IT IS VISIBLE FROM STREET.
INSPECTIONS MUST BE APPROVED AND THIS CARD RETURNED TO THE BUILDING DEPT. OFFICE BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.

Owner of land Address Phone

BUILDING INSPECTION APPROVALS	PLUMBING INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
1 FOOTINGS	1 ROUGH	1 ROUGH
2 FOUNDATION	2 FINISH	2 FINISH
3 FRAMING	HEATING INSPECTION APPROVALS	FIREPLACE CHIMNEYS
	1 ROUGH	1 ROUGH
4 INSULATION AS PER PRINT	2 FINISH Town HALL	2 FINISH NT TOWER

Work shall not proceed until the Inspector has approved the various stages of construction.

PERMIT WILL BECOME NULL AND VOID IF CONSTRUCTION WORK IS NOT STARTED WITHIN SIX MONTHS OF DATE THE PERMIT IS ISSUED AS NOTED ABOVE.

Inspections indicated on this card can be arranged for by telephone or personal written notification.

Building Official

Paid - Check # 25867
AMT 2530.00
E. Stoveski

TOWN OF UNION

BUILDING PERMIT

Date 12/27/00

NO. 0047

Est. Value $	253,000
Bldg. Permit Fee	2530.00
Land Use	
TOTAL FEE	2,530.00

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APPLICATION MUST BE TYPED OR PRINTED

Owner Sprint Spectrum L.P. Street 1 International Blvd. Phone (201) 684-4000
Lot No. 5 House No. 3 Road Cacion Road
Owner of land Howard Randy Bauer Address 3 Cacion Road Union CT Phone (860) 974-0000
Builder McPhee Electric Address 505 Main St. Farmington CT Phone (860) 677-9797
Architect SEA Consultants Address 2080 Silas Deane Highway Suite 302 Rocky Hill CT Phone (860) 563-7775
Type of building 180' monopole + related facility Size of building
Floor area 1st floor 2nd floor Total
Type of heat: Hot Water ☐ Hot Air ☐ Steam ☐ Electric ☐ Wood ☐
Type of work: Original ☐ Alteration ☐ Addition ☐ Repair ☐ Demolish ☐
Approvals: Septic Perc ☐ Wetlands ☐ Driveway ☐ Fire Marshal ☐ Planning ☐
Signature [illegible] Agent of Sprint PCS Building Official [illegible signature]

**DO NOT DESTROY OR MUTILATE.
POST THIS CARD SO IT IS VISIBLE FROM STREET.
INSPECTIONS MUST BE APPROVED AND THIS CARD RETURNED TO THE BUILDING DEPT. OFFICE BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.**

Owner of land Address Phone

BUILDING INSPECTION APPROVALS	PLUMBING INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
1 FOOTINGS	1 ROUGH	1 ROUGH
2 FOUNDATION	2 FINISH	2 FINISH
3 FRAMING	**HEATING INSPECTION APPROVALS**	**FIREPLACE** **CHIMNEYS**
	1 ROUGH	1 ROUGH
4 INSULATION AS PER PRINT	2 FINISH AT TOWN HALL	2 FINISH AT TOWER

Work shall not proceed until the Inspector has approved the various stages of construction.

PERMIT WILL BECOME NULL AND VOID IF CONSTRUCTION WORK IS NOT STARTED WITHIN SIX MONTHS OF DATE THE PERMIT IS ISSUED AS NOTED ABOVE.

Inspections indicated on this card can be arranged for by telephone or personal written notification.

Building Official

Fiscal Authorization Policy

SPRINT PCS

ATTACHMENT C
TEMPORARY DELEGATION OF APPROVAL AUTHORITY

To : VP, Controller - Sprint PCS

I

Michael Loucy	Director of Site Development
Authorizing Name (Print/Type)	**Title**

in accordance with Sprint PCS Financial Policy, paragraph 9.1, do hereby delegate my fiscal approval authority to :

Tom Kincaid	145-76-7791	Site Development Manager
Employee Name (Print/Type)	**Social Security Number**	**Title**

for the following department(s):

Department Number(s)

13249	20100/20109
20200/20209	26100/26109
20800/20809	22100/22109
23500/23509	

This delegation is effective for the period **DECEMBER 26, 2000 THROUGH DECEMBER 29, 2000** (not to exceed 30 days) and is necessary due to VACATIOIN (reason: e.g. absence, vacation, etc.)

Signature of person receiving temporary delegation	12/22/2000 **Date**
Signature of person whose authority is being delegated	12/22/2000 **Date**

A copy of this completed form should accompany all individual financial commitments or expenditure documentation approved under the above temporary delegation.

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Tuesday, October 19, 2021 11:43 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 284889635911: Your package has been delivered

Hi. Your package was delivered Tue, 10/19/2021 at 11:41am.

Delivered to 1043 BUCKLEY HWY, UNION, CT 06076
Received by J.JOHNSON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 284889635911

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Unionm First Selectman David Eaton 1043 Buckley HWY UNION, CT, US, 06076
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/14/2021 06:41 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	UNION, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Tuesday, October 19, 2021 11:43 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 284889730500: Your package has been delivered

Hi. Your package was delivered Tue, 10/19/2021 at 11:41am.

Delivered to 1043 BUCKLEY HWY, UNION, CT 06076
Received by J.JOHNSON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 284889730500

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Unionm Building Official Joe Pajak 1043 Buckley HWY UNION, CT, US, 06076
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/14/2021 06:41 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	UNION, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, October 15, 2021 11:42 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 284889493242: Your package has been delivered

Hi. Your package was delivered Fri, 10/15/2021 at 11:40am.

Delivered to 1 CARION RD, UNION, CT 06076

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 284889493242

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO	Sherwood Bauer Sherwood Bauer 1 Carion Road UNION, CT, US, 06076
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/14/2021 06:41 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	UNION, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday Residential Delivery
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Date: **September 06, 2021**

MORRISON HERSHFIELD

Morrison Hershfield
1455 Lincon Parkway, Suit 500
Atlanta, GA 30346
(770) 379-8500

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Site Number:**	CTHA354A
	Site Name:	CT33XC005
Crown Castle Designation:	**BU Number:**	876365
	Site Name:	Kingston W. / Bauer (SSUSA)
	JDE Job Number:	684634
	Work Order Number:	2014542
	Order Number:	584568 Rev. 0
Engineering Firm Designation:	**Morrison Hershfield Project Number:** CN9-519 / 2101398	
Site Data:	**3 Carion Rd, Union, Tolland County, CT 06076** **Latitude *41° 59' 16.56"*, Longitude *-72° 6' 48.96"*** **180 Foot EEI Monopole Tower**	

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

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

LC5: Proposed Equipment Configuration **Sufficient Capacity-60.0%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria."

Respectfully submitted by:

G. Lance Cooke, P.E. (CT Licenses No.PEN.0028133)
Senior Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 180 ft Monopole tower designed by Engineered Endeavors, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	2 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)
180.0	178.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
	180.0	1	-	Platform Mount [LP 604-1]		
		1	-	Site Pro 1 HRK12 Handrail Kit		

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)
76.0	77.0	1	lucent	KS24019-L112A	1	1/2
	76.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1531937	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	2259246	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1533008	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The foundation steel reinforcement was assumed to be the minimum required per ACI 318.
4) The following material grades were assumed
   a) Concrete compressive strength: f'c = 3 ksi
   b) Foundation flexural reinforcement: fy = 60 ks

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield 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	180 - 155.21	Pole	TP24.22x19x0.1875	1	-4.55	850.94	20.1	Pass
L2	155.21 - 124.833	Pole	TP30.11x23.0905x0.3125	2	-8.13	1760.87	21.3	Pass
L3	124.833 - 83.3367	Pole	TP38.09x28.5893x0.4375	3	-16.50	3117.31	21.5	Pass
L4	83.3367 - 40.84	Pole	TP46.03x36.1094x0.5	4	-28.93	4310.28	22.9	Pass
L5	40.84 - 0	Pole	TP53.5x43.7164x0.5625	5	-47.93	5805.48	23.2	Pass
							Summary	
						Pole (L5)	23.2	Pass
						Rating =	23.2	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	21.8	Pass
1	Base Plate		30.3	Pass
1	Base Foundation (Structure)	0	27.8	Pass
1	Base Foundation (Soil Interaction)		60.0	Pass

Structure Rating (max from all components) =	60.0%*

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.

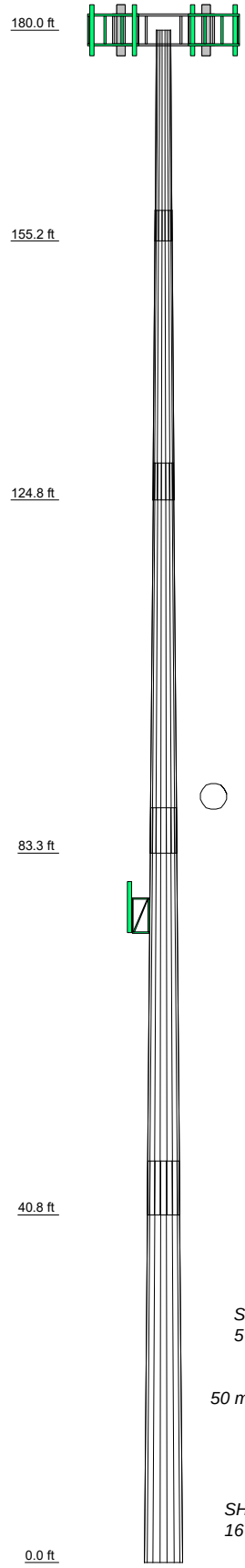
4.1) Recommendations

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

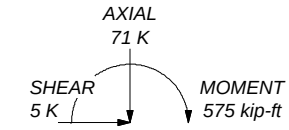
APPENDIX A

TNXTOWER OUTPUT

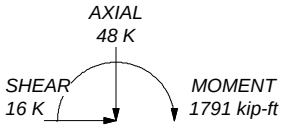
Section	1	2	3	4	5	
Length (ft)	24.79	33.96	45.83	47.83	47.17	35.5
Number of Sides	18	18	18	18	18	
Thickness (in)	0.1875	0.3125	0.4375	0.5000	0.5625	
Socket Length (ft)	3.58	4.33	5.33	6.33		
Top Dia (in)	19.0000	23.0905	28.5893	36.1094	43.7164	
Bot Dia (in)	24.2200	30.1100	38.0900	46.0300	53.5000	
Grade	A572-65					
Weight (K)	1.1	3.0	7.1	10.5	13.8	



ALL REACTIONS ARE FACTORED



TORQUE 1 kip-ft
50 mph WIND - 2.0000 in ICE



TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 23.2%

Morrison Hershfield
Consulting Engineers
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
Phone: (770) 379-8500
FAX: (770) 379-8501

Job:	CN9-519 / 2101398		
Project:	876365 / KINGSTON W. / BAUER		
Client: Crown Castle USA	Drawn by: ANS	App'd:	
Code: TIA-222-H	Date: 09/07/21	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

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

Tower base elevation above sea level: 930.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 2.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

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	180.00-155.21	24.79	3.58	18	19.0000	24.2200	0.1875	0.7500	A572-65 (65 ksi)
L2	155.21-124.83	33.96	4.33	18	23.0905	30.1100	0.3125	1.2500	A572-65 (65 ksi)
L3	124.83-83.34	45.83	5.33	18	28.5893	38.0900	0.4375	1.7500	A572-65 (65 ksi)
L4	83.34-40.84	47.83	6.33	18	36.1094	46.0300	0.5000	2.0000	A572-65 (65 ksi)
L5	40.84-0.00	47.17		18	43.7164	53.5000	0.5625	2.2500	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	19.2642	11.1958	500.5935	6.6784	9.6520	51.8642	1001.8456	5.5990	3.0140	16.075
	24.5647	14.3023	1043.6203	8.5315	12.3038	84.8212	2088.6137	7.1525	3.9327	20.975
L2	24.1506	22.5929	1480.9453	8.0862	11.7300	126.2533	2963.8393	11.2986	3.5139	11.245
	30.5263	29.5554	3315.3843	10.5781	15.2959	216.7502	6635.1311	14.7805	4.7494	15.198
L3	29.8750	39.0923	3914.1813	9.9939	14.5234	269.5093	7833.5129	19.5499	4.2617	9.741
	38.6101	52.2852	9364.9159	13.3666	19.3497	483.9820	18742.1544	26.1476	5.9338	13.563
L4	37.7126	56.5121	9053.3179	12.6413	18.3436	493.5418	18118.5484	28.2614	5.4753	10.951
	46.6630	72.2561	18923.7555	16.1632	23.3832	809.2871	37872.4113	36.1349	7.2213	14.443
L5	45.6378	77.0459	18127.0191	15.3196	22.2079	816.2412	36277.8902	38.5302	6.7041	11.918
	54.2385	94.5133	33462.4074	18.7928	27.1780	1231.2314	66968.8455	47.2656	8.4260	14.98

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 180.00-155.21				1	1	1			
L2 155.21-124.83				1	1	1			
L3 124.83-83.34				1	1	1			
L4 83.34-40.84				1	1	1			
L5 40.84-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	180.00 - 0.00	1	No Ice	0.04	0.22
							1/2" Ice	0.14	0.75
							1" Ice	0.24	1.28
							2" Ice	0.44	2.34

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Step Pegs (5/8" SR) 7-in. w/30" step	C	No	No	CaAa (Out Of Face)	180.00 - 0.00	1	No Ice	0.00	0.49
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
180									
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	No	Inside Pole	180.00 - 0.00	3	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
							2" Ice	0.00	2.50
76									
LDF4-50A(1/2)	A	No	No	Inside Pole	76.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.00-155.21	A	0.000	0.000	0.000	0.000	0.19
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.930	0.02
L2	155.21-124.83	A	0.000	0.000	0.000	0.000	0.23
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.139	0.02
L3	124.83-83.34	A	0.000	0.000	0.000	0.000	0.31
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.556	0.03
L4	83.34-40.84	A	0.000	0.000	0.000	0.000	0.32
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.594	0.03
L5	40.84-0.00	A	0.000	0.000	0.000	0.000	0.31
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.531	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.00-155.21	A	1.999	0.000	0.000	0.000	0.000	0.19
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.842	0.06
L2	155.21-124.83	A	1.964	0.000	0.000	0.000	0.000	0.23
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	13.286	0.07
L3	124.83-83.34	A	1.906	0.000	0.000	0.000	0.000	0.31
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	17.853	0.10
L4	83.34-40.84	A	1.810	0.000	0.000	0.000	0.000	0.32
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	17.792	0.10
L5	40.84-0.00	A	1.616	0.000	0.000	0.000	0.000	0.31
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	16.318	0.09

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	180.00-155.21	-0.2954	0.1705	-1.4550	0.8401
L2	155.21-124.83	-0.2974	0.1717	-1.5463	0.8927
L3	124.83-83.34	-0.2990	0.1726	-1.6064	0.9275
L4	83.34-40.84	-0.3001	0.1732	-1.6341	0.9434
L5	40.84-0.00	-0.3008	0.1737	-1.6163	0.9332

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
180									
8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
Transition Ladder	C	None		0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.00 8.00 10.00 14.00	6.00 8.00 10.00 14.00	0.16 0.24 0.32 0.48
Platform Mount [LP 604-1]	C	None		0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.03 26.44 29.80 36.34	23.03 26.44 29.80 36.34	0.93 1.32 1.77 2.80
Site Pro 1 HRK12 Handrail Kit	C	None		0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 6.39 8.18 11.66	4.56 6.39 8.18 11.66	0.25 0.31 0.40 0.66
***									
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
Radio 4480_TMOV2	A	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	B	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	C	From Leg	4.00 0.00 -2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
76 KS24019-L112A	C	From Leg	3.00 0.00 1.00	0.0000	76.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.14 0.20 0.26 0.41	0.14 0.20 0.26 0.41	0.01 0.01 0.01 0.02
Side Arm Mount [SO 701-1] *** 	C	From Leg	1.50 0.00 0.00	0.0000	76.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
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	180 - 155.21	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.13	0.04	-0.02
			Max. Mx	20	-4.55	93.54	-0.01
			Max. My	14	-4.55	0.01	-93.54
			Max. Vy	20	-5.22	93.54	-0.01
			Max. Vx	14	5.22	0.01	-93.54

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	38			0.06
L2	155.21 - 124.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.06	0.11	-0.06
			Max. Mx	20	-8.13	275.66	-0.02
			Max. My	14	-8.13	0.04	-275.64
			Max. Vy	20	-7.10	275.66	-0.02
			Max. Vx	14	7.10	0.04	-275.64
			Max. Torque	38			0.15
L3	124.833 - 83.3367	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.17	0.23	-0.13
			Max. Mx	20	-16.50	621.25	-0.05
			Max. My	14	-16.50	0.08	-621.23
			Max. Vy	20	-9.99	621.25	-0.05
			Max. Vx	14	9.99	0.08	-621.23
			Max. Torque	38			0.30
L4	83.3367 - 40.84	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.13	0.79	-0.46
			Max. Mx	20	-28.93	1101.04	0.15
			Max. My	14	-28.93	0.01	-1101.31
			Max. Vy	20	-13.05	1101.04	0.15
			Max. Vx	14	13.06	0.01	-1101.31
			Max. Torque	38			0.54
L5	40.84 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.43	0.98	-0.57
			Max. Mx	20	-47.93	1789.62	0.71
			Max. My	14	-47.93	-0.52	-1790.54
			Max. Vy	20	-16.10	1789.62	0.71
			Max. Vx	14	16.12	-0.52	-1790.54
			Max. Torque	38			0.71

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	71.43	0.00	0.00
	Max. H_x	20	47.94	16.09	0.01
	Max. H_z	2	47.94	0.01	16.10
	Max. M_x	2	1790.02	0.01	16.10
	Max. M_z	8	1788.71	-16.09	-0.01
	Max. Torsion	38	0.71	2.57	4.44
	Min. Vert	7	35.95	-13.93	8.04
	Min. H_x	8	47.94	-16.09	-0.01
	Min. H_z	14	47.94	-0.01	-16.10
	Min. M_x	14	-1790.54	-0.01	-16.10
	Min. M_z	20	-1789.62	16.09	0.01
	Min. Torsion	32	-0.71	-2.57	-4.44

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	39.95	0.00	0.00	0.21	0.36	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	47.94	-0.01	-16.10	-1790.02	1.41	-0.48
0.9 Dead+1.0 Wind 0 deg - No Ice	35.95	-0.01	-16.10	-1774.94	1.29	-0.48

Load Combination	*Vertical*	*Shear$_x$*	*Shear$_z$*	*Overturning Moment, M$_x$*	*Overturning Moment, M$_z$*	*Torque*
	K	*K*	*K*	*kip-ft*	*kip-ft*	*kip-ft*
1.2 Dead+1.0 Wind 30 deg - No Ice	47.94	8.03	-13.94	-1549.69	-893.30	-0.28
0.9 Dead+1.0 Wind 30 deg - No Ice	35.95	8.03	-13.94	-1536.64	-885.85	-0.28
1.2 Dead+1.0 Wind 60 deg - No Ice	47.94	13.93	-8.04	-894.05	-1548.53	-0.00
0.9 Dead+1.0 Wind 60 deg - No Ice	35.95	13.93	-8.04	-886.54	-1535.54	-0.00
1.2 Dead+1.0 Wind 90 deg - No Ice	47.94	16.09	0.01	1.22	-1788.71	0.28
0.9 Dead+1.0 Wind 90 deg - No Ice	35.95	16.09	0.01	1.15	-1773.69	0.28
1.2 Dead+1.0 Wind 120 deg - No Ice	47.94	13.94	8.06	896.24	-1549.50	0.48
0.9 Dead+1.0 Wind 120 deg - No Ice	35.95	13.94	8.06	888.59	-1536.50	0.48
1.2 Dead+1.0 Wind 150 deg - No Ice	47.94	8.05	13.95	1551.17	-894.97	0.55
0.9 Dead+1.0 Wind 150 deg - No Ice	35.95	8.05	13.95	1537.98	-887.51	0.55
1.2 Dead+1.0 Wind 180 deg - No Ice	47.94	0.01	16.10	1790.54	-0.52	0.48
0.9 Dead+1.0 Wind 180 deg - No Ice	35.95	0.01	16.10	1775.33	-0.63	0.48
1.2 Dead+1.0 Wind 210 deg - No Ice	47.94	-8.03	13.94	1550.21	894.20	0.28
0.9 Dead+1.0 Wind 210 deg - No Ice	35.95	-8.03	13.94	1537.03	886.52	0.28
1.2 Dead+1.0 Wind 240 deg - No Ice	47.94	-13.93	8.04	894.57	1549.43	-0.00
0.9 Dead+1.0 Wind 240 deg - No Ice	35.95	-13.93	8.04	886.93	1536.21	-0.00
1.2 Dead+1.0 Wind 270 deg - No Ice	47.94	-16.09	-0.01	-0.71	1789.62	-0.28
0.9 Dead+1.0 Wind 270 deg - No Ice	35.95	-16.09	-0.01	-0.77	1774.36	-0.28
1.2 Dead+1.0 Wind 300 deg - No Ice	47.94	-13.94	-8.06	-895.72	1550.40	-0.48
0.9 Dead+1.0 Wind 300 deg - No Ice	35.95	-13.94	-8.06	-888.21	1537.17	-0.48
1.2 Dead+1.0 Wind 330 deg - No Ice	47.94	-8.05	-13.95	-1550.65	895.87	-0.55
0.9 Dead+1.0 Wind 330 deg - No Ice	35.95	-8.05	-13.95	-1537.60	888.18	-0.55
1.2 Dead+1.0 Ice+1.0 Temp	71.43	0.00	0.00	0.57	0.98	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	71.43	-0.01	-5.13	-574.24	1.48	-0.62
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	71.43	2.56	-4.44	-497.01	-285.75	-0.36
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	71.43	4.43	-2.56	-286.45	-496.14	-0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	71.43	5.12	0.01	1.03	-573.30	0.36
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	71.43	4.44	2.57	288.40	-496.57	0.62
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	71.43	2.57	4.44	498.66	-286.49	0.71
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	71.43	0.01	5.13	575.46	0.63	0.62
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	71.43	-2.56	4.44	498.23	287.87	0.36
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	71.43	-4.43	2.56	287.67	498.25	-0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	71.43	-5.12	-0.01	0.18	575.41	-0.36
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	71.43	-4.44	-2.57	-287.18	498.68	-0.62
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	71.43	-2.57	-4.44	-497.44	288.60	-0.71

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 0 deg - Service	39.95	-0.00	-3.49	-386.19	0.58	-0.10
Dead+Wind 30 deg - Service	39.95	1.74	-3.02	-334.32	-192.53	-0.06
Dead+Wind 60 deg - Service	39.95	3.02	-1.74	-192.81	-333.95	-0.00
Dead+Wind 90 deg - Service	39.95	3.49	0.00	0.42	-385.79	0.06
Dead+Wind 120 deg - Service	39.95	3.02	1.75	193.60	-334.16	0.10
Dead+Wind 150 deg - Service	39.95	1.75	3.03	334.96	-192.89	0.12
Dead+Wind 180 deg - Service	39.95	0.00	3.49	386.62	0.16	0.10
Dead+Wind 210 deg - Service	39.95	-1.74	3.02	334.75	193.28	0.06
Dead+Wind 240 deg - Service	39.95	-3.02	1.74	193.24	334.70	-0.00
Dead+Wind 270 deg - Service	39.95	-3.49	-0.00	0.01	386.54	-0.06
Dead+Wind 300 deg - Service	39.95	-3.02	-1.75	-193.17	334.91	-0.10
Dead+Wind 330 deg - Service	39.95	-1.75	-3.03	-334.53	193.64	-0.12

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-39.95	0.00	0.00	39.95	0.00	0.000%
2	-0.01	-47.94	-16.10	0.01	47.94	16.10	0.000%
3	-0.01	-35.95	-16.10	0.01	35.95	16.10	0.000%
4	8.03	-47.94	-13.94	-8.03	47.94	13.94	0.000%
5	8.03	-35.95	-13.94	-8.03	35.95	13.94	0.000%
6	13.93	-47.94	-8.04	-13.93	47.94	8.04	0.000%
7	13.93	-35.95	-8.04	-13.93	35.95	8.04	0.000%
8	16.09	-47.94	0.01	-16.09	47.94	-0.01	0.000%
9	16.09	-35.95	0.01	-16.09	35.95	-0.01	0.000%
10	13.94	-47.94	8.06	-13.94	47.94	-8.06	0.000%
11	13.94	-35.95	8.06	-13.94	35.95	-8.06	0.000%
12	8.05	-47.94	13.95	-8.05	47.94	-13.95	0.000%
13	8.05	-35.95	13.95	-8.05	35.95	-13.95	0.000%
14	0.01	-47.94	16.10	-0.01	47.94	-16.10	0.000%
15	0.01	-35.95	16.10	-0.01	35.95	-16.10	0.000%
16	-8.03	-47.94	13.94	8.03	47.94	-13.94	0.000%
17	-8.03	-35.95	13.94	8.03	35.95	-13.94	0.000%
18	-13.93	-47.94	8.04	13.93	47.94	-8.04	0.000%
19	-13.93	-35.95	8.04	13.93	35.95	-8.04	0.000%
20	-16.09	-47.94	-0.01	16.09	47.94	0.01	0.000%
21	-16.09	-35.95	-0.01	16.09	35.95	0.01	0.000%
22	-13.94	-47.94	-8.06	13.94	47.94	8.06	0.000%
23	-13.94	-35.95	-8.06	13.94	35.95	8.06	0.000%
24	-8.05	-47.94	-13.95	8.05	47.94	13.95	0.000%
25	-8.05	-35.95	-13.95	8.05	35.95	13.95	0.000%
26	0.00	-71.43	0.00	0.00	71.43	0.00	0.000%
27	-0.01	-71.43	-5.13	0.01	71.43	5.13	0.000%
28	2.56	-71.43	-4.44	-2.56	71.43	4.44	0.000%
29	4.43	-71.43	-2.56	-4.43	71.43	2.56	0.000%
30	5.12	-71.43	0.01	-5.12	71.43	-0.01	0.000%
31	4.44	-71.43	2.57	-4.44	71.43	-2.57	0.000%
32	2.57	-71.43	4.44	-2.57	71.43	-4.44	0.000%
33	0.01	-71.43	5.13	-0.01	71.43	-5.13	0.000%
34	-2.56	-71.43	4.44	2.56	71.43	-4.44	0.000%
35	-4.43	-71.43	2.56	4.43	71.43	-2.56	0.000%
36	-5.12	-71.43	-0.01	5.12	71.43	0.01	0.000%
37	-4.44	-71.43	-2.57	4.44	71.43	2.57	0.000%
38	-2.57	-71.43	-4.44	2.57	71.43	4.44	0.000%
39	-0.00	-39.95	-3.49	0.00	39.95	3.49	0.000%
40	1.74	-39.95	-3.02	-1.74	39.95	3.02	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
41	3.02	-39.95	-1.74	-3.02	39.95	1.74	0.000%
42	3.49	-39.95	0.00	-3.49	39.95	-0.00	0.000%
43	3.02	-39.95	1.75	-3.02	39.95	-1.75	0.000%
44	1.75	-39.95	3.03	-1.75	39.95	-3.03	0.000%
45	0.00	-39.95	3.49	-0.00	39.95	-3.49	0.000%
46	-1.74	-39.95	3.02	1.74	39.95	-3.02	0.000%
47	-3.02	-39.95	1.74	3.02	39.95	-1.74	0.000%
48	-3.49	-39.95	-0.00	3.49	39.95	0.00	0.000%
49	-3.02	-39.95	-1.75	3.02	39.95	1.75	0.000%
50	-1.75	-39.95	-3.03	1.75	39.95	3.03	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00013220
3	Yes	4	0.00000001	0.00008088
4	Yes	5	0.00000001	0.00019511
5	Yes	5	0.00000001	0.00009855
6	Yes	5	0.00000001	0.00019630
7	Yes	5	0.00000001	0.00009918
8	Yes	4	0.00000001	0.00010250
9	Yes	4	0.00000001	0.00005575
10	Yes	5	0.00000001	0.00019872
11	Yes	5	0.00000001	0.00010044
12	Yes	5	0.00000001	0.00019429
13	Yes	5	0.00000001	0.00009808
14	Yes	4	0.00000001	0.00012756
15	Yes	4	0.00000001	0.00007715
16	Yes	5	0.00000001	0.00019780
17	Yes	5	0.00000001	0.00009993
18	Yes	5	0.00000001	0.00019661
19	Yes	5	0.00000001	0.00009930
20	Yes	4	0.00000001	0.00009907
21	Yes	4	0.00000001	0.00005262
22	Yes	5	0.00000001	0.00019469
23	Yes	5	0.00000001	0.00009828
24	Yes	5	0.00000001	0.00019912
25	Yes	5	0.00000001	0.00010064
26	Yes	4	0.00000001	0.00000001
27	Yes	5	0.00000001	0.00019515
28	Yes	5	0.00000001	0.00022454
29	Yes	5	0.00000001	0.00022499
30	Yes	5	0.00000001	0.00019466
31	Yes	5	0.00000001	0.00022696
32	Yes	5	0.00000001	0.00022492
33	Yes	5	0.00000001	0.00019559
34	Yes	5	0.00000001	0.00022703
35	Yes	5	0.00000001	0.00022631
36	Yes	5	0.00000001	0.00019543
37	Yes	5	0.00000001	0.00022529
38	Yes	5	0.00000001	0.00022761
39	Yes	4	0.00000001	0.00001117
40	Yes	4	0.00000001	0.00005070
41	Yes	4	0.00000001	0.00005170
42	Yes	4	0.00000001	0.00001056
43	Yes	4	0.00000001	0.00005385
44	Yes	4	0.00000001	0.00004996
45	Yes	4	0.00000001	0.00001116
46	Yes	4	0.00000001	0.00005312
47	Yes	4	0.00000001	0.00005201
48	Yes	4	0.00000001	0.00001056
49	Yes	4	0.00000001	0.00005028
50	Yes	4	0.00000001	0.00005426

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	180 - 155.21 (1)	TP24.22x19x0.1875	24.79	0.00	0.0	13.8533	-4.55	810.42	0.006
L2	155.21 - 124.833 (2)	TP30.11x23.0905x0.3125	33.96	0.00	0.0	28.6670	-8.13	1677.02	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L3	124.833 - 83.3367 (3)	TP38.09x28.5893x0.4375	45.83	0.00	0.0	50.7499	-16.50	2968.87	0.006
L4	83.3367 - 40.84 (4)	TP46.03x36.1094x0.5	47.83	0.00	0.0	70.1714	-28.93	4105.03	0.007
L5	40.84 - 0 (5)	TP53.5x43.7164x0.5625	47.17	0.00	0.0	94.5133	-47.93	5529.03	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	180 - 155.21 (1)	TP24.22x19x0.1875	93.55	456.64	0.205	0.00	456.64	0.000
L2	155.21 - 124.833 (2)	TP30.11x23.0905x0.3125	275.66	1262.08	0.218	0.00	1262.08	0.000
L3	124.833 - 83.3367 (3)	TP38.09x28.5893x0.4375	621.27	2822.08	0.220	0.00	2822.08	0.000
L4	83.3367 - 40.84 (4)	TP46.03x36.1094x0.5	1101.32	4724.02	0.233	0.00	4724.02	0.000
L5	40.84 - 0 (5)	TP53.5x43.7164x0.5625	1790.84	7622.86	0.235	0.00	7622.86	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	180 - 155.21 (1)	TP24.22x19x0.1875	5.22	243.13	0.021	0.00	495.63	0.000
L2	155.21 - 124.833 (2)	TP30.11x23.0905x0.3125	7.10	503.11	0.014	0.00	1273.40	0.000
L3	124.833 - 83.3367 (3)	TP38.09x28.5893x0.4375	9.99	890.66	0.011	0.00	2850.64	0.000
L4	83.3367 - 40.84 (4)	TP46.03x36.1094x0.5	13.06	1231.51	0.011	0.39	4768.71	0.000
L5	40.84 - 0 (5)	TP53.5x43.7164x0.5625	16.12	1658.71	0.010	0.55	7689.77	0.000

Pole Interaction Design Data

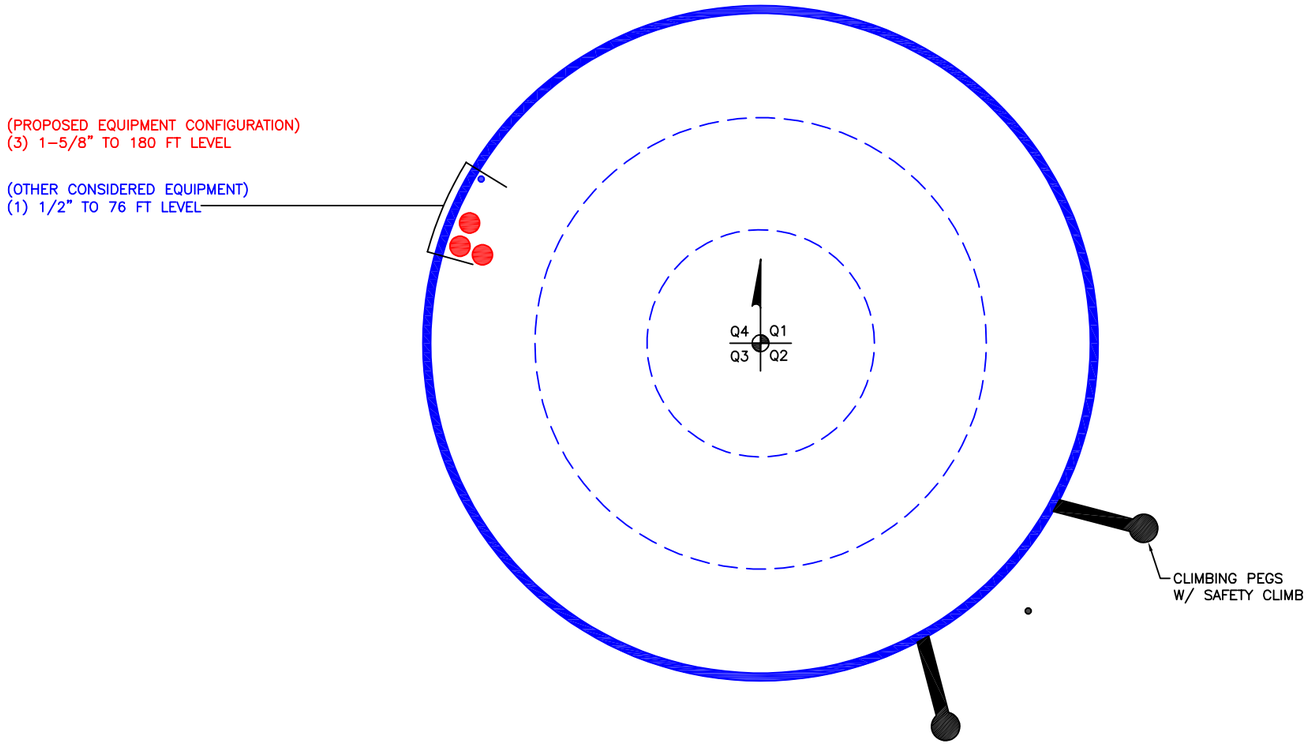
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	180 - 155.21 (1)	0.006	0.205	0.000	0.021	0.000	0.211	1.050	4.8.2
L2	155.21 - 124.833 (2)	0.005	0.218	0.000	0.014	0.000	0.223	1.050	4.8.2
L3	124.833 - 83.3367 (3)	0.006	0.220	0.000	0.011	0.000	0.226	1.050	4.8.2
L4	83.3367 - 40.84 (4)	0.007	0.233	0.000	0.011	0.000	0.240	1.050	4.8.2
L5	40.84 - 0 (5)	0.009	0.235	0.000	0.010	0.000	0.244	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	180 - 155.21	Pole	TP24.22x19x0.1875	1	-4.55	850.94	20.1	Pass
L2	155.21 - 124.833	Pole	TP30.11x23.0905x0.3125	2	-8.13	1760.87	21.3	Pass
L3	124.833 - 83.3367	Pole	TP38.09x28.5893x0.4375	3	-16.50	3117.31	21.5	Pass
L4	83.3367 - 40.84	Pole	TP46.03x36.1094x0.5	4	-28.93	4310.28	22.9	Pass
L5	40.84 - 0	Pole	TP53.5x43.7164x0.5625	5	-47.93	5805.48	23.2	Pass
							Summary	
						Pole (L5)	23.2	Pass
						RATING =	**23.2**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876365

APPENDIX C

ADDITIONAL CALCULATIONS

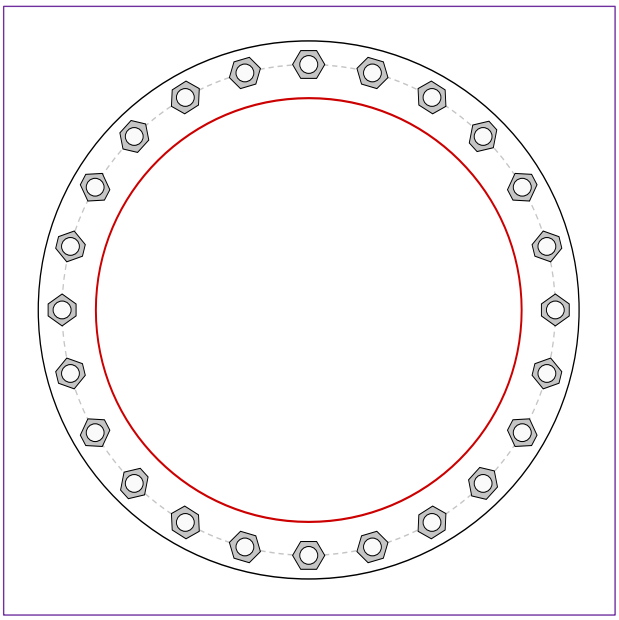
Monopole Base Plate Connection

Site Info	
BU #	876365
Site Name	GSTON W. / BAUER (SSU
Order #	584568 Rev.0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1

Applied Loads	
Moment (kip-ft)	1790.84
Axial Force (kips)	47.93
Shear Force (kips)	16.12

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(24) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 62" BC

Base Plate Data

68" OD x 2.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

53.5" x 0.5625" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_t = 55.74	ϕPn_t = 243.75	**Stress Rating**
Vu = 0.67	ϕVn = 149.1	**21.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	17.18	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**30.3%**	**Pass**

Pier and Pad Foundation

BU # :	876365
Site Name:	KINGSTON W. / B,
App. Number:	549111 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	47.94	kips
Base Shear, Vu_comp:	16.11	kips
Moment, M_u:	1790.84	ft-kips
Tower Height, **H**:	180	ft
BP Dist. Above Fdn, bp_{dist}:	3.25	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	8.5	ft
Ext. Above Grade, **E**:	0.67	ft
Pier Rebar Size, **Sc**:	10	
Pier Rebar Quantity, **mc**:	41	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	10	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	7.33	ft
Pad Width, W_1:	18.5	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	19	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	140	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	38	degrees
SPT Blow Count, N_{blows}:	48	
Base Friction, μ:	0.5	
Neglected Depth, **N**:	4.25	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	9	ft

<--Toggle between Gross and Net

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	283.10	16.11	**5.4%**	**Pass**
Bearing Pressure (ksf)	6.00	2.74	**45.7%**	**Pass**
*Overturning (kip*ft)*	3205.96	1924.08	**60.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	10051.98	1871.39	**17.7%**	**Pass**
Pier Compression (kip)	34489.26	112.97	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	2073.94	437.00	**20.1%**	**Pass**
Pad Shear - 1-way (kips)	574.53	88.72	**14.7%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.018	**10.5%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3840.35	1122.83	**27.8%**	**Pass**

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

Structural Rating*:	**27.8%**
Soil Rating*:	**60.0%**

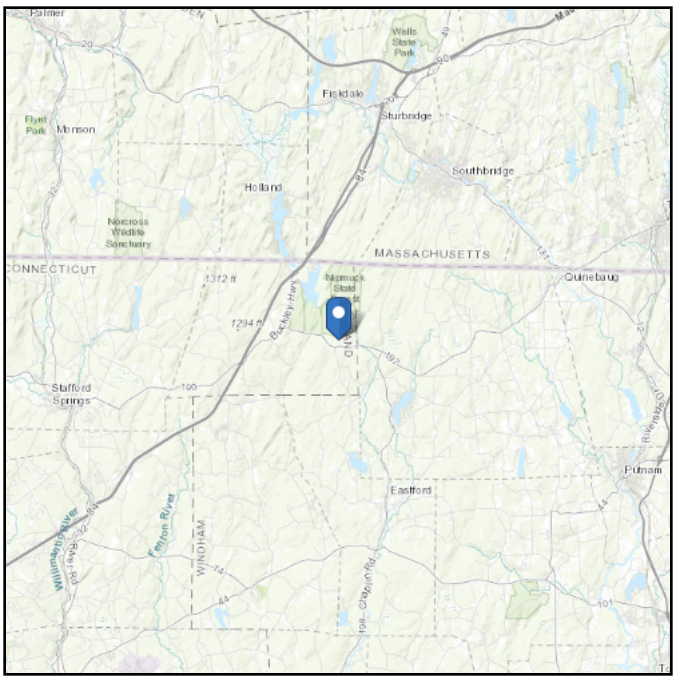
Version 4.1.0

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 929.51 ft (NAVD 88)
Latitude: 41.987933
Longitude: -72.1136



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	95 Vmph
100-year MRI	102 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Mon Sep 06 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

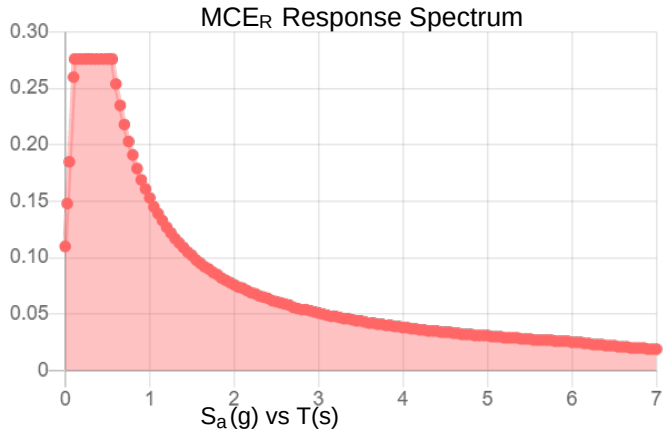
Seismic

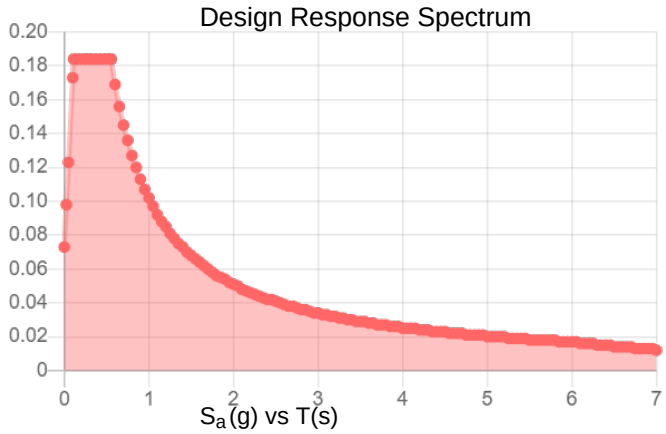
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.172	S_{DS} :	0.184
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.276	PGA_M :	0.135
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Sep 06 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.	Considered Ice thickness = 2*1 = 2 in.
Concurrent Temperature:	5 F	
Gust Speed:	50 mph	

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

Date Accessed: Mon Sep 06 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-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.

Date: **September 1, 2021**

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Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
704-405-6589

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Retain**	
	Carrier Site Number:	CTHA354A
	Carrier Site Name:	CT33XC005
Crown Castle Designation:	**Crown Castle BU Number:**	876365
	Crown Castle Site Name:	KINGSTON W. / BAUER (SSUSA)
	Crown Castle JDE Job Number:	684634
	Crown Castle Order Number:	584568 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**3 Carion Road, Union, Tolland County, CT, 06076** **Latitude 41°59'16.56", Longitude -72°6'48.96"**	
Structure Information:	**Tower Height & Type:**	**180.0 ft Monopole**
	Mount Elevation:	**180.0 ft**
	Mount Type:	**10.5 ft Platform**

Dear Darcy Tarr,

Infinigy Engineering, PLLC 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 abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

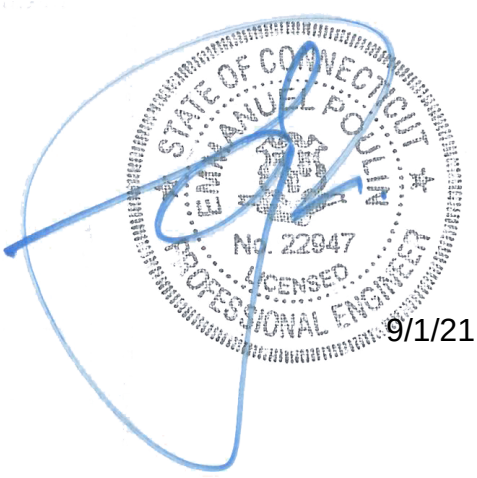
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code and Appendix N based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Abram Tadrous

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



9/1/21

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 sector 10.5 ft Platform.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code and Appendix N
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.175
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
180.0	178.0	3	ERICSSON	AIR6449 B41_T-MOBILE	10.5 ft Platform
		3	ERICSSON	RADIO 4480_TMOV2	
		3	RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	
		3	ERICSSON	RADIO 4460 B2/B25 B66_TMO	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	584568 Rev. 0	CCI Sites
Loading Document	T-Mobile	RFDS Version: 1	TSA
Previous Mount Analysis	Infinigy Engineering, PLLC	9549351	CCI Sites

3.1) Analysis Method

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

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP8	180.0	47.7	Pass
	Horizontal(s)	M1		34.8	Pass
	Handrail(s)	M17		30.3	Pass
	Support Channel(s)	M5		32.6	Pass
	Handrail Corner(s)	M33		48.9	Pass
	Support Channel(s)	M7		50.7	Pass
	Mount Connection(s)	-		3.4	Pass

Structure Rating (max from all components) =	50.7%

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

4.1) Recommendations

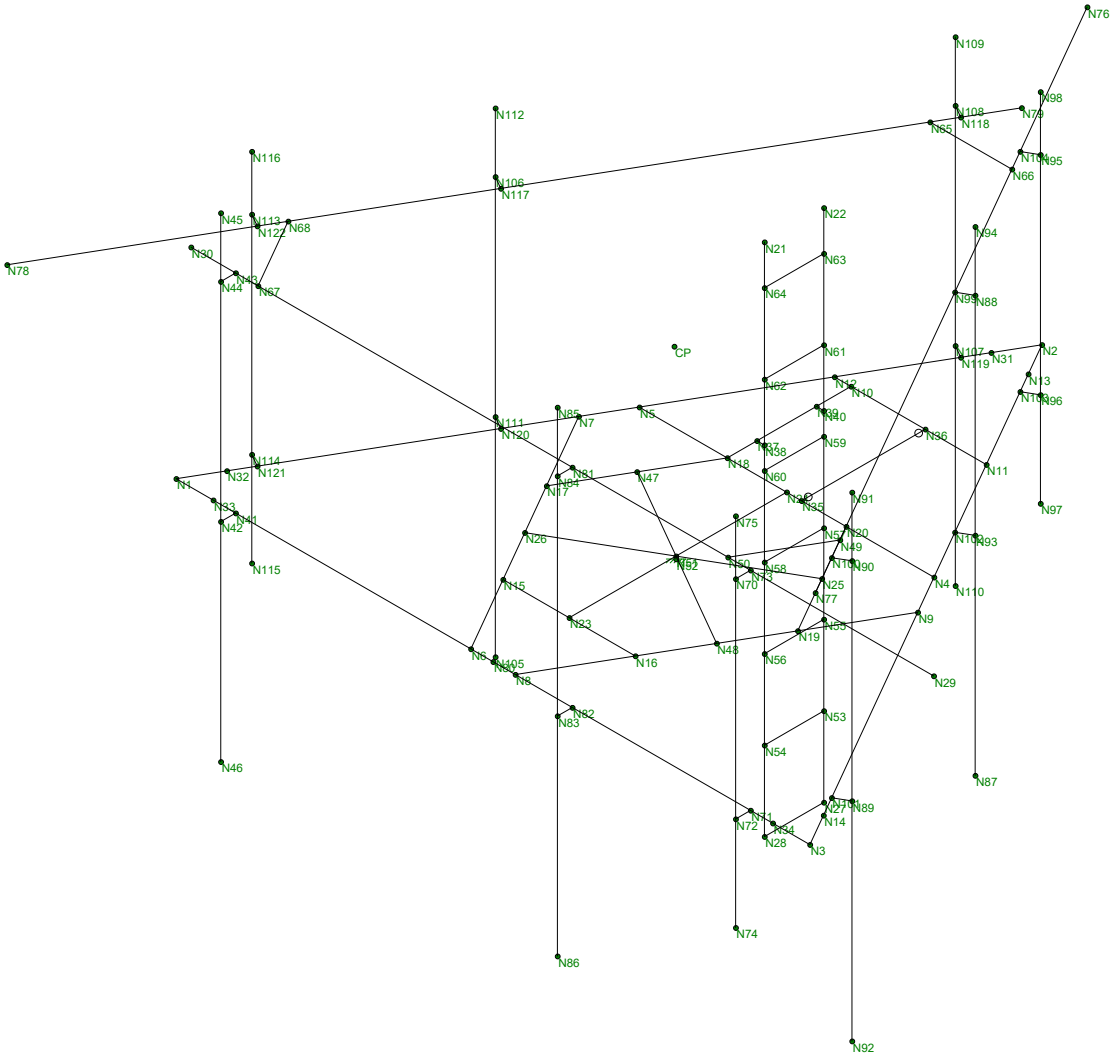
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modifications listed below must be completed.

1. Installation of proposed Site Pro 1 HRK12 handrail kit.

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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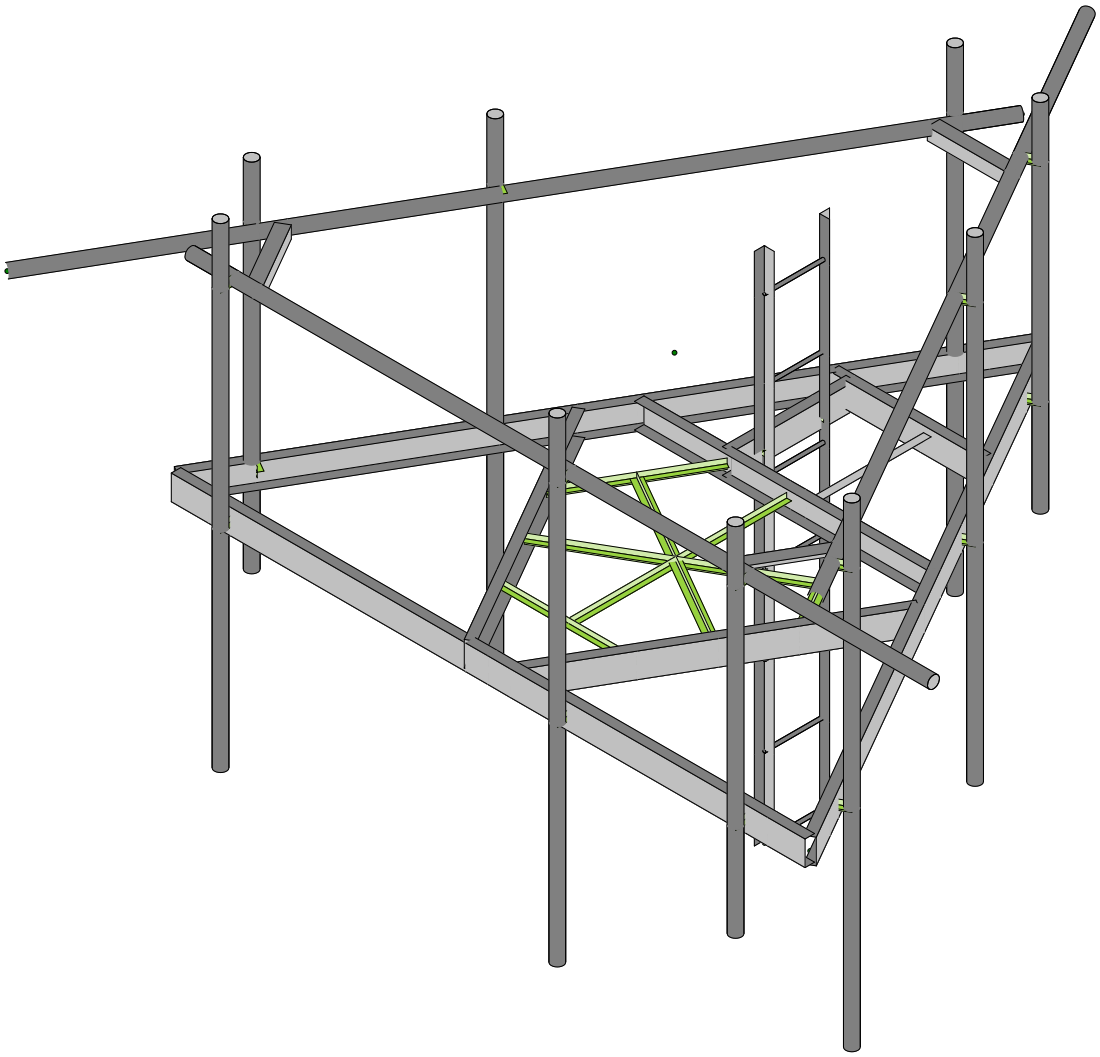

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	T-Mobile
Engineer:	Abram Tadrous

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	929.51	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	180.00	ft
Tower Height AGL:	180.00	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.967	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	85.900	psf
Round Pressure:	51.540	psf
Ice Wind Pressure:	8.246	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.175	g
1-Second Accel. (S_1):	0.064	g
Short-Period Design (S_{DS}):	0.187	
1-Second Design (S_{D1}):	0.102	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

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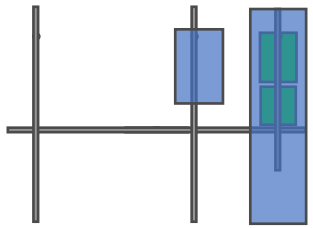
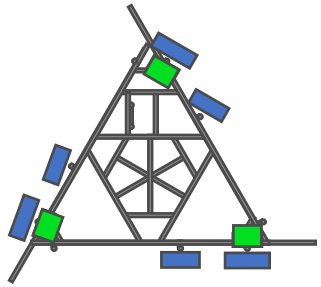
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



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Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

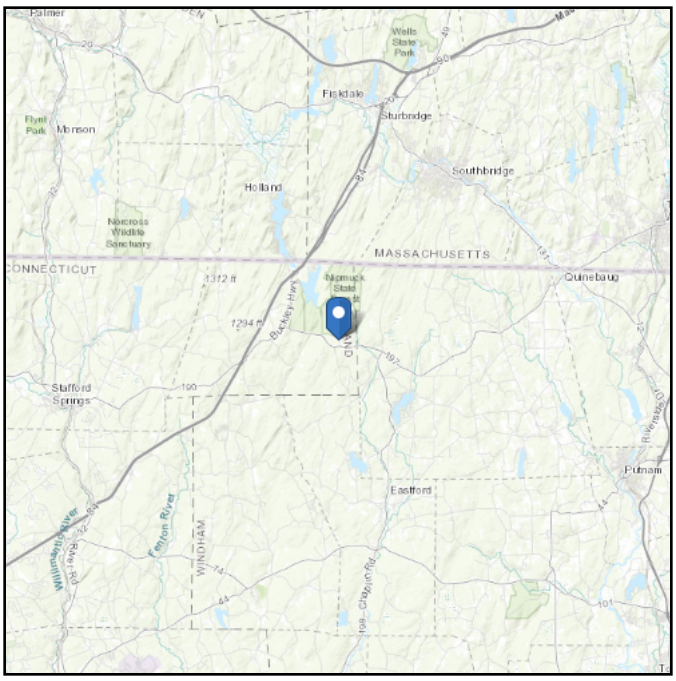
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
ERICSSON AIR6449 B41_T-MOBILE	178.0	3	0.90	42.81	5.66	2.48	218.05	95.42	114.63	32.10	MP2
/CELWAVE APXVAALL24_43-U-NA20_TI	178.0	3	0.90	42.81	14.67	5.32	565.26	204.99	149.90	41.97	MP1
ERICSSON RADIO 4480_TMOV2	178.0	3	0.90	42.81	2.88	1.40	110.91	53.83	81.00	22.68	MP1
RICSSON RADIO 4460 B2/B25 B66_TMC	178.0	3	0.90	42.81	2.14	1.69	82.43	64.96	109.00	30.52	MP1

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 929.51 ft (NAVD 88)
Latitude: 41.987933
Longitude: -72.1136



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	95 Vmph
100-year MRI	102 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Tue Aug 31 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Seismic

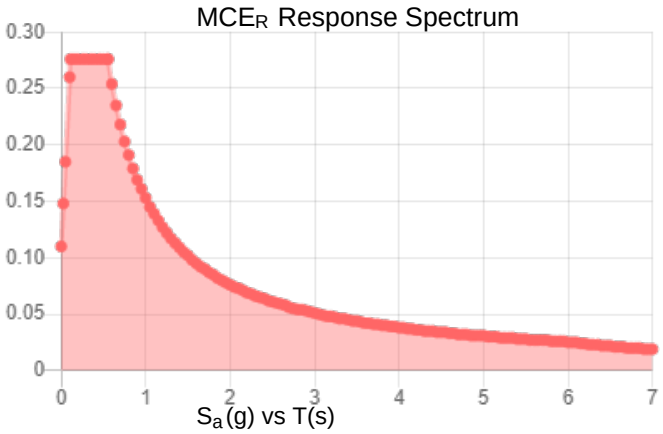
Site Soil Class: D - Stiff Soil

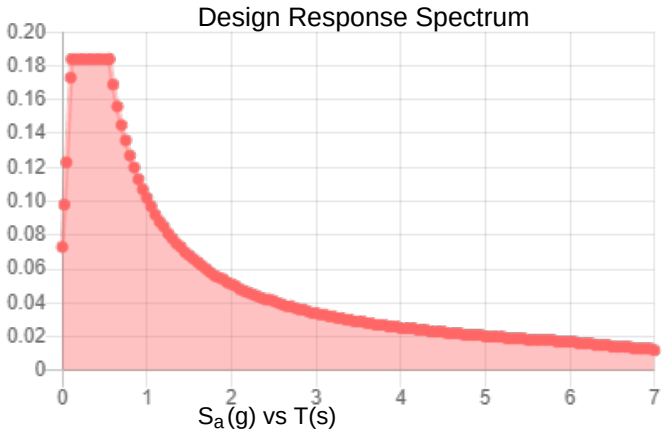
Per County Jurisdiction

Results:

S_S :	0.172	0.175	S_{DS} :	0.184
S_1 :	0.064		S_{D1} :	0.102
F_a :	1.6		T_L :	6
F_v :	2.4		PGA :	0.085
S_{MS} :	0.276		PGA_M :	0.135
S_{M1} :	0.153		F_{PGA} :	1.6
			I_e :	1

Seismic Design Category B





Data Accessed: Tue Aug 31 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Aug 31 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N1			Horizontal	Beam	Channel	A36 Gr.36	Typical
2	M2	N2	N1		180	Horizontal	Beam	Channel	A36 Gr.36	Typical
3	M3	N2	N3			Horizontal	Beam	Channel	A36 Gr.36	Typical
4	M4	N4	N5		180	Support Chan...	Beam	Channel	A36 Gr.36	Typical
5	M5	N6	N7			Support Chan...	Beam	Channel	A36 Gr.36	Typical
6	M6	N8	N9		180	Support Chan...	Beam	Channel	A36 Gr.36	Typical
7	M7	N18	N10		180	Support Chan...	Beam	Channel	A36 Gr.36	Typical
8	M8	N11	N12			Support Chan...	Beam	Channel	A36 Gr.36	Typical
9	M9	N15	N16			RIGID	None	None	RIGID	Typical
10	M10	N17	N18			RIGID	None	None	RIGID	Typical
11	M11	N19	N20			RIGID	None	None	RIGID	Typical
12	M12	N21	N28		180	Ladder Rail	Column	Single Angle	A36 Gr.36	Typical
13	M13	N22	N27		90	Ladder Rail	Column	Single Angle	A36 Gr.36	Typical
14	M14	N23	N24			RIGID	None	None	RIGID	Typical
15	M15	N25	N26			RIGID	None	None	RIGID	Typical
16	M16	N27	N28			Ladder Step	Beam	BAR	A36 Gr.36	Typical
17	M17	N29	N30		90	Handrails	Beam	Pipe	A53 Gr.B	Typical
18	M18	N35	N36		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N37	N38			RIGID	None	None	RIGID	Typical
20	M20	N39	N40			RIGID	None	None	RIGID	Typical
21	M21	N41	N42			RIGID	None	None	RIGID	Typical
22	M22	N43	N44			RIGID	None	None	RIGID	Typical
23	MP3	N45	N46			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
24	M24	N47	N48			RIGID	None	None	RIGID	Typical
25	M25	N49	N50		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
26	M26	N52	N51			RIGID	None	None	RIGID	Typical
27	M27	N53	N54			Ladder Step	Beam	BAR	A36 Gr.36	Typical
28	M28	N55	N56			Ladder Step	Beam	BAR	A36 Gr.36	Typical
29	M29	N57	N58			Ladder Step	Beam	BAR	A36 Gr.36	Typical
30	M30	N59	N60			Ladder Step	Beam	BAR	A36 Gr.36	Typical
31	M31	N61	N62			Ladder Step	Beam	BAR	A36 Gr.36	Typical
32	M32	N63	N64			Ladder Step	Beam	BAR	A36 Gr.36	Typical
33	M33	N65	N66		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
34	M34	N67	N68		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
35	M35	N71	N72			RIGID	None	None	RIGID	Typical
36	M36	N73	N70			RIGID	None	None	RIGID	Typical
37	MP1	N75	N74			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
38	M38	N76	N77		90	Handrails	Beam	Pipe	A53 Gr.B	Typical
39	M39	N78	N79		90	Handrails	Beam	Pipe	A53 Gr.B	Typical
40	M40	N81	N84			RIGID	None	None	RIGID	Typical
41	M41	N82	N83			RIGID	None	None	RIGID	Typical
42	MP2	N85	N86			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
43	M43	N99	N88			RIGID	None	None	RIGID	Typical
44	M44	N100	N90			RIGID	None	None	RIGID	Typical
45	M45	N101	N89			RIGID	None	None	RIGID	Typical
46	MP9	N91	N92			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
47	M47	N102	N93			RIGID	None	None	RIGID	Typical
48	MP8	N94	N87			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
49	M49	N103	N96			RIGID	None	None	RIGID	Typical
50	M50	N104	N95			RIGID	None	None	RIGID	Typical
51	MP7	N98	N97			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
52	M52	N117	N106			RIGID	None	None	RIGID	Typical
53	M53	N118	N108			RIGID	None	None	RIGID	Typical
54	M54	N119	N107			RIGID	None	None	RIGID	Typical
55	MP6	N109	N110			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
56	M56	N120	N111			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	MP5	N112	N105			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
58	M58	N121	N114			RIGID	None	None	RIGID	Typical
59	M59	N122	N113			RIGID	None	None	RIGID	Typical
60	MP4	N116	N115			Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		27	269.5	0
3	Total General		27	269.5	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	0.625 SR	7	84	7.308
7	A36 Gr.36	C5X9	8	618.2	462.779
8	A36 Gr.36	L1.5x1.5x4	1	25	4.87
9	A36 Gr.36	L2.5x2.5x3	3	49.6	12.683
10	A36 Gr.36	L2x2x4	2	208	55.679
11	A53 Gr.B	PIPE_2.0	12	1242	359.231
12	Total HR Steel		33	2226.8	902.55

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Ladder Rail	L2x2x4	Column	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
2	Ladder Step	0.625 SR	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
3	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Horizontal	C5X9	Beam	Channel	A36 Gr.36	Typical	2.64	.624	8.89	.109
6	2.5 Mount Pipe	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	Support Channel	C5X9	Beam	Channel	A36 Gr.36	Typical	2.64	.624	8.89	.109
8	Grating Angle	L1.5x1.5x4	Beam	Single Angle	A36 Gr.36	Typical	.688	.139	.139	.013
9	Handrail Corner Angle	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	-92.57276	-.5	123.385059	0	
2	N2	-28.572761	-.5	12.533808	0	
3	N3	35.427239	-.5	123.385059	0	
4	N4	1.183222	-.5	64.072682	0	
5	N5	-58.328744	-.5	64.072682	0	
6	N6	-33.060795	-.5	123.385059	0	
7	N7	-62.816778	-.5	71.846185	0	
8	N8	-24.084727	-.5	123.385059	0	
9	N9	5.671256	-.5	71.846185	0	
10	N10	-40.572761	-.5	39.09192	0	
11	N11	-13.239428	-.5	39.09192	0	
12	N12	-43.906094	-.5	39.09192	0	
13	N13	-24.822761	-.5	19.028998	0	
14	N14	31.677239	-.5	116.889869	0	
15	N15	-41.938786	-.5	108.007927	0	
16	N16	-15.206735	-.5	108.007927	0	
17	N17	-53.938786	-.5	87.223317	0	
18	N18	-40.572761	-.5	64.072682	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
19	N19	-3.206735	-.5	87.223317	0	
20	N20	-16.572761	-.5	64.072682	0	
21	N21	-39.072761	35	58.082301	0	
22	N22	-39.072761	35	46.082301	0	
23	N23	-28.572761	-.5	108.007927	0	
24	N24	-28.572761	-.5	64.072682	0	
25	N25	-9.889748	-.5	75.648	0	
26	N26	-47.938786	-.5	97.615622	0	
27	N27	-39.072761	-69	46.082301	0	
28	N28	-39.072761	-69	58.082301	0	
29	N29	60.427239	41.5	123.385059	0	
30	N30	-89.572761	41.5	123.385059	0	
31	N31	-32.322761	-.5	19.028998	0	
32	N32	-88.822761	-.5	116.889869	0	
33	N33	-85.072761	-.5	123.385059	0	
34	N34	27.927239	-.5	123.385059	0	
35	N35	-25.572761	-.5	64.072682	0	
36	N36	-25.572761	-.5	39.09192	0	
37	N37	-40.572761	-.5	58.082301	0	
38	N38	-39.072761	-.5	58.082301	0	
39	N39	-40.572761	-.5	46.082301	0	
40	N40	-39.072761	-.5	46.082301	0	
41	N41	-80.572761	-.5	123.385059	0	
42	N42	-80.572761	-.5	126.385059	0	
43	N43	-80.572761	41.5	123.385059	0	
44	N44	-80.572761	41.5	126.385059	0	
45	N45	-80.572761	53.5	126.385059	0	
46	N46	-80.572761	-42.5	126.385059	0	
47	N47	-47.255773	-.5	75.648	0	
48	N48	-9.206735	-.5	97.615622	0	
49	N49	27.153736	41.5	109.054932	0	
50	N50	18.880234	41.5	123.385059	0	
51	N51	-28.572761	-.5	86.434642	0	
52	N52	-28.572761	-1	86.434642	0	
53	N53	-39.072761	-53	46.082301	0	
54	N54	-39.072761	-53	58.082301	0	
55	N55	-39.072761	-37	46.082301	0	
56	N56	-39.072761	-37	58.082301	0	
57	N57	-39.072761	-21	46.082301	0	
58	N58	-39.072761	-21	58.082301	0	
59	N59	-39.072761	-5	46.082301	0	
60	N60	-39.072761	-5	58.082301	0	
61	N61	-39.072761	11	46.082301	0	
62	N62	-39.072761	11	58.082301	0	
63	N63	-39.072761	27	46.082301	0	
64	N64	-39.072761	27	58.082301	0	
65	N65	-36.846263	41.5	26.863935	0	
66	N66	-20.299258	41.5	26.863935	0	
67	N67	-76.025755	41.5	123.385059	0	
68	N68	-84.299258	41.5	109.054932	0	
69	CP	-29.438786	35.5	85.934642	0	
70	N70	23.431239	41.5	126.385059	0	
71	N71	23.431239	-.5	123.385059	0	
72	N72	23.431239	-.5	126.385059	0	
73	N73	23.431239	41.5	123.385059	0	
74	N74	23.431239	-19.5	126.385059	0	
75	N75	23.431239	52.5	126.385059	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
76	N76	-41.072761	41.5	-9.116828	0	
77	N77	33.927239	41.5	120.786983	0	
78	N78	-105.072761	41.5	145.035694	0	
79	N79	-30.072761	41.5	15.131884	0	
80	N80	-28.572761	-.5	123.385059	0	
81	N81	-12.572761	41.5	123.385059	0	
82	N82	-12.572761	-.5	123.385059	0	
83	N83	-12.572761	-.5	126.385059	0	
84	N84	-12.572761	41.5	126.385059	0	
85	N85	-12.572761	53.5	126.385059	0	
86	N86	-12.572761	-42.5	126.385059	0	
87	N87	-1.974685	-42.5	52.603027	0	
88	N88	-1.974685	41.5	52.603027	0	
89	N89	32.025315	-.5	111.492754	0	
90	N90	32.025315	41.5	111.492754	0	
91	N91	32.025315	53.5	111.492754	0	
92	N92	32.025315	-42.5	111.492754	0	
93	N93	-1.974685	-.5	52.603027	0	
94	N94	-1.974685	53.5	52.603027	0	
95	N95	-19.976685	41.5	21.422648	0	
96	N96	-19.976685	-.5	21.422648	0	
97	N97	-19.976685	-19.5	21.422648	0	
98	N98	-19.976685	52.5	21.422648	0	
99	N99	-4.572761	41.5	54.103027	0	
100	N100	29.427239	41.5	112.992754	0	
101	N101	29.427239	-.5	112.992754	0	
102	N102	-4.572761	-.5	54.103027	0	
103	N103	-22.574761	-.5	22.922648	0	
104	N104	-22.574761	41.5	22.922648	0	
105	N105	-71.170837	-42.5	80.31584	0	
106	N106	-71.170837	41.5	80.31584	0	
107	N107	-37.170837	-.5	21.426112	0	
108	N108	-37.170837	41.5	21.426112	0	
109	N109	-37.170837	53.5	21.426112	0	
110	N110	-37.170837	-42.5	21.426112	0	
111	N111	-71.170837	-.5	80.31584	0	
112	N112	-71.170837	53.5	80.31584	0	
113	N113	-89.172837	41.5	111.496219	0	
114	N114	-89.172837	-.5	111.496219	0	
115	N115	-89.172837	-19.5	111.496219	0	
116	N116	-89.172837	52.5	111.496219	0	
117	N117	-68.572761	41.5	81.81584	0	
118	N118	-34.572761	41.5	22.926112	0	
119	N119	-34.572761	-.5	22.926112	0	
120	N120	-68.572761	-.5	81.81584	0	
121	N121	-86.574761	-.5	112.996219	0	
122	N122	-86.574761	41.5	112.996219	0	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Horizontal	128	Segment	Segment	Segment	Segment	Segm...				Lateral
2	M2	Horizontal	128	Segment	Segment	Segment	Segment	Segm...				Lateral
3	M3	Horizontal	128	Segment	Segment	Segment	Segment	Segm...				Lateral
4	M4	Support Ch...	59.512			Lbyy						Lateral
5	M5	Support Ch...	59.512			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
6	M6	Support Ch...	59.512			Lbyy						Lateral
7	M7	Support Ch...	24.981			Lbyy						Lateral
8	M8	Support Ch...	30.667			Lbyy						Lateral
9	M12	Ladder Rail	104	Segment	Segment	Segment	Segment	Segm...				Lateral
10	M13	Ladder Rail	104	Segment	Segment	Segment	Segment	Segm...				Lateral
11	M16	Ladder Step	12			Lbyy						Lateral
12	M17	Handrails	150			Lbyy						Lateral
13	M18	Grating Angle	24.981			Lbyy						Lateral
14	MP3	Mount Pipe	96			Lbyy						Lateral
15	M25	Handrail Co...	16.547			Lbyy						Lateral
16	M27	Ladder Step	12			Lbyy						Lateral
17	M28	Ladder Step	12			Lbyy						Lateral
18	M29	Ladder Step	12			Lbyy						Lateral
19	M30	Ladder Step	12			Lbyy						Lateral
20	M31	Ladder Step	12			Lbyy						Lateral
21	M32	Ladder Step	12			Lbyy						Lateral
22	M33	Handrail Co...	16.547			Lbyy						Lateral
23	M34	Handrail Co...	16.547			Lbyy						Lateral
24	MP1	Mount Pipe	72			Lbyy						Lateral
25	M38	Handrails	150			Lbyy						Lateral
26	M39	Handrails	150			Lbyy						Lateral
27	MP2	Mount Pipe	96			Lbyy						Lateral
28	MP9	Mount Pipe	96			Lbyy						Lateral
29	MP8	Mount Pipe	96			Lbyy						Lateral
30	MP7	Mount Pipe	72			Lbyy						Lateral
31	MP6	Mount Pipe	96			Lbyy						Lateral
32	MP5	Mount Pipe	96			Lbyy						Lateral
33	MP4	Mount Pipe	72			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(...	Surface(Plate/Wall)
1	Self Weight	DL		-1			18		8	
2	Wind Load AZI 0	WLZ					36			
3	Wind Load AZI ...	None					36			
4	Wind Load AZI ...	None					36			
5	Wind Load AZI ...	WLX					36			
6	Wind Load AZI ...	None					36			
7	Wind Load AZI ...	None					36			
8	Wind Load AZI ...	None					36			
9	Wind Load AZI ...	None					36			
10	Wind Load AZI ...	None					36			
11	Wind Load AZI ...	None					36			
12	Wind Load AZI ...	None					36			
13	Wind Load AZI ...	None					36			
14	Distr. Wind Loa...	WLZ						60		
15	Distr. Wind Loa...	WLX						60		
16	Ice Weight	OL1					18	60	8	
17	Ice Wind Load ...	OL2					36			
18	Ice Wind Load ...	None					36			
19	Ice Wind Load ...	None					36			
20	Ice Wind Load ...	OL3					36			
21	Ice Wind Load ...	None					36			
22	Ice Wind Load ...	None					36			
23	Ice Wind Load ...	None					36			
24	Ice Wind Load ...	None					36			

Basic Load Cases (Continued)

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(...	Surface(Plate/Wall)
25	Ice Wind Load ...	None					36			
26	Ice Wind Load ...	None					36			
27	Ice Wind Load ...	None					36			
28	Ice Wind Load ...	None					36			
29	Distr. Ice Wind ...	OL2						60		
30	Distr. Ice Wind ...	OL3						60		
31	Seismic Load Z	ELZ			-.28		18			
32	Seismic Load X	ELX	-.28				18			
33	Service Live Lo...	LL				1				
34	Maintenance Lo...	LL				1				
35	Maintenance Lo...	LL				1				
36	Maintenance Lo...	LL				1				
37	Maintenance Lo...	LL				1				
38	Maintenance Lo...	LL				1				
39	Maintenance Lo...	LL				1				
40	Maintenance Lo...	LL				1				
41	Maintenance Lo...	LL				1				
42	Maintenance Lo...	LL				1				
43	BLC 1 Transient...	None						95		
44	BLC 16 Transie...	None						95		

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N3	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N41	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N71	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N82	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N101	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N102	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N103	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N119	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N120	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N121	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-57.315	6
2	MP2	Y	-57.315	39.11
3	MP1	Y	-74.95	0
4	MP1	Y	-74.95	%100
5	MP1	Y	-81	%30
6	MP1	Y	-109	%60
7	MP5	Y	-57.315	6
8	MP5	Y	-57.315	39.11
9	MP4	Y	-74.95	0
10	MP4	Y	-74.95	%100
11	MP4	Y	-81	%30
12	MP4	Y	-109	%60
13	MP8	Y	-57.315	6
14	MP8	Y	-57.315	39.11
15	MP7	Y	-74.95	0
16	MP7	Y	-74.95	%100
17	MP7	Y	-81	%30
18	MP7	Y	-109	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	-109.03	6
3	MP2	X	0	39.11
4	MP2	Z	-109.03	39.11
5	MP1	X	0	0
6	MP1	Z	-282.63	0
7	MP1	X	0	%100
8	MP1	Z	-282.63	%100
9	MP1	X	0	%30
10	MP1	Z	-110.91	%30
11	MP1	X	0	%60
12	MP1	Z	-82.43	%60
13	MP5	X	0	6
14	MP5	Z	-54.88	6
15	MP5	X	0	39.11
16	MP5	Z	-54.88	39.11
17	MP4	X	0	0
18	MP4	Z	-123.57	0
19	MP4	X	0	%100
20	MP4	Z	-123.57	%100
21	MP4	X	0	%30
22	MP4	Z	-60.51	%30
23	MP4	X	0	%60
24	MP4	Z	-67	%60
25	MP8	X	0	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
26	MP8	Z	-93.7	6
27	MP8	X	0	39.11
28	MP8	Z	-93.7	39.11
29	MP7	X	0	0
30	MP7	Z	-237.6	0
31	MP7	X	0	%100
32	MP7	Z	-237.6	%100
33	MP7	X	0	%30
34	MP7	Z	-96.64	%30
35	MP7	X	0	%60
36	MP7	Z	-78.06	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-46.85	6
2	MP2	Z	-81.15	6
3	MP2	X	-46.85	39.11
4	MP2	Z	-81.15	39.11
5	MP1	X	-118.8	0
6	MP1	Z	-205.77	0
7	MP1	X	-118.8	%100
8	MP1	Z	-205.77	%100
9	MP1	X	-48.32	%30
10	MP1	Z	-83.69	%30
11	MP1	X	-39.03	%60
12	MP1	Z	-67.6	%60
13	MP5	X	-41.85	6
14	MP5	Z	-72.48	6
15	MP5	X	-41.85	39.11
16	MP5	Z	-72.48	39.11
17	MP4	X	-104.1	0
18	MP4	Z	-180.31	0
19	MP4	X	-104.1	%100
20	MP4	Z	-180.31	%100
21	MP4	X	-43.66	%30
22	MP4	Z	-75.63	%30
23	MP4	X	-37.6	%60
24	MP4	Z	-65.13	%60
25	MP8	X	-31.52	6
26	MP8	Z	-54.59	6
27	MP8	X	-31.52	39.11
28	MP8	Z	-54.59	39.11
29	MP7	X	-73.76	0
30	MP7	Z	-127.76	0
31	MP7	X	-73.76	%100
32	MP7	Z	-127.76	%100
33	MP7	X	-34.05	%30
34	MP7	Z	-58.98	%30
35	MP7	X	-34.66	%60
36	MP7	Z	-60.04	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-54.59	6
2	MP2	Z	-31.52	6
3	MP2	X	-54.59	39.11

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP2	Z	-31.52	39.11
5	MP1	X	-127.76	0
6	MP1	Z	-73.76	0
7	MP1	X	-127.76	%100
8	MP1	Z	-73.76	%100
9	MP1	X	-58.98	%30
10	MP1	Z	-34.05	%30
11	MP1	X	-60.04	%60
12	MP1	Z	-34.66	%60
13	MP5	X	-92.82	6
14	MP5	Z	-53.59	6
15	MP5	X	-92.82	39.11
16	MP5	Z	-53.59	39.11
17	MP4	X	-240.06	0
18	MP4	Z	-138.6	0
19	MP4	X	-240.06	%100
20	MP4	Z	-138.6	%100
21	MP4	X	-94.56	%30
22	MP4	Z	-54.59	%30
23	MP4	X	-70.93	%60
24	MP4	Z	-40.95	%60
25	MP8	X	-41.32	6
26	MP8	Z	-23.86	6
27	MP8	X	-41.32	39.11
28	MP8	Z	-23.86	39.11
29	MP7	X	-88.76	0
30	MP7	Z	-51.25	0
31	MP7	X	-88.76	%100
32	MP7	Z	-51.25	%100
33	MP7	X	-46.62	%30
34	MP7	Z	-26.92	%30
35	MP7	X	-56.26	%60
36	MP7	Z	-32.48	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-47.71	6
2	MP2	Z	0	6
3	MP2	X	-47.71	39.11
4	MP2	Z	0	39.11
5	MP1	X	-102.49	0
6	MP1	Z	0	0
7	MP1	X	-102.49	%100
8	MP1	Z	0	%100
9	MP1	X	-53.83	%30
10	MP1	Z	0	%30
11	MP1	X	-64.96	%60
12	MP1	Z	0	%60
13	MP5	X	-101.85	6
14	MP5	Z	0	6
15	MP5	X	-101.85	39.11
16	MP5	Z	0	39.11
17	MP4	X	-261.56	0
18	MP4	Z	0	0
19	MP4	X	-261.56	%100
20	MP4	Z	0	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
21	MP4	X	-104.23	%30
22	MP4	Z	0	%30
23	MP4	X	-80.38	%60
24	MP4	Z	0	%60
25	MP8	X	-63.04	6
26	MP8	Z	0	6
27	MP8	X	-63.04	39.11
28	MP8	Z	0	39.11
29	MP7	X	-147.53	0
30	MP7	Z	0	0
31	MP7	X	-147.53	%100
32	MP7	Z	0	%100
33	MP7	X	-68.1	%30
34	MP7	Z	0	%30
35	MP7	X	-69.33	%60
36	MP7	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-54.59	6
2	MP2	Z	31.52	6
3	MP2	X	-54.59	39.11
4	MP2	Z	31.52	39.11
5	MP1	X	-127.76	0
6	MP1	Z	73.76	0
7	MP1	X	-127.76	%100
8	MP1	Z	73.76	%100
9	MP1	X	-58.98	%30
10	MP1	Z	34.05	%30
11	MP1	X	-60.04	%60
12	MP1	Z	34.66	%60
13	MP5	X	-63.26	6
14	MP5	Z	36.52	6
15	MP5	X	-63.26	39.11
16	MP5	Z	36.52	39.11
17	MP4	X	-153.22	0
18	MP4	Z	88.46	0
19	MP4	X	-153.22	%100
20	MP4	Z	88.46	%100
21	MP4	X	-67.04	%30
22	MP4	Z	38.71	%30
23	MP4	X	-62.51	%60
24	MP4	Z	36.09	%60
25	MP8	X	-81.15	6
26	MP8	Z	46.85	6
27	MP8	X	-81.15	39.11
28	MP8	Z	46.85	39.11
29	MP7	X	-205.77	0
30	MP7	Z	118.8	0
31	MP7	X	-205.77	%100
32	MP7	Z	118.8	%100
33	MP7	X	-83.69	%30
34	MP7	Z	48.32	%30
35	MP7	X	-67.6	%60
36	MP7	Z	39.03	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-46.85	6
2	MP2	Z	81.15	6
3	MP2	X	-46.85	39.11
4	MP2	Z	81.15	39.11
5	MP1	X	-118.8	0
6	MP1	Z	205.77	0
7	MP1	X	-118.8	%100
8	MP1	Z	205.77	%100
9	MP1	X	-48.32	%30
10	MP1	Z	83.69	%30
11	MP1	X	-39.03	%60
12	MP1	Z	67.6	%60
13	MP5	X	-24.78	6
14	MP5	Z	42.92	6
15	MP5	X	-24.78	39.11
16	MP5	Z	42.92	39.11
17	MP4	X	-53.96	0
18	MP4	Z	93.47	0
19	MP4	X	-53.96	%100
20	MP4	Z	93.47	%100
21	MP4	X	-27.78	%30
22	MP4	Z	48.11	%30
23	MP4	X	-32.74	%60
24	MP4	Z	56.71	%60
25	MP8	X	-54.51	6
26	MP8	Z	94.42	6
27	MP8	X	-54.51	39.11
28	MP8	Z	94.42	39.11
29	MP7	X	-141.32	0
30	MP7	Z	244.77	0
31	MP7	X	-141.32	%100
32	MP7	Z	244.77	%100
33	MP7	X	-55.45	%30
34	MP7	Z	96.05	%30
35	MP7	X	-41.21	%60
36	MP7	Z	71.38	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	109.03	6
3	MP2	X	0	39.11
4	MP2	Z	109.03	39.11
5	MP1	X	0	0
6	MP1	Z	282.63	0
7	MP1	X	0	%100
8	MP1	Z	282.63	%100
9	MP1	X	0	%30
10	MP1	Z	110.91	%30
11	MP1	X	0	%60
12	MP1	Z	82.43	%60
13	MP5	X	0	6
14	MP5	Z	54.88	6
15	MP5	X	0	39.11
16	MP5	Z	54.88	39.11
17	MP4	X	0	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP4	Z	123.57	0
19	MP4	X	0	%100
20	MP4	Z	123.57	%100
21	MP4	X	0	%30
22	MP4	Z	60.51	%30
23	MP4	X	0	%60
24	MP4	Z	67	%60
25	MP8	X	0	6
26	MP8	Z	93.7	6
27	MP8	X	0	39.11
28	MP8	Z	93.7	39.11
29	MP7	X	0	0
30	MP7	Z	237.6	0
31	MP7	X	0	%100
32	MP7	Z	237.6	%100
33	MP7	X	0	%30
34	MP7	Z	96.64	%30
35	MP7	X	0	%60
36	MP7	Z	78.06	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	46.85	6
2	MP2	Z	81.15	6
3	MP2	X	46.85	39.11
4	MP2	Z	81.15	39.11
5	MP1	X	118.8	0
6	MP1	Z	205.77	0
7	MP1	X	118.8	%100
8	MP1	Z	205.77	%100
9	MP1	X	48.32	%30
10	MP1	Z	83.69	%30
11	MP1	X	39.03	%60
12	MP1	Z	67.6	%60
13	MP5	X	41.85	6
14	MP5	Z	72.48	6
15	MP5	X	41.85	39.11
16	MP5	Z	72.48	39.11
17	MP4	X	104.1	0
18	MP4	Z	180.31	0
19	MP4	X	104.1	%100
20	MP4	Z	180.31	%100
21	MP4	X	43.66	%30
22	MP4	Z	75.63	%30
23	MP4	X	37.6	%60
24	MP4	Z	65.13	%60
25	MP8	X	31.52	6
26	MP8	Z	54.59	6
27	MP8	X	31.52	39.11
28	MP8	Z	54.59	39.11
29	MP7	X	73.76	0
30	MP7	Z	127.76	0
31	MP7	X	73.76	%100
32	MP7	Z	127.76	%100
33	MP7	X	34.05	%30
34	MP7	Z	58.98	%30

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
35	MP7	X	34.66	%60
36	MP7	Z	60.04	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	54.59	6
2	MP2	Z	31.52	6
3	MP2	X	54.59	39.11
4	MP2	Z	31.52	39.11
5	MP1	X	127.76	0
6	MP1	Z	73.76	0
7	MP1	X	127.76	%100
8	MP1	Z	73.76	%100
9	MP1	X	58.98	%30
10	MP1	Z	34.05	%30
11	MP1	X	60.04	%60
12	MP1	Z	34.66	%60
13	MP5	X	92.82	6
14	MP5	Z	53.59	6
15	MP5	X	92.82	39.11
16	MP5	Z	53.59	39.11
17	MP4	X	240.06	0
18	MP4	Z	138.6	0
19	MP4	X	240.06	%100
20	MP4	Z	138.6	%100
21	MP4	X	94.56	%30
22	MP4	Z	54.59	%30
23	MP4	X	70.93	%60
24	MP4	Z	40.95	%60
25	MP8	X	41.32	6
26	MP8	Z	23.86	6
27	MP8	X	41.32	39.11
28	MP8	Z	23.86	39.11
29	MP7	X	88.76	0
30	MP7	Z	51.25	0
31	MP7	X	88.76	%100
32	MP7	Z	51.25	%100
33	MP7	X	46.62	%30
34	MP7	Z	26.92	%30
35	MP7	X	56.26	%60
36	MP7	Z	32.48	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	47.71	6
2	MP2	Z	0	6
3	MP2	X	47.71	39.11
4	MP2	Z	0	39.11
5	MP1	X	102.49	0
6	MP1	Z	0	0
7	MP1	X	102.49	%100
8	MP1	Z	0	%100
9	MP1	X	53.83	%30
10	MP1	Z	0	%30
11	MP1	X	64.96	%60
12	MP1	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP5	X	101.85	6
14	MP5	Z	0	6
15	MP5	X	101.85	39.11
16	MP5	Z	0	39.11
17	MP4	X	261.56	0
18	MP4	Z	0	0
19	MP4	X	261.56	%100
20	MP4	Z	0	%100
21	MP4	X	104.23	%30
22	MP4	Z	0	%30
23	MP4	X	80.38	%60
24	MP4	Z	0	%60
25	MP8	X	63.04	6
26	MP8	Z	0	6
27	MP8	X	63.04	39.11
28	MP8	Z	0	39.11
29	MP7	X	147.53	0
30	MP7	Z	0	0
31	MP7	X	147.53	%100
32	MP7	Z	0	%100
33	MP7	X	68.1	%30
34	MP7	Z	0	%30
35	MP7	X	69.33	%60
36	MP7	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	54.59	6
2	MP2	Z	-31.52	6
3	MP2	X	54.59	39.11
4	MP2	Z	-31.52	39.11
5	MP1	X	127.76	0
6	MP1	Z	-73.76	0
7	MP1	X	127.76	%100
8	MP1	Z	-73.76	%100
9	MP1	X	58.98	%30
10	MP1	Z	-34.05	%30
11	MP1	X	60.04	%60
12	MP1	Z	-34.66	%60
13	MP5	X	63.26	6
14	MP5	Z	-36.52	6
15	MP5	X	63.26	39.11
16	MP5	Z	-36.52	39.11
17	MP4	X	153.22	0
18	MP4	Z	-88.46	0
19	MP4	X	153.22	%100
20	MP4	Z	-88.46	%100
21	MP4	X	67.04	%30
22	MP4	Z	-38.71	%30
23	MP4	X	62.51	%60
24	MP4	Z	-36.09	%60
25	MP8	X	81.15	6
26	MP8	Z	-46.85	6
27	MP8	X	81.15	39.11
28	MP8	Z	-46.85	39.11
29	MP7	X	205.77	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
30	MP7	Z	-118.8	0
31	MP7	X	205.77	%100
32	MP7	Z	-118.8	%100
33	MP7	X	83.69	%30
34	MP7	Z	-48.32	%30
35	MP7	X	67.6	%60
36	MP7	Z	-39.03	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	46.85	6
2	MP2	Z	-81.15	6
3	MP2	X	46.85	39.11
4	MP2	Z	-81.15	39.11
5	MP1	X	118.8	0
6	MP1	Z	-205.77	0
7	MP1	X	118.8	%100
8	MP1	Z	-205.77	%100
9	MP1	X	48.32	%30
10	MP1	Z	-83.69	%30
11	MP1	X	39.03	%60
12	MP1	Z	-67.6	%60
13	MP5	X	24.78	6
14	MP5	Z	-42.92	6
15	MP5	X	24.78	39.11
16	MP5	Z	-42.92	39.11
17	MP4	X	53.96	0
18	MP4	Z	-93.47	0
19	MP4	X	53.96	%100
20	MP4	Z	-93.47	%100
21	MP4	X	27.78	%30
22	MP4	Z	-48.11	%30
23	MP4	X	32.74	%60
24	MP4	Z	-56.71	%60
25	MP8	X	54.51	6
26	MP8	Z	-94.42	6
27	MP8	X	54.51	39.11
28	MP8	Z	-94.42	39.11
29	MP7	X	141.32	0
30	MP7	Z	-244.77	0
31	MP7	X	141.32	%100
32	MP7	Z	-244.77	%100
33	MP7	X	55.45	%30
34	MP7	Z	-96.05	%30
35	MP7	X	41.21	%60
36	MP7	Z	-71.38	%60

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-111.516	6
2	MP2	Y	-111.516	39.11
3	MP1	Y	-303.093	0
4	MP1	Y	-303.093	%100
5	MP1	Y	-132.643	%30
6	MP1	Y	-133.389	%60
7	MP5	Y	-111.516	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP5	Y	-111.516	39.11
9	MP4	Y	-303.093	0
10	MP4	Y	-303.093	%100
11	MP4	Y	-132.643	%30
12	MP4	Y	-133.389	%60
13	MP8	Y	-111.516	6
14	MP8	Y	-111.516	39.11
15	MP7	Y	-303.093	0
16	MP7	Y	-303.093	%100
17	MP7	Y	-132.643	%30
18	MP7	Y	-133.389	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	-10.23	6
3	MP2	X	0	39.11
4	MP2	Z	-10.23	39.11
5	MP1	X	0	0
6	MP1	Z	-32.33	0
7	MP1	X	0	%100
8	MP1	Z	-32.33	%100
9	MP1	X	0	%30
10	MP1	Z	-11.69	%30
11	MP1	X	0	%60
12	MP1	Z	-9.23	%60
13	MP5	X	0	6
14	MP5	Z	-6.72	6
15	MP5	X	0	39.11
16	MP5	Z	-6.72	39.11
17	MP4	X	0	0
18	MP4	Z	-20.91	0
19	MP4	X	0	%100
20	MP4	Z	-20.91	%100
21	MP4	X	0	%30
22	MP4	Z	-8.76	%30
23	MP4	X	0	%60
24	MP4	Z	-8.12	%60
25	MP8	X	0	6
26	MP8	Z	-9.23	6
27	MP8	X	0	39.11
28	MP8	Z	-9.23	39.11
29	MP7	X	0	0
30	MP7	Z	-29.1	0
31	MP7	X	0	%100
32	MP7	Z	-29.1	%100
33	MP7	X	0	%30
34	MP7	Z	-10.86	%30
35	MP7	X	0	%60
36	MP7	Z	-8.91	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-4.62	6
2	MP2	Z	-8	6
3	MP2	X	-4.62	39.11

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP2	Z	-8	39.11
5	MP1	X	-14.55	0
6	MP1	Z	-25.2	0
7	MP1	X	-14.55	%100
8	MP1	Z	-25.2	%100
9	MP1	X	-5.43	%30
10	MP1	Z	-9.41	%30
11	MP1	X	-4.46	%60
12	MP1	Z	-7.72	%60
13	MP5	X	-4.29	6
14	MP5	Z	-7.44	6
15	MP5	X	-4.29	39.11
16	MP5	Z	-7.44	39.11
17	MP4	X	-13.49	0
18	MP4	Z	-23.37	0
19	MP4	X	-13.49	%100
20	MP4	Z	-23.37	%100
21	MP4	X	-5.16	%30
22	MP4	Z	-8.94	%30
23	MP4	X	-4.35	%60
24	MP4	Z	-7.54	%60
25	MP8	X	-3.63	6
26	MP8	Z	-6.28	6
27	MP8	X	-3.63	39.11
28	MP8	Z	-6.28	39.11
29	MP7	X	-11.31	0
30	MP7	Z	-19.6	0
31	MP7	X	-11.31	%100
32	MP7	Z	-19.6	%100
33	MP7	X	-4.6	%30
34	MP7	Z	-7.97	%30
35	MP7	X	-4.14	%60
36	MP7	Z	-7.17	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.28	6
2	MP2	Z	-3.63	6
3	MP2	X	-6.28	39.11
4	MP2	Z	-3.63	39.11
5	MP1	X	-19.6	0
6	MP1	Z	-11.31	0
7	MP1	X	-19.6	%100
8	MP1	Z	-11.31	%100
9	MP1	X	-7.97	%30
10	MP1	Z	-4.6	%30
11	MP1	X	-7.17	%60
12	MP1	Z	-4.14	%60
13	MP5	X	-8.75	6
14	MP5	Z	-5.05	6
15	MP5	X	-8.75	39.11
16	MP5	Z	-5.05	39.11
17	MP4	X	-27.66	0
18	MP4	Z	-15.97	0
19	MP4	X	-27.66	%100
20	MP4	Z	-15.97	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
21	MP4	X	-10.04	%30
22	MP4	Z	-5.8	%30
23	MP4	X	-7.96	%60
24	MP4	Z	-4.6	%60
25	MP8	X	-5.42	6
26	MP8	Z	-3.13	6
27	MP8	X	-5.42	39.11
28	MP8	Z	-3.13	39.11
29	MP7	X	-16.8	0
30	MP7	Z	-9.7	0
31	MP7	X	-16.8	%100
32	MP7	Z	-9.7	%100
33	MP7	X	-7.25	%30
34	MP7	Z	-4.18	%30
35	MP7	X	-6.9	%60
36	MP7	Z	-3.98	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.26	6
2	MP2	Z	0	6
3	MP2	X	-6.26	39.11
4	MP2	Z	0	39.11
5	MP1	X	-19.39	0
6	MP1	Z	0	0
7	MP1	X	-19.39	%100
8	MP1	Z	0	%100
9	MP1	X	-8.37	%30
10	MP1	Z	0	%30
11	MP1	X	-7.97	%60
12	MP1	Z	0	%60
13	MP5	X	-9.76	6
14	MP5	Z	0	6
15	MP5	X	-9.76	39.11
16	MP5	Z	0	39.11
17	MP4	X	-30.82	0
18	MP4	Z	0	0
19	MP4	X	-30.82	%100
20	MP4	Z	0	%100
21	MP4	X	-11.31	%30
22	MP4	Z	0	%30
23	MP4	X	-9.08	%60
24	MP4	Z	0	%60
25	MP8	X	-7.25	6
26	MP8	Z	0	6
27	MP8	X	-7.25	39.11
28	MP8	Z	0	39.11
29	MP7	X	-22.63	0
30	MP7	Z	0	0
31	MP7	X	-22.63	%100
32	MP7	Z	0	%100
33	MP7	X	-9.2	%30
34	MP7	Z	0	%30
35	MP7	X	-8.28	%60
36	MP7	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.28	6
2	MP2	Z	3.63	6
3	MP2	X	-6.28	39.11
4	MP2	Z	3.63	39.11
5	MP1	X	-19.6	0
6	MP1	Z	11.31	0
7	MP1	X	-19.6	%100
8	MP1	Z	11.31	%100
9	MP1	X	-7.97	%30
10	MP1	Z	4.6	%30
11	MP1	X	-7.17	%60
12	MP1	Z	4.14	%60
13	MP5	X	-6.84	6
14	MP5	Z	3.95	6
15	MP5	X	-6.84	39.11
16	MP5	Z	3.95	39.11
17	MP4	X	-21.42	0
18	MP4	Z	12.37	0
19	MP4	X	-21.42	%100
20	MP4	Z	12.37	%100
21	MP4	X	-8.44	%30
22	MP4	Z	4.87	%30
23	MP4	X	-7.35	%60
24	MP4	Z	4.24	%60
25	MP8	X	-8	6
26	MP8	Z	4.62	6
27	MP8	X	-8	39.11
28	MP8	Z	4.62	39.11
29	MP7	X	-25.2	0
30	MP7	Z	14.55	0
31	MP7	X	-25.2	%100
32	MP7	Z	14.55	%100
33	MP7	X	-9.41	%30
34	MP7	Z	5.43	%30
35	MP7	X	-7.72	%60
36	MP7	Z	4.46	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-4.62	6
2	MP2	Z	8	6
3	MP2	X	-4.62	39.11
4	MP2	Z	8	39.11
5	MP1	X	-14.55	0
6	MP1	Z	25.2	0
7	MP1	X	-14.55	%100
8	MP1	Z	25.2	%100
9	MP1	X	-5.43	%30
10	MP1	Z	9.41	%30
11	MP1	X	-4.46	%60
12	MP1	Z	7.72	%60
13	MP5	X	-3.19	6
14	MP5	Z	5.53	6
15	MP5	X	-3.19	39.11
16	MP5	Z	5.53	39.11
17	MP4	X	-9.89	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP4	Z	17.13	0
19	MP4	X	-9.89	%100
20	MP4	Z	17.13	%100
21	MP4	X	-4.23	%30
22	MP4	Z	7.33	%30
23	MP4	X	-4	%60
24	MP4	Z	6.93	%60
25	MP8	X	-5.11	6
26	MP8	Z	8.86	6
27	MP8	X	-5.11	39.11
28	MP8	Z	8.86	39.11
29	MP7	X	-16.16	0
30	MP7	Z	28	0
31	MP7	X	-16.16	%100
32	MP7	Z	28	%100
33	MP7	X	-5.85	%30
34	MP7	Z	10.13	%30
35	MP7	X	-4.61	%60
36	MP7	Z	7.99	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	10.23	6
3	MP2	X	0	39.11
4	MP2	Z	10.23	39.11
5	MP1	X	0	0
6	MP1	Z	32.33	0
7	MP1	X	0	%100
8	MP1	Z	32.33	%100
9	MP1	X	0	%30
10	MP1	Z	11.69	%30
11	MP1	X	0	%60
12	MP1	Z	9.23	%60
13	MP5	X	0	6
14	MP5	Z	6.72	6
15	MP5	X	0	39.11
16	MP5	Z	6.72	39.11
17	MP4	X	0	0
18	MP4	Z	20.91	0
19	MP4	X	0	%100
20	MP4	Z	20.91	%100
21	MP4	X	0	%30
22	MP4	Z	8.76	%30
23	MP4	X	0	%60
24	MP4	Z	8.12	%60
25	MP8	X	0	6
26	MP8	Z	9.23	6
27	MP8	X	0	39.11
28	MP8	Z	9.23	39.11
29	MP7	X	0	0
30	MP7	Z	29.1	0
31	MP7	X	0	%100
32	MP7	Z	29.1	%100
33	MP7	X	0	%30
34	MP7	Z	10.86	%30

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
35	MP7	X	0	%60
36	MP7	Z	8.91	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	4.62	6
2	MP2	Z	8	6
3	MP2	X	4.62	39.11
4	MP2	Z	8	39.11
5	MP1	X	14.55	0
6	MP1	Z	25.2	0
7	MP1	X	14.55	%100
8	MP1	Z	25.2	%100
9	MP1	X	5.43	%30
10	MP1	Z	9.41	%30
11	MP1	X	4.46	%60
12	MP1	Z	7.72	%60
13	MP5	X	4.29	6
14	MP5	Z	7.44	6
15	MP5	X	4.29	39.11
16	MP5	Z	7.44	39.11
17	MP4	X	13.49	0
18	MP4	Z	23.37	0
19	MP4	X	13.49	%100
20	MP4	Z	23.37	%100
21	MP4	X	5.16	%30
22	MP4	Z	8.94	%30
23	MP4	X	4.35	%60
24	MP4	Z	7.54	%60
25	MP8	X	3.63	6
26	MP8	Z	6.28	6
27	MP8	X	3.63	39.11
28	MP8	Z	6.28	39.11
29	MP7	X	11.31	0
30	MP7	Z	19.6	0
31	MP7	X	11.31	%100
32	MP7	Z	19.6	%100
33	MP7	X	4.6	%30
34	MP7	Z	7.97	%30
35	MP7	X	4.14	%60
36	MP7	Z	7.17	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.28	6
2	MP2	Z	3.63	6
3	MP2	X	6.28	39.11
4	MP2	Z	3.63	39.11
5	MP1	X	19.6	0
6	MP1	Z	11.31	0
7	MP1	X	19.6	%100
8	MP1	Z	11.31	%100
9	MP1	X	7.97	%30
10	MP1	Z	4.6	%30
11	MP1	X	7.17	%60
12	MP1	Z	4.14	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP5	X	8.75	6
14	MP5	Z	5.05	6
15	MP5	X	8.75	39.11
16	MP5	Z	5.05	39.11
17	MP4	X	27.66	0
18	MP4	Z	15.97	0
19	MP4	X	27.66	%100
20	MP4	Z	15.97	%100
21	MP4	X	10.04	%30
22	MP4	Z	5.8	%30
23	MP4	X	7.96	%60
24	MP4	Z	4.6	%60
25	MP8	X	5.42	6
26	MP8	Z	3.13	6
27	MP8	X	5.42	39.11
28	MP8	Z	3.13	39.11
29	MP7	X	16.8	0
30	MP7	Z	9.7	0
31	MP7	X	16.8	%100
32	MP7	Z	9.7	%100
33	MP7	X	7.25	%30
34	MP7	Z	4.18	%30
35	MP7	X	6.9	%60
36	MP7	Z	3.98	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.26	6
2	MP2	Z	0	6
3	MP2	X	6.26	39.11
4	MP2	Z	0	39.11
5	MP1	X	19.39	0
6	MP1	Z	0	0
7	MP1	X	19.39	%100
8	MP1	Z	0	%100
9	MP1	X	8.37	%30
10	MP1	Z	0	%30
11	MP1	X	7.97	%60
12	MP1	Z	0	%60
13	MP5	X	9.76	6
14	MP5	Z	0	6
15	MP5	X	9.76	39.11
16	MP5	Z	0	39.11
17	MP4	X	30.82	0
18	MP4	Z	0	0
19	MP4	X	30.82	%100
20	MP4	Z	0	%100
21	MP4	X	11.31	%30
22	MP4	Z	0	%30
23	MP4	X	9.08	%60
24	MP4	Z	0	%60
25	MP8	X	7.25	6
26	MP8	Z	0	6
27	MP8	X	7.25	39.11
28	MP8	Z	0	39.11
29	MP7	X	22.63	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
30	MP7	Z	0	0
31	MP7	X	22.63	%100
32	MP7	Z	0	%100
33	MP7	X	9.2	%30
34	MP7	Z	0	%30
35	MP7	X	8.28	%60
36	MP7	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.28	6
2	MP2	Z	-3.63	6
3	MP2	X	6.28	39.11
4	MP2	Z	-3.63	39.11
5	MP1	X	19.6	0
6	MP1	Z	-11.31	0
7	MP1	X	19.6	%100
8	MP1	Z	-11.31	%100
9	MP1	X	7.97	%30
10	MP1	Z	-4.6	%30
11	MP1	X	7.17	%60
12	MP1	Z	-4.14	%60
13	MP5	X	6.84	6
14	MP5	Z	-3.95	6
15	MP5	X	6.84	39.11
16	MP5	Z	-3.95	39.11
17	MP4	X	21.42	0
18	MP4	Z	-12.37	0
19	MP4	X	21.42	%100
20	MP4	Z	-12.37	%100
21	MP4	X	8.44	%30
22	MP4	Z	-4.87	%30
23	MP4	X	7.35	%60
24	MP4	Z	-4.24	%60
25	MP8	X	8	6
26	MP8	Z	-4.62	6
27	MP8	X	8	39.11
28	MP8	Z	-4.62	39.11
29	MP7	X	25.2	0
30	MP7	Z	-14.55	0
31	MP7	X	25.2	%100
32	MP7	Z	-14.55	%100
33	MP7	X	9.41	%30
34	MP7	Z	-5.43	%30
35	MP7	X	7.72	%60
36	MP7	Z	-4.46	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	4.62	6
2	MP2	Z	-8	6
3	MP2	X	4.62	39.11
4	MP2	Z	-8	39.11
5	MP1	X	14.55	0
6	MP1	Z	-25.2	0
7	MP1	X	14.55	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	-25.2	%100
9	MP1	X	5.43	%30
10	MP1	Z	-9.41	%30
11	MP1	X	4.46	%60
12	MP1	Z	-7.72	%60
13	MP5	X	3.19	6
14	MP5	Z	-5.53	6
15	MP5	X	3.19	39.11
16	MP5	Z	-5.53	39.11
17	MP4	X	9.89	0
18	MP4	Z	-17.13	0
19	MP4	X	9.89	%100
20	MP4	Z	-17.13	%100
21	MP4	X	4.23	%30
22	MP4	Z	-7.33	%30
23	MP4	X	4	%60
24	MP4	Z	-6.93	%60
25	MP8	X	5.11	6
26	MP8	Z	-8.86	6
27	MP8	X	5.11	39.11
28	MP8	Z	-8.86	39.11
29	MP7	X	16.16	0
30	MP7	Z	-28	0
31	MP7	X	16.16	%100
32	MP7	Z	-28	%100
33	MP7	X	5.85	%30
34	MP7	Z	-10.13	%30
35	MP7	X	4.61	%60
36	MP7	Z	-7.99	%60

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Z	-16.048	6
2	MP2	Z	-16.048	39.11
3	MP1	Z	-20.986	0
4	MP1	Z	-20.986	%100
5	MP1	Z	-22.68	%30
6	MP1	Z	-30.52	%60
7	MP5	Z	-16.048	6
8	MP5	Z	-16.048	39.11
9	MP4	Z	-20.986	0
10	MP4	Z	-20.986	%100
11	MP4	Z	-22.68	%30
12	MP4	Z	-30.52	%60
13	MP8	Z	-16.048	6
14	MP8	Z	-16.048	39.11
15	MP7	Z	-20.986	0
16	MP7	Z	-20.986	%100
17	MP7	Z	-22.68	%30
18	MP7	Z	-30.52	%60

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-16.048	6
2	MP2	X	-16.048	39.11
3	MP1	X	-20.986	0

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	X	-20.986	%100
5	MP1	X	-22.68	%30
6	MP1	X	-30.52	%60
7	MP5	X	-16.048	6
8	MP5	X	-16.048	39.11
9	MP4	X	-20.986	0
10	MP4	X	-20.986	%100
11	MP4	X	-22.68	%30
12	MP4	X	-30.52	%60
13	MP8	X	-16.048	6
14	MP8	X	-16.048	39.11
15	MP7	X	-20.986	0
16	MP7	X	-20.986	%100
17	MP7	X	-22.68	%30
18	MP7	X	-30.52	%60

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-85.9	-85.9	0	%100
2	M2	SZ	-85.9	-85.9	0	%100
3	M3	SZ	-85.9	-85.9	0	%100
4	M4	SZ	-85.9	-85.9	0	%100
5	M5	SZ	-85.9	-85.9	0	%100
6	M6	SZ	-85.9	-85.9	0	%100
7	M7	SZ	-85.9	-85.9	0	%100
8	M8	SZ	-85.9	-85.9	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	0	0	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	-85.9	-85.9	0	%100
13	M13	SZ	-85.9	-85.9	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	-51.54	-51.54	0	%100
17	M17	SZ	-51.54	-51.54	0	%100
18	M18	SZ	-85.9	-85.9	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	0	0	0	%100
22	M22	SZ	0	0	0	%100
23	MP3	SZ	-51.54	-51.54	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	-85.9	-85.9	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	-51.54	-51.54	0	%100
28	M28	SZ	-51.54	-51.54	0	%100
29	M29	SZ	-51.54	-51.54	0	%100
30	M30	SZ	-51.54	-51.54	0	%100
31	M31	SZ	-51.54	-51.54	0	%100
32	M32	SZ	-51.54	-51.54	0	%100
33	M33	SZ	-85.9	-85.9	0	%100
34	M34	SZ	-85.9	-85.9	0	%100
35	M35	SZ	0	0	0	%100
36	M36	SZ	0	0	0	%100
37	MP1	SZ	-51.54	-51.54	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
38	M38	SZ	-51.54	-51.54	0	%100
39	M39	SZ	-51.54	-51.54	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	MP2	SZ	-51.54	-51.54	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	MP9	SZ	-51.54	-51.54	0	%100
47	M47	SZ	0	0	0	%100
48	MP8	SZ	-51.54	-51.54	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	MP7	SZ	-51.54	-51.54	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	0	0	0	%100
54	M54	SZ	0	0	0	%100
55	MP6	SZ	-51.54	-51.54	0	%100
56	M56	SZ	0	0	0	%100
57	MP5	SZ	-51.54	-51.54	0	%100
58	M58	SZ	0	0	0	%100
59	M59	SZ	0	0	0	%100
60	MP4	SZ	-51.54	-51.54	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-85.9	-85.9	0	%100
2	M2	SX	-85.9	-85.9	0	%100
3	M3	SX	-85.9	-85.9	0	%100
4	M4	SX	-85.9	-85.9	0	%100
5	M5	SX	-85.9	-85.9	0	%100
6	M6	SX	-85.9	-85.9	0	%100
7	M7	SX	-85.9	-85.9	0	%100
8	M8	SX	-85.9	-85.9	0	%100
9	M9	SX	0	0	0	%100
10	M10	SX	0	0	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	-85.9	-85.9	0	%100
13	M13	SX	-85.9	-85.9	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	-51.54	-51.54	0	%100
17	M17	SX	-51.54	-51.54	0	%100
18	M18	SX	-85.9	-85.9	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	0	0	0	%100
22	M22	SX	0	0	0	%100
23	MP3	SX	-51.54	-51.54	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	-85.9	-85.9	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	-51.54	-51.54	0	%100
28	M28	SX	-51.54	-51.54	0	%100
29	M29	SX	-51.54	-51.54	0	%100
30	M30	SX	-51.54	-51.54	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
31	M31	SX	-51.54	-51.54	0	%100
32	M32	SX	-51.54	-51.54	0	%100
33	M33	SX	-85.9	-85.9	0	%100
34	M34	SX	-85.9	-85.9	0	%100
35	M35	SX	0	0	0	%100
36	M36	SX	0	0	0	%100
37	MP1	SX	-51.54	-51.54	0	%100
38	M38	SX	-51.54	-51.54	0	%100
39	M39	SX	-51.54	-51.54	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	MP2	SX	-51.54	-51.54	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	MP9	SX	-51.54	-51.54	0	%100
47	M47	SX	0	0	0	%100
48	MP8	SX	-51.54	-51.54	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	MP7	SX	-51.54	-51.54	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	0	0	0	%100
54	M54	SX	0	0	0	%100
55	MP6	SX	-51.54	-51.54	0	%100
56	M56	SX	0	0	0	%100
57	MP5	SX	-51.54	-51.54	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	MP4	SX	-51.54	-51.54	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-22.337	-22.337	0	%100
2	M2	Y	-22.337	-22.337	0	%100
3	M3	Y	-22.337	-22.337	0	%100
4	M4	Y	-22.337	-22.337	0	%100
5	M5	Y	-22.337	-22.337	0	%100
6	M6	Y	-22.337	-22.337	0	%100
7	M7	Y	-22.337	-22.337	0	%100
8	M8	Y	-22.337	-22.337	0	%100
9	M9	Y	-6.861	-6.861	0	%100
10	M10	Y	-6.861	-6.861	0	%100
11	M11	Y	-6.861	-6.861	0	%100
12	M12	Y	-15.05	-15.05	0	%100
13	M13	Y	-15.05	-15.05	0	%100
14	M14	Y	-6.861	-6.861	0	%100
15	M15	Y	-6.861	-6.861	0	%100
16	M16	Y	-8.671	-8.671	0	%100
17	M17	Y	-13.737	-13.737	0	%100
18	M18	Y	-13.003	-13.003	0	%100
19	M19	Y	-6.861	-6.861	0	%100
20	M20	Y	-6.861	-6.861	0	%100
21	M21	Y	-6.861	-6.861	0	%100
22	M22	Y	-6.861	-6.861	0	%100
23	MP3	Y	-13.737	-13.737	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
24	M24	Y	-6.861	-6.861	0	%100
25	M25	Y	-17.097	-17.097	0	%100
26	M26	Y	-6.861	-6.861	0	%100
27	M27	Y	-8.671	-8.671	0	%100
28	M28	Y	-8.671	-8.671	0	%100
29	M29	Y	-8.671	-8.671	0	%100
30	M30	Y	-8.671	-8.671	0	%100
31	M31	Y	-8.671	-8.671	0	%100
32	M32	Y	-8.671	-8.671	0	%100
33	M33	Y	-17.097	-17.097	0	%100
34	M34	Y	-17.097	-17.097	0	%100
35	M35	Y	-6.861	-6.861	0	%100
36	M36	Y	-6.861	-6.861	0	%100
37	MP1	Y	-13.737	-13.737	0	%100
38	M38	Y	-13.737	-13.737	0	%100
39	M39	Y	-13.737	-13.737	0	%100
40	M40	Y	-6.861	-6.861	0	%100
41	M41	Y	-6.861	-6.861	0	%100
42	MP2	Y	-13.737	-13.737	0	%100
43	M43	Y	-6.861	-6.861	0	%100
44	M44	Y	-6.861	-6.861	0	%100
45	M45	Y	-6.861	-6.861	0	%100
46	MP9	Y	-13.737	-13.737	0	%100
47	M47	Y	-6.861	-6.861	0	%100
48	MP8	Y	-13.737	-13.737	0	%100
49	M49	Y	-6.861	-6.861	0	%100
50	M50	Y	-6.861	-6.861	0	%100
51	MP7	Y	-13.737	-13.737	0	%100
52	M52	Y	-6.861	-6.861	0	%100
53	M53	Y	-6.861	-6.861	0	%100
54	M54	Y	-6.861	-6.861	0	%100
55	MP6	Y	-13.737	-13.737	0	%100
56	M56	Y	-6.861	-6.861	0	%100
57	MP5	Y	-13.737	-13.737	0	%100
58	M58	Y	-6.861	-6.861	0	%100
59	M59	Y	-6.861	-6.861	0	%100
60	MP4	Y	-13.737	-13.737	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-15.558	-15.558	0	%100
2	M2	SZ	-15.558	-15.558	0	%100
3	M3	SZ	-15.558	-15.558	0	%100
4	M4	SZ	-15.558	-15.558	0	%100
5	M5	SZ	-15.558	-15.558	0	%100
6	M6	SZ	-15.558	-15.558	0	%100
7	M7	SZ	-15.558	-15.558	0	%100
8	M8	SZ	-15.558	-15.558	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	0	0	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	-22.065	-22.065	0	%100
13	M13	SZ	-22.065	-22.065	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	-70.781	-70.781	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
17	M17	SZ	-24.703	-24.703	0	%100
18	M18	SZ	-26.671	-26.671	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	0	0	0	%100
22	M22	SZ	0	0	0	%100
23	MP3	SZ	-24.703	-24.703	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	-19.301	-19.301	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	-70.781	-70.781	0	%100
28	M28	SZ	-70.781	-70.781	0	%100
29	M29	SZ	-70.781	-70.781	0	%100
30	M30	SZ	-70.781	-70.781	0	%100
31	M31	SZ	-70.781	-70.781	0	%100
32	M32	SZ	-70.781	-70.781	0	%100
33	M33	SZ	-19.301	-19.301	0	%100
34	M34	SZ	-19.301	-19.301	0	%100
35	M35	SZ	0	0	0	%100
36	M36	SZ	0	0	0	%100
37	MP1	SZ	-24.703	-24.703	0	%100
38	M38	SZ	-24.703	-24.703	0	%100
39	M39	SZ	-24.703	-24.703	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	MP2	SZ	-24.703	-24.703	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	MP9	SZ	-24.703	-24.703	0	%100
47	M47	SZ	0	0	0	%100
48	MP8	SZ	-24.703	-24.703	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	MP7	SZ	-24.703	-24.703	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	0	0	0	%100
54	M54	SZ	0	0	0	%100
55	MP6	SZ	-24.703	-24.703	0	%100
56	M56	SZ	0	0	0	%100
57	MP5	SZ	-24.703	-24.703	0	%100
58	M58	SZ	0	0	0	%100
59	M59	SZ	0	0	0	%100
60	MP4	SZ	-24.703	-24.703	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-15.558	-15.558	0	%100
2	M2	SX	-15.558	-15.558	0	%100
3	M3	SX	-15.558	-15.558	0	%100
4	M4	SX	-15.558	-15.558	0	%100
5	M5	SX	-15.558	-15.558	0	%100
6	M6	SX	-15.558	-15.558	0	%100
7	M7	SX	-15.558	-15.558	0	%100
8	M8	SX	-15.558	-15.558	0	%100
9	M9	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
10	M10	SX	0	0	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	-22.065	-22.065	0	%100
13	M13	SX	-22.065	-22.065	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	-70.781	-70.781	0	%100
17	M17	SX	-24.703	-24.703	0	%100
18	M18	SX	-26.671	-26.671	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	0	0	0	%100
22	M22	SX	0	0	0	%100
23	MP3	SX	-24.703	-24.703	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	-19.301	-19.301	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	-70.781	-70.781	0	%100
28	M28	SX	-70.781	-70.781	0	%100
29	M29	SX	-70.781	-70.781	0	%100
30	M30	SX	-70.781	-70.781	0	%100
31	M31	SX	-70.781	-70.781	0	%100
32	M32	SX	-70.781	-70.781	0	%100
33	M33	SX	-19.301	-19.301	0	%100
34	M34	SX	-19.301	-19.301	0	%100
35	M35	SX	0	0	0	%100
36	M36	SX	0	0	0	%100
37	MP1	SX	-24.703	-24.703	0	%100
38	M38	SX	-24.703	-24.703	0	%100
39	M39	SX	-24.703	-24.703	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	MP2	SX	-24.703	-24.703	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	MP9	SX	-24.703	-24.703	0	%100
47	M47	SX	0	0	0	%100
48	MP8	SX	-24.703	-24.703	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	MP7	SX	-24.703	-24.703	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	0	0	0	%100
54	M54	SX	0	0	0	%100
55	MP6	SX	-24.703	-24.703	0	%100
56	M56	SX	0	0	0	%100
57	MP5	SX	-24.703	-24.703	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	MP4	SX	-24.703	-24.703	0	%100

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-.199	-.871	0	10.667
2	M1	Y	-.871	-1.706	10.667	21.333

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
3	M1	Y	-1.706	-2.086	21.333	32
4	M1	Y	-2.086	-1.546	32	42.667
5	M1	Y	-1.546	-.709	42.667	53.333
6	M1	Y	-.709	-.049	53.333	64
7	M3	Y	-.047	-.679	64	74.667
8	M3	Y	-.679	-1.46	74.667	85.333
9	M3	Y	-1.46	-2.207	85.333	96
10	M3	Y	-2.207	-1.886	96	106.667
11	M3	Y	-1.886	-.793	106.667	117.333
12	M3	Y	-.793	-.05	117.333	128
13	M6	Y	-.079	-1.124	0	11.902
14	M6	Y	-1.124	-1.93	11.902	23.805
15	M6	Y	-1.93	-1.81	23.805	35.707
16	M6	Y	-1.81	-1.142	35.707	47.61
17	M6	Y	-1.142	-.188	47.61	59.512
18	M1	Y	-.052	-.724	64	74.667
19	M1	Y	-.724	-1.553	74.667	85.333
20	M1	Y	-1.553	-2.093	85.333	96
21	M1	Y	-2.093	-1.801	96	106.667
22	M1	Y	-1.801	-.898	106.667	117.333
23	M1	Y	-.898	-.052	117.333	128
24	M2	Y	-.226	-.239	64	74.667
25	M2	Y	-.239	-1.363	74.667	85.333
26	M2	Y	-1.363	-2.403	85.333	96
27	M2	Y	-2.403	-1.948	96	106.667
28	M2	Y	-1.948	-1.014	106.667	117.333
29	M2	Y	-1.014	-.036	117.333	128
30	M5	Y	-.046	-.84	0	11.902
31	M5	Y	-.84	-1.814	11.902	23.805
32	M5	Y	-1.814	-1.629	23.805	35.707
33	M5	Y	-1.629	-.804	35.707	47.61
34	M5	Y	-.804	-.505	47.61	59.512
35	M9	Y	-1.263	-1.263	0	2.501
36	M56	Y	-2.001	-2.001	0	2.501
37	M2	Y	-.042	-.361	25.6	35.2
38	M2	Y	-.361	-.833	35.2	44.8
39	M2	Y	-.833	-.679	44.8	54.4
40	M2	Y	-.679	-.042	54.4	64
41	M4	Y	-.289	-.361	35.707	59.512
42	M7	Y	-.296	-.746	2.498	9.992
43	M7	Y	-.746	-.643	9.992	17.487
44	M7	Y	-.643	-.077	17.487	24.981
45	M8	Y	-.101	-.101	25.796	30.667
46	M3	Y	-.057	-.899	25.6	35.2
47	M3	Y	-.899	-1.077	35.2	44.8
48	M3	Y	-1.077	-.464	44.8	54.4
49	M3	Y	-.464	-.057	54.4	64
50	M4	Y	-.386	-.665	0	11.902
51	M4	Y	-.665	-.945	11.902	23.805
52	M8	Y	-1.012	-1.012	1.407	6.407
53	M18	Y	-.962	-1.054	0	12.49
54	M18	Y	-1.054	-1.146	12.49	24.981
55	M2	Y	-.134	-.873	0	6.4
56	M2	Y	-.873	-1.047	6.4	12.8
57	M2	Y	-1.047	-.688	12.8	19.2
58	M2	Y	-.688	-.36	19.2	25.6
59	M3	Y	-.044	-.622	0	8.533

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
60	M3	Y	-.622	-.935	8.533	17.067
61	M3	Y	-.935	-.981	17.067	25.6
62	M8	Y	-.091	-.87	0	7.667
63	M8	Y	-.87	-1.224	7.667	15.333
64	M8	Y	-1.224	-.841	15.333	23
65	M8	Y	-.841	-.156	23	30.667
66	M1	Y	-.596	-.596	60.746	65.746
67	M5	Y	-1.092	-.539	0	8.927
68	M5	Y	-.539	.003	8.927	17.854
69	M6	Y	-1.156	-.505	0	8.927
70	M6	Y	-.505	.029	8.927	17.854
71	M9	Y	-.304	-.659	0	5.346
72	M9	Y	-.659	-.924	5.346	10.693
73	M9	Y	-.924	-.878	10.693	16.039
74	M9	Y	-.878	-.588	16.039	21.386
75	M9	Y	-.588	-.274	21.386	26.732
76	M3	Y	-.596	-.596	60.746	65.746
77	M4	Y	-1.156	-.505	0	8.927
78	M4	Y	-.505	.029	8.927	17.854
79	M6	Y	.003	-.539	41.658	50.585
80	M6	Y	-.539	-1.092	50.585	59.512
81	M11	Y	-.304	-.659	0	5.346
82	M11	Y	-.659	-.924	5.346	10.693
83	M11	Y	-.924	-.878	10.693	16.039
84	M11	Y	-.878	-.588	16.039	21.386
85	M11	Y	-.588	-.274	21.386	26.732
86	M2	Y	-.596	-.596	60.746	65.746
87	M4	Y	.03	-.503	41.658	50.585
88	M4	Y	-.503	-1.154	50.585	59.512
89	M5	Y	.003	-.539	41.658	50.585
90	M5	Y	-.539	-1.092	50.585	59.512
91	M10	Y	-.304	-.659	0	5.346
92	M10	Y	-.659	-.925	5.346	10.693
93	M10	Y	-.925	-.881	10.693	16.039
94	M10	Y	-.881	-.59	16.039	21.386
95	M10	Y	-.59	-.272	21.386	26.732

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-2.517	-11	0	10.667
2	M1	Y	-11	-21.545	10.667	21.333
3	M1	Y	-21.545	-26.348	21.333	32
4	M1	Y	-26.348	-19.518	32	42.667
5	M1	Y	-19.518	-8.955	42.667	53.333
6	M1	Y	-8.955	-.612	53.333	64
7	M3	Y	-.599	-8.58	64	74.667
8	M3	Y	-8.58	-18.435	74.667	85.333
9	M3	Y	-18.435	-27.869	85.333	96
10	M3	Y	-27.869	-23.822	96	106.667
11	M3	Y	-23.822	-10.016	106.667	117.333
12	M3	Y	-10.016	-.629	117.333	128
13	M6	Y	-.995	-14.195	0	11.902
14	M6	Y	-14.195	-24.371	11.902	23.805
15	M6	Y	-24.371	-22.862	23.805	35.707
16	M6	Y	-22.862	-14.427	35.707	47.61
17	M6	Y	-14.427	-2.37	47.61	59.512

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
18	M1	Y	-.65	-9.138	64	74.667
19	M1	Y	-9.138	-19.608	74.667	85.333
20	M1	Y	-19.608	-26.427	85.333	96
21	M1	Y	-26.427	-22.745	96	106.667
22	M1	Y	-22.745	-11.341	106.667	117.333
23	M1	Y	-11.341	-.65	117.333	128
24	M2	Y	-2.859	-3.017	64	74.667
25	M2	Y	-3.017	-17.212	74.667	85.333
26	M2	Y	-17.212	-30.349	85.333	96
27	M2	Y	-30.349	-24.6	96	106.667
28	M2	Y	-24.6	-12.811	106.667	117.333
29	M2	Y	-12.811	-.452	117.333	128
30	M5	Y	-.579	-10.603	0	11.902
31	M5	Y	-10.603	-22.914	11.902	23.805
32	M5	Y	-22.914	-20.571	23.805	35.707
33	M5	Y	-20.571	-10.153	35.707	47.61
34	M5	Y	-10.153	-6.378	47.61	59.512
35	M9	Y	-15.953	-15.953	0	2.501
36	M56	Y	-25.268	-25.268	0	2.501
37	M2	Y	-.524	-4.562	25.6	35.2
38	M2	Y	-4.562	-10.513	35.2	44.8
39	M2	Y	-10.513	-8.573	44.8	54.4
40	M2	Y	-8.573	-.524	54.4	64
41	M4	Y	-3.653	-4.562	35.707	59.512
42	M7	Y	-3.74	-9.416	2.498	9.992
43	M7	Y	-9.416	-8.117	9.992	17.487
44	M7	Y	-8.117	-.974	17.487	24.981
45	M8	Y	-1.279	-1.279	25.796	30.667
46	M3	Y	-.723	-11.354	25.6	35.2
47	M3	Y	-11.354	-13.598	35.2	44.8
48	M3	Y	-13.598	-5.859	44.8	54.4
49	M3	Y	-5.859	-.723	54.4	64
50	M4	Y	-4.87	-8.401	0	11.902
51	M4	Y	-8.401	-11.933	11.902	23.805
52	M8	Y	-12.782	-12.782	1.407	6.407
53	M18	Y	-12.153	-13.312	0	12.49
54	M18	Y	-13.312	-14.472	12.49	24.981
55	M2	Y	-1.692	-11.025	0	6.4
56	M2	Y	-11.025	-13.221	6.4	12.8
57	M2	Y	-13.221	-8.684	12.8	19.2
58	M2	Y	-8.684	-4.551	19.2	25.6
59	M3	Y	-.556	-7.854	0	8.533
60	M3	Y	-7.854	-11.813	8.533	17.067
61	M3	Y	-11.813	-12.392	17.067	25.6
62	M8	Y	-1.147	-10.983	0	7.667
63	M8	Y	-10.983	-15.463	7.667	15.333
64	M8	Y	-15.463	-10.626	15.333	23
65	M8	Y	-10.626	-1.972	23	30.667
66	M1	Y	-7.521	-7.521	60.746	65.746
67	M5	Y	-13.792	-6.806	0	8.927
68	M5	Y	-6.806	.036	8.927	17.854
69	M6	Y	-14.604	-6.377	0	8.927
70	M6	Y	-6.377	.37	8.927	17.854
71	M9	Y	-3.841	-8.321	0	5.346
72	M9	Y	-8.321	-11.671	5.346	10.693
73	M9	Y	-11.671	-11.091	10.693	16.039
74	M9	Y	-11.091	-7.423	16.039	21.386

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
75	M9	Y	-7.423	-3.465	21.386	26.732
76	M3	Y	-7.521	-7.521	60.746	65.746
77	M4	Y	-14.604	-6.377	0	8.927
78	M4	Y	-6.377	.37	8.927	17.854
79	M6	Y	.036	-6.806	41.658	50.585
80	M6	Y	-6.806	-13.792	50.585	59.512
81	M11	Y	-3.841	-8.321	0	5.346
82	M11	Y	-8.321	-11.671	5.346	10.693
83	M11	Y	-11.671	-11.091	10.693	16.039
84	M11	Y	-11.091	-7.423	16.039	21.386
85	M11	Y	-7.423	-3.465	21.386	26.732
86	M2	Y	-7.524	-7.524	60.746	65.746
87	M4	Y	.373	-6.351	41.658	50.585
88	M4	Y	-6.351	-14.568	50.585	59.512
89	M5	Y	.036	-6.808	41.658	50.585
90	M5	Y	-6.808	-13.794	50.585	59.512
91	M10	Y	-3.841	-8.323	0	5.346
92	M10	Y	-8.323	-11.687	5.346	10.693
93	M10	Y	-11.687	-11.131	10.693	16.039
94	M10	Y	-11.131	-7.447	16.039	21.386
95	M10	Y	-7.447	-3.438	21.386	26.732

Load Combinations

	Descripti...	So...	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Factor	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + ...	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + ...	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + ...	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + ...	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + ...	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + ...	Yes	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + ...	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + ...	Yes	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + ...	Yes	Y		1	1.2	10	1	14	-.5	15	-.866												
11	1.2DL + ...	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + ...	Yes	Y		1	1.2	12	1	14	.5	15	-.866												
13	1.2DL + ...	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + ...	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + ...	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + ...	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + ...	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + ...	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + ...	Yes	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + ...	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + ...	Yes	Y		1	.9	9	1	14	-.866	15	-.5												
22	0.9DL + ...	Yes	Y		1	.9	10	1	14	-.5	15	-.866												
23	0.9DL + ...	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + ...	Yes	Y		1	.9	12	1	14	.5	15	-.866												
25	0.9DL + ...	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1...	Yes	Y		1	1.2	16	1																
27	1.2D + 1...	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1...	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										

Load Combinations (Continued)

	Descripti...	So...	PDelta	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Factor	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
32	1.2D + 1...	Yes	Y		1	1.2	16	1	22	1	29	-.866	30	.5										
33	1.2D + 1...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1...	Yes	Y		1	1.2	16	1	24	1	29	-.866	30	-.5										
35	1.2D + 1...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.866										
36	1.2D + 1...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.866										
38	1.2D + 1...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2...	Yes	Y		1	1.2...	31	1	32															
40	(1.2 + 0.2...	Yes	Y		1	1.2...	31	.866	32	.5														
41	(1.2 + 0.2...	Yes	Y		1	1.2...	31	.5	32	.866														
42	(1.2 + 0.2...	Yes	Y		1	1.2...	31		32	1														
43	(1.2 + 0.2...	Yes	Y		1	1.2...	31	-.5	32	.866														
44	(1.2 + 0.2...	Yes	Y		1	1.2...	31	-.866	32	.5														
45	(1.2 + 0.2...	Yes	Y		1	1.2...	31	-1	32															
46	(1.2 + 0.2...	Yes	Y		1	1.2...	31	-.866	32	-.5														
47	(1.2 + 0.2...	Yes	Y		1	1.2...	31	-.5	32	-.866														
48	(1.2 + 0.2...	Yes	Y		1	1.2...	31		32	-1														
49	(1.2 + 0.2...	Yes	Y		1	1.2...	31	.5	32	-.866														
50	(1.2 + 0.2...	Yes	Y		1	1.2...	31	.866	32	-.5														
51	(0.9 - 0.2...	Yes	Y		1	.863	31	1	32															
52	(0.9 - 0.2...	Yes	Y		1	.863	31	.866	32	.5														
53	(0.9 - 0.2...	Yes	Y		1	.863	31	.5	32	.866														
54	(0.9 - 0.2...	Yes	Y		1	.863	31		32	1														
55	(0.9 - 0.2...	Yes	Y		1	.863	31	-.5	32	.866														
56	(0.9 - 0.2...	Yes	Y		1	.863	31	-.866	32	.5														
57	(0.9 - 0.2...	Yes	Y		1	.863	31	-1	32															
58	(0.9 - 0.2...	Yes	Y		1	.863	31	-.866	32	-.5														
59	(0.9 - 0.2...	Yes	Y		1	.863	31	-.5	32	-.866														
60	(0.9 - 0.2...	Yes	Y		1	.863	31		32	-1														
61	(0.9 - 0.2...	Yes	Y		1	.863	31	.5	32	-.866														
62	(0.9 - 0.2...	Yes	Y		1	.863	31	.866	32	-.5														
63	1.0DL + ...	Yes	Y		1	1	2	.23	14	.23	15		33	1.5										
64	1.0DL + ...	Yes	Y		1	1	3	.23	14	.2	15	.115	33	1.5										
65	1.0DL + ...	Yes	Y		1	1	4	.23	14	.115	15	.2	33	1.5										
66	1.0DL + ...	Yes	Y		1	1	5	.23	14		15	.23	33	1.5										
67	1.0DL + ...	Yes	Y		1	1	6	.23	14	-.115	15	.2	33	1.5										
68	1.0DL + ...	Yes	Y		1	1	7	.23	14	-.2	15	.115	33	1.5										
69	1.0DL + ...	Yes	Y		1	1	8	.23	14	-.23	15		33	1.5										
70	1.0DL + ...	Yes	Y		1	1	9	.23	14	-.2	15	-.115	33	1.5										
71	1.0DL + ...	Yes	Y		1	1	10	.23	14	-.115	15	-.2	33	1.5										
72	1.0DL + ...	Yes	Y		1	1	11	.23	14		15	-.23	33	1.5										
73	1.0DL + ...	Yes	Y		1	1	12	.23	14	.115	15	-.2	33	1.5										
74	1.0DL + ...	Yes	Y		1	1	13	.23	14	.2	15	-.115	33	1.5										
75	1.2DL + ...	Yes	Y		1	1.2	33	1.5																
76	1.2DL + ...	Yes	Y		1	1.2	34	1.5	2	.058	14	.058	15											
77	1.2DL + ...	Yes	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029										
78	1.2DL + ...	Yes	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05										
79	1.2DL + ...	Yes	Y		1	1.2	34	1.5	5	.058	14		15	.058										
80	1.2DL + ...	Yes	Y		1	1.2	34	1.5	6	.058	14	-.029	15	.05										
81	1.2DL + ...	Yes	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029										
82	1.2DL + ...	Yes	Y		1	1.2	34	1.5	8	.058	14	-.058	15											
83	1.2DL + ...	Yes	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.029										
84	1.2DL + ...	Yes	Y		1	1.2	34	1.5	10	.058	14	-.029	15	-.05										
85	1.2DL + ...	Yes	Y		1	1.2	34	1.5	11	.058	14		15	-.058										
86	1.2DL + ...	Yes	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05										
87	1.2DL + ...	Yes	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.029										
88	1.2DL + ...	Yes	Y		1	1.2	35	1.5	2	.058	14	.058	15											

Load Combinations (Continued)

	Descripti...	So...	PDelta	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Factor	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
89	1.2DL + ...	Yes	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029										
90	1.2DL + ...	Yes	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05										
91	1.2DL + ...	Yes	Y		1	1.2	35	1.5	5	.058	14		15	.058										
92	1.2DL + ...	Yes	Y		1	1.2	35	1.5	6	.058	14	-.029	15	.05										
93	1.2DL + ...	Yes	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029										
94	1.2DL + ...	Yes	Y		1	1.2	35	1.5	8	.058	14	-.058	15											
95	1.2DL + ...	Yes	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.029										
96	1.2DL + ...	Yes	Y		1	1.2	35	1.5	10	.058	14	-.029	15	-.05										
97	1.2DL + ...	Yes	Y		1	1.2	35	1.5	11	.058	14		15	-.058										
98	1.2DL + ...	Yes	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05										
99	1.2DL + ...	Yes	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.029										
100	1.2DL + ...	Yes	Y		1	1.2	36	1.5	2	.058	14	.058	15											
101	1.2DL + ...	Yes	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029										
102	1.2DL + ...	Yes	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05										
103	1.2DL + ...	Yes	Y		1	1.2	36	1.5	5	.058	14		15	.058										
104	1.2DL + ...	Yes	Y		1	1.2	36	1.5	6	.058	14	-.029	15	.05										
105	1.2DL + ...	Yes	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029										
106	1.2DL + ...	Yes	Y		1	1.2	36	1.5	8	.058	14	-.058	15											
107	1.2DL + ...	Yes	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.029										
108	1.2DL + ...	Yes	Y		1	1.2	36	1.5	10	.058	14	-.029	15	-.05										
109	1.2DL + ...	Yes	Y		1	1.2	36	1.5	11	.058	14		15	-.058										
110	1.2DL + ...	Yes	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05										
111	1.2DL + ...	Yes	Y		1	1.2	36	1.5	13	.058	14	.05	15	-.029										
112	1.2DL + ...	Yes	Y		1	1.2	37	1.5	2	.058	14	.058	15											
113	1.2DL + ...	Yes	Y		1	1.2	37	1.5	3	.058	14	.05	15	.029										
114	1.2DL + ...	Yes	Y		1	1.2	37	1.5	4	.058	14	.029	15	.05										
115	1.2DL + ...	Yes	Y		1	1.2	37	1.5	5	.058	14		15	.058										
116	1.2DL + ...	Yes	Y		1	1.2	37	1.5	6	.058	14	-.029	15	.05										
117	1.2DL + ...	Yes	Y		1	1.2	37	1.5	7	.058	14	-.05	15	.029										
118	1.2DL + ...	Yes	Y		1	1.2	37	1.5	8	.058	14	-.058	15											
119	1.2DL + ...	Yes	Y		1	1.2	37	1.5	9	.058	14	-.05	15	-.029										
120	1.2DL + ...	Yes	Y		1	1.2	37	1.5	10	.058	14	-.029	15	-.05										
121	1.2DL + ...	Yes	Y		1	1.2	37	1.5	11	.058	14		15	-.058										
122	1.2DL + ...	Yes	Y		1	1.2	37	1.5	12	.058	14	.029	15	-.05										
123	1.2DL + ...	Yes	Y		1	1.2	37	1.5	13	.058	14	.05	15	-.029										
124	1.2DL + ...	Yes	Y		1	1.2	38	1.5	2	.058	14	.058	15											
125	1.2DL + ...	Yes	Y		1	1.2	38	1.5	3	.058	14	.05	15	.029										
126	1.2DL + ...	Yes	Y		1	1.2	38	1.5	4	.058	14	.029	15	.05										
127	1.2DL + ...	Yes	Y		1	1.2	38	1.5	5	.058	14		15	.058										
128	1.2DL + ...	Yes	Y		1	1.2	38	1.5	6	.058	14	-.029	15	.05										
129	1.2DL + ...	Yes	Y		1	1.2	38	1.5	7	.058	14	-.05	15	.029										
130	1.2DL + ...	Yes	Y		1	1.2	38	1.5	8	.058	14	-.058	15											
131	1.2DL + ...	Yes	Y		1	1.2	38	1.5	9	.058	14	-.05	15	-.029										
132	1.2DL + ...	Yes	Y		1	1.2	38	1.5	10	.058	14	-.029	15	-.05										
133	1.2DL + ...	Yes	Y		1	1.2	38	1.5	11	.058	14		15	-.058										
134	1.2DL + ...	Yes	Y		1	1.2	38	1.5	12	.058	14	.029	15	-.05										
135	1.2DL + ...	Yes	Y		1	1.2	38	1.5	13	.058	14	.05	15	-.029										
136	1.2DL + ...	Yes	Y		1	1.2	39	1.5	2	.058	14	.058	15											
137	1.2DL + ...	Yes	Y		1	1.2	39	1.5	3	.058	14	.05	15	.029										
138	1.2DL + ...	Yes	Y		1	1.2	39	1.5	4	.058	14	.029	15	.05										
139	1.2DL + ...	Yes	Y		1	1.2	39	1.5	5	.058	14		15	.058										
140	1.2DL + ...	Yes	Y		1	1.2	39	1.5	6	.058	14	-.029	15	.05										
141	1.2DL + ...	Yes	Y		1	1.2	39	1.5	7	.058	14	-.05	15	.029										
142	1.2DL + ...	Yes	Y		1	1.2	39	1.5	8	.058	14	-.058	15											
143	1.2DL + ...	Yes	Y		1	1.2	39	1.5	9	.058	14	-.05	15	-.029										
144	1.2DL + ...	Yes	Y		1	1.2	39	1.5	10	.058	14	-.029	15	-.05										
145	1.2DL + ...	Yes	Y		1	1.2	39	1.5	11	.058	14		15	-.058										

Load Combinations (Continued)

	Descripti...	So...	PDelta	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Factor	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
146	1.2DL + ...	Yes	Y		1	1.2	39	1.5	12	.058	14	.029	15	-.05										
147	1.2DL + ...	Yes	Y		1	1.2	39	1.5	13	.058	14	.05	15	-.029										
148	1.2DL + ...	Yes	Y		1	1.2	40	1.5	2	.058	14	.058	15											
149	1.2DL + ...	Yes	Y		1	1.2	40	1.5	3	.058	14	.05	15	.029										
150	1.2DL + ...	Yes	Y		1	1.2	40	1.5	4	.058	14	.029	15	.05										
151	1.2DL + ...	Yes	Y		1	1.2	40	1.5	5	.058	14		15	.058										
152	1.2DL + ...	Yes	Y		1	1.2	40	1.5	6	.058	14	-.029	15	.05										
153	1.2DL + ...	Yes	Y		1	1.2	40	1.5	7	.058	14	-.05	15	.029										
154	1.2DL + ...	Yes	Y		1	1.2	40	1.5	8	.058	14	-.058	15											
155	1.2DL + ...	Yes	Y		1	1.2	40	1.5	9	.058	14	-.05	15	-.029										
156	1.2DL + ...	Yes	Y		1	1.2	40	1.5	10	.058	14	-.029	15	-.05										
157	1.2DL + ...	Yes	Y		1	1.2	40	1.5	11	.058	14		15	-.058										
158	1.2DL + ...	Yes	Y		1	1.2	40	1.5	12	.058	14	.029	15	-.05										
159	1.2DL + ...	Yes	Y		1	1.2	40	1.5	13	.058	14	.05	15	-.029										
160	1.2DL + ...	Yes	Y		1	1.2	41	1.5	2	.058	14	.058	15											
161	1.2DL + ...	Yes	Y		1	1.2	41	1.5	3	.058	14	.05	15	.029										
162	1.2DL + ...	Yes	Y		1	1.2	41	1.5	4	.058	14	.029	15	.05										
163	1.2DL + ...	Yes	Y		1	1.2	41	1.5	5	.058	14		15	.058										
164	1.2DL + ...	Yes	Y		1	1.2	41	1.5	6	.058	14	-.029	15	.05										
165	1.2DL + ...	Yes	Y		1	1.2	41	1.5	7	.058	14	-.05	15	.029										
166	1.2DL + ...	Yes	Y		1	1.2	41	1.5	8	.058	14	-.058	15											
167	1.2DL + ...	Yes	Y		1	1.2	41	1.5	9	.058	14	-.05	15	-.029										
168	1.2DL + ...	Yes	Y		1	1.2	41	1.5	10	.058	14	-.029	15	-.05										
169	1.2DL + ...	Yes	Y		1	1.2	41	1.5	11	.058	14		15	-.058										
170	1.2DL + ...	Yes	Y		1	1.2	41	1.5	12	.058	14	.029	15	-.05										
171	1.2DL + ...	Yes	Y		1	1.2	41	1.5	13	.058	14	.05	15	-.029										
172	1.2DL + ...	Yes	Y		1	1.2	42	1.5	2	.058	14	.058	15											
173	1.2DL + ...	Yes	Y		1	1.2	42	1.5	3	.058	14	.05	15	.029										
174	1.2DL + ...	Yes	Y		1	1.2	42	1.5	4	.058	14	.029	15	.05										
175	1.2DL + ...	Yes	Y		1	1.2	42	1.5	5	.058	14		15	.058										
176	1.2DL + ...	Yes	Y		1	1.2	42	1.5	6	.058	14	-.029	15	.05										
177	1.2DL + ...	Yes	Y		1	1.2	42	1.5	7	.058	14	-.05	15	.029										
178	1.2DL + ...	Yes	Y		1	1.2	42	1.5	8	.058	14	-.058	15											
179	1.2DL + ...	Yes	Y		1	1.2	42	1.5	9	.058	14	-.05	15	-.029										
180	1.2DL + ...	Yes	Y		1	1.2	42	1.5	10	.058	14	-.029	15	-.05										
181	1.2DL + ...	Yes	Y		1	1.2	42	1.5	11	.058	14		15	-.058										
182	1.2DL + ...	Yes	Y		1	1.2	42	1.5	12	.058	14	.029	15	-.05										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N52	max	4158.555	17	9999.65	36	4734.136	2	5900.985	2	2932.47	24	4512.188	23
2		min	-4158.557	11	2007.858	54	-4734.132	20	-5206.54	20	-2930.528	18	-4663.107	5
3	Totals:	max	4158.555	17	9999.65	36	4734.136	2						
4		min	-4158.557	11	2007.858	54	-4734.132	20						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ..	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M7	C5X9	.507	0	5	.218	5.985	z	5	74436.5...	85536	1909.122	11853	2...	H1-1b
2	M33	L2.5x2.5x3	.489	16.547	6	.061	0	y	6	27229.4...	29192.4	872.574	1971.83	2...	H2-1
3	MP8	PIPE_2.0	.477	54	8	.085	54		8	14916.0...	32130	1871.625	1871.625	1...	H1-1b
4	M34	L2.5x2.5x3	.467	16.547	10	.062	0	y	10	27229.4...	29192.4	872.574	1971.83	2...	H2-1
5	M25	L2.5x2.5x3	.467	16.547	2	.064	16.5...	y	7	27229.4...	29192.4	872.574	1971.83	2...	H2-1
6	MP5	PIPE_2.0	.436	54	13	.078	54		12	14916.0...	32130	1871.625	1871.625	2...	H1-1b
7	MP2	PIPE_2.0	.400	54	5	.082	54		3	14916.0...	32130	1871.625	1871.625	1...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ..	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
8	MP7	PIPE_2.0	.393	52.5	9	.080	52.5		7	20866.7...	32130	1871.625	1871.625	2...	H1-1b
9	MP6	PIPE_2.0	.380	54	6	.075	54		6	14916.0...	32130	1871.625	1871.625	1...	H1-1b
10	MP3	PIPE_2.0	.377	54	35	.070	54		10	14916.0...	32130	1871.625	1871.625	2...	H1-1b
11	MP1	PIPE_2.0	.370	52.5	30	.060	52.5		7	20866.7...	32130	1871.625	1871.625	2...	H1-1b
12	MP9	PIPE_2.0	.356	54	2	.075	54		2	14916.0...	32130	1871.625	1871.625	1...	H1-1b
13	M1	C5X9	.348	68	30	.226	58.6...	y	8	85153.1...	85536	1909.122	11853	1...	H1-1b
14	M2	C5X9	.345	60	6	.193	69.3...	y	4	84014.7...	85536	1909.122	11853	1.1	H1-1b
15	MP4	PIPE_2.0	.327	52.5	38	.056	52.5		2	20866.7...	32130	1871.625	1871.625	2...	H1-1b
16	M5	C5X9	.326	42.154	6	.117	42.1...	y	31	38865.7...	85536	1909.122	11853	1...	H1-1b
17	M17	PIPE_2.0	.303	71.875	31	.237	40.6...		2	6295.422	32130	1871.625	1871.625	1...	H1-1b
18	M12	L2x2x4	.302	35.75	11	.027	35.75	z	31	30368.6...	30585.6	690.934	1576.849	1...	H2-1
19	M38	PIPE_2.0	.300	37.5	9	.239	40.6...		6	6295.422	32130	1871.625	1871.625	2...	H1-1b
20	M13	L2x2x4	.295	35.75	11	.036	35.75	y	2	30368.6...	30585.6	690.934	1576.849	1...	H2-1
21	M6	C5X9	.291	17.358	10	.100	17.3...	y	36	38865.7...	85536	1909.122	11853	1...	H1-1b
22	M3	C5X9	.285	68	34	.205	58.6...	y	12	84014.7...	85536	1909.122	11853	1...	H1-1b
23	M39	PIPE_2.0	.259	137.5	6	.238	40.6...		10	6295.422	32130	1871.625	1871.625	1...	H1-1b
24	M28	0.625 SR	.245	12	2	.036	0		8	7286.847	9940.19	103.542	103.542	2...	H1-1b
25	M29	0.625 SR	.227	12	2	.041	0		8	7286.847	9940.19	103.542	103.542	2...	H1-1b
26	M4	C5X9	.224	17.358	2	.056	17.3...	y	28	38865.7...	85536	1909.122	11853	2...	H1-1b
27	M27	0.625 SR	.211	12	2	.022	0		8	7286.847	9940.19	103.542	103.542	2...	H1-1b
28	M16	0.625 SR	.174	12	2	.010	0		8	7286.847	9940.19	103.542	103.542	2...	H1-1b
29	M8	C5X9	.170	0	13	.045	27.4...	y	28	69371.4...	85536	1909.122	11853	1...	H1-1b
30	M30	0.625 SR	.102	12	2	.016	0		8	7286.847	9940.19	103.542	103.542	2...	H1-1b
31	M32	0.625 SR	.065	12	8	.019	0		2	7286.847	9940.19	103.542	103.542	2...	H1-1b
32	M18	L1.5x1.5x4	.056	12.49	33	.011	24.9...	z	28	15152.9...	22275	360.338	834.027	1...	H2-1
33	M31	0.625 SR	.053	12	8	.017	0		3	7286.847	9940.19	103.542	103.542	2...	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	CT33XC005
Site Number:	876365
Connection Description:	Platform to Tower

MAXIMUM BOLT LOADS		
Bolt Tension:	744.03	lbs
Bolt Shear:	603.63	lbs

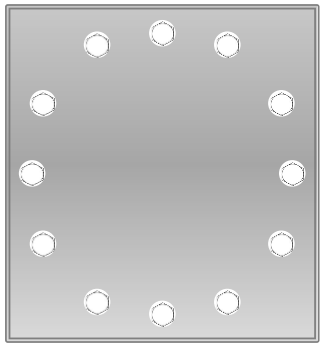
WORST CASE BOLT LOADS[1]		
Bolt Tension:	0.00	lbs
Bolt Shear:	603.63	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.75	in
Bolt Grade:	A325	-
# of Bolts:	12	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #24 on member M26 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of M26

BOLT CHECK		
Tensile Strength	30101.39	
Shear Strength	17892.35	
Max Tensile Usage	2.5%	
Max Shear Usage	3.4%	
Interaction Check (Worst Case)	0.00	***≤1.05***
Result	Pass	



EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA354A

876365
3 Carion Road
Union, Connecticut 06076

October 7, 2021

EBI Project Number: 6221006038

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**7.29%**

October 7, 2021

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

Emissions Analysis for Site: CTHA354A - 876365

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **3 Carion Road** in **Union, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 3 Carion Road in Union, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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 RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 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 178 feet above ground level (AGL).

15) Emissions from additional carriers were not included because emissions data for the site location are not available.

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:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_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 / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	178 feet	Height (AGL):	178 feet	Height (AGL):	178 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A1 MPE %:	**2.87%**	Antenna B1 MPE %:	**2.87%**	Antenna C1 MPE %:	**2.87%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	178 feet	Height (AGL):	178 feet	Height (AGL):	178 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**4.42%**	Antenna B2 MPE %:	**4.42%**	Antenna C2 MPE %:	**4.42%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	7.29%
no additional carriers	N/A
Site Total MPE % :	7.29%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	7.29%
T-Mobile Sector B Total:	7.29%
T-Mobile Sector C Total:	7.29%
Site Total MPE % :	7.29%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 600 MHz LTE	2	591.73	178.0	1.44	600 MHz LTE	400	0.36%
T-Mobile 600 MHz NR	1	1577.94	178.0	1.92	600 MHz NR	400	0.48%
T-Mobile 700 MHz LTE	2	695.22	178.0	1.69	700 MHz LTE	467	0.36%
T-Mobile 1900 MHz GSM	4	1052.26	178.0	5.11	1900 MHz GSM	1000	0.51%
T-Mobile 1900 MHz LTE	2	2104.51	178.0	5.11	1900 MHz LTE	1000	0.51%
T-Mobile 2100 MHz LTE	2	2649.42	178.0	6.44	2100 MHz LTE	1000	0.64%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	178.0	13.42	2500 MHz LTE 1C & 2C Traffic	1000	1.34%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	178.0	1.31	2500 MHz LTE 1C & 2C Broadcast	1000	0.13%
T-Mobile 2500 MHz NR Traffic	1	22089.26	178.0	26.84	2500 MHz NR Traffic	1000	2.68%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	178.0	2.61	2500 MHz NR Broadcast	1000	0.26%
						Total:	**7.29%**

• 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:	7.29%
Sector B:	7.29%
Sector C:	7.29%
T-Mobile Maximum MPE % (Sector A):	7.29%
Site Total:	7.29%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.29%** 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: CTHA354A
T-MOBILE SITE NAME: CTHA354A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 180'-0"

BUSINESS UNIT #: 876365
SITE ADDRESS: 3 CARION RD, UNION, CT 06076
COUNTY: TOLLAND
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67D5A998C 6160 (GSM ONLY)

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	KINGSTON W. / BAUER (SSUSA)
SITE ADDRESS:	3 CARION RD UNION, CT 06076
COUNTY:	TOLLAND
MAP/PARCEL #:	CT-145-23-19-000005
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.987933
LONGITUDE:	-72.113600
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	952'
CURRENT ZONING:	RT
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:	BAUER SHERWOOD R & JOAN M 1 CARION RD UNION, CT 06076
TOWER OWNER:	CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 4 SYLVAN WAY PARSIPPANY, NJ 07054
ELECTRIC PROVIDER:	NOT PROVIDED
TELCO PROVIDER:	NOT PROVIDED

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S BOULDER AVE, SUITE 300 TULSA, OK 74119 JENNY PAUL (918) 587-4630
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277

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
ATTACHED	HANDRAIL KIT SPECS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 24X36. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT DESCRIPTION

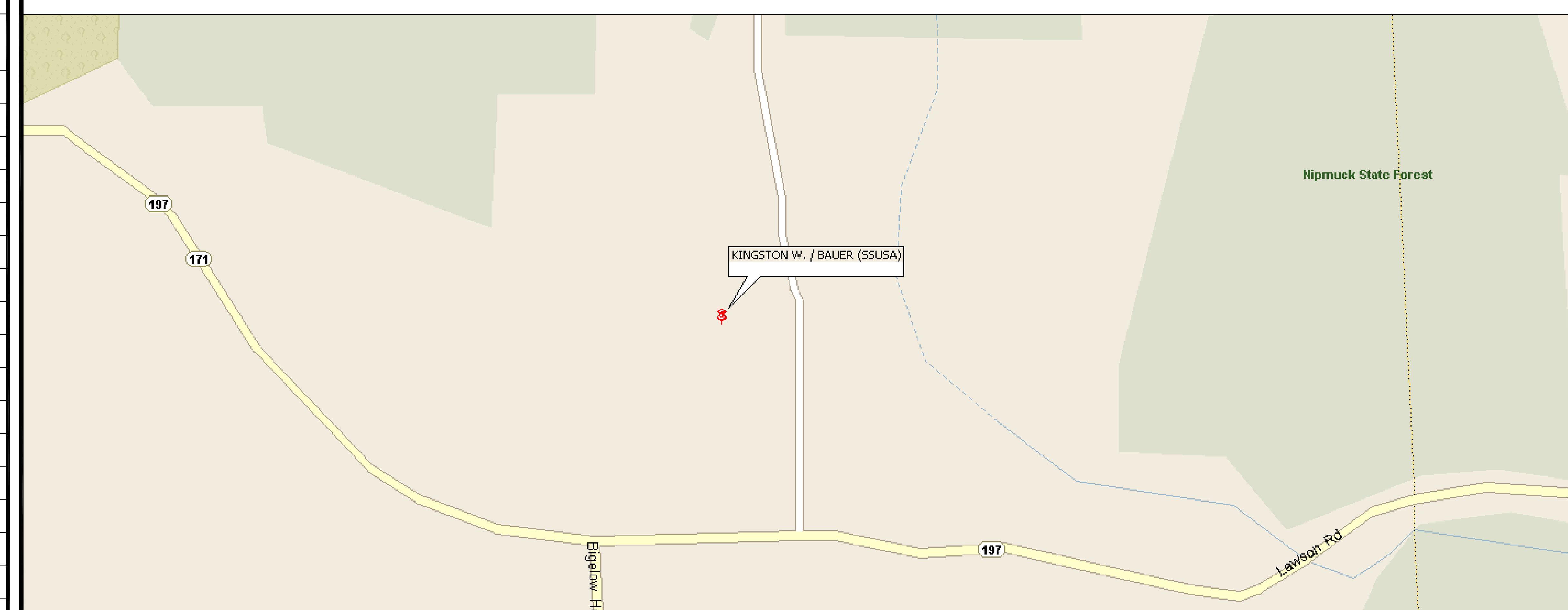
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (12) RADIOS
- INSTALL (6) ANTENNAS
- INSTALL (6) RADIOS
- INSTALL (3) HYBRID CABLES
- INSTALL (1) SITE PRO 1 - HRK 12 HANDRAIL KIT

GROUND SCOPE OF WORK:
- REMOVE (E) MBTS CABINET
- REMOVE (E) EQUIPMENT CABINET
- INSTALL (1) 6160 SITE SUPPORT CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) RBS 6601 IN SSC
- INSTALL (3) BB 6648 IN 6160 SSC
- INSTALL (1) DUG20 IN SSC
- INSTALL (1) PSU 4813
- INSTALL(1) CSR IXRE V2 (GEN2) TRANSPORT SYSTEM

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

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC / 2018 CONNECTICUT SBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	MORRISON HERSHFIELD
DATED:	9/06/21
MOUNT ANALYSIS:	INFINIGY ENGINEERING, PLLC
DATED:	9/1/21
RFDS REVISION:	1
DATED:	7/9/21
ORDER ID:	584568
REVISION:	0

CALL CONNECTICUT ONE CALL (800) 922-4455 CBYD.COM CALL 2 WORKING DAYS BEFORE YOU DIG! 811

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.

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:
CTHA354A

BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
UNION, CT 06076

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
1	10/05/21	KT	CONSTRUCTION	KT

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

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

SHEET NUMBER:	REVISION:
T-1	1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: 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.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–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 ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

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

CONDUCTOR COLOR CODE

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

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

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

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

T··Mobile···
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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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T-MOBILE SITE NUMBER:
CTHA354A

BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
UNION, CT 06076

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
1	10/05/21	KT	CONSTRUCTION	KT

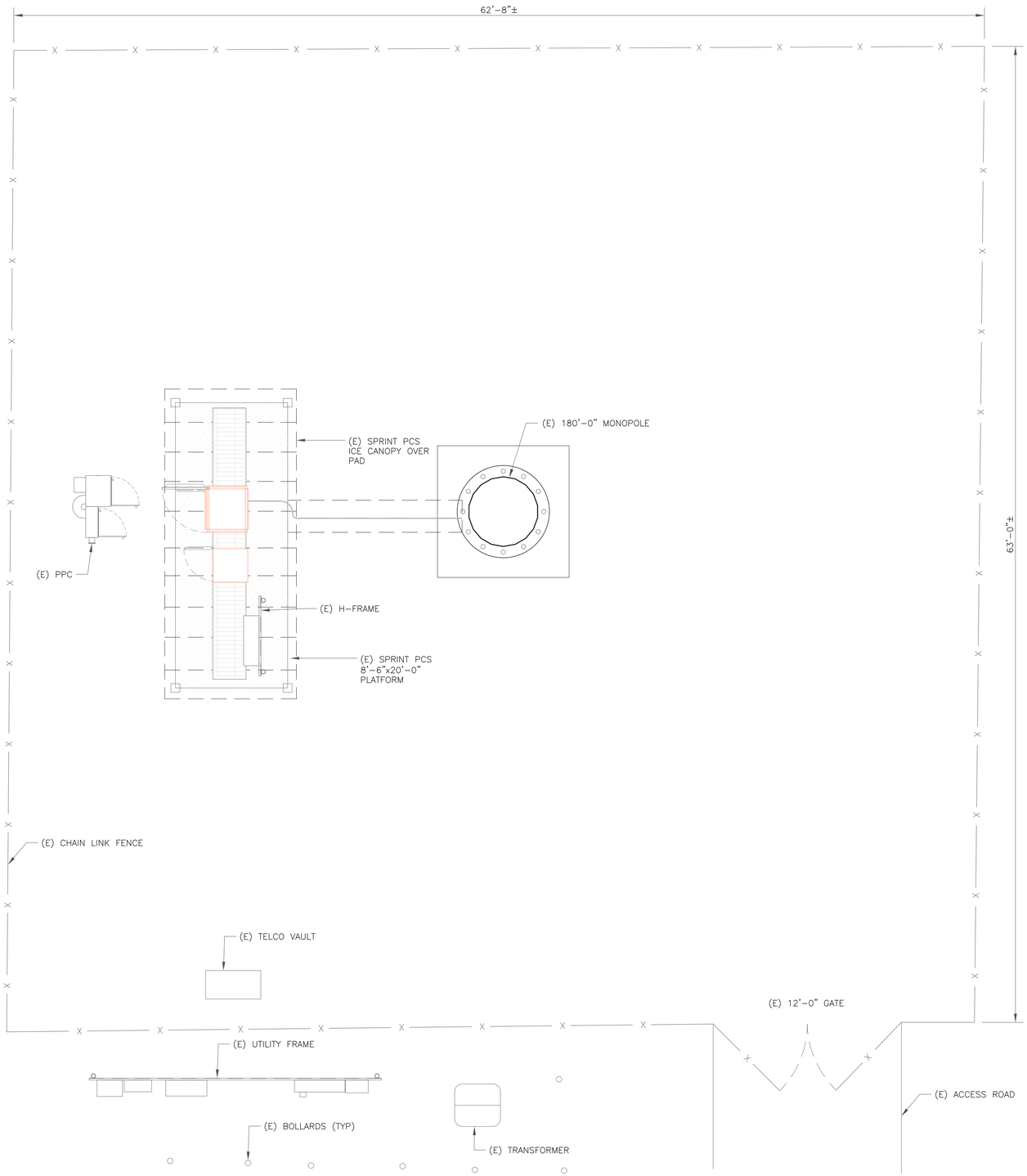
10/05/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: T-2
REVISION: 1

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS OR FROM ASSESSORS MAPS. 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



APN: CT-145-23-19-000005
ZONING: RT

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

N

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T-MOBILE SITE NUMBER:
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3 CARION RD
UNION, CT 06076

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ISSUED FOR:

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STATE OF CONNECTICUT
No. 23924
LICENSED PROFESSIONAL ENGINEER
10/05/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1.1
REVISION: 1

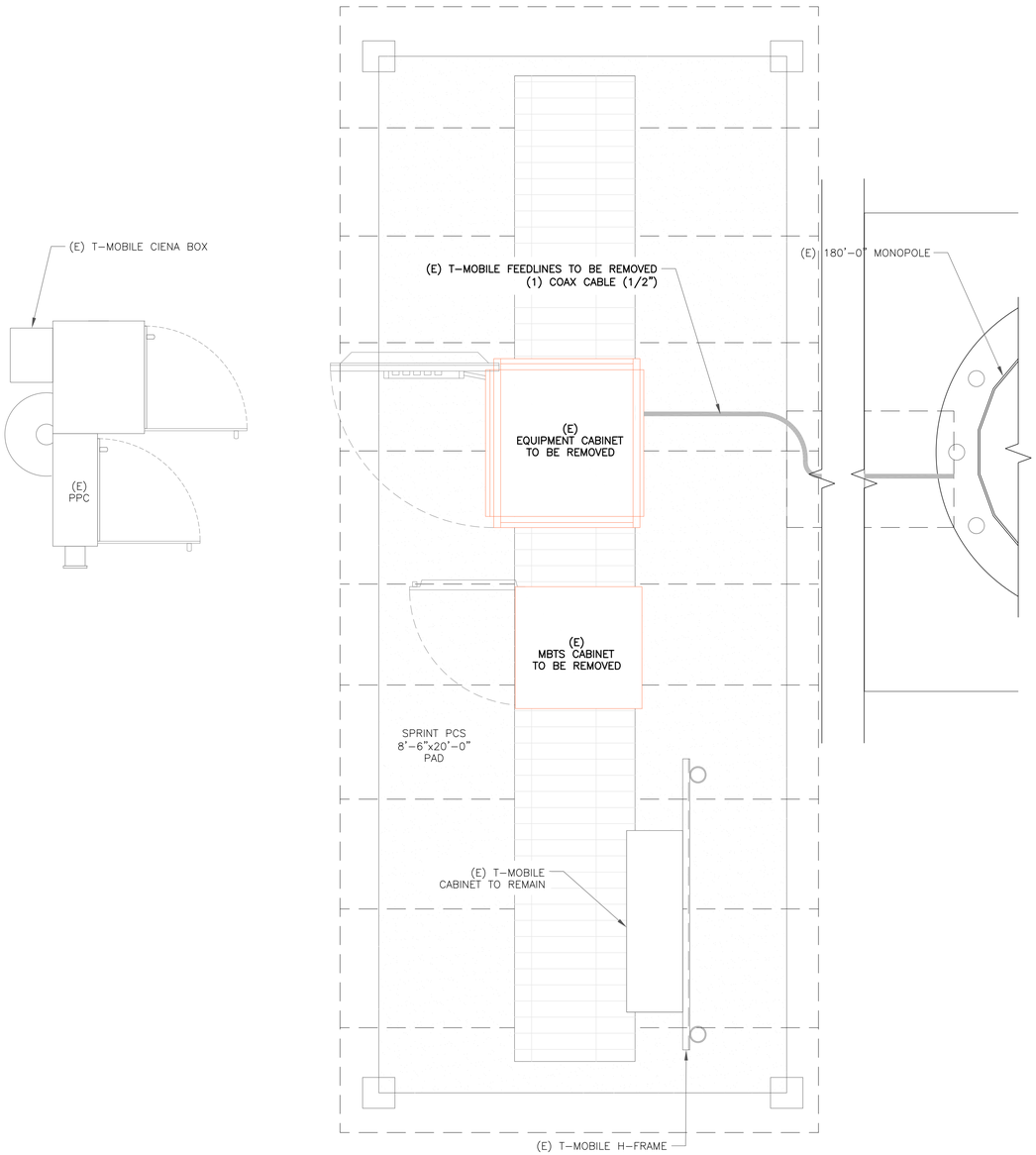
147459.003.01_KINGSTON W. BAUER.dwg – Sheet:C-1.1 – User: kevin.turkall – Oct 05, 2021 – 11:00am

EQUIPMENT LEGEND:

EXISTING

TO BE RELOCATED/REMOVED

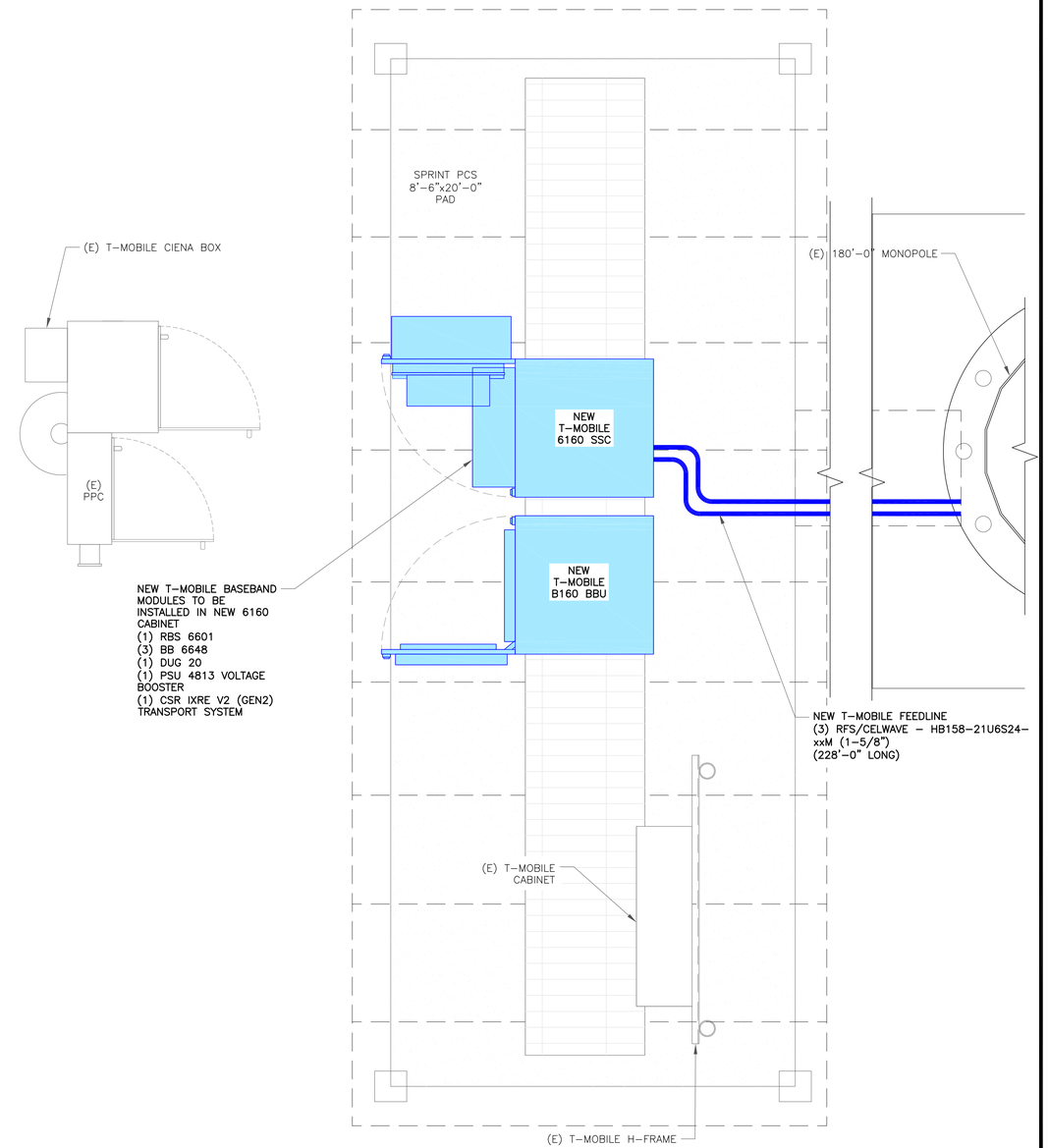
NEW



1 EXISTING EQUIPMENT PLAN

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N



2 FINAL EQUIPMENT PLAN

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

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T-MOBILE SITE NUMBER:
CTHA354A

BU #: **876365**
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EXISTING
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ISSUED FOR:

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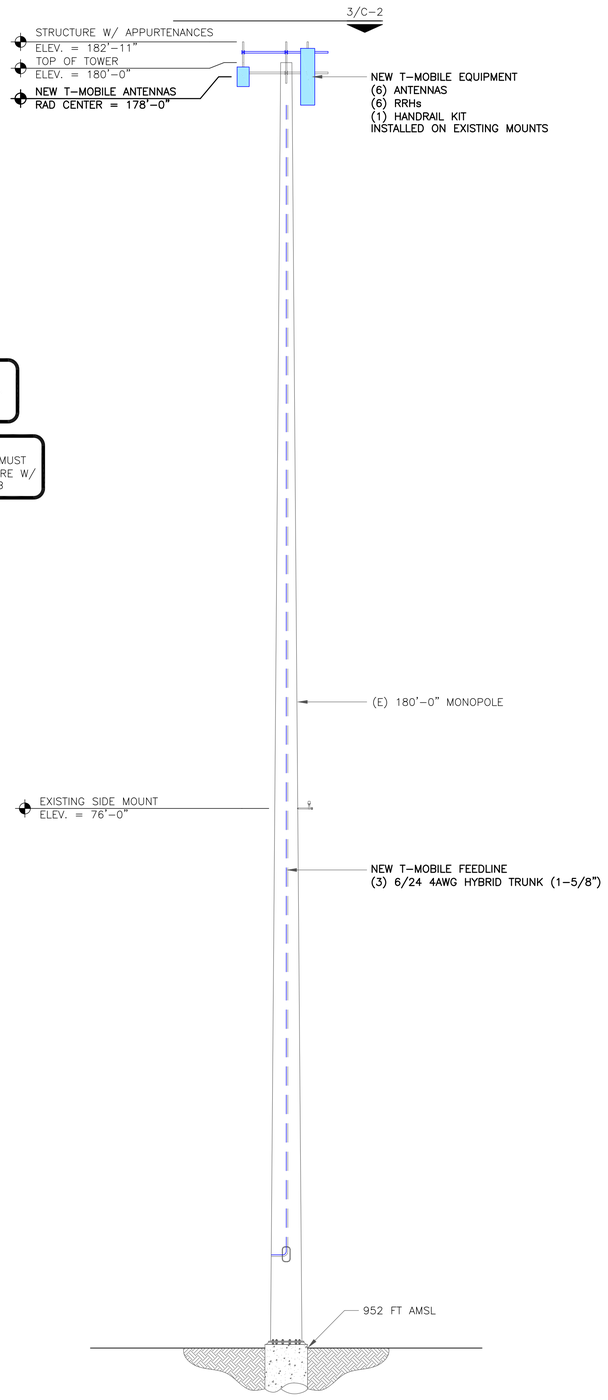
STATE OF CONNECTICUT
CHRISTOPHER R. CLOUTIER
No. 23924
LICENSED PROFESSIONAL ENGINEER
10/05/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1.2

REVISION: 1

147459.003.01_KINGSTON W. BAUER.dwg – Sheet:C-1.2 – User: kevin.turkall – Oct 05, 2021 – 11:00am

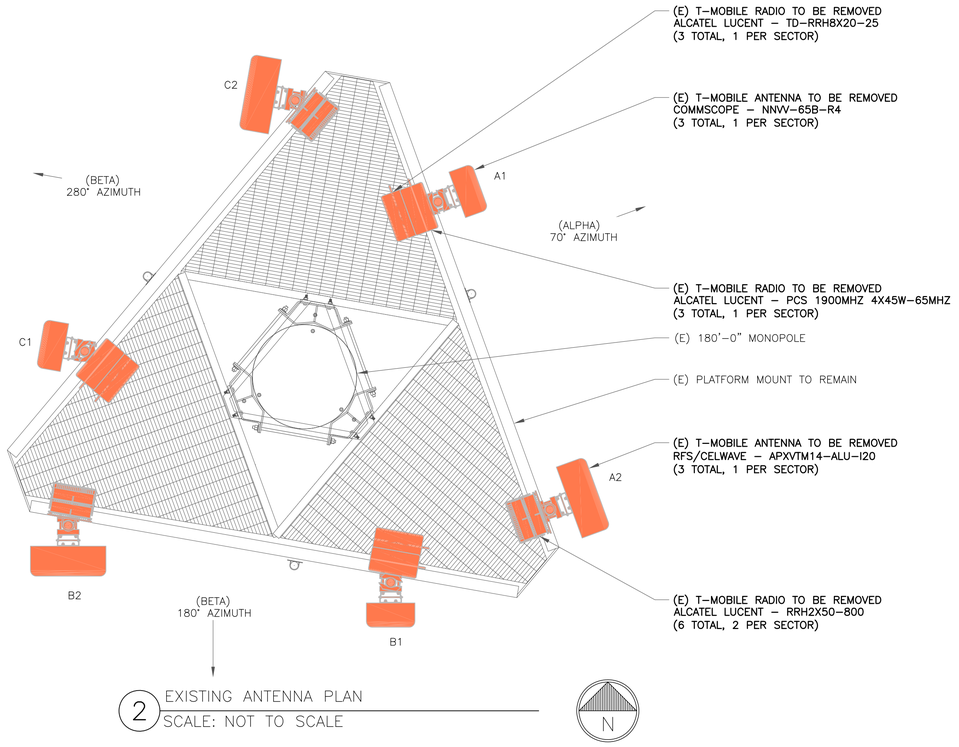


T-MOBILE EQUIPMENT

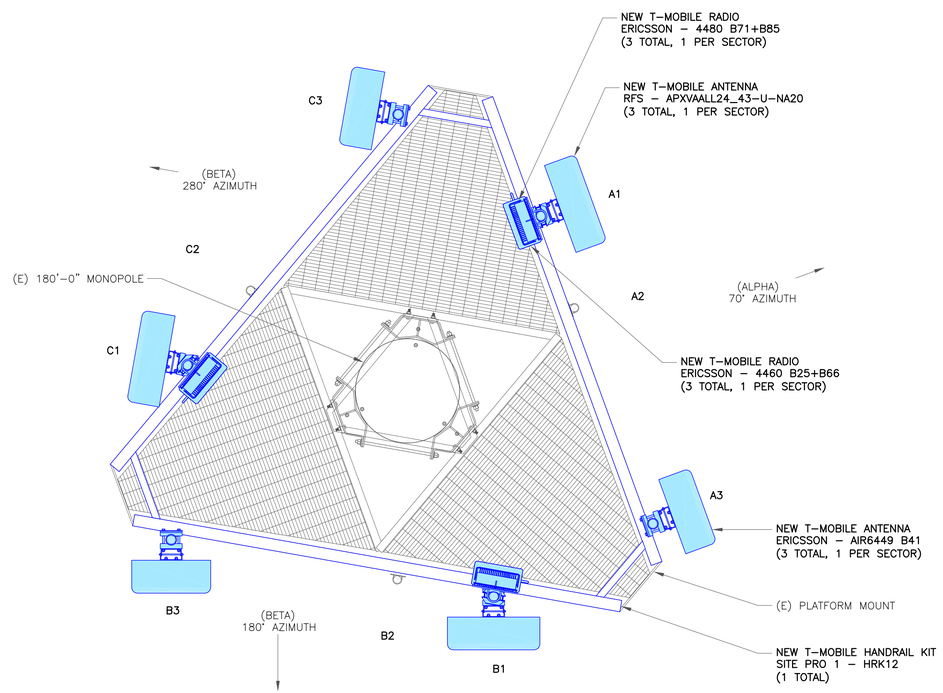
ANTENNA CL: 178'-0"
MOUNT CL: 180'-0'

ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: NOT TO SCALE



3 FINAL ANTENNA PLAN
SCALE: NOT TO SCALE

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SHEET NUMBER: C-2

REVISION: 1

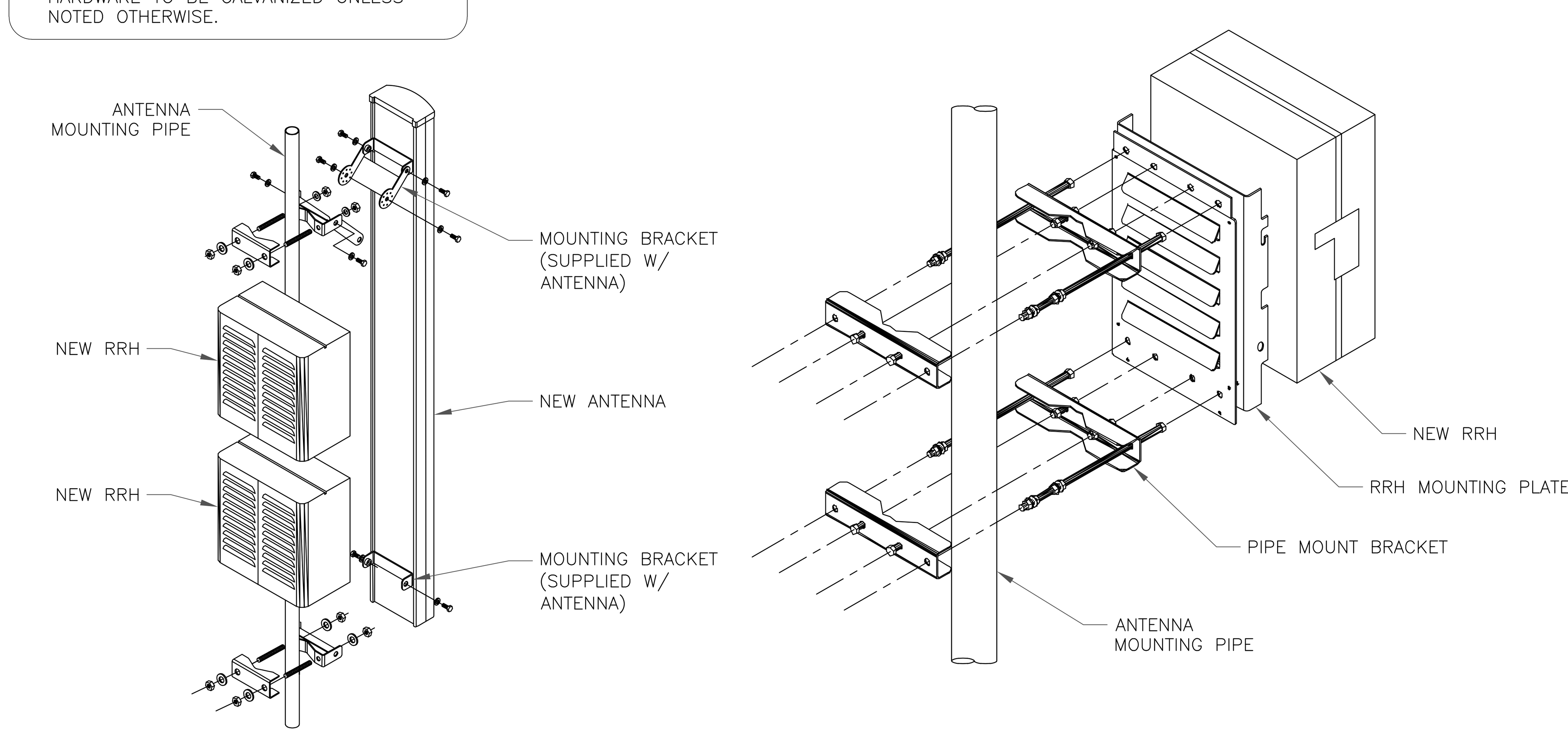
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	CABLE TYPE	CABLE DIAMETER	CABLE LENGTH
ALPHA	A-1	L700/L600/N600/ L1900/G1900	RFS	APXVAARR24_43-U-NA20	70°	0°	–	178'-0"	(1) 4480 B71+B65 (1) 4460 B25+B66	(1) HYBRID	6/24 AWG HYBRID	228'
	A-2	–	–	–	–	–	–	–	–	–	–	–
	A-3	L2500/N2500	ERICSSON	AIR6449 B41	70°	0°	–	178'-0"	–	–	–	–
BETA	B-1	L700/L600/N600/ L1900/G1900	RFS	APXVAARR24_43-U-NA20	180°	0°	–	178'-0"	(1) 4480 B71+B65 (1) 4460 B25+B66	(1) HYBRID	6/24 AWG HYBRID	228'
	B-2	–	–	–	–	–	–	–	–	–	–	–
	B-3	L2500/N2500	ERICSSON	AIR6449 B41	180°	0°	–	178'-0"	–	–	–	–
GAMMA	C-1	L700/L600/N600/ L1900/G1900	RFS	APXVAARR24_43-U-NA20	280°	0°	–	178'-0"	(1) 4480 B71+B65 (1) 4460 B25+B66	(1) HYBRID	6/24 AWG HYBRID	228'
	C-2	–	–	–	–	–	–	–	–	–	–	–
	C-3	L2500/N2500	ERICSSON	AIR6449 B41	280°	0°	–	178'-0"	–	–	–	–

1 ANTENNA & FEEDLINE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

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BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
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EXISTING
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10/05/21

B&T ENGINEERING, INC.
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SHEET NUMBER: C-3
REVISION: 1

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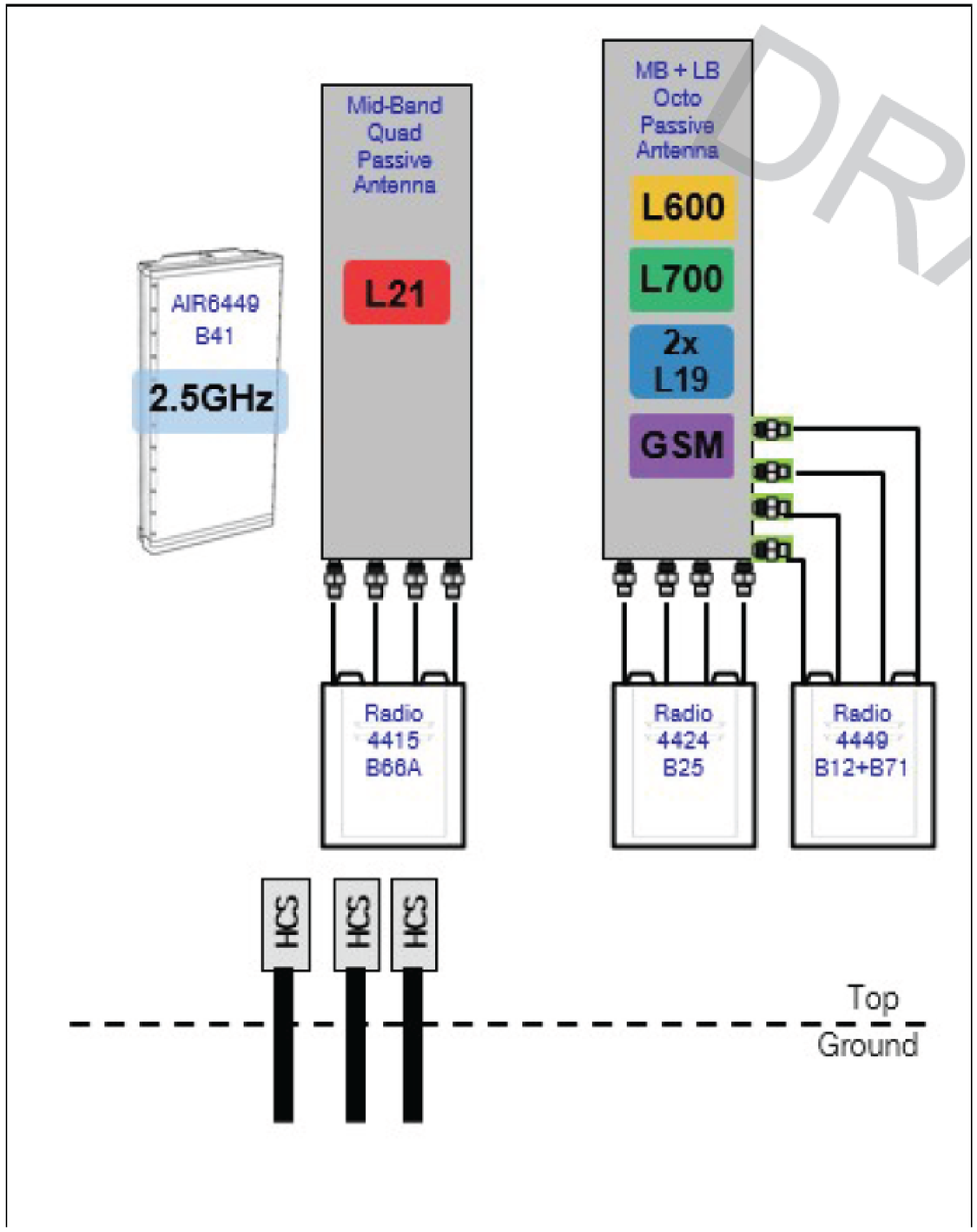

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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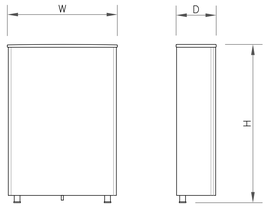
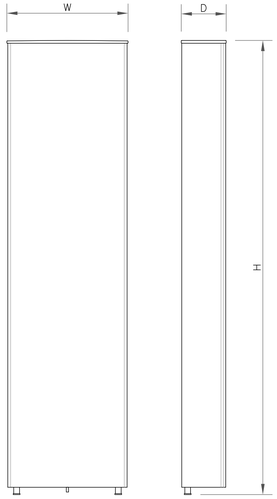
SHEET NUMBER: C-4

REVISION: 1



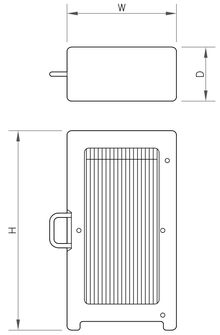
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.51"
DEPTH	8.54"
HEIGHT	33.11"
WEIGHT	114.63 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



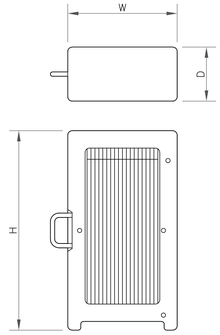
ANTENNA SPECS	
MANUFACTURER	RFS/CELWAVE
MODEL #	APXVAALL24_43-UNA20
WIDTH	24.00"
DEPTH	8.50"
HEIGHT	95.90"
WEIGHT	149.90 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4460 B25+B66
WIDTH	15.10"
DEPTH	11.90"
HEIGHT	17.0"
WEIGHT	109.0 LBS

3 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4480 B71+B85A
WIDTH	15.70"
DEPTH	7.50"
HEIGHT	22.0"
WEIGHT	81.0 LBS

4 RRU SPECS
SCALE: NOT TO SCALE

ERICSSON 6160 SSC
WEIGHT: 60.0 LBS
SIZE (HxWxD): 63"x25.6"x33.5" IN.

5 ERICSSON 6160 SSC
SCALE: NOT TO SCALE

BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	

6 ERICSSON B160 BATTERY CABINET
SCALE: NOT TO SCALE

7 NOT USED
SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE

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T-MOBILE SITE NUMBER:
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KINGSTON W. / BAUER (SSUSA)

3 CARION RD
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EXISTING
180'-0" MONOPOLE

ISSUED FOR:

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-5

REVISION: 1

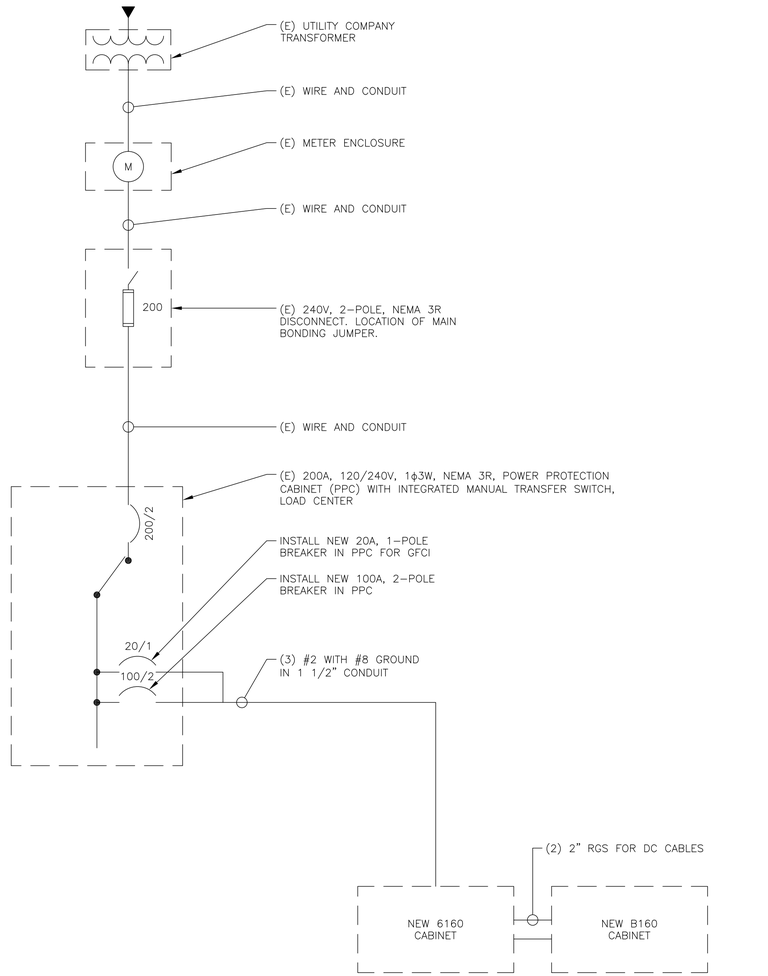
FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
BLANK	2	100A	1	7	60A	2	SURGE PROTECTION
			2	8			
6160 CABINET	2	100A	3	9			
			4	10			
GFI	1	20A	5	11	15A	1	TELCO GFCI
FAN	1	10A	6	12			

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	■KEYED 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 3 AND 4 WITH A NEW 2P 100A BREAKER
REPLACE EXISTING BREAKER IN POSITION 5 WITH A NEW 1P 20A BREAKER
IF 100A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (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 PHOTOS

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

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:

1. 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.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.

2 ONE LINE DIAGRAM
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
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CTHA354A

BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
UNION, CT 06076

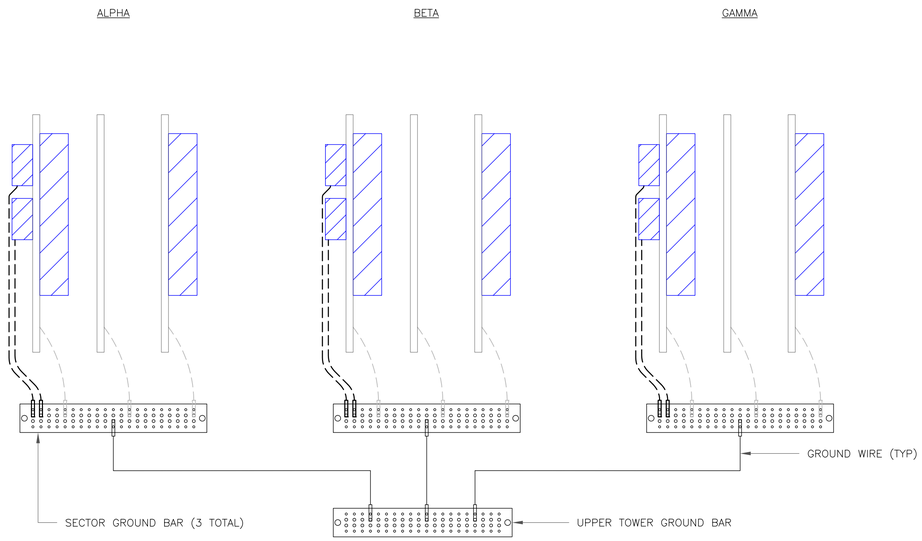
EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
1	10/05/21	KT	CONSTRUCTION	KT

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: E-1
REVISION: 1



NOTE:

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

1 ANTENNA GROUNDING DIAGRAM
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
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T-MOBILE SITE NUMBER:
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3 CARION RD
UNION, CT 06076

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

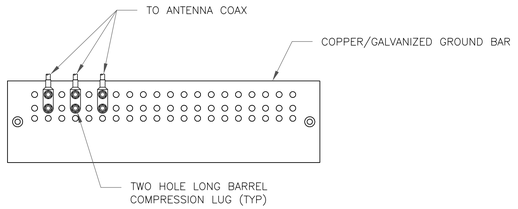
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
1	10/05/21	KT	CONSTRUCTION	KT

STEPHEN G. CRAMER
CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/05/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-1

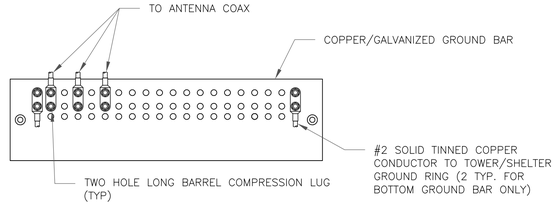
REVISION: 1



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.

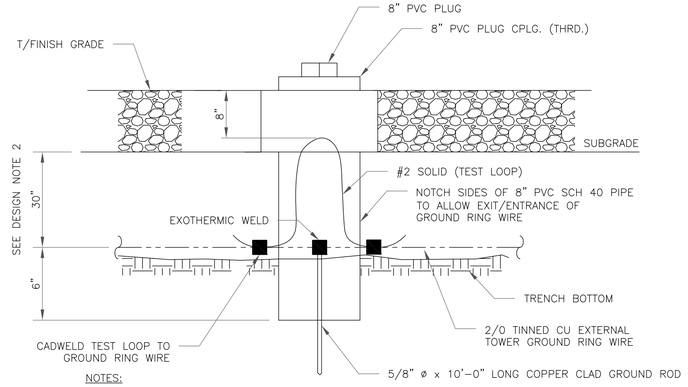
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

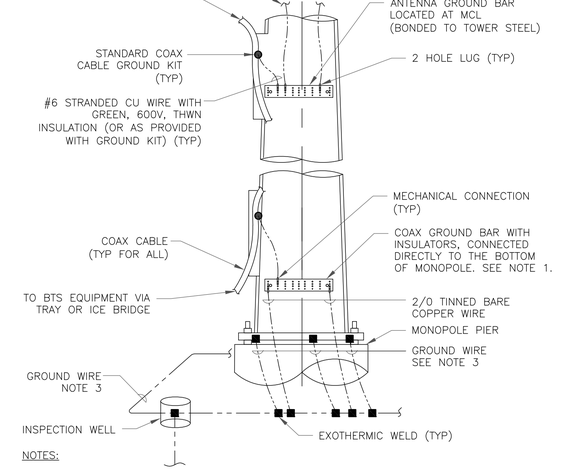
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



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)

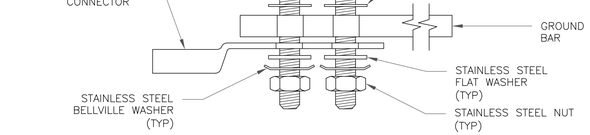
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



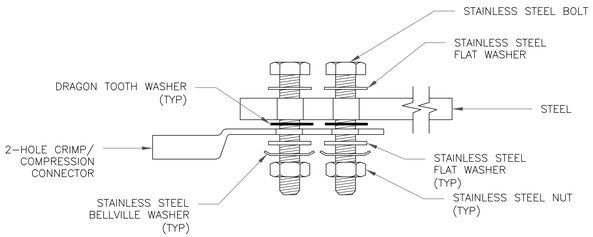
NOTES:

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.

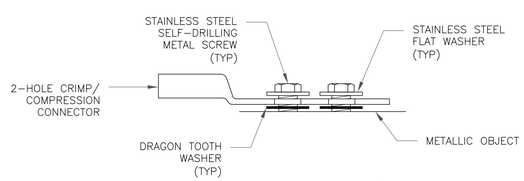
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

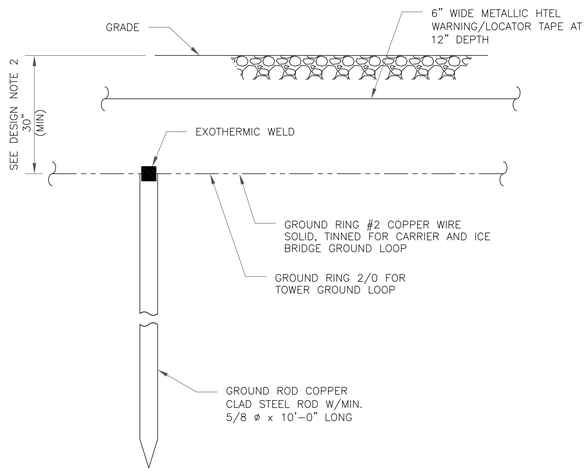


SINGLE CONNECTOR AT STEEL OBJECTS



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

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
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CHARLOTTE, NC 28277

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T-MOBILE SITE NUMBER:
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BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
UNION, CT 06076

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
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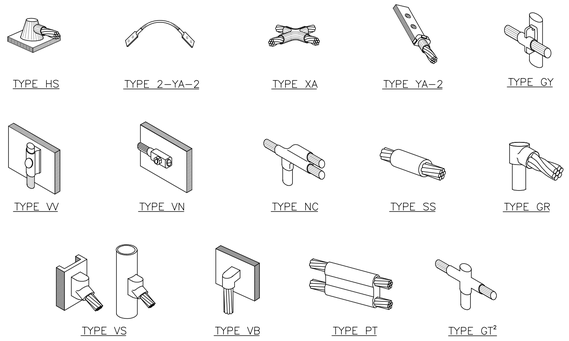
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-2
REVISION: 1

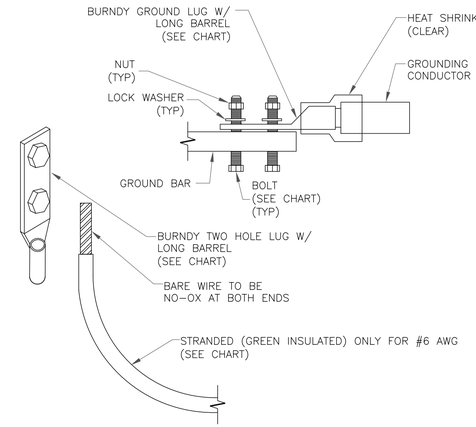


NOTE:

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

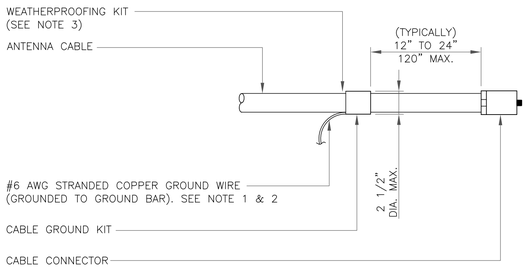
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



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.

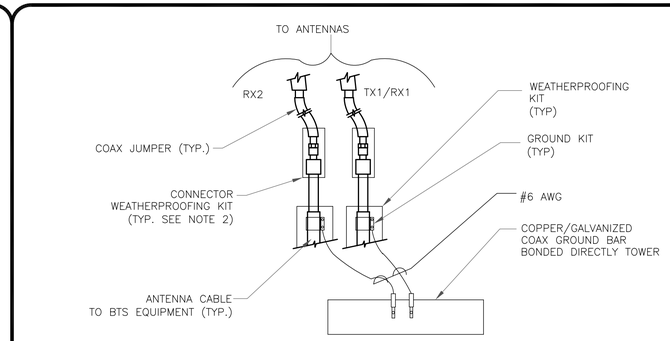
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

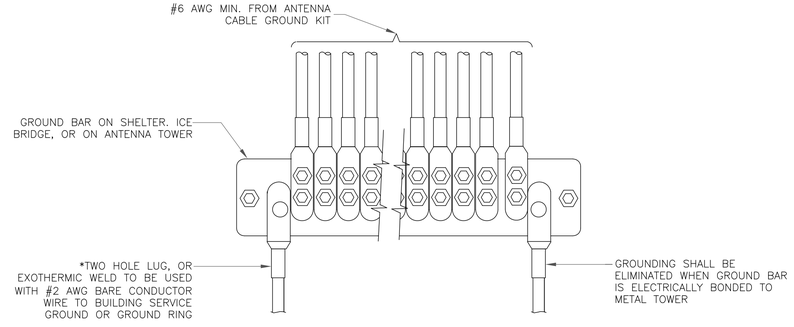
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



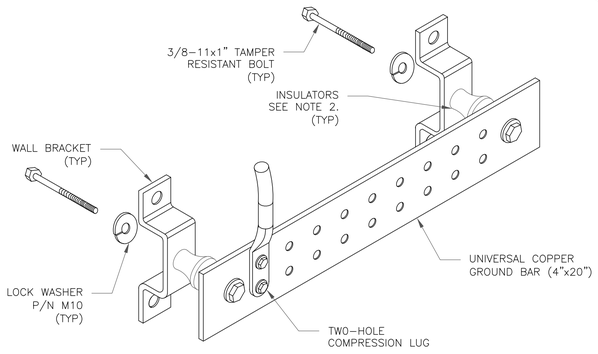
NOTES:

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



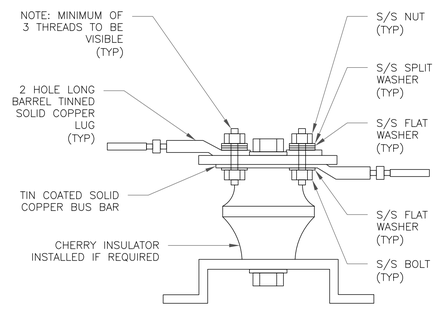
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



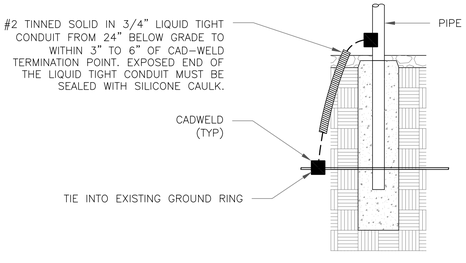
NOTES:

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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
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
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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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T-MOBILE SITE NUMBER:
CTHA354A

BU #: **876365**
KINGSTON W. / BAUER (SSUSA)

3 CARION RD
UNION, CT 06076

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

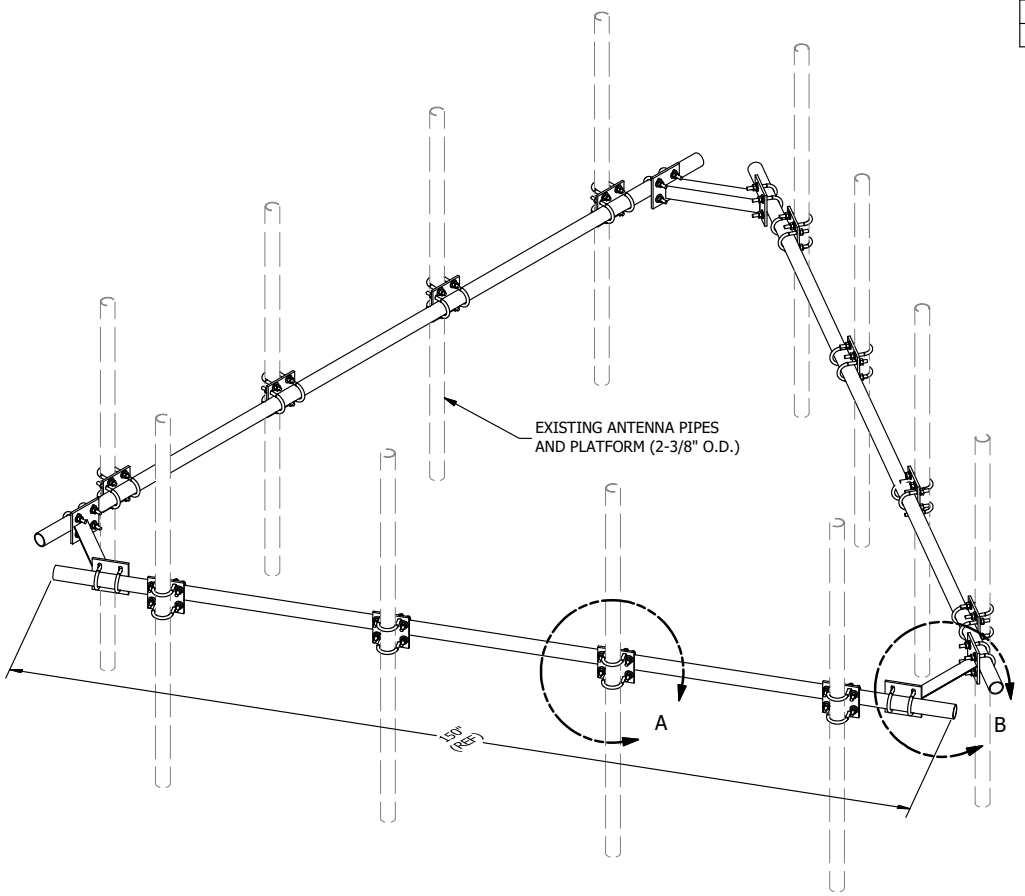
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/10/21	KT	CONSTRUCTION	KT
1	10/05/21	KT	CONSTRUCTION	KT

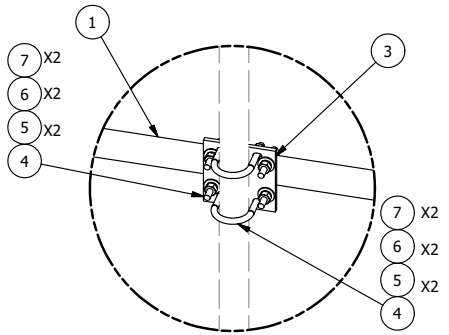
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

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.

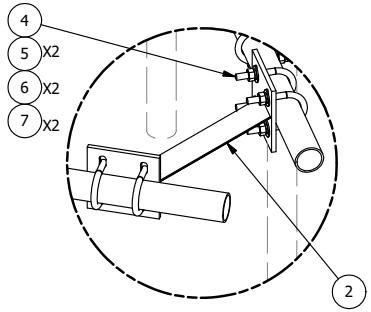
SHEET NUMBER: G-3
REVISION: 1

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
					TOTAL WT. #	272.43





DETAIL A



DETAIL B

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP		CEK	7/10/2014

REVISION HISTORY

TOLERANCE NOTES

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

DESCRIPTION: **HANDRAIL KIT FOR 12'-6" FACE**

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	KC8 5/30/2012		HRK12

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 7/13/2014	HRK12