INDUSTRIAL AVE,
TE 3
HWAH NJ 07430

ONE: 201.684.0055
X: 201.684.0066

Transcend Wireless

August 26, 2021

Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
310 Prestige Park Road (aka 311 Prestige Park, aka 584-310 Prestige Park), East Hartford, CT 06108
Latitude: 41.78833333
Longitude: -72.60055556
T-Mobile Site#: CTHA515A - Anchor/L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 128' level of the 155' monopole located at 310 Prestige Park Road in East Hartford, CT. The monopole is owned by American Tower and the property is owned by Fremont 311 PPR LLC. T-Mobile now intends to replace three (3) antennas and add an additional (3) antennas for a total of nine (9) antennas. The new L600/N600/L700/L1900/U2100/L2500/N2500 antennas would be installed at the same 128' level of the tower. The new antennas support 5G services.

Planned Modifications:
Tower:
Install New:
(3) Ericsson AIR6449 B41 Antennas
(3) RFS APXVAALL24-43-U-NA20 Antennas
(3) Radio 4460 B25/B66
(3) Radio 4480 B71/B85
(3) 6 x 24 HCS Cables

To Be Removed:
(3) Ericsson AIR32 KRD901146-1 B66A B2A Antennas
(3) T-Arm Sector Mounts
(1) 6 x 12 HCS Cables

Ground Work:
Install (1) 6160 Equipment Cabinet, (1) Battery Cabinet B160, and (2) BB6648, (1) IXRE Router, (1) PSU4813, and (3) 6 x 12 Hybrid Cables
Remove (1) 9 x 18 Hybrid Cable

This tower was originally approved by the Connecticut Siting Council in Do. 40 on May 15, 1984. None of the modifications break the conditions given.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Marcia Leclerc, Elected Official, and The Town Planner of East Hartford Jeffrey Cormier, as well as the property and tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications 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 Communications 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 referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Marcia Leclerc - Mayor of East Hartford
Jeffrey Cormier - Town Planner
Fremont 311 PPR LLC - Property Owner
American Towers - Tower Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
TOWN PLANNER
JEFFREY CORMIER
740 MAIN STREET
EAST HARTFORD CT 06108

CT 061 9-01

UPS GROUND
TRACKING #: 1Z V25 742 03 9079 2184

BILLING: P/P

Reference #1: CTHA515A

XOL 21.07.05 NV45 34.0A 08/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
MAYOR MARCIA LECLERC
740 MAIN STREET
EAST HARTFORD CT 06108

CT 061 9-01

UPS GROUND
TRACKING #: 1Z V25 742 03 9351 8171

BILLING: P/P

Reference #1: CTHA515A

XOL 21.07.05 NV45 34.0A 08/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
CONTACTS MANAGEMENT
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801

MA 018 9-04

UPS GROUND

TRACKING #: 1Z V25 742 03 9075 2208

BILLING: P/P

Reference #1: CTHA515A

XOL 21.07.05 NV45 34.0A 08/2021*

TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
FREMONT 311 PPR LLC
SUITE 202
65 LASALLE ROAD
WEST HARTFORD CT 06107

CT 061 9-03

UPS GROUND

TRACKING #: 1Z V25 742 03 9267 0196

BILLING: P/P

Reference #1: CTHA515A

XOL 21.07.05 NV45 34.0A 08/2021*

TM

Shipping Confirmation

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/25/2021

Delivery Time: 1:53 PM

Left At: FRONT DESK

Signed by: RIGGOT

TRANSCEND WIRELESS

Tracking Number:	1ZV257420392670196
Ship To:	FREMONT 311 PPR LLC 65 LASALLE ROAD SUITE 202 WEST HARTFORD, CT 06107 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA515A

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/25/2021

Delivery Time: 12:55 PM

Left At: OFFICE

Signed by: DANIELS

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390792184
Ship To:	JEFFREY CORMIER 740 MAIN STREET EAST HARTFORD, CT 06108 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA515A

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/25/2021

Delivery Time: 12:54 PM

Left At: OFFICE

Signed by: JOE

TRANSCEND WIRELESS

Tracking Number:	1ZV257420393518171
Ship To:	MAYOR MARCIA LECLERC 740 MAIN STREET EAST HARTFORD, CT 06108 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA515A

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/25/2021

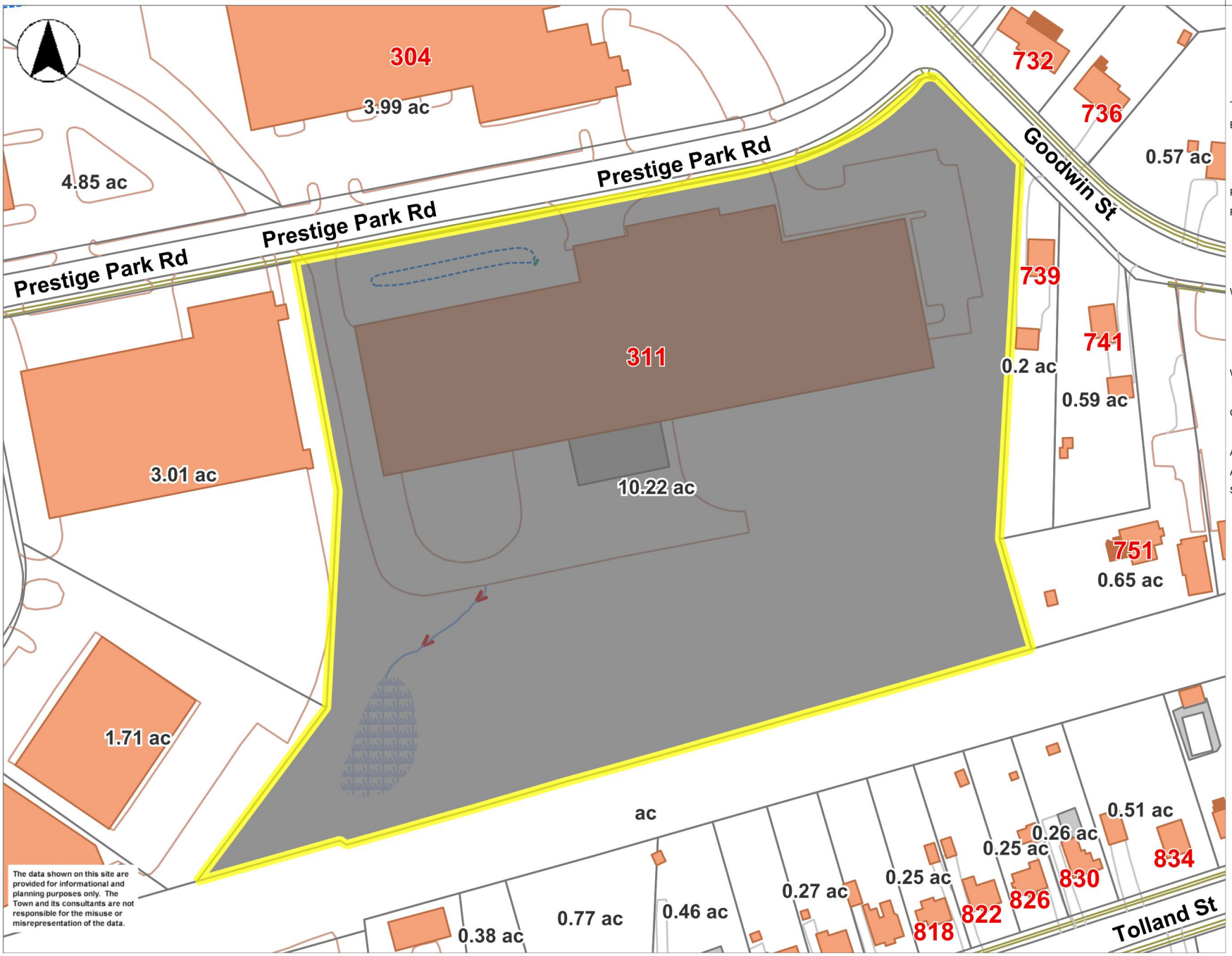
Delivery Time: 12:20 PM

Left At: FRONT DESK

Signed by: ANCRI

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390752208
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA515A



0 180 360 ft

Printed on 08/23/2021 at 04:16 PM

East Hartford MapsOnline

Town of East Hartford Property Summary Report

311 PRESTIGE PARK RD

MAP LOT:	49-4	**CAMA PID:**	11577
LOCATION:	311 PRESTIGE PARK RD		
OWNER NAME:	FREMONT 311 PPR LLC		

11577 03/29/2016

OWNER OF RECORD
FREMONT 311 PPR LLC 65 LASALLE RD SUITE 202 WEST HARTFORD, CT 06107

LIVING AREA:	111040	**ZONING:**	I3	**ACREAGE:**	10.22

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
FREMONT 311 PPR LLC	3439/0094	15-Dec-2013	$0.00
FREMONT PRESTIGE I L L C C/O FREMONT MANAGEMENT L L C	2714/0011	12-Mar-2006	$0.00
FREMONT PRESTIGE PARK LLC C/O FREMONT MANAGEMENT	1932/0164	29-Oct-2000	$3,605,000.00
BECKENSTEIN ENTERPRISES PRESTIGE PARK LLC	1595/0281	09-Dec-1995	$0.00
BECKENSTEIN ENTERPRISES	1213/0053	02-May-1989	$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	$2,989,880.00	**IMPROVEMENTS:**	$2,562,610.00	**LAND:**	$427,270.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2019	$2,989,880.00	$2,562,610.00	$427,270.00
2018	$2,989,880.00	$2,562,610.00	$427,270.00
2017	$2,989,880.00	$2,562,610.00	$427,270.00
2016	$2,989,880.00	$2,562,610.00	$427,270.00
2015	$2,743,720.00	$2,316,450.00	$427,270.00

Town of East Hartford Property Summary Report

311 PRESTIGE PARK RD

MAP LOT:	49-4	**CAMA PID:**	11577
LOCATION:	311 PRESTIGE PARK RD		
OWNER NAME:	FREMONT 311 PPR LLC		

BUILDING # 1

YEAR BUILT	1988	**EXT WALL 1**	Insul Panel
STYLE	Storage Facility	**INT WALLS 1**	Drywall
MODEL	Ind/Comm	**HEAT FUEL**	Other
STORIES	1.0	**HEAT TYPE**	Unit Heater
OCCUPANCY	Light Storage	**AC TYPE**	Partial
ROOF	Flat	**BEDROOMS**	
ROOF COVER	Metal	**FULL BATHS**	
FLOOR COVER 1	Mixed	**HALF BATHS**	
% BSMT	null	**TOTAL ROOMS**	0
% FIN BSMT	null	**% REC RM**	null
% SEMI FIN		**% ATTIC FINISH**	null
BSMT GARAGE	null	**FIREPLACES**	null

11577 03/29/2016

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
W/Partitions	MEZ3	11104.00 S.F.
Load Dock	LDK	1.00 UNITS
Sprinklers-Wet	SPR1	111040.00 S.F.

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Fence-C/L	FN1	1x1100 (1100.00 L.F.)
Paving	PAV1	1x35000 (35000.00 SF)

DOCKET NO. 40

ORIGINAL

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN THE HARTFORD AND MIDDLESEX COUNTIES.	:	CONNECTICUT SITING COUNCIL
	:	May 15, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to Southern New England Telephone for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Shuttle Meadow Road, Southington, Connecticut;
Mountain Street, Hartford, Connecticut;
Prestige Park Road, East Hartford, Connecticut;
Beckley Road, Berlin, Connecticut;
Slicer tract, Niederwerfer Road, South Windsor, Connecticut; and
Kikapoo Road, Middlefield, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions.

1. The towers shall be no taller than necessary to provide the proposed service and in no event shall exceed

   a) 150 feet at the Southington site,
   b) 100 feet at the Hartford site,
   c) 150 feet at the East Hartford site,
   d) 150 feet at the Berlin site,
   e) 75 feet at the South Windsor site, and
   f) 75 feet at the Middlefield site.

2. A fence not lower than eight feet shall surround each tower and its associated equipment.

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities.
4. The applicant or its successor shall permit in accordance with representations made by it during the proceeding public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. Unless necessary to comply with condition number seven, below, no lights shall be installed on any of these towers.
6. The facility construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations.
7. The applicant shall submit a development and management plan (D&M) for the South Windsor, Southington, and Berlin sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites. The applicant shall consult with Mrs. Claire Aubin and the Town of South Windsor in the preparation of the South Windsor site D&M.
8. Construction activities shall take place during daylight working hours.
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed,

or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p(c) of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Journal Inquirer, and the Middletown Press.

The parties to this proceeding are

Southern New England Telephone Company Room 314 227 Church Street New Haven, Connecticut 06506	(Applicant)
ATTN: Mr. Peter J. Tyrrell, Esquire	(its attorney)
Town of South Windsor 1540 Sullivan Avenue South Windsor, Connecticut 06074	represented by: Mr. Richard M. Rittenband Town Attorney 1734 Ellington Road South Windsor, Connecticut 06074
Frank Niederwerfer 260 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)
Claire Aubin 407 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)

Betty S. Kleiner
Chairman
Hartford Audubon Society, Inc.
5 Flintlock Ridge
Simsbury, Connecticut 06070

(service waived)

Roger Thorpe
2916 Ellington Road
South Windsor, Connecticut 06074

Intervenors in this proceeding are

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

representing:

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 15th day of May, 1984.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Yes
Commissioner Stanley Pac Designee: Christopher Cooper	Yes
Owen L. Clark	Yes
Fred J. Doocy	~~Yes~~ Abstain
Mortimer A. Gelston	Yes
James G. Horsfall	Absent
Janet Sitty	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, May 15, 1984
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

DEPARTMENT OF ADMINISTRATIVE SERVICES

July 27, 2021

Dan Reid, Project Manager
Transcend Wireless
10 Industrial Ave
Mahwah NJ 07430

Re: Structural Analysis Report for Site #302473
310 Prestige Park Road, East Hartford, CT

Mr. Reid,

Based on the Structural Analysis Report by American Tower Corporation, dated June 7, 2021, the proposed additions to this tower comply with the structural requirements of the 2018 Connecticut State Building Code.

If you have any questions you may contact me as 860-713-5900.

Sincerely,

Joseph V. Cassidy, P.E.
State Building Inspector

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**E H F R - Prestige Park, CT**
ATC Asset Number	:	**302473**
Engineering Number	:	**13677961_C3_02**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**ATC E. Hartford Monopole**
Carrier Site Number	:	**CTHA515A**
Site Location	:	**310 Prestige Park Rd.** **East Hartford, CT 06108-1206** **41.788300,-72.600600**
County	:	**Hartford**
Date	:	**June 7, 2021**
Max Usage	:	**103%**
Result	:	**Pass**

Prepared By:
Siddharth Yadav
TEP

Reviewed By:

STATE OF CONNECTICUT
GRAHAM M. ANDRES
29538
LICENSED
PROFESSIONAL ENGINEER

6/9/21

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	ITT Meyer designed per AT&T Specification #AT-8935 (Type B), dated April 13, 1984 Mapping by Smith Cullum, dated May 30, 2002
Foundation Drawing	Southern New England Telephone Job #38904, dated April 20, 1983
Geotechnical Report	GeoTechnologies Project #1-02-1122-EA, dated September 6, 2002
Modifications	SpectraSite Site#CT-0009, dated March 19, 2003 ATC Project #51574133, dated January 17, 2013 ATC Project #63706335, dated October 19, 2015 ATC Project #OAA696438_C6_05, dated July 11, 2017 ATC Project #OAA745293_C6_06, dated April 1, 2019
Mount Analysis	CoreOne Consulting, ATC Eng. #13677961_C8_03, dated May 26, 2021

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	115.01 mph (3-Second Gust)**
Basic Wind Speed w/ Ice:	48.73 mph (3-Second Gust) w/ 1.27" radial ice concurrent**
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.05
Site Class:	D - Stiff Soil

****Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, Annex S.**

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
156.0	3	Ericsson RRUS 4478 B14	Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (1) 3/8" (0.38"-9.5mm) RET Control Cable (6) 7/8" Coax	AT&T MOBILITY
	3	Kaelus DBCT108F1V92-1			
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	3	Powerwave Allgon 7770.00			
	6	Powerwave Allgon 7020.00 Dual Band RET			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS-32 B30 (77 lbs)			
	3	CCI OPA-65R-LCUU-H6			
	6	Kathrein Scala 80010965			
138.0	2	RFS APXV9ERR18-C-A20	T-Arms	(1) 5/8" Hybriflex (3) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter			
	3	Alcatel-Lucent 4X40W RRH			
	3	RFS APXVTM14-C-I20			
	3	RFS IBC1900BB-1			
	3	RFS IBC1900HG-2A			
	1	RFS APXVSPP18-C-A20			
128.0	3	Ericsson AIR32 B66Aa/B2a	-	(1) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" Hybriflex	T-MOBILE
119.0	1	Generic 12" x 12" Junction Box	Side Arm	(1) 2" conduit (3) 1/2" Coax (6) 5/16" (0.31"-7.9mm) Coax	CLEARWIRE CORPORATION
118.0	3	Argus LLPX310R			
	3	NextNet BTS-2500			
	1	DragonWave A-ANT-23G-1-C			
	3	DragonWave Horizon Compact			
	2	DragonWave A-ANT-23G-2-C			
97.0	2	RFS DB-T1-6Z-8AB-0Z	Sector Frames	(2) 1 1/4" Hybriflex Cable	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung B2/B66A RRH-BR049			
	12	Andrew SBNHH-1D65B			
	3	Samsung Outdoor CBRS 20W RRH			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
34.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL
32.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax (6) 7/8" Coax	AT&T MOBILITY

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
128.0	3	Andrew LNX-6515DS-A1M	T-Arms	(6) 1 5/8" Coax	T-MOBILE
	3	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
128.0	3	Ericsson Radio 4460 B25+B66	Perfect Vision PV-LPPGS-12M-HR25-AP4	(2) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson Radio 4480 B71+B85A			
	3	Ericsson Air6449 B41			
	3	RFS APXVAALL24 43-U-NA20			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	76%	Pass
Shaft	100%	Pass
Base Plate	51%	Pass
Reinforcement	103%	Pass
Flange	101%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3094.8	98%
Axial (Kips)	50.5	23%
Shear (Kips)	28.7	21%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
128.0	Ericsson Radio 4460 B25+B66	T-MOBILE	2.153	2.044
	Ericsson Radio 4480 B71+B85A			
	Ericsson Air6449 B41			
	RFS APXVAALL24 43-U-NA20			
118.0	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	1.823	1.743
	DragonWave A-ANT-23G-2-C			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

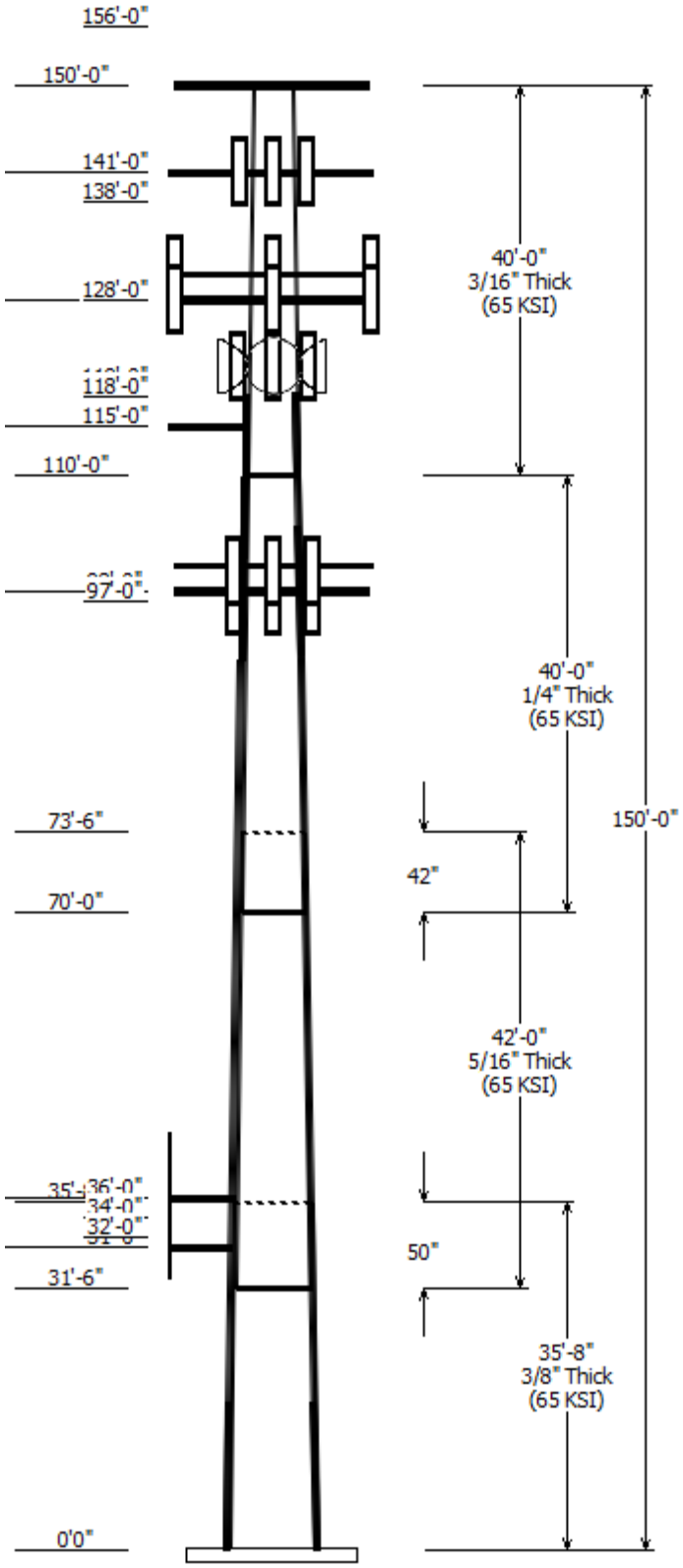
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

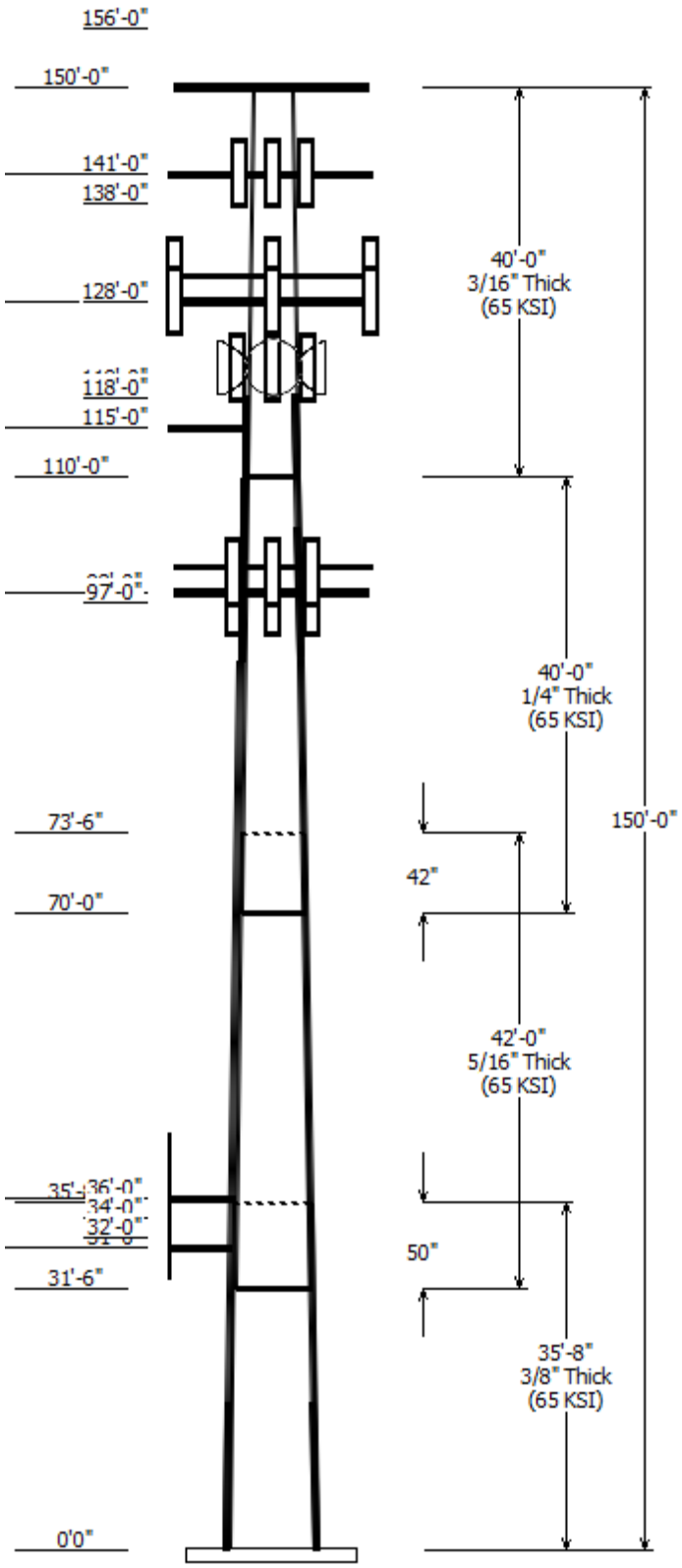
Client :	T-MOBILE		
Pole :	302473	Code:	ANSI/TIA-222-H
Location :	E H F R - Prestige Park, CT		
Description :	150' ITT Meyer Type "B" Monopole	Risk Category :	II
Shape :	12 Sides	Exposure :	B
Height :	150.00 (ft)	Topo Method :	Method 1
Base Elev (ft):	0.00	Topographic Category :	1
Taper:	0.156700 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	35.667	31.79	37.38	0.375		0.000	12 Sides	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	12 Sides	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	12 Sides	65
4	40.000	15.00	21.26	0.188	Butt Joint	0.000	12 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
156.000	156.000	6	Kathrein Scala 80010965
156.000	156.000	3	CCI OPA-65R-LCUU-H6
156.000	156.000	3	Ericsson RRUS-32 B30 (77 lbs)
156.000	156.000	3	Ericsson RRUS 4449 B5, B12
156.000	156.000	3	Ericsson RRUS 4478 B14
156.000	156.000	3	Raycap DC6-48-60-18-8F (23.5"
156.000	156.000	6	Powerwave Allgon LGP21401
156.000	156.000	3	Kaelus DBCT108F1V92-1
156.000	156.000	3	Ericsson Radio 8843 - B2 + B66
156.000	156.000	6	Powerwave Allgon 7020.00
156.000	156.000	3	Powerwave Allgon 7770.00
150.000	150.000	2	Generic Mount Reinforcement
150.000	150.000	1	Flat Platform w/ Handrails
141.000	141.000	3	Round T-Arm
138.000	142.000	2	RFS APXV9ERR18-C-A20
138.000	142.000	1	RFS APXVSPP18-C-A20
138.000	142.000	3	Alcatel-Lucent TD-RRH8x20-25
138.000	142.000	3	Alcatel-Lucent 800 MHz RRH
138.000	142.000	3	Alcatel-Lucent 4X40W RRH
138.000	142.000	3	RFS APXVTM14-C-I20
138.000	142.000	3	RFS IBC1900BB-1
138.000	142.000	3	RFS IBC1900HG-2A
128.000	129.000	3	Ericsson AIR32 B66Aa/B2a
128.000	128.000	3	RFS APXVAALL24 43-U-NA20
128.000	128.000	3	Ericsson Air6449 B41
128.000	128.000	3	Ericsson Radio 4480 B71+B85A
128.000	128.000	3	Ericsson Radio 4460 B25+B66
128.000	128.000	1	Round Platform w/ Handrails
119.000	119.000	1	Generic 12" x 12" Junction Box
118.000	120.000	2	DragonWave A-ANT-23G-2-C
118.000	120.000	3	Argus LLPX310R
118.000	120.000	3	NextNet BTS-2500
118.000	120.000	1	DragonWave A-ANT-23G-1-C
118.000	120.000	3	DragonWave Horizon Compact
115.000	115.000	1	Side Arms
98.000	98.000	3	Generic Flat Light Sector Fram
97.000	100.000	2	RFS DB-T1-6Z-8AB-0Z
97.000	97.000	3	Samsung B5/B13 RRH-BR04C
97.000	97.000	3	Samsung B2/B66A RRH-BR049
97.000	100.000	12	Andrew SBNHH-1D65B
97.000	97.000	3	Samsung Outdoor CBRS 20W
97.000	97.000	3	Samsung Outdoor CBRS 20W
36.000	36.000	1	Stand-off
34.000	37.000	1	Generic GPS



32.000	32.000	1	Generic GPS
31.000	31.000	1	Stand-off

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Reinforcing Plate	Yes
110.0	120.0	Reinforcing Plate	Yes
110.0	120.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
0.000	118.0	1/2" Coax	No
0.000	118.0	5/16" (0.31"-	No
0.000	119.0	2" conduit	No
0.000	3.000	7/8" Coax	No
0.000	22.500	#20 w/ Angle	Yes
0.000	22.500	#20 w/ Angle	Yes
0.000	22.500	#20 w/ Angle	Yes
0.000	22.500	#20 w/ Angle	Yes
0.000	32.000	1/2" Coax	No
0.000	34.000	1/2" Coax	Yes
0.000	97.000	1 1/4" Hybriflex	Yes
0.000	106.0	#20 w/ Angle	Yes
0.000	106.0	#20 w/ Angle	Yes
0.000	106.0	#20 w/ Angle	Yes
0.000	106.0	#20 w/ Angle	Yes
0.000	128.0	1 1/4" (1.25"-	No
0.000	128.0	1 5/8" Coax	No
0.000	128.0	1 5/8" Hybriflex	No
0.000	138.0	1 1/4" Hybriflex	No
0.000	142.0	5/8" Hybriflex	No
0.000	156.0	0.39" (10mm)	No
0.000	156.0	0.78" (19.7mm) 8	No
0.000	156.0	3/8" (0.38"-	No
0.000	156.0	7/8" Coax	No

Load Cases

1.2D + 1.0W	115 mph with No Ice
0.9D + 1.0W	115 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	49 mph with 1.27 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

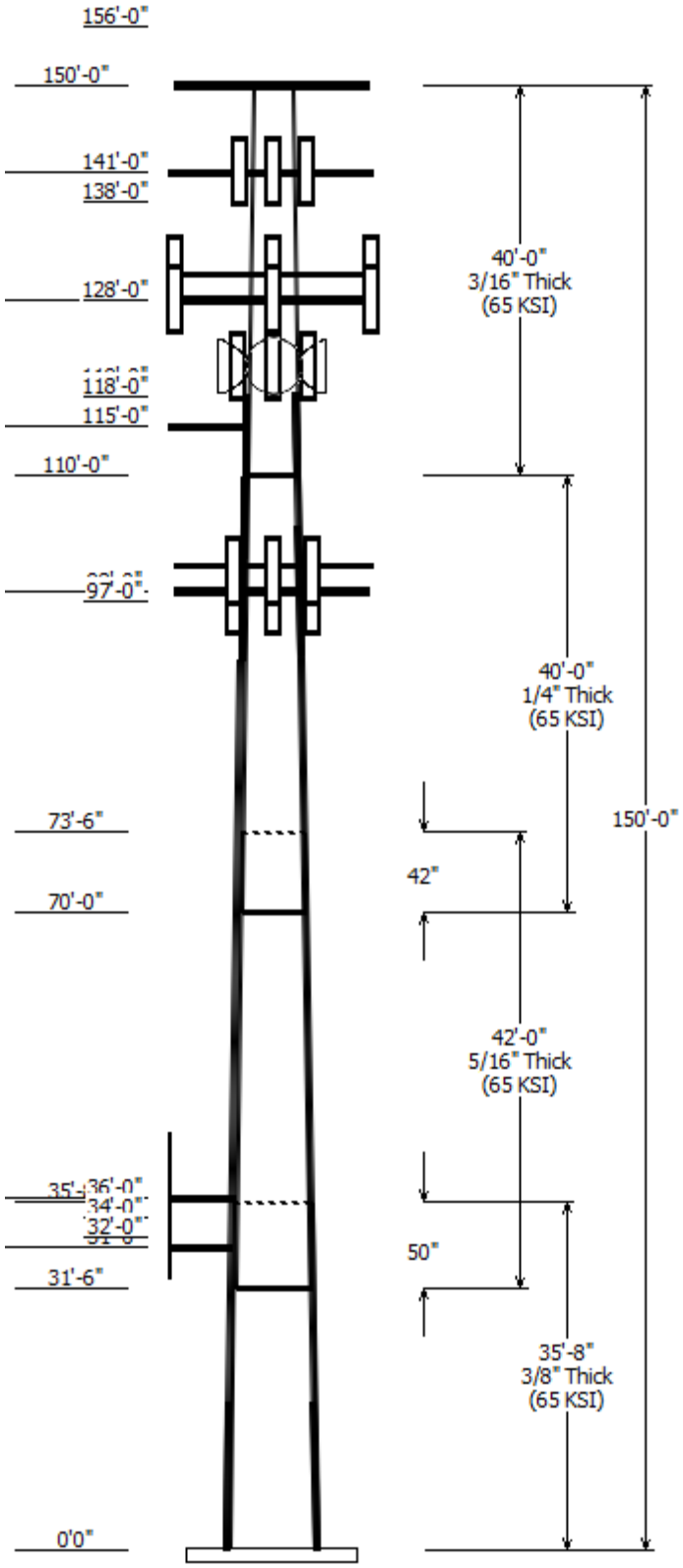
Reactions

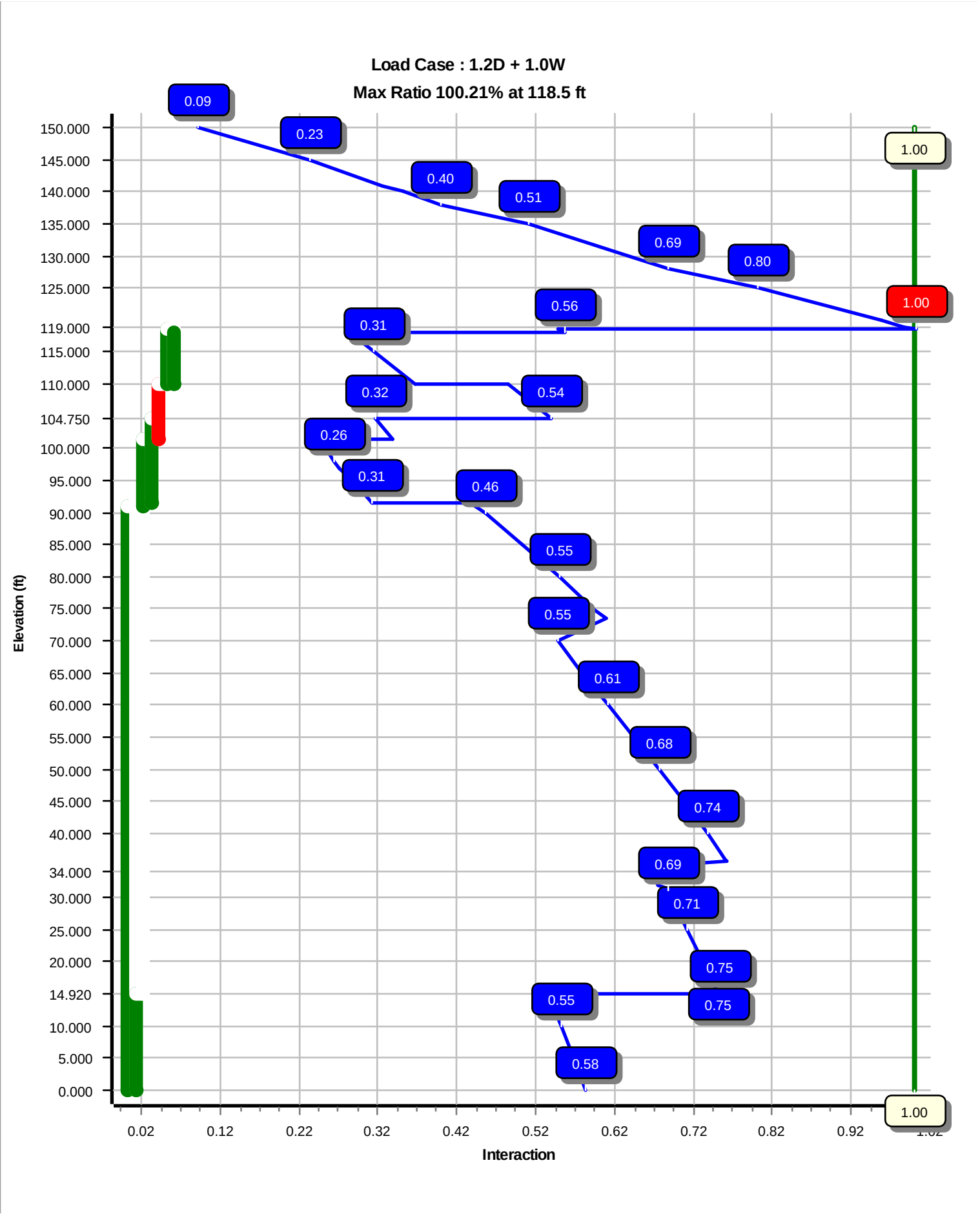
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	3094.80	28.67	50.46
0.9D + 1.0W	3029.91	28.65	37.83
1.2D + 1.0Di + 1.0Wi	776.13	6.33	71.76
1.2D + 1.0Ev + 1.0Eh	164.85	1.27	50.07
0.9D - 1.0Ev + 1.0Eh	160.39	1.27	34.72

1.0D + 1.0W	745.10	6.98	42.10

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	118.00	21.885	1.743
1.0D + 1.0W	118.00	21.885	1.743




Load Case : 1.2D + 1.0W
Max Ratio 100.21% at 118.5 ft
0.09
0.23
0.40
0.51
0.69
0.80
1.00
0.56
0.31
0.32
0.54
0.26
0.31
0.46
0.55
0.55
0.61
0.68
0.74
0.69
0.71
0.75
0.55
0.75
0.58
1.00
150.000
145.000
140.000
135.000
130.000
125.000
119.000
115.000
110.000
104.750
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
34.000
30.000
25.000
20.000
14.920
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302473 Code: ANSI/TIA-222-H

Site Name: E H F R - Prestige Park, CT Engineering Number:13677961_C3_02 6/8/2021 11:53:18 AM

Customer: T-MOBILE

Analysis Parameters

Location :	Hartford County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-H	Base Diameter (in) :	37.38
Shape :	12 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.157
Pole Manfacturer :	ITT Meyer	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	1.00

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	115 mph
Risk Category:	II	Design Wind Speed With Ice:	49 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.27 in
Crest Height:	0 ft	HMSL:	68.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	3.13				
T_L (sec):	6	p:	1	C_s:	0.030
S_s:	0.188	S_1:	0.055	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.201	S_{d1}:	0.088		

Load Cases

1.2D + 1.0W	115 mph with No Ice
0.9D + 1.0W	115 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	49 mph with 1.27 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302473 Code: ANSI/TIA-222-H

Site Name: E H F R - Prestige Park, CT Engineering Number:13677961_C3_02 6/8/2021 11:53:18 AM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.667	0.3750	65		0.00	5,014	37.38	0.00	44.68	7810.1	24.03	99.68	31.79	35.67	37.93	4778.9	20.04	84.78	0.156700
2-12	42.000	0.3125	65	Slip	50.00	4,237	33.06	31.50	32.96	4514.2	25.68	105.82	26.48	73.50	26.34	2303.3	20.03	84.76	0.156700
3-12	40.000	0.2500	65	Slip	42.00	2,646	27.53	70.00	21.97	2087.4	26.83	110.14	21.26	110.00	16.92	954.0	20.12	85.07	0.156700
4-12	40.000	0.1875	65	Butt	0.00	1,475	21.26	110.00	12.73	721.9	27.71	113.43	15.00	150.00	8.94	250.5	18.76	80.00	0.156700
				Shaft Weight		13,372													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
156.00	Powerwave Allgon 7020.00 Dual	6	0.75	0.000	2.20	0.339	0.50	10.89	0.687	0.50
156.00	Kaelus DBCT108F1V92-1	3	0.75	0.000	13.90	0.633	0.50	35.30	1.097	0.50
156.00	Powerwave Allgon LGP21401	6	0.75	0.000	14.10	1.104	0.50	35.32	1.711	0.50
156.00	Raycap DC6-48-60-18-8F (23.5"	3	0.75	0.000	20.00	1.260	0.50	64.77	1.820	0.50
156.00	Ericsson Radio 8843 - B2 + B66A	3	0.75	0.000	71.90	1.650	0.50	124.29	2.370	0.50
156.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	106.92	2.605	0.50
156.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	125.80	2.762	0.50
156.00	Ericsson RRUS-32 B30 (77 lbs)	3	0.75	0.000	77.00	3.314	0.50	159.70	4.406	0.50
156.00	Powerwave Allgon 7770.00	3	0.75	0.000	35.00	5.508	0.65	145.77	6.395	0.65
156.00	CCI OPA-65R-LCUU-H6	3	0.75	0.000	73.00	9.658	0.66	246.06	12.015	0.66
156.00	Kathrein Scala 80010965	6	0.75	0.000	97.60	13.814	0.62	324.30	16.408	0.62
150.00	Generic Mount Reinforcement	2	1.00	0.000	200.00	7.500	1.00	364.56	13.867	1.00
150.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,208.44	60.233	1.00
141.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	426.85	16.676	0.67
138.00	RFS IBC1900HG-2A	3	0.80	4.000	22.00	0.966	0.50	44.77	1.524	0.50
138.00	RFS IBC1900BB-1	3	0.80	4.000	22.00	0.966	0.50	44.77	1.524	0.50
138.00	Alcatel-Lucent 4X40W RRH	3	0.80	4.000	59.50	2.322	0.50	127.46	3.234	0.50
138.00	Alcatel-Lucent 800 MHz RRH w/	3	0.80	4.000	61.80	2.495	0.50	138.09	3.373	0.50
138.00	Alcatel-Lucent TD-RRH8x20-25	3	0.80	4.000	70.00	4.046	0.50	149.74	5.166	0.50
138.00	RFS APXVTM14-C-I20	3	0.80	4.000	52.90	6.342	0.66	169.07	8.180	0.66
138.00	RFS APXVSPP18-C-A20	1	0.80	4.000	57.00	8.024	0.69	202.54	10.378	0.69
138.00	RFS APXV9ERR18-C-A20	2	0.80	4.000	62.00	8.024	0.78	214.81	10.378	0.78
128.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.50	183.01	3.446	0.50
128.00	Ericsson Radio 4480 B71+B85A	3	0.75	0.000	84.00	2.852	0.50	147.26	3.787	0.50
128.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	218.12	7.011	0.63
128.00	Ericsson AIR32 B66Aa/B2a	3	0.75	1.000	132.20	6.510	0.71	265.85	8.344	0.71
128.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	448.95	23.349	0.63
128.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,085.03	47.668	1.00
119.00	Generic 12" x 12" Junction Box	1	0.80	0.000	10.00	1.200	0.50	44.66	1.804	0.50
118.00	DragonWave Horizon Compact	3	0.80	2.000	10.60	0.721	0.50	29.27	1.194	0.50
118.00	DragonWave A-ANT-23G-1-C	1	0.80	2.000	15.00	1.610	1.00	44.34	2.239	1.00
118.00	NextNet BTS-2500	3	0.80	2.000	35.00	1.817	0.50	73.51	2.578	0.50
118.00	Argus LLPX310R	3	0.80	2.000	28.60	4.292	0.63	103.44	5.665	0.63
118.00	DragonWave A-ANT-23G-2-C	2	0.80	2.000	12.30	4.688	0.50	93.41	5.746	0.50
115.00	Side Arms	1	1.00	0.000	560.00	8.500	1.00	947.44	14.381	1.00
98.00	Generic Flat Light Sector Frame	3	0.75	0.000	400.00	17.900	0.67	645.53	30.210	0.67
97.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	18.60	0.857	0.50	38.15	1.368	0.50
97.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	4.40	0.892	0.50	19.06	1.412	0.50
97.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	136.37	2.610	0.50
97.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	116.90	2.610	0.50
97.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	3.000	44.00	4.800	0.50	146.52	5.958	0.50
97.00	Andrew SBNHH-1D65B	12	0.80	3.000	50.70	8.173	0.69	193.63	10.478	0.69
36.00	Stand-off	1	1.00	0.000	50.00	2.000	1.00	75.71	3.028	1.00
34.00	Generic GPS	1	1.00	3.000	10.00	0.900	1.00	31.42	1.368	1.00
32.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	31.34	1.366	1.00
31.00	Stand-off	1	1.00	0.000	50.00	2.000	1.00	75.30	3.012	1.00

Totals Num Loadings:46 132 13,181.80 27,535.77

Linear Appurtenance Properties

Load Case Azimuth (deg) : 100

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	156.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	156.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	156.00	1	3/8" (0.38"- 9.5mm)	0.38	0.23	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	156.00	6	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	142.00	1	5/8" Hybriflex	0.84	0.70	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	138.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	128.00	1	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	128.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AS-IS
0.00	128.00	1	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	210	0.00	Y	
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	90	0.00	Y	
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	330	0.00	Y	
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	0	0.00	Y	
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	120	0.00	Y	
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	240	0.00	Y	
0.00	119.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	118.00	3	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	118.00	6	5/16" (0.31"-7.9mm)	0.31	0.05	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	150	0.00	Y	
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	60	0.00	Y	
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	240	0.00	Y	
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	330	0.00	Y	
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	30	0.00	Y	
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	120	0.00	Y	
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	210	0.00	Y	
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	300	0.00	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	0	0.00	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	90	0.00	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	180	0.00	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	270	0.00	Y	
0.00	97.00	2	1 1/4" Hybriflex Cable	1.54	1.00	N	2	1.00	1.00	10	1.00	Y	VERIZON WIRELESS
0.00	34.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	190	1.00	Y	SPRINT NEXTEL
0.00	32.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	22.50	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	135	0.00	Y	
0.00	22.50	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	315	0.00	Y	
0.00	22.50	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	45	0.00	Y	
0.00	22.50	1	#20 w/ Angle Brackets	4.00	4.68	N	1	0.00	0.00	225	0.00	Y	
0.00	3.00	6	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	91.06	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
0.00	14.92	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	37.0	3.31	5/8" A36 U-Bolt	No
91.06	101.5	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes
91.58	104.7	4	PL PL 4 x 1.25	53	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
101.5	110.0	4	PL PL 3" x 1"	49	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
110.0	118.5	3	PL PL 3" x 1"	49	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
110.0	118.0	3	PL PL 5" x 1.25"	58	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.380	44.684	7,810.1	24.03	99.68	78.5	403.6	0.0	0.0	39.28	9,917	0.0
5.00		0.3750	36.597	43.737	7,324.4	23.47	97.59	79.1	386.6	0.0	752.2	39.28	9,563	668.0
10.00		0.3750	35.813	42.791	6,859.3	22.91	95.50	79.7	370.0	0.0	736.1	39.28	9,215	668.0
14.92	Reinf. Top	0.3750	35.042	41.860	6,421.3	22.36	93.45	80.3	354.0	0.0	708.6	39.28	8,879	657.3
15.00		0.3750	35.030	41.845	6,414.3	22.35	93.41	80.3	353.7	0.0	11.4	19.64	4,436	5.3
20.00		0.3750	34.246	40.899	5,989.0	21.79	91.32	80.9	337.8	0.0	703.9	19.64	4,269	334.0
25.00		0.3750	33.463	39.953	5,583.0	21.23	89.23	81.6	322.3	0.0	687.8	19.64	4,105	334.0
30.00		0.3750	32.679	39.007	5,195.7	20.67	87.14	81.9	307.1	0.0	671.7	19.64	3,943	334.0
31.00		0.3750	32.522	38.818	5,120.4	20.56	86.73	81.9	304.2	0.0	132.4	19.64	3,912	66.8
31.50	Bot - Section 2	0.3750	32.444	38.723	5,083.1	20.50	86.52	81.9	302.7	0.0	66.0	19.64	3,896	33.4
32.00		0.3750	32.366	38.629	5,045.9	20.45	86.31	81.9	301.2	0.0	121.8	19.64	4,007	33.4
34.00		0.3750	32.052	38.250	4,899.1	20.22	85.47	81.9	295.3	0.0	484.3	19.64	3,943	133.6
35.00		0.3750	31.896	38.061	4,826.7	20.11	85.05	81.9	292.3	0.0	240.4	19.64	3,911	66.8
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.6	25.12	103.73	77.3	253.3	0.0	159.6	19.64	3,890	44.5
36.00		0.3125	32.364	32.252	4,228.9	25.07	103.56	77.4	252.4	0.0	36.6	19.64	3,880	22.3
40.00		0.3125	31.737	31.621	3,985.6	24.53	101.56	78.0	242.6	0.0	434.7	19.64	3,754	267.2
45.00		0.3125	30.954	30.833	3,694.9	23.86	99.05	78.7	230.6	0.0	531.3	19.64	3,600	334.0
50.00		0.3125	30.170	30.044	3,418.6	23.19	96.54	79.4	218.9	0.0	517.9	19.64	3,449	334.0
55.00		0.3125	29.387	29.256	3,156.5	22.52	94.04	80.2	207.5	0.0	504.5	19.64	3,302	334.0
60.00		0.3125	28.603	28.467	2,908.1	21.85	91.53	80.9	196.4	0.0	491.0	19.64	3,158	334.0
65.00		0.3125	27.820	27.679	2,673.1	21.17	89.02	81.6	185.6	0.0	477.6	19.64	3,016	334.0
70.00	Bot - Section 3	0.3125	27.036	26.891	2,451.2	20.50	86.52	81.9	175.1	0.0	464.2	19.64	2,879	334.0
73.50	Top - Section 2	0.2500	26.988	21.524	1,964.0	26.25	107.95	76.1	140.6	0.0	575.9	19.64	2,870	233.8
75.00		0.2500	26.753	21.335	1,912.7	25.99	107.01	76.4	138.1	0.0	109.4	19.64	2,830	100.2
80.00		0.2500	25.969	20.704	1,748.0	25.15	103.88	77.3	130.0	0.0	357.6	19.64	2,696	334.0
85.00		0.2500	25.186	20.073	1,593.1	24.31	100.74	78.2	122.2	0.0	346.9	19.64	2,566	334.0
90.00		0.2500	24.402	19.442	1,447.6	23.47	97.61	79.1	114.6	0.0	336.2	19.64	2,439	334.0
91.06	Reinf. Top Reinf	0.2500	24.236	19.308	1,417.8	23.30	96.94	79.3	113.0	0.0	70.1	19.64	2,439	334.0
91.58	Reinf Bottom	0.2500	24.154	19.243	1,403.5	23.21	96.62	79.4	112.3	0.0	33.9	19.64	2,400	34.6
95.00		0.2500	23.619	18.812	1,311.2	22.63	94.47	80.0	107.2	0.0	221.4	39.64	3,847	461.2
97.00		0.2500	23.305	18.559	1,259.2	22.30	93.22	80.4	104.4	0.0	127.2	39.64	3,758	269.7
98.00		0.2500	23.148	18.433	1,233.7	22.13	92.59	80.6	103.0	0.0	62.9	39.64	3,714	134.8
100.0		0.2500	22.835	18.181	1,183.7	21.79	91.34	80.9	100.1	0.0	124.6	39.64	3,628	269.7
101.5	Reinf. Top Reinf	0.2500	22.600	17.992	1,147.1	21.54	90.40	81.2	98.1	0.0	92.3	39.64	3,599	235.7
104.7	Reinf. Top	0.2500	22.091	17.582	1,070.5	21.00	88.36	81.8	93.6	0.0	196.7	32.00	2,147	353.9
105.0		0.2500	22.052	17.550	1,064.7	20.96	88.21	81.9	93.3	0.0	14.9	12.00	802.1	10.2
110.0	Top - Section 3	0.2500	21.268	16.919	954.0	20.12	85.07	81.9	86.7	0.0	293.2	12.00	748.8	204.2
110.0	Bot - Section 4	0.1875	21.268	12.727	721.9	27.71	113.43	74.5	65.6	0.0		27.75	1,770	
115.0		0.1875	20.485	12.254	644.4	26.59	109.25	75.7	60.8	0.0	212.5	27.75	1,650	472.6
118.0	Reinf. Top	0.1875	20.014	11.970	600.6	25.92	106.74	76.4	58.0	0.0	123.6	27.75	1,581	283.6
118.5	Reinf. Top	0.1875	19.936	11.923	593.5	25.81	106.33	76.6	57.5	0.0	20.3	9.000	496.9	15.3
119.0		0.1875	19.858	11.876	586.5	25.70	105.91	76.7	57.1	0.0	20.2			
120.0		0.1875	19.701	11.781	572.6	25.47	105.07	76.9	56.1	0.0	40.3			
125.0		0.1875	18.918	11.308	506.4	24.35	100.89	78.2	51.7	0.0	196.4			
128.0		0.1875	18.447	11.024	469.2	23.68	98.39	78.9	49.1	0.0	114.0			
130.0		0.1875	18.134	10.835	445.4	23.24	96.71	79.4	47.5	0.0	74.4			
135.0		0.1875	17.351	10.362	389.6	22.12	92.54	80.6	43.4	0.0	180.3			
138.0		0.1875	16.880	10.078	358.5	21.44	90.03	81.3	41.0	0.0	104.3			
140.0		0.1875	16.567	9.889	338.6	21.00	88.36	81.8	39.5	0.0	67.9			
141.0		0.1875	16.410	9.795	329.0	20.77	87.52	81.9	38.7	0.0	33.5			
145.0		0.1875	15.784	9.416	292.3	19.88	84.18	81.9	35.8	0.0	130.7			
150.0		0.1875	15.000	8.943	250.5	18.76	80.00	81.9	32.3	0.0	156.2			
											13,372.1			10,088.

Site Number: 302473 Code: ANSI/TIA-222-H

Site Name: E H F R - Prestige Park, CT Engineering Number:13677961_C3_02 6/8/2021 11:53:18 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.0W 115 mph with No Ice 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		301.9	0.0					0.0	0.0	301.9	0.0	0.0	0.0
5.00		600.6	902.6					0.0	1,174.6	600.6	2,077.2	0.0	0.0
10.00		521.6	883.3					0.0	1,167.5	521.6	2,050.8	0.0	0.0
14.92	Reinf. Top	226.5	850.3					89.7	1,148.8	316.3	1,999.1	0.0	0.0
15.00		225.1	13.7					1.5	12.3	226.6	25.9	0.0	0.0
20.00		438.0	844.7					91.4	766.7	529.4	1,611.4	0.0	0.0
25.00		428.0	825.4					91.5	710.5	519.5	1,535.9	0.0	0.0
30.00		253.4	806.1					91.7	654.4	345.1	1,460.4	0.0	0.0
31.00	Appurtenance(s)	63.0	158.9	49.9	0.0	0.0	60.0	18.5	130.9	131.3	349.8	0.0	0.0
31.50	Bot - Section 2	42.5	79.2					9.3	65.4	51.8	144.6	0.0	0.0
32.00	Appurtenance(s)	107.9	146.2	22.7	0.0	0.0	12.0	9.3	65.4	139.9	223.6	0.0	0.0
34.00	Appurtenance(s)	129.8	581.2	23.6	0.0	70.9	12.0	37.8	261.4	191.2	854.6	0.0	0.0
35.00		72.5	288.5					19.1	130.5	91.6	419.0	0.0	0.0
35.67	Top - Section 1	43.6	191.5					12.9	87.0	56.4	278.5	0.0	0.0
36.00	Appurtenance(s)	190.1	43.9	52.1	0.0	0.0	60.0	6.4	43.5	248.7	147.4	0.0	0.0
40.00		397.2	521.6					78.7	522.0	475.9	1,043.7	0.0	0.0
45.00		444.7	637.5					101.7	652.6	546.4	1,290.1	0.0	0.0
50.00		446.7	621.4					105.2	652.6	551.9	1,274.0	0.0	0.0
55.00		447.2	605.4					108.4	652.6	555.6	1,257.9	0.0	0.0
60.00		446.2	589.3					111.4	652.6	557.6	1,241.8	0.0	0.0
65.00		444.0	573.2					114.3	652.6	558.4	1,225.7	0.0	0.0
70.00	Bot - Section 3	378.0	557.1					117.0	652.6	495.1	1,209.6	0.0	0.0
73.50	Top - Section 2	223.6	691.1					83.5	456.8	307.0	1,147.9	0.0	0.0
75.00		288.1	131.3					36.1	195.8	324.3	327.0	0.0	0.0
80.00		439.9	429.1					122.0	652.6	561.9	1,081.7	0.0	0.0
85.00		434.1	416.3					124.4	652.6	558.5	1,068.8	0.0	0.0
90.00		260.8	403.4					126.7	652.6	387.6	1,055.9	0.0	0.0
91.06	Reinf. Top Reinf	67.4	84.1					28.3	454.3	95.7	538.4	0.0	0.0
91.58	Reinf Bottom	166.6	40.7					13.8	67.5	180.5	108.3	0.0	0.0
95.00		228.4	265.7					92.1	725.6	320.5	991.3	0.0	0.0
97.00	Appurtenance(s)	125.4	152.6	2,250.7	0.0	6,067.6	1,475.4	54.4	424.3	2,430.5	2,052.3	0.0	0.0
98.00	Appurtenance(s)	124.4	75.5	935.9	0.0	0.0	1,440.0	27.4	209.8	1,087.7	1,725.3	0.0	0.0
100.00		144.5	149.5					55.0	419.5	199.5	569.0	0.0	0.0
101.50	Reinf. Top Reinf	194.0	110.8					41.5	354.7	235.5	465.5	0.0	0.0
104.75	Reinf. Top	142.4	236.0					90.7	580.5	233.1	816.5	0.0	0.0
105.00		209.7	17.9					7.0	24.2	216.8	42.2	0.0	0.0
110.00	Top - Section 3	354.0	351.9					141.7	394.9	495.6	746.8	0.0	0.0
115.00	Appurtenance(s)	245.0	255.0	308.6	0.0	0.0	672.0	0.0	694.6	553.6	1,621.6	0.0	0.0
118.00	Reinf. Top	105.7	148.4	535.6	0.0	1,071.2	314.6	0.0	416.8	641.3	879.8	0.0	0.0
118.50	Reinf. Top	29.9	24.4					0.0	30.7	29.9	55.1	0.0	0.0
119.00	Appurtenance(s)	44.7	24.3	17.6	0.0	0.0	12.0	0.0	12.3	62.3	48.6	0.0	0.0
120.00		176.0	48.3					0.0	20.2	176.0	68.5	0.0	0.0
125.00		231.9	235.7					0.0	101.0	231.9	336.7	0.0	0.0
128.00	Appurtenance(s)	141.9	136.8	3,012.1	0.0	390.2	4,387.2	0.0	60.6	3,154.0	4,584.6	0.0	0.0
130.00		193.7	89.3					0.0	23.0	193.7	112.2	0.0	0.0
135.00		217.7	216.4					0.0	57.4	217.7	273.8	0.0	0.0
138.00	Appurtenance(s)	132.8	125.2	1,443.8	0.0	5,775.3	1,254.7	0.0	34.5	1,576.6	1,414.4	0.0	0.0
140.00		78.5	81.5					0.0	15.8	78.5	97.3	0.0	0.0

Load Case: 1.2D + 1.0W 115 mph with No Ice 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

141.00	Appurtenance(s)	127.9	40.2	562.7	0.0	0.0	900.0	0.0	7.9	690.7	948.1	0.0	0.0
145.00		224.9	156.9					0.0	29.0	224.9	185.9	0.0	0.0
150.00	Appurtenance(s)	122.9	187.4	2,248.3	0.0	0.0	2,880.0	0.0	35.2	2,371.2	3,102.6	0.0	0.0
								Totals:		25,849.7	48,187.3	0.00	0.00

Load Case: 1.2D + 1.0W 115 mph with No Ice 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.46	-28.67	0.00	-3,094.80	0.00	3,094.80	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.584
5.00	-48.27	-28.27	0.00	-2,951.43	0.00	2,951.43	3,114.35	767.59	2,623.11	2,294.24	0.13	-0.24	0.567
10.00	-46.10	-27.93	0.00	-2,810.06	0.00	2,810.06	3,070.50	750.99	2,510.89	2,212.51	0.52	-0.49	0.551
14.92	-44.05	-27.69	0.00	-2,672.63	0.00	2,672.63	3,026.34	734.65	2,402.87	2,132.75	1.14	-0.72	0.535
14.92	-44.05	-27.69	0.00	-2,672.63	0.00	2,672.63	3,026.34	734.65	2,402.87	2,132.75	1.14	-0.72	0.752
15.00	-43.94	-27.60	0.00	-2,670.41	0.00	2,670.41	3,025.61	734.39	2,401.13	2,131.46	1.15	-0.73	0.752
20.00	-42.18	-27.29	0.00	-2,532.44	0.00	2,532.44	2,979.68	717.78	2,293.82	2,051.14	2.10	-1.07	0.732
25.00	-40.49	-26.98	0.00	-2,395.98	0.00	2,395.98	2,932.71	701.18	2,188.97	1,971.59	3.40	-1.41	0.711
30.00	-38.95	-26.74	0.00	-2,261.07	0.00	2,261.07	2,875.21	684.57	2,086.57	1,886.65	5.06	-1.75	0.692
31.00	-38.58	-26.63	0.00	-2,234.34	0.00	2,234.34	2,861.26	681.25	2,066.38	1,868.29	5.44	-1.82	0.688
31.50	-38.42	-26.60	0.00	-2,221.02	0.00	2,221.02	2,854.29	679.59	2,056.33	1,859.14	5.63	-1.86	0.687
32.00	-38.16	-26.51	0.00	-2,207.73	0.00	2,207.73	2,847.32	677.93	2,046.29	1,850.02	5.83	-1.89	0.676
34.00	-37.27	-26.35	0.00	-2,154.64	0.00	2,154.64	2,819.42	671.29	2,006.41	1,813.74	6.65	-2.03	0.668
35.00	-36.82	-26.28	0.00	-2,128.29	0.00	2,128.29	2,805.48	667.97	1,986.62	1,795.73	7.08	-2.10	0.665
35.67	-36.53	-26.24	0.00	-2,110.77	0.00	2,110.77	2,248.07	566.94	1,717.07	1,468.70	7.38	-2.14	0.763
36.00	-36.32	-26.08	0.00	-2,102.03	0.00	2,102.03	2,245.83	566.02	1,711.49	1,464.83	7.53	-2.17	0.761
40.00	-35.15	-25.76	0.00	-1,997.69	0.00	1,997.69	2,218.59	554.95	1,645.23	1,418.49	9.47	-2.46	0.737
45.00	-33.74	-25.37	0.00	-1,868.87	0.00	1,868.87	2,183.60	541.11	1,564.24	1,360.97	12.23	-2.81	0.707
50.00	-32.34	-24.95	0.00	-1,742.04	0.00	1,742.04	2,147.58	527.27	1,485.29	1,303.95	15.36	-3.16	0.676
55.00	-30.97	-24.51	0.00	-1,617.30	0.00	1,617.30	2,110.52	513.44	1,408.39	1,247.47	18.86	-3.51	0.645
60.00	-29.62	-24.05	0.00	-1,494.76	0.00	1,494.76	2,072.42	499.60	1,333.53	1,191.58	22.72	-3.85	0.612
65.00	-28.30	-23.57	0.00	-1,374.53	0.00	1,374.53	2,033.27	485.77	1,260.72	1,136.35	26.93	-4.19	0.579
70.00	-27.02	-23.11	0.00	-1,256.68	0.00	1,256.68	1,982.10	471.93	1,189.95	1,075.84	31.49	-4.52	0.547
73.50	-25.84	-22.79	0.00	-1,175.79	0.00	1,175.79	1,473.96	377.74	952.81	802.32	34.89	-4.75	0.608
75.00	-25.46	-22.53	0.00	-1,141.60	0.00	1,141.60	1,466.28	374.42	936.13	791.05	36.40	-4.84	0.595
80.00	-24.31	-22.01	0.00	-1,028.94	0.00	1,028.94	1,440.00	363.35	881.62	753.69	41.64	-5.17	0.549
85.00	-23.18	-21.48	0.00	-918.88	0.00	918.88	1,412.68	352.28	828.74	716.65	47.21	-5.48	0.503
90.00	-22.10	-21.06	0.00	-811.47	0.00	811.47	1,384.32	341.21	777.50	679.98	53.10	-5.77	0.456
91.06	-21.56	-20.93	0.00	-789.09	0.00	789.09	1,378.16	338.86	766.82	672.24	54.39	-5.84	0.443
91.06	-21.56	-20.93	0.00	-789.09	0.00	789.09	1,378.16	338.86	766.82	672.24	54.39	-5.84	0.446
91.58	-21.43	-20.78	0.00	-778.26	0.00	778.26	1,375.14	337.72	761.64	668.47	55.02	-5.87	0.441
95.00	-20.43	-20.40	0.00	-707.20	0.00	707.20	1,354.92	330.14	727.89	643.72	59.29	-6.06	0.288
97.00	-18.63	-17.79	0.00	-660.32	0.00	660.32	1,342.86	325.72	708.50	629.35	61.84	-6.13	0.271
98.00	-17.02	-16.54	0.00	-642.53	0.00	642.53	1,336.78	323.50	698.91	622.19	63.13	-6.17	0.264
100.00	-16.46	-16.30	0.00	-609.46	0.00	609.46	1,324.47	319.08	679.91	607.94	65.72	-6.24	0.253
101.50	-16.00	-16.03	0.00	-585.01	0.00	585.01	1,315.14	315.75	665.84	597.30	67.69	-6.29	0.243
101.50	-16.00	-16.03	0.00	-585.01	0.00	585.01	1,315.14	315.75	665.84	597.30	67.69	-6.29	0.338
104.75	-15.19	-15.73	0.00	-532.90	0.00	532.90	1,294.59	308.56	635.85	574.43	72.00	-6.40	0.315
104.75	-15.19	-15.73	0.00	-532.90	0.00	532.90	1,294.59	308.56	635.85	574.43	72.00	-6.40	0.539
105.00	-15.12	-15.56	0.00	-528.97	0.00	528.97	1,292.99	308.01	633.57	572.68	72.34	-6.41	0.536
110.00	-14.34	-15.07	0.00	-451.18	0.00	451.18	1,247.14	296.94	588.87	532.29	79.25	-6.79	0.484
110.00	-14.34	-15.07	0.00	-451.18	0.00	451.18	853.24	223.37	444.19	366.34	79.25	-6.79	0.000
115.00	-12.74	-14.38	0.00	-375.82	0.00	375.82	835.00	215.06	411.80	345.06	86.53	-7.13	0.315

Site Number: 302473 Code: ANSI/TIA-222-H

Site Name: E H F R - Prestige Park, CT Engineering Number:13677961_C3_02 6/8/2021 11:53:25 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.0W 115 mph with No Ice 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

118.00	-11.93	-13.65	0.00	-331.61	0.00	331.61	823.55	210.08	392.95	332.38	91.04	-7.27	0.283
118.00	-11.93	-13.65	0.00	-331.61	0.00	331.61	823.55	210.08	392.95	332.38	91.04	-7.27	0.557
118.50	-11.87	-13.62	0.00	-324.79	0.00	324.79	821.61	209.25	389.85	330.27	91.80	-7.29	0.548
118.50	-11.87	-13.62	0.00	-324.79	0.00	324.79	821.61	209.25	389.85	330.27	91.80	-7.29	1.002
119.00	-11.81	-13.57	0.00	-317.98	0.00	317.98	819.65	208.42	386.76	328.17	92.57	-7.33	0.988
120.00	-11.67	-13.47	0.00	-304.41	0.00	304.41	815.71	206.76	380.63	323.96	94.11	-7.48	0.958
125.00	-11.25	-13.30	0.00	-237.05	0.00	237.05	795.39	198.46	350.69	303.09	102.29	-8.15	0.801
128.00	-7.12	-9.55	0.00	-196.77	0.00	196.77	782.69	193.48	333.31	290.69	107.52	-8.52	0.688
130.00	-6.98	-9.39	0.00	-177.67	0.00	177.67	774.02	190.16	321.97	282.49	111.12	-8.75	0.640
135.00	-6.68	-9.17	0.00	-130.75	0.00	130.75	751.62	181.86	294.48	262.21	120.52	-9.24	0.510
138.00	-5.52	-7.40	0.00	-97.46	0.00	97.46	737.68	176.87	278.58	250.22	126.38	-9.49	0.399
140.00	-5.42	-7.32	0.00	-82.66	0.00	82.66	728.18	173.55	268.22	242.31	130.37	-9.64	0.350
141.00	-4.59	-6.49	0.00	-75.34	0.00	75.34	721.95	171.89	263.11	237.92	132.39	-9.70	0.324
145.00	-4.42	-6.25	0.00	-49.37	0.00	49.37	694.06	165.25	243.18	219.79	140.57	-9.92	0.232
150.00	0.00	-5.39	0.00	-18.11	0.00	18.11	659.19	156.95	219.37	198.13	151.01	-10.08	0.093

Load Case: 0.9D + 1.0W — 115 mph with No Ice (Reduced DL) — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		301.9	0.0					0.0	0.0	301.9	0.0	0.0	0.0
5.00		600.6	677.0					0.0	881.0	600.6	1,557.9	0.0	0.0
10.00		521.6	662.5					0.0	875.6	521.6	1,538.1	0.0	0.0
14.92	Reinf. Top	226.5	637.7					89.7	861.6	316.3	1,499.3	0.0	0.0
15.00		225.1	10.3					1.5	9.2	226.6	19.5	0.0	0.0
20.00		438.0	633.5					91.4	575.0	529.4	1,208.5	0.0	0.0
25.00		428.0	619.0					91.5	532.9	519.5	1,151.9	0.0	0.0
30.00		253.4	604.5					91.7	490.8	345.1	1,095.3	0.0	0.0
31.00	Appurtenance(s)	63.0	119.2	49.9	0.0	0.0	45.0	18.5	98.2	131.3	262.3	0.0	0.0
31.50	Bot - Section 2	42.5	59.4					9.3	49.1	51.8	108.4	0.0	0.0
32.00	Appurtenance(s)	107.9	109.6	22.7	0.0	0.0	9.0	9.3	49.1	139.9	167.7	0.0	0.0
34.00	Appurtenance(s)	129.8	435.9	23.6	0.0	70.9	9.0	37.8	196.0	191.2	640.9	0.0	0.0
35.00		72.5	216.3					19.1	97.9	91.6	314.2	0.0	0.0
35.67	Top - Section 1	43.6	143.6					12.9	65.3	56.4	208.9	0.0	0.0
36.00	Appurtenance(s)	190.1	32.9	52.1	0.0	0.0	45.0	6.4	32.6	248.7	110.6	0.0	0.0
40.00		397.2	391.2					78.7	391.5	475.9	782.8	0.0	0.0
45.00		444.7	478.2					101.7	489.4	546.4	967.6	0.0	0.0
50.00		446.7	466.1					105.2	489.4	551.9	955.5	0.0	0.0
55.00		447.2	454.0					108.4	489.4	555.6	943.4	0.0	0.0
60.00		446.2	441.9					111.4	489.4	557.6	931.4	0.0	0.0
65.00		444.0	429.9					114.3	489.4	558.4	919.3	0.0	0.0
70.00	Bot - Section 3	378.0	417.8					117.0	489.4	495.1	907.2	0.0	0.0
73.50	Top - Section 2	223.6	518.3					83.5	342.6	307.0	860.9	0.0	0.0
75.00		288.1	98.4					36.1	146.8	324.3	245.3	0.0	0.0
80.00		439.9	321.9					122.0	489.4	561.9	811.3	0.0	0.0
85.00		434.1	312.2					124.4	489.4	558.5	801.6	0.0	0.0
90.00		260.8	302.5					126.7	489.4	387.6	792.0	0.0	0.0
91.06	Reinf. Top Reinf	67.4	63.0					28.3	340.7	95.7	403.8	0.0	0.0
91.58	Reinf Bottom	166.6	30.5					13.8	50.7	180.5	81.2	0.0	0.0
95.00		228.4	199.3					92.1	544.2	320.5	743.5	0.0	0.0
97.00	Appurtenance(s)	125.4	114.4	2,250.7	0.0	6,067.6	1,106.5	54.4	318.2	2,430.5	1,539.2	0.0	0.0
98.00	Appurtenance(s)	124.4	56.6	935.9	0.0	0.0	1,080.0	27.4	157.3	1,087.7	1,294.0	0.0	0.0
100.00		144.5	112.1					55.0	314.6	199.5	426.8	0.0	0.0
101.50	Reinf. Top Reinf	194.0	83.1					41.5	266.0	235.5	349.1	0.0	0.0
104.75	Reinf. Top	142.4	177.0					90.7	435.4	233.1	612.4	0.0	0.0
105.00		209.7	13.4					7.0	18.2	216.8	31.6	0.0	0.0
110.00	Top - Section 3	354.0	263.9					141.7	296.2	495.6	560.1	0.0	0.0
115.00	Appurtenance(s)	245.0	191.3	308.6	0.0	0.0	504.0	0.0	521.0	553.6	1,216.2	0.0	0.0
118.00	Reinf. Top	105.7	111.3	535.6	0.0	1,071.2	236.0	0.0	312.6	641.3	659.8	0.0	0.0
118.50	Reinf. Top	29.9	18.3					0.0	23.0	29.9	41.3	0.0	0.0
119.00	Appurtenance(s)	44.7	18.2	17.6	0.0	0.0	9.0	0.0	9.2	62.3	36.4	0.0	0.0
120.00		176.0	36.2					0.0	15.2	176.0	51.4	0.0	0.0
125.00		231.9	176.8					0.0	75.8	231.9	252.6	0.0	0.0
128.00	Appurtenance(s)	141.9	102.6	3,012.1	0.0	390.2	3,290.4	0.0	45.5	3,154.0	3,438.5	0.0	0.0
130.00		193.7	66.9					0.0	17.2	193.7	84.2	0.0	0.0
135.00		217.7	162.3					0.0	43.1	217.7	205.4	0.0	0.0
138.00	Appurtenance(s)	132.8	93.9	1,443.8	0.0	5,775.3	941.0	0.0	25.8	1,576.6	1,060.8	0.0	0.0
140.00		78.5	61.2					0.0	11.8	78.5	73.0	0.0	0.0

Load Case: 0.9D + 1.0W — 115 mph with No Ice (Reduced DL) — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

141.00	Appurtenance(s)	127.9	30.1	562.7	0.0	0.0	675.0	0.0	5.9	690.7	711.1	0.0	0.0
145.00		224.9	117.7					0.0	21.8	224.9	139.4	0.0	0.0
150.00	Appurtenance(s)	122.9	140.6	2,248.3	0.0	0.0	2,160.0	0.0	26.4	2,371.2	2,327.0	0.0	0.0
								Totals:		25,849.7	36,140.4	0.00	0.00

Load Case: 0.9D + 1.0W 115 mph with No Ice (Reduced DL) 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.83	-28.65	0.00	-3,029.91	0.00	3,029.91	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.569
5.00	-36.16	-28.19	0.00	-2,886.68	0.00	2,886.68	3,114.35	767.59	2,623.11	2,294.24	0.13	-0.24	0.553
10.00	-34.51	-27.80	0.00	-2,745.72	0.00	2,745.72	3,070.50	750.99	2,510.89	2,212.51	0.50	-0.47	0.537
14.92	-32.96	-27.54	0.00	-2,608.94	0.00	2,608.94	3,026.34	734.65	2,402.87	2,132.75	1.12	-0.71	0.520
14.92	-32.96	-27.54	0.00	-2,608.94	0.00	2,608.94	3,026.34	734.65	2,402.87	2,132.75	1.12	-0.71	0.732
15.00	-32.86	-27.41	0.00	-2,606.73	0.00	2,606.73	3,025.61	734.39	2,401.13	2,131.46	1.13	-0.71	0.732
20.00	-31.50	-27.04	0.00	-2,469.69	0.00	2,469.69	2,979.68	717.78	2,293.82	2,051.14	2.05	-1.04	0.712
25.00	-30.21	-26.68	0.00	-2,334.47	0.00	2,334.47	2,932.71	701.18	2,188.97	1,971.59	3.33	-1.38	0.691
30.00	-29.03	-26.40	0.00	-2,201.09	0.00	2,201.09	2,875.21	684.57	2,086.57	1,886.65	4.95	-1.71	0.671
31.00	-28.75	-26.29	0.00	-2,174.68	0.00	2,174.68	2,861.26	681.25	2,066.38	1,868.29	5.31	-1.78	0.668
31.50	-28.63	-26.25	0.00	-2,161.54	0.00	2,161.54	2,854.29	679.59	2,056.33	1,859.14	5.50	-1.81	0.666
32.00	-28.43	-26.15	0.00	-2,148.41	0.00	2,148.41	2,847.32	677.93	2,046.29	1,850.02	5.69	-1.85	0.655
34.00	-27.75	-25.98	0.00	-2,096.05	0.00	2,096.05	2,819.42	671.29	2,006.41	1,813.74	6.49	-1.98	0.648
35.00	-27.41	-25.91	0.00	-2,070.06	0.00	2,070.06	2,805.48	667.97	1,986.62	1,795.73	6.92	-2.05	0.645
35.67	-27.19	-25.86	0.00	-2,052.79	0.00	2,052.79	2,248.07	566.94	1,717.07	1,468.70	7.21	-2.09	0.739
36.00	-27.02	-25.68	0.00	-2,044.17	0.00	2,044.17	2,245.83	566.02	1,711.49	1,464.83	7.35	-2.11	0.737
40.00	-26.12	-25.32	0.00	-1,941.45	0.00	1,941.45	2,218.59	554.95	1,645.23	1,418.49	9.24	-2.39	0.714
45.00	-25.03	-24.88	0.00	-1,814.87	0.00	1,814.87	2,183.60	541.11	1,564.24	1,360.97	11.94	-2.74	0.684
50.00	-23.96	-24.42	0.00	-1,690.49	0.00	1,690.49	2,147.58	527.27	1,485.29	1,303.95	14.99	-3.08	0.654
55.00	-22.91	-23.95	0.00	-1,568.39	0.00	1,568.39	2,110.52	513.44	1,408.39	1,247.47	18.40	-3.42	0.623
60.00	-21.88	-23.46	0.00	-1,448.66	0.00	1,448.66	2,072.42	499.60	1,333.53	1,191.58	22.15	-3.75	0.591
65.00	-20.87	-22.96	0.00	-1,331.37	0.00	1,331.37	2,033.27	485.77	1,260.72	1,136.35	26.25	-4.08	0.559
70.00	-19.90	-22.49	0.00	-1,216.59	0.00	1,216.59	1,982.10	471.93	1,189.95	1,075.84	30.69	-4.40	0.528
73.50	-19.00	-22.17	0.00	-1,137.88	0.00	1,137.88	1,473.96	377.74	952.81	802.32	33.99	-4.62	0.586
75.00	-18.71	-21.89	0.00	-1,104.64	0.00	1,104.64	1,466.28	374.42	936.13	791.05	35.46	-4.71	0.573
80.00	-17.83	-21.36	0.00	-995.19	0.00	995.19	1,440.00	363.35	881.62	753.69	40.55	-5.02	0.529
85.00	-16.98	-20.82	0.00	-888.40	0.00	888.40	1,412.68	352.28	828.74	716.65	45.97	-5.32	0.484
90.00	-16.16	-20.40	0.00	-784.31	0.00	784.31	1,384.32	341.21	777.50	679.98	51.69	-5.61	0.439
91.06	-15.76	-20.28	0.00	-762.64	0.00	762.64	1,378.16	338.86	766.82	672.24	52.95	-5.67	0.426
91.06	-15.76	-20.28	0.00	-762.64	0.00	762.64	1,378.16	338.86	766.82	672.24	52.95	-5.67	0.429
91.58	-15.66	-20.12	0.00	-752.14	0.00	752.14	1,375.14	337.72	761.64	668.47	53.56	-5.70	0.424
95.00	-14.90	-19.76	0.00	-683.32	0.00	683.32	1,354.92	330.14	727.89	643.72	57.71	-5.88	0.277
97.00	-13.61	-17.20	0.00	-637.73	0.00	637.73	1,342.86	325.72	708.50	629.35	60.18	-5.96	0.260
98.00	-12.42	-15.99	0.00	-620.53	0.00	620.53	1,336.78	323.50	698.91	622.19	61.43	-5.99	0.254
100.00	-12.00	-15.76	0.00	-588.55	0.00	588.55	1,324.47	319.08	679.91	607.94	63.96	-6.06	0.243
101.50	-11.66	-15.51	0.00	-564.90	0.00	564.90	1,315.14	315.75	665.84	597.30	65.86	-6.11	0.234
101.50	-11.66	-15.51	0.00	-564.90	0.00	564.90	1,315.14	315.75	665.84	597.30	65.86	-6.11	0.325
104.75	-11.06	-15.22	0.00	-514.50	0.00	514.50	1,294.59	308.56	635.85	574.43	70.06	-6.22	0.303
104.75	-11.06	-15.22	0.00	-514.50	0.00	514.50	1,294.59	308.56	635.85	574.43	70.06	-6.22	0.519
105.00	-11.00	-15.04	0.00	-510.70	0.00	510.70	1,292.99	308.01	633.57	572.68	70.38	-6.23	0.516
110.00	-10.41	-14.55	0.00	-435.50	0.00	435.50	1,247.14	296.94	588.87	532.29	77.09	-6.59	0.466
110.00	-10.41	-14.55	0.00	-435.50	0.00	435.50	853.24	223.37	444.19	366.34	77.09	-6.59	0.000
115.00	-9.21	-13.89	0.00	-362.77	0.00	362.77	835.00	215.06	411.80	345.06	84.15	-6.92	0.303

Load Case: 0.9D + 1.0W — 115 mph with No Ice (Reduced DL) — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

118.00	-8.62	-13.18	0.00	-320.03	0.00	320.03	823.55	210.08	392.95	332.38	88.54	-7.05	0.272
118.00	-8.62	-13.18	0.00	-320.03	0.00	320.03	823.55	210.08	392.95	332.38	88.54	-7.05	0.535
118.50	-8.57	-13.15	0.00	-313.43	0.00	313.43	821.61	209.25	389.85	330.27	89.27	-7.07	0.526
118.50	-8.57	-13.15	0.00	-313.43	0.00	313.43	821.61	209.25	389.85	330.27	89.27	-7.07	0.963
119.00	-8.52	-13.10	0.00	-306.86	0.00	306.86	819.65	208.42	386.76	328.17	90.01	-7.11	0.949
120.00	-8.40	-12.98	0.00	-293.75	0.00	293.75	815.71	206.76	380.63	323.96	91.52	-7.26	0.921
125.00	-8.07	-12.79	0.00	-228.85	0.00	228.85	795.39	198.46	350.69	303.09	99.45	-7.91	0.769
128.00	-5.07	-9.21	0.00	-190.09	0.00	190.09	782.69	193.48	333.31	290.69	104.52	-8.26	0.663
130.00	-4.96	-9.03	0.00	-171.68	0.00	171.68	774.02	190.16	321.97	282.49	108.01	-8.48	0.616
135.00	-4.73	-8.82	0.00	-126.51	0.00	126.51	751.62	181.86	294.48	262.21	117.12	-8.95	0.491
138.00	-3.91	-7.11	0.00	-94.28	0.00	94.28	737.68	176.87	278.58	250.22	122.81	-9.20	0.384
140.00	-3.84	-7.02	0.00	-80.07	0.00	80.07	728.18	173.55	268.22	242.31	126.68	-9.34	0.337
141.00	-3.23	-6.23	0.00	-73.04	0.00	73.04	721.95	171.89	263.11	237.92	128.63	-9.41	0.313
145.00	-3.11	-6.00	0.00	-48.11	0.00	48.11	694.06	165.25	243.18	219.79	136.57	-9.61	0.225
150.00	0.00	-5.39	0.00	-18.11	0.00	18.11	659.19	156.95	219.37	198.13	146.69	-9.78	0.093

Load Case: 1.2D + 1.0Di + 1.0Wi — 49 mph with 1.27 in Radial Ice — 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		44.7	0.0					0.0	0.0	44.7	0.0	0.0	0.0
5.00		88.7	1,142.4					0.0	1,308.6	88.7	2,450.9	0.0	0.0
10.00		86.6	1,146.1					0.0	1,318.6	86.6	2,464.7	0.0	0.0
14.92	Reinf. Top	43.3	1,117.1					0.0	1,306.2	43.3	2,423.3	0.0	0.0
15.00		43.4	18.1					0.0	14.9	43.4	33.0	0.0	0.0
20.00		84.8	1,119.3					0.0	932.8	84.8	2,052.1	0.0	0.0
25.00		83.5	1,101.0					0.0	846.8	83.5	1,947.8	0.0	0.0
30.00		49.7	1,081.1					0.0	758.4	49.7	1,839.5	0.0	0.0
31.00	Appurtenance(s)	12.4	214.2	13.5	0.0	0.0	80.3	0.0	151.9	25.9	446.5	0.0	0.0
31.50	Bot - Section 2	8.4	106.8					0.0	76.0	8.4	182.8	0.0	0.0
32.00	Appurtenance(s)	21.3	174.3	6.2	0.0	0.0	29.1	0.0	76.0	27.5	279.5	0.0	0.0
34.00	Appurtenance(s)	25.7	693.3	6.5	0.0	19.4	29.2	0.0	303.9	32.1	1,026.4	0.0	0.0
35.00		14.4	344.5					0.0	150.9	14.4	495.4	0.0	0.0
35.67	Top - Section 1	8.6	228.9					0.0	100.6	8.6	329.5	0.0	0.0
36.00	Appurtenance(s)	37.7	62.6	14.2	0.0	0.0	80.7	0.0	50.3	51.8	193.6	0.0	0.0
40.00		79.1	742.8					0.0	604.4	79.1	1,347.2	0.0	0.0
45.00		89.2	910.6					0.0	756.7	89.2	1,667.4	0.0	0.0
50.00		90.4	891.0					0.0	758.0	90.4	1,649.0	0.0	0.0
55.00		91.4	870.9					0.0	759.2	91.4	1,630.2	0.0	0.0
60.00		92.1	850.5					0.0	760.3	92.1	1,610.8	0.0	0.0
65.00		92.6	829.8					0.0	761.3	92.6	1,591.1	0.0	0.0
70.00	Bot - Section 3	79.5	808.8					0.0	762.3	79.5	1,571.1	0.0	0.0
73.50	Top - Section 2	47.2	868.2					0.0	534.1	47.2	1,402.3	0.0	0.0
75.00		61.2	206.8					0.0	229.0	61.2	435.8	0.0	0.0
80.00		94.1	675.0					0.0	764.0	94.1	1,439.0	0.0	0.0
85.00		94.0	656.6					12.5	764.8	106.5	1,421.4	0.0	0.0
90.00		56.9	638.1					20.5	765.5	77.4	1,403.6	0.0	0.0
91.06	Reinf. Top Reinf	14.8	133.8					5.1	485.6	19.9	619.3	0.0	0.0
91.58	Reinf Bottom	36.8	64.9					2.6	82.8	39.4	147.7	0.0	0.0
95.00		50.7	422.4					18.4	826.6	69.1	1,249.0	0.0	0.0
97.00	Appurtenance(s)	28.0	243.4	524.2	0.0	1,393.7	3,385.4	11.8	483.6	563.9	4,112.3	0.0	0.0
98.00	Appurtenance(s)	27.9	120.7	283.6	0.0	0.0	2,047.0	6.1	232.9	317.7	2,400.6	0.0	0.0
100.00		32.5	238.8					12.8	465.9	45.3	704.8	0.0	0.0
101.50	Reinf. Top Reinf	44.0	177.2					10.0	398.5	54.0	575.8	0.0	0.0
104.75	Reinf. Top	32.4	377.3					22.8	675.7	55.3	1,053.1	0.0	0.0
105.00		48.4	28.8					1.8	31.6	50.2	60.4	0.0	0.0
110.00	Top - Section 3	85.7	562.6					7.6	476.1	93.3	1,038.7	0.0	0.0
115.00	Appurtenance(s)	63.1	459.4	93.7	0.0	0.0	939.4	0.0	743.4	156.8	2,142.2	0.0	0.0
118.00	Reinf. Top	27.3	268.8	128.5	0.0	257.1	800.7	0.0	446.2	155.8	1,515.7	0.0	0.0
118.50	Reinf. Top	7.7	44.4					0.0	35.6	7.7	80.0	0.0	0.0
119.00	Appurtenance(s)	11.6	44.3	4.7	0.0	0.0	40.7	0.0	17.2	16.3	102.1	0.0	0.0
120.00		45.7	88.0					0.0	30.0	45.7	118.0	0.0	0.0
125.00		60.4	427.2					0.0	101.0	60.4	528.2	0.0	0.0
128.00	Appurtenance(s)	37.1	249.4	754.1	0.0	89.8	6,840.1	0.0	60.6	791.2	7,150.1	0.0	0.0
130.00		50.9	163.3					0.0	23.0	50.9	186.3	0.0	0.0
135.00		57.4	394.6					0.0	57.4	57.4	452.0	0.0	0.0
138.00	Appurtenance(s)	35.2	229.8	342.2	0.0	1,368.7	2,589.4	0.0	34.5	377.3	2,853.6	0.0	0.0
140.00		20.8	150.2					0.0	15.8	20.8	166.0	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 49 mph with 1.27 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

141.00	Appurtenance(s)	34.1	74.3	173.7	0.0	0.0	1,340.6	0.0	7.9	207.8	1,422.7	0.0	0.0
145.00		60.3	288.6					0.0	29.0	60.3	317.7	0.0	0.0
150.00	Appurtenance(s)	33.1	345.1	618.6	0.0	0.0	3,912.0	0.0	35.2	651.7	4,292.4	0.0	0.0
								Totals:		5,662.20	66,622.5	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 49 mph with 1.27 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-71.76	-6.33	0.00	-776.13	0.00	776.13	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.156
5.00	-69.30	-6.32	0.00	-744.46	0.00	744.46	3,114.35	767.59	2,623.11	2,294.24	0.03	-0.06	0.153
10.00	-66.83	-6.30	0.00	-712.87	0.00	712.87	3,070.50	750.99	2,510.89	2,212.51	0.13	-0.12	0.149
14.92	-64.40	-6.28	0.00	-681.88	0.00	681.88	3,026.34	734.65	2,402.87	2,132.75	0.29	-0.18	0.145
14.92	-64.40	-6.28	0.00	-681.88	0.00	681.88	3,026.34	734.65	2,402.87	2,132.75	0.29	-0.18	0.204
15.00	-64.36	-6.29	0.00	-681.38	0.00	681.38	3,025.61	734.39	2,401.13	2,131.46	0.29	-0.18	0.204
20.00	-62.30	-6.29	0.00	-649.94	0.00	649.94	2,979.68	717.78	2,293.82	2,051.14	0.53	-0.27	0.199
25.00	-60.35	-6.29	0.00	-618.48	0.00	618.48	2,932.71	701.18	2,188.97	1,971.59	0.86	-0.36	0.195
30.00	-58.50	-6.28	0.00	-587.03	0.00	587.03	2,875.21	684.57	2,086.57	1,886.65	1.29	-0.45	0.190
31.00	-58.05	-6.27	0.00	-580.74	0.00	580.74	2,861.26	681.25	2,066.38	1,868.29	1.38	-0.47	0.190
31.50	-57.87	-6.27	0.00	-577.61	0.00	577.61	2,854.29	679.59	2,056.33	1,859.14	1.43	-0.48	0.189
32.00	-57.59	-6.26	0.00	-574.48	0.00	574.48	2,847.32	677.93	2,046.29	1,850.02	1.48	-0.48	0.187
34.00	-56.56	-6.24	0.00	-561.94	0.00	561.94	2,819.42	671.29	2,006.41	1,813.74	1.69	-0.52	0.185
35.00	-56.06	-6.24	0.00	-555.70	0.00	555.70	2,805.48	667.97	1,986.62	1,795.73	1.80	-0.54	0.184
35.67	-55.73	-6.24	0.00	-551.54	0.00	551.54	2,248.07	566.94	1,717.07	1,468.70	1.88	-0.55	0.212
36.00	-55.53	-6.22	0.00	-549.46	0.00	549.46	2,245.83	566.02	1,711.49	1,464.83	1.92	-0.56	0.211
40.00	-54.18	-6.21	0.00	-524.57	0.00	524.57	2,218.59	554.95	1,645.23	1,418.49	2.42	-0.63	0.206
45.00	-52.50	-6.19	0.00	-493.52	0.00	493.52	2,183.60	541.11	1,564.24	1,360.97	3.13	-0.72	0.198
50.00	-50.84	-6.16	0.00	-462.59	0.00	462.59	2,147.58	527.27	1,485.29	1,303.95	3.94	-0.82	0.191
55.00	-49.21	-6.12	0.00	-431.81	0.00	431.81	2,110.52	513.44	1,408.39	1,247.47	4.84	-0.91	0.183
60.00	-47.59	-6.08	0.00	-401.22	0.00	401.22	2,072.42	499.60	1,333.53	1,191.58	5.85	-1.00	0.175
65.00	-45.99	-6.03	0.00	-370.84	0.00	370.84	2,033.27	485.77	1,260.72	1,136.35	6.94	-1.09	0.167
70.00	-44.41	-5.97	0.00	-340.70	0.00	340.70	1,982.10	471.93	1,189.95	1,075.84	8.14	-1.18	0.159
73.50	-43.01	-5.93	0.00	-319.80	0.00	319.80	1,473.96	377.74	952.81	802.32	9.03	-1.24	0.177
75.00	-42.57	-5.90	0.00	-310.90	0.00	310.90	1,466.28	374.42	936.13	791.05	9.42	-1.27	0.174
80.00	-41.12	-5.84	0.00	-281.39	0.00	281.39	1,440.00	363.35	881.62	753.69	10.80	-1.36	0.162
85.00	-39.69	-5.75	0.00	-252.20	0.00	252.20	1,412.68	352.28	828.74	716.65	12.27	-1.44	0.149
90.00	-38.29	-5.67	0.00	-223.43	0.00	223.43	1,384.32	341.21	777.50	679.98	13.82	-1.53	0.136
91.06	-37.67	-5.64	0.00	-217.40	0.00	217.40	1,378.16	338.86	766.82	672.24	14.17	-1.54	0.133
91.06	-37.67	-5.64	0.00	-217.40	0.00	217.40	1,378.16	338.86	766.82	672.24	14.17	-1.54	0.134
91.58	-37.52	-5.62	0.00	-214.48	0.00	214.48	1,375.14	337.72	761.64	668.47	14.33	-1.55	0.132
95.00	-36.27	-5.54	0.00	-195.26	0.00	195.26	1,354.92	330.14	727.89	643.72	15.46	-1.60	0.086
97.00	-32.17	-4.87	0.00	-182.78	0.00	182.78	1,342.86	325.72	708.50	629.35	16.14	-1.62	0.081
98.00	-29.78	-4.49	0.00	-177.91	0.00	177.91	1,336.78	323.50	698.91	622.19	16.48	-1.63	0.079
100.00	-29.08	-4.44	0.00	-168.92	0.00	168.92	1,324.47	319.08	679.91	607.94	17.17	-1.65	0.075
101.50	-28.50	-4.38	0.00	-162.27	0.00	162.27	1,315.14	315.75	665.84	597.30	17.69	-1.67	0.073
101.50	-28.50	-4.38	0.00	-162.27	0.00	162.27	1,315.14	315.75	665.84	597.30	17.69	-1.67	0.100
104.75	-27.45	-4.30	0.00	-148.05	0.00	148.05	1,294.59	308.56	635.85	574.43	18.84	-1.70	0.093
104.75	-27.45	-4.30	0.00	-148.05	0.00	148.05	1,294.59	308.56	635.85	574.43	18.84	-1.70	0.160
105.00	-27.39	-4.27	0.00	-146.98	0.00	146.98	1,292.99	308.01	633.57	572.68	18.93	-1.70	0.159
110.00	-26.34	-4.19	0.00	-125.62	0.00	125.62	1,247.14	296.94	588.87	532.29	20.77	-1.81	0.145
110.00	-26.34	-4.19	0.00	-125.62	0.00	125.62	853.24	223.37	444.19	366.34	20.77	-1.81	0.000
115.00	-24.20	-3.99	0.00	-104.65	0.00	104.65	835.00	215.06	411.80	345.06	22.71	-1.90	0.094

Load Case: 1.2D + 1.0Di + 1.0Wi 49 mph with 1.27 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

118.00	-22.69	-3.80	0.00	-92.41	0.00	92.41	823.55	210.08	392.95	332.38	23.92	-1.94	0.085
118.00	-22.69	-3.80	0.00	-92.41	0.00	92.41	823.55	210.08	392.95	332.38	23.92	-1.94	0.168
118.50	-22.61	-3.79	0.00	-90.51	0.00	90.51	821.61	209.25	389.85	330.27	24.12	-1.94	0.165
118.50	-22.61	-3.79	0.00	-90.51	0.00	90.51	821.61	209.25	389.85	330.27	24.12	-1.94	0.302
119.00	-22.51	-3.78	0.00	-88.62	0.00	88.62	819.65	208.42	386.76	328.17	24.33	-1.96	0.298
120.00	-22.38	-3.78	0.00	-84.84	0.00	84.84	815.71	206.76	380.63	323.96	24.74	-2.00	0.290
125.00	-21.85	-3.75	0.00	-65.95	0.00	65.95	795.39	198.46	350.69	303.09	26.94	-2.19	0.245
128.00	-14.73	-2.70	0.00	-54.61	0.00	54.61	782.69	193.48	333.31	290.69	28.34	-2.29	0.207
130.00	-14.54	-2.67	0.00	-49.21	0.00	49.21	774.02	190.16	321.97	282.49	29.32	-2.35	0.193
135.00	-14.09	-2.62	0.00	-35.86	0.00	35.86	751.62	181.86	294.48	262.21	31.85	-2.49	0.156
138.00	-11.25	-2.13	0.00	-26.63	0.00	26.63	737.68	176.87	278.58	250.22	33.44	-2.56	0.122
140.00	-11.09	-2.10	0.00	-22.38	0.00	22.38	728.18	173.55	268.22	242.31	34.52	-2.60	0.108
141.00	-9.67	-1.84	0.00	-20.28	0.00	20.28	721.95	171.89	263.11	237.92	35.06	-2.61	0.099
145.00	-9.36	-1.77	0.00	-12.92	0.00	12.92	694.06	165.25	243.18	219.79	37.28	-2.67	0.072
150.00	0.00	-1.33	0.00	-4.07	0.00	4.07	659.19	156.95	219.37	198.13	40.10	-2.71	0.021

Site Number: 302473 Code: ANSI/TIA-222-H

Site Name: E H F R - Prestige Park, CT Engineering Number:13677961_C3_02 6/8/2021 11:53:39 AM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		73.5	0.0					0.0	0.0	73.5	0.0	0.0	0.0
5.00		146.3	752.2					0.0	978.8	146.3	1,731.0	0.0	0.0
10.00		127.0	736.1					0.0	972.9	127.0	1,709.0	0.0	0.0
14.92	Reinf. Top	55.2	708.6					21.9	957.3	77.0	1,665.9	0.0	0.0
15.00		54.8	11.4					0.4	10.2	55.2	21.6	0.0	0.0
20.00		106.7	703.9					22.2	638.9	128.9	1,342.8	0.0	0.0
25.00		104.2	687.8					22.3	592.1	126.5	1,279.9	0.0	0.0
30.00		61.7	671.7					22.3	545.3	84.0	1,217.0	0.0	0.0
31.00	Appurtenance(s)	15.3	132.4	12.2	0.0	0.0	50.0	4.5	109.1	32.0	291.5	0.0	0.0
31.50	Bot - Section 2	10.4	66.0					2.3	54.5	12.6	120.5	0.0	0.0
32.00	Appurtenance(s)	26.3	121.8	5.5	0.0	0.0	10.0	2.3	54.5	34.1	186.3	0.0	0.0
34.00	Appurtenance(s)	31.6	484.3	5.8	0.0	17.3	10.0	9.2	217.8	46.6	712.1	0.0	0.0
35.00		17.6	240.4					4.7	108.8	22.3	349.1	0.0	0.0
35.67	Top - Section 1	10.6	159.6					3.1	72.5	13.7	232.1	0.0	0.0
36.00	Appurtenance(s)	46.3	36.6	12.7	0.0	0.0	50.0	1.6	36.3	60.6	122.9	0.0	0.0
40.00		96.7	434.7					19.2	435.0	115.9	869.7	0.0	0.0
45.00		108.3	531.3					24.8	543.8	133.1	1,075.1	0.0	0.0
50.00		108.8	517.9					25.6	543.8	134.4	1,061.7	0.0	0.0
55.00		108.9	504.5					26.4	543.8	135.3	1,048.3	0.0	0.0
60.00		108.7	491.0					27.1	543.8	135.8	1,034.8	0.0	0.0
65.00		108.1	477.6					27.8	543.8	136.0	1,021.4	0.0	0.0
70.00	Bot - Section 3	92.1	464.2					28.5	543.8	120.6	1,008.0	0.0	0.0
73.50	Top - Section 2	54.4	575.9					20.3	380.7	74.8	956.6	0.0	0.0
75.00		70.2	109.4					8.8	163.1	79.0	272.5	0.0	0.0
80.00		107.1	357.6					29.7	543.8	136.8	901.4	0.0	0.0
85.00		105.7	346.9					30.3	543.8	136.0	890.7	0.0	0.0
90.00		63.5	336.2					30.9	543.8	94.4	880.0	0.0	0.0
91.06	Reinf. Top Reinf	16.4	70.1					6.9	378.6	23.3	448.6	0.0	0.0
91.58	Reinf Bottom	40.6	33.9					3.4	56.3	43.9	90.2	0.0	0.0
95.00		55.6	221.4					22.4	604.7	78.0	826.1	0.0	0.0
97.00	Appurtenance(s)	30.5	127.2	548.1	0.0	1,477.5	1,229.5	13.2	353.6	591.9	1,710.3	0.0	0.0
98.00	Appurtenance(s)	30.3	62.9	227.9	0.0	0.0	1,200.0	6.7	174.8	264.9	1,437.7	0.0	0.0
100.00		35.2	124.6					13.4	349.6	48.6	474.2	0.0	0.0
101.50	Reinf. Top Reinf	47.2	92.3					10.1	295.6	57.3	387.9	0.0	0.0
104.75	Reinf. Top	34.7	196.7					22.1	483.7	56.8	680.4	0.0	0.0
105.00		51.1	14.9					1.7	20.2	52.8	35.1	0.0	0.0
110.00	Top - Section 3	86.2	293.2					34.5	329.1	120.7	622.4	0.0	0.0
115.00	Appurtenance(s)	59.7	212.5	75.1	0.0	0.0	560.0	0.0	578.8	134.8	1,351.4	0.0	0.0
118.00	Reinf. Top	25.7	123.6	130.4	0.0	260.8	262.2	0.0	347.3	156.2	733.2	0.0	0.0
118.50	Reinf. Top	7.3	20.3					0.0	25.6	7.3	45.9	0.0	0.0
119.00	Appurtenance(s)	10.9	20.2	4.3	0.0	0.0	10.0	0.0	10.2	15.2	40.5	0.0	0.0
120.00		42.9	40.3					0.0	16.8	42.9	57.1	0.0	0.0
125.00		56.5	196.4					0.0	84.2	56.5	280.6	0.0	0.0
128.00	Appurtenance(s)	34.6	114.0	733.5	0.0	95.0	3,656.0	0.0	50.5	768.0	3,820.5	0.0	0.0
130.00		47.2	74.4					0.0	19.1	47.2	93.5	0.0	0.0
135.00		53.0	180.3					0.0	47.8	53.0	228.2	0.0	0.0
138.00	Appurtenance(s)	32.3	104.3	351.6	0.0	1,406.3	1,045.6	0.0	28.7	383.9	1,178.6	0.0	0.0
140.00		19.1	67.9					0.0	13.1	19.1	81.1	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

141.00	Appurtenance(s)	31.2	33.5	137.0	0.0	0.0	750.0	0.0	6.6	168.2	790.1	0.0	0.0
145.00		54.8	130.7					0.0	24.2	54.8	154.9	0.0	0.0
150.00	Appurtenance(s)	29.9	156.2	547.5	0.0	0.0	2,400.0	0.0	29.3	577.4	2,585.5	0.0	0.0
								Totals:		6,294.58	40,156.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.10	-6.98	0.00	-745.10	0.00	745.10	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.145
5.00	-40.36	-6.87	0.00	-710.22	0.00	710.22	3,114.35	767.59	2,623.11	2,294.24	0.03	-0.06	0.141
10.00	-38.65	-6.78	0.00	-675.86	0.00	675.86	3,070.50	750.99	2,510.89	2,212.51	0.12	-0.12	0.137
14.92	-36.98	-6.72	0.00	-642.51	0.00	642.51	3,026.34	734.65	2,402.87	2,132.75	0.27	-0.17	0.133
14.92	-36.98	-6.72	0.00	-642.51	0.00	642.51	3,026.34	734.65	2,402.87	2,132.75	0.27	-0.17	0.187
15.00	-36.95	-6.69	0.00	-641.97	0.00	641.97	3,025.61	734.39	2,401.13	2,131.46	0.28	-0.18	0.186
20.00	-35.60	-6.61	0.00	-608.53	0.00	608.53	2,979.68	717.78	2,293.82	2,051.14	0.51	-0.26	0.181
25.00	-34.31	-6.52	0.00	-575.50	0.00	575.50	2,932.71	701.18	2,188.97	1,971.59	0.82	-0.34	0.176
30.00	-33.09	-6.46	0.00	-542.89	0.00	542.89	2,875.21	684.57	2,086.57	1,886.65	1.22	-0.42	0.171
31.00	-32.80	-6.43	0.00	-536.43	0.00	536.43	2,861.26	681.25	2,066.38	1,868.29	1.31	-0.44	0.170
31.50	-32.68	-6.42	0.00	-533.21	0.00	533.21	2,854.29	679.59	2,056.33	1,859.14	1.35	-0.45	0.170
32.00	-32.49	-6.40	0.00	-530.00	0.00	530.00	2,847.32	677.93	2,046.29	1,850.02	1.40	-0.45	0.167
34.00	-31.77	-6.36	0.00	-517.19	0.00	517.19	2,819.42	671.29	2,006.41	1,813.74	1.60	-0.49	0.166
35.00	-31.42	-6.34	0.00	-510.83	0.00	510.83	2,805.48	667.97	1,986.62	1,795.73	1.70	-0.50	0.165
35.67	-31.19	-6.33	0.00	-506.60	0.00	506.60	2,248.07	566.94	1,717.07	1,468.70	1.77	-0.52	0.189
36.00	-31.06	-6.29	0.00	-504.49	0.00	504.49	2,245.83	566.02	1,711.49	1,464.83	1.81	-0.52	0.188
40.00	-30.19	-6.21	0.00	-479.33	0.00	479.33	2,218.59	554.95	1,645.23	1,418.49	2.28	-0.59	0.183
45.00	-29.10	-6.10	0.00	-448.30	0.00	448.30	2,183.60	541.11	1,564.24	1,360.97	2.94	-0.68	0.175
50.00	-28.03	-6.00	0.00	-417.78	0.00	417.78	2,147.58	527.27	1,485.29	1,303.95	3.69	-0.76	0.167
55.00	-26.98	-5.89	0.00	-387.79	0.00	387.79	2,110.52	513.44	1,408.39	1,247.47	4.53	-0.84	0.160
60.00	-25.94	-5.77	0.00	-358.35	0.00	358.35	2,072.42	499.60	1,333.53	1,191.58	5.46	-0.93	0.152
65.00	-24.91	-5.65	0.00	-329.50	0.00	329.50	2,033.27	485.77	1,260.72	1,136.35	6.47	-1.01	0.144
70.00	-23.90	-5.54	0.00	-301.23	0.00	301.23	1,982.10	471.93	1,189.95	1,075.84	7.57	-1.08	0.136
73.50	-22.94	-5.46	0.00	-281.83	0.00	281.83	1,473.96	377.74	952.81	802.32	8.39	-1.14	0.151
75.00	-22.67	-5.40	0.00	-273.63	0.00	273.63	1,466.28	374.42	936.13	791.05	8.75	-1.16	0.148
80.00	-21.76	-5.27	0.00	-246.63	0.00	246.63	1,440.00	363.35	881.62	753.69	10.01	-1.24	0.137
85.00	-20.87	-5.14	0.00	-220.27	0.00	220.27	1,412.68	352.28	828.74	716.65	11.35	-1.31	0.125
90.00	-19.99	-5.04	0.00	-194.55	0.00	194.55	1,384.32	341.21	777.50	679.98	12.76	-1.39	0.114
91.06	-19.54	-5.01	0.00	-189.19	0.00	189.19	1,378.16	338.86	766.82	672.24	13.07	-1.40	0.111
91.06	-19.54	-5.01	0.00	-189.19	0.00	189.19	1,378.16	338.86	766.82	672.24	13.07	-1.40	0.111
91.58	-19.45	-4.98	0.00	-186.59	0.00	186.59	1,375.14	337.72	761.64	668.47	13.22	-1.41	0.110
95.00	-18.62	-4.89	0.00	-169.57	0.00	169.57	1,354.92	330.14	727.89	643.72	14.25	-1.45	0.072
97.00	-16.92	-4.26	0.00	-158.32	0.00	158.32	1,342.86	325.72	708.50	629.35	14.86	-1.47	0.067
98.00	-15.49	-3.96	0.00	-154.06	0.00	154.06	1,336.78	323.50	698.91	622.19	15.17	-1.48	0.066
100.00	-15.02	-3.90	0.00	-146.15	0.00	146.15	1,324.47	319.08	679.91	607.94	15.80	-1.50	0.063
101.50	-14.63	-3.84	0.00	-140.29	0.00	140.29	1,315.14	315.75	665.84	597.30	16.27	-1.51	0.060
101.50	-14.63	-3.84	0.00	-140.29	0.00	140.29	1,315.14	315.75	665.84	597.30	16.27	-1.51	0.084
104.75	-13.95	-3.77	0.00	-127.82	0.00	127.82	1,294.59	308.56	635.85	574.43	17.31	-1.54	0.078
104.75	-13.95	-3.77	0.00	-127.82	0.00	127.82	1,294.59	308.56	635.85	574.43	17.31	-1.54	0.134
105.00	-13.91	-3.73	0.00	-126.87	0.00	126.87	1,292.99	308.01	633.57	572.68	17.39	-1.54	0.133
110.00	-13.29	-3.61	0.00	-108.25	0.00	108.25	1,247.14	296.94	588.87	532.29	19.05	-1.63	0.120
110.00	-13.29	-3.61	0.00	-108.25	0.00	108.25	853.24	223.37	444.19	366.34	19.05	-1.63	0.000
115.00	-11.94	-3.45	0.00	-90.21	0.00	90.21	835.00	215.06	411.80	345.06	20.80	-1.71	0.078

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

118.00	-11.21	-3.27	0.00	-79.61	0.00	79.61	823.55	210.08	392.95	332.38	21.89	-1.74	0.070
118.00	-11.21	-3.27	0.00	-79.61	0.00	79.61	823.55	210.08	392.95	332.38	21.89	-1.74	0.139
118.50	-11.16	-3.26	0.00	-77.98	0.00	77.98	821.61	209.25	389.85	330.27	22.07	-1.75	0.137
118.50	-11.16	-3.26	0.00	-77.98	0.00	77.98	821.61	209.25	389.85	330.27	22.07	-1.75	0.250
119.00	-11.12	-3.25	0.00	-76.34	0.00	76.34	819.65	208.42	386.76	328.17	22.25	-1.76	0.246
120.00	-11.06	-3.23	0.00	-73.09	0.00	73.09	815.71	206.76	380.63	323.96	22.62	-1.79	0.239
125.00	-10.78	-3.18	0.00	-56.96	0.00	56.96	795.39	198.46	350.69	303.09	24.59	-1.96	0.202
128.00	-6.98	-2.29	0.00	-47.31	0.00	47.31	782.69	193.48	333.31	290.69	25.85	-2.04	0.172
130.00	-6.89	-2.25	0.00	-42.73	0.00	42.73	774.02	190.16	321.97	282.49	26.72	-2.10	0.160
135.00	-6.66	-2.20	0.00	-31.47	0.00	31.47	751.62	181.86	294.48	262.21	28.98	-2.22	0.129
138.00	-5.49	-1.78	0.00	-23.46	0.00	23.46	737.68	176.87	278.58	250.22	30.40	-2.28	0.101
140.00	-5.41	-1.76	0.00	-19.91	0.00	19.91	728.18	173.55	268.22	242.31	31.36	-2.31	0.090
141.00	-4.63	-1.56	0.00	-18.15	0.00	18.15	721.95	171.89	263.11	237.92	31.84	-2.33	0.083
145.00	-4.47	-1.50	0.00	-11.92	0.00	11.92	694.06	165.25	243.18	219.79	33.82	-2.38	0.061
150.00	0.00	-1.31	0.00	-4.41	0.00	4.41	659.19	156.95	219.37	198.13	36.34	-2.42	0.022

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	3.13
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	42.10 k
Seismic Base Shear (E):	1.26 k

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	186	4,036	0.011	14	230
49	143.00	155	3,168	0.009	11	192
48	140.50	40	791	0.002	3	50
47	139.00	81	1,567	0.004	5	101
46	136.50	133	2,479	0.007	9	165
45	132.50	228	4,006	0.011	14	283
44	129.00	94	1,556	0.004	5	116
43	126.50	165	2,633	0.007	9	204
42	122.50	281	4,211	0.012	15	348
41	119.50	57	815	0.002	3	71
40	118.75	30	430	0.001	2	38
39	118.25	46	642	0.002	2	57
38	116.50	471	6,392	0.018	22	584
37	112.50	791	10,016	0.028	35	981
36	107.50	622	7,192	0.020	25	772
35	104.88	35	387	0.001	1	44
34	103.13	680	7,236	0.020	25	844
33	100.75	388	3,938	0.011	14	481
32	99.00	474	4,648	0.013	16	588
31	97.50	238	2,260	0.006	8	295
30	96.00	481	4,431	0.012	16	596
29	93.29	826	7,189	0.020	25	1,024
28	91.32	90	752	0.002	3	112
27	90.53	449	3,677	0.010	13	556
26	87.50	880	6,737	0.019	24	1,091

25	82.50	891	6,062	0.017	21	1,105
24	77.50	901	5,414	0.015	19	1,118
23	74.25	273	1,502	0.004	5	338
22	71.75	957	4,925	0.014	17	1,186
21	67.50	1,008	4,593	0.013	16	1,250
20	62.50	1,021	3,990	0.011	14	1,267
19	57.50	1,035	3,421	0.009	12	1,283
18	52.50	1,048	2,889	0.008	10	1,300
17	47.50	1,062	2,395	0.007	8	1,317
16	42.50	1,075	1,942	0.005	7	1,333
15	38.00	870	1,256	0.003	4	1,079
14	35.83	73	94	0.000	0	90
13	35.33	232	290	0.001	1	288
12	34.50	349	416	0.001	1	433
11	33.00	702	765	0.002	3	871
10	31.75	176	178	0.000	1	219
9	31.25	120	118	0.000	0	149
8	30.50	241	225	0.001	1	299
7	27.50	1,217	920	0.003	3	1,509
6	22.50	1,280	648	0.002	2	1,587
5	17.50	1,343	411	0.001	1	1,665
4	14.96	22	5	0.000	0	27
3	12.46	1,666	259	0.001	1	2,066
2	7.50	1,709	96	0.000	0	2,119
1	2.50	1,731	11	0.000	0	2,147
Powerwave Allgon 702	150.00	13	297	0.001	1	16
Kaelus DBCT108F1V92-	150.00	42	938	0.003	3	52
Powerwave Allgon LGP	150.00	85	1,904	0.005	7	105
Raycap DC6-48-60-18-	150.00	60	1,350	0.004	5	74
Ericsson Radio 8843	150.00	216	4,853	0.013	17	267
Ericsson RRUS 4478 B	150.00	180	4,043	0.011	14	223
Ericsson RRUS 4449 B	150.00	213	4,793	0.013	17	264
Ericsson RRUS-32 B30	150.00	231	5,198	0.014	18	286
Powerwave Allgon 777	150.00	105	2,363	0.007	8	130
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.014	17	272
Kathrein Scala 80010	150.00	586	13,176	0.036	46	726
Generic Mount Reinfo	150.00	400	9,000	0.025	31	496
Flat Platform w/ Han	150.00	2,000	45,000	0.125	157	2,480
Round T-Arm	141.00	750	14,911	0.041	52	930
RFS IBC1900HG-2A	138.00	66	1,257	0.003	4	82
RFS IBC1900BB-1	138.00	66	1,257	0.003	4	82
Alcatel-Lucent 4X40W	138.00	178	3,399	0.009	12	221
Alcatel-Lucent 800 M	138.00	185	3,531	0.010	12	230
Alcatel-Lucent TD-RR	138.00	210	3,999	0.011	14	260
RFS APXVTM14-C-I20	138.00	159	3,022	0.008	11	197
RFS APXVSPP18-C-A20	138.00	57	1,086	0.003	4	71
RFS APXV9ERR18-C-A20	138.00	124	2,361	0.007	8	154
Ericsson Radio 4460	128.00	327	5,358	0.015	19	406
Ericsson Radio 4480	128.00	252	4,129	0.011	14	313
Ericsson Air6449 B41	128.00	312	5,112	0.014	18	387
Ericsson AIR32 B66Aa	128.00	397	6,498	0.018	23	492
RFS APXVAALL24 43-U-	128.00	368	6,036	0.017	21	457
Round Platform w/ Ha	128.00	2,000	32,768	0.091	115	2,480
Generic 12" x 12" Ju	119.00	10	142	0.000	0	12
DragonWave Horizon C	118.00	32	443	0.001	2	39
DragonWave A-ANT-23G	118.00	15	209	0.001	1	19
NextNet BTS-2500	118.00	105	1,462	0.004	5	130
Argus LLPX310R	118.00	86	1,195	0.003	4	106
DragonWave A-ANT-23G	118.00	25	343	0.001	1	31
Side Arms	115.00	560	7,406	0.021	26	694
Generic Flat Light S	98.00	1,200	11,525	0.032	40	1,488
Samsung Outdoor CBRS	97.00	56	525	0.001	2	69
Samsung Outdoor CBRS	97.00	13	124	0.000	0	16
Samsung B2/B66A RRH-	97.00	253	2,382	0.007	8	314

Samsung B5/B13 RRH-B	97.00	211	1,984	0.005	7	262
RFS DB-T1-6Z-8AB-0Z	97.00	88	828	0.002	3	109
Andrew SBNHH-1D65B	97.00	608	5,724	0.016	20	754
Stand-off	36.00	50	65	0.000	0	62
Generic GPS	34.00	10	12	0.000	0	12
Generic GPS	32.00	10	10	0.000	0	12
Stand-off	31.00	50	48	0.000	0	62
		42,105	361,002	1.000	1,263	52,214

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	186	4,036	0.011	14	160
49	143.00	155	3,168	0.009	11	133
48	140.50	40	791	0.002	3	34
47	139.00	81	1,567	0.004	5	70
46	136.50	133	2,479	0.007	9	114
45	132.50	228	4,006	0.011	14	196
44	129.00	94	1,556	0.004	5	80
43	126.50	165	2,633	0.007	9	141
42	122.50	281	4,211	0.012	15	241
41	119.50	57	815	0.002	3	49
40	118.75	30	430	0.001	2	26
39	118.25	46	642	0.002	2	39
38	116.50	471	6,392	0.018	22	405
37	112.50	791	10,016	0.028	35	680
36	107.50	622	7,192	0.020	25	535
35	104.88	35	387	0.001	1	30
34	103.13	680	7,236	0.020	25	585
33	100.75	388	3,938	0.011	14	334
32	99.00	474	4,648	0.013	16	408
31	97.50	238	2,260	0.006	8	204
30	96.00	481	4,431	0.012	16	413
29	93.29	826	7,189	0.020	25	710
28	91.32	90	752	0.002	3	78
27	90.53	449	3,677	0.010	13	386
26	87.50	880	6,737	0.019	24	757
25	82.50	891	6,062	0.017	21	766
24	77.50	901	5,414	0.015	19	775
23	74.25	273	1,502	0.004	5	234
22	71.75	957	4,925	0.014	17	823
21	67.50	1,008	4,593	0.013	16	867
20	62.50	1,021	3,990	0.011	14	878
19	57.50	1,035	3,421	0.009	12	890
18	52.50	1,048	2,889	0.008	10	901
17	47.50	1,062	2,395	0.007	8	913
16	42.50	1,075	1,942	0.005	7	924
15	38.00	870	1,256	0.003	4	748
14	35.83	73	94	0.000	0	63
13	35.33	232	290	0.001	1	200
12	34.50	349	416	0.001	1	300
11	33.00	702	765	0.002	3	604
10	31.75	176	178	0.000	1	152
9	31.25	120	118	0.000	0	104
8	30.50	241	225	0.001	1	208
7	27.50	1,217	920	0.003	3	1,046
6	22.50	1,280	648	0.002	2	1,101
5	17.50	1,343	411	0.001	1	1,155
4	14.96	22	5	0.000	0	19
3	12.46	1,666	259	0.001	1	1,433

2	7.50	1,709	96	0.000	0	1,470
1	2.50	1,731	11	0.000	0	1,488
Powerwave Allgon 702	150.00	13	297	0.001	1	11
Kaelus DBCT108F1V92-	150.00	42	938	0.003	3	36
Powerwave Allgon LGP	150.00	85	1,904	0.005	7	73
Raycap DC6-48-60-18-	150.00	60	1,350	0.004	5	52
Ericsson Radio 8843	150.00	216	4,853	0.013	17	185
Ericsson RRUS 4478 B	150.00	180	4,043	0.011	14	155
Ericsson RRUS 4449 B	150.00	213	4,793	0.013	17	183
Ericsson RRUS-32 B30	150.00	231	5,198	0.014	18	199
Powerwave Allgon 777	150.00	105	2,363	0.007	8	90
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.014	17	188
Kathrein Scala 80010	150.00	586	13,176	0.036	46	504
Generic Mount Reinfo	150.00	400	9,000	0.025	31	344
Flat Platform w/ Han	150.00	2,000	45,000	0.125	157	1,720
Round T-Arm	141.00	750	14,911	0.041	52	645
RFS IBC1900HG-2A	138.00	66	1,257	0.003	4	57
RFS IBC1900BB-1	138.00	66	1,257	0.003	4	57
Alcatel-Lucent 4X40W	138.00	178	3,399	0.009	12	153
Alcatel-Lucent 800 M	138.00	185	3,531	0.010	12	159
Alcatel-Lucent TD-RR	138.00	210	3,999	0.011	14	181
RFS APXVTM14-C-I20	138.00	159	3,022	0.008	11	136
RFS APXVSPP18-C-A20	138.00	57	1,086	0.003	4	49
RFS APXV9ERR18-C-A20	138.00	124	2,361	0.007	8	107
Ericsson Radio 4460	128.00	327	5,358	0.015	19	281
Ericsson Radio 4480	128.00	252	4,129	0.011	14	217
Ericsson Air6449 B41	128.00	312	5,112	0.014	18	268
Ericsson AIR32 B66Aa	128.00	397	6,498	0.018	23	341
RFS APXVAALL24 43-U-	128.00	368	6,036	0.017	21	317
Round Platform w/ Ha	128.00	2,000	32,768	0.091	115	1,720
Generic 12" x 12" Ju	119.00	10	142	0.000	0	9
DragonWave Horizon C	118.00	32	443	0.001	2	27
DragonWave A-ANT-23G	118.00	15	209	0.001	1	13
NextNet BTS-2500	118.00	105	1,462	0.004	5	90
Argus LLPX310R	118.00	86	1,195	0.003	4	74
DragonWave A-ANT-23G	118.00	25	343	0.001	1	21
Side Arms	115.00	560	7,406	0.021	26	482
Generic Flat Light S	98.00	1,200	11,525	0.032	40	1,032
Samsung Outdoor CBRS	97.00	56	525	0.001	2	48
Samsung Outdoor CBRS	97.00	13	124	0.000	0	11
Samsung B2/B66A RRH-	97.00	253	2,382	0.007	8	218
Samsung B5/B13 RRH-B	97.00	211	1,984	0.005	7	181
RFS DB-T1-6Z-8AB-0Z	97.00	88	828	0.002	3	76
Andrew SBNHH-1D65B	97.00	608	5,724	0.016	20	523
Stand-off	36.00	50	65	0.000	0	43
Generic GPS	34.00	10	12	0.000	0	9
Generic GPS	32.00	10	10	0.000	0	9
Stand-off	31.00	50	48	0.000	0	43
		42,105	361,002	1.000	1,263	36,205

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.07	-1.27	0.00	-164.85	0.00	164.85	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.039
5.00	-47.95	-1.28	0.00	-158.51	0.00	158.51	3,114.35	767.59	2,623.11	2,294.24	0.01	-0.01	0.038
10.00	-45.88	-1.29	0.00	-152.12	0.00	152.12	3,070.50	750.99	2,510.89	2,212.51	0.03	-0.03	0.037
14.92	-45.85	-1.29	0.00	-145.79	0.00	145.79	3,026.34	734.65	2,402.87	2,132.75	0.06	-0.04	0.037
14.92	-45.85	-1.29	0.00	-145.79	0.00	145.79	3,026.34	734.65	2,402.87	2,132.75	0.06	-0.04	0.051
15.00	-44.19	-1.30	0.00	-145.69	0.00	145.69	3,025.61	734.39	2,401.13	2,131.46	0.06	-0.04	0.050
20.00	-42.60	-1.31	0.00	-139.20	0.00	139.20	2,979.68	717.78	2,293.82	2,051.14	0.11	-0.06	0.049
25.00	-41.09	-1.32	0.00	-132.67	0.00	132.67	2,932.71	701.18	2,188.97	1,971.59	0.18	-0.08	0.048
30.00	-40.79	-1.32	0.00	-126.09	0.00	126.09	2,875.21	684.57	2,086.57	1,886.65	0.27	-0.10	0.047
31.00	-40.58	-1.32	0.00	-124.76	0.00	124.76	2,861.26	681.25	2,066.38	1,868.29	0.29	-0.10	0.047
31.50	-40.36	-1.32	0.00	-124.10	0.00	124.10	2,854.29	679.59	2,056.33	1,859.14	0.31	-0.10	0.047
32.00	-39.48	-1.32	0.00	-123.44	0.00	123.44	2,847.32	677.93	2,046.29	1,850.02	0.32	-0.10	0.046
34.00	-39.03	-1.32	0.00	-120.79	0.00	120.79	2,819.42	671.29	2,006.41	1,813.74	0.36	-0.11	0.046
35.00	-38.75	-1.33	0.00	-119.47	0.00	119.47	2,805.48	667.97	1,986.62	1,795.73	0.38	-0.12	0.046
35.67	-38.65	-1.33	0.00	-118.59	0.00	118.59	2,248.07	566.94	1,717.07	1,468.70	0.40	-0.12	0.053
36.00	-37.51	-1.33	0.00	-118.14	0.00	118.14	2,245.83	566.02	1,711.49	1,464.83	0.41	-0.12	0.052
40.00	-36.18	-1.33	0.00	-112.84	0.00	112.84	2,218.59	554.95	1,645.23	1,418.49	0.52	-0.14	0.051
45.00	-34.86	-1.33	0.00	-106.21	0.00	106.21	2,183.60	541.11	1,564.24	1,360.97	0.67	-0.16	0.049
50.00	-33.56	-1.33	0.00	-99.57	0.00	99.57	2,147.58	527.27	1,485.29	1,303.95	0.84	-0.18	0.047
55.00	-32.28	-1.32	0.00	-92.95	0.00	92.95	2,110.52	513.44	1,408.39	1,247.47	1.04	-0.20	0.046
60.00	-31.01	-1.31	0.00	-86.34	0.00	86.34	2,072.42	499.60	1,333.53	1,191.58	1.25	-0.22	0.044
65.00	-29.76	-1.30	0.00	-79.78	0.00	79.78	2,033.27	485.77	1,260.72	1,136.35	1.49	-0.23	0.042
70.00	-28.58	-1.29	0.00	-73.27	0.00	73.27	1,982.10	471.93	1,189.95	1,075.84	1.74	-0.25	0.040
73.50	-28.24	-1.29	0.00	-68.77	0.00	68.77	1,473.96	377.74	952.81	802.32	1.93	-0.27	0.045
75.00	-27.12	-1.27	0.00	-66.84	0.00	66.84	1,466.28	374.42	936.13	791.05	2.02	-0.27	0.044
80.00	-26.01	-1.25	0.00	-60.51	0.00	60.51	1,440.00	363.35	881.62	753.69	2.32	-0.29	0.041
85.00	-24.92	-1.23	0.00	-54.26	0.00	54.26	1,412.68	352.28	828.74	716.65	2.63	-0.31	0.038
90.00	-24.37	-1.22	0.00	-48.13	0.00	48.13	1,384.32	341.21	777.50	679.98	2.96	-0.33	0.035
91.06	-24.25	-1.21	0.00	-46.84	0.00	46.84	1,378.16	338.86	766.82	672.24	3.04	-0.33	0.034
91.06	-24.25	-1.21	0.00	-46.84	0.00	46.84	1,378.16	338.86	766.82	672.24	3.04	-0.33	0.035
91.58	-23.23	-1.19	0.00	-46.21	0.00	46.21	1,375.14	337.72	761.64	668.47	3.07	-0.33	0.034
95.00	-22.63	-1.17	0.00	-42.15	0.00	42.15	1,354.92	330.14	727.89	643.72	3.32	-0.34	0.022
97.00	-20.81	-1.11	0.00	-39.82	0.00	39.82	1,342.86	325.72	708.50	629.35	3.46	-0.35	0.021
98.00	-18.74	-1.04	0.00	-38.71	0.00	38.71	1,336.78	323.50	698.91	622.19	3.54	-0.35	0.020
100.00	-18.26	-1.03	0.00	-36.62	0.00	36.62	1,324.47	319.08	679.91	607.94	3.68	-0.36	0.019
101.50	-17.41	-1.00	0.00	-35.08	0.00	35.08	1,315.14	315.75	665.84	597.30	3.80	-0.36	0.018
101.50	-17.41	-1.00	0.00	-35.08	0.00	35.08	1,315.14	315.75	665.84	597.30	3.80	-0.36	0.025
104.75	-17.37	-1.00	0.00	-31.83	0.00	31.83	1,294.59	308.56	635.85	574.43	4.04	-0.37	0.023
104.75	-17.37	-1.00	0.00	-31.83	0.00	31.83	1,294.59	308.56	635.85	574.43	4.04	-0.37	0.040
105.00	-16.60	-0.97	0.00	-31.58	0.00	31.58	1,292.99	308.01	633.57	572.68	4.06	-0.37	0.039
110.00	-15.62	-0.94	0.00	-26.73	0.00	26.73	1,247.14	296.94	588.87	532.29	4.46	-0.39	0.035
110.00	-15.62	-0.94	0.00	-26.73	0.00	26.73	853.24	223.37	444.19	366.34	4.46	-0.39	0.000
115.00	-14.34	-0.88	0.00	-22.05	0.00	22.05	835.00	215.06	411.80	345.06	4.87	-0.41	0.023
118.00	-13.96	-0.87	0.00	-19.40	0.00	19.40	823.55	210.08	392.95	332.38	5.13	-0.42	0.021
118.00	-13.96	-0.87	0.00	-19.40	0.00	19.40	823.55	210.08	392.95	332.38	5.13	-0.42	0.042
118.50	-13.92	-0.86	0.00	-18.97	0.00	18.97	821.61	209.25	389.85	330.27	5.18	-0.42	0.041
118.50	-13.92	-0.86	0.00	-18.97	0.00	18.97	821.61	209.25	389.85	330.27	5.18	-0.42	0.074

119.00	-13.84	-0.86	0.00	-18.54	0.00	18.54	819.65	208.42	386.76	328.17	5.22	-0.42	0.073
120.00	-13.49	-0.85	0.00	-17.68	0.00	17.68	815.71	206.76	380.63	323.96	5.31	-0.43	0.071
125.00	-13.28	-0.85	0.00	-13.43	0.00	13.43	795.39	198.46	350.69	303.09	5.78	-0.47	0.061
128.00	-8.63	-0.59	0.00	-10.89	0.00	10.89	782.69	193.48	333.31	290.69	6.08	-0.49	0.049
130.00	-8.35	-0.58	0.00	-9.70	0.00	9.70	774.02	190.16	321.97	282.49	6.29	-0.50	0.045
135.00	-8.19	-0.57	0.00	-6.80	0.00	6.80	751.62	181.86	294.48	262.21	6.83	-0.53	0.037
138.00	-6.79	-0.49	0.00	-5.08	0.00	5.08	737.68	176.87	278.58	250.22	7.16	-0.54	0.030
140.00	-6.74	-0.48	0.00	-4.10	0.00	4.10	728.18	173.55	268.22	242.31	7.39	-0.55	0.026
141.00	-5.62	-0.41	0.00	-3.62	0.00	3.62	721.95	171.89	263.11	237.92	7.50	-0.55	0.023
145.00	-5.39	-0.40	0.00	-1.98	0.00	1.98	694.06	165.25	243.18	219.79	7.97	-0.56	0.017
150.00	0.00	-0.34	0.00	0.00	0.00	0.00	659.19	156.95	219.37	198.13	8.56	-0.56	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.72	-1.27	0.00	-160.39	0.00	160.39	3,157.17	784.20	2,737.77	2,376.61	0.00	0.00	0.036
5.00	-33.25	-1.27	0.00	-154.06	0.00	154.06	3,114.35	767.59	2,623.11	2,294.24	0.01	-0.01	0.035
10.00	-31.81	-1.28	0.00	-147.69	0.00	147.69	3,070.50	750.99	2,510.89	2,212.51	0.03	-0.03	0.034
14.92	-31.80	-1.28	0.00	-141.40	0.00	141.40	3,026.34	734.65	2,402.87	2,132.75	0.06	-0.04	0.033
14.92	-31.80	-1.28	0.00	-141.40	0.00	141.40	3,026.34	734.65	2,402.87	2,132.75	0.06	-0.04	0.046
15.00	-30.64	-1.28	0.00	-141.30	0.00	141.30	3,025.61	734.39	2,401.13	2,131.46	0.06	-0.04	0.046
20.00	-29.54	-1.29	0.00	-134.88	0.00	134.88	2,979.68	717.78	2,293.82	2,051.14	0.11	-0.06	0.045
25.00	-28.49	-1.30	0.00	-128.42	0.00	128.42	2,932.71	701.18	2,188.97	1,971.59	0.18	-0.07	0.044
30.00	-28.28	-1.30	0.00	-121.94	0.00	121.94	2,875.21	684.57	2,086.57	1,886.65	0.27	-0.09	0.043
31.00	-28.14	-1.30	0.00	-120.64	0.00	120.64	2,861.26	681.25	2,066.38	1,868.29	0.29	-0.10	0.043
31.50	-27.99	-1.30	0.00	-119.99	0.00	119.99	2,854.29	679.59	2,056.33	1,859.14	0.30	-0.10	0.043
32.00	-27.37	-1.30	0.00	-119.34	0.00	119.34	2,847.32	677.93	2,046.29	1,850.02	0.31	-0.10	0.042
34.00	-27.07	-1.30	0.00	-116.74	0.00	116.74	2,819.42	671.29	2,006.41	1,813.74	0.35	-0.11	0.042
35.00	-26.87	-1.30	0.00	-115.44	0.00	115.44	2,805.48	667.97	1,986.62	1,795.73	0.37	-0.11	0.042
35.67	-26.80	-1.30	0.00	-114.58	0.00	114.58	2,248.07	566.94	1,717.07	1,468.70	0.39	-0.11	0.048
36.00	-26.01	-1.30	0.00	-114.14	0.00	114.14	2,245.83	566.02	1,711.49	1,464.83	0.40	-0.12	0.048
40.00	-25.09	-1.30	0.00	-108.95	0.00	108.95	2,218.59	554.95	1,645.23	1,418.49	0.50	-0.13	0.047
45.00	-24.17	-1.29	0.00	-102.47	0.00	102.47	2,183.60	541.11	1,564.24	1,360.97	0.65	-0.15	0.045
50.00	-23.27	-1.29	0.00	-95.99	0.00	95.99	2,147.58	527.27	1,485.29	1,303.95	0.82	-0.17	0.043
55.00	-22.38	-1.28	0.00	-89.55	0.00	89.55	2,110.52	513.44	1,408.39	1,247.47	1.00	-0.19	0.041
60.00	-21.50	-1.27	0.00	-83.14	0.00	83.14	2,072.42	499.60	1,333.53	1,191.58	1.21	-0.21	0.040
65.00	-20.64	-1.26	0.00	-76.77	0.00	76.77	2,033.27	485.77	1,260.72	1,136.35	1.44	-0.23	0.038
70.00	-19.81	-1.24	0.00	-70.47	0.00	70.47	1,982.10	471.93	1,189.95	1,075.84	1.69	-0.25	0.036
73.50	-19.58	-1.24	0.00	-66.12	0.00	66.12	1,473.96	377.74	952.81	802.32	1.87	-0.26	0.040
75.00	-18.80	-1.22	0.00	-64.26	0.00	64.26	1,466.28	374.42	936.13	791.05	1.95	-0.26	0.039
80.00	-18.04	-1.20	0.00	-58.14	0.00	58.14	1,440.00	363.35	881.62	753.69	2.24	-0.28	0.037
85.00	-17.28	-1.18	0.00	-52.12	0.00	52.12	1,412.68	352.28	828.74	716.65	2.54	-0.30	0.034
90.00	-16.89	-1.17	0.00	-46.22	0.00	46.22	1,384.32	341.21	777.50	679.98	2.87	-0.32	0.031
91.06	-16.82	-1.17	0.00	-44.97	0.00	44.97	1,378.16	338.86	766.82	672.24	2.94	-0.32	0.031
91.06	-16.82	-1.17	0.00	-44.97	0.00	44.97	1,378.16	338.86	766.82	672.24	2.94	-0.32	0.031
91.58	-16.11	-1.14	0.00	-44.37	0.00	44.37	1,375.14	337.72	761.64	668.47	2.97	-0.32	0.030
95.00	-15.69	-1.12	0.00	-40.47	0.00	40.47	1,354.92	330.14	727.89	643.72	3.21	-0.33	0.020
97.00	-14.43	-1.07	0.00	-38.22	0.00	38.22	1,342.86	325.72	708.50	629.35	3.35	-0.34	0.019
98.00	-12.99	-1.00	0.00	-37.15	0.00	37.15	1,336.78	323.50	698.91	622.19	3.42	-0.34	0.018
100.00	-12.66	-0.99	0.00	-35.14	0.00	35.14	1,324.47	319.08	679.91	607.94	3.56	-0.34	0.017
101.50	-12.07	-0.96	0.00	-33.66	0.00	33.66	1,315.14	315.75	665.84	597.30	3.67	-0.35	0.016
101.50	-12.07	-0.96	0.00	-33.66	0.00	33.66	1,315.14	315.75	665.84	597.30	3.67	-0.35	0.022
104.75	-12.04	-0.96	0.00	-30.53	0.00	30.53	1,294.59	308.56	635.85	574.43	3.91	-0.35	0.021
104.75	-12.04	-0.96	0.00	-30.53	0.00	30.53	1,294.59	308.56	635.85	574.43	3.91	-0.35	0.036
105.00	-11.51	-0.94	0.00	-30.29	0.00	30.29	1,292.99	308.01	633.57	572.68	3.93	-0.35	0.035
110.00	-10.83	-0.90	0.00	-25.62	0.00	25.62	1,247.14	296.94	588.87	532.29	4.31	-0.37	0.032
110.00	-10.83	-0.90	0.00	-25.62	0.00	25.62	853.24	223.37	444.19	366.34	4.31	-0.37	0.000
115.00	-9.94	-0.85	0.00	-21.12	0.00	21.12	835.00	215.06	411.80	345.06	4.71	-0.39	0.021
118.00	-9.68	-0.83	0.00	-18.58	0.00	18.58	823.55	210.08	392.95	332.38	4.96	-0.40	0.019
118.00	-9.68	-0.83	0.00	-18.58	0.00	18.58	823.55	210.08	392.95	332.38	4.96	-0.40	0.037
118.50	-9.65	-0.83	0.00	-18.16	0.00	18.16	821.61	209.25	389.85	330.27	5.00	-0.40	0.037
118.50	-9.65	-0.83	0.00	-18.16	0.00	18.16	821.61	209.25	389.85	330.27	5.00	-0.40	0.067

119.00	-9.59	-0.83	0.00	-17.75	0.00	17.75	819.65	208.42	386.76	328.17	5.04	-0.40	0.066
120.00	-9.35	-0.81	0.00	-16.92	0.00	16.92	815.71	206.76	380.63	323.96	5.13	-0.41	0.064
125.00	-9.21	-0.81	0.00	-12.84	0.00	12.84	795.39	198.46	350.69	303.09	5.58	-0.45	0.054
128.00	-5.99	-0.57	0.00	-10.42	0.00	10.42	782.69	193.48	333.31	290.69	5.87	-0.47	0.043
130.00	-5.79	-0.56	0.00	-9.28	0.00	9.28	774.02	190.16	321.97	282.49	6.07	-0.48	0.040
135.00	-5.68	-0.55	0.00	-6.50	0.00	6.50	751.62	181.86	294.48	262.21	6.59	-0.51	0.032
138.00	-4.71	-0.47	0.00	-4.85	0.00	4.85	737.68	176.87	278.58	250.22	6.91	-0.52	0.026
140.00	-4.67	-0.46	0.00	-3.92	0.00	3.92	728.18	173.55	268.22	242.31	7.13	-0.53	0.023
141.00	-3.90	-0.39	0.00	-3.46	0.00	3.46	721.95	171.89	263.11	237.92	7.24	-0.53	0.020
145.00	-3.74	-0.38	0.00	-1.89	0.00	1.89	694.06	165.25	243.18	219.79	7.69	-0.54	0.014
150.00	0.00	-0.34	0.00	0.00	0.00	0.00	659.19	156.95	219.37	198.13	8.26	-0.54	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.0W	28.67	0.00	50.46	0.00	0.00	3094.80	118.50	1.00
0.9D + 1.0W	28.65	0.00	37.83	0.00	0.00	3029.91	118.50	0.96
1.2D + 1.0Di + 1.0Wi	6.33	0.00	71.76	0.00	0.00	776.13	118.50	0.30
1.2D + 1.0Ev + 1.0Eh	1.27	0.00	50.07	0.00	0.00	164.85	118.50	0.07
0.9D - 1.0Ev + 1.0Eh	1.27	0.00	34.72	0.00	0.00	160.39	118.50	0.07
1.0D + 1.0W	6.98	0.00	42.10	0.00	0.00	745.10	118.50	0.25

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	91.06	(4) SOL-#20 All Thread Bar	419.2	12.6	16.8	0.748	311.5	330.5	0.943
0.00	14.92	(4) SOL-#20 All Thread Bar	188.8	7.0	16.8	0.415	233.9	319.1	0.733
91.06	101.50	(4) SOL-#20 All Thread Bar	419.8	12.6	16.8	0.749	192.7	330.5	0.583
91.58	104.75	(4) PL-PL 4 x 1.25	281.6	6.8	38.3	0.177	123.6	220.3	0.561
101.50	110.00	(4) PL-PL 3" x 1"	295.6	7.1	38.3	0.185	119.7	116.3	1.028
110.00	118.50	(3) PL-PL 3" x 1"	392.2	9.4	38.3	0.246	115.6	116.3	0.994
110.00	118.00	(3) PL-PL 5" x 1.25"	425.5	10.2	38.3	0.267	141.8	295.3	0.480

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	91.06	(4) SOL-#20 All Thread Bar	0.0	12.0	0	0	0.000	0.0	12.0	0	0	0.000
0.00	14.92	(4) SOL-#20 All Thread Bar	218.6	12.0	19	24	0.759	0.0	12.0	0	0	0.000
91.06	101.50	(4) SOL-#20 All Thread Bar	108.4	12.0	10	12	0.753	0.0	12.0	0	0	0.000
91.58	104.75	(4) PL-PL 4 x 1.25	114.5	38.3	3	6	0.499	108.8	38.3	3	6	0.474
101.50	110.00	(4) PL-PL 3" x 1"	106.2	38.3	3	6	0.463	73.3	38.3	2	6	0.319
110.00	118.50	(3) PL-PL 3" x 1"	0.0	38.3	0	6	0.000	0.0	38.3	0	6	0.000
110.00	118.00	(3) PL-PL 5" x 1.25"	121.2	38.3	4	8	0.396	152.8	38.3	4	8	0.499

Base Plate & Anchor Rod Analysis

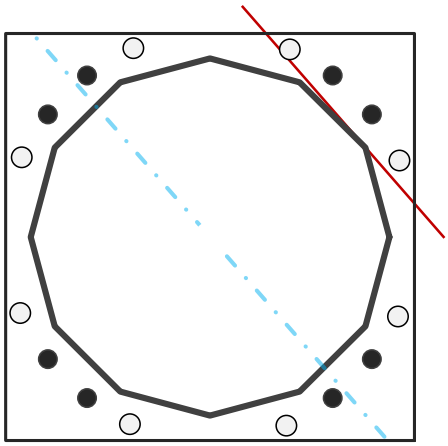
Pole Dimensions		
Number of Sides	12	-
Diameter	37.38	in
Thickness	3/8	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3,094.8	k-ft
Axial, Pu	50.5	k
Shear, Vu	28.7	k
Neutral Axis	311	°

Report Capacities		
Component	Capacity	Result
Base Plate	51%	Pass
Anchor Rods	76%	Pass
Dwyidag	62%	Pass

Base Plate		
Shape	Square	-
Width	44.25	in
Thickness	2 1/2	in
Grade	A633 Gr. E	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	0	in
Orientation Offset		°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	1098.0	k
Bending Stress, ϕMn	2136.7	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, ø	2 1/4	in
Bolt Circle	44	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset		°
Applied Force, Pu	185.2	k
Anchor Rods, ϕPn	243.6	k



Dywidag Reinforcement		
Quantity	8	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	44.26	in
Orientation Offset	22	°
Applied Force, Pu	227.8	k
Dywidag Bar, ϕPn	368.2	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	28.7	1342.6	0.43
Anchor Rod Forces	28.7	1342.6	0.43
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1752.2	0.57
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	43.0992	3.5916	0.1692		7379.37
Bolt	3.9761	3.2477	0.8393	4.5	6294.24
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		9631.30
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	44.25	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	23.681	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	44	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	185.2	k
Applied Shear, Vu	0.4	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.760	OK
Interaction Capacity	0.764	OK

External Base Plate		
Chord Length AA	25.074	in
Additional AA	0.250	in
Section Modulus, Z	39.569	in^3
Applied Moment, Mu	1098.0	k-ft
Bending Capacity, ϕMn	2136.7	k-ft
Capacity, Mu/ϕMn	0.514	OK
Chord Length AB	23.751	in
Additional AB	0.250	in
Section Modulus, Z	37.501	in^3
Applied Moment, Mu	855.2	k-ft
Bending Capacity, ϕMn	2025.1	k-ft
Capacity, Mu/ϕMn	0.422	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Dywidag Reinforcement		
Dywidag Quantity, N	8	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	44.26	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	227.8	k
Compressive Capacity, ϕPn	368.2	k
Capacity, Pu/ϕPn	0.619	OK

Flange Plate Analysis

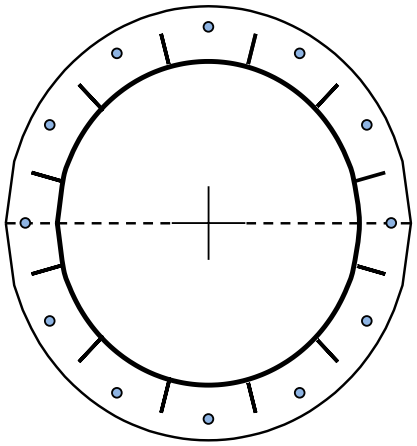
Flange Plate			
	Plate Type	***Flange***	***@ 110 ft***
	Pole Diameter	21.2543	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	60	ksi
	Weld Length	3/16	in
	f_s Resistance	174.38	k-in
	Applied	103.13	k-in

Code Rev.	***H***		
Moment	451.2 k-ft		
Axial	14.3 k		

Date	6/8/2021
Engineer	Siddharth.Yadav
Site #	302473
Carrier	T-MOBILE

Stiffeners			
	#	***12***	***Show***
	Thickness	1/2	in
	Length	3	in
	Height	5	in
	Chamfer	1	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1 1/8	in
	Type	A490	
	Fy	130	ksi
	Fu	150	ksi
	f_s Resistance	68.15	k
	Applied	68.85	k



Reinforcement			
	#		

Plate Stress Ratio:

59% Pass

Bolt Stress Ratio:

101% Fail

Extra Bolts			
	#		

Site Name: E H F R - Prestige Park, CT
Site Number: 302473
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

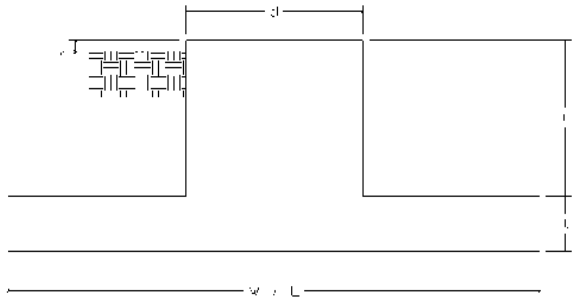
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	50.5	k
Uplift/Leg:	0.0	k
Total Shear:	28.7	k
Moment:	3,094.8	k-ft
Tower + Appurtenance Weight:	50.5	k
Depth to Base of Foundation (l + t - h):	8	ft
Diameter of Pier (d):	4.333333	ft
Length of Pier (l):	5.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	18	ft
Length of Pad (L):	18	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	12	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.40	-
Ultimate Compressive Bearing Pressure:	10,675	psf
Ultimate Passive Pressure on Pad Face:	1,465	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Overturning Moment Usage		
Design OTM:	3338.5	k-ft
OTM Resistance:	3415.7	k-ft
Design OTM / OTM Resistance:	98%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	1871	psf
Factored Nominal Bearing Pressure:	8006	psf
Factored Nominal (Net) Bearing Pressure:	23%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	154.2	k
Ultimate Passive Pressure Resistance:	59.3	k
Total Factored Sliding Resistance:	160.2	k
Sliding Design / Sliding Resistance:	18%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	28.7	k
Shear/Leg (Uplift):	28.7	k
Concrete Strength (f'_c):	4,000	psi
Pad Tension Steel Depth:	32.38	in
Dead Load Factor:	0.9	-
f_{Shear}:	0.75	-
$f_{Flexure\ /\ Tension}$:	0.9	-
$f_{Compression:}$	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	10	-
# of Bottom Pad Rebar:	36	-
Pad Bottom Steel Area:	45.72	in^2
Pad Steel F_y:	60,000	psi
Top Pad Rebar Size #:	5	-
# of Top Pad Rebar:	36	-
Pad Top Steel Area:	11.16	in^2
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in^2
# of Pier Rebar:	52	-
Pier Steel F_y:	60,000	psi
Pier Cage Diameter:	43.6	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in^2
Tie Spacing:	12	in
Tie Steel F_y:	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	139.2	k	
One Way Shear Capacity (fV_c):	663.4	k	*ACI 318-14 25.5.5.1*
V_u / fV_c:	21%	Pass	
Load Direction Controling Shear Capacity:	*Parallel to Pad Edge*		
Lower Steel Pad Factored Moment (M_u):	615.9	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	6334.2	k-ft	*ACI 318-14 22.3.1.1*
M_u / fM_n:	10%	Pass	
Load Direction Controling Flexural Capacity:	*Parallel to Pad Edge*		
Upper Steel Pad Factored Moment (M_u):	441.3	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	1606.4	k-ft	
M_u / fM_n:	27%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0065		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Upper Pad Flexural Reinforcement Ratio:	0.0016		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Lower Pad Reinforcement Spacing:	6.0	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Upper Pad Reinforcement Spacing:	6.0	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Ultimate Punching Shear Stress, v_u:	62.68	psi	*ACI 318-14 R8.4.4.2.3*
Nominal Punching Shear Capacity (f_cv_c):	189.7	psi	*ACI 318-14 22.6.5.2*
v_u / f_cv_c:	33%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f:	0.60		*TIA-222-H 9.4.2*
Moment Transfer Effective Flexural Width, B_{eff}:	13.33	ft	*TIA-222-H 9.4.2*
Moment Transfer Through Pad Flexure:	23417.89	k-in	*TIA-222-H 9.4.2*
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	58461.36	k-in	
g_fM_{sc} / $fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3252.5	k-ft	
Pier Moment Capacity (fM_n):	7786.5	k-ft	
M_u / fM_n:	42%	Pass	
Factored Shear in Pier (V_u):	28.7	k	
Pier Shear Capacity (fV_n):	266.3	k	*ACI 318-14 22.5.1.1*
V_u / fV_c:	11%	Pass	
Pier Shear Reinforcement Ratio:	0.0009		*OK - No Ties Necessary for Shear - ACI11.5.6.1*
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	4380.5	k	
T_u / fT_n:	0%	Pass	
Factored Compression in Pier (P_u):	50.5	k	
Pier Compression Capacity (fP_n):	3660.0	k	*ACI 318-14 22.4.2.1*
P_u / fP_n:	1%	Pass	
Minimum Depth to Develop Vertical Rebar:	54	in	*ACI 318-14 25.4.2.3*
Minimum Hook Development Length:	27	in	*ACI 318-14 25.4.3.1*
Minimum Mat Thickness / Edge Distance from Pier:	30.0	in	
Minimum Foundation Depth:	7.27	ft	
$M_u/f_BM_n + T_u/f_TT_n$:	42%	Pass	

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CORE ONE CONSULTING

Antenna Mount Analysis Report

ATC Site Name	:	**E H F R – Prestige Park, CT**
ATC Site Number	:	**302473**
Engineering Number	:	**13677961_C8_03**
Mount Elevation	:	**128 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**ATC E. Hartford Monopole**
Carrier Site Number	:	**CTHA515A**
Site Location	:	**310 Prestige Park Rd.** **East Hartford, CT 06108** **41.788300, -72.600600**
County	:	**Hartford**
Date	:	**May 26, 2021**
Max Usage	:	**56%**
Result	:	**Pass**

Prepared By:
Alexander Bazeley, EI
Structural Lead

Reviewed By:
Michael Leeper, PE
Senior Professional Engineer

STATE OF CONNECTICUT
MICHAEL BENJAMIN LEEPER
33195
LICENSED
PROFESSIONAL ENGINEER

Table of Contents

Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for T-Mobile at 128 ft.

Supporting Documents

RFDS	RFDS dated April 23, 2021
Proposed Mount	Perfect Vision PV-LPPGS-12M-HR25-AP4
Proposed Collar	Perfect Vision PV-RM1045-GS Collar Mount
Structural Analysis	ATC Site 302473, Dated September 26, 2019

Analysis

This antenna mount was analyzed using RISA-3D v17 analysis software

Basic Wind Speed:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.5" Ice
Codes:	TIA-222-H
Structure Class:	II
Exposure Category:	B
Topographic Procedure:	Method 2
Topographic Feature:	Flat
Crest Height:	0 ft
Crest Length:	0 ft
Spectral Response:	Ss = 0.188, S_1 = 0.055
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the mount does meet the specified IBC/TIA/ASCE code and minimum design requirements. The proposed mount is therefore deemed adequate to support the existing and proposed loading as listed in this report.

- Contractor to install proposed Perfect Vision PV-LPPGS-12M0HR25-AP4 and collar PV-RM1045-GS mount prior to installing proposed equipment.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Antenna Loading

Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
128.0	128.0	3	RFS APXVAALL24 43-U-NA20
		3	Ericsson AIR6449 B41
		3	Ericsson AIR32 B66Aa/B2a
		3	Ericsson Radio 4480 B71+B85A
		3	Ericsson Radio 4460 B25+B66

Structure Usages

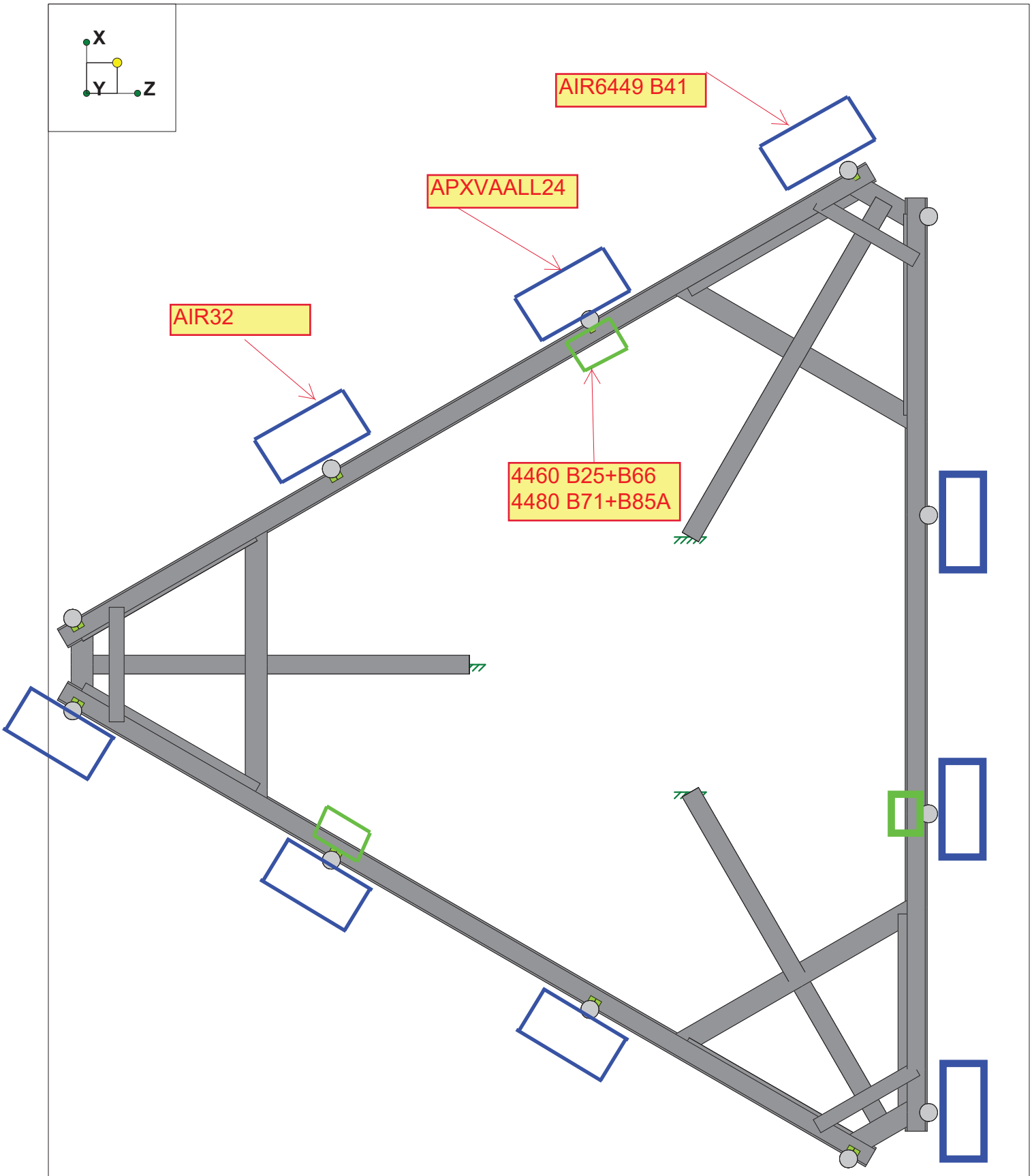
Structural Component	Controlling Usage	Pass/Fail
Horizontals	38%	Pass
Standoff	43%	Pass
Mount Pipes	56%	Pass

Anchor Reactions

Reaction Data	Design Reactions	Analysis Reactions	Result
Shear (lb)	34,591.9	3,577.8	10.3%
Tension (lb)	58,196.0	2,014.6	3.5%
Interaction	--	--	1.2%

*** Proposed (4) 3/4" A36 Bolts.**

Anchor reactions are acceptable per rigorous analysis



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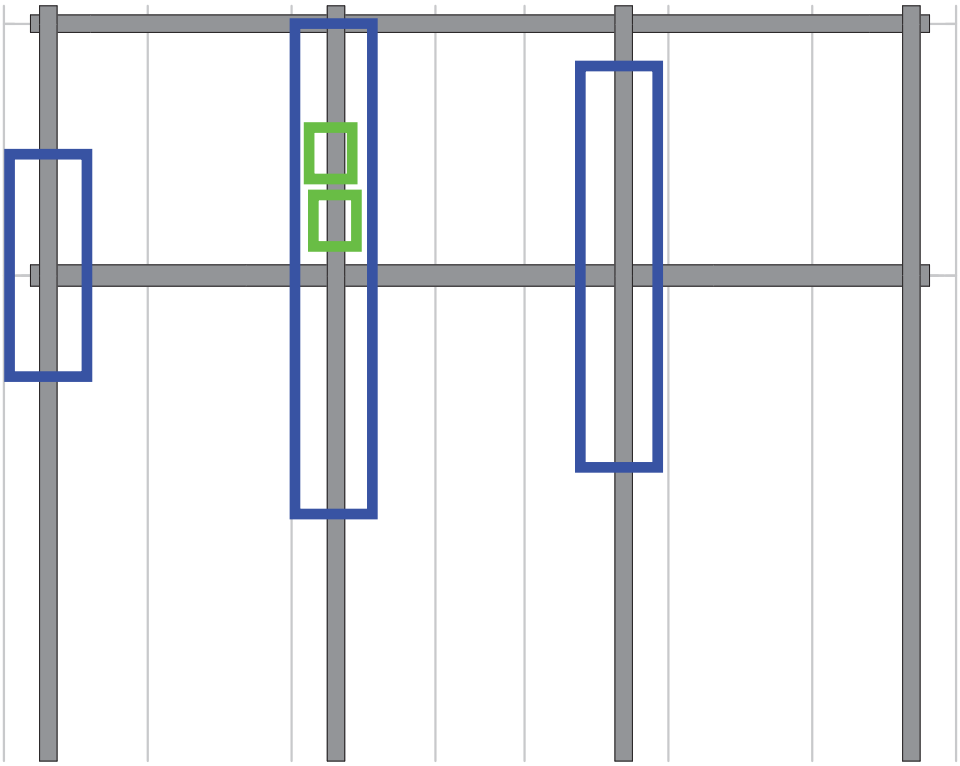

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Standard Conditions

All engineering services performed by Core one Consulting are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of Core one Consulting

It is the responsibility of the client to ensure that the information provided to Core one Consulting and used in the performance of our engineering services is correct and complete.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and Core one Consulting, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Core one Consulting is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Site Name	302473
Client	ATC
Carrier	T-Mobile
Date	6/1/2021

Wind Loading Inputs:

Design Wind Velocity:	118	ultimate 3-second gust
Exposure Category:	B	
Adopted Building Code:	TIA-222-H	
Antenna Load Standard:	TIA-222-H	
Wind Centerline (ft):	128.00	ft
K_a:	0.90	
K_z:	1.06	
K_{zt}:	1.00	
K_d:	0.85	
K_e:	1.00	
qz=	32.04	
Cf=	1.20	
Gh=	1.00	
Fst (psf)=	38.45	Fp= 0.10

Ice Wind	50
Ice Thickness	1.5
Fst_Ice(psf)	15.21

Appurtenance Name	Total Quantity	Weight(lbs)	EPA		Seismic Force	
			EPA_N (sqft)	EPA_t (sqft)	F-Norm (lbs)	F-Perp (lbs)
Ericsson AIR6449 B41	3	104.0	5.7	2.5	10.0	10.0
RFS APXVAALL24 43-U-NA20	3	122.8	20.2	8.7	11.8	11.8
Ericsson AIR32 B66Aa/B2a	3	132.2	6.5	4.7	12.7	12.7
Ericsson 4460 B25+B66	3	109.0	2.6	2.0	10.5	10.5
Ericsson Radio 4480 B71+B85A	3	84.0	2.9	1.4	8.1	8.1

Seismic Loads

Latitude and longitude were determined from existing as-builts, customer records, and confirmed using GoogleEarth. Design spectral acceleration parameters were optained using NSHMP Hazard, a program by USGS for determining seismic values within the continental US. Input data and program output are provided at the end of this report.

Latitude:	41.78830	º
Longitude:	-72.6006	º

S_s =	0.188	g	Site Class:	D	
F_a =	1.60		Occupancy Category:	II	
S_{MS} =	0.301		Importance Factor, I:	1.00	
S_{DS} =	0.201		Seismic Design Catagory:	B	
S_1 =	0.055	g	Amplification Factor, a_p:	1.0	
F_v =	2.40		Response Factor, R_p:	2.5	
S_{M1} =	0.132		z =	128.0	ft
S_{D1} =	0.088		h =	128.0	ft

Telecommunication cabinets and radio equipment are non-structural components to be designed under the provisions of ASCE 7-16 chapter 13.

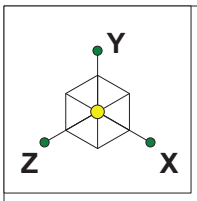
(ASCE 7-16 13.3-3) $F_{p,\min} = 0.3 S_{DS} I_p W_p$ = 0.060 w_p

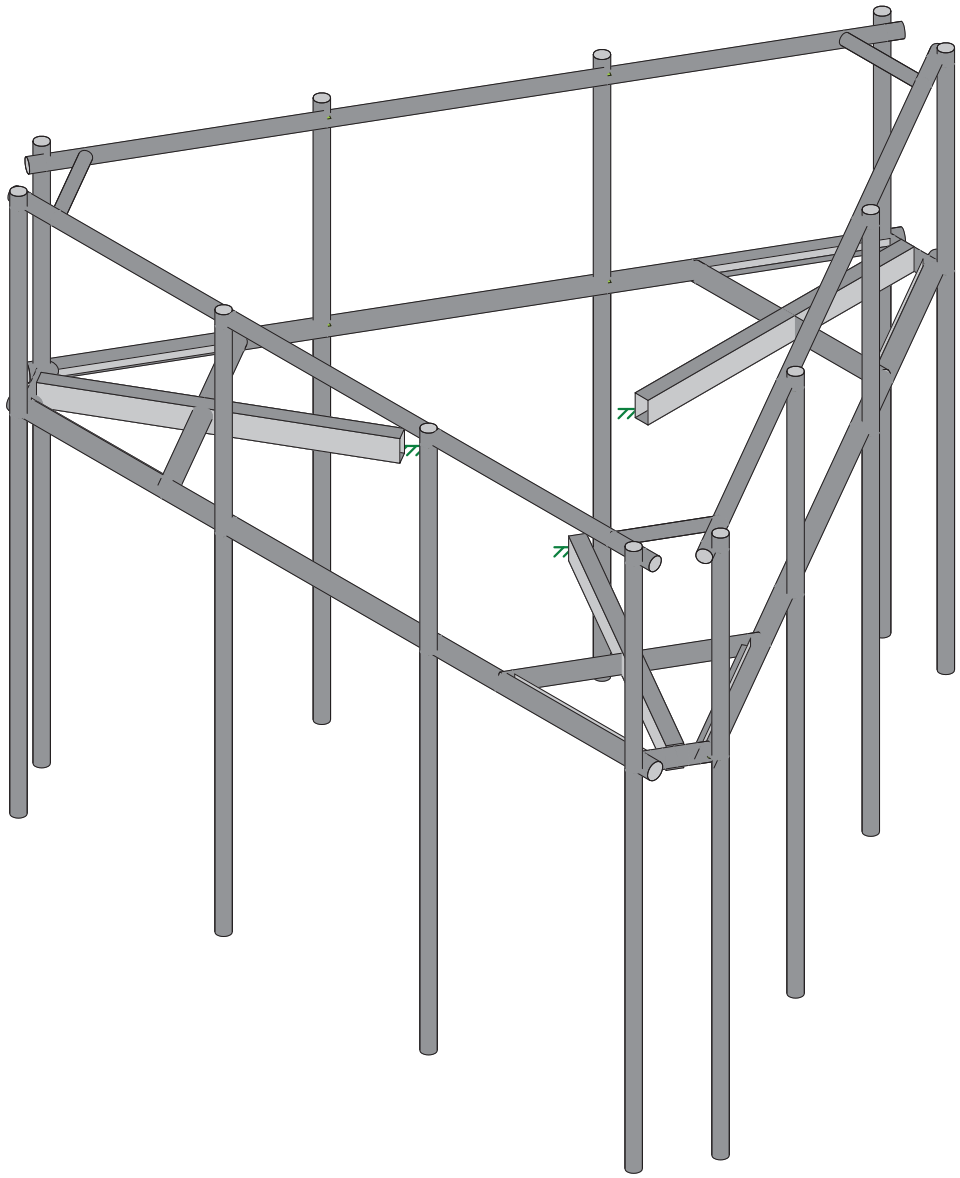
(ASCE 7-16 13.3-1) $F_p = \dfrac{0.4 a_p S_{DS} W_p}{\left(\dfrac{R_p}{I_p}\right)}\left(1 + 2\dfrac{z}{h}\right)$ = 0.096 w_p

(ASCE 7-16 13.3-2) $F_{p,\max} = 1.6 S_{DS} I_p W_p$ = 0.321 w_p

Use F_p = 0.096 *wp*

Core One Consulting USA
Phone: (778) 805-2166
www.coreoneconsulting.com





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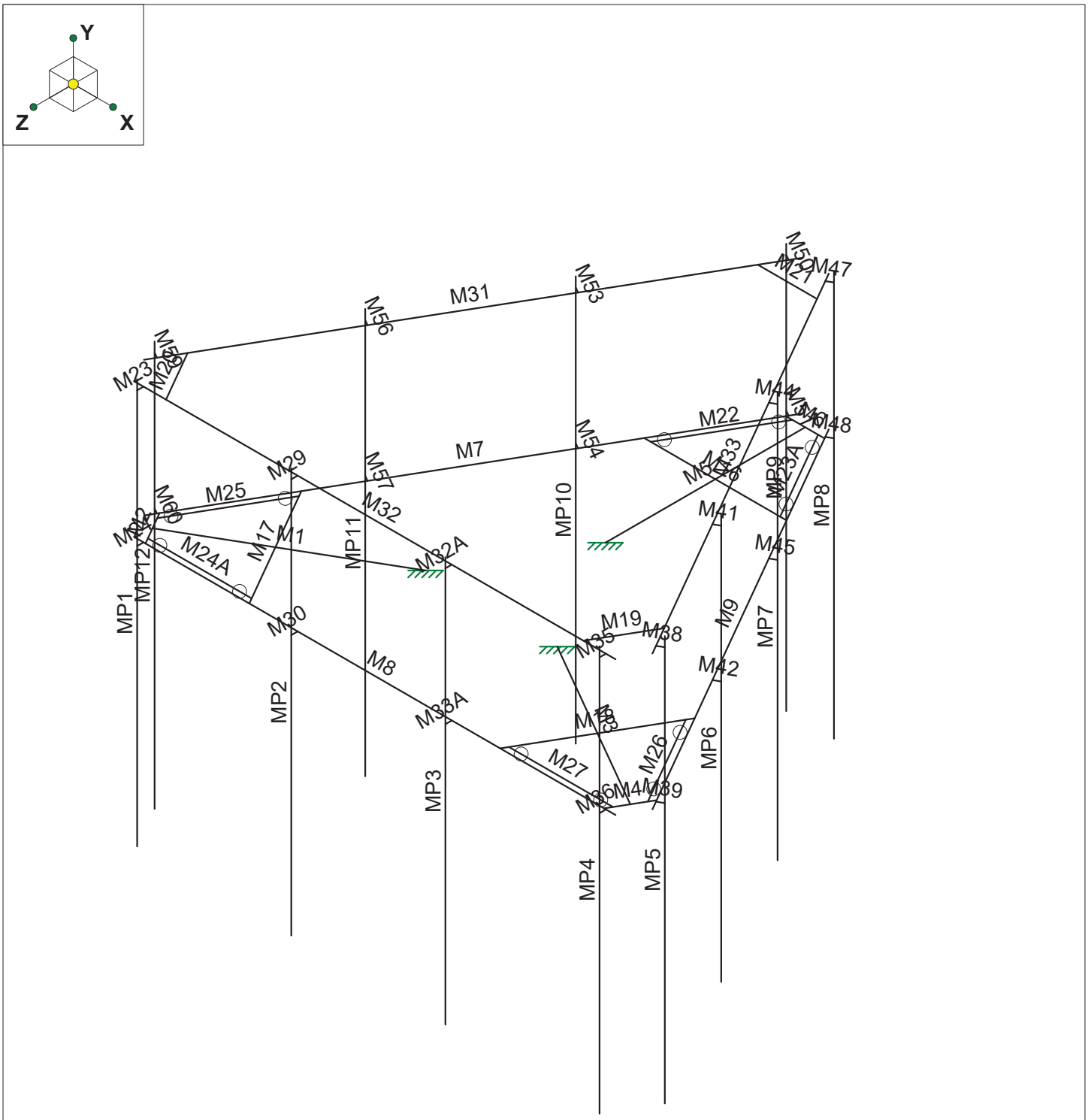

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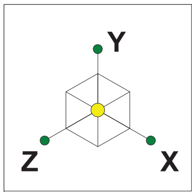

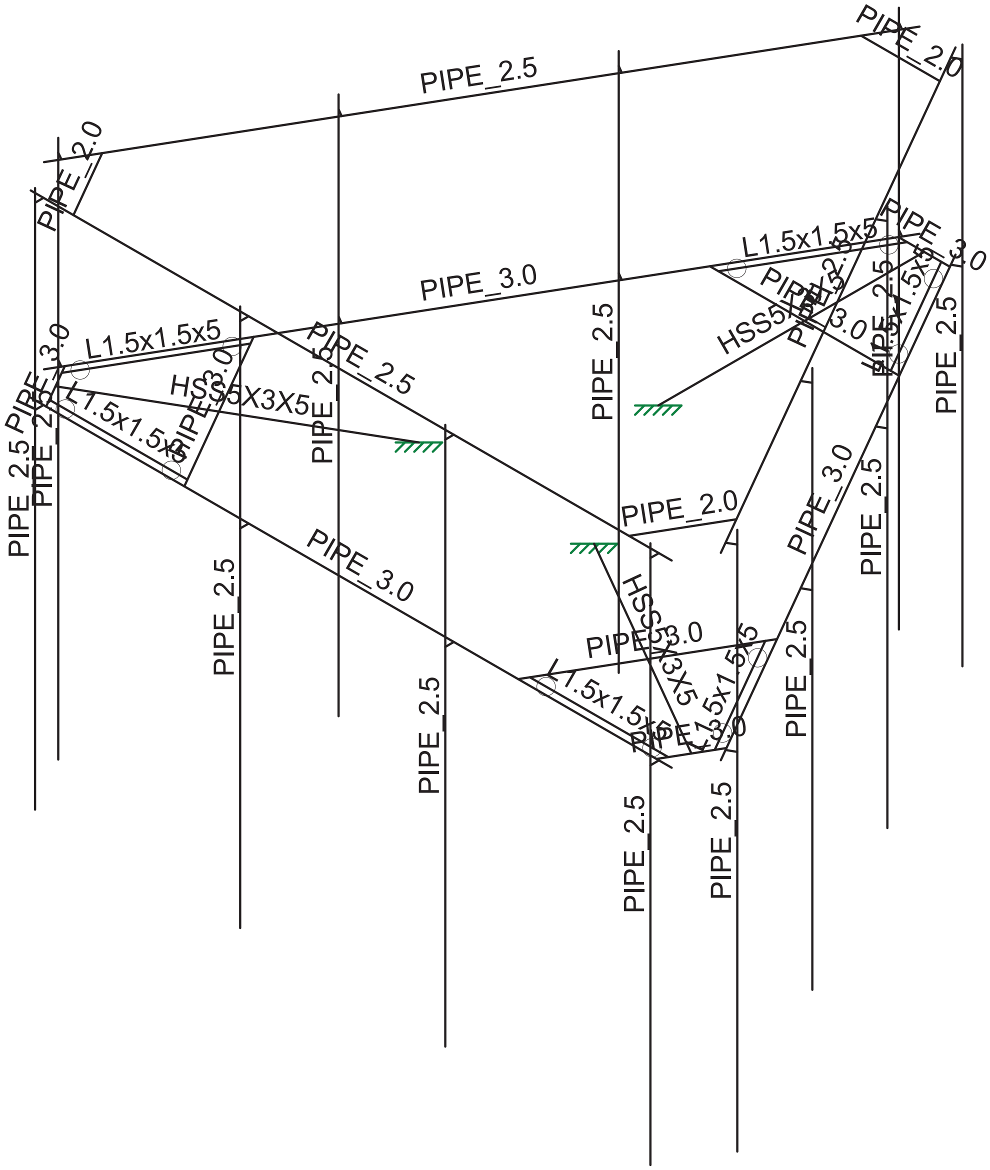

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302473

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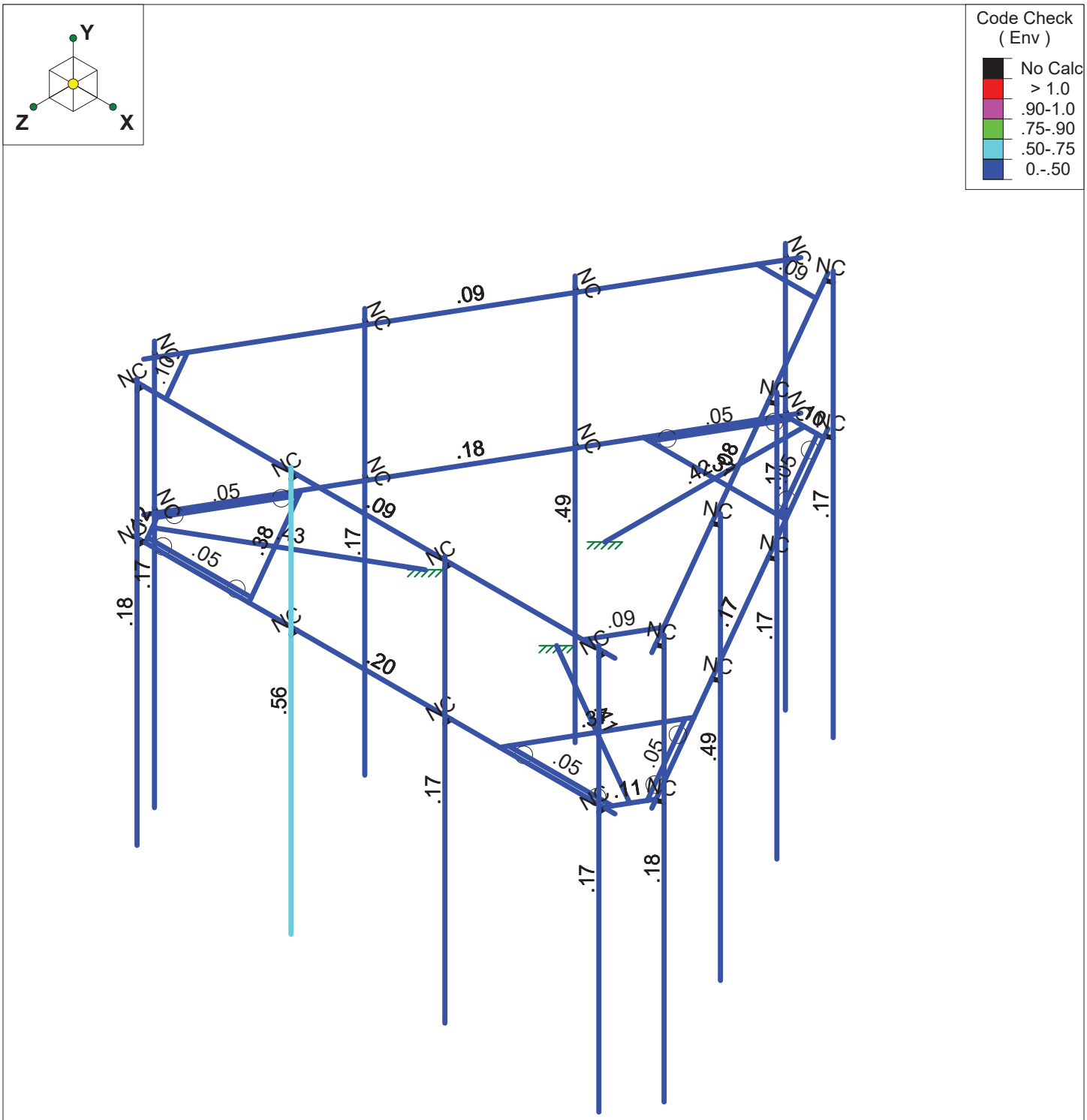

Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.4D

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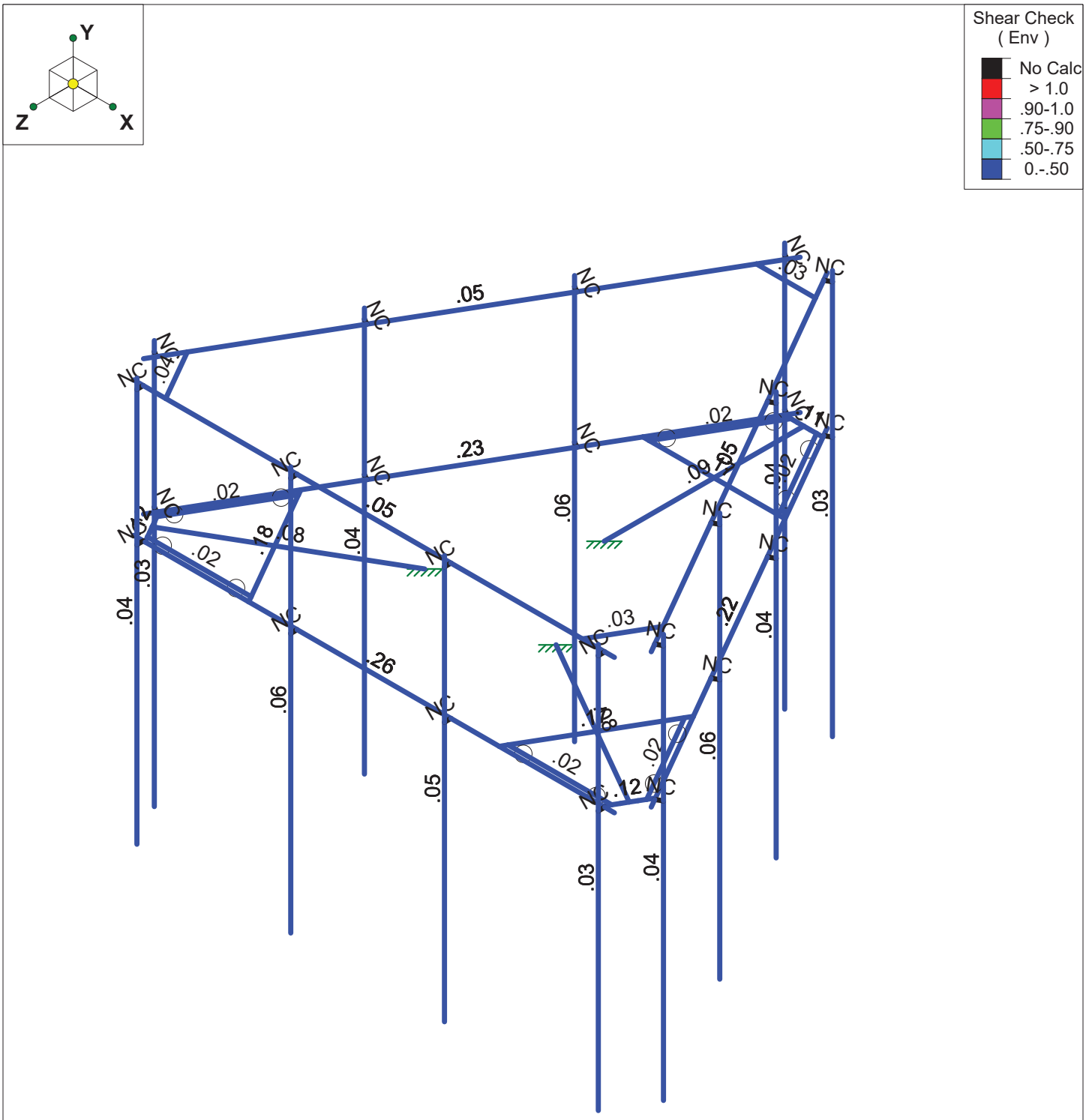

Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.4D

CORE ONE CONSULTIN...		
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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			HSS5x3x5	Beam	None	A500 Gr....	Typical
2	M2	N3	N4			3" STD Pipe	Beam	None	A500 Gr....	Typical
3	M3	N5	N8			HSS5x3x5	Beam	None	A500 Gr....	Typical
4	M4	N9	N10			3" STD Pipe	Beam	None	A500 Gr....	Typical
5	M5	N6	N11			HSS5x3x5	Beam	None	A500 Gr....	Typical
6	M6	N12	N13			3" STD Pipe	Beam	None	A500 Gr....	Typical
7	M7	N16	N15			3" STD Pipe	Beam	None	A500 Gr....	Typical
8	M8	N19	N18			3" STD Pipe	Beam	None	A500 Gr....	Typical
9	M9	N22	N21			3" STD Pipe	Beam	None	A500 Gr....	Typical
10	MP1	N106	N107			P2.5	Beam	None	A500 Gr....	Typical
11	M31	N86	N85			P2.5	Beam	None	A500 Gr....	Typical
12	M32	N88	N87			P2.5	Beam	None	A500 Gr....	Typical
13	M33	N90	N89			P2.5	Beam	None	A500 Gr....	Typical
14	M23	N94	N58			RIGID	None	None	RIGID	Typical
15	M24	N55A	N57			RIGID	None	None	RIGID	Typical
16	M16	N47	N48			3" STD Pipe	Beam	None	A500 Gr....	Typical
17	M17	N51	N52			3" STD Pipe	Beam	None	A500 Gr....	Typical
18	M18	N57A	N58A			3" STD Pipe	Beam	None	A500 Gr....	Typical
19	M19	N47A	N54			2" STD Pipe	Beam	None	A500 Gr....	Typical
20	M20	N59	N48A			2" STD Pipe	Beam	None	A500 Gr....	Typical
21	M21	N60	N53			2" STD Pipe	Beam	None	A500 Gr....	Typical
22	M22	N62	N61			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
23	M23A	N60A	N59A			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
24	M24A	N67	N66			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
25	M25	N65	N64			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
26	M26	N72A	N71A			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
27	M27	N70A	N69			L1.5x1.5x5	Beam	None	A36 Gr.36	Typical
28	MP2	N73A	N72B			P2.5	Beam	None	A500 Gr....	Typical
29	M29	N74A	N76			RIGID	None	None	RIGID	Typical
30	M30	N71B	N75A			RIGID	None	None	RIGID	Typical
31	MP3	N79	N78			P2.5	Beam	None	A500 Gr....	Typical
32	M32A	N80	N82			RIGID	None	None	RIGID	Typical
33	M33A	N77	N81			RIGID	None	None	RIGID	Typical
34	MP4	N85A	N84			P2.5	Beam	None	A500 Gr....	Typical
35	M35	N86A	N88A			RIGID	None	None	RIGID	Typical
36	M36	N83	N87A			RIGID	None	None	RIGID	Typical
37	MP5	N92	N91			P2.5	Beam	None	A500 Gr....	Typical
38	M38	N93	N95			RIGID	None	None	RIGID	Typical
39	M39	N90A	N94A			RIGID	None	None	RIGID	Typical
40	MP6	N98	N97			P2.5	Beam	None	A500 Gr....	Typical
41	M41	N99	N101			RIGID	None	None	RIGID	Typical
42	M42	N96	N100			RIGID	None	None	RIGID	Typical
43	MP7	N104	N103			P2.5	Beam	None	A500 Gr....	Typical
44	M44	N105	N107A			RIGID	None	None	RIGID	Typical
45	M45	N102	N106A			RIGID	None	None	RIGID	Typical
46	MP8	N110	N109			P2.5	Beam	None	A500 Gr....	Typical
47	M47	N111	N113			RIGID	None	None	RIGID	Typical
48	M48	N108	N112			RIGID	None	None	RIGID	Typical
49	MP9	N117	N116			P2.5	Beam	None	A500 Gr....	Typical
50	M50	N118	N120			RIGID	None	None	RIGID	Typical
51	M51	N115	N119			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
52	MP10	N123	N122			P2.5	Beam	None	A500 Gr....	Typical
53	M53	N124	N126			RIGID	None	None	RIGID	Typical
54	M54	N121	N125			RIGID	None	None	RIGID	Typical
55	MP11	N129	N128			P2.5	Beam	None	A500 Gr....	Typical
56	M56	N130	N132			RIGID	None	None	RIGID	Typical
57	M57	N127	N131			RIGID	None	None	RIGID	Typical
58	MP12	N135	N134			P2.5	Beam	None	A500 Gr....	Typical
59	M59	N136	N138			RIGID	None	None	RIGID	Typical
60	M60	N133	N137			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HSS5x3x5	HSS5X3X5	Beam	None	A500 Gr.B Rect	Typical	4.1	5.6	12.6	13.1
2	3" STD Pipe	PIPE_3.0	Beam	None	A500 Gr.B RND	Typical	2.07	2.85	2.85	5.69
3	L1.5x1.5x5	L1.5x1.5x5	Beam	None	A36 Gr.36	Typical	.84	.164	.164	.023
4	2" STD Pipe	PIPE_2.0	Beam	None	A500 Gr.B RND	Typical	1.02	.627	.627	1.25
5	P2.5	PIPE_2.5	Beam	None	A500 Gr.B RND	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	HSS5x3x5	62.25			Lbyy						Lateral
2	M2	3" STD Pipe	12									Lateral
3	M3	HSS5x3x5	62.251			Lbyy						Lateral
4	M4	3" STD Pipe	12									Lateral
5	M5	HSS5x3x5	62.251			Lbyy						Lateral
6	M6	3" STD Pipe	12									Lateral
7	M7	3" STD Pipe	150			Lbyy						Lateral
8	M8	3" STD Pipe	150			Lbyy						Lateral
9	M9	3" STD Pipe	150			Lbyy						Lateral
10	MP1	P2.5	126			Lbyy						Lateral
11	M31	P2.5	150			Lbyy						Lateral
12	M32	P2.5	150			Lbyy						Lateral
13	M33	P2.5	150			Lbyy						Lateral
14	M16	3" STD Pipe	44.332			Lbyy						Lateral
15	M17	3" STD Pipe	44.332			Lbyy						Lateral
16	M18	3" STD Pipe	44.332			Lbyy						Lateral
17	M19	2" STD Pipe	18.412			Lbyy						Lateral
18	M20	2" STD Pipe	18.412			Lbyy						Lateral
19	M21	2" STD Pipe	18.412			Lbyy						Lateral
20	M22	L1.5x1.5x5	32.332			Lbyy						Lateral
21	M23A	L1.5x1.5x5	32.332			Lbyy						Lateral
22	M24A	L1.5x1.5x5	32.332			Lbyy						Lateral
23	M25	L1.5x1.5x5	32.332			Lbyy						Lateral
24	M26	L1.5x1.5x5	32.332			Lbyy						Lateral
25	M27	L1.5x1.5x5	32.332			Lbyy						Lateral
26	MP2	P2.5	126			Lbyy						Lateral
27	MP3	P2.5	126			Lbyy						Lateral
28	MP4	P2.5	126			Lbyy						Lateral
29	MP5	P2.5	126			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
30	MP6	P2.5	126			Lbyy						Lateral
31	MP7	P2.5	126			Lbyy						Lateral
32	MP8	P2.5	126			Lbyy						Lateral
33	MP9	P2.5	126			Lbyy						Lateral
34	MP10	P2.5	126			Lbyy						Lateral
35	MP11	P2.5	126			Lbyy						Lateral
36	MP12	P2.5	126			Lbyy						Lateral

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		24	48	0
3	Total General		24	48	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L1.5x1.5x5	6	194	.046
7	A500 Gr.B Rect	HSS5X3X5	3	186.8	.234
8	A500 Gr.B RND	PIPE_2.0	3	55.2	.017
9	A500 Gr.B RND	PIPE_2.5	15	1962	.963
10	A500 Gr.B RND	PIPE_3.0	9	619	.391
11	Total HR Steel		36	3017	1.651

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1.1			30		3	
2	Wind Load AZI 000	WLZ					30		1	
3	Wind Load AZI 090	WLX					30		1	
4	Ice Weight	OL1					30	36	3	
5	Wind + Ice Load AZI ...	OL2					30		1	
6	Wind + Ice Load AZI ...	OL3					30		1	
7	Service Lm1	LL				1				
8	Service Lm2	OL4				1				
9	Service Lm3	OL5				1				
10	Service Lm4	OL6				1				
11	Service Lm5	OL7								
12	Service Lv 1	OL8					1			
13	Service Lv 2	OL9					1			
14	Service Lv 3	OL10					1			
15	Seismic Load AZI 000	ELZ			-.096		30			
16	Seismic Load AZI 090	ELX	-.096				30			
17	BLC 1 Transient Area...	None						33		
18	BLC 2 Transient Area...	None						51		
19	BLC 3 Transient Area...	None						53		
20	BLC 4 Transient Area...	None						33		
21	BLC 5 Transient Area...	None						51		
22	BLC 6 Transient Area...	None						53		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		DL	1.4																		
2	1.2D + 1W AZI 000	Yes	Y		DL	1.2	W...	1																
3	1.2D + 1W AZI 030	Yes	Y		DL	1.2	W...	.866	W...	.5														
4	1.2D + 1W AZI 060	Yes	Y		DL	1.2	W...	.5	W...	.866														
5	1.2D + 1W AZI 090	Yes	Y		DL	1.2			W...	1														
6	1.2D + 1W AZI 120	Yes	Y		DL	1.2	W...	-.5	W...	.866														
7	1.2D + 1W AZI 150	Yes	Y		DL	1.2	W...	-.8...	W...	.5														
8	1.2D + 1W AZI 180	Yes	Y		DL	1.2	W...	-1																
9	1.2D + 1W AZI 210	Yes	Y		DL	1.2	W...	-.8...	W...	-.5														
10	1.2D + 1W AZI 240	Yes	Y		DL	1.2	W...	-.5	W...	-.8...														
11	1.2D + 1W AZI 270	Yes	Y		DL	1.2			W...	-1														
12	1.2D + 1W AZI 300	Yes	Y		DL	1.2	W...	.5	W...	-.8...														
13	1.2D + 1W AZI 330	Yes	Y		DL	1.2	W...	.866	W...	-.5														
14	0.9D + 1W AZI 000	Yes	Y		DL	.9	W...	1																
15	0.9D + 1W AZI 030	Yes	Y		DL	.9	W...	.866	W...	.5														
16	0.9D + 1W AZI 060	Yes	Y		DL	.9	W...	.5	W...	.866														
17	0.9D + 1W AZI 090	Yes	Y		DL	.9			W...	1														
18	0.9D + 1W AZI 120	Yes	Y		DL	.9	W...	-.5	W...	.866														
19	0.9D + 1W AZI 150	Yes	Y		DL	.9	W...	-.8...	W...	.5														
20	0.9D + 1W AZI 180	Yes	Y		DL	.9	W...	-1																
21	0.9D + 1W AZI 210	Yes	Y		DL	.9	W...	-.8...	W...	-.5														
22	0.9D + 1W AZI 240	Yes	Y		DL	.9	W...	-.5	W...	-.8...														
23	0.9D + 1W AZI 270	Yes	Y		DL	.9			W...	-1														
24	0.9D + 1W AZI 300	Yes	Y		DL	.9	W...	.5	W...	-.8...														
25	0.9D + 1W AZI 330	Yes	Y		DL	.9	W...	.866	W...	-.5														
26	1.2D + 1Di	Yes	Y		DL	1.2	O...	1																
27	1.2D + 1Di + 1Wi AZI 000	Yes	Y		DL	1.2	O...	1	O...	1														
28	1.2D + 1Di + 1Wi AZI 030	Yes	Y		DL	1.2	O...	1	O...	.866	O...	.5												
29	1.2D + 1Di + 1Wi AZI 060	Yes	Y		DL	1.2	O...	1	O...	.5	O...	.866												
30	1.2D + 1Di + 1Wi AZI 090	Yes	Y		DL	1.2	O...	1			O...	1												
31	1.2D + 1Di + 1Wi AZI 120	Yes	Y		DL	1.2	O...	1	O...	-.5	O...	.866												
32	1.2D + 1Di + 1Wi AZI 150	Yes	Y		DL	1.2	O...	1	O...	-.8...	O...	.5												
33	1.2D + 1Di + 1Wi AZI 180	Yes	Y		DL	1.2	O...	1	O...	-1														
34	1.2D + 1Di + 1Wi AZI 210	Yes	Y		DL	1.2	O...	1	O...	-.8...	O...	-.5												
35	1.2D + 1Di + 1Wi AZI 240	Yes	Y		DL	1.2	O...	1	O...	-.5	O...	-.8...												
36	1.2D + 1Di + 1Wi AZI 270	Yes	Y		DL	1.2	O...	1			O...	-1												
37	1.2D + 1Di + 1Wi AZI 300	Yes	Y		DL	1.2	O...	1	O...	.5	O...	-.8...												
38	1.2D + 1Di + 1Wi AZI 330	Yes	Y		DL	1.2	O...	1	O...	.866	O...	-.5												
39	(1.2+0.2Sds)D + 1E AZI 000	Yes	Y		DL	1.24	ELZ	1																
40	(1.2+0.2Sds)D + 1E AZI 030	Yes	Y		DL	1.24	ELZ	.866	E...	.5														
41	(1.2+0.2Sds)D + 1E AZI 060	Yes	Y		DL	1.24	ELZ	.5	E...	.866														
42	(1.2+0.2Sds)D + 1E AZI 090	Yes	Y		DL	1.24			E...	1														
43	(1.2+0.2Sds)D + 1E AZI 120	Yes	Y		DL	1.24	ELZ	-.5	E...	.866														
44	(1.2+0.2Sds)D + 1E AZI 150	Yes	Y		DL	1.24	ELZ	-.8...	E...	.5														
45	(1.2+0.2Sds)D + 1E AZI 180	Yes	Y		DL	1.24	ELZ	-1																
46	(1.2+0.2Sds)D + 1E AZI 210	Yes	Y		DL	1.24	ELZ	-.8...	E...	-.5														
47	(1.2+0.2Sds)D + 1E AZI 240	Yes	Y		DL	1.24	ELZ	-.5	E...	-.8...														
48	(1.2+0.2Sds)D + 1E AZI 270	Yes	Y		DL	1.24			E...	-1														
49	(1.2+0.2Sds)D + 1E AZI 300	Yes	Y		DL	1.24	ELZ	.5	E...	-.8...														
50	(1.2+0.2Sds)D + 1E AZI 330	Yes	Y		DL	1.24	ELZ	.866	E...	-.5														
51	(0.9-0.2Sds)D + 1E AZI 000	Yes	Y		DL	.86	ELZ	1																

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
52	(0.9-0.2Sds)D + 1E AZI 030	Yes	Y		DL	.86	ELZ	.866	E...	.5																
53	(0.9-0.2Sds)D + 1E AZI 060	Yes	Y		DL	.86	ELZ	.5	E...	.866																
54	(0.9-0.2Sds)D + 1E AZI 090	Yes	Y		DL	.86			E...	1																
55	(0.9-0.2Sds)D + 1E AZI 120	Yes	Y		DL	.86	ELZ	-.5	E...	.866																
56	(0.9-0.2Sds)D + 1E AZI 150	Yes	Y		DL	.86	ELZ	-.8...	E...	.5																
57	(0.9-0.2Sds)D + 1E AZI 180	Yes	Y		DL	.86	ELZ	-1																		
58	(0.9-0.2Sds)D + 1E AZI 210	Yes	Y		DL	.86	ELZ	-.8...	E...	-.5																
59	(0.9-0.2Sds)D + 1E AZI 240	Yes	Y		DL	.86	ELZ	-.5	E...	-.8...																
60	(0.9-0.2Sds)D + 1E AZI 270	Yes	Y		DL	.86			E...	-1																
61	(0.9-0.2Sds)D + 1E AZI 300	Yes	Y		DL	.86	ELZ	.5	E...	-.8...																
62	(0.9-0.2Sds)D + 1E AZI 330	Yes	Y		DL	.86	ELZ	.866	E...	-.5																

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	-20.501708	0	-11.836667	0	
2	N2	-74.411789	0	19.288333	0	
3	N3	-77.411789	0	14.092181	0	
4	N4	-71.411789	0	24.484486	0	
5	N5	20.500854	0	-11.838146	0	
6	N6	0.000854	0	-47.345187	0	
7	N7	0	0	-23.673333	0	
8	N8	74.411789	0	19.288333	0	
9	N9	71.411789	0	24.484486	0	
10	N10	77.411789	0	14.092181	0	
11	N11	0.000854	0	-109.596667	0	
12	N12	6	0	-109.596667	0	
13	N13	-6	0	-109.596667	0	
14	N15	-79.206	0	17.199845	0	
15	N16	-4.206	0	-112.703966	0	
16	N18	75.000211	0	24.484486	0	
17	N19	-74.999789	0	24.484486	0	
18	N21	4.205789	0	-112.704331	0	
19	N22	79.205789	0	17.19948	0	
20	N32	75.411789	0	17.556283	0	
21	N33	73.411789	0	21.020384	0	
22	N36	-2	0	-109.596667	0	
23	N37	2	0	-109.596667	0	
24	N40	-73.411789	0	21.020384	0	
25	N41	-75.411789	0	17.556283	0	
26	N70	-89.999789	45	30.484486	0	
27	N71	-89.999789	-96	30.484486	0	
28	N72	90.000211	45	30.484486	0	
29	N73	90.000211	-96	30.484486	0	
30	N74	90.000211	45	-135.515514	0	
31	N75	90.000211	-96	-135.515514	0	
32	N55A	-71.999789	0	26.484486	0	
33	N107	-71.999789	45	26.484486	0	
34	N106	-71.999789	-81	26.484486	0	
35	N85	-79.206	42	17.199845	0	
36	N86	-4.206	42	-112.703966	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
37	N87	75.000211	42	24.484486	0	
38	N88	-74.999789	42	24.484486	0	
39	N89	4.205789	42	-112.704331	0	
40	N90	79.205789	42	17.19948	0	
41	N94	-71.999789	42	26.484486	0	
42	N57	-71.999789	0	24.484486	0	
43	N58	-71.999789	42	24.484486	0	
44	N44	0.000854	0	-81.596667	0	
45	N47	-22.165808	0	-81.596667	0	
46	N48	22.165808	0	-81.596667	0	
47	N47A	65.000211	42	24.484486	0	
48	N48A	-64.999789	42	24.484486	0	
49	N50	-50.163505	0	5.287594	0	
50	N51	-39.080174	0	24.484486	0	
51	N52	-61.245982	0	-13.907819	0	
52	N53	9.205789	42	-104.044076	0	
53	N54	74.205789	42	8.539226	0	
54	N56	50.162651	0	5.289073	0	
55	N57A	61.245982	0	-13.907819	0	
56	N58A	39.080174	0	24.484486	0	
57	N59	-74.206	42	8.539591	0	
58	N60	-9.206	42	-104.043712	0	
59	N59A	4	0	-109.596667	0	
60	N60A	20.165808	0	-81.596667	0	
61	N61	-4	0	-109.596667	0	
62	N62	-20.165808	0	-81.596667	0	
63	N64	-76.411789	0	15.824232	0	
64	N65	-60.245982	0	-12.175768	0	
65	N66	-72.411789	0	22.752435	0	
66	N67	-40.080174	0	22.752435	0	
67	N69	72.411789	0	22.752435	0	
68	N70A	40.080174	0	22.752435	0	
69	N71A	76.411789	0	15.824232	0	
70	N72A	60.245982	0	-12.175768	0	
71	N71B	-23.999789	0	26.484486	0	
72	N72B	-23.999789	45	26.484486	0	
73	N73A	-23.999789	-81	26.484486	0	
74	N74A	-23.999789	42	26.484486	0	
75	N75A	-23.999789	0	24.484486	0	
76	N76	-23.999789	42	24.484486	0	
77	N77	24.000211	0	26.484486	0	
78	N78	24.000211	45	26.484486	0	
79	N79	24.000211	-81	26.484486	0	
80	N80	24.000211	42	26.484486	0	
81	N81	24.000211	0	24.484486	0	
82	N82	24.000211	42	24.484486	0	
83	N83	72.000211	0	26.484486	0	
84	N84	72.000211	45	26.484486	0	
85	N85A	72.000211	-81	26.484486	0	
86	N86A	72.000211	42	26.484486	0	
87	N87A	72.000211	0	24.484486	0	
88	N88A	72.000211	42	24.484486	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
89	N90A	79.43784	0	13.601404	0	
90	N91	79.43784	45	13.601403	0	
91	N92	79.43784	-81	13.601403	0	
92	N93	79.43784	42	13.601403	0	
93	N94A	77.705789	0	14.601404	0	
94	N95	77.705789	42	14.601403	0	
95	N96	55.43784	0	-27.967816	0	
96	N97	55.43784	45	-27.967816	0	
97	N98	55.43784	-81	-27.967816	0	
98	N99	55.43784	42	-27.967816	0	
99	N100	53.705789	0	-26.967816	0	
100	N101	53.705789	42	-26.967816	0	
101	N102	31.43784	0	-69.537035	0	
102	N103	31.43784	45	-69.537035	0	
103	N104	31.43784	-81	-69.537035	0	
104	N105	31.43784	42	-69.537035	0	
105	N106A	29.705789	0	-68.537035	0	
106	N107A	29.705789	42	-68.537035	0	
107	N108	7.43784	0	-111.106254	0	
108	N109	7.43784	45	-111.106255	0	
109	N110	7.43784	-81	-111.106255	0	
110	N111	7.43784	42	-111.106255	0	
111	N112	5.705789	0	-110.106254	0	
112	N113	5.705789	42	-110.106255	0	
113	N115	-7.438051	0	-111.10589	0	
114	N116	-7.438051	45	-111.105889	0	
115	N117	-7.438051	-81	-111.105889	0	
116	N118	-7.438051	42	-111.105889	0	
117	N119	-5.706	0	-110.10589	0	
118	N120	-5.706	42	-110.105889	0	
119	N121	-31.438051	0	-69.53667	0	
120	N122	-31.438051	45	-69.53667	0	
121	N123	-31.438051	-81	-69.53667	0	
122	N124	-31.438051	42	-69.53667	0	
123	N125	-29.706	0	-68.53667	0	
124	N126	-29.706	42	-68.53667	0	
125	N127	-55.438051	0	-27.967451	0	
126	N128	-55.438051	45	-27.967451	0	
127	N129	-55.438051	-81	-27.967451	0	
128	N130	-55.438051	42	-27.967451	0	
129	N131	-53.706	0	-26.967451	0	
130	N132	-53.706	42	-26.967451	0	
131	N133	-79.438051	0	13.601769	0	
132	N134	-79.438051	45	13.601769	0	
133	N135	-79.438051	-81	13.601769	0	
134	N136	-79.438051	42	13.601769	0	
135	N137	-77.706	0	14.601769	0	
136	N138	-77.706	42	14.601769	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Joint Loads and Enforced Displacements (BLC 7 : Service Lm1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N58	L	Y	-500

Joint Loads and Enforced Displacements (BLC 8 : Service Lm2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N76	L	Y	-500

Joint Loads and Enforced Displacements (BLC 9 : Service Lm3)

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

Joint Loads and Enforced Displacements (BLC 10 : Service Lm4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N88A	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-52	30
2	MP2	Y	-61.4	6
3	MP3	Y	-66.1	15
4	MP2	Y	-54.5	48
5	MP2	Y	-42	48
6	MP1	Y	-52	60
7	MP2	Y	-61.4	90
8	MP3	Y	-66.1	75
9	MP2	Y	-54.5	48
10	MP2	Y	-42	48
11	MP5	Y	-52	30
12	MP6	Y	-61.4	6
13	MP7	Y	-66.1	15
14	MP6	Y	-54.5	48
15	MP6	Y	-42	48
16	MP5	Y	-52	60
17	MP6	Y	-61.4	90
18	MP7	Y	-66.1	75
19	MP6	Y	-54.5	48
20	MP6	Y	-42	48
21	MP9	Y	-52	30
22	MP10	Y	-61.4	6
23	MP11	Y	-66.1	15
24	MP10	Y	-54.5	48

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
25	MP10	Y	-42	48
26	MP9	Y	-52	60
27	MP10	Y	-61.4	90
28	MP11	Y	-66.1	75
29	MP10	Y	-54.5	48
30	MP10	Y	-42	48

Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-81.919	30
2	MP2	Z	-291.836	6
3	MP3	Z	-93.852	15
4	MP2	Z	-36.97	48
5	MP2	Z	-41.119	48
6	MP1	Z	-81.919	60
7	MP2	Z	-291.836	90
8	MP3	Z	-93.852	75
9	MP2	Z	-36.97	48
10	MP2	Z	-41.119	48
11	MP5	Z	-47.411	30
12	MP6	Z	-167.387	6
13	MP7	Z	-74.416	15
14	MP6	Z	-30.612	48
15	MP6	Z	-25.234	48
16	MP5	Z	-47.411	60
17	MP6	Z	-167.387	90
18	MP7	Z	-74.416	75
19	MP6	Z	-30.612	48
20	MP6	Z	-25.234	48
21	MP9	Z	-47.411	30
22	MP10	Z	-167.387	6
23	MP11	Z	-74.416	15
24	MP10	Z	-30.612	48
25	MP10	Z	-25.234	48
26	MP9	Z	-47.411	60
27	MP10	Z	-167.387	90
28	MP11	Z	-74.416	75
29	MP10	Z	-30.612	48
30	MP10	Z	-25.234	48

Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-39.898	30
2	MP2	X	-139.894	6
3	MP3	X	-75.485	15
4	MP2	X	-31.658	48
5	MP2	X	-22.154	48
6	MP1	X	-39.898	60
7	MP2	X	-139.894	90
8	MP3	X	-75.485	75
9	MP2	X	-31.658	48

Member Point Loads (BLC 3 : Wind Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP2	X	-22.154	48
11	MP5	X	-70.416	30
12	MP6	X	-250.353	6
13	MP7	X	-87.373	15
14	MP6	X	-34.85	48
15	MP6	X	-35.824	48
16	MP5	X	-70.416	60
17	MP6	X	-250.353	90
18	MP7	X	-87.373	75
19	MP6	X	-34.85	48
20	MP6	X	-35.824	48
21	MP9	X	-70.416	30
22	MP10	X	-250.353	6
23	MP11	X	-87.373	15
24	MP10	X	-34.85	48
25	MP10	X	-35.824	48
26	MP9	X	-70.416	60
27	MP10	X	-250.353	90
28	MP11	X	-87.373	75
29	MP10	X	-34.85	48
30	MP10	X	-35.824	48

Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-69.583	30
2	MP2	Y	-227.913	6
3	MP3	Y	-85.51	15
4	MP2	Y	-36.916	48
5	MP2	Y	-36.442	48
6	MP1	Y	-69.583	60
7	MP2	Y	-227.913	90
8	MP3	Y	-85.51	75
9	MP2	Y	-36.916	48
10	MP2	Y	-36.442	48
11	MP5	Y	-69.583	30
12	MP6	Y	-227.913	6
13	MP7	Y	-85.51	15
14	MP6	Y	-36.916	48
15	MP6	Y	-36.442	48
16	MP5	Y	-69.583	60
17	MP6	Y	-227.913	90
18	MP7	Y	-85.51	75
19	MP6	Y	-36.916	48
20	MP6	Y	-36.442	48
21	MP9	Y	-69.583	30
22	MP10	Y	-227.913	6
23	MP11	Y	-85.51	15
24	MP10	Y	-36.916	48
25	MP10	Y	-36.442	48
26	MP9	Y	-69.583	60
27	MP10	Y	-227.913	90

Member Point Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP11	Y	-85.51	75
29	MP10	Y	-36.916	48
30	MP10	Y	-36.442	48

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-36.014	30
2	MP2	Z	-128.298	6
3	MP3	Z	-41.26	15
4	MP2	Z	-16.253	48
5	MP2	Z	-18.077	48
6	MP1	Z	-36.014	60
7	MP2	Z	-128.298	90
8	MP3	Z	-41.26	75
9	MP2	Z	-16.253	48
10	MP2	Z	-18.077	48
11	MP5	Z	-18.759	30
12	MP6	Z	-66.229	6
13	MP7	Z	-29.443	15
14	MP6	Z	-12.112	48
15	MP6	Z	-9.984	48
16	MP5	Z	-18.759	60
17	MP6	Z	-66.229	90
18	MP7	Z	-29.443	75
19	MP6	Z	-12.112	48
20	MP6	Z	-9.984	48
21	MP9	Z	-18.759	30
22	MP10	Z	-66.229	6
23	MP11	Z	-29.443	15
24	MP10	Z	-12.112	48
25	MP10	Z	-9.984	48
26	MP9	Z	-18.759	60
27	MP10	Z	-66.229	90
28	MP11	Z	-29.443	75
29	MP10	Z	-12.112	48
30	MP10	Z	-9.984	48

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.786	30
2	MP2	X	-55.351	6
3	MP3	X	-29.867	15
4	MP2	X	-12.526	48
5	MP2	X	-8.766	48
6	MP1	X	-15.786	60
7	MP2	X	-55.351	90
8	MP3	X	-29.867	75
9	MP2	X	-12.526	48
10	MP2	X	-8.766	48
11	MP5	X	-27.861	30
12	MP6	X	-99.055	6

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP7	X	-34.57	15
14	MP6	X	-13.789	48
15	MP6	X	-14.174	48
16	MP5	X	-27.861	60
17	MP6	X	-99.055	90
18	MP7	X	-34.57	75
19	MP6	X	-13.789	48
20	MP6	X	-14.174	48
21	MP9	X	-27.861	30
22	MP10	X	-99.055	6
23	MP11	X	-34.57	15
24	MP10	X	-13.789	48
25	MP10	X	-14.174	48
26	MP9	X	-27.861	60
27	MP10	X	-99.055	90
28	MP11	X	-34.57	75
29	MP10	X	-13.789	48
30	MP10	X	-14.174	48

Member Point Loads (BLC 12 : Service Lv 1)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M8	Y	-250	0

Member Point Loads (BLC 13 : Service Lv 2)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M8	Y	-250	%50

Member Point Loads (BLC 14 : Service Lv 3)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M8	Y	-250	%100

Member Point Loads (BLC 15 : Seismic Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-2.503	30
2	MP2	Z	-2.955	6
3	MP3	Z	-3.181	15
4	MP2	Z	-2.623	48
5	MP2	Z	-2.021	48
6	MP1	Z	-2.503	60
7	MP2	Z	-2.955	90
8	MP3	Z	-3.181	75
9	MP2	Z	-2.623	48
10	MP2	Z	-2.021	48
11	MP5	Z	-2.503	30
12	MP6	Z	-2.955	6
13	MP7	Z	-3.181	15
14	MP6	Z	-2.623	48
15	MP6	Z	-2.021	48
16	MP5	Z	-2.503	60
17	MP6	Z	-2.955	90

Member Point Loads (BLC 15 : Seismic Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP7	Z	-3.181	75
19	MP6	Z	-2.623	48
20	MP6	Z	-2.021	48
21	MP9	Z	-2.503	30
22	MP10	Z	-2.955	6
23	MP11	Z	-3.181	15
24	MP10	Z	-2.623	48
25	MP10	Z	-2.021	48
26	MP9	Z	-2.503	60
27	MP10	Z	-2.955	90
28	MP11	Z	-3.181	75
29	MP10	Z	-2.623	48
30	MP10	Z	-2.021	48

Member Point Loads (BLC 16 : Seismic Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-2.503	30
2	MP2	X	-2.955	6
3	MP3	X	-3.181	15
4	MP2	X	-2.623	48
5	MP2	X	-2.021	48
6	MP1	X	-2.503	60
7	MP2	X	-2.955	90
8	MP3	X	-3.181	75
9	MP2	X	-2.623	48
10	MP2	X	-2.021	48
11	MP5	X	-2.503	30
12	MP6	X	-2.955	6
13	MP7	X	-3.181	15
14	MP6	X	-2.623	48
15	MP6	X	-2.021	48
16	MP5	X	-2.503	60
17	MP6	X	-2.955	90
18	MP7	X	-3.181	75
19	MP6	X	-2.623	48
20	MP6	X	-2.021	48
21	MP9	X	-2.503	30
22	MP10	X	-2.955	6
23	MP11	X	-3.181	15
24	MP10	X	-2.623	48
25	MP10	X	-2.021	48
26	MP9	X	-2.503	60
27	MP10	X	-2.955	90
28	MP11	X	-3.181	75
29	MP10	X	-2.623	48
30	MP10	X	-2.021	48

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	Y	-15.278	-15.278	0	%100
2	M2	Y	-10.95	-10.95	0	%100
3	M3	Y	-15.278	-15.278	0	%100
4	M4	Y	-10.95	-10.95	0	%100
5	M5	Y	-15.278	-15.278	0	%100
6	M6	Y	-10.95	-10.95	0	%100
7	M7	Y	-10.95	-10.95	0	%100
8	M8	Y	-10.95	-10.95	0	%100
9	M9	Y	-10.95	-10.95	0	%100
10	MP1	Y	-9.638	-9.638	0	%100
11	M31	Y	-9.638	-9.638	0	%100
12	M32	Y	-9.638	-9.638	0	%100
13	M33	Y	-9.638	-9.638	0	%100
14	M16	Y	-10.95	-10.95	0	%100
15	M17	Y	-10.95	-10.95	0	%100
16	M18	Y	-10.95	-10.95	0	%100
17	M19	Y	-8.589	-8.589	0	%100
18	M20	Y	-8.589	-8.589	0	%100
19	M21	Y	-8.589	-8.589	0	%100
20	M22	Y	-8.598	-8.598	0	%100
21	M23A	Y	-8.598	-8.598	0	%100
22	M24A	Y	-8.598	-8.598	0	%100
23	M25	Y	-8.598	-8.598	0	%100
24	M26	Y	-8.598	-8.598	0	%100
25	M27	Y	-8.598	-8.598	0	%100
26	MP2	Y	-9.638	-9.638	0	%100
27	MP3	Y	-9.638	-9.638	0	%100
28	MP4	Y	-9.638	-9.638	0	%100
29	MP5	Y	-9.638	-9.638	0	%100
30	MP6	Y	-9.638	-9.638	0	%100
31	MP7	Y	-9.638	-9.638	0	%100
32	MP8	Y	-9.638	-9.638	0	%100
33	MP9	Y	-9.638	-9.638	0	%100
34	MP10	Y	-9.638	-9.638	0	%100
35	MP11	Y	-9.638	-9.638	0	%100
36	MP12	Y	-9.638	-9.638	0	%100

Member Distributed Loads (BLC 17 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	Y	-.724	-7.432	31.125	41.5
2	M1	Y	-7.432	-9.793	41.5	51.875
3	M1	Y	-9.793	-1.1	51.875	62.25
4	M2	Y	-1.649	-1.649	1.457	10.543
5	M17	Y	-4.664	-4.664	3.872	40.459
6	M24A	Y	-3.123	-3.824	3.233	12.933
7	M24A	Y	-3.824	-3.435	12.933	22.632
8	M24A	Y	-3.435	-1.954	22.632	32.332
9	M25	Y	-3.123	-3.824	3.233	12.933
10	M25	Y	-3.824	-3.435	12.933	22.632
11	M25	Y	-3.435	-1.954	22.632	32.332

Member Distributed Loads (BLC 17 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
12	M3	Y	-.724	-7.432	31.126	41.501
13	M3	Y	-7.432	-9.792	41.501	51.876
14	M3	Y	-9.792	-1.1	51.876	62.251
15	M4	Y	-1.649	-1.649	1.457	10.543
16	M18	Y	-4.664	-4.664	3.872	40.459
17	M26	Y	-3.123	-3.824	3.233	12.933
18	M26	Y	-3.824	-3.435	12.933	22.632
19	M26	Y	-3.435	-1.954	22.632	32.332
20	M27	Y	-3.123	-3.824	3.233	12.933
21	M27	Y	-3.824	-3.435	12.933	22.632
22	M27	Y	-3.435	-1.954	22.632	32.332
23	M5	Y	-.724	-7.432	31.126	41.501
24	M5	Y	-7.432	-9.792	41.501	51.876
25	M5	Y	-9.792	-1.099	51.876	62.251
26	M6	Y	-1.649	-1.649	1.457	10.542
27	M16	Y	-4.665	-4.665	3.873	40.459
28	M22	Y	-3.123	-3.824	3.233	12.933
29	M22	Y	-3.824	-3.435	12.933	22.632
30	M22	Y	-3.435	-1.955	22.632	32.332
31	M23A	Y	-3.123	-3.824	3.233	12.933
32	M23A	Y	-3.824	-3.434	12.933	22.632
33	M23A	Y	-3.434	-1.954	22.632	32.332

Member Distributed Loads (BLC 18 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	Z	-13.874	-13.874	0	62.25
2	M2	Z	-5.607	-5.607	0	12
3	M3	Z	-13.874	-13.874	0	62.251
4	M4	Z	-5.607	-5.607	0	12
5	M6	Z	-11.215	-11.215	0	12
6	M7	Z	-5.607	-5.607	0	150
7	M8	Z	-11.215	-11.215	0	150
8	M9	Z	-5.607	-5.607	0	150
9	MP1	Z	-9.212	-9.212	0	126
10	M31	Z	-4.606	-4.606	0	150
11	M32	Z	-9.212	-9.212	0	150
12	M33	Z	-4.606	-4.606	0	150
13	M16	Z	-11.215	-11.215	0	44.332
14	M17	Z	-5.607	-5.607	0	44.332
15	M18	Z	-5.607	-5.607	0	44.332
16	M19	Z	-3.805	-3.805	0	18.412
17	M20	Z	-3.805	-3.805	0	18.412
18	M21	Z	-7.61	-7.61	0	18.412
19	M22	Z	-2.403	-2.403	0	32.332
20	M23A	Z	-2.403	-2.403	0	32.332
21	M24A	Z	-4.806	-4.806	0	32.332
22	M25	Z	-2.403	-2.403	0	32.332
23	M26	Z	-2.403	-2.403	0	32.332
24	M27	Z	-4.806	-4.806	0	32.332
25	MP2	Z	-9.212	-9.212	0	126
26	MP3	Z	-9.212	-9.212	0	126

Member Distributed Loads (BLC 18 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
27	MP4	Z	-9.212	-9.212	0	126
28	MP5	Z	-9.212	-9.212	0	126
29	M38	Z	0	0	0	2
30	M39	Z	0	0	0	2
31	MP6	Z	-9.212	-9.212	0	126
32	M41	Z	0	0	0	2
33	M42	Z	0	0	0	2
34	MP7	Z	-9.212	-9.212	0	126
35	M44	Z	0	0	0	2
36	M45	Z	0	0	0	2
37	MP8	Z	-9.212	-9.212	0	126
38	M47	Z	0	0	0	2
39	M48	Z	0	0	0	2
40	MP9	Z	-9.212	-9.212	0	126
41	M50	Z	0	0	0	2
42	M51	Z	0	0	0	2
43	MP10	Z	-9.212	-9.212	0	126
44	M53	Z	0	0	0	2
45	M54	Z	0	0	0	2
46	MP11	Z	-9.212	-9.212	0	126
47	M56	Z	0	0	0	2
48	M57	Z	0	0	0	2
49	MP12	Z	-9.212	-9.212	0	126
50	M59	Z	0	0	0	2
51	M60	Z	0	0	0	2

Member Distributed Loads (BLC 19 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	X	-8.01	-8.01	0	62.25
2	M2	X	-9.712	-9.712	0	12
3	M3	X	-8.011	-8.011	0	62.251
4	M4	X	-9.712	-9.712	0	12
5	M5	X	-16.021	-16.021	0	62.251
6	M7	X	-9.712	-9.712	0	150
7	M9	X	-9.712	-9.712	0	150
8	MP1	X	-9.212	-9.212	0	126
9	M31	X	-7.978	-7.978	0	150
10	M33	X	-7.978	-7.978	0	150
11	M23	X	0	0	0	2
12	M24	X	0	0	0	2
13	M17	X	-9.712	-9.712	0	44.332
14	M18	X	-9.712	-9.712	0	44.332
15	M19	X	-6.59	-6.59	0	18.412
16	M20	X	-6.59	-6.59	0	18.412
17	M22	X	-4.162	-4.162	0	32.332
18	M23A	X	-4.162	-4.162	0	32.332
19	M25	X	-4.162	-4.162	0	32.332
20	M26	X	-4.162	-4.162	0	32.332
21	MP2	X	-9.212	-9.212	0	126
22	M29	X	0	0	0	2
23	M30	X	0	0	0	2

Member Distributed Loads (BLC 19 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
24	MP3	X	-9.212	-9.212	0	126
25	M32A	X	0	0	0	2
26	M33A	X	0	0	0	2
27	MP4	X	-9.212	-9.212	0	126
28	M35	X	0	0	0	2
29	M36	X	0	0	0	2
30	MP5	X	-9.212	-9.212	0	126
31	M38	X	0	0	0	2
32	M39	X	0	0	0	2
33	MP6	X	-9.212	-9.212	0	126
34	M41	X	0	0	0	2
35	M42	X	0	0	0	2
36	MP7	X	-9.212	-9.212	0	126
37	M44	X	0	0	0	2
38	M45	X	0	0	0	2
39	MP8	X	-9.212	-9.212	0	126
40	M47	X	0	0	0	2
41	M48	X	0	0	0	2
42	MP9	X	-9.212	-9.212	0	126
43	M50	X	0	0	0	2
44	M51	X	0	0	0	2
45	MP10	X	-9.212	-9.212	0	126
46	M53	X	0	0	0	2
47	M54	X	0	0	0	2
48	MP11	X	-9.212	-9.212	0	126
49	M56	X	0	0	0	2
50	M57	X	0	0	0	2
51	MP12	X	-9.212	-9.212	0	126
52	M59	X	0	0	0	2
53	M60	X	0	0	0	2

Member Distributed Loads (BLC 20 : BLC 4 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	Y	-.507	-5.202	31.125	41.5
2	M1	Y	-5.202	-6.855	41.5	51.875
3	M1	Y	-6.855	-.77	51.875	62.25
4	M2	Y	-1.154	-1.154	1.457	10.543
5	M17	Y	-3.265	-3.265	3.872	40.459
6	M24A	Y	-2.186	-2.677	3.233	12.933
7	M24A	Y	-2.677	-2.404	12.933	22.632
8	M24A	Y	-2.404	-1.368	22.632	32.332
9	M25	Y	-2.186	-2.677	3.233	12.933
10	M25	Y	-2.677	-2.404	12.933	22.632
11	M25	Y	-2.404	-1.368	22.632	32.332
12	M3	Y	-.507	-5.202	31.126	41.501
13	M3	Y	-5.202	-6.855	41.501	51.876
14	M3	Y	-6.855	-.77	51.876	62.251
15	M4	Y	-1.154	-1.154	1.457	10.543
16	M18	Y	-3.265	-3.265	3.872	40.459
17	M26	Y	-2.186	-2.677	3.233	12.933
18	M26	Y	-2.677	-2.404	12.933	22.632

Member Distributed Loads (BLC 20 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
19	M26	Y	-2.404	-1.368	22.632	32.332
20	M27	Y	-2.186	-2.677	3.233	12.933
21	M27	Y	-2.677	-2.404	12.933	22.632
22	M27	Y	-2.404	-1.368	22.632	32.332
23	M5	Y	-.507	-5.202	31.126	41.501
24	M5	Y	-5.202	-6.855	41.501	51.876
25	M5	Y	-6.855	-.77	51.876	62.251
26	M6	Y	-1.154	-1.154	1.457	10.542
27	M16	Y	-3.265	-3.265	3.873	40.459
28	M22	Y	-2.186	-2.677	3.233	12.933
29	M22	Y	-2.677	-2.405	12.933	22.632
30	M22	Y	-2.405	-1.368	22.632	32.332
31	M23A	Y	-2.186	-2.677	3.233	12.933
32	M23A	Y	-2.677	-2.404	12.933	22.632
33	M23A	Y	-2.404	-1.368	22.632	32.332

Member Distributed Loads (BLC 21 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	Z	-5.488	-5.488	0	62.25
2	M2	Z	-2.218	-2.218	0	12
3	M3	Z	-5.488	-5.488	0	62.251
4	M4	Z	-2.218	-2.218	0	12
5	M6	Z	-4.436	-4.436	0	12
6	M7	Z	-2.218	-2.218	0	150
7	M8	Z	-4.436	-4.436	0	150
8	M9	Z	-2.218	-2.218	0	150
9	MP1	Z	-3.644	-3.644	0	126
10	M31	Z	-1.822	-1.822	0	150
11	M32	Z	-3.644	-3.644	0	150
12	M33	Z	-1.822	-1.822	0	150
13	M16	Z	-4.436	-4.436	0	44.332
14	M17	Z	-2.218	-2.218	0	44.332
15	M18	Z	-2.218	-2.218	0	44.332
16	M19	Z	-1.505	-1.505	0	18.412
17	M20	Z	-1.505	-1.505	0	18.412
18	M21	Z	-3.01	-3.01	0	18.412
19	M22	Z	-.951	-.951	0	32.332
20	M23A	Z	-.951	-.951	0	32.332
21	M24A	Z	-1.901	-1.901	0	32.332
22	M25	Z	-.951	-.951	0	32.332
23	M26	Z	-.951	-.951	0	32.332
24	M27	Z	-1.901	-1.901	0	32.332
25	MP2	Z	-3.644	-3.644	0	126
26	MP3	Z	-3.644	-3.644	0	126
27	MP4	Z	-3.644	-3.644	0	126
28	MP5	Z	-3.644	-3.644	0	126
29	M38	Z	0	0	0	2
30	M39	Z	0	0	0	2
31	MP6	Z	-3.644	-3.644	0	126
32	M41	Z	0	0	0	2
33	M42	Z	0	0	0	2

Member Distributed Loads (BLC 21 : BLC 5 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
34	MP7	Z	-3.644	-3.644	0	126
35	M44	Z	0	0	0	2
36	M45	Z	0	0	0	2
37	MP8	Z	-3.644	-3.644	0	126
38	M47	Z	0	0	0	2
39	M48	Z	0	0	0	2
40	MP9	Z	-3.644	-3.644	0	126
41	M50	Z	0	0	0	2
42	M51	Z	0	0	0	2
43	MP10	Z	-3.644	-3.644	0	126
44	M53	Z	0	0	0	2
45	M54	Z	0	0	0	2
46	MP11	Z	-3.644	-3.644	0	126
47	M56	Z	0	0	0	2
48	M57	Z	0	0	0	2
49	MP12	Z	-3.644	-3.644	0	126
50	M59	Z	0	0	0	2
51	M60	Z	0	0	0	2

Member Distributed Loads (BLC 22 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
1	M1	X	-3.169	-3.169	0	62.25
2	M2	X	-3.842	-3.842	0	12
3	M3	X	-3.169	-3.169	0	62.251
4	M4	X	-3.842	-3.842	0	12
5	M5	X	-6.338	-6.338	0	62.251
6	M7	X	-3.842	-3.842	0	150
7	M9	X	-3.842	-3.842	0	150
8	MP1	X	-3.644	-3.644	0	126
9	M31	X	-3.156	-3.156	0	150
10	M33	X	-3.156	-3.156	0	150
11	M23	X	0	0	0	2
12	M24	X	0	0	0	2
13	M17	X	-3.842	-3.842	0	44.332
14	M18	X	-3.842	-3.842	0	44.332
15	M19	X	-2.607	-2.607	0	18.412
16	M20	X	-2.607	-2.607	0	18.412
17	M22	X	-1.647	-1.647	0	32.332
18	M23A	X	-1.647	-1.647	0	32.332
19	M25	X	-1.647	-1.647	0	32.332
20	M26	X	-1.647	-1.647	0	32.332
21	MP2	X	-3.644	-3.644	0	126
22	M29	X	0	0	0	2
23	M30	X	0	0	0	2
24	MP3	X	-3.644	-3.644	0	126
25	M32A	X	0	0	0	2
26	M33A	X	0	0	0	2
27	MP4	X	-3.644	-3.644	0	126
28	M35	X	0	0	0	2
29	M36	X	0	0	0	2
30	MP5	X	-3.644	-3.644	0	126

Member Distributed Loads (BLC 22 : BLC 6 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb...	End Magnitude[lb/ft,F,psf]	Start Location[in,%]	End Location[in,%]
31	M38	X	0	0	0	2
32	M39	X	0	0	0	2
33	MP6	X	-3.644	-3.644	0	126
34	M41	X	0	0	0	2
35	M42	X	0	0	0	2
36	MP7	X	-3.644	-3.644	0	126
37	M44	X	0	0	0	2
38	M45	X	0	0	0	2
39	MP8	X	-3.644	-3.644	0	126
40	M47	X	0	0	0	2
41	M48	X	0	0	0	2
42	MP9	X	-3.644	-3.644	0	126
43	M50	X	0	0	0	2
44	M51	X	0	0	0	2
45	MP10	X	-3.644	-3.644	0	126
46	M53	X	0	0	0	2
47	M54	X	0	0	0	2
48	MP11	X	-3.644	-3.644	0	126
49	M56	X	0	0	0	2
50	M57	X	0	0	0	2
51	MP12	X	-3.644	-3.644	0	126
52	M59	X	0	0	0	2
53	M60	X	0	0	0	2

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N66	N64	N65	N67	Y	Two W...	-10
2	N70A	N69	N71A	N72A	Y	Two W...	-10
3	N60A	N59A	N61	N62	Y	Two W...	-10

Member Area Loads (BLC 2 : Wind Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N70	N72	N73	N71	Z	Open S...	-38.45

Member Area Loads (BLC 3 : Wind Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N72	N74	N75	N73	X	Open S...	-38.45

Member Area Loads (BLC 4 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N66	N64	N65	N67	Y	Two W...	-7
2	N70A	N69	N71A	N72A	Y	Two W...	-7
3	N60A	N59A	N61	N62	Y	Two W...	-7

Member Area Loads (BLC 5 : Wind + Ice Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N70	N72	N73	N71	Z	Open S...	-15.21

Member Area Loads (BLC 6 : Wind + Ice Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribu...	Magnitude[psf]
1	N72	N74	N75	N73	X	Open S...	-15.21

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
1	N1	max	0	62	0	62	0	62	0	62	0	62	0	62
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N2	max	.014	6	.054	18	.027	6	4.211e-3	2	1.03e-3	4	3.913e-3	11
4		min	-.014	24	-.273	37	-.027	24	-2.564e-3	20	-1.004e-3	22	-1.776e-3	17
5	N3	max	.013	7	.054	18	.029	6	3.708e-3	2	9.566e-4	4	3.939e-3	11
6		min	-.013	25	-.271	37	-.028	24	-2.521e-3	20	-9.399e-4	22	-2.043e-3	17
7	N4	max	.015	6	.054	18	.027	6	4.906e-3	2	8.815e-4	4	3.574e-3	11
8		min	-.015	24	-.279	38	-.026	24	-3.249e-3	20	-8.491e-4	22	-1.929e-3	17
9	N5	max	0	62	0	62	0	62	0	62	0	62	0	62
10		min	0	1	0	1	0	1	0	1	0	1	0	1
11	N6	max	0	62	0	62	0	62	0	62	0	62	0	62
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N7	max	0	62	0	62	0	62	0	62	0	62	0	62
14		min	0	1	0	1	0	1	0	1	0	1	0	1
15	N8	max	.01	5	.056	22	.02	23	3.34e-3	2	1.255e-3	6	2.019e-3	23
16		min	-.01	23	-.274	29	-.021	5	-2.314e-3	20	-1.229e-3	24	-4.517e-3	5
17	N9	max	.015	5	.056	22	.018	22	3.602e-3	2	1.079e-3	6	1.961e-3	23
18		min	-.015	23	-.272	29	-.018	4	-2.555e-3	20	-1.062e-3	24	-3.942e-3	5
19	N10	max	.006	3	.058	22	.023	23	3.168e-3	2	1.184e-3	6	2.58e-3	23
20		min	-.006	21	-.279	29	-.024	5	-2.575e-3	20	-1.151e-3	24	-4.841e-3	5
21	N11	max	.042	23	.045	14	.001	8	1.446e-3	14	3.094e-4	9	3.251e-3	11
22		min	-.043	5	-.27	33	-.001	14	-4.454e-3	33	-2.827e-4	15	-2.901e-3	17
23	N12	max	.042	23	.046	14	.001	7	1.563e-3	14	1.364e-4	9	3.149e-3	11
24		min	-.043	5	-.268	33	-.001	25	-3.873e-3	33	-1.188e-4	15	-3.079e-3	17
25	N13	max	.042	23	.045	14	.004	9	1.73e-3	14	3.2e-4	8	3.878e-3	11
26		min	-.043	5	-.275	33	-.004	15	-3.986e-3	8	-2.879e-4	14	-3.273e-3	17
27	N15	max	.013	7	.059	18	.03	6	3.697e-3	2	9.472e-4	4	3.919e-3	11
28		min	-.013	25	-.283	37	-.029	24	-2.537e-3	20	-9.302e-4	22	-2.072e-3	17
29	N16	max	.042	23	.05	14	.003	9	1.788e-3	14	3.183e-4	8	3.915e-3	11
30		min	-.043	5	-.285	33	-.003	15	-3.99e-3	8	-2.868e-4	14	-3.317e-3	17
31	N18	max	.015	5	.062	22	.02	23	3.59e-3	2	1.069e-3	6	1.986e-3	23
32		min	-.015	23	-.284	29	-.021	5	-2.571e-3	20	-1.052e-3	24	-3.919e-3	5
33	N19	max	.015	6	.06	18	.028	6	4.927e-3	2	8.706e-4	4	3.583e-3	11
34		min	-.015	24	-.289	37	-.027	24	-3.303e-3	20	-8.388e-4	22	-1.98e-3	17
35	N21	max	.042	23	.051	14	.001	7	1.595e-3	14	1.316e-4	9	3.156e-3	11
36		min	-.043	5	-.28	33	-.001	25	-3.806e-3	33	-1.136e-4	15	-3.084e-3	17
37	N22	max	.008	4	.064	22	.025	23	3.19e-3	2	1.172e-3	6	2.64e-3	23
38		min	-.008	22	-.29	29	-.026	5	-2.617e-3	20	-1.139e-3	24	-4.851e-3	5
39	N32	max	.008	4	.057	22	.021	23	3.275e-3	2	1.296e-3	6	2.208e-3	23
40		min	-.008	22	-.275	29	-.022	5	-2.402e-3	20	-1.261e-3	24	-4.632e-3	5
41	N33	max	.012	5	.056	22	.019	23	3.428e-3	2	1.181e-3	6	1.997e-3	23
42		min	-.012	23	-.273	29	-.02	5	-2.398e-3	20	-1.163e-3	24	-4.324e-3	5
43	N36	max	.042	23	.045	14	.002	9	1.541e-3	14	3.813e-4	9	3.465e-3	11
44		min	-.043	5	-.272	33	-.002	15	-4.287e-3	33	-3.449e-4	15	-3.021e-3	17
45	N37	max	.042	23	.045	14	.001	7	1.485e-3	14	2.217e-4	10	3.217e-3	11
46		min	-.043	5	-.269	33	-.001	25	-4.26e-3	33	-2.027e-4	16	-2.957e-3	17

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
47	N40	max	.015	6	.054	18	.027	6	4.452e-3	2	9.819e-4	4	3.794e-3	11
48		min	-.014	24	-.274	37	-.026	24	-2.794e-3	20	-9.466e-4	22	-1.826e-3	17
49	N41	max	.013	6	.054	18	.028	6	4.041e-3	2	1.046e-3	4	3.923e-3	11
50		min	-.013	24	-.272	37	-.027	24	-2.546e-3	20	-1.029e-3	22	-1.868e-3	17
51	N70	max	0	62	0	62	0	62	0	62	0	62	0	62
52		min	0	1	0	1	0	1	0	1	0	1	0	1
53	N71	max	0	62	0	62	0	62	0	62	0	62	0	62
54		min	0	1	0	1	0	1	0	1	0	1	0	1
55	N72	max	0	62	0	62	0	62	0	62	0	62	0	62
56		min	0	1	0	1	0	1	0	1	0	1	0	1
57	N73	max	0	62	0	62	0	62	0	62	0	62	0	62
58		min	0	1	0	1	0	1	0	1	0	1	0	1
59	N74	max	0	62	0	62	0	62	0	62	0	62	0	62
60		min	0	1	0	1	0	1	0	1	0	1	0	1
61	N75	max	0	62	0	62	0	62	0	62	0	62	0	62
62		min	0	1	0	1	0	1	0	1	0	1	0	1
63	N55A	max	.017	5	.058	19	.027	6	4.927e-3	2	8.706e-4	4	3.583e-3	11
64		min	-.016	23	-.287	38	-.026	24	-3.303e-3	20	-8.388e-4	22	-1.98e-3	17
65	N107	max	.111	5	.058	19	.109	3	2.247e-3	14	9.842e-4	19	1.791e-3	23
66		min	-.108	23	-.287	38	-.106	21	-2.546e-3	8	-1.413e-3	13	-2.065e-3	5
67	N106	max	.513	11	.058	19	.649	20	1.057e-2	2	8.706e-4	4	7.351e-3	11
68		min	-.384	17	-.288	38	-.778	2	-8.977e-3	20	-8.388e-4	22	-5.773e-3	17
69	N85	max	.105	5	.06	18	.098	3	2.42e-3	2	8.625e-4	33	1.923e-3	22
70		min	-.097	23	-.279	37	-.088	21	-2.159e-3	20	-2.688e-4	14	-2.546e-3	4
71	N86	max	.062	17	.051	14	.08	14	1.968e-3	2	1.081e-3	17	2.463e-3	23
72		min	-.067	11	-.283	33	-.079	20	-1.578e-3	20	-1.507e-3	11	-2.585e-3	5
73	N87	max	.105	5	.062	22	.093	25	2.092e-3	25	1.101e-3	3	1.819e-3	11
74		min	-.101	23	-.28	29	-.106	7	-2.758e-3	7	-6.016e-4	21	-1.742e-3	17
75	N88	max	.104	5	.061	18	.1	3	2.247e-3	14	9.843e-4	19	1.791e-3	23
76		min	-.101	23	-.287	37	-.097	21	-2.546e-3	8	-1.414e-3	13	-2.065e-3	5
77	N89	max	.06	17	.051	14	.079	2	1.792e-3	2	1.442e-3	5	2.956e-3	11
78		min	-.073	11	-.277	33	-.077	20	-1.387e-3	20	-9.437e-4	23	-2.422e-3	17
79	N90	max	.106	17	.065	22	.091	25	2.135e-3	14	2.181e-4	25	2.368e-3	12
80		min	-.104	23	-.287	29	-.095	7	-2.215e-3	8	-7.016e-4	32	-1.968e-3	18
81	N94	max	.105	5	.058	19	.103	3	2.247e-3	14	9.842e-4	19	1.791e-3	23
82		min	-.102	23	-.287	38	-.098	21	-2.546e-3	8	-1.413e-3	13	-2.066e-3	5
83	N57	max	.015	6	.055	18	.027	6	4.927e-3	2	8.706e-4	4	3.583e-3	11
84		min	-.015	24	-.28	38	-.026	24	-3.303e-3	20	-8.388e-4	22	-1.98e-3	17
85	N58	max	.104	5	.056	18	.103	3	2.247e-3	14	9.842e-4	19	1.791e-3	23
86		min	-.101	23	-.286	38	-.098	21	-2.546e-3	8	-1.413e-3	13	-2.066e-3	5
87	N44	max	.043	23	.012	14	0	8	8.672e-4	14	5.645e-4	5	2.091e-3	11
88		min	-.043	5	-.133	33	0	14	-5.178e-3	33	-5.474e-4	23	-1.802e-3	17
89	N47	max	.043	23	.032	15	.008	9	2.11e-3	15	7.696e-4	9	5.892e-3	10
90		min	-.043	5	-.222	34	-.007	15	-3.783e-3	9	-7.201e-4	15	-2.935e-3	16
91	N48	max	.043	23	.033	25	.002	16	1.542e-3	25	4.012e-4	24	2.391e-3	24
92		min	-.043	5	-.197	32	-.002	10	-3.153e-3	7	-4.123e-4	6	-4.76e-3	6
93	N47A	max	.105	5	.048	22	.101	25	2.298e-3	25	1.308e-3	3	1.69e-3	23
94		min	-.101	23	-.274	29	-.108	7	-2.845e-3	7	-7.386e-4	21	-2.029e-3	5
95	N48A	max	.105	5	.048	19	.11	3	2.559e-3	14	1.23e-3	19	1.975e-3	11
96		min	-.101	23	-.286	38	-.103	21	-2.655e-3	8	-1.758e-3	13	-1.93e-3	17
97	N50	max	.015	8	.015	18	.027	8	3.459e-3	27	5.858e-4	5	4.334e-3	36
98		min	-.015	14	-.134	37	-.027	14	-1.392e-3	20	-5.687e-4	23	-1.094e-3	17

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
99	N51	max	.015	5	.041	19	.034	20	7.421e-3	2	1.243e-3	3	1.475e-3	23
100		min	-.014	23	-.228	38	-.034	2	-4.018e-3	20	-1.194e-3	21	-1.501e-3	5
101	N52	max	.028	21	.039	17	.026	7	1.66e-3	15	1.187e-3	16	5.015e-3	11
102		min	-.028	3	-.199	36	-.025	25	-2.903e-3	9	-1.197e-3	10	-2.435e-3	17
103	N53	max	.072	17	.038	14	.079	14	1.55e-3	14	1.705e-3	5	3.186e-3	11
104		min	-.081	11	-.27	33	-.079	20	-1.565e-3	20	-1.137e-3	23	-2.544e-3	17
105	N54	max	.111	5	.048	23	.092	25	2.403e-3	2	4.798e-4	24	2.261e-3	11
106		min	-.106	23	-.284	29	-.099	7	-2.311e-3	20	-1.006e-3	6	-2.202e-3	17
107	N56	max	.009	2	.016	22	.016	20	2.791e-3	2	6.304e-4	5	1.171e-3	23
108		min	-.009	20	-.135	29	-.016	2	-1.378e-3	20	-6.129e-4	23	-4.88e-3	30
109	N57A	max	.029	24	.04	23	.013	21	1.743e-3	25	1.557e-3	6	3.384e-3	23
110		min	-.03	6	-.225	30	-.014	3	-3.465e-3	7	-1.508e-3	24	-6.315e-3	5
111	N58A	max	.015	5	.038	21	.026	19	5.731e-3	2	1.165e-3	19	1.226e-3	23
112		min	-.014	23	-.2	28	-.026	13	-2.871e-3	20	-1.175e-3	13	-1.438e-3	5
113	N59	max	.104	5	.046	18	.099	3	2.749e-3	2	1.034e-3	34	2.107e-3	22
114		min	-.1	23	-.273	37	-.092	21	-2.18e-3	20	-4.514e-4	15	-2.415e-3	4
115	N60	max	.072	17	.037	15	.081	14	1.768e-3	14	1.311e-3	17	2.714e-3	23
116		min	-.081	11	-.28	34	-.081	20	-1.76e-3	20	-1.835e-3	10	-2.824e-3	5
117	N59A	max	.042	23	.046	14	.001	7	1.524e-3	14	1.593e-4	10	3.183e-3	11
118		min	-.043	5	-.269	33	-.001	25	-4.067e-3	33	-1.437e-4	16	-3.017e-3	17
119	N60A	max	.043	23	.03	25	.002	15	1.448e-3	25	3.801e-4	23	2.185e-3	24
120		min	-.043	5	-.189	32	-.002	9	-3.214e-3	7	-3.814e-4	5	-4.627e-3	6
121	N61	max	.042	23	.045	14	.003	9	1.636e-3	14	3.769e-4	9	3.674e-3	11
122		min	-.043	5	-.273	33	-.003	15	-4.119e-3	33	-3.381e-4	15	-3.145e-3	17
123	N62	max	.043	23	.028	15	.007	8	1.976e-3	15	6.999e-4	9	5.668e-3	10
124		min	-.043	5	-.211	34	-.006	14	-3.798e-3	9	-6.558e-4	15	-2.613e-3	16
125	N64	max	.013	7	.054	18	.028	6	3.874e-3	2	1.02e-3	4	3.932e-3	11
126		min	-.013	25	-.271	37	-.028	24	-2.531e-3	20	-1.006e-3	22	-1.957e-3	17
127	N65	max	.026	21	.035	17	.026	7	1.565e-3	15	1.184e-3	16	5.028e-3	11
128		min	-.026	3	-.19	36	-.025	25	-2.794e-3	9	-1.185e-3	10	-2.278e-3	17
129	N66	max	.015	6	.054	18	.027	6	4.684e-3	2	9.332e-4	4	3.682e-3	11
130		min	-.014	24	-.276	37	-.026	24	-3.022e-3	20	-8.955e-4	22	-1.877e-3	17
131	N67	max	.015	6	.036	19	.033	20	7.165e-3	2	1.211e-3	3	1.525e-3	11
132		min	-.014	24	-.216	38	-.033	2	-3.603e-3	20	-1.168e-3	21	-1.476e-3	17
133	N69	max	.014	5	.056	22	.018	22	3.516e-3	2	1.123e-3	6	1.978e-3	23
134		min	-.013	23	-.272	29	-.019	4	-2.478e-3	20	-1.109e-3	24	-4.132e-3	5
135	N70A	max	.013	5	.034	21	.025	19	5.61e-3	2	1.171e-3	19	1.218e-3	23
136		min	-.013	23	-.191	28	-.025	13	-2.609e-3	20	-1.173e-3	13	-1.528e-3	5
137	N71A	max	.007	4	.057	22	.022	23	3.218e-3	2	1.271e-3	6	2.396e-3	23
138		min	-.007	22	-.277	29	-.023	5	-2.489e-3	20	-1.233e-3	24	-4.74e-3	5
139	N72A	max	.027	24	.036	23	.013	21	1.579e-3	25	1.526e-3	6	3.121e-3	23
140		min	-.027	6	-.214	30	-.014	3	-3.361e-3	32	-1.483e-3	24	-6.23e-3	5
141	N71B	max	.014	5	.044	20	.056	20	1.051e-2	2	1.208e-3	2	1.948e-3	23
142		min	-.014	23	-.253	27	-.058	2	-7.748e-3	20	-1.176e-3	20	-2.501e-3	5
143	N72B	max	.108	17	.044	20	.192	2	3.329e-3	14	3.624e-4	19	1.838e-3	11
144		min	-.107	23	-.253	27	-.15	20	-3.268e-3	20	-9.088e-4	38	-1.231e-3	17
145	N73A	max	1.036	23	.044	20	2.333	20	3.892e-2	2	1.208e-3	2	1.724e-2	23
146		min	-1.077	5	-.254	27	-2.549	2	-3.633e-2	20	-1.176e-3	20	-1.773e-2	5
147	N74A	max	.105	5	.044	20	.182	2	3.329e-3	14	3.624e-4	19	1.838e-3	11
148		min	-.102	23	-.253	27	-.14	20	-3.268e-3	20	-9.088e-4	38	-1.231e-3	17
149	N75A	max	.015	5	.029	20	.056	20	1.051e-2	2	1.208e-3	2	1.948e-3	23
150		min	-.014	23	-.238	27	-.058	2	-7.748e-3	20	-1.176e-3	20	-2.501e-3	5

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
151	N76	max	.105	5	.038	20	.182	2	3.329e-3	14	3.624e-4	19	1.838e-3	11
152		min	-.101	23	-.25	27	-.14	20	-3.268e-3	20	-9.088e-4	38	-1.231e-3	17
153	N77	max	.015	6	.037	20	.044	19	7.569e-3	2	1.227e-3	20	1.759e-3	11
154		min	-.015	24	-.22	27	-.045	13	-5.151e-3	20	-1.236e-3	2	-1.047e-3	17
155	N78	max	.112	5	.037	20	.173	2	3.304e-3	14	1.385e-3	28	1.389e-3	23
156		min	-.105	23	-.221	27	-.139	20	-3.428e-3	8	-4.592e-4	21	-1.905e-3	5
157	N79	max	.54	11	.036	20	.94	20	1.558e-2	2	1.227e-3	20	8.637e-3	11
158		min	-.483	17	-.221	27	-1.134	2	-1.321e-2	20	-1.236e-3	2	-7.949e-3	17
159	N80	max	.107	5	.037	20	.163	2	3.304e-3	14	1.385e-3	28	1.389e-3	23
160		min	-.101	23	-.221	27	-.129	20	-3.428e-3	8	-4.592e-4	21	-1.905e-3	5
161	N81	max	.015	5	.027	21	.044	19	7.569e-3	2	1.227e-3	20	1.759e-3	11
162		min	-.014	23	-.209	28	-.045	13	-5.151e-3	20	-1.236e-3	2	-1.047e-3	17
163	N82	max	.105	5	.031	21	.163	2	3.304e-3	14	1.385e-3	28	1.389e-3	23
164		min	-.101	23	-.218	28	-.129	20	-3.428e-3	8	-4.592e-4	21	-1.905e-3	5
165	N83	max	.017	5	.059	22	.018	22	3.59e-3	2	1.069e-3	6	1.986e-3	23
166		min	-.017	23	-.277	29	-.019	4	-2.571e-3	20	-1.052e-3	24	-3.919e-3	5
167	N84	max	.112	5	.059	22	.102	25	2.092e-3	25	1.101e-3	3	1.819e-3	11
168		min	-.107	23	-.277	29	-.114	7	-2.758e-3	7	-6.016e-4	21	-1.742e-3	17
169	N85A	max	.267	23	.059	22	.336	20	5.598e-3	2	1.069e-3	6	4.001e-3	23
170		min	-.423	5	-.277	29	-.419	2	-4.585e-3	20	-1.052e-3	24	-5.926e-3	5
171	N86A	max	.107	5	.059	22	.095	25	2.092e-3	25	1.101e-3	3	1.819e-3	11
172		min	-.101	23	-.277	29	-.106	7	-2.758e-3	7	-6.016e-4	21	-1.742e-3	17
173	N87A	max	.015	5	.057	22	.018	22	3.59e-3	2	1.069e-3	6	1.986e-3	23
174		min	-.015	23	-.274	29	-.019	4	-2.571e-3	20	-1.052e-3	24	-3.919e-3	5
175	N88A	max	.105	5	.058	22	.095	25	2.092e-3	25	1.101e-3	3	1.819e-3	11
176		min	-.101	23	-.279	29	-.106	7	-2.758e-3	7	-6.016e-4	21	-1.742e-3	17
177	N90A	max	.006	3	.061	22	.026	23	3.19e-3	2	1.172e-3	6	2.64e-3	23
178		min	-.006	21	-.287	29	-.026	5	-2.617e-3	20	-1.139e-3	24	-4.851e-3	5
179	N91	max	.113	17	.061	22	.096	25	2.135e-3	14	2.18e-4	25	2.368e-3	12
180		min	-.111	23	-.287	29	-.101	7	-2.215e-3	8	-7.016e-4	32	-1.968e-3	18
181	N92	max	.54	23	.061	22	.475	20	7.3e-3	2	1.172e-3	6	7.802e-3	23
182		min	-.717	5	-.287	29	-.521	2	-6.744e-3	20	-1.139e-3	24	-9.979e-3	5
183	N93	max	.107	5	.061	22	.091	25	2.135e-3	14	2.18e-4	25	2.368e-3	12
184		min	-.105	23	-.287	29	-.095	7	-2.215e-3	8	-7.016e-4	32	-1.968e-3	18
185	N94A	max	.006	4	.059	22	.024	23	3.19e-3	2	1.172e-3	6	2.64e-3	23
186		min	-.006	22	-.281	29	-.025	5	-2.617e-3	20	-1.139e-3	24	-4.851e-3	5
187	N95	max	.107	5	.06	22	.091	25	2.135e-3	14	2.18e-4	25	2.368e-3	12
188		min	-.105	23	-.287	29	-.096	7	-2.215e-3	8	-7.016e-4	32	-1.968e-3	18
189	N96	max	.052	24	.037	24	.013	20	3.158e-3	25	1.458e-3	5	6.26e-3	23
190		min	-.054	6	-.247	31	-.013	14	-5.018e-3	7	-1.427e-3	23	-8.373e-3	5
191	N97	max	.162	5	.037	24	.103	25	2.379e-3	13	-1.418e-4	23	2.819e-3	24
192		min	-.126	23	-.247	31	-.125	7	-1.888e-3	19	-6.859e-4	29	-3.174e-3	6
193	N98	max	1.994	23	.036	24	1.384	8	2.01e-2	14	1.458e-3	5	3.119e-2	23
194		min	-2.159	5	-.248	31	-1.238	14	-2.187e-2	8	-1.427e-3	23	-3.316e-2	5
195	N99	max	.153	5	.037	24	.096	25	2.379e-3	13	-1.418e-4	23	2.819e-3	24
196		min	-.118	23	-.247	31	-.12	7	-1.888e-3	19	-6.859e-4	29	-3.174e-3	6
197	N100	max	.051	24	.023	24	.014	8	3.158e-3	25	1.458e-3	5	6.26e-3	23
198		min	-.052	6	-.234	31	-.014	14	-5.018e-3	7	-1.427e-3	23	-8.373e-3	5
199	N101	max	.153	5	.03	24	.096	25	2.379e-3	13	-1.418e-4	23	2.819e-3	24
200		min	-.118	23	-.244	31	-.12	7	-1.888e-3	19	-6.859e-4	29	-3.174e-3	6
201	N102	max	.051	23	.031	24	.008	18	2.695e-3	25	8.494e-4	24	3.965e-3	24
202		min	-.051	5	-.216	32	-.008	12	-3.284e-3	7	-8.575e-4	6	-6.414e-3	6

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
203	N103	max	.139	5	.031	24	.093	25	1.619e-3	25	1.352e-3	31	3.489e-3	11
204		min	-.114	23	-.216	32	-.116	7	-1.992e-3	7	-4.447e-4	24	-3.124e-3	17
205	N104	max	.804	23	.031	24	.624	7	8.856e-3	14	8.494e-4	24	1.131e-2	23
206		min	-1.001	5	-.216	32	-.578	25	-9.423e-3	8	-8.575e-4	6	-1.371e-2	5
207	N105	max	.13	5	.031	24	.088	25	1.619e-3	25	1.352e-3	31	3.489e-3	11
208		min	-.104	23	-.216	32	-.11	7	-1.992e-3	7	-4.447e-4	24	-3.124e-3	17
209	N106A	max	.051	23	.023	25	.007	18	2.695e-3	25	8.494e-4	24	3.965e-3	24
210		min	-.052	5	-.206	32	-.007	12	-3.284e-3	7	-8.575e-4	6	-6.414e-3	6
211	N107A	max	.131	5	.025	25	.088	25	1.619e-3	25	1.352e-3	31	3.489e-3	11
212		min	-.104	23	-.215	32	-.108	7	-1.992e-3	7	-4.447e-4	24	-3.124e-3	17
213	N108	max	.042	23	.049	14	.001	6	1.595e-3	14	1.316e-4	9	3.156e-3	11
214		min	-.043	5	-.274	33	-.001	24	-3.806e-3	33	-1.136e-4	15	-3.084e-3	17
215	N109	max	.069	17	.049	14	.084	2	1.792e-3	2	1.442e-3	5	2.956e-3	11
216		min	-.083	11	-.274	33	-.082	20	-1.387e-3	20	-9.437e-4	23	-2.422e-3	17
217	N110	max	.42	11	.049	14	.429	8	3.61e-3	14	1.316e-4	9	5.165e-3	11
218		min	-.415	17	-.274	33	-.253	14	-5.785e-3	8	-1.136e-4	15	-5.097e-3	17
219	N111	max	.062	17	.049	14	.079	14	1.792e-3	2	1.442e-3	5	2.956e-3	11
220		min	-.074	11	-.274	33	-.078	20	-1.387e-3	20	-9.437e-4	23	-2.422e-3	17
221	N112	max	.042	23	.047	14	.001	7	1.595e-3	14	1.316e-4	9	3.156e-3	11
222		min	-.043	5	-.27	33	-.001	25	-3.806e-3	33	-1.136e-4	15	-3.084e-3	17
223	N113	max	.063	17	.047	14	.079	2	1.792e-3	2	1.442e-3	5	2.956e-3	11
224		min	-.075	11	-.275	33	-.077	20	-1.387e-3	20	-9.437e-4	23	-2.422e-3	17
225	N115	max	.042	23	.048	14	.004	9	1.788e-3	14	3.183e-4	8	3.915e-3	11
226		min	-.043	5	-.282	33	-.004	15	-3.99e-3	8	-2.869e-4	14	-3.317e-3	17
227	N116	max	.072	17	.048	14	.086	14	1.968e-3	2	1.081e-3	17	2.463e-3	23
228		min	-.077	11	-.282	33	-.085	20	-1.578e-3	20	-1.507e-3	11	-2.585e-3	5
229	N117	max	.687	11	.048	14	.588	8	5.92e-3	14	3.183e-4	8	9.051e-3	11
230		min	-.641	17	-.283	33	-.411	14	-8.093e-3	8	-2.869e-4	14	-8.474e-3	17
231	N118	max	.064	17	.048	14	.08	14	1.968e-3	2	1.081e-3	17	2.463e-3	23
232		min	-.069	11	-.282	33	-.08	20	-1.578e-3	20	-1.507e-3	11	-2.585e-3	5
233	N119	max	.042	23	.046	14	.004	9	1.788e-3	14	3.183e-4	8	3.915e-3	11
234		min	-.043	5	-.277	33	-.004	15	-3.99e-3	8	-2.869e-4	14	-3.317e-3	17
235	N120	max	.065	17	.046	14	.08	14	1.968e-3	2	1.081e-3	17	2.463e-3	23
236		min	-.071	11	-.282	33	-.08	20	-1.578e-3	20	-1.507e-3	11	-2.585e-3	5
237	N121	max	.054	11	.037	16	.019	9	3.88e-3	15	1.091e-3	9	8.314e-3	10
238		min	-.053	17	-.247	35	-.018	15	-4.776e-3	9	-1.059e-3	15	-5.649e-3	16
239	N122	max	.114	17	.037	16	.102	15	1.714e-3	15	3.459e-4	16	2.822e-3	23
240		min	-.151	11	-.248	35	-.122	9	-2.273e-3	9	-8.765e-4	35	-3.063e-3	5
241	N123	max	2.151	11	.037	16	1.366	8	2.079e-2	14	1.091e-3	9	3.299e-2	11
242		min	-1.942	17	-.248	35	-1.297	14	-2.16e-2	8	-1.059e-3	15	-3.047e-2	17
243	N124	max	.105	17	.037	16	.097	15	1.714e-3	15	3.459e-4	16	2.822e-3	23
244		min	-.143	11	-.248	35	-.115	9	-2.273e-3	9	-8.765e-4	35	-3.063e-3	5
245	N125	max	.054	11	.024	16	.017	9	3.88e-3	15	1.091e-3	9	8.314e-3	10
246		min	-.053	17	-.234	35	-.016	15	-4.776e-3	9	-1.059e-3	15	-5.649e-3	16
247	N126	max	.105	17	.031	16	.096	15	1.714e-3	15	3.459e-4	16	2.822e-3	23
248		min	-.144	11	-.245	35	-.114	9	-2.273e-3	9	-8.765e-4	35	-3.063e-3	5
249	N127	max	.043	10	.038	17	.025	8	2.248e-3	15	1.244e-3	17	6.001e-3	10
250		min	-.043	16	-.218	36	-.024	14	-4.074e-3	9	-1.252e-3	11	-4.269e-3	16
251	N128	max	.115	17	.038	17	.107	15	2.798e-3	3	1.145e-3	36	3.003e-3	10
252		min	-.148	11	-.219	36	-.118	9	-2.289e-3	21	6.562e-5	17	-2.875e-3	16
253	N129	max	.96	11	.038	17	.7	9	8.284e-3	14	1.244e-3	17	1.343e-2	11
254		min	-.821	17	-.219	36	-.553	15	-1.008e-2	8	-1.252e-3	11	-1.174e-2	17

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
255	N130	max	.107	17	.038	17	.099	15	2.799e-3	3	1.145e-3	36	3.003e-3	10
256		min	-.139	11	-.219	36	-.111	9	-2.289e-3	21	6.562e-5	17	-2.875e-3	16
257	N131	max	.042	10	.029	17	.025	8	2.248e-3	15	1.244e-3	17	6.001e-3	10
258		min	-.042	16	-.208	36	-.024	14	-4.074e-3	9	-1.252e-3	11	-4.269e-3	16
259	N132	max	.107	17	.032	17	.099	15	2.799e-3	3	1.145e-3	36	3.003e-3	10
260		min	-.139	11	-.217	36	-.112	9	-2.289e-3	21	6.562e-5	17	-2.875e-3	16
261	N133	max	.013	7	.057	18	.03	6	3.697e-3	2	9.473e-4	4	3.919e-3	11
262		min	-.013	25	-.276	37	-.029	24	-2.537e-3	20	-9.302e-4	22	-2.072e-3	17
263	N134	max	.112	5	.057	18	.105	3	2.42e-3	2	8.625e-4	33	1.923e-3	22
264		min	-.103	23	-.276	37	-.094	21	-2.159e-3	20	-2.687e-4	14	-2.546e-3	4
265	N135	max	.434	11	.057	18	.342	20	5.705e-3	2	9.473e-4	4	5.926e-3	11
266		min	-.284	17	-.276	37	-.435	2	-4.55e-3	20	-9.302e-4	22	-4.086e-3	17
267	N136	max	.105	5	.057	18	.098	3	2.42e-3	2	8.625e-4	33	1.923e-3	22
268		min	-.098	23	-.276	37	-.088	21	-2.159e-3	20	-2.687e-4	14	-2.546e-3	4
269	N137	max	.013	7	.055	18	.029	6	3.697e-3	2	9.473e-4	4	3.919e-3	11
270		min	-.013	25	-.273	37	-.028	24	-2.537e-3	20	-9.302e-4	22	-2.072e-3	17
271	N138	max	.105	5	.055	18	.098	3	2.42e-3	2	8.625e-4	33	1.923e-3	22
272		min	-.098	23	-.278	37	-.089	21	-2.159e-3	20	-2.687e-4	14	-2.546e-3	4

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	N6	max	1209.75	17	3576.513	33	1844.709	14	8744.839	33	1879.542	23	640.771	17
2		min	-1210.864	11	256.75	14	-2014.643	8	-269.633	14	-1882.567	5	-743.356	11
3	N5	max	1885.717	5	3579.068	29	1185.94	3	329.028	21	1120.765	19	7705.239	29
4		min	-1737.382	23	229.781	22	-1102.555	21	-4293.105	28	-1123.386	13	-398.131	22
5	N1	max	1414.175	18	3577.789	37	1651.356	13	302.636	19	1538.516	14	396.63	18
6		min	-1561.254	12	230.053	18	-1566.07	19	-4606.35	38	-1539.083	8	-7523.111	37
7	Totals:	max	4458.858	5	9729.607	33	4467.376	2						
8		min	-4458.858	11	3106.878	51	-4467.374	20						

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

	Member	Shape	Co...	Loc[in]	LC	Sh...	Loc[in]	Dir	LC	phi*Pnc [l...	phi*Pnt [lb]	phi*Mn y-...	phi*M.....	Eqn
1	MP2	PIPE_...	.558	80.063	20	.063	81.375		2	20633.208	60858	4315.5	4315.5 ...	H1...
2	MP10	PIPE_...	.490	80.063	17	.056	81.375		10	20633.208	60858	4315.5	4315.5 ...	H1...
3	MP6	PIPE_...	.490	80.063	23	.056	81.375		5	20633.208	60858	4315.5	4315.5 ...	H1...
4	M1	HSS5...	.429	0	38	.085	0	y	27	140249.3...	169740	15456	22149 ...	H1...
5	M5	HSS5...	.417	0	34	.088	0	z	11	140248.1...	169740	15456	22149 ...	H1...
6	M3	HSS5...	.409	0	28	.084	0	y	31	140248.1...	169740	15456	22149 ...	H1...
7	M17	PIPE_...	.376	22.166	38	.180	22.166		34	71678.263	78246	6898.5	6898.5 ...	H1...
8	M18	PIPE_...	.372	22.166	29	.173	22.166		38	71678.263	78246	6898.5	6898.5 ...	H1...
9	M16	PIPE_...	.369	22.166	34	.174	22.166		30	71678.263	78246	6898.5	6898.5 ...	H1...
10	M8	PIPE_...	.198	35.938	8	.262	35.938		8	28615.556	78246	6898.5	6898.5 ...	H3-6
11	M7	PIPE_...	.178	114.062	27	.228	35.937		5	28615.556	78246	6898.5	6898.5 ...	H1...
12	MP1	PIPE_...	.176	81.375	38	.043	81.375		2	20633.208	60858	4315.5	4315.5 ...	H1...
13	MP5	PIPE_...	.176	81.375	29	.041	81.375		6	20633.208	60858	4315.5	4315.5 ...	H1...
14	MP3	PIPE_...	.175	80.063	8	.050	81.375		3	20633.208	60858	4315.5	4315.5 ...	H1...
15	M9	PIPE_...	.173	114.063	35	.223	35.938		12	28615.556	78246	6898.5	6898.5 ...	H1...
16	MP12	PIPE_...	.171	81.375	38	.033	81.375		10	20633.208	60858	4315.5	4315.5 ...	H1...
17	MP4	PIPE_...	.170	81.375	30	.034	81.375		2	20633.208	60858	4315.5	4315.5 ...	H1...

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

	Member	Shape	Co...	Loc[in]	LC	Sh...	Loc[in]	Dir	LC	phi*Pnc [l...	phi*Pnt [lb]	phi*Mn y-...	phi*M.....	Eqn
18	MP9	PIPE_...	.169	81.375	33	.038	81.375		10	20633.208	60858	4315.5	4315.5	H1...
19	MP8	PIPE_...	.166	81.375	34	.032	81.375		31	20633.208	60858	4315.5	4315.5	H1...
20	MP7	PIPE_...	.166	80.063	11	.042	81.375		6	20633.208	60858	4315.5	4315.5	H1...
21	MP11	PIPE_...	.166	80.063	5	.043	81.375		11	20633.208	60858	4315.5	4315.5	H1...
22	M2	PIPE_...	.120	6	13	.124	6		13	77744.98	78246	6898.5	6898.5	H1...
23	M4	PIPE_...	.112	6	5	.123	6		5	77744.98	78246	6898.5	6898.5	H1...
24	M6	PIPE_...	.104	6	10	.111	6		3	77744.98	78246	6898.5	6898.5	H1...
25	M20	PIPE_...	.103	0	2	.037	0		2	37271.951	38556	2245.95	2245.....	H1...
26	M21	PIPE_...	.089	18.412	10	.033	0		10	37271.951	38556	2245.95	2245.....	H1...
27	M31	PIPE_...	.088	98.437	38	.045	9.375		35	14558.792	60858	4315.5	4315.5	H1...
28	M32	PIPE_...	.087	98.438	30	.049	9.375		27	14558.792	60858	4315.5	4315.5	H1...
29	M19	PIPE_...	.086	0	5	.034	18.412		6	37271.951	38556	2245.95	2245.....	H1...
30	M33	PIPE_...	.084	98.438	34	.046	9.375		31	14558.792	60858	4315.5	4315.5	H1...
31	M23A	L1.5x1...	.052	16.166	28	.016	32.332	y	32	14281.729	27210.938	421.042	978.1.....	H2-1
32	M25	L1.5x1...	.051	16.166	31	.017	32.332	y	37	14281.729	27210.938	421.042	978.1.....	H2-1
33	M26	L1.5x1...	.050	16.166	36	.017	32.332	y	30	14281.729	27210.938	421.042	978.1.....	H2-1
34	M22	L1.5x1...	.049	16.166	27	.017	32.332	y	34	14281.729	27210.938	421.042	978.1.....	H2-1
35	M27	L1.5x1...	.049	16.166	36	.017	32.332	y	28	14281.729	27210.938	421.042	978.1.....	H2-1
36	M24A	L1.5x1...	.047	16.166	32	.017	32.332	y	38	14281.729	27210.938	421.042	978.1.....	H2-1

Project #:	
Site:	302473

Date:	6/1/2021
By:	APB

Capacity Input:	N
Analysis/Design:	Analysis
ASD/LRFD:	LRFD
Data	Auto Calc Capacity

Bolt Properties		
Nominal Diameter (d)	3/4	inches
Steel Grade	A36	
Threads Excluded?	N	
Yield Strength (Fyb)	36	ksi
Ultimate Strength (Fub)	58	ksi
Threads/in (n)	10	
Gross Area (Agb)	0.442	in^2
Net Area (Anb)	0.334	in^2

Shear (lbs)	3577.8
Tension (lbs)	2014.6

Bolt Capacity (0.75 A36 Bolts)				
	Ult Load/ Bolt	Factored Load (ϕ=0.75)	# of Bolts	Factor Joint Capacity
Shear (lbs)	11530.6	8648.0	4	34591.9
Tension (lbs)	19398.7	14549.0	4	58196.0

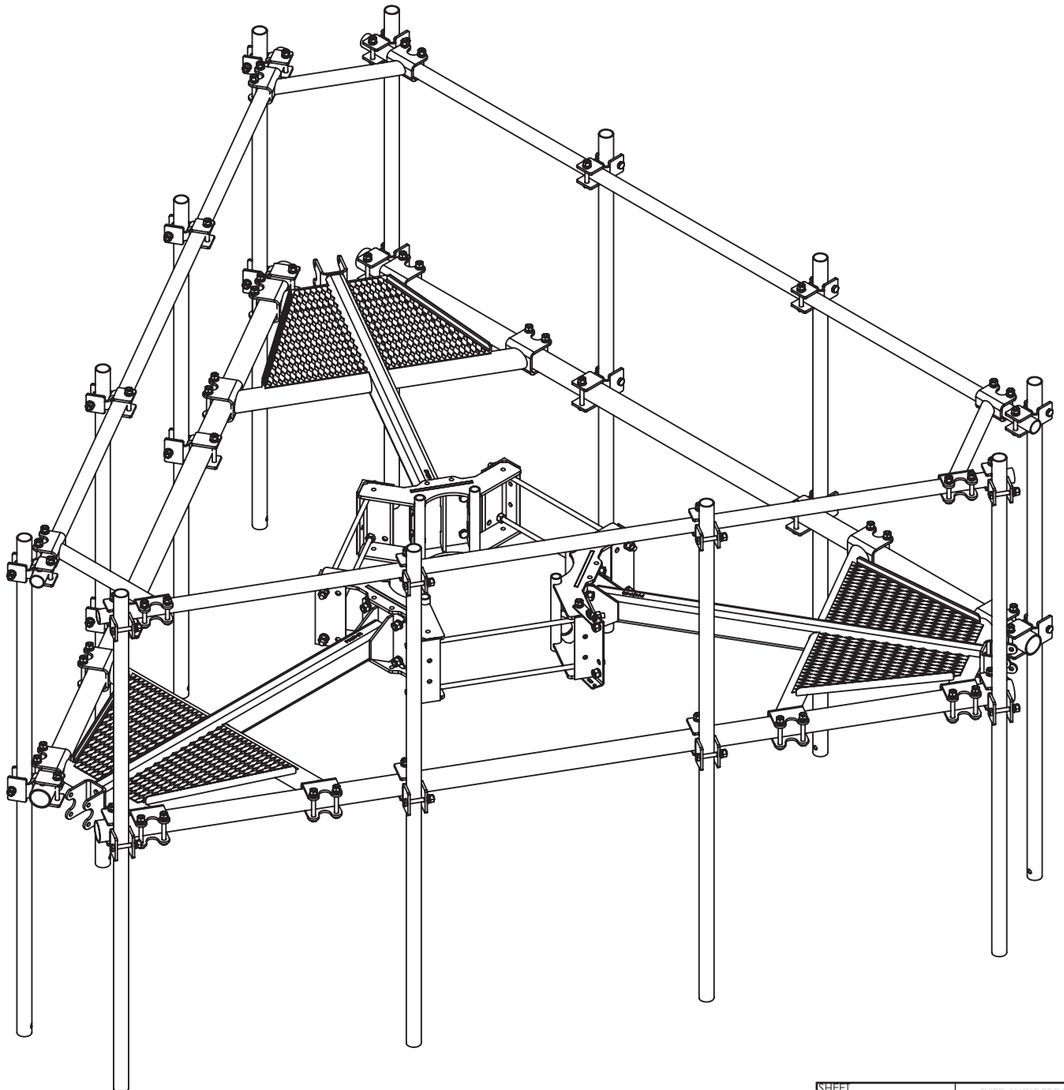
Interaction Check	
V /ϕVn	10.3%
T /ϕTn	3.5%
≤1.0	1.2%
	Pass

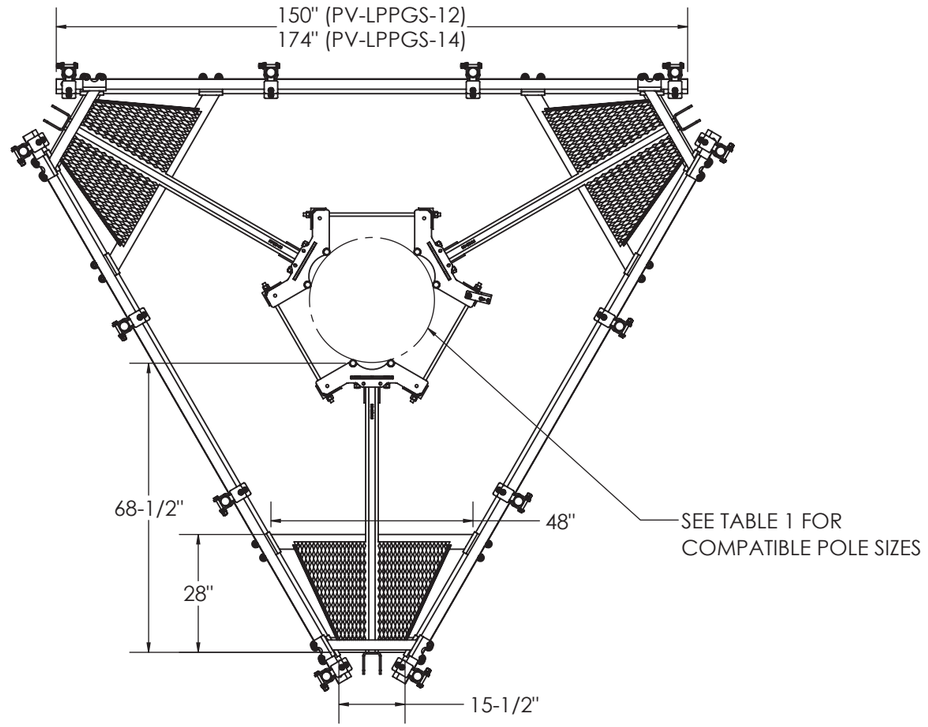
CORE ONE CONSULTING USA

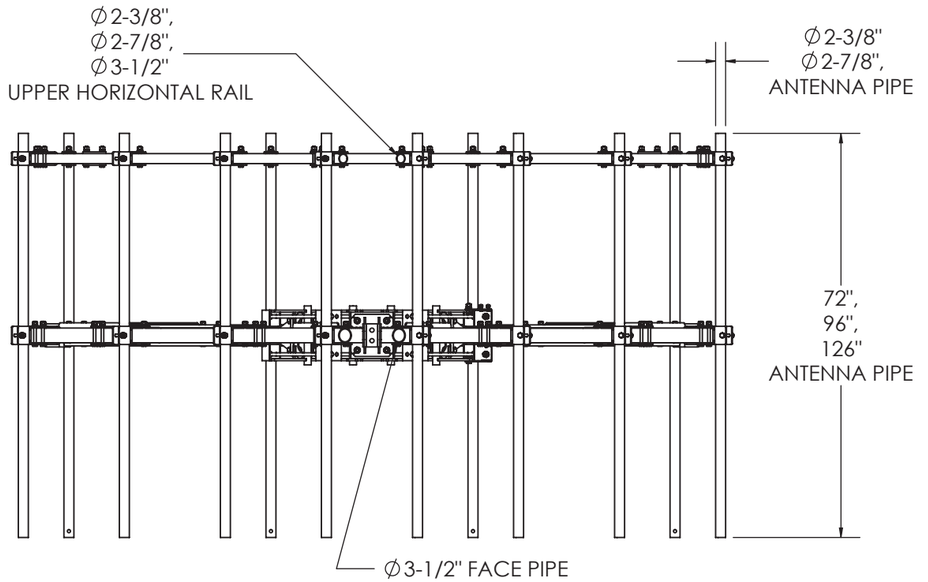
Core One Consulting
Phone: (778) 805-2166
www.coreoneconsulting.com

PV-LPPGS
MONOPOLE GUARDIAN MOUNT

SEE SHEET 2 - TABLE 1 FOR FULL CONFIGURATION DETAILS







SHEET 1 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:36	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION®

MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

C:\PVMSteel\Catalog\SW Working Files\Engineering Details\

PART NUMBERS, WEIGHTS, & EPA

Table 1: Configurations

Part Number	Description	Weight (lbs)	(EPA)A (ft2)*	(EPA)A 1/2" Radial Ice (ft2)*	Included Parts																											
					PV-RM1045-GS	PV-RM3060-GS	PV-LPP-GS-B	PV--LPP-GS-EXT	PV-LPP-GS-HK	PV-LPP-GS-HR238	PV-LPP-GS-HR278	PV-LPP-GS-HR312	PV-LPP-GS-TKB	PV-XP-DC-2020	PV-XP-DC-2025	PV-XP-DC-2030	PV-XP-DC-2525	PV-XP-DC-2530	PIPE-238X96	PIPE-238X150	PIPE-238X174	PIPE-278X96	PIPE-278X126	PIPE-278X150	PIPE-278X174	PIPE-312X150	PIPE-312X174	PV-SCRB-RMGS	115-242	PV-LPP-GS-ACC1
PV-LPPGS-12M-B†	12'6" Face, 10"-40" OD Pole	1210	13.9	18.1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	1	1	3
PV-LPPGS-14M-B†	14'6" Face, 13"-44" OD Pole	1480	16.7	21.4	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	1	3
PV-LPPGS-14L-B†	14'6" Face, 35"-60" OD Pole	1495	14.8	19.3	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	1	3
PV-LPPGS-12M-HR2-B	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, No Antenna Pipe	1400	18.5	25.0	1	-	1	-	1	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-B	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, No Antenna Pipe	1495	19.4	25.9	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-B	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, No Antenna Pipe	1575	20.6	27.1	1	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-B	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, No Antenna Pipe	1695	22.0	29.2	1	-	1	1	1	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-B	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, No Antenna Pipe	1800	23.0	30.3	1	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-B	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, No Antenna Pipe	1895	24.4	31.6	1	-	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-B	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, No Antenna Pipe	1710	20.0	27.1	-	1	1	-	1	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-B	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, No Antenna Pipe	1820	21.1	28.2	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-B	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, No Antenna Pipe	1910	22.5	29.5	-	1	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-12M-HR2-AP1	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	1925	19.0	25.6	1	-	1	-	1	1	-	-	-	12	-	12	-	-	12	3	-	-	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-AP1	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2030	19.9	26.5	1	-	1	-	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-AP1	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2120	21.0	27.7	1	-	1	-	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-AP1	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2215	22.5	29.8	1	-	1	1	1	1	-	-	-	12	-	12	-	-	12	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-AP1	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2335	23.6	30.9	1	-	1	1	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-AP1	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2440	24.9	32.2	1	-	1	1	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-AP1	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2230	20.6	27.7	-	1	1	-	1	1	-	-	-	12	-	12	-	-	12	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-AP1	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2350	21.6	28.8	-	1	1	-	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-AP1	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-3/8" x 96" Pipe	2450	23.0	30.1	-	1	1	-	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-12M-HR2-AP3	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2155	19.0	25.6	1	-	1	-	1	1	-	-	-	-	12	-	-	12	-	3	-	12	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-AP3	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2260	19.9	26.5	1	-	1	-	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-AP3	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2355	21.0	27.6	1	-	1	-	1	-	-	1	-	-	-	-	24	-	-	-	12	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-AP3	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2460	21.0	27.7	1	-	1	1	1	1	-	-	-	12	-	-	12	-	-	3	12	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-AP3	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2565	23.5	30.8	1	-	1	1	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-AP3	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2670	24.8	32.2	1	-	1	1	1	-	-	1	-	-	-	-	24	-	-	-	12	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-AP3	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2475	20.6	27.7	-	1	1	-	1	1	-	-	-	-	12	-	-	12	-	-	3	12	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-AP3	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2580	21.6	28.7	-	1	1	-	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-AP3	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, (12) 2-7/8" x 96" Pipe	2690	22.9	30.1	-	1	1	-	1	-	-	1	-	-	-	-	24	-	-	-	12	-	-	-	-	6	1	1	3
PV-LPPGS-12M-TKB3-AP4	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail with Brace Kit, (12) 2-7/8" x 126" Pipe	3180	27.7	37.3	2	-	1	-	1	-	-	1	1	-	-	-	24	-	-	-	-	12	-	-	6	-	2	2	3
PV-LPPGS-14M-TKB3-AP4	14'6" Face, 13"-44"" OD Pole, 3-1/2" OD Horizontal Rail with Brace Kit, (12) 2-7/8" x 126" Pipe	3715	31.5	41.9	2	-	1	2	1	-	-	1	1	-	-	-	24	-	-	-	-	12	-	-	-	6	2	2	3
PV-LPPGS-14L-TKB3-AP4	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail with Brace Kit, (12) 2-7/8" x 126" Pipe	3745	29.5	39.8	-	2	1	-	1	-	-	1	1	-	-	-	24	-	-	-	-	12	-	-	-	6	2	2	3

* (EPA)A INCLUDES ALL STRUCTURAL MEMBERS INCLUDING CROSSOVER CONNECTIONS. IF DESIRED ADD ANTENNA PIPE PER TABLE 2.
† THESE MOUNTS ARE NOT CLASSIFIED TO TIA-5053 STANDARD

Table 2: Antenna Pipe Additional EPA (Each)

Size	(EPA)A (ft2)	(EPA)A 1/2" Radial Ice (ft2)
2-3/8" x 96"	1.5	2.2
2-7/8" x 96"	1.8	2.5
2-7/8" x 126"	2.4	3.3

SHEET 2 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:48	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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PART NUMBERS, WEIGHTS, & EPA

Table 5: KKGS Configurations

Part Number	Description	Weight (lbs)	(EPA)A (ft2)*	(EPA)A 1/2" Radial Ice (ft2)*	Included Parts																														
					PV-RM1045-GS	PV-RM3060-GS	PV-RM1045-MD	PV-RM3060-MD	PV-LPP-GS-B	PV--LPP-GS-EXT	PV-LPP-GS-HK	PV-LPP-GS-HR238	PV-LPP-GS-HR278	PV-LPP-GS-HR312	PV-KKGS-1	PV-XP-DC-2020	PV-XP-DC-2025	PV-XP-DC-2030	PV-XP-DC-2525	PV-XP-DC-2530	PIPE-238X96	PIPE-238X150	PIPE-238X174	PIPE-278X96	PIPE-278X126	PIPE-278X150	PIPE-278X174	PIPE-312X150	PIPE-312X174	PV-SCRB-RMGS	115-242	PV-LPP-GS-ACC1
PV-LPPGS-12M-HR2-K-B	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, No Antenna Pipe	1710	21.2	28.5	1	-	1	-	1	-	1	1	-	-	-	-	-	-	-	-	3	-	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-K-B	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, No Antenna Pipe	1805	22.1	29.4	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-K-B	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, No Antenna Pipe	1885	23.3	30.6	1	-	1	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-K-B	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, No Antenna Pipe	2005	24.7	32.7	1	-	1	-	1	1	1	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-K-B	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, No Antenna Pipe	2110	25.7	33.8	1	-	1	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-K-B	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, No Antenna Pipe	2205	27.1	35.1	1	-	1	-	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-K-B	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, No Antenna Pipe	2020	22.7	30.6	-	1	-	1	1	-	1	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-K-B	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, No Antenna Pipe	2130	23.8	31.7	-	1	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-K-B	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, No Antenna Pipe	2220	25.1	33	-	1	-	1	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-12M-HR2-K-AP1	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2235	39.9	55	1	-	1	-	1	-	1	1	-	-	-	12	-	12	-	-	12	3	-	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-K-AP1	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2340	40.8	55.9	1	-	1	-	1	-	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-K-AP1	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2430	42	57.1	1	-	1	-	1	-	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-K-AP1	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2525	43.4	59.2	1	-	1	-	1	1	1	1	-	-	-	12	-	12	-	-	12	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-K-AP1	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2645	44.5	60.3	1	-	1	-	1	1	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-K-AP1	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2750	45.8	61.6	1	-	1	-	1	1	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-K-AP1	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2540	41.5	57.1	-	1	-	1	1	-	1	1	-	-	-	12	-	12	-	-	12	-	3	-	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-K-AP1	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2660	42.5	58.2	-	1	-	1	1	-	1	-	1	-	-	-	12	12	-	-	12	-	-	-	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-K-AP1	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-3/8" x 96" Pipe	2760	43.9	59.5	-	1	-	1	1	-	1	-	-	1	-	-	-	24	-	-	12	-	-	-	-	-	-	-	6	1	1	3
PV-LPPGS-12M-HR2-K-AP3	12'6" Face, 10"-40" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2465	43.7	58.8	1	-	1	-	1	-	1	1	-	-	-	12	-	-	12	-	3	-	12	-	-	-	3	-	1	1	3
PV-LPPGS-12M-HR25-K-AP3	12'6" Face, 10"-40" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2570	44.7	59.8	1	-	1	-	1	-	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	3	-	3	-	1	1	3
PV-LPPGS-12M-HR3-K-AP3	12'6" Face, 10"-40" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2665	45.8	60.9	1	-	1	-	1	-	1	-	-	1	-	-	-	-	-	24	-	-	-	12	-	-	-	6	-	1	1	3
PV-LPPGS-14M-HR2-K-AP3	14'6" Face, 13"-44" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2770	47.2	63.1	1	-	1	-	1	1	1	1	-	-	-	12	-	-	12	-	-	3	12	-	-	-	-	3	1	1	3
PV-LPPGS-14M-HR25-K-AP3	14'6" Face, 13"-44" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2875	48.3	64.1	1	-	1	-	1	1	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	-	3	-	3	1	1	3
PV-LPPGS-14M-HR3-K-AP3	14'6" Face, 13"-44" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2980	49.6	65.5	1	-	1	-	1	1	1	-	-	1	-	-	-	-	-	24	-	-	-	12	-	-	-	-	6	1	1	3
PV-LPPGS-14L-HR2-K-AP3	14'6" Face, 35"-60" OD Pole, 2-3/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2785	45.3	60.9	-	1	-	1	1	-	1	1	-	-	-	12	-	-	12	-	-	3	12	-	-	-	-	3	1	1	3
PV-LPPGS-14L-HR25-K-AP3	14'6" Face, 35"-60" OD Pole, 2-7/8" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	2890	46.4	62	-	1	-	1	1	-	1	-	1	-	-	-	-	-	12	12	-	-	-	12	-	-	3	-	3	1	1	3
PV-LPPGS-14L-HR3-K-AP3	14'6" Face, 35"-60" OD Pole, 3-1/2" OD Horizontal Rail, Kicker, (12) 2-7/8" x 96" Pipe	3000	47.7	63.3	-	1	-	1	1	-	1	-	-	1	-	-	-	-	-	24	-	-	-	12	-	-	-	-	6	1	1	3

* (EPA)A INCLUDES ALL STRUCTURAL MEMBERS INCLUDING CROSSOVER CONNECTIONS. IF DESIRED ADD ANTENNA PIPE PER TABLE 4.

Table 4: Antenna Pipe Additional EPA (Each)

Size	(EPA)A (ft2)	(EPA)A 1/2" Radial Ice (ft2)
2-3/8" x 96"	1.5	2.2
2-7/8" x 96"	1.8	2.5

SHEET 3 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:48	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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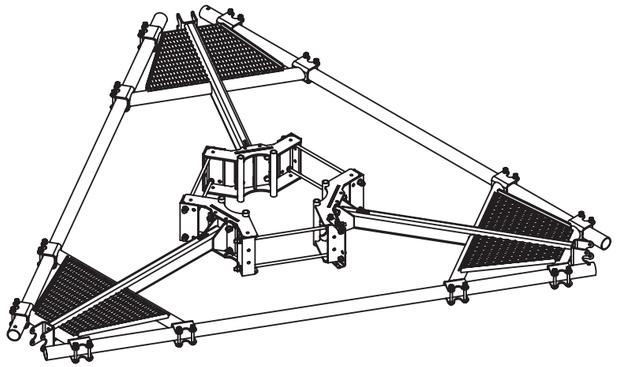
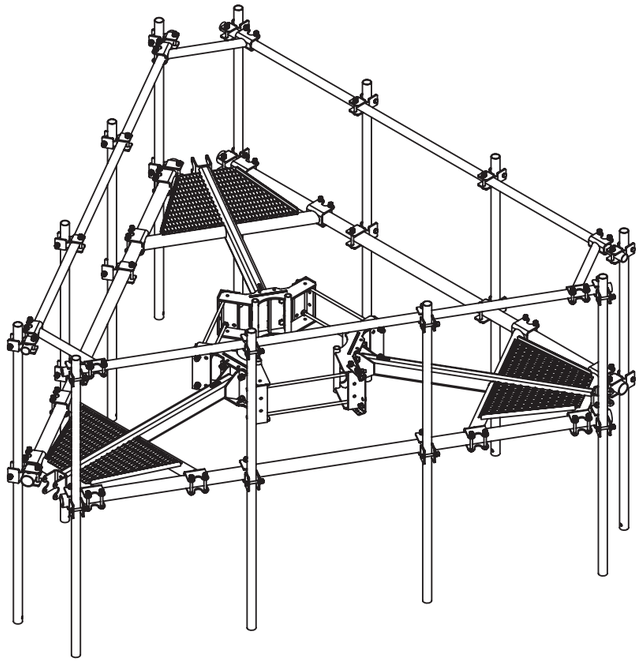
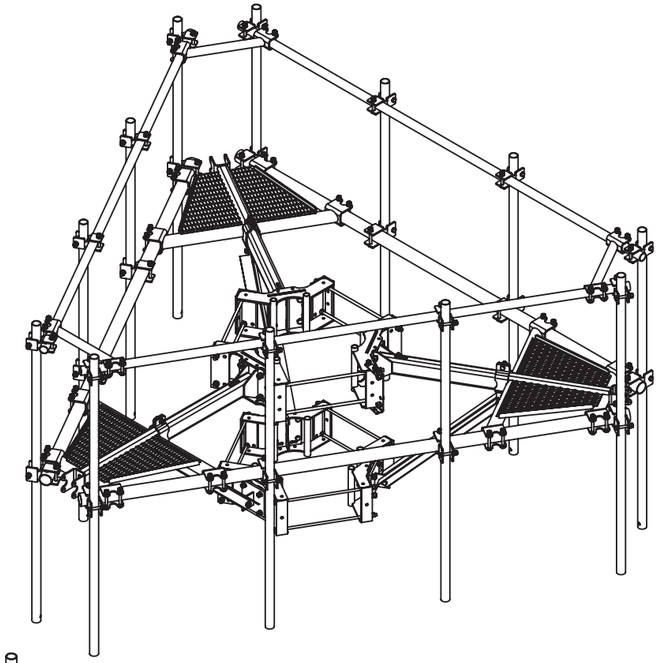
INCLUDED PART OVERVIEW



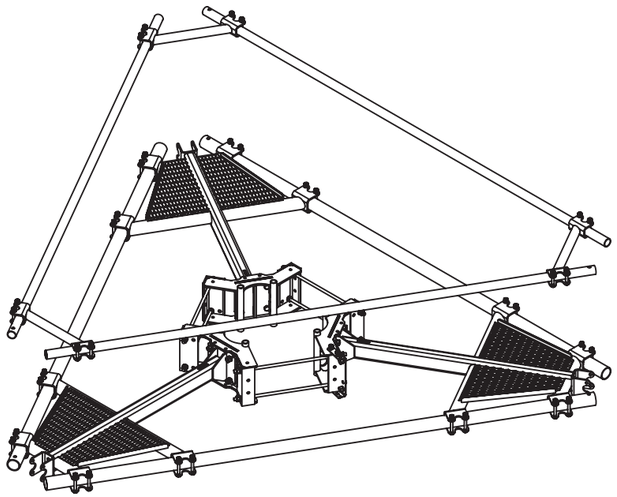
BASE MOUNT
(PV-LPPGS-12M-B SHOWN)



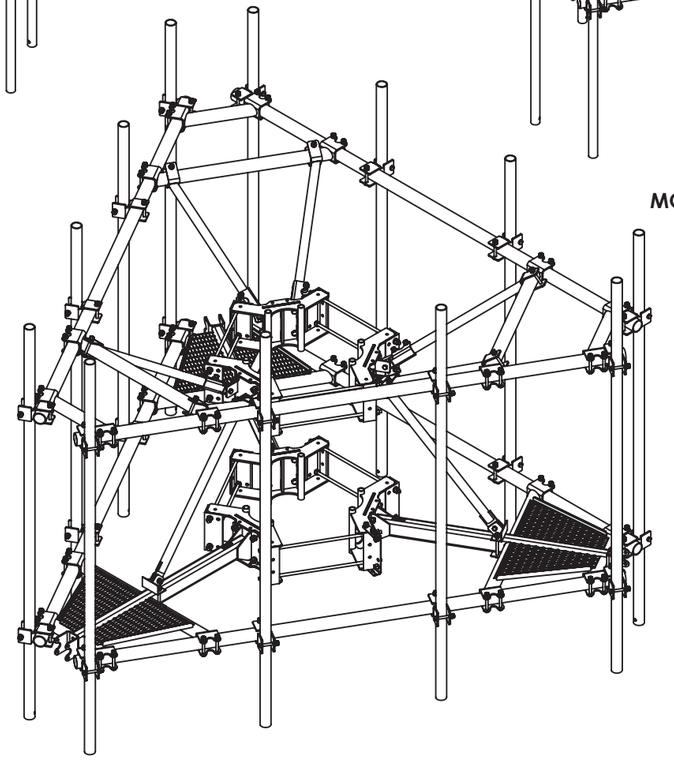
MOUNT WITH UPPER RAIL AND ANTENNA PIPE
(PV-LPPGS-12M-HR2-AP1 SHOWN)



MOUNT WITH KICKER KIT AND ANTENNA PIPE
(PV-LPPGS-12M-HR2-K-AP1 SHOWN)



MOUNT WITH UPPER RAIL
(PV-LPPGS-12M-HR2-B SHOWN)



MOUNT WITH UPPER BRACE KIT AND ANTENNA PIPE
(PV-LPPGS-12M-TKB3-AP4 SHOWN)

Table 5: Threaded Connection Tightening Points	
Reference Config	**Total Connections**
Base Mount	48
Add Upper Rail	60
Add (12) Pipes	108*
Add KKGS	144
Add TKB	168

* APPROXIMATELY 40% LESS THAN INDUSTRY AVERAGE OF EQUIVALENT MOUNT

SHEET: 4 OF 15
THIRD ANGLE PROJECTION
2/9/2021
SCALE: 1:40

DIMENSIONS ARE IN INCHES
TOLERANCES U.N.O.
HOLES: +1/16", -1/32"
ANGULAR: PROFILE ±1/4°, BEND ±2°
ALL OTHERS: ±1/16"

CATEGORY: 02_Monopole
SERIES: 01_Triangular
TYPE: PV-LPPGS_GUARDIAN
BY: DJN
CHECKED: SJS
STATUS: APPROVED

REV	DESCRIPTION	DATE
8	KKGS UPDATE	2/2/21
7	REPLACED PKBK WITH PV-KKRS	11/11/20
6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
5	ADDED HR2-AP3 CONFIGS	1/20/20
4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER: LPPGS-ENG-01-R8
REV: 8

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MOUNT CLASSIFICATIONS

MOUNT CLASSIFICATION INFORMATION:

- STANDARDS: TIA-222-G, TIA-222-H, TIA-5053
- MAX STRUCTURE HEIGHT: 400ft
- STRUCTURE CLASS: I OR II
- EXPOSURE CATEGORY: B OR C
- TOPOGRAPHIC CATEGORY: 1
- DESIGN WIND PRESSURE: 135psf
- DESIGN WIND PRESSURE (ICED): 15psf
- DESIGN ICE THICKNESS (RADIAL): 2.75"

MOUNTS EXCEED THE FOLLOWING REQUIREMENTS:

- HEAVY 5
- HEAVY 10
- HEAVY WLL

APPROVED MOUNT CLASSIFICATIONS:

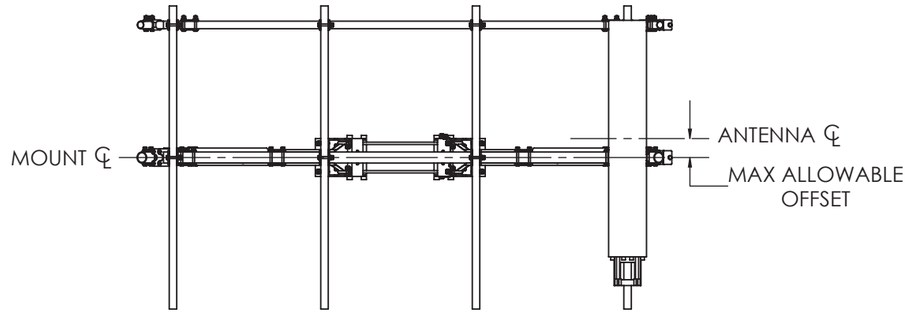
Table 6: Approved Mount Classifications

		Maximum Antenna Centerline Offset				
		0in	6in	12in	24in	39in
Part Number	PV-LPPGS-12M-HR2-AP1	M1300R(1250)-4[0]	M1300R(1250)-4[6]	M1100R(1150)-4[12]	M700R(1000)-4[24]	-
	PV-LPPGS-12M-HR25-AP1	M1350R(1250)-4[0]	M1350R(1250)-4[6]	M1150R(1200)-4[12]	M750R(1100)-4[24]	-
	PV-LPPGS-12M-HR3-AP1	M1350R(1250)-4[0]	M1350R(1250)-4[6]	M1150R(1200)-4[12]	M750R(1100)-4[24]	-
	PV-LPPGS-14M-HR2-AP1	M1300R(1200)-4[0]	M1300R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-14M-HR25-AP1	M1350R(1200)-4[0]	M1350R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-14M-HR3-AP1	M1350R(1200)-4[0]	M1350R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-14L-HR2-AP1	M1300R(1200)-4[0]	M1300R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-14L-HR25-AP1	M1350R(1200)-4[0]	M1350R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-14L-HR3-AP1	M1350R(1200)-4[0]	M1350R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	-
	PV-LPPGS-12M-HR2-AP3	M1300R(1250)-4[0]	M1300R(1250)-4[6]	M1100R(1150)-4[12]	M700R(1000)-4[24]	
	PV-LPPGS-12M-HR25-AP3	M1900R(1350)-4[0]	M1900R(1350)-4[6]	M1600R(1250)-4[12]	M1100R(1150)-4[24]	-
	PV-LPPGS-12M-HR3-AP3	M1850R(1300)-4[0]	M1850R(1300)-4[6]	M1500R(1250)-4[12]	M1050R(1150)-4[24]	-
	PV-LPPGS-14M-HR2-AP3	M1300R(1200)-4[0]	M1300R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	
	PV-LPPGS-14M-HR25-AP3	M1800R(1300)-4[0]	M1800R(1300)-4[6]	M1600R(1250)-4[12]	M1200R(1150)-4[24]	-
	PV-LPPGS-14M-HR3-AP3	M1800R(1300)-4[0]	M1800R(1300)-4[6]	M1600R(1250)-4[12]	M1200R(1150)-4[24]	-
	PV-LPPGS-14L-HR2-AP3	M1300R(1200)-4[0]	M1300R(1200)-4[6]	M1100R(1150)-4[12]	M700R(1100)-4[24]	
	PV-LPPGS-14L-HR25-AP3	M1800R(1300)-4[0]	M1800R(1300)-4[6]	M1600R(1250)-4[12]	M1200R(1150)-4[24]	-
	PV-LPPGS-14L-HR3-AP3	M1800R(1300)-4[0]	M1800R(1300)-4[6]	M1600R(1250)-4[12]	M1200R(1150)-4[24]	-
	PV-LPPGS-12M-TKB3-AP4	-	-	-	-	M1650R(2750)-4[39]
	PV-LPPGS-14M-TKB3-AP4	-	-	-	-	M2400R(3150)-4[39]
	PV-LPPGS-14L-TKB3-AP4	-	-	-	-	M2400R(3150)-4[39]

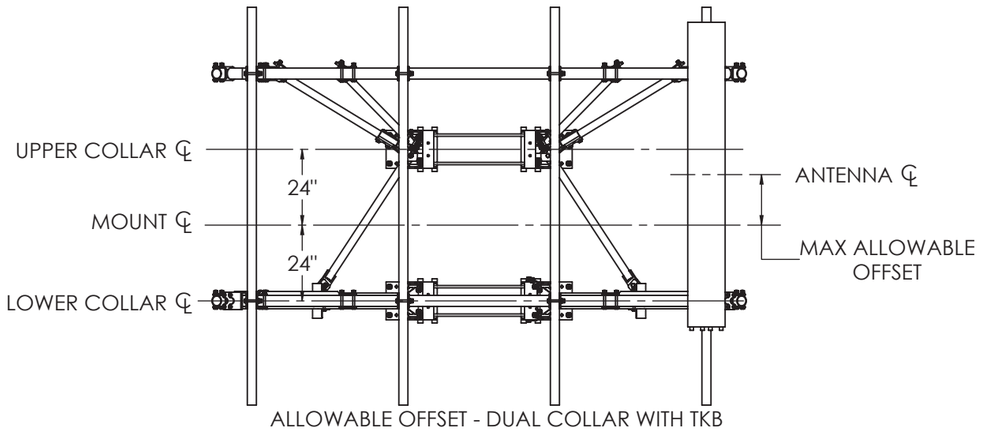
NOTE: ON POLES 3/16" OR LESS THICK, PV-PKBK KICKER KIT IS REQUIRED. SEE SHEETS 3&6

Table 7: Mount Classification Identification Example

M1750R(1450)-4[6]	Used at the beginning of each mount identification.
M**1750**R(1450)-4[6]	The maximum factored horizontal force (**1750**lbf), F, considered for design under extreme wind condition at each mounting pipe location.
M1750**R**(1450)-4[6]	Classification category.
M1750R(**1450**)-4[6]	Maximum factored vertical force (**1450**lbf), Fzi, considered for design under extreme ice condition at each mounting pipe location.
M1750R(1450)-**4**[6]	The mount is designed for (**4**) mounting pipe locations per sector.
M1750R(1450)-4[**6**]	The centerline of the maximum horizontal concentrated force, F, may be offset vertically from the mount centerline by up to **6** inches.



ALLOWABLE OFFSET - SINGLE COLLAR



ALLOWABLE OFFSET - DUAL COLLAR WITH TKB

SHEET: 5 OF 15	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	8	KKGS UPDATE	2/2/21
2/9/2021	SCALE: 1:48	SERIES: 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		TYPE: PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
		BY: DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED: SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS: APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER: LPPGS-ENG-01-R8 | REV: 8

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MOUNT CLASSIFICATIONS

MOUNT CLASSIFICATION INFORMATION:

- STANDARDS: TIA-222-G, TIA-222-H, TIA-5053
- MAX STRUCTURE HEIGHT: 400ft
- STRUCTURE CLASS: I OR II
- EXPOSURE CATEGORY: B OR C
- TOPOGRAPHIC CATEGORY: 1
- DESIGN WIND PRESSURE: 135psf
- DESIGN WIND PRESSURE (ICED): 15psf
- DESIGN ICE THICKNESS (RADIAL): 2.75"

MOUNTS EXCEED THE FOLLOWING REQUIREMENTS:

- HEAVY 5
- HEAVY 10
- HEAVY WLL

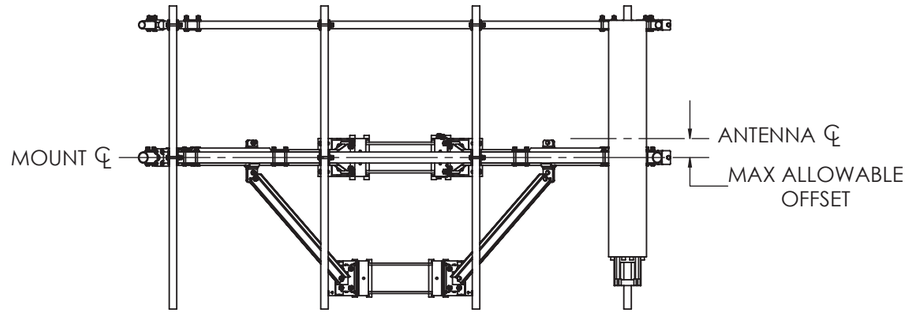
APPROVED MOUNT CLASSIFICATIONS:

Table 8: Approved Mount Classifications

		Maximum Antenna Centerline Offset			
		0in	**6in**	**12in**	**24in**
Part Number	**PV-LPPGS-12M-HR2-K-AP1**	M1400R(1600)-4[0]	M1350R(1600)-4[6]	M1150R(1500)-4[12]	M800R(1500)-4[24]
	PV-LPPGS-12M-HR25-K-AP1	M1450R(1600)-4[0]	M1450R(1600)-4[6]	M1300R(1500)-4[12]	M1000R(1500)-4[24]
	PV-LPPGS-12M-HR3-K-AP1	M1450R(1600)-4[0]	M1450R(1600)-4[6]	M1300R(1500)-4[12]	M1000R(1500)-4[24]
	PV-LPPGS-14M-HR2-K-AP1	M1400R(1600)-4[0]	M1250R(1600)-4[6]	M1100R(1500)-4[12]	M800R(1500)-4[24]
	PV-LPPGS-14M-HR25-K-AP1	M1450R(1600)-4[0]	M1400R(1600)-4[6]	M1250R(1500)-4[12]	M900R(1500)-4[24]
	PV-LPPGS-14M-HR3-K-AP1	M1500R(1600)-4[0]	M1500R(1600)-4[6]	M1300R(1500)-4[12]	M950R(1500)-4[24]
	PV-LPPGS-14L-HR2-K-AP1	M1400R(1600)-4[0]	M1250R(1600)-4[6]	M1100R(1500)-4[12]	M800R(1500)-4[24]
	PV-LPPGS-14L-HR25-K-AP1	M1450R(1600)-4[0]	M1400R(1600)-4[6]	M1250R(1500)-4[12]	M900R(1500)-4[24]
	PV-LPPGS-14L-HR3-K-AP1	M1500R(1600)-4[0]	M1500R(1600)-4[6]	M1300R(1500)-4[12]	M950R(1500)-4[24]
	PV-LPPGS-12M-HR2-K-AP3	M1800R(2000)-4[0]	M1800R(2000)-4[6]	M1600R(1800)-4[12]	M1200R(1800)-4[24]
	PV-LPPGS-12M-HR25-K-AP3	M2000R(2400)-4[0]	M2000R(2400)-4[6]	M1800R(2200)-4[12]	M1300R(2200)-4[24]
	PV-LPPGS-12M-HR3-K-AP3	M2000R(2400)-4[0]	M2000R(2400)-4[6]	M1800R(2200)-4[12]	M1300R(2200)-4[24]
	PV-LPPGS-14M-HR2-K-AP3	M1800R(2000)-4[0]	M1800R(2000)-4[6]	M1600R(1800)-4[12]	M1200R(1700)-4[24]
	PV-LPPGS-14M-HR25-K-AP3	M2000R(2000)-4[0]	M2000R(2000)-4[6]	M1700R(1800)-4[12]	M1300R(1700)-4[24]
	PV-LPPGS-14M-HR3-K-AP3	M2000R(2000)-4[0]	M2000R(1950)-4[6]	M1700R(1800)-4[12]	M1300R(1700)-4[24]
	PV-LPPGS-14L-HR2-K-AP3	M1800R(2000)-4[0]	M1800R(2000)-4[6]	M1600R(1800)-4[12]	M1200R(1700)-4[24]
	PV-LPPGS-14L-HR25-K-AP3	M2000R(2000)-4[0]	M2000R(2000)-4[6]	M1700R(1800)-4[12]	M1300R(1700)-4[24]
	PV-LPPGS-14L-HR3-K-AP3	M2000R(2000)-4[0]	M2000R(1950)-4[6]	M1700R(1800)-4[12]	M1300R(1700)-4[24]

Table 9: Mount Classification Identification Example

M1750R(1450)-4[6]	Used at the beginning of each mount identification.
M**1750**R(1450)-4[6]	The maximum factored horizontal force (**1750**lbf), F, considered for design under extreme wind condition at each mounting pipe location.
M1750**R**(1450)-4[6]	Classification category.
M1750R(**1450**)-4[6]	Maximum factored vertical force (**1450**lbf), Fzi, considered for design under extreme ice condition at each mounting pipe location.
M1750R(1450)-**4**[6]	The mount is designed for (**4**) mounting pipe locations per sector.
M1750R(1450)-4[**6**]	The centerline of the maximum horizontal concentrated force, F, may be offset vertically from the mount centerline by up to **6** inches.



ALLOWABLE OFFSET - SINGLE COLLAR

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SHEET 6 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:48	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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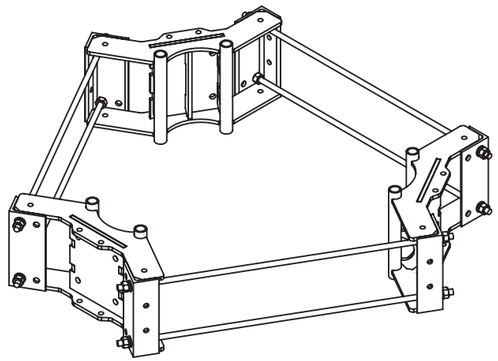
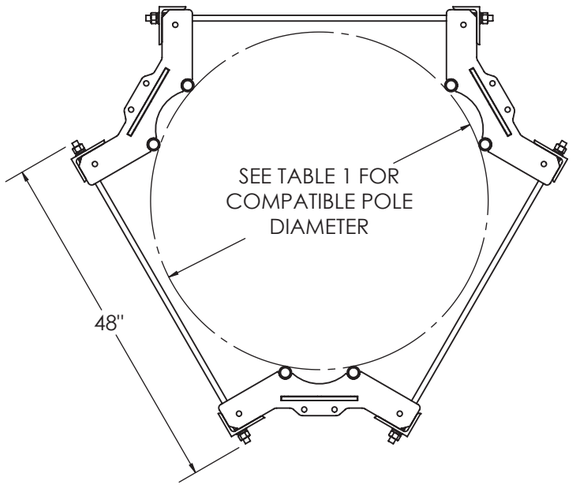
MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

STANDARD POLE

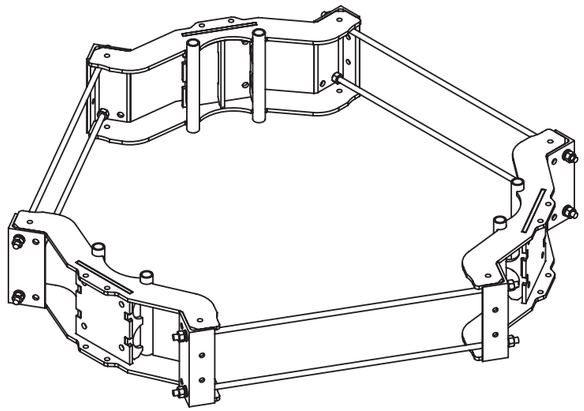
PV-RM1045-GS

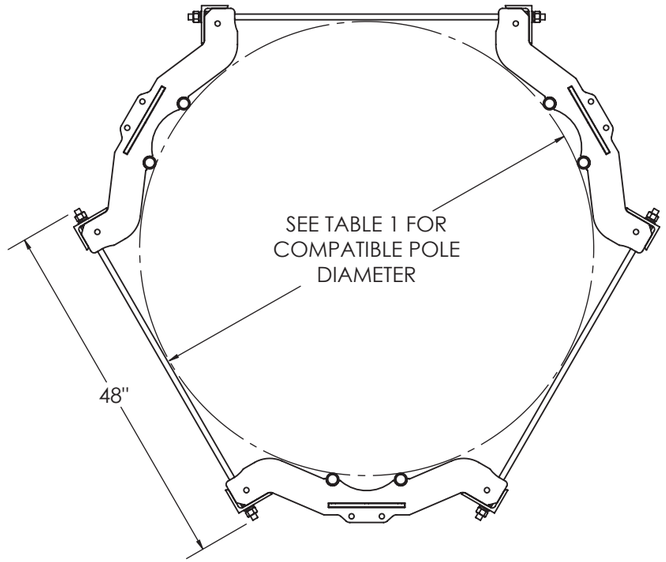




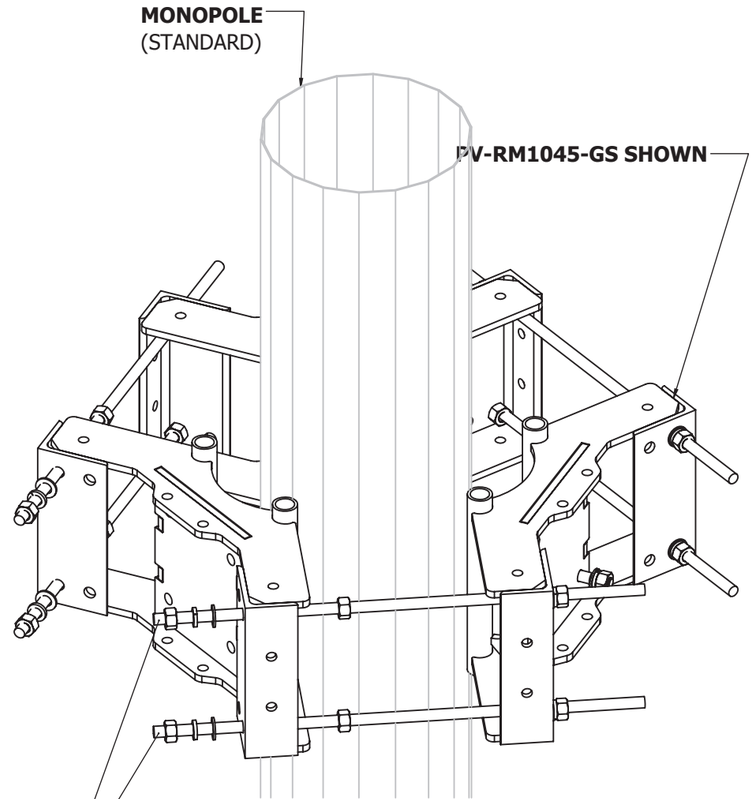
LARGE POLE

PV-RM3060-GS





COLLAR MOUNT INSTALLATION



WHEN INSTALLED ADJACENT TO CLIMB PATH REMOVE EXCESS ALL-THREAD TO PROMOTE CLIMBER SAFETY AND PREVENT CONTACT WITH SAFETY CLIMB WIRE ROPE.
MINIMUM 1" REQUIRED BEYOND HEX NUT

ROD CUT LENGTH

Table 10: Threaded Rod Cut Length (in)

Pole OD (in)	PV-RM1045-GS	PV-RM3060-GS
10	14	-
15	19.5	-
20	24.5	-
25	29	-
30	33.5	24
35	38	26.5
40	42.5	31
45	48	35.5
50	-	40
55	-	44
60	-	48

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SHEET: 7 OF 15	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES: 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE: 1:20	TYPE: PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY: DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED: SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS: APPROVED	REV	DESCRIPTION	DATE

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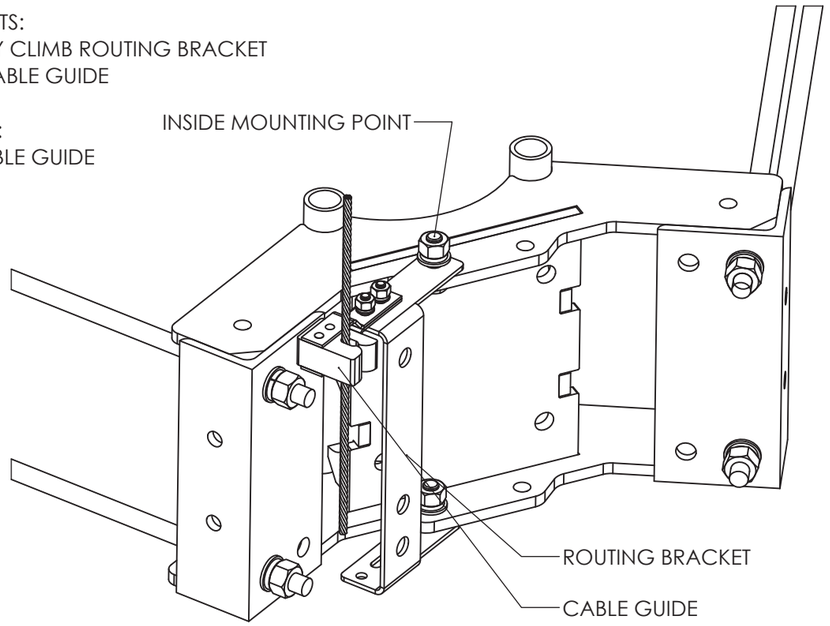
MONOPOLE GUARDIAN MOUNT

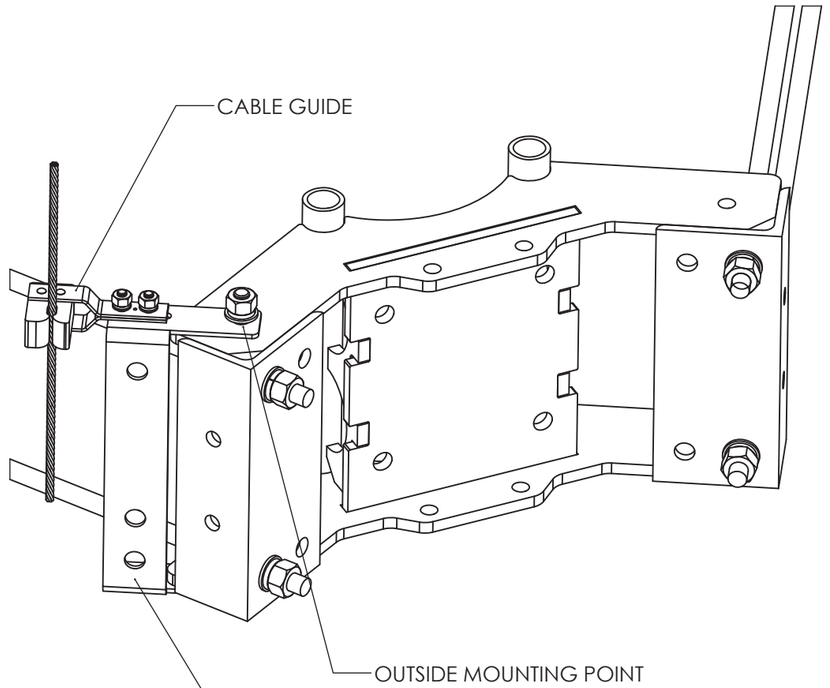
DOCUMENT NUMBER: LPPGS-ENG-01-R8 | REV: 8

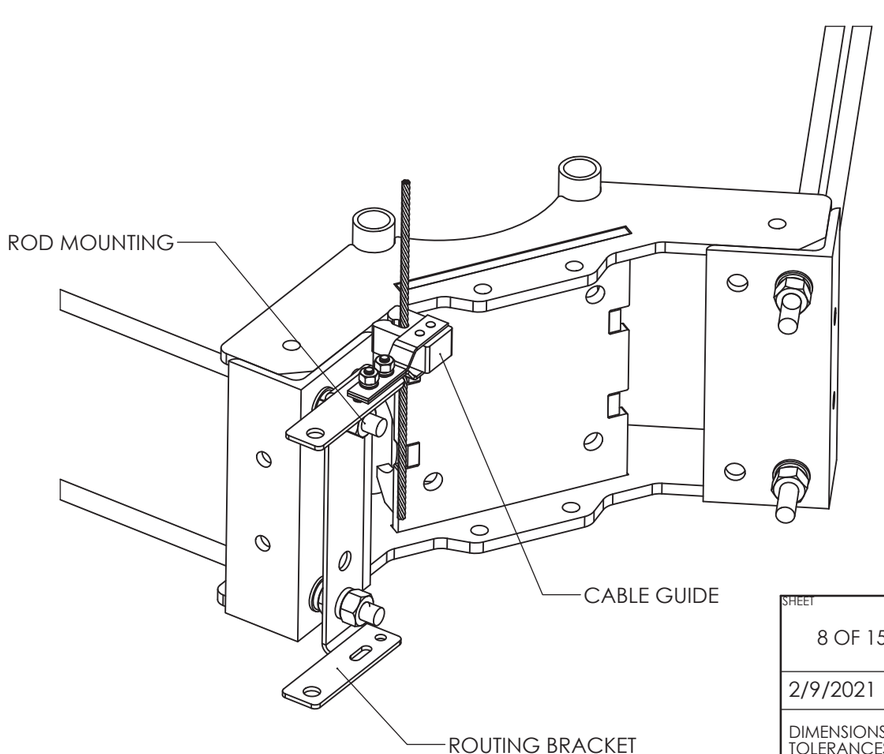
SAFETY CLIMB ROUTING

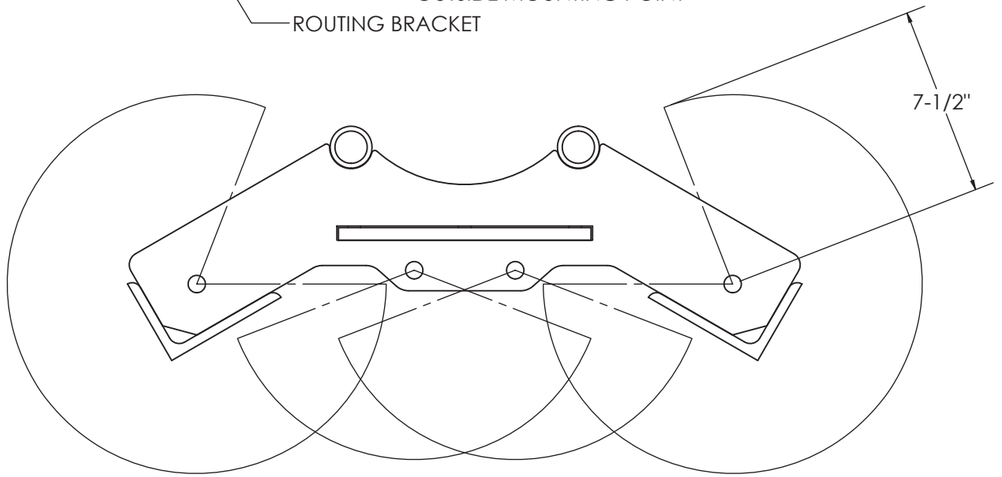
INCLUDED COMPONENTS:
PV-SCRB-RMGS - SAFETY CLIMB ROUTING BRACKET
115-242 - STANDARD CABLE GUIDE

OPTIONAL ACCESSORY:
115-203 - LOCKING CABLE GUIDE









CABLE GUIDE RANGE

SHEET 8 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:6	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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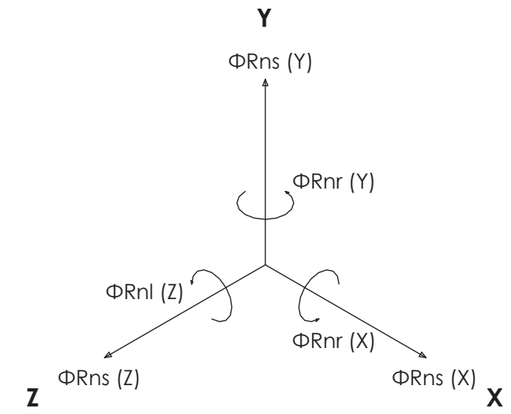
PV-XP-DC

DUALCROSS 90° CROSSOVER BRACKET

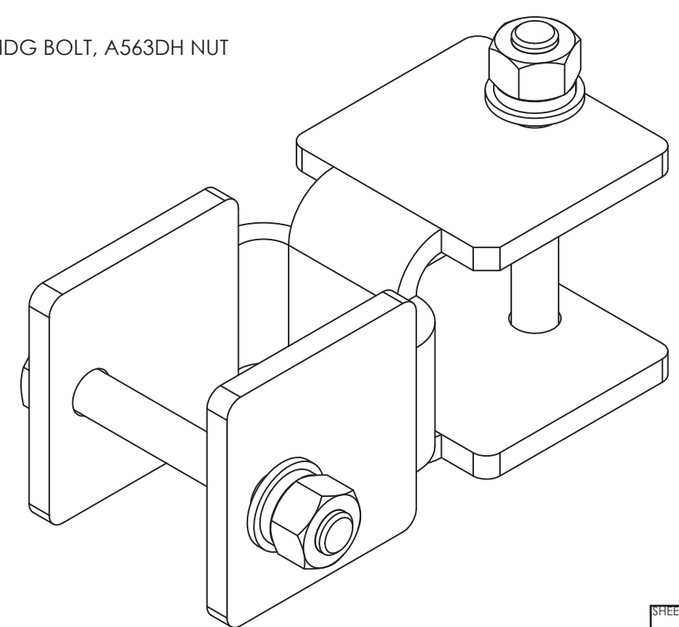
Table 11: Crossover Configurations and Capacities

Part Number	Weight	Pipe 1 Size (Vertical)	Pipe 2 Size (Horizontal)	Pipe 1 Bolt Size	Pipe 2 Bolt Size	Available Sliding Strength (Φ=0.7)			Available Torsional Strength (Φ=0.7)		Available Lateral Twist Strength (Φ=0.9)
						ΦRns (X)	ΦRns (Y)	ΦRns (Z)	ΦRnr (X)	ΦRnr (Y)	ΦRnl (Z)
	lbs	*in*	*in*	*in*	*in*	*kip*	*kip*	*kip*	*kip-in*	*kip-in*	*kip-in*
PV-XP-DC-2020	6.1	∅2.375	∅2.375	∅5/8 x 4-1/2	∅5/8 x 4-1/2	3.85	3.85	Fixed	6.0	6.0	14.0
PV-XP-DC-2025	7.0	∅2.375	∅2.875	∅5/8 x 4-1/2	∅5/8 x 5	3.85	3.85	Fixed	6.0	6.0	14.0
PV-XP-DC-2030	8.1	∅2.375	∅3.5	∅5/8 x 4-1/2	∅5/8 x 5-1/2	3.85	3.85	Fixed	6.8	6.0	14.0
PV-XP-DC-2525	8.0	∅2.875	∅2.875	∅5/8 x 5	∅5/8 x 5	3.85	3.85	Fixed	6.0	6.0	20.0
PV-XP-DC-2530	9.3	∅2.875	∅3.5	∅5/8 x 5	∅5/8 x 5-1/2	3.85	3.85	Fixed	6.8	6.0	20.0
PV-XP-DC-3030	10.7	∅3.5	∅3.5	∅5/8 x 5-1/2	∅5/8 x 5-1/2	3.85	3.85	Fixed	6.8	6.8	27.0
PV-XP-DC-3040	13.1	∅3.5	∅4.5	∅5/8 x 5-1/2	∅5/8 x 6-1/2	3.85	3.85	Fixed	6.8	6.8	27.0

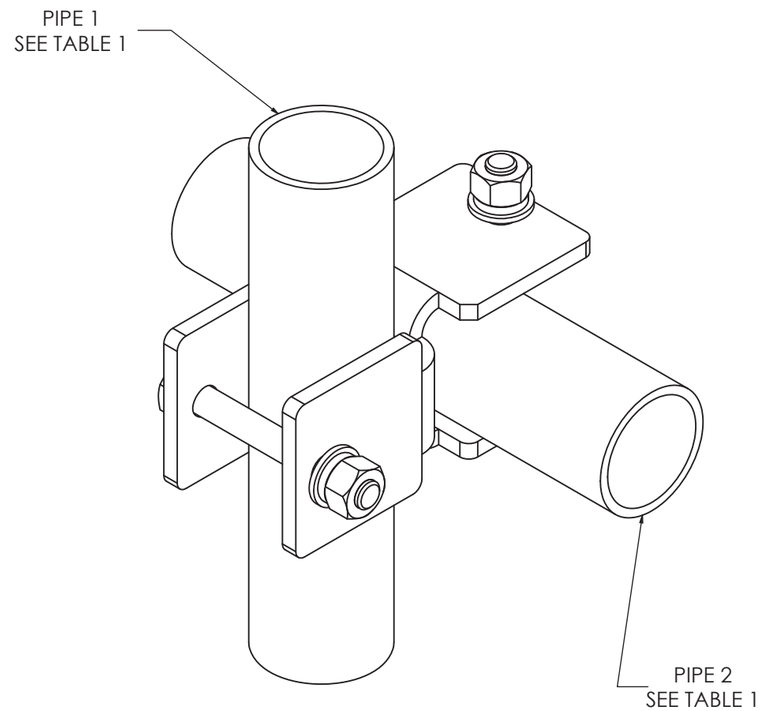


NOTES:

- CAPACITY VALUES EXPERIMENTALLY DETERMINED
- INSTALLATION REQUIREMENTS:
  - MINIMUM BOLT TORQUE: 100 FT-LBS
  - CLEAN, DRY ASSEMBLY
  - GALVANIZED BRACKET AND HARDWARE
  - COLORED WAX COATING ON NUTS
- MATERIALS
  - BRACKET: A36 HDG
  - HARDWARE: A325 HDG BOLT, A563DH NUT



PV-XP-DC
DUALCROSS 90° CROSSOVER



SHEET 9 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:2	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

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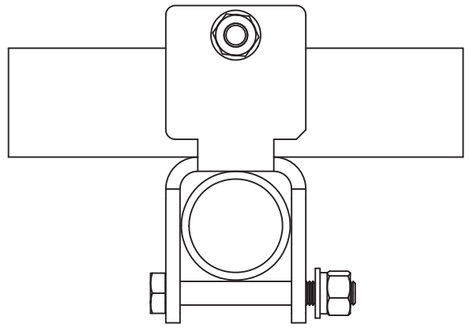
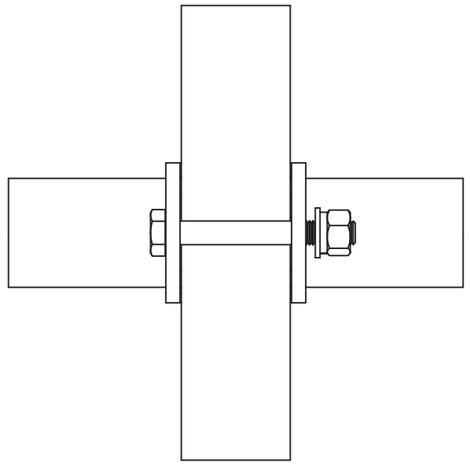
PV-XP-DC

DUALCROSS 90° CROSSOVER BRACKET

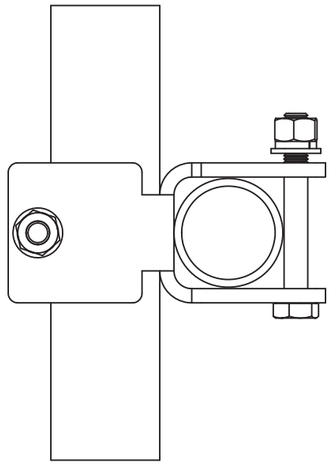
PRE-INSTALL ASSEMBLY:



TOP

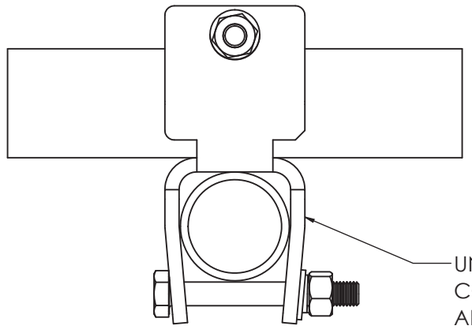


FRONT



SIDE

POST-INSTALL ASSEMBLY:



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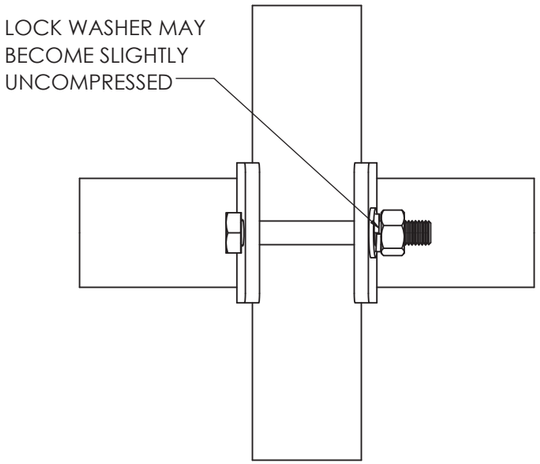

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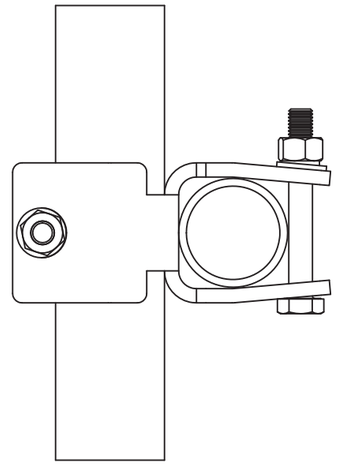

SIDE

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SHEET 10 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:4	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

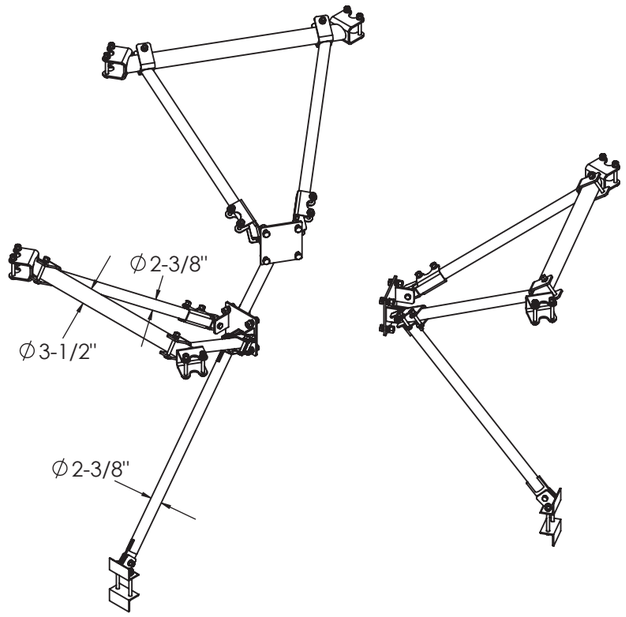
PV-LPP-GS-TKB

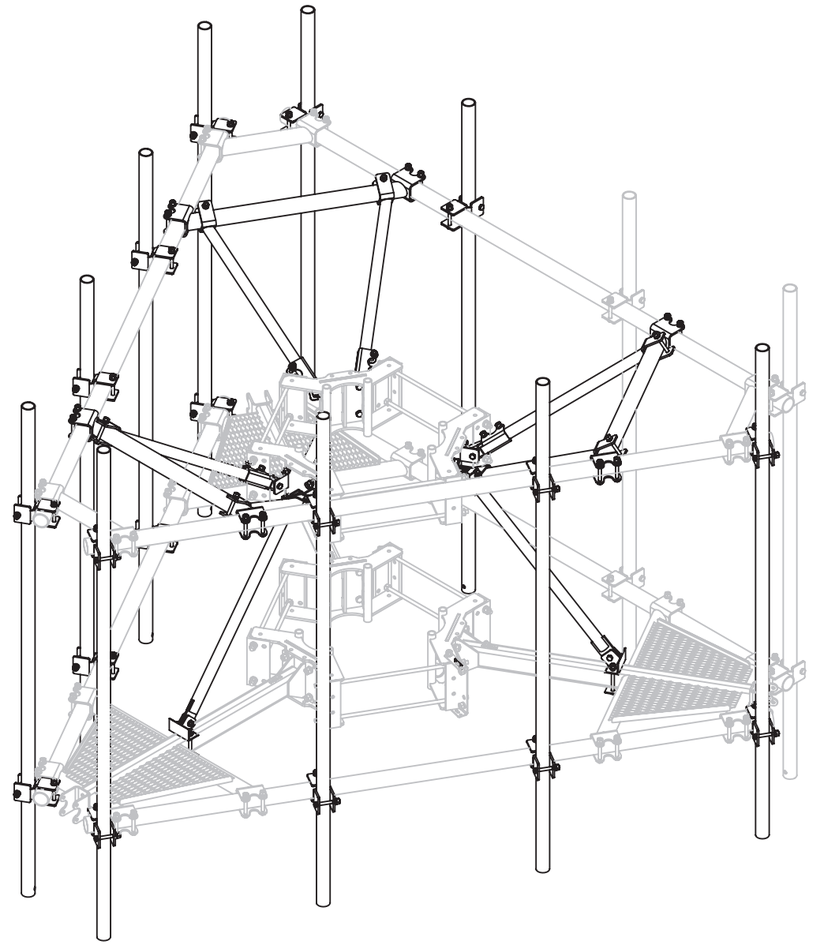
GUARDIAN TOP KICKER BRACE KIT
INCLUDED IN KITS:

- PV-LPPGS-12M-TKB3-AP4
- PV-LPPGS-14M-TKB3-AP4
- PV-LPPGS-14L-TKB3-AP4

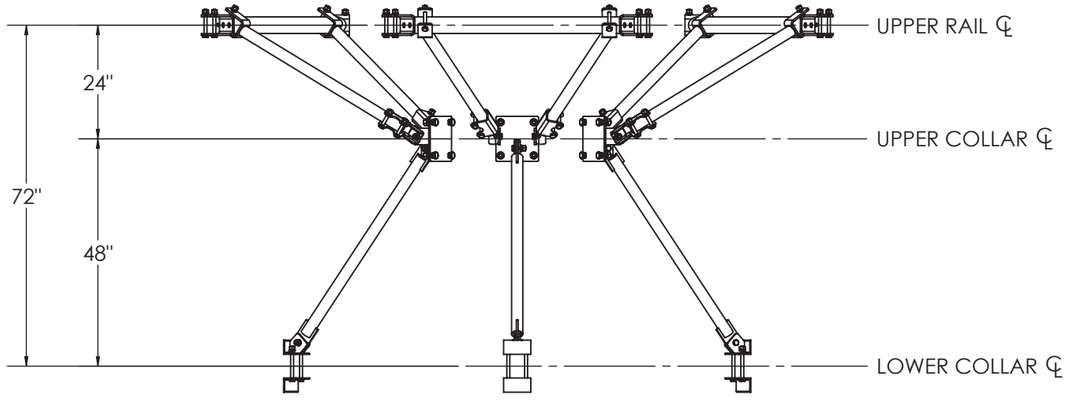
COMPATIBLE WITH 3-1/2" OD UPPER RAIL ONLY

ADDITIONAL EPA: 6.7 SQFT





GUARDIAN MOUNT WITH TKB
(PV-LPPGS-12M-TKB3-AP4 SHOWN)



SHEET 11 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:32	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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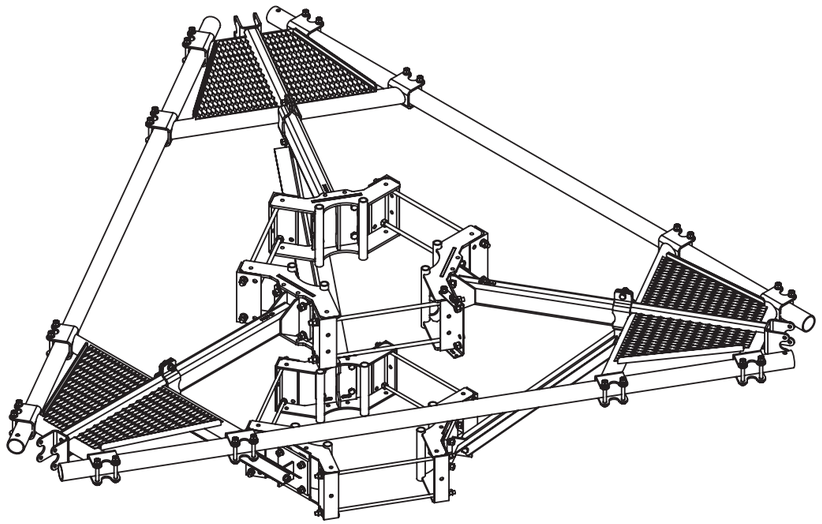
MONOPOLE GUARDIAN MOUNT

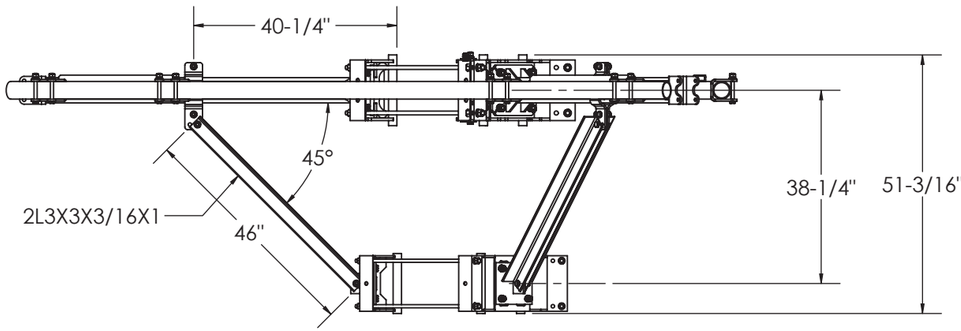
DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

C:\PVMSteel\Catalog\SW Working Files\Engineering Details\

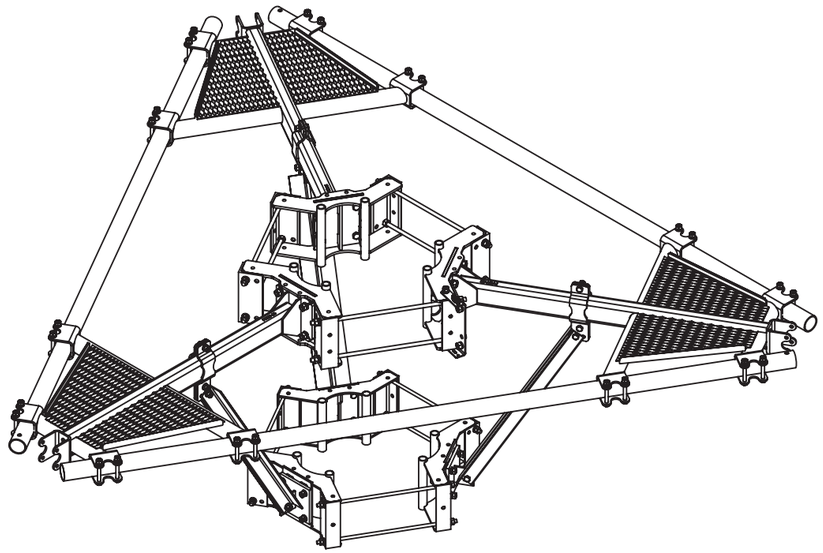
PV-KKGS

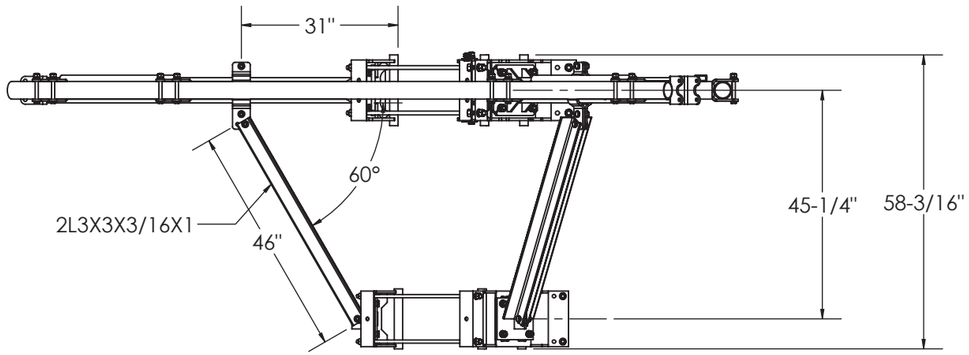
- KICKER KIT REINFORCEMENT SYSTEM
- USE FOR THIN WALL MONOPOLES TO AVOID POLE CRIMPING ISSUES (3/16" WALL OR THINNER)
- ACCEPTABLE INSTALLATION ANGLE BETWEEN 45° AND 60°





TYPICAL KICKER INSTALLATION
45°





OPTIONAL KICKER INSTALLATION
60°

SHEET 12 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:30	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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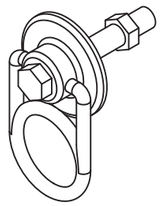
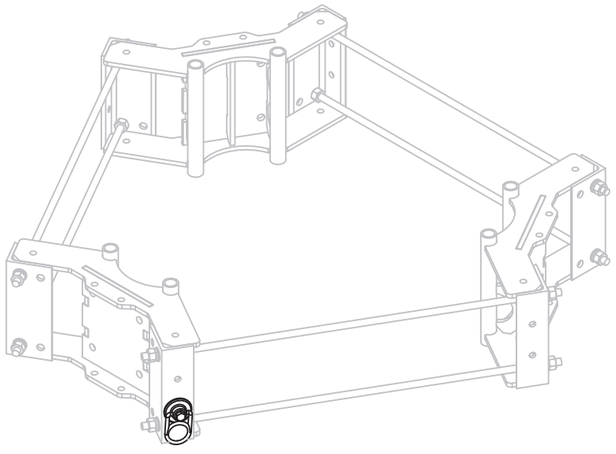
PV-LPP-GS-ACC1

- 10K SWIVEL ATTACHMENT ACCESSORY
- (3) INCLUDED WITH ALL PV-LPPGS KITS, (1) INSTALLED PER SECTOR MAX
- MOUNT TO COLLAR
- SHOULDER HEIGHT WHEN INSTALLED ON TKB UPPER COLLAR



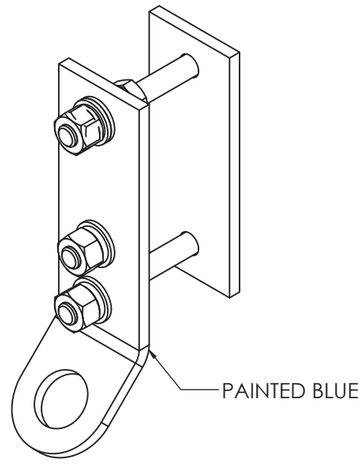
PV-GS-ACC1
10K SWIVEL ATTACHMENT ACCESSORY



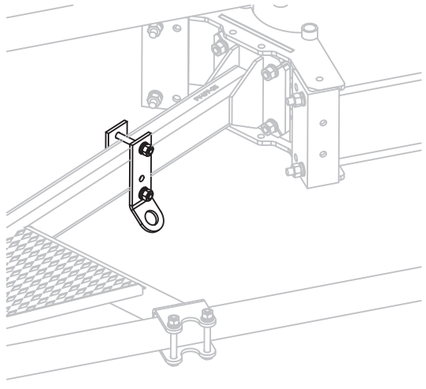
COLLAR MOUNTING

PV-LPP-GS-ACC2

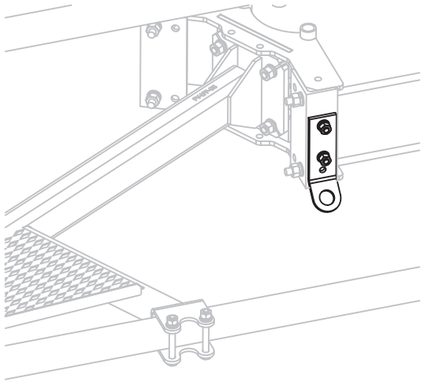
- OPTIONAL ADD-ON KIT: 5K ATTACHMENT ACCESSORY
- (1) INSTALLED PER SECTOR MAX
- MOUNT TO COLLAR OR STANDOFF ARM
- SHOULDER HEIGHT WHEN INSTALLED ON TKB UPPER COLLAR



PV-LPP-GS-ACC2
5K ATTACHMENT POINT
WEIGHT: 8 LBS



STANDOFF ARM MOUNTING



COLLAR MOUNTING

SHEET 13 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:16	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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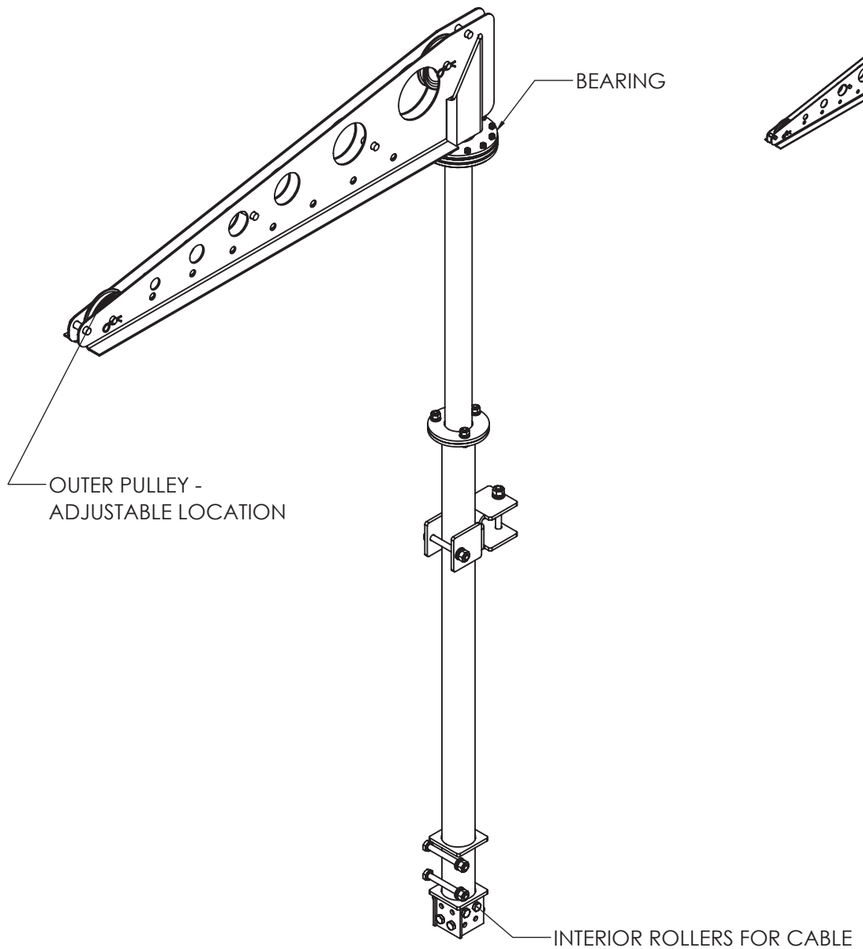
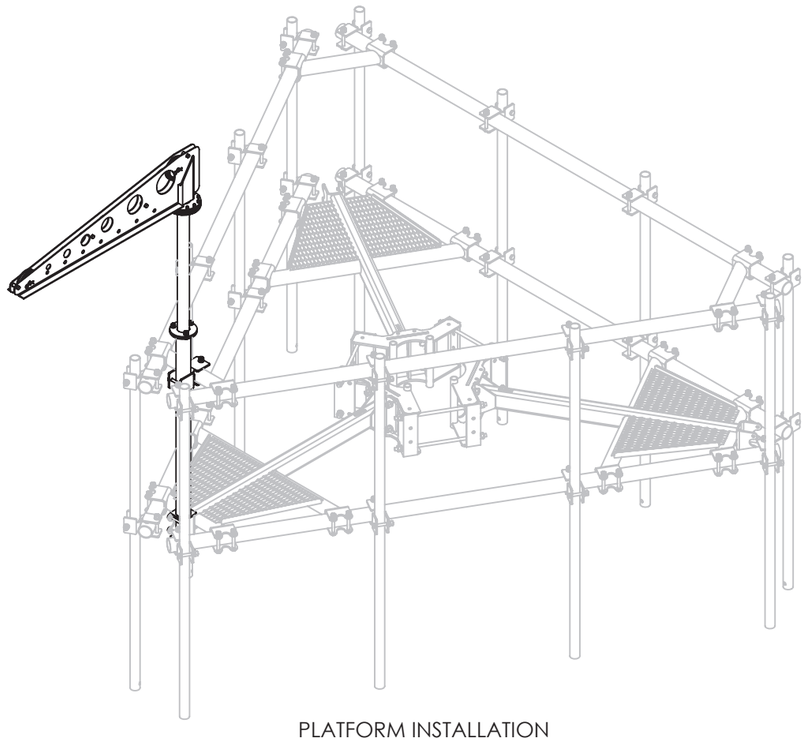
PV-LPP-GS-ACC4

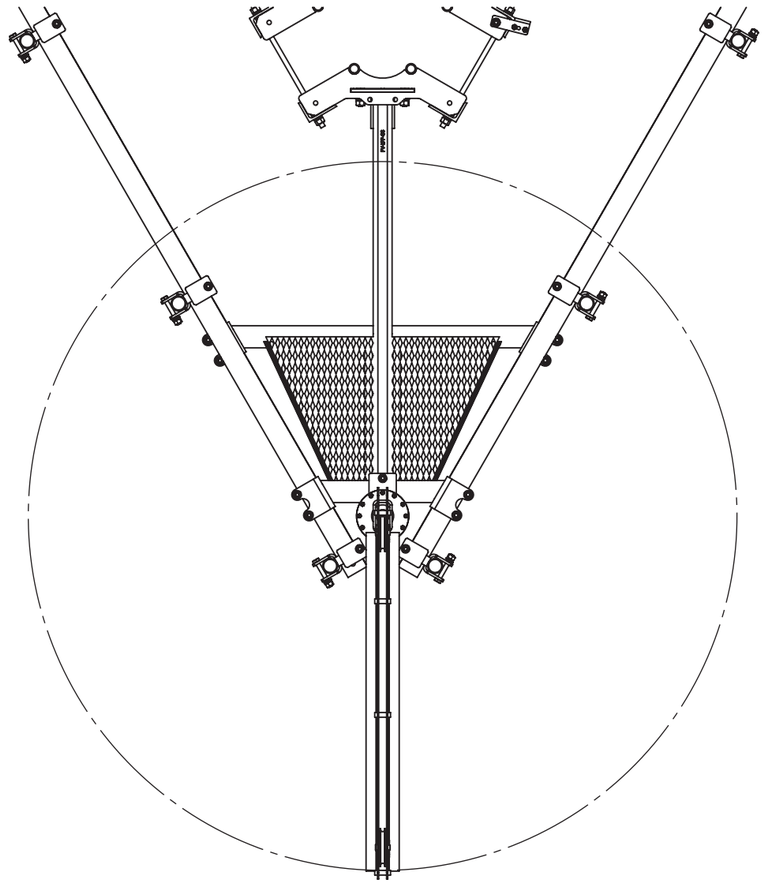
- OPTIONAL ADD-ON KIT: LIFTING POLE
- MOUNTS TO SPADE WELDMENT
- SLEW BEARING FOR SMOOTH 360° ROTATION
- ADJUSTABLE OUTER PULLEY LOCATION
- DISASSEMBLES INTO MULTIPLE PIECES FOR EASIER INSTALLATION.
- RATED FOR 1000LB LINE LOAD
- REQUIRES ∅3-1/2" UPPER RAIL
- RETURN LINE ROUTES THROUGH INTERIOR OF PIPES
- SEE PV-LPP-GS-ACC4 INSTRUCTIONS FOR FULL INFORMATION



PV-LPP-GS-ACC4
LIFTING POLE



PLATFORM INSTALLATION



PIVOT RANGE

SHEET 14 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:24	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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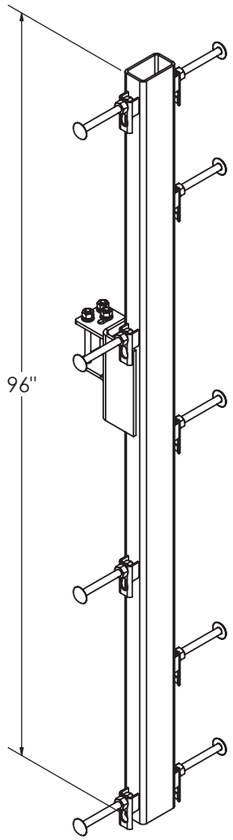
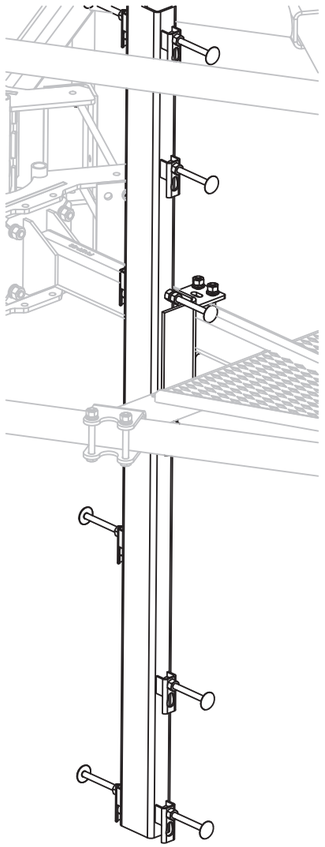
PV-LPP-GS-ACC5

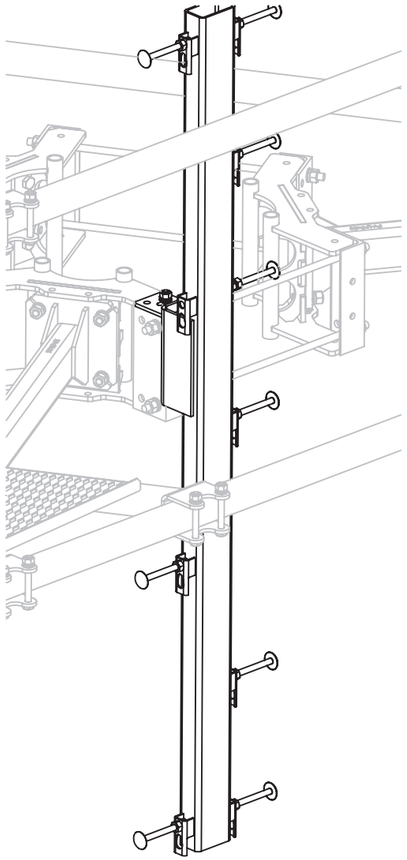
- OPTIONAL ADD-ON KIT: CLIMBING MAST
- 8' HEIGHT
- MOUNT TO COLLAR OR STANDOFF ARM
- PROVIDES CONVENIENT ACCESS TO TRANSITION FROM STRUCTURE CLIMBING FACILITY TO MOUNT
- DOES NOT INCREASE LEASE AREA REQUIREMENT FOR SYMMETRIC ANTENNA INSTALLATIONS
- ADDITIONAL EPA: 4.67 SQFT



PV-LPP-GS-ACC5
CLIMBING MAST ADD-ON
WEIGHT: 140 LBS



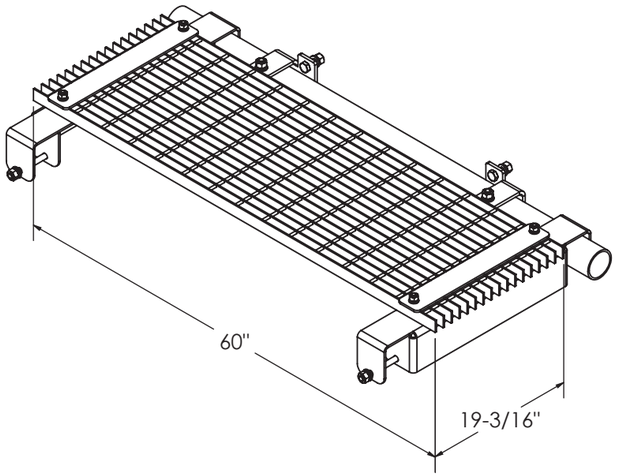
STANDOFF ARM MOUNTING



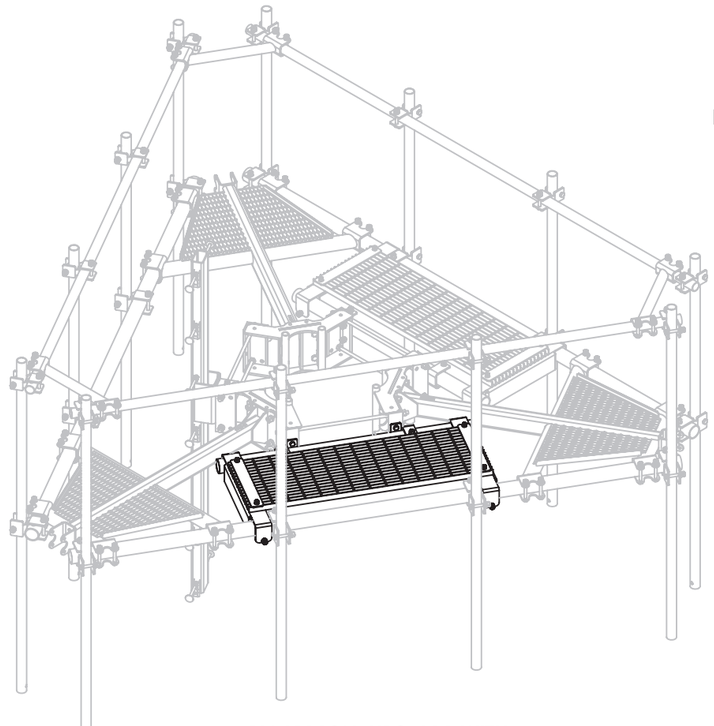
COLLAR MOUNTING

PV-LPP-GS-WALK

- OPTIONAL ADD-ON KIT: WALKWAY
- MOUNTS BETWEEN FACE PIPE AND COLLAR
- CREATES WORKING SURFACE BETWEEN SECTORS



PV-LPP-GS-WALK
WEIGHT: 200LBS



PV-LPP12M-HR2-AP1 WITH
(2) PV-LPP-GS-WALK & (1) PV-LPP-GS-ACC5

SHEET 15 OF 15	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	8	KKGS UPDATE	2/2/21
		SERIES 01_Triangular	7	REPLACED PKBK WITH PV-KKRS	11/11/20
2/9/2021	SCALE 1:24	TYPE PV-LPPGS_GUARDIAN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	5	ADDED HR2-AP3 CONFIGS	1/20/20
		CHECKED SJS	4	ADDED PKBK VIEWS. ORGANIZED ACC	11/1/19
		STATUS APPROVED	REV	DESCRIPTION	DATE

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MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER LPPGS-ENG-01-R8 | REV 8

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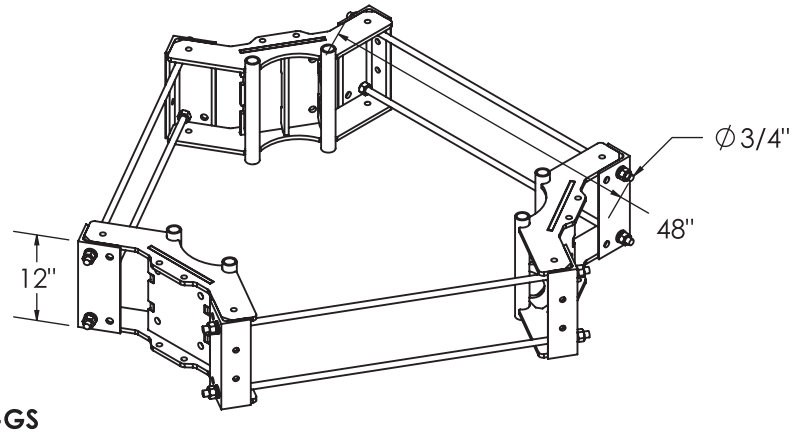
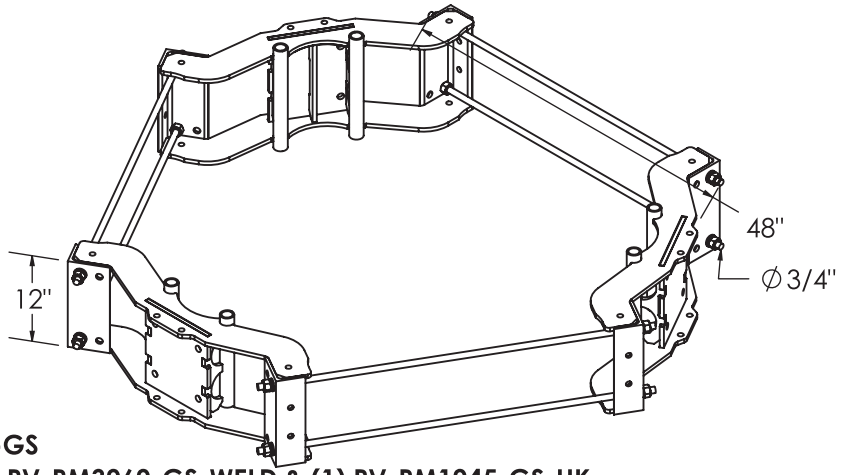
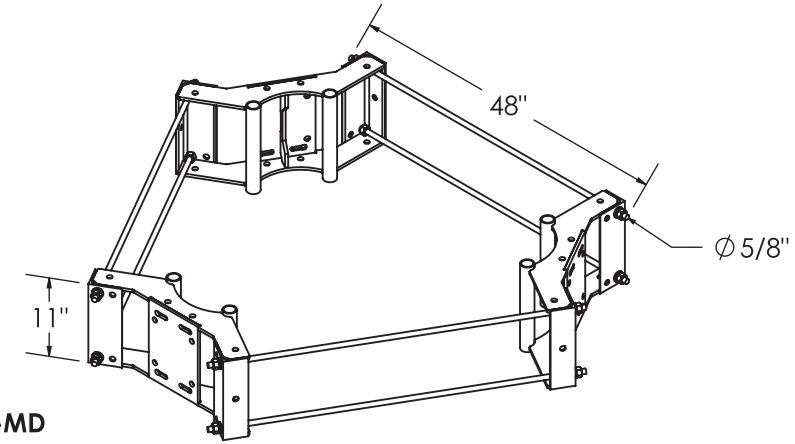


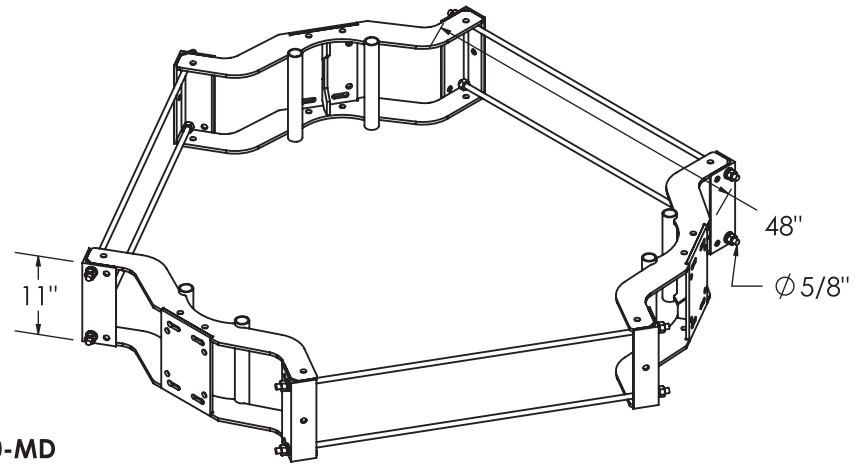
PV-RM1045-GS
SHIPS AS (1) PV-RM1045-GS-WELD & (1) PV-RM1045-GS-HK
WELDMENT PART#: W097-148-01
FRONT BOLT PATTERN Ø13/16" @ 7" X 7"



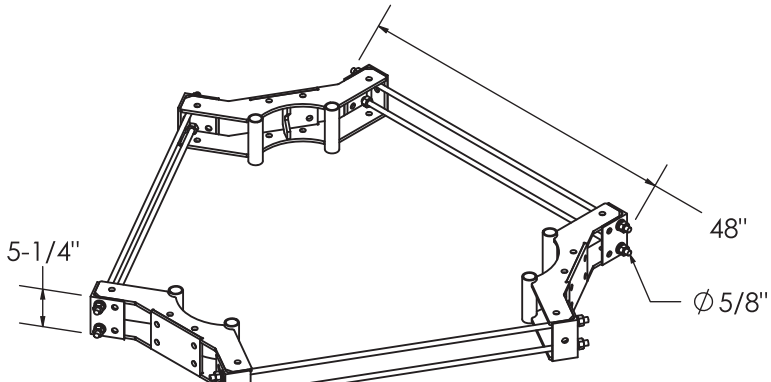
PV-RM3060-GS
SHIPS AS (1) PV-RM3060-GS-WELD & (1) PV-RM1045-GS-HK
WELDMENT PART#: W097-148-02
FRONT BOLT PATTERN Ø13/16" @ 7" X 7"

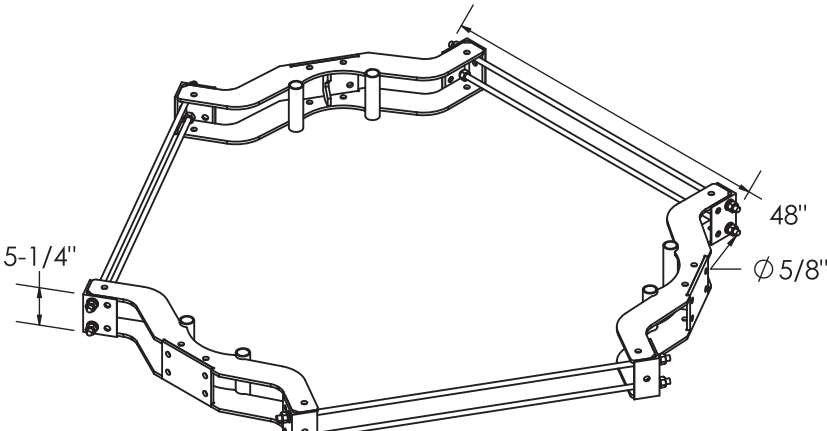


PV-RM1045-MD
SHIPS AS (1) PV-RM1045-MD-WELD & (1) PV-RM1045-MD-HK
WELDMENT PART#: W097-181-01
FRONT BOLT PATTERN Ø11/16" @ 6" X 6"



PV-RM3060-MD
SHIPS AS (1) PV-RM3060-MD-WELD & (1) PV-RM1045-MD-HK
WELDMENT PART#: W097-181-02
FRONT BOLT PATTERN Ø11/16" @ 6" X 6"





RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Section 1 - Site Information

Site ID: CTHA515A
Status: Draft
Version: 6
Project Type: Anchor
Approved: Not Approved
Approved By: Not Approved
Last Modified: 4/18/2021 9:54:16 PM
Last Modified By: Dominic.Kallas2@T-Mobile.com

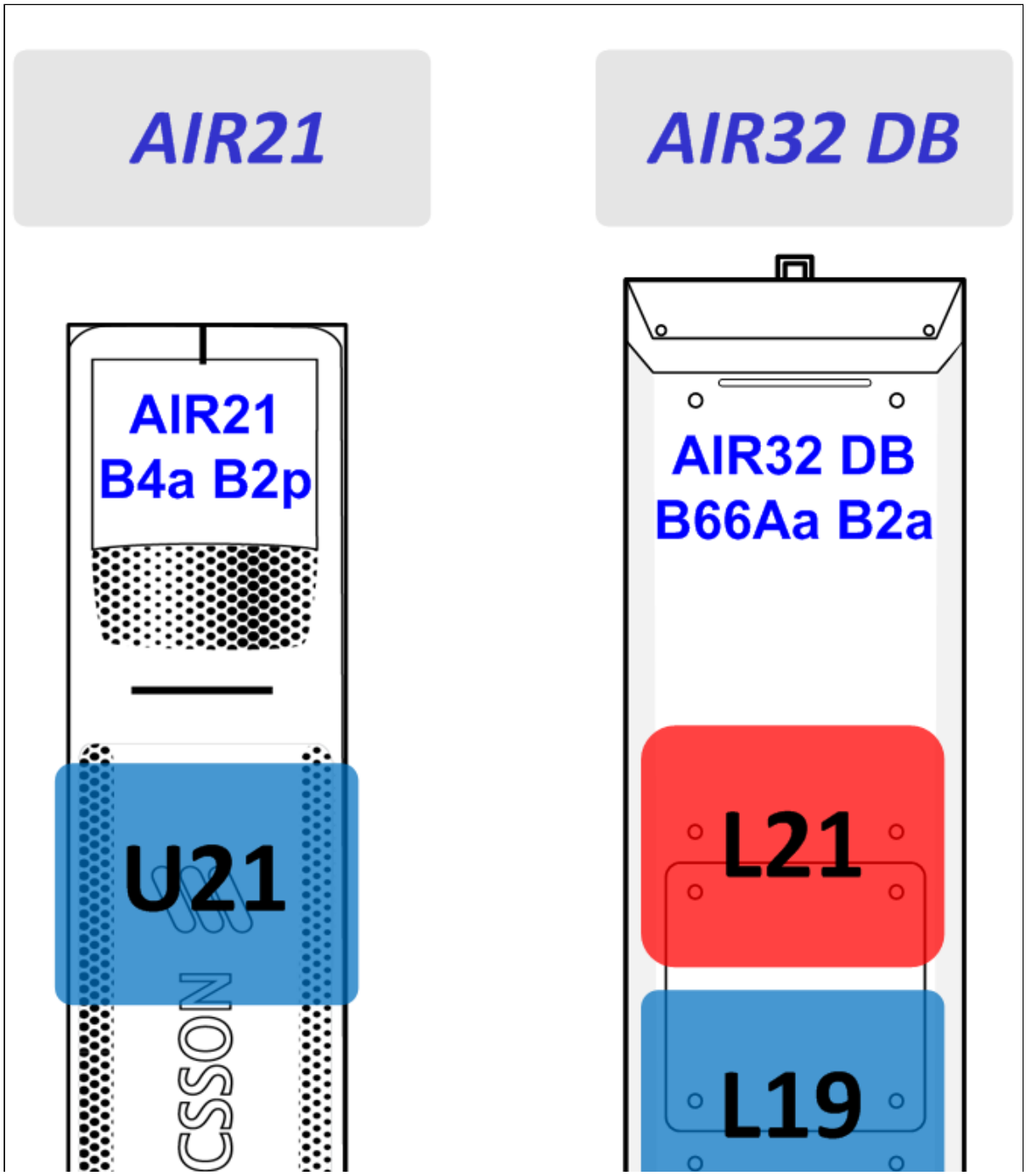
Site Name: ATC E. Hartford Monopole
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: ATC

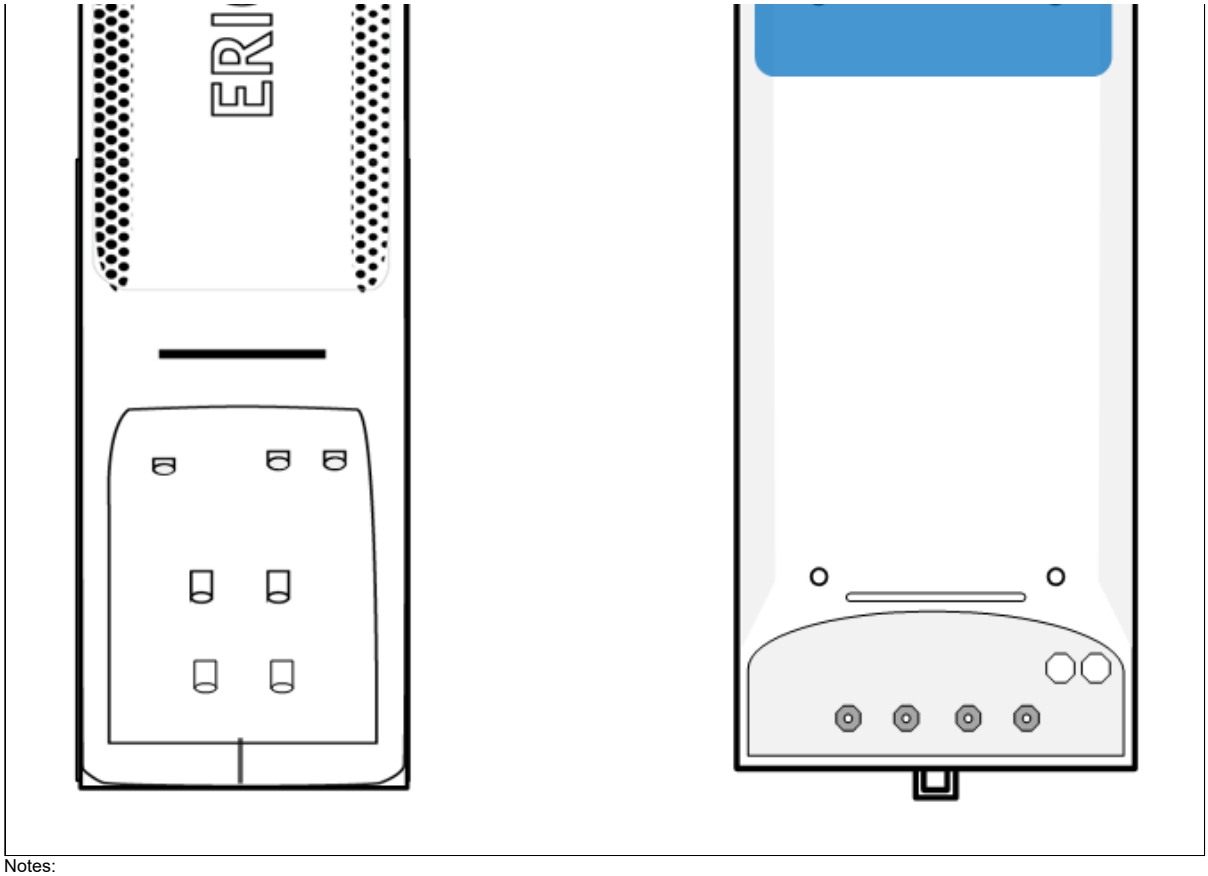
Latitude: 41.78830000
Longitude: -72.60050000
Address: 318 Prestige Park Rd
City, State: East Hartford, CT
Region: NORTHEAST

RAN Template: 67E5A997DB Outdoor		AL Template: 67E5997DB_2xAIR+1OP (U21 Market)		
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

95ABD V3.png

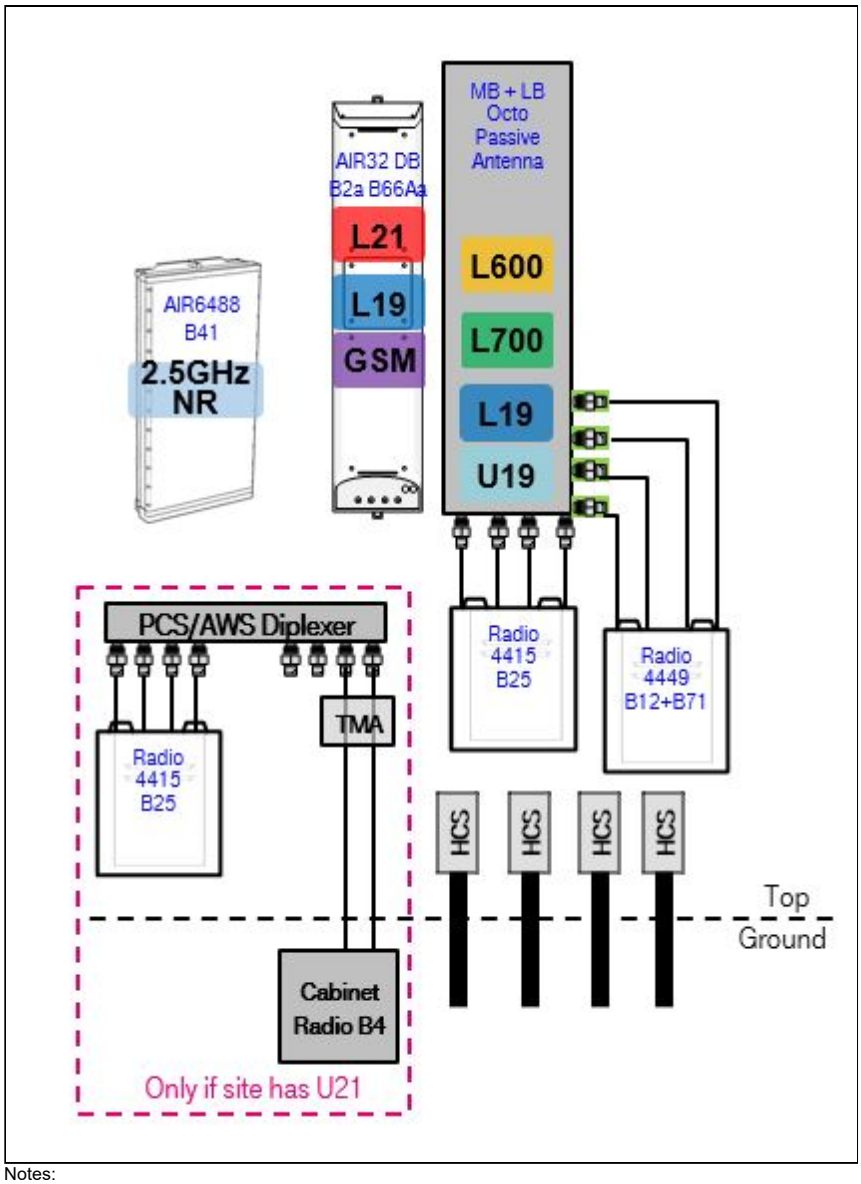




Notes:

Section 3 - Proposed Template Images

67D5997DB_2xAIR+1OP.JPG



Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 95ADB V3

Enclosure	1	2
Enclosure Type	RBS 6201 ODE	Ancillary Equipment (Ericsson)
Baseband	DUW30 [U2100]; BB 5216 [L2100, L1900]	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG*

Proposed RAN Equipment

Template: 67E5A997DB Outdoor

Enclosure	1	2	3
Enclosure Type	RBS 6201 ODE	Enclosure 6160	B160
Baseband	DUW30 [U2100]; BB 6648 [L2100, L1900]; BB 6648 [L700, L600, N600]	BB 6648 [L2500, N2500]	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* Ericsson Hybrid Trunk 6/24 4AWG 50m **(x 2)**	Ericsson Hybrid Trunk 6/24 4AWG 50m PSU 4813	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

Add (1) BB6648 for L600, L700, and N600 (MMBB - Mixed Mode Baseband) to existing RBS6201 ODE base station cabinet.

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

Add (1) BB6648 for L2500 and N2500 (MMBB - Mixed Mode Baseband) to new Enclosure 6160.

Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

Add (1) Battery Cabinet B160.

Existing: (1) 9X18 HCS; (1) 6X12 HCS

Remove 9X18 HCS.

Make sure that remaining 6X12 HCS is used for the AIR32 Dual Band antennae.

Add (3) 6X24 HCS as follows: (2) 6X24 HCS terminating at the ODE; (1) 6X24 HCS terminating at the Enclosure 6160 (Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster).

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Section 6 - A&L Equipment

Existing Template: 95ADB V3_2xAIR
Proposed Template: 67E5997DB_2xAIR+1OP (U21 Market)

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	**1**	**2**		**3**			
Antenna Model	Empty Antenna Mount (Empty mount)	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			
Azimuth		20		20			
M. Tilt		0		0			
Height		128		128			
Ports		**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.		U2100		L2100	L2100	L1900	L1900
Dark Tech.							
Restricted Tech.							
Decomm. Tech.							
E. Tilt		2		2		2	
Cables		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.	
TMAs							
Diplexers / Combiners							
Radio							
Sector Equipment							

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1				2				3	
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	20				20				20	
M. Tilt	0				0				0	
Height	128				128				128	
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**
Active Tech.	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900 U2100	L2500 N2500	L2500 N2500
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	2	2	2	2	2	2	2	2	2	2
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs										
Diplexers / Combiners										
Radio					Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

New Platform with 3 mounts per sector.

Add handrail kit.

Temp solution needed during construction.

Keep AIR32 B66A/B2A Dual Band for L2100 and L1900 1st Carrier in Position 1.

Remove AIR21 B2A/B4P from Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 2.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 2 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Add (1) Radio 4460 B25+B66 for L1900 2nd Carrier and U2100 to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 3.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Sector 2 (Existing) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	1	2		3			
Antenna Model	Empty Antenna Mount (Empty mount)	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			
Azimuth		120		120			
M. Tilt		0		0			
Height		128		128			
Ports		P1	P2	P3	P4	P5	P6
Active Tech.		U2100		L2100	L2100	L1900	L1900
Dark Tech.							
Restricted Tech.							
Decomm. Tech.							
E. Tilt		2		2		2	
Cables		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.	
TMAs							
Diplexers / Combiners							
Radio							
Sector Equipment							

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1				2				3	
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	120				120				120	
M. Tilt	0				0				0	
Height	128				128				128	
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900 U2100	L2500 N2500	L2500 N2500
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	2	2	2	2	2	2	2	2	2	2
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs										
Diplexers / Combiners										
Radio					Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

New Platform with 3 mounts per sector.

Add handrail kit.

Temp solution needed during construction.

Keep AIR32 B66A/B2A Dual Band for L2100 and L1900 1st Carrier in Position 1.

Remove AIR21 B2A/B4P from Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 2.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 2 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Add (1) Radio 4460 B25+B66 for L1900 2nd Carrier and U2100 to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 3.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Sector 3 (Existing) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	1	2		3			
Antenna Model	Empty Antenna Mount (Empty mount)	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			
Azimuth		250		250			
M. Tilt		0		0			
Height		128		128			
Ports		P1	P2	P3	P4	P5	P6
Active Tech.		U2100		L2100	L2100	L1900	L1900
Dark Tech.							
Restricted Tech.							
Decomm. Tech.							
E. Tilt		2		2		2	
Cables		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.	
TMAs							
Diplexers / Combiners							
Radio							
Sector Equipment							

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1				2				3	
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	250				250				250	
M. Tilt	0				0				0	
Height	128				128				128	
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900 U2100	L2500 N2500	L2500 N2500
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	2	2	2	2	2	2	2	2	2	2
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs										
Diplexers / Combiners										
Radio					Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

New Platform with 3 mounts per sector.

Add handrail kit.

Temp solution needed during construction.

Keep AIR32 B66A/B2A Dual Band for L2100 and L1900 1st Carrier in Position 1.

Remove AIR21 B2A/B4P from Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 2.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 2 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Add (1) Radio 4460 B25+B66 for L1900 2nd Carrier and U2100 to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 3.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67E5A997DB Outdoor	67E5997DB_2xAIR+1OP (U21 Market)

CTHA515A_Anchor_6_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
L600_5G POPs

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

----- This section is intentionally blank. -----

Proposed Power Systems Equipment

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: CTHA515A

ATC E. Hartford Monopole
310 Prestige Park Road
East Hartford, Connecticut 06108

June 23, 2021

EBI Project Number: 6221003178

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**29.67%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

June 23, 2021

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

Emissions Analysis for Site: CTHA515A - ATC E. Hartford Monopole

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **310 Prestige Park Road** in **East Hartford, 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 310 Prestige Park Road in East Hartford, 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 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.

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 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 Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 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 Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 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 128 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 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):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	**2.11%**	Antenna B1 MPE %:	**2.11%**	Antenna C1 MPE %:	**2.11%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
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 / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,010.27	ERP (W):	11,010.27	ERP (W):	11,010.27
Antenna A2 MPE %:	**4.04%**	Antenna B2 MPE %:	**4.04%**	Antenna C2 MPE %:	**4.04%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
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):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 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 A3 MPE %:	**8.78%**	Antenna B3 MPE %:	**8.78%**	Antenna C3 MPE %:	**8.78%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	14.93%
Verizon	8.9%
Clearwire	0.21%
AT&T	4.61%
Sprint	1.02%
Site Total MPE % :	29.67%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	14.93%
T-Mobile Sector B Total:	14.93%
T-Mobile Sector C Total:	14.93%
Site Total MPE % :	29.67%

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 1900 MHz LTE	2	2056.61	128.0	9.94	1900 MHz LTE	1000	0.99%
T-Mobile 2100 MHz LTE	2	2307.55	128.0	11.15	2100 MHz LTE	1000	1.11%
T-Mobile 600 MHz LTE	2	591.73	128.0	2.86	600 MHz LTE	400	0.71%
T-Mobile 600 MHz NR	1	1577.94	128.0	3.81	600 MHz NR	400	0.95%
T-Mobile 700 MHz LTE	2	695.22	128.0	3.36	700 MHz LTE	467	0.72%
T-Mobile 1900 MHz LTE	2	2104.51	128.0	10.17	1900 MHz LTE	1000	1.02%
T-Mobile 2100 MHz UMTS	2	1324.71	128.0	6.40	2100 MHz UMTS	1000	0.64%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	128.0	26.68	2500 MHz LTE 1C & 2C Traffic	1000	2.67%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	128.0	2.59	2500 MHz LTE 1C & 2C Broadcast	1000	0.26%
T-Mobile 2500 MHz NR Traffic	1	22089.26	128.0	53.36	2500 MHz NR Traffic	1000	5.34%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	128.0	5.19	2500 MHz NR Broadcast	1000	0.52%
						Total:	**14.93%**

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

Summary

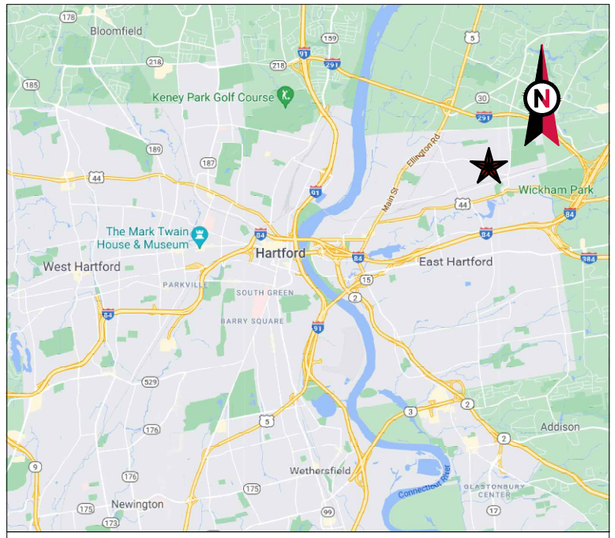
All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

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:	14.93%
Sector B:	14.93%
Sector C:	14.93%
T-Mobile Maximum MPE % (Sector A):	14.93%
Site Total:	29.67%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **29.67%** 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.



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: E H F R - PRESTIGE PARK
ATC SITE NUMBER: 302473
T-MOBILE SITE NAME: ATC E. HARTFORD MONOPOLE
T-MOBILE SITE NUMBER: CTHA515A
SITE ADDRESS: 310 PRESTIGE PARK ROAD EAST HARTFORD, CT 06108

T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN
67E5997DB_2XAIR+1OP CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

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

1. 2015 INTERNATIONAL BUILDING CODE (IBC)
2. 2017 NATIONAL ELECTRIC CODE (NEC)
3. BASIC WIND SPEED: 115.01 MPH (3-SECOND GUST, VULT) / EXPOSURE CATEGORY: B / RISK CATEGORY : II
4. LOCAL BUILDING CODE
5. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (877) 659-6326

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 376-6843

CBYD.COM 811 Call Before You Dig, Inc.

PROJECT SUMMARY

SITE ADDRESS:

310 PRESTIGE PARK ROAD

EAST HARTFORD, CT 06108

COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.78833333

LONGITUDE: -72.60055556

GROUND ELEVATION: 68' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

KIMLEY-HORN
& ASSOCIATES, INC.
421 FAYETTEVILLE ST, STE 600
RALEIGH, NC 27601
COA: PEC.0000738

PROPERTY OWNER:

FREMONT PRESTIGE PARK LLC
C/O FREMONT MANAGEMENT LLC
65 LASALLE RD STE 202
WEST HARTFORD, CT, 06107

APPLICANT:

T-MOBILE

SUE EMERY
SUSAN.EMERY@T-MOBILE.COM

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE (3) T-ARM SECTOR MOUNTS,
(3) AIR21 KRC118023-1_B2P_B4A ANTENNA(S), AND (1) 6X12 HCS,
INSTALL (1) PV-LPPGS-12M-HR25-AP4 MOUNT, (1) PROPOSED PV-RM1045-GS COLLAR MOUNT, (3) APXVAALL2443-U-NA20 ANTENNA(s), (3) AIR6449 B41 ANTENNA(s), (3) 4480 B71+B85 RRH(s), AND (3) 4460 B25+B66RRH(s)
EXISTING (3) AIR32 B66AA/B2A ANTENNA(S) AND (1) 9X18 HYBRID CABLE(s) TO REMAIN

GROUND WORK:

REMOVE (1) 9X18 HYBRID CABLE(S)
INSTALL (1) B160 BATTERY CABINET, (1) ENCLOSURE 6160, (2) BB6648, (1) IXRE ROUTER, (1) PSU4813, AND (3) 6X12 HYBRID CABLE(s)
EXISTING (1) RBS 6201 ODE TO REMAIN
THE PROPOSED PROJECT DOES NOT INCLUDE ELECTRICAL SCOPE

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

TAKE I-84 EAST TO EXIT 58. TURN LEFT OFF EXIT ONTO ROBERTS STREET. FOLLOW TO SCOTLAND ROAD AND TURN LEFT. GO TO END AND TURN LEFT ONTO RT 44 (BURNSIDE AVE). TURN RIGHT ONTO SCHOOL STREET (3RD STREET ON RIGHT). FOLLOW TO PRESTIGE PARK ROAD AND TURN RIGHT. FOLLOW TO LAST BUILDING ON LEFT. TOWER IS BEHIND BUILDING.

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R-607	SUPPLEMENTAL			

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RDC	06/11/21
0	ISSUED FOR CONSTRUCTION	PY	07/21/21
1	REVISED FOR CONSTRUCTION	CCG	09/02/21

ATC SITE NUMBER:
302473
ATC SITE NAME:
E H F R - PRESTIGE PARK
T-MOBILE SITE NAME:
ATC E. HARTFORD MONOPOLE
SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

SEAL:

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

T-Mobile

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNA AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:

i. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

ii. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

CONCRETE AND REINFORCING STEEL NOTES:

2. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
3. MIX DESIGN SHALL BE APPROVED BY T-MOBILE REP PRIOR TO PLACING CONCRETE.
4. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
5. THE FOLLOWING MATERIALS SHALL BE USED:
   - PORTLAND CEMENT: ASTM C150, TYPE 2
   - REINFORCEMENT: ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
   - REINFORCEMENT BARS: ASTM A615, GRADE 60, DEFORMED
   - NORMAL WEIGHT AGGREGATE: ASTM C33
   - WATER: ASTM C 94/C 94M
   - WELDED WIRE FABRIC: ASTM A185
   - ADMIXTURES:
     - -WATER-REDUCING AGENT: ASTM C 494/C 494M, TYPE A
     - -AIR-ENTERING AGENT: ASTM C 260/C 260M
     - -SUPERPLASTICIZER: ASTM C494, TYPE F OR TYPE G
     - -RETARDING: ASTM C 494/C 494M, TYPE B
6. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
7. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
8. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.
9. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
10. DO NOT WELD OR TACK WELD REINFORCING STEEL.
11. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
12. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
13. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
14. FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
15. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
16. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
17. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
18. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
19. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
20. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
21. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
22. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
23. SLAB ON GROUND: COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

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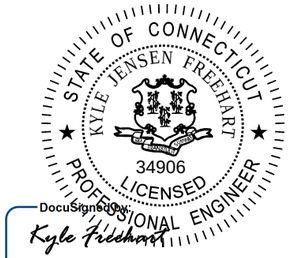
ATC SITE NUMBER:
302473
ATC SITE NAME:
E H F R - PRESTIGE PARK
T-MOBILE SITE NAME:
ATC E. HARTFORD MONOPOLE
SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

SEAL:



DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

T-Mobile

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	1

SITE PLAN NOTES:

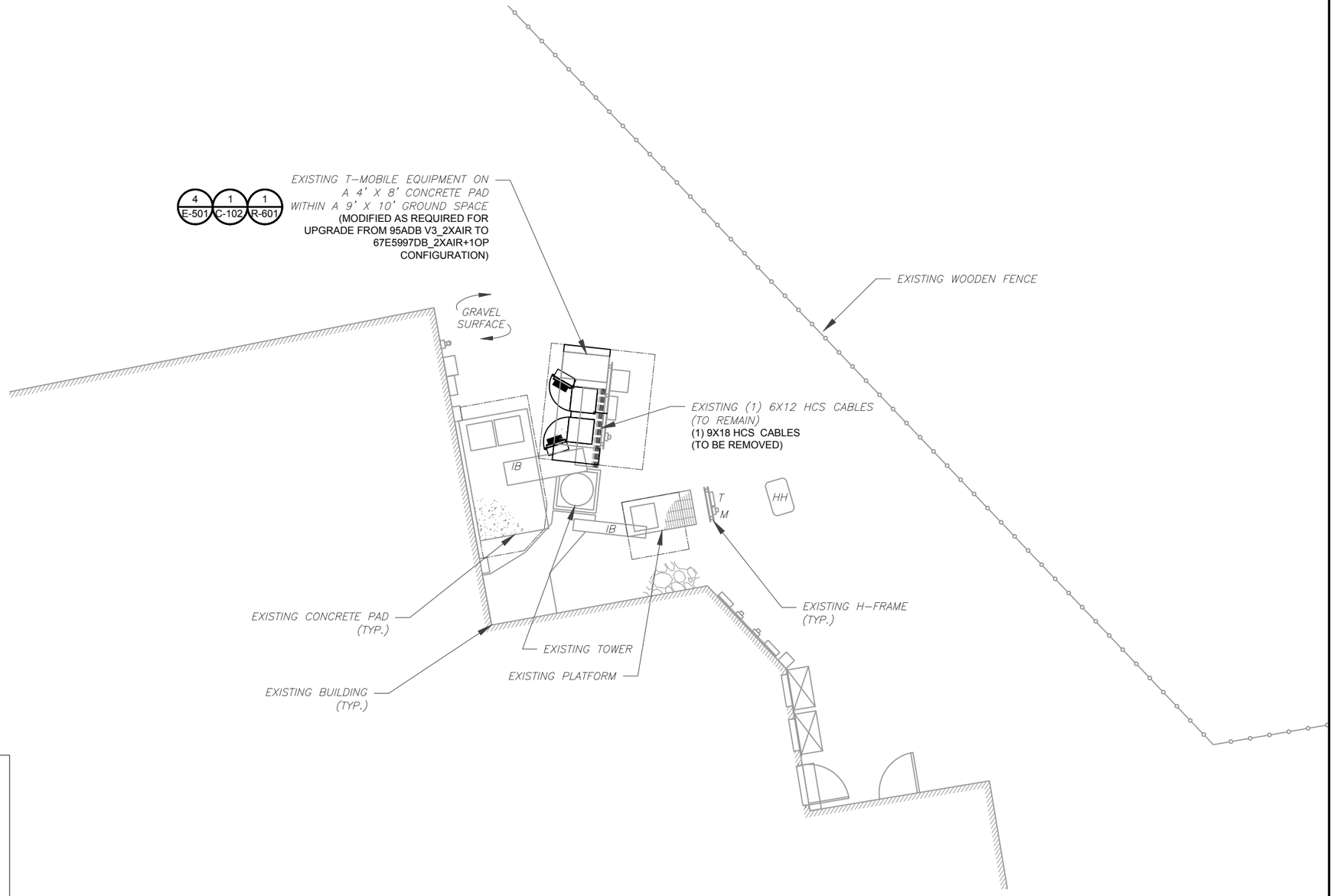
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
——x——	CHAINLINK FENCE



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **155'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

N

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SEAL:

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

T-Mobile

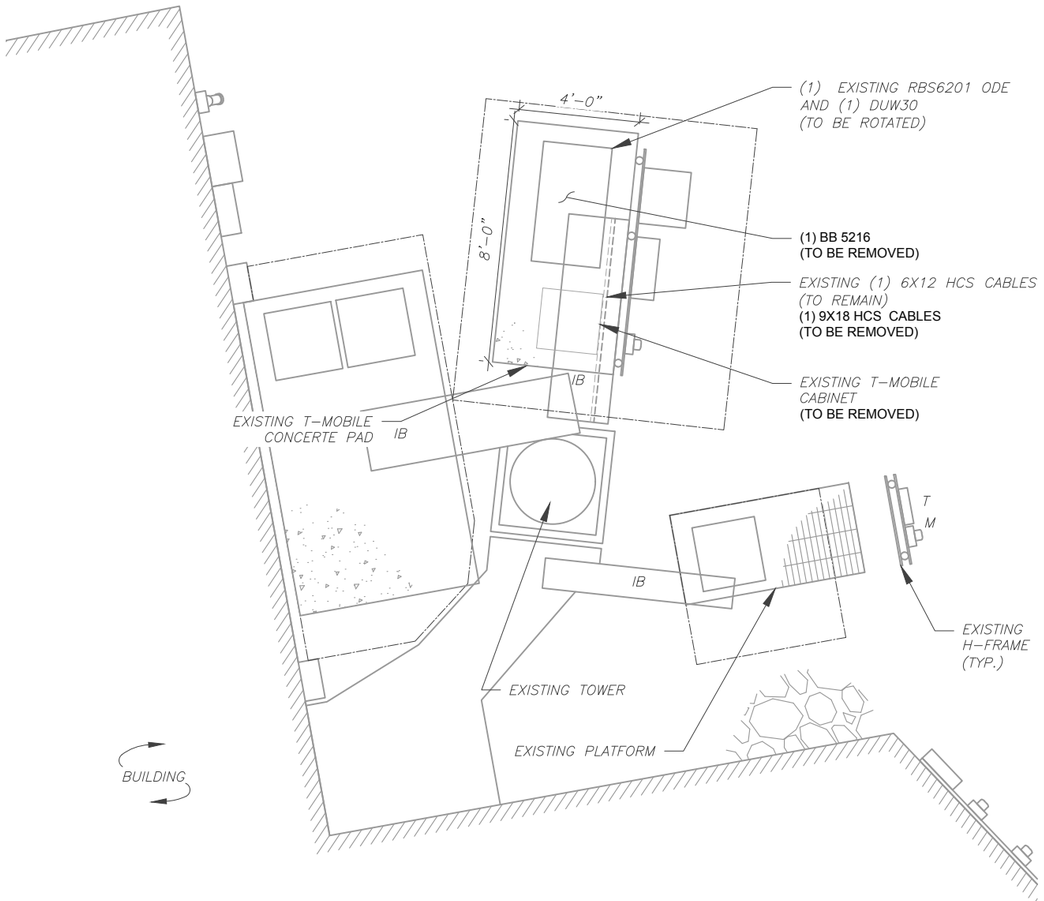
DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	1

SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

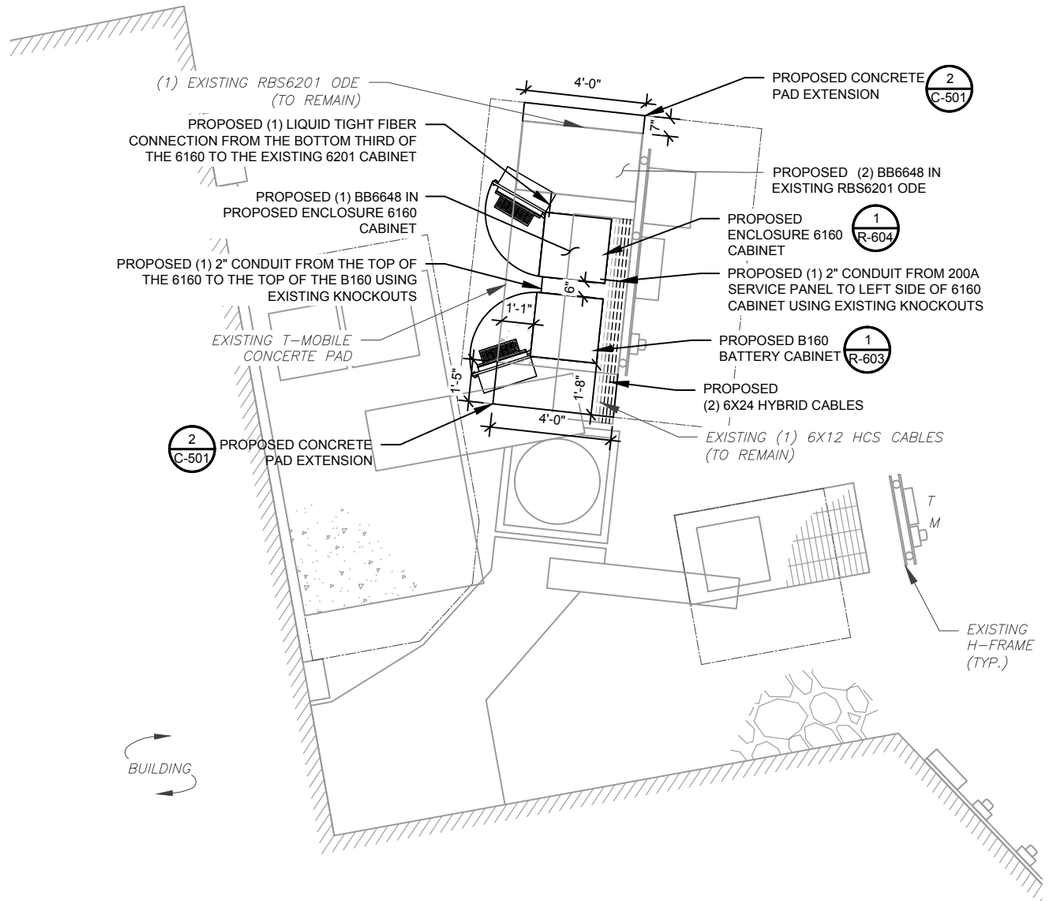


1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RDC	06/11/21
0	ISSUED FOR CONSTRUCTION	PY	07/21/21
1	REVISED FOR CONSTRUCTION	CCG	09/02/21

ATC SITE NUMBER:
302473

ATC SITE NAME:
E H F R - PRESTIGE PARK

T-MOBILE SITE NAME:
ATC E. HARTFORD MONOPOLE

SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

SEAL:

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

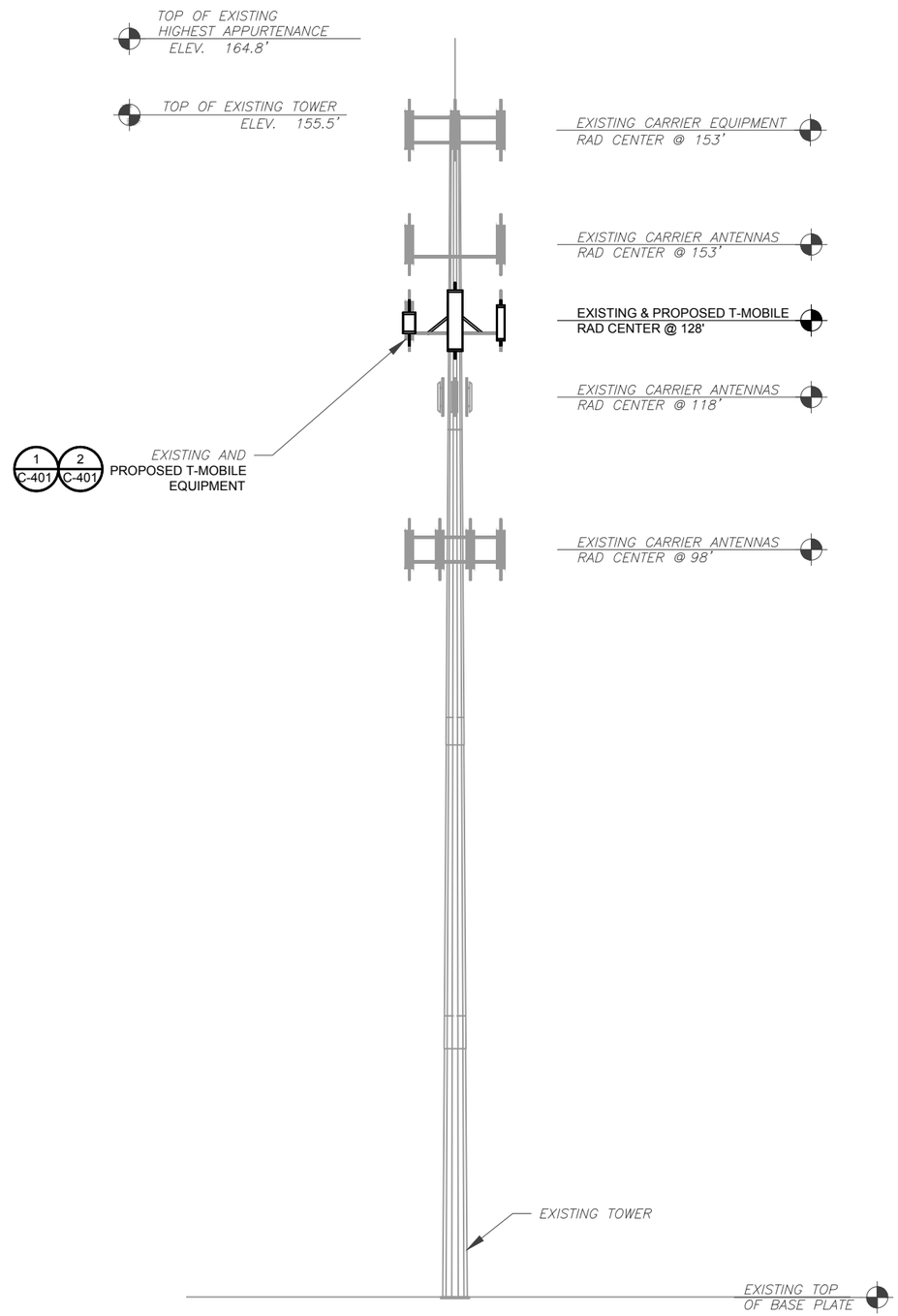
DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

T-Mobile

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	1



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COREONE CONSULTING, DATED 05/26/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

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SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

SEAL:

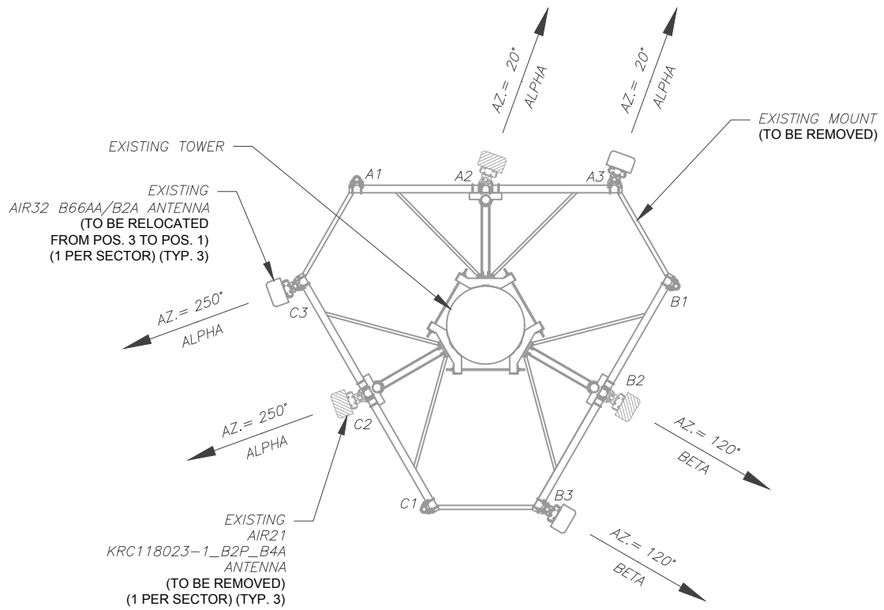
STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

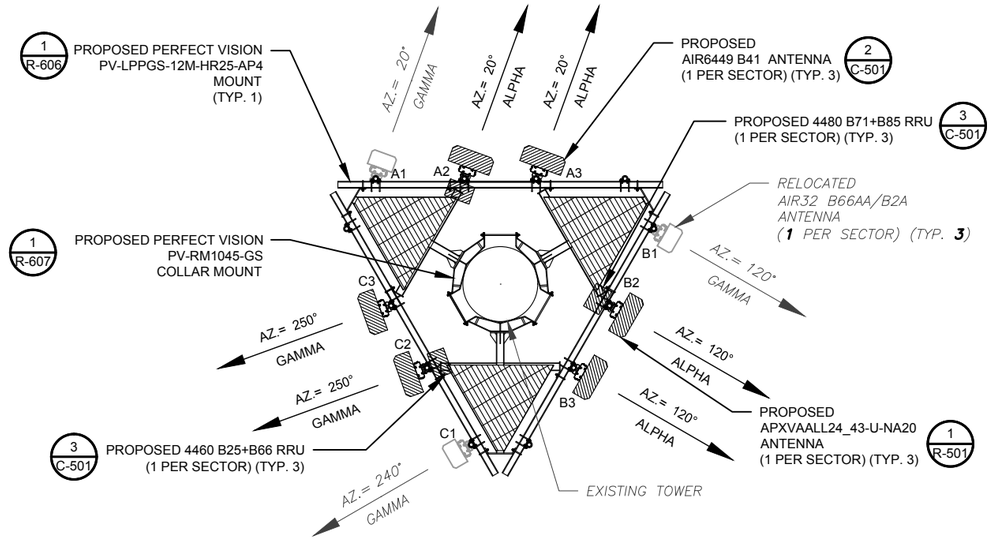
TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	1



1 EXISTING ANTENNA PLAN
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COREONE CONSULTING, DATED 05/26/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	128'	20°	A1	–	–	–	–	–	–
			A2	AIR21 KRC118023-1_B2P_B4A	U2100	0°/2°	RMV	–	–
			A3	AIR32 B66AA/B2A	L2100 L1900	0°/2°	REL	–	–
BETA	128'	120°	B1	–	–	–	–	–	–
			B2	AIR21 KRC118023-1_B2P_B4A	U2100	0°/2°	RMV	–	–
			B3	AIR32 B66AA/B2A	L2100 L1900	0°/2°	REL	–	–
GAMMA	128'	250°	C1	–	–	–	–	–	–
			C2	AIR21 KRC118023-1_B2P_B4A	U2100	0°/2°	RMV	–	–
			C3	AIR32 B66AA/B2A	L2100 L1900	0°/2°	REL	–	–

NOTES

1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
3. ROUTE HYBRID JUMPERS TO AVOID DAMAGE FROM BEING STEPPED UPON.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	128'	20°	A1	AIR32 B66AA/B2A	L2100/L1900	0°/2°	REL	-	-
			A2	APXVAALL24_43-U-NA20	L700/L600/N600/L1900 /U2100	0°/2°	ADD	4480 B71+B85 4460 B25+B66	ADD ADD
			A3	AIR6449 B41	L2500/N2500	0°/2°	ADD	-	-
BETA	128'	120°	B1	AIR32 B66AA/B2A	L2100/L1900	0°/2°	REL	-	-
			B2	APXVAALL24_43-U-NA20	L700/L600/N600/L1900 /U2100	0°/2°	ADD	4480 B71+B85 4460 B25+B66	ADD ADD
			B3	AIR6449 B41	L2500/N2500	0°/2°	ADD	-	-
GAMMA	128'	250°	C1	AIR32 B66AA/B2A	L2100/L1900	0°/2°	REL	-	-
			C2	APXVAALL24_43-U-NA20	L700/L600/N600/L1900 /U2100	0°/2°	ADD	4480 B71+B85 4460 B25+B66	ADD ADD
			C3	AIR6449 B41	L2500/N2500	0°/2°	ADD	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(1) 9X18 HCS	RMN
–	–	–	(1) 6X12 HCS	RMN

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 6X24 HCS	ADD
-	-	-	-	-

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SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

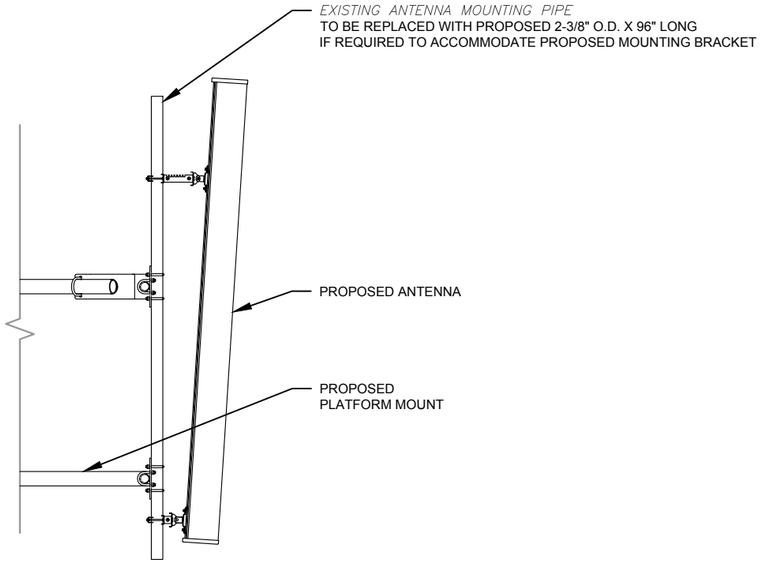
SEAL:
STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED
PROFESSIONAL ENGINEER
DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

T-Mobile

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

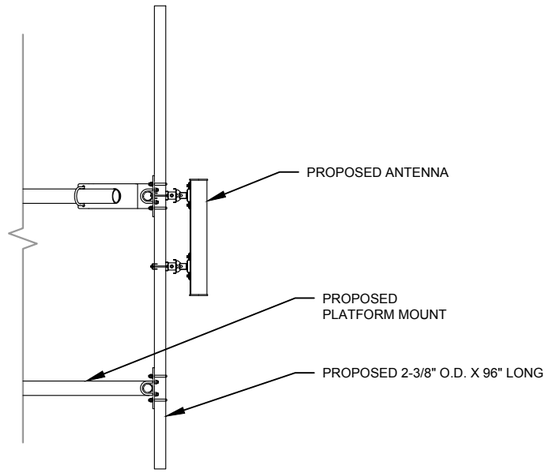
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	1



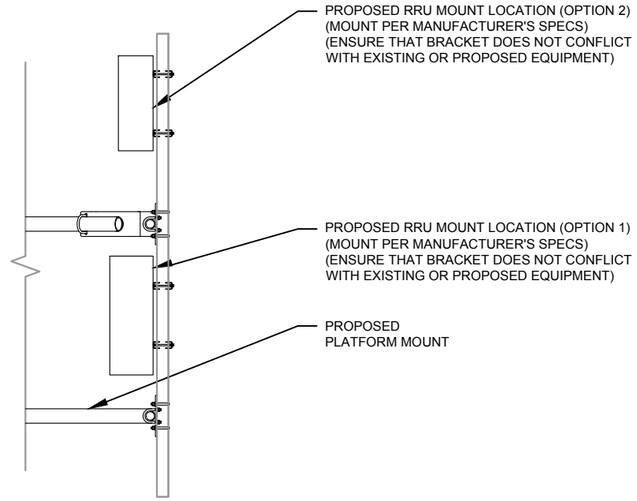
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



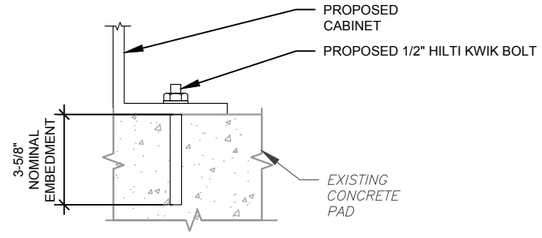
2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.

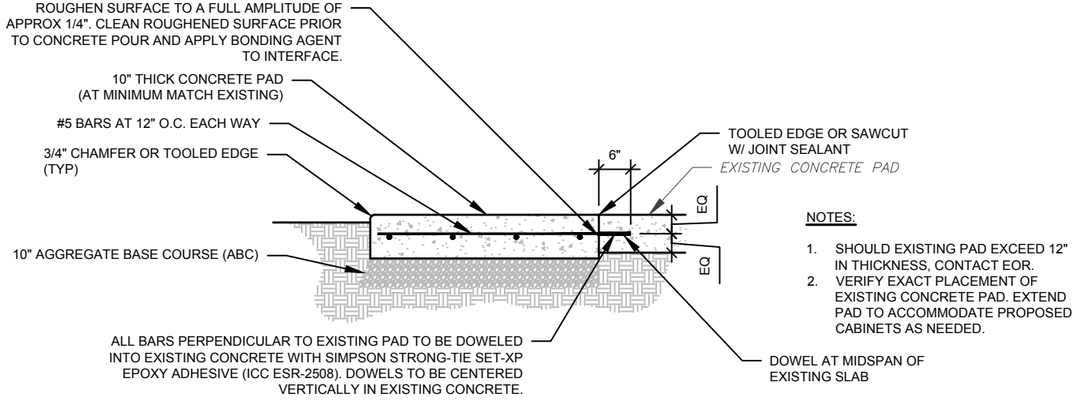


NOTE:

INSTALL HILTI KWIK BOLT ANCHORS STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.US.HILTI.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

4 CABINET ATTACHMENT DETAIL

SCALE: NOT TO SCALE



NOTES:

1. SHOULD EXISTING PAD EXCEED 12" IN THICKNESS, CONTACT EOR.
2. VERIFY EXACT PLACEMENT OF EXISTING CONCRETE PAD. EXTEND PAD TO ACCOMMODATE PROPOSED CABINETS AS NEEDED.

5 CONCRETE PAD EXTENSION DETAIL

SCALE: NOT TO SCALE

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ATC SITE NUMBER:

302473

ATC SITE NAME:

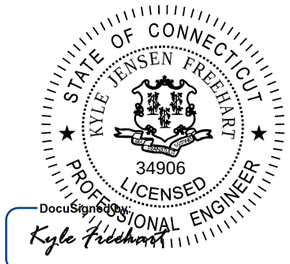
E H F R - PRESTIGE PARK

T-MOBILE SITE NAME:

ATC E. HARTFORD MONOPOLE

SITE ADDRESS:
310 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108

SEAL:

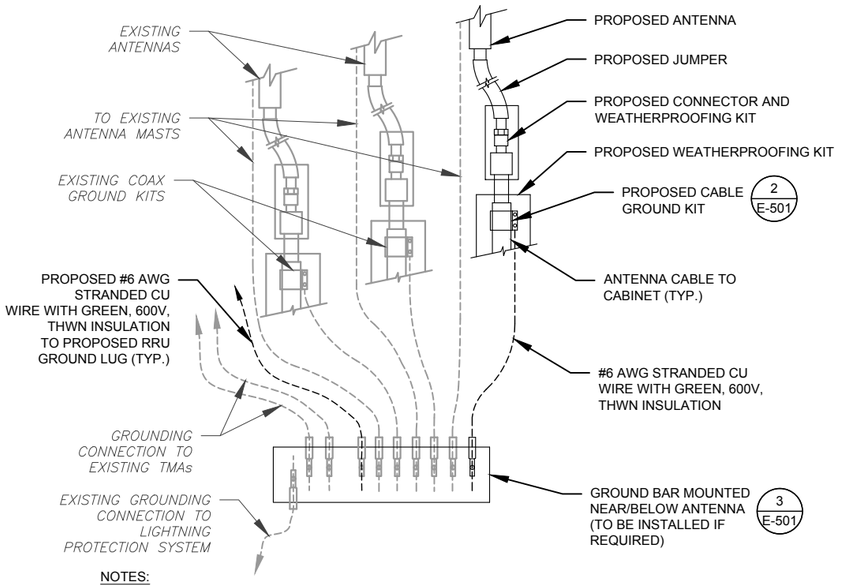


T-Mobile

DATE DRAWN:	09/02/21
ATC JOB NO:	13677961
CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	1

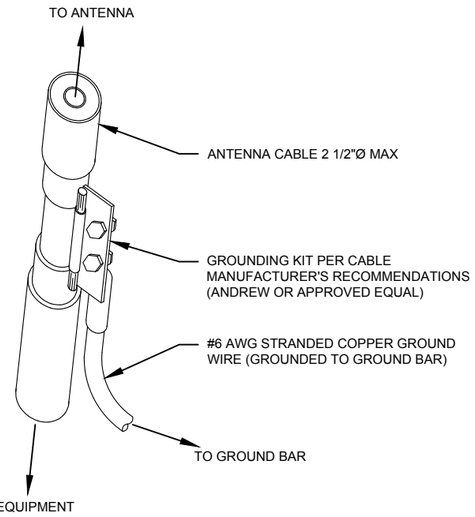


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

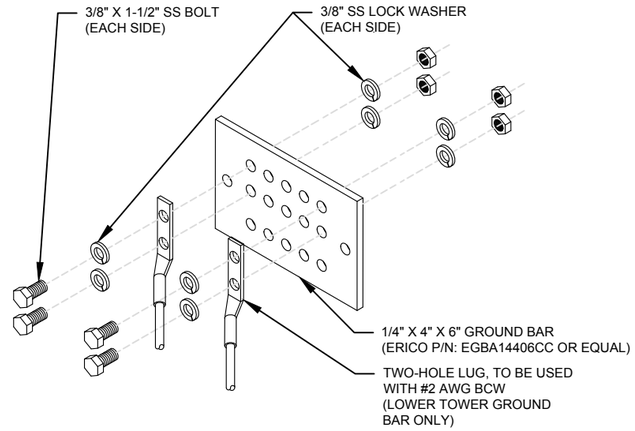


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

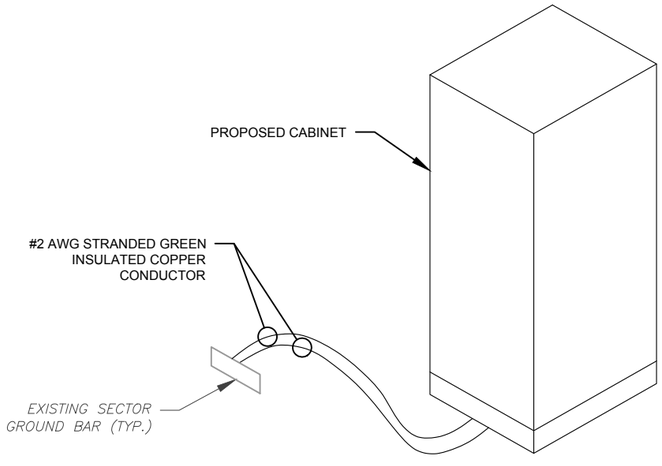


GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.



4 CABINET GROUNDING DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"

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T-Mobile

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CUSTOMER ID:	ATC E. HARTFORD MONOPOLE
CUSTOMER #:	CTHA515A

GROUNDING DETAILS

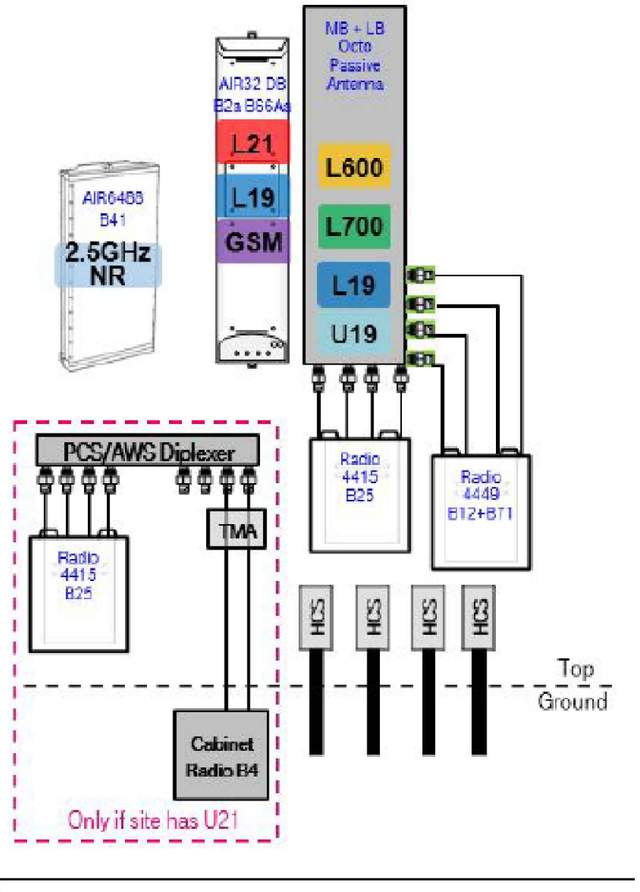
SHEET NUMBER:	REVISION:
E-501	1

Section 3 - Proposed Template Images

Proposed RAN Equipment			
Template: 67E5A997DB Outdoor			
Enclosure	1	2	3
Enclosure Type	RBS 6201 ODE	Enclosure 6160	B160
Baseband	DUW30 U2100 / BB 6648 L2100 L1900 / BB 6648 L700 L600 N600	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson 6x12 HCS "Select Length & AWG" / Ericsson Hybrid Trunk 6/24 4AWG 50m (x 2)	Ericsson Hybrid Trunk 6/24 4AWG 50m / PSU 4813	
Transport System		CSR IXRe V2 (Gen2)	

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

67D5997DB_2xAIR+1OP.JPG



Notes:

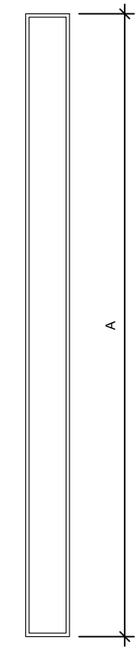
2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

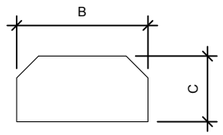
SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: 1



FRONT VIEW

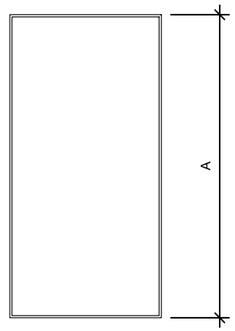


TOP VIEW

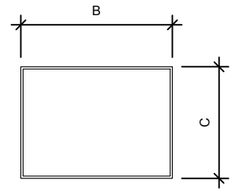
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAALL24_43-U-NA20	95.9"	24.0"	8.5"	122.8
AIR6449 B41	33.1"	20.6"	8.6"	104.0



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

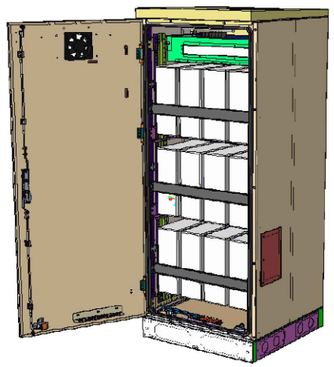
RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4480 B71+B85A	21.8"	15.7"	7.5"	84
4460 B25+B66	19.6"	15.7"	12.1"	109

SUPPLEMENTAL

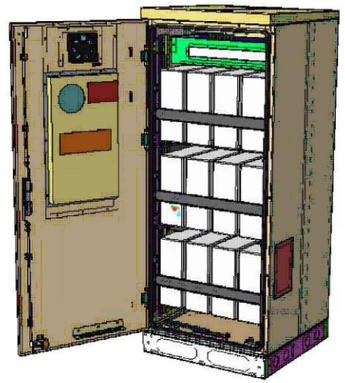
SHEET NUMBER: R-602

REVISION: 1

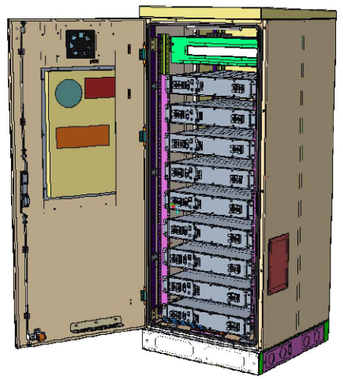
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

Electrical specification
- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

Mechanical specification
- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m^2)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification
- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
- Relative humidity: 15-100%

Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
- Convection cooling
  - Emergency fan

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	1

Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.

Preliminary technical specification for Enclosure 6160 AC

CAPACITY	
Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option
MECHANICAL SPECIFICATION	
Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder
POWER SYSTEM	
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

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SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	1

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CORE ONE CONSULTING

Antenna Mount Analysis Report

ATC Site Name	:	E H F R – Prestige Park, CT
ATC Site Number	:	302473
Engineering Number	:	13677961_C8_03
Mount Elevation	:	128 ft
Carrier	:	T-Mobile
Carrier Site Name	:	ATC E. Hartford Monopole
Carrier Site Number	:	CTHA515A
Site Location	:	310 Prestige Park Rd. East Hartford, CT 06108 41.788300, -72.600600
County	:	Hartford
Date	:	May 26, 2021
Max Usage	:	56%
Result	:	Pass

Prepared By:
Alexander Bazeley, EI
Structural Lead

Reviewed By:
Michael Leeper, PE
Senior Professional Engineer

Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for T-Mobile at 128 ft.

Supporting Documents

RFDS	RFDS dated April 23, 2021
Proposed Mount	Perfect Vision PV-LPPGS-12M-HR25-AP4
Proposed Collar	Perfect Vision PV-RM1045-GS Collar Mount
Structural Analysis	ATC Site 302473, Dated September 26, 2019

Analysis

This antenna mount was analyzed using RISA-3D v17 analysis software

Basic Wind Speed:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.5" Ice
Codes:	TIA-222-H
Structure Class:	II
Exposure Category:	B
Topographic Procedure:	Method 2
Topographic Feature:	Flat
Crest Height:	0 ft
Crest Length:	0 ft
Spectral Response:	Ss = 0.188, S_1 = 0.055
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the mount does meet the specified IBC/TIA/ASCE code and minimum design requirements. The proposed mount is therefore deemed adequate to support the existing and proposed loading as listed in this report.

- Contractor to install proposed Perfect Vision PV-LPPGS-12M0HR25-AP4 and collar PV-RM1045-GS mount prior to installing proposed equipment.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

[Core One Consulting – 506 Second Avenue, Suite 1512, Seattle, WA 98104 – 778.805.2166 Office - www.Coreoneconsulting.com]

1 MOUNT ANALYSIS

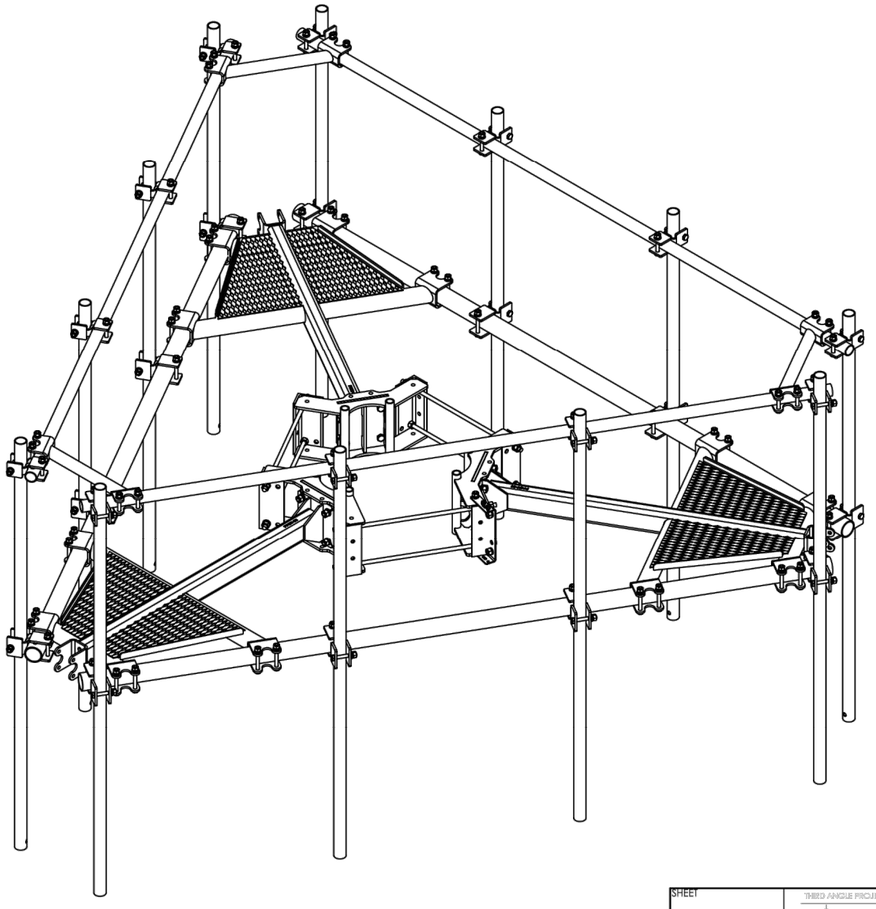
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.

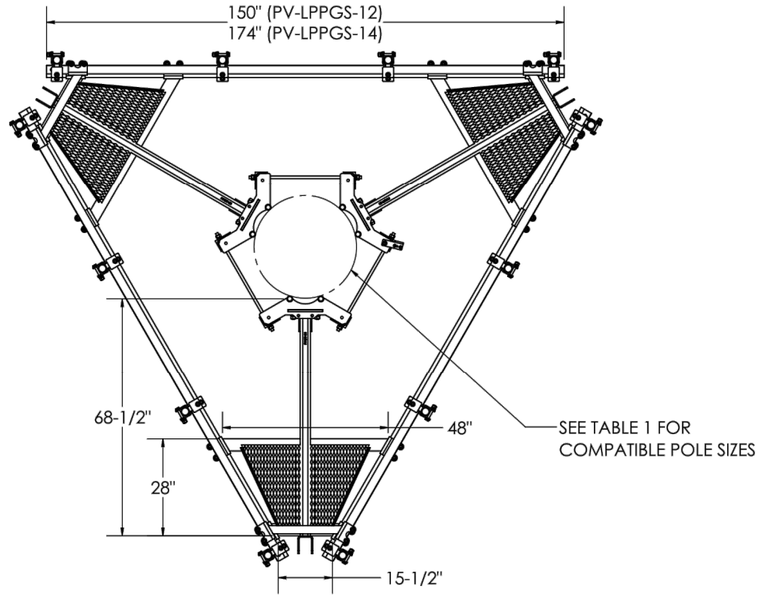
SUPPLEMENTAL

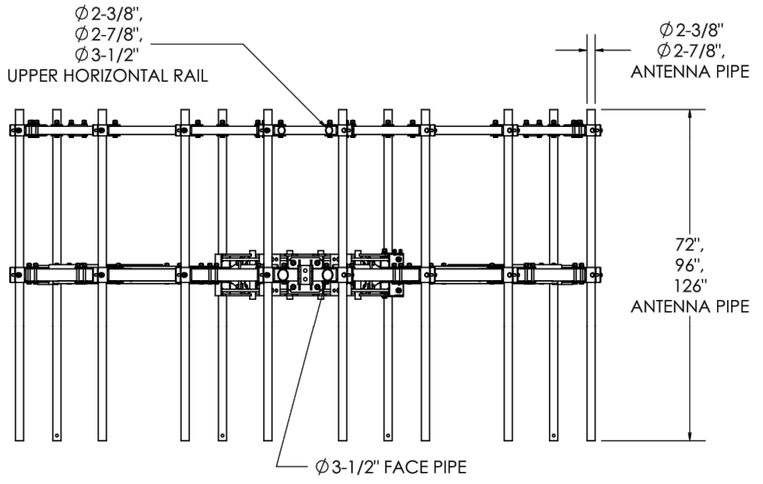
SHEET NUMBER:	REVISION:
R-605	1

PV-LPPGS
MONOPOLE GUARDIAN MOUNT

SEE SHEET 2 - TABLE 1 FOR FULL CONFIGURATION DETAILS







SHEET: 1 OF 16	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	9	ACC1 REPLACE ACC2, PV-CMX-CG-BO REPLACE 115-242	3/16/21
		SERIES: 01_Triangular	8	KKGS UPDATE	2/2/21
3/19/2021	SCALE: 1:36	TYPE: PV-LPPGS_GUARDIAN	7	REPLACED PKBK WITH PV-KKRS	11/11/20
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		BY: DJN	6	ADDED ALL THREAD NOTE TO COLLARS	7/27/20
		CHECKED: SJS	5	ADDED HR2-AP3 CONFIGS	1/20/20
		STATUS: APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION

MONOPOLE GUARDIAN MOUNT

DOCUMENT NUMBER: LPPGS-ENG-01-R9 | REV: 9

1 PROPOSED MOUNT

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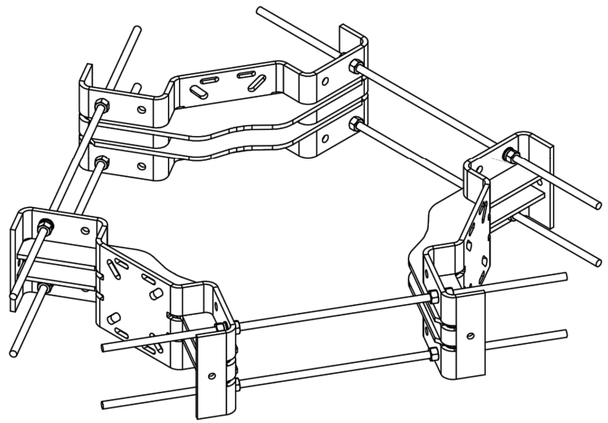
SUPPLEMENTAL

SHEET NUMBER: R-606 | REVISION: 1

C:\PVMSteel\Catalog\SW Working Files\Engineering Details\

7/8/2016 10:11:33 AM

ITEM NO.	PART #	DESCRIPTION	REV.	QTY.
1	H02-0012-10	3/4" A563DH GALVANIZED NUT	0	24
2	H03-0012-02	3/4" DIA. F436 HARDENED GALVANIZED WASHER	0	12
3	H04-0012-01	3/4" SPRING LOCK WASHER	0	12
4	H15-2075-04	3/4"Dia x 4' x 10TPI Anchor Rod - A193-B7 HDG	0	6
5	W097-039-01	P10 - MONOPOLE COLLAR MOUNT - SMALL 3 SECTOR WELDMENT	3	3
6	P097-000-30	P10 - INSTALLATION INSTRUCTIONS - RING MOUNT	0	1



Z:\Product Development\Part Drawings\Parent Assemblies\PV - P10 Catalog Parts\

PART #: PV-RM1045	P10 - MONOPOLE COLLAR - 10"-45" POLE - 3 SECTOR			
PERFECTVISION MANUFACTURING	FILE: PV-RM1045 REV 2.SLDDRW			SCALE : 1:12
	PAGE NUMBER	REVISION	DRAWN BY	DATE: 7/8/2016
	1 OF 2	2	DJN	ASSEMBLY WEIGHT = 311.94 LBS.

1 PROPOSED MOUNT COLLAR

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SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-607	1