

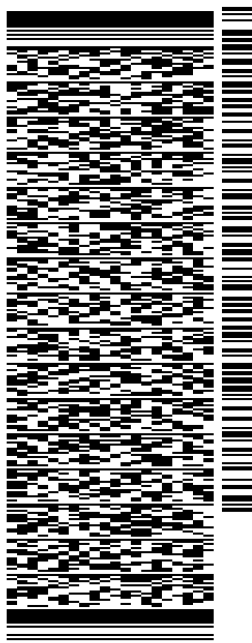
ORIGIN ID:FOYA (781) 392-7547
KATIE ADAMS
NB+C
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
UNITED STATES US

SHIP DATE: 02SEP22
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BILL SENDER

TO **MELANIE A. BACHMAN**
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051

(860) 827-2935 REF: 100510
INV/ PO: DEPT:



581J1/EC8C/FE2D

TRK# 7778 3588 4891
0201
TUE - 06 SEP 4:30P
STANDARD OVERNIGHT

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06051
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1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

September 2nd, 2022

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

**RE: Shared Use Application for T-Mobile
Crown Site ID# 842423; T-Mobile Site ID# CTNL200A
10 North Ridge Drive Windham, CT 06256
Latitude: 41.739875 / Longitude: -72.172912**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes (“C.G.S.”) §16-50aa, as amended, T-Mobile hereby requests an order from the Connecticut Siting Council (“Council”) to approve the shared use by T-Mobile of an existing telecommunication tower at 10 North Ridge Drive Windham (the “Property”). The existing 86’11” monopole tower is owned by Crown Castle International Corp. (“Crown Castle”). The underlying property is owned by Walmart Real Estate Business Trust. T-Mobile requests that the Council find that the proposed shared use of the Crown Castle tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times. A copy of this filing is being sent to Thomas DeVivo, Mayor for the Town of Windham, Matthew Vertefeulle, Director of Code Enforcement, as well as the property owner.

Background

The existing Crown Castle facility consists of a 86’11” monopole tower within a 2,500 square foot leased area. AT&T currently maintains antennas at the 84-foot level and Verizon currently maintains antennas at the 74- foot level. Verizon’s equipment is located east of the tower and AT&T’s equipment is located northwest of the tower.

T-Mobile is licensed by the Federal Communications Commission (“FCC”) to provide wireless services throughout the State of Connecticut. T-Mobile and Crown Castle have agreed to the proposed shared use of 10 North Ridge Drive Windham tower pursuant to mutually acceptable terms and conditions. Likewise, T-Mobile and Crown Castle have agreed to the proposed installation of equipment cabinets on the ground on the south side of the tower within the existing compound. Crown Castle has authorized T-Mobile to apply for all necessary permits and approvals that may be required to share the existing tower.

T-Mobile proposes to install nine (9) antennas, six (6) RRUs, one (1) antenna platform, and three (3) hybrid cables. In addition, T-Mobile will install a ground equipment cabinet on a 10'x15' equipment pad. Included in the Construction Drawings are T-Mobile project specifications for locations of all proposed site improvements. The Construction Drawings also contain specifications for T-Mobile proposed antennas and groundwork. C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, “if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use.” T-Mobile respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility.

The existing Crown Castle tower is structurally capable of supporting T-Mobile’s proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report (“Structural Report”) prepared for this project confirms that this tower can support T-Mobile’s proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility.

Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the Crown Castle tower. This authority complements the Council’s prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council’s jurisdiction. In addition, § 16-50x(a) directs the Council to “give such consideration to the other state laws and municipal regulations as it shall deem appropriate” in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the Crown Castle tower would have a minimal environmental effect for the following reasons:

1. The proposed installation will have no visual impact on the area of the tower. T-Mobile’s equipment cabinet would be installed within the existing facility compound. T-Mobile’s shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.
2. Operation of T-Mobile’s antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission (“FCC”). Included in the



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www.crowncastle.com

EME report of this filing are the approximation tables that demonstrate that T-Mobile's proposed facility will operate well within the FCC RF emissions safety standards.

3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the Crown Castle facility other than periodic maintenance. The proposed shared use of the Crown Castle tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. Economic Feasibility. As previously mentioned, T-Mobile has entered into an agreement with Crown Castle for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting T-Mobile's full array of nine (9) antennas, six (6) RRUs, one (1) antenna platform, and three (3) hybrid cables and all related equipment. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing Crown Castle tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 10 North Ridge Drive Windham satisfies the criteria stated in C.G.S. §16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Sincerely,

Katie Adams
Crown Castle – Agent for T-Mobile
100 Apollo Drive Suite 303
Chelmsford, MA 01824
kadams@nbcllc.com
(781) 392-7547

cc:

Thomas DeVivo, Mayor (*Via Federal Express*)
Windham Town Hall
979 Main St.
Willimantic, CT 06226
860-465-3005



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Matthew Vertefeuille, Director of Code Enforcement (*Via Federal Express*)
Windham Town Hall
979 Main St. 1st Floor
Willimantic, CT 06226
860-465-3069

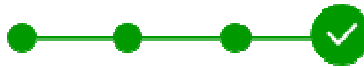
Walmart Real Estate Business Trust (*Via Federal Express*)
PO Box 8050 MS 0555
Bentonville, AR 72716

Katie Adams

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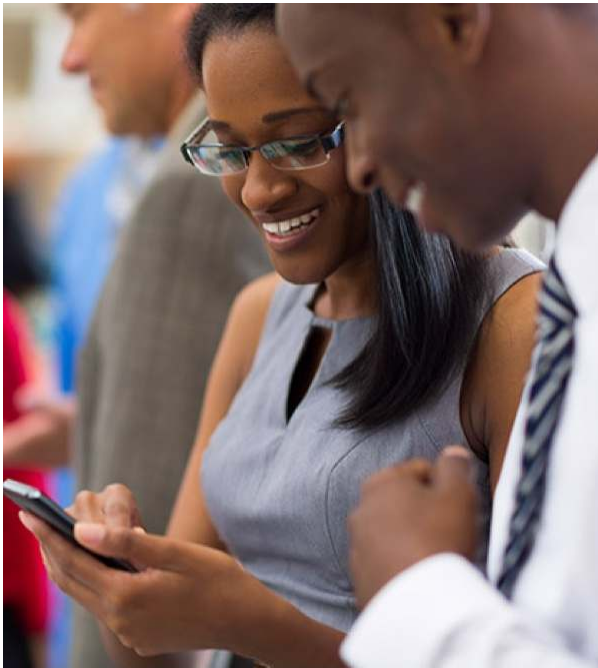


Delivered to 979 MAIN ST, WILLIMANTIC, CT 06226
Received by L.LEBLONDE

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	777835841903
FROM	NB+C 100 Apollo Drive Suite 303 CHELMSFORD, MA, US, 01824
TO	Windham Town Hall Matthew Vertefeuille 979 Main St. 1st Floor WILLIMANTIC, CT, US, 06226

REFERENCE 100788 - CSC
SHIPPER REFERENCE 100788 - CSC
SHIP DATE Wed 9/07/2022 06:33 PM
DELIVERED TO Receptionist/Front Desk
PACKAGING TYPE FedEx Pak
ORIGIN CHELMSFORD, MA, US, 01824
DESTINATION WILLIMANTIC, CT, US, 06226
SPECIAL HANDLING Deliver Weekday
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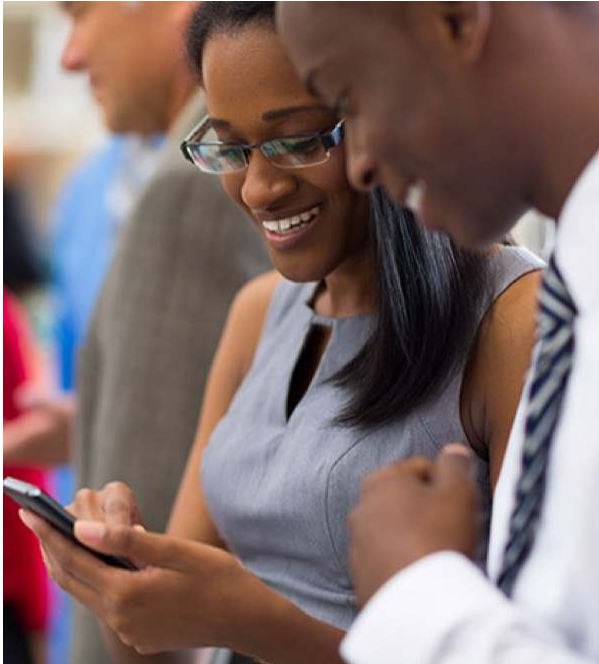


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Received by L.LEBLONDE

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TRACKING NUMBER	777835817081
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TO	Windham Town Hall Thomas DeVivo, Mayor 979 Main St. WILLIMANTIC, CT, US, 06226
REFERENCE	100788 - CSC 1

SHIPPER REFERENCE	100788 - CSC
SHIP DATE	Wed 9/07/2022 06:33 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Pak
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	WILLIMANTIC, CT, US, 06226
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	2.00 LB
SERVICE TYPE	FedEx Standard Overnight



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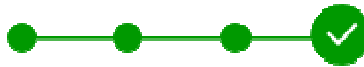
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To: Katie Adams
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9:57am.



Delivered to 1201 MOBERLY LN, BENTONVILLE, AR 72716
Received by D.NEWSOME

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	777835862224
FROM	NB+C 100 Apollo Drive Suite 303 CHELMSFORD, MA, US, 01824
TO	Walmart Real Estate Business Trust PO Box 8050 MS 0555 BENTONVILLE, AR, US, 72716
REFERENCE	100788 - CSC

SHIPPER REFERENCE 100788 - CSC
SHIP DATE Wed 9/07/2022 06:33 PM
DELIVERED TO Shipping/Receiving
PACKAGING TYPE FedEx Pak
ORIGIN CHELMSFORD, MA, US, 01824
DESTINATION BENTONVILLE, AR, US, 72716
SPECIAL HANDLING Deliver Weekday
NUMBER OF PIECES 1
TOTAL SHIPMENT WEIGHT 1.00 LB
SERVICE TYPE FedEx Standard Overnight



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Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

Crown Castle Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

Re: Tower Share Application
Crown Castle telecommunications site at: 10 NORTH RIDGE DRIVE, WINDHAM,
CT 06256

Crown Atlantic Company LLC (“Crown Castle”) hereby authorizes T-MOBILE, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

Crown Site ID/Name: 842423/WINDHAM NORTH RIDGE ROAD
Customer Site ID: CTNL200A/
Site Address: 10 NORTH RIDGE DRIVE, WINDHAM, CT 06256

Crown Castle

By: Jeff Barbadora Date: September 2, 2022

Exhibit A

Original Facility Approval

Connecticut Siting Council^(/CSC)

[CT.gov Home](#) [\(/\)](#) [Connecticut Siting Council](#) [\(/CSC\)](#) DO 275 D&O Windham

[Decisions \(/CSC/Decisions/Decisions\)](#) >

[Meetings and Minutes \(/CSC/Common-Elements/v4-template/Council-Activity\)](#) >

[Pending Matters \(/CSC/1_Applications-and-Other-Pending-Matters/Pending-Matters\)](#) >

[About Us \(/CSC/Common-Elements/Common-Elements/Connecticut-Siting-Council---Description\)](#) >

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DOCKET NO. 275 – AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 10 North Ridge Road, Windham, Connecticut.

} Connecticut

} Siting

} Council

April 26, 2004

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at 10 North Ridge Road, Windham, Connecticut. The Council approves the Alternative 1 tower configuration.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS LLC, Omnipoint Communications, Inc. and other entities, both public and private, but such tower shall not exceed 107 feet above ground level. Antennas and lighting mounted on the tower shall not exceed a total height of 109 feet above ground level. Tower lighting shall consist of a single steady red beacon.

2. Construction activities shall be limited to the period of mid-August to mid-May to avoid the nesting season of rare birds that may utilize the site.
 3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, and landscaping;
 - b. specifications for the tower, tower foundation, antennas, equipment building, and security fence; and
 - c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
 4. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided tower space is available and such antennas are compatible with the structural integrity of the tower.
 5. Prior to the commencement of operation, the Certificate Holder shall provide to the Council a worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall submit a revised electromagnetic radio frequency power density report to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
 6. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
 7. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
 8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
 9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant and the Willimantic Chronicle.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601

Intervenor

Omnipoint Communications, Inc.

Its Representative

Stephen J. Humes
LeBoeuf, Lamb, Greene & MacRae, LLP
Goodwin Square
Asylum Street
Hartford, CT 06103

Exhibit B

Property Card

CURRENT OWNER		TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT			
WALMART REAL ESTATE BUSINESS TRUST TAX #0555 STORE 01-2022 PO BOX 8050 MS 0555 BENTONVILLE, AR 72716 Additional Owners:		1 Level	2 Public Water	1 Paved		Description	Code	Appraised Value	Assessed Value
			3 Public Sewer			COM LAND	2-1	1,735,680	1,214,980
			0 None			COM BLDG	2-2	8,817,690	6,172,370
SUPPLEMENTAL DATA						COM OUTBL	2-5	885,720	620,010
Other ID: 5- 3/225/ 21		LCI C		VISION 6163 WINDHAM, CT VISION					
Zoning C4		ParcelStatus							
Neighborhood 330 - 0		Cost Flag							
Living Units 0		Lot Number 0							
Census 8005		A_D 02							
District No 1		ASSOC PID#							
GIS ID:						Total		11,439,090	8,007,360

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)														
WALMART REAL ESTATE BUSINESS TRUST		910/ 48	03/02/2006	U	I	0		Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value						
WALMART STORES INC		398/ 37	10/30/1992	U	I	0		2020	2-1	1,214,980	2019	2-1	1,214,980	2018	2-1	1,214,980						
CONN RESIDENTIAL LAND		362/ 231	07/01/1991	U	I	0		2020	2-2	6,107,380	2019	2-2	6,107,380	2018	2-2	6,107,380						
RUMAR ASSOCIATES		312/ 544	07/25/1988	U	I	0		2020	2-5	620,010	2019	2-5	620,010	2018	2-5	620,010						
WINDHAM PROPERTIES INC		295/ 433	12/01/1986	U	I	0																
KAVANEWSKY SHIRLEY		220/ 148	08/01/1969	U	I	0																
Total:								7,942,370			Total:			7,942,370			Total:			7,942,370		

EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor												
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.												
Total:																				

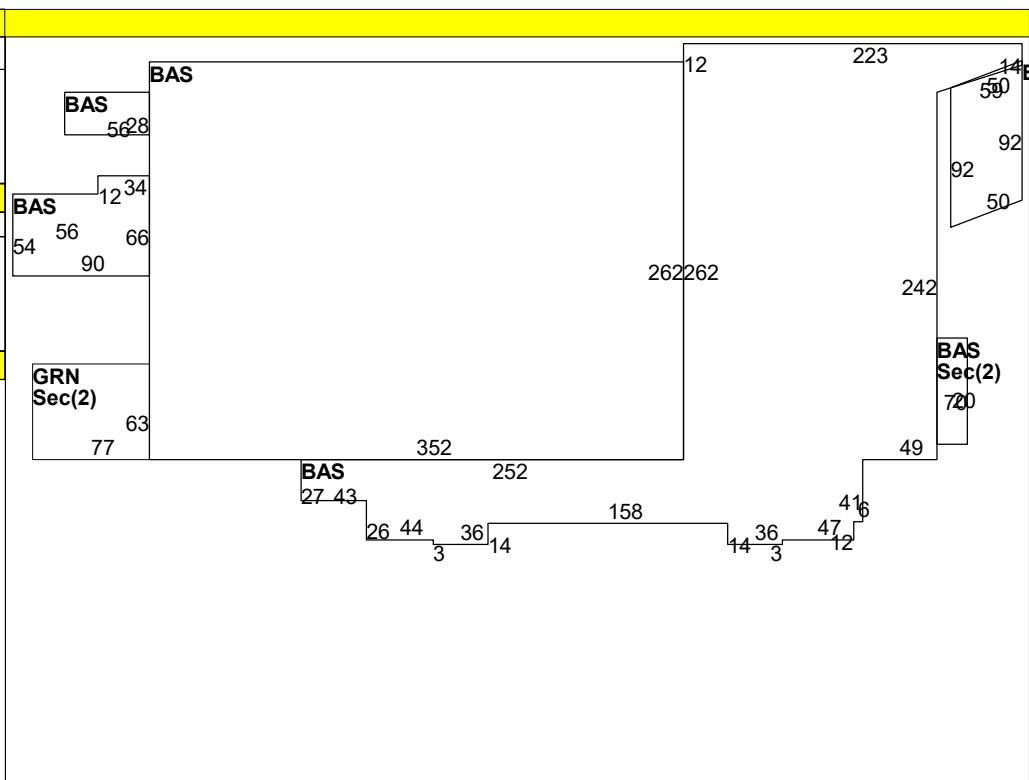
ASSESSING NEIGHBORHOOD												APPRAISED VALUE SUMMARY			
NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch											
0001/A			322	C											

NOTES												APPRAISED VALUE SUMMARY				
12/5/95-GH1 630 TO 1008 SQ FT 99GL: ADTN = 30% COMPLETE												Appraised Bldg. Value (Card)				8,383,300
SIDE CARD: P												Appraised XF (B) Value (Bldg)				477,980
												Appraised OB (L) Value (Bldg)				885,720
												Appraised Land Value (Bldg)				1,735,680
												Special Land Value				0
												Total Appraised Parcel Value				11,439,090
												Valuation Method:				1
												Adjustment:				0
												Net Total Appraised Parcel Value				11,439,090

BUILDING PERMIT RECORD										VISIT/ CHANGE HISTORY					
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd.	Purpose/Result	
B2100231	07/08/2021	05	General Renov	25,000		0			09/28/2010			AO	8	NO RESPONSE	
B2000187	08/20/2020	05	General Renov	1,200	08/04/2021	100	01/21/2021		04/23/2007			BH			
M2000092	08/10/2020	51	Mechanical	0	08/04/2021	100	01/21/2021								
B2000186	08/10/2020	05	General Renov	500,000	08/04/2021	100	01/21/2021								
B2000162	07/27/2020	53	Cell Tower/Antennae	20,000		0									
P2000008	07/02/2020	33	Sprinklers	12,000		0									
E2000027	06/08/2020	06	Electrical	645		0									

LAND LINE VALUATION SECTION																			
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	201	Commercial	C4				6.00	AC	247,500.00	1.0000	0	1.0000	1.00	330	1.00		1.00		1,485,000
1	201	Commercial					9.00	AC	11,250.00	1.0000	0	1.0000	1.00		0.00		1.00		101,250
1	201	Commercial					8.40	AC	7,920.00	1.0000	0	1.0000	1.00		0.00		1.00		66,530
1	201	Commercial					1.00	AC	82,900.00	1.0000	0	1.0000	1.00		0.00		1.00		82,900

CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	17		Retail				
Model	94		Commercial				
Grade	04		Average +10				
Stories	1.0						
Occupancy	1						
Exterior Wall 1	15		Concrete/mas	MIXED USE			
Level From	01	01		Code	Description	Percentage	
Level To	01	01		201	Commercial	100	
Uncov Parking	0						
Perimeter	1228			COST/MARKET VALUATION			
Identical Units	1			Adj. Base Rate:		63.42	
Efficiency	0			AYB		1993	
1 Bedroom	0			Dep Code		A	
2 Bedroom	0			Remodel Rating			
3 Bedroom	0			Year Remodeled			
AC Type	03		Central	Dep %		21	
Structure Type	345		345	Functional Obslnc			
Bldg Use	201		Commercial	External Obslnc			
				Cost Trend Factor			
				Condition			
				% Complete			
Percent Finish	100		Forced Air	Overall % Cond		79	
Heating	04		Masonry	Apprais Val		8,383,300	
Frame Type	03		Average	Dep % Ovr		0	
Plumbing	02		Average	Dep Ovr Comment			
Local Modifier	2.75			Misc Imp Ovr		0	
Partitions	02		Average	Misc Imp Ovr Comment			
Wall Height	16			Cost to Cure Ovr		0	
Size	16101			Cost to Cure Ovr Comment			



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
PA10	ASPHALT PAR			L	409.5	2.50	1993				80	819,140
LT30	LIGHT POLE 1			L	22	952.00	1993				70	14,660
GH10	GREENHOUSE			L	1,008	25.00	1994				50	12,600
FN30	CHAIN LINK 6			L	480	16.90	2000				70	5,680
RS30	UTILITY STON			L	0	14.00	2010				70	0
CP50	CANOPY ONL			L	4,806	10.00	2001		0		70	33,640
EE1X	ENCLOSED EN			B	845	75.00	1997		1		100	50,070
CP5X	CANOPY ONL			B	4,806	18.00	1997		1		100	68,340
SS1X	SPRINKLER W			B	166.2	2.28	1997		1		100	299,520

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Gross Area	Living Area	Eff. Area
BAS	First Floor	167,328	167,328	
Ttl. Gross Liv/Lease Area:		167,328	167,328	



CURRENT OWNER		TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT			
WALMART REAL ESTATE BUSINESS TAX #0555 STORE 01-2022 PO BOX 8050 MS 0555 BENTONVILLE, AR 72716 Additional Owners:						Description	Code	Appraised Value	Assessed Value
		SUPPLEMENTAL DATA							
		Other ID: 5- 3/225/ 21		ASSOC PID#		Total		11,439,090	8,007,360

6163
WINDHAM, CT

VISION

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)								
								Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
								Total:			Total:			Total:		

EXEMPTIONS				OTHER ASSESSMENTS				
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.
			Total:					

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD				
NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0001/A			322	C

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,383,300
Appraised XF (B) Value (Bldg)	477,980
Appraised OB (L) Value (Bldg)	885,720
Appraised Land Value (Bldg)	1,735,680
Special Land Value	0
Total Appraised Parcel Value	11,439,090
Valuation Method:	1
Adjustment:	0
Net Total Appraised Parcel Value	11,439,090

NOTES

BUILDING PERMIT RECORD									VISIT/ CHANGE HISTORY					
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd.	Purpose/Result

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A.	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value

CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
<i>Element</i>	<i>Cd.</i>	<i>Ch.</i>	<i>Description</i>	<i>Element</i>	<i>Cd.</i>	<i>Ch.</i>	<i>Description</i>
MIXED USE							
<i>Code</i>	<i>Description</i>			<i>Percentage</i>			
201	Commercial			100			
COST/MARKET VALUATION							
Cost Trend Factor							

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

<i>Code</i>	<i>Description</i>	<i>Sub</i>	<i>Sub Descript</i>	<i>L/B</i>	<i>Units</i>	<i>Unit Price</i>	<i>Yr</i>	<i>Gde</i>	<i>Dp Rt</i>	<i>Cnd</i>	<i>%Cnd</i>	<i>Apr Value</i>
LD4X	TRUCK AND T			B	1,568	12.90	1997		1		100	15,980
LD4X	TRUCK AND T			B	4,324	12.90	1997		1		100	44,070

No Photo On Record

BUILDING SUB-AREA SUMMARY SECTION

<i>Code</i>	<i>Description</i>	<i>Gross Area</i>	<i>Living Area</i>	<i>Eff. Area</i>
Ttl. Gross Liv/Lease Area:		0	0	

CURRENT OWNER		TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT			
WALMART REAL ESTATE BUSINESS TRUST TAX #0555 STORE 01-2022 PO BOX 8050 MS 0555 BENTONVILLE, AR 72716 Additional Owners:		1 Level	2 Public Water	1 Paved		Description	Code	Appraised Value	Assessed Value
			3 Public Sewer			COM LAND	2-1	1,735,680	1,214,980
			0 None			COM BLDG	2-2	8,817,690	6,172,370
SUPPLEMENTAL DATA						COM OUTBL	2-5	885,720	620,010
Other ID: 5- 3/225/ 21		LCI C		VISION 6163 WINDHAM, CT VISION					
Zoning C4		ParcelStatus							
Neighborhood 330 - 0		Cost Flag							
Living Units 0		Lot Number 0							
Census 8005		A_D 02							
District No 1		ASSOC PID#							
GIS ID:						Total		11,439,090	8,007,360

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)									
WALMART REAL ESTATE BUSINESS TRUST		910/ 48	03/02/2006	U	I	0		Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	
WALMART STORES INC		398/ 37	10/30/1992	U	I	0		2020	2-1	1,214,980	2019	2-1	1,214,980	2018	2-1	1,214,980	
CONN RESIDENTIAL LAND		362/ 231	07/01/1991	U	I	0		2020	2-2	6,107,380	2019	2-2	6,107,380	2018	2-2	6,107,380	
RUMAR ASSOCIATES		312/ 544	07/25/1988	U	I	0		2020	2-5	620,010	2019	2-5	620,010	2018	2-5	620,010	
WINDHAM PROPERTIES INC		295/ 433	12/01/1986	U	I	0											
KAVANEWSKY SHIRLEY		220/ 148	08/01/1969	U	I	0											
Total:								7,942,370		Total:		7,942,370		Total:		7,942,370	

EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor										
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.										
Total:																		

ASSESSING NEIGHBORHOOD										APPRAISED VALUE SUMMARY														
NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch	Appraised Bldg. Value (Card)					Appraised XF (B) Value (Bldg)					Appraised OB (L) Value (Bldg)					Appraised Land Value (Bldg)				
0001/A			322	C	136,780					0					0					1,735,680				

NOTES										Valuation Method:									
12/5/95-GH1 630 TO 1008 SQ FT										1									
99GL: ADTN = 30% COMPLETE										0									

BUILDING PERMIT RECORD										VISIT/ CHANGE HISTORY									
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd.	Purpose/Result					
									09/28/2010			AO	8	NO RESPONSE					
									04/23/2007			BH							

LAND LINE VALUATION SECTION															Special Pricing					S Adj Fact		Adj. Unit Price		Land Value
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Adj.	Unit Price	Land Value						
1	201	Commercial	C4				6.00	AC 247,500.00	1.0000	0	1.0000	1.00	330	1.00		1.00		1,485,000						
1	201	Commercial					9.00	AC 11,250.00	1.0000	0	1.0000	1.00		0.00		1.00		101,250						
1	201	Commercial					8.40	AC 7,920.00	1.0000	0	1.0000	1.00		0.00		1.00		66,530						
1	201	Commercial					1.00	AC 82,900.00	1.0000	0	1.0000	1.00		0.00		1.00		82,900						

CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)				
Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	25		Service Shop				
Model	94		Commercial				
Grade	04		Average +10				
Stories	1.0						
Occupancy							
Exterior Wall 1	15		Concrete/mas				
Level From	01	01					
Level To	01	01					
Uncov Parking							
Perimeter	246						
Identical Units							
Efficiency							
1 Bedroom							
2 Bedroom							
3 Bedroom							
AC Type	01		None				
Structure Type							
Bldg Use	201		Commercial				
Percent Finish	100						
Heating	04		Forced Air				
Frame Type	03		Masonry				
Plumbing	02		Average				
Local Modifier							
Partitions	02		Average				
Wall Height	14						
Size	5268						

MIXED USE		
Code	Description	Percentage
201	Commercial	100

COST/MARKET VALUATION		
Adj. Base Rate:		40.16
AYB		1993
Dep Code		A
Remodel Rating		
Year Remodeled		
Dep %		21
Functional Obslnc		
External Obslnc		
Cost Trend Factor		
Condition		
% Complete		
Overall % Cond		79
Apprais Val		136,780
Dep % Ovr		0
Dep Ovr Comment		
Misc Imp Ovr		0
Misc Imp Ovr Comment		
Cost to Cure Ovr		0
Cost to Cure Ovr Comment		

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)												
Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION				
Code	Description	Gross Area	Living Area	Eff. Area
BAS	First Floor	1,400	1,400	
GRN	Greenhouse	4,851	0	
Ttl. Gross Liv/Lease Area:		6,251	1,400	

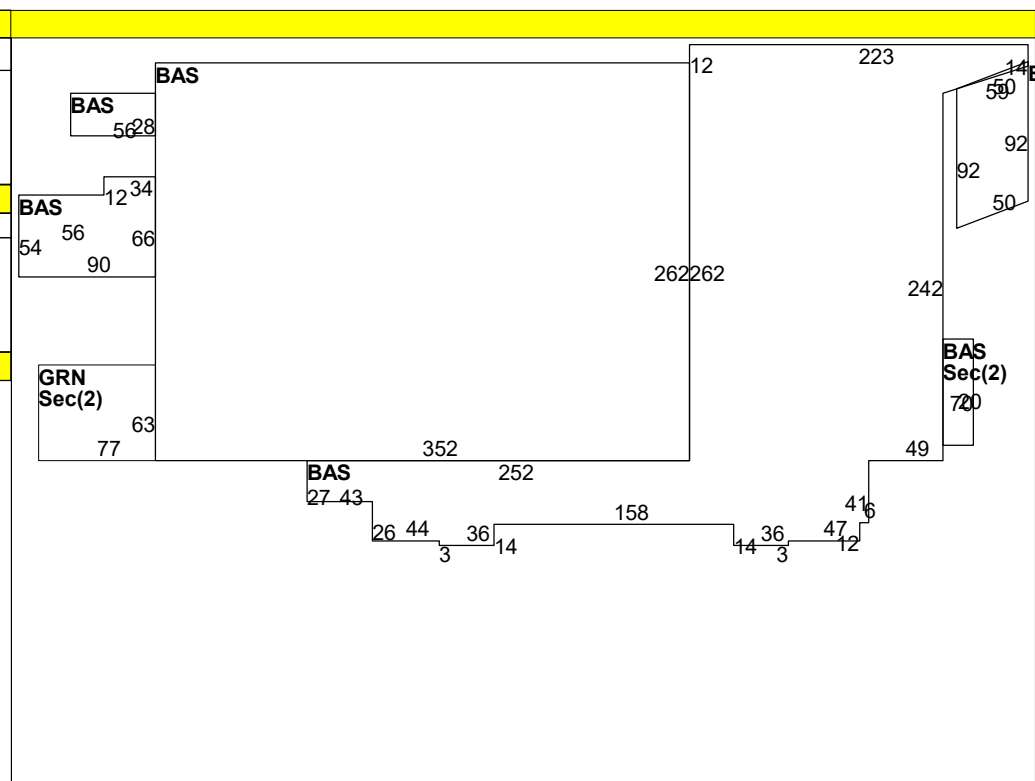


Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CTNL200A
T-MOBILE SITE NAME: CTNL200A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 86'-9"

BUSINESS UNIT #: 842423
SITE ADDRESS: 10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256
COUNTY: WINDHAM
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE COVERAGE STRATEGY SITE CONFIGURATION: 67E5A998E 6160

T-Mobile
 35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

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

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

T-MOBILE SITE NUMBER:
CTNL200A

BU #: 842423
**WINDHAM NORTH
 RIDGE ROAD**
 10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256

 EXISTING
 86'-9" MONOPOLE

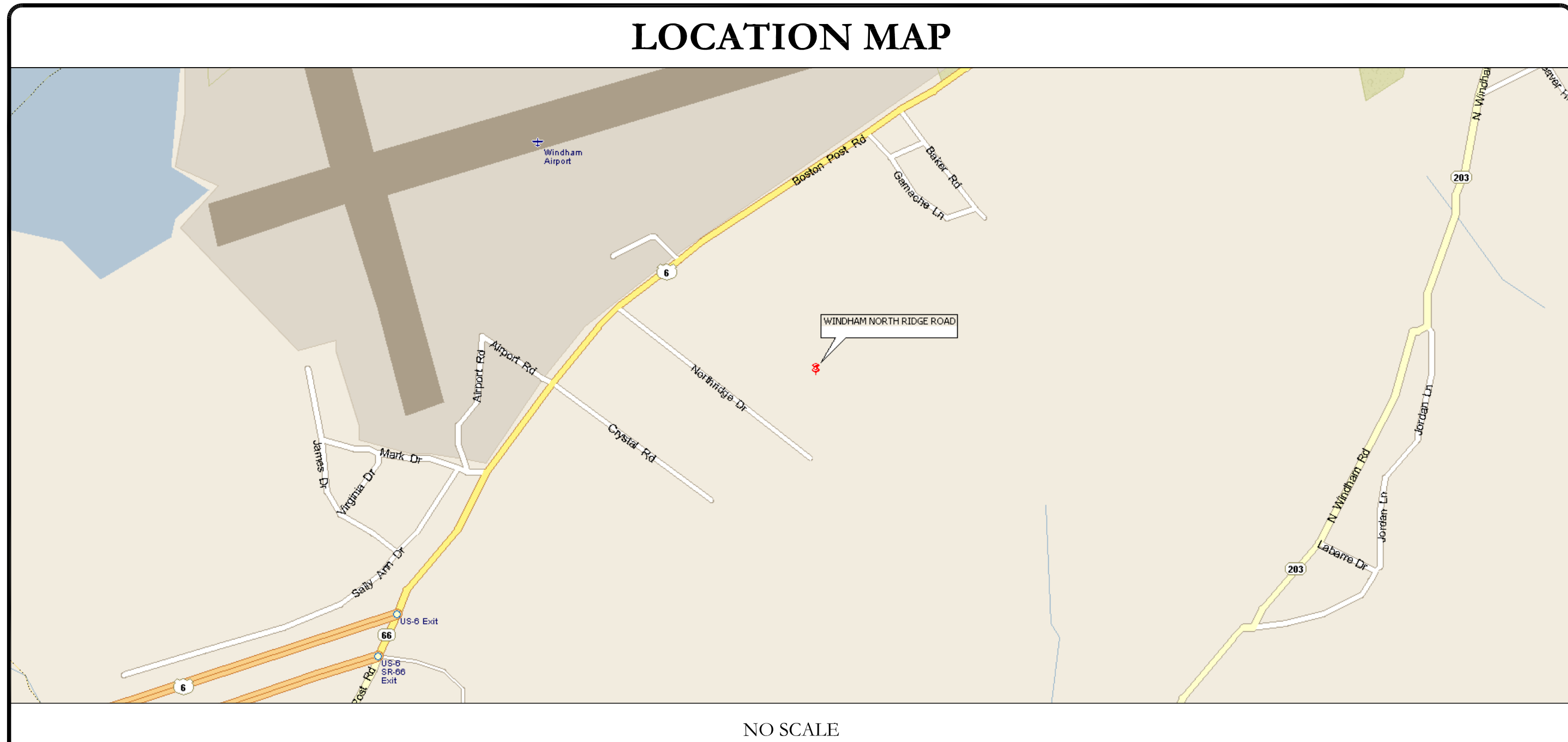
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	9/9/21	JHW	CONSTRUCTION	JHW
2	10/11/21	YXI	CONSTRUCTION	YXI
3	11/19/21	JTS	CONSTRUCTION	JTS
4	3/8/22	JTS	CONSTRUCTION	KT
5	3/16/22	DAS	CONSTRUCTION	KT

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	WINDHAM NORTH RIDGE ROAD
SITE ADDRESS:	10 NORTH RIDGE DRIVE WINDHAM, CT 06256
COUNTY:	WINDHAM
MAP/PARCEL #:	5-3-225-21
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.739875
LONGITUDE:	-72.172916
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	311 FT
CURRENT ZONING:	C4
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	WALMART REAL ESTATE BUSINESS TRUST PO BOX 8050 MS 0555 BENTONVILLE, AR 72716
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	NORTHEAST UTILITIES
TELCO PROVIDER:	AT&T

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
G-5.1	ICE CANOPY SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
ATTACHED	MOUNT SPECS
ATTACHED	GENERATOR DETAILS
ATTACHED	ICE CANOPY SPECS

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



PROJECT DESCRIPTION	
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.	
TOWER SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (9) ANTENNAS • INSTALL (6) RADIOS • INSTALL (3) HYBRID CABLES (6X24) • INSTALL (1) SITE PRO1 - RMQP-496-HK PLATFORM 	
GROUND SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (1) GENERAC RD048 48KW GENERATOR • INSTALL (1) 6160 AC V1 CABINET • INSTALL (1) B160 CABINET • INSTALL (1) RBS 6601, (3) BB 6648, (1) CSR IXRE V2 (GEN2) TRANSPORT SYSTEM, (2) PSU 4813 VR2a (Kit), (1) DUG20 IN RBS 6601 CABINET • INSTALL (1) TELCO BOARD • INSTALL (1) ATS • INSTALL (1) PPC EQUIPMENT CABINET • INSTALL (1) 8'x10' ICE CANOPY • INSTALL (1) 2'x10' ICE BRIDGE • INSTALL (1) H-FRAME • INSTALL (1) METER • INSTALL (1) 10'-0" x 15'-0" PAD IN A 10'-0" x 15'-0" LEASE AREA 	
NOTE: THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.	

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

APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	2015 IBC W/AMENDMENTS
MECHANICAL	2015 IMC W/AMENDMENTS
ELECTRICAL	2017 NEC
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	2/18/22
MOUNT ANALYSIS REPORT:	TRYLON
DATED:	2/17/22
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	1
DATED:	11/24/21
ORDER ID:	573238
REVISION:	0

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

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

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

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

SHEET NUMBER: T-1	REVISION: 5
------------------------------------	------------------------------

95362.012.01_WINDHAM NORTH RIDGE ROAD.dwg - SheetT-1 - User: kevin.turkall - Mar 16, 2022 - 1:38pm

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

Table with 3 columns: SYSTEM, CONDUCTOR, COLOR. Lists color codes for 120/240V, 10; 120/208V, 3Ø; 277/480V, 3Ø; and DC VOLTAGE.

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

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

T-Mobile logo and address: 35 GRIFFIN ROAD, BLOOMFIELD, CT 06002

CROWN CASTLE logo and address: 3 CORPORATE PARK DRIVE, SUITE 101, CLIFTON PARK, NY 12065

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

T-MOBILE SITE NUMBER: CTNL200A, BU #: 842423, WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE, WINDHAM, CT 06256

EXISTING 86'-9" MONOPOLE

Table with 5 columns: REV, DATE, DRWN, DESCRIPTION, DES./QA. Lists revision history.

Professional Engineer Seal for Chad G. Little, State of Connecticut, No. 23924, Licensed, Expires 2/10/22, 3/16/22

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

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SHEET NUMBER: T-2, REVISION: 5

95362.012.01_1_WINDHAM_NORTH_RIDGE_ROAD.dwg - Sheet1-2 - User: kevin.turkfall - Mar 16, 2022 - 1:38pm

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CTNL200A

BU #: 842423
WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256

EXISTING
 86'-9" MONOPOLE

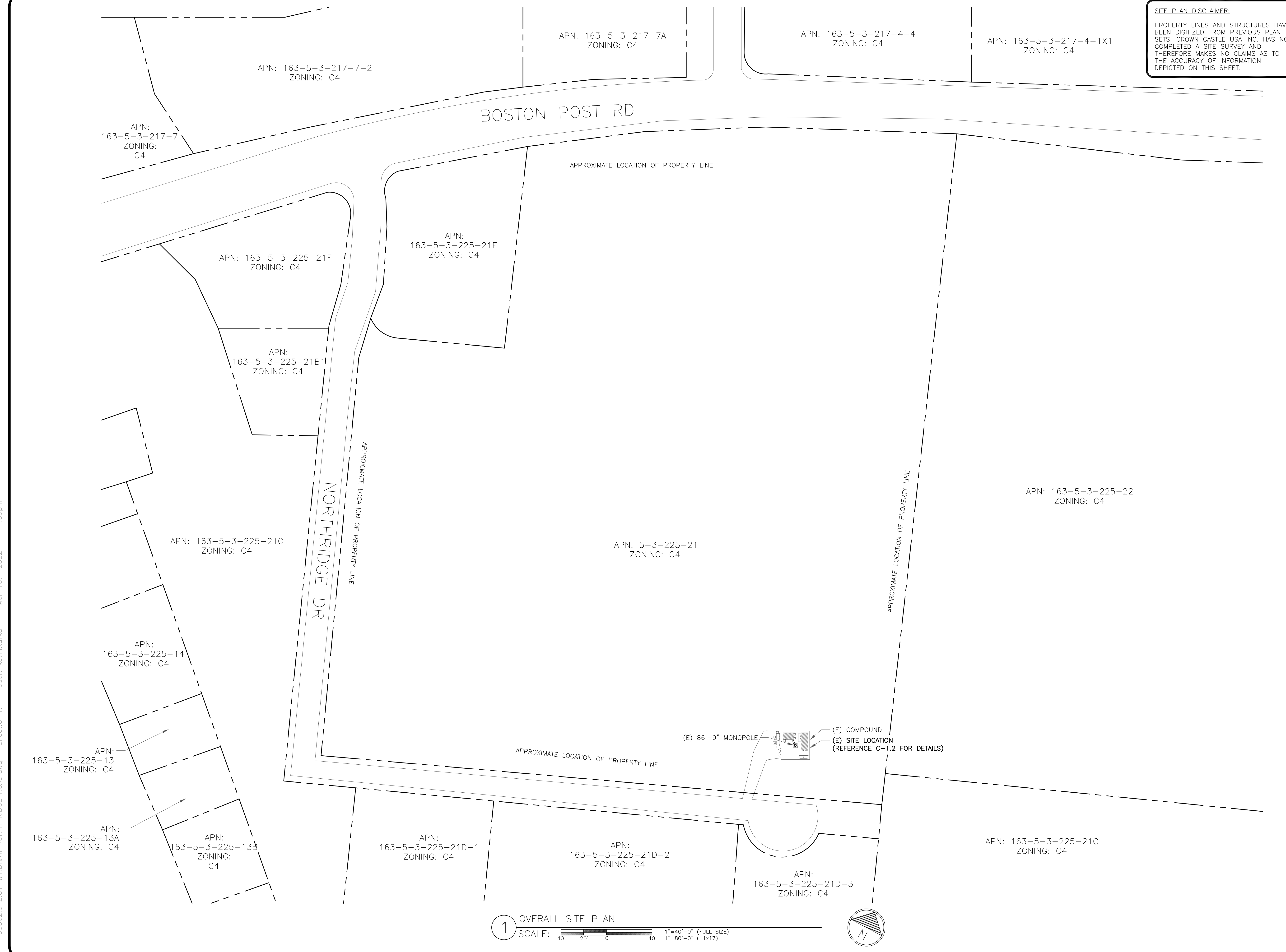
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	9/9/21	JHW	CONSTRUCTION	JHW
2	10/11/21	YXI	CONSTRUCTION	YXI
3	11/19/21	JTS	CONSTRUCTION	JTS
4	3/8/22	JTS	CONSTRUCTION	KT
5	3/16/22	DAS	CONSTRUCTION	KT

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SHEET NUMBER: C-1.1
REVISION: 5



95362.012.01_WINDHAM NORTH RIDGE ROAD.dwg - Sheet C-1.1 - User: kevin.turkall - Mar 16, 2022 - 1:39pm

T-MOBILE SITE NUMBER:
CTNL200A

BU #: 842423
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING
86'-9" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	9/9/21	JHW	CONSTRUCTION	JHW
2	10/11/21	YXI	CONSTRUCTION	YXI
3	11/19/21	JTS	CONSTRUCTION	JTS
4	3/8/22	JTS	CONSTRUCTION	KT
5	3/16/22	DAS	CONSTRUCTION	KT



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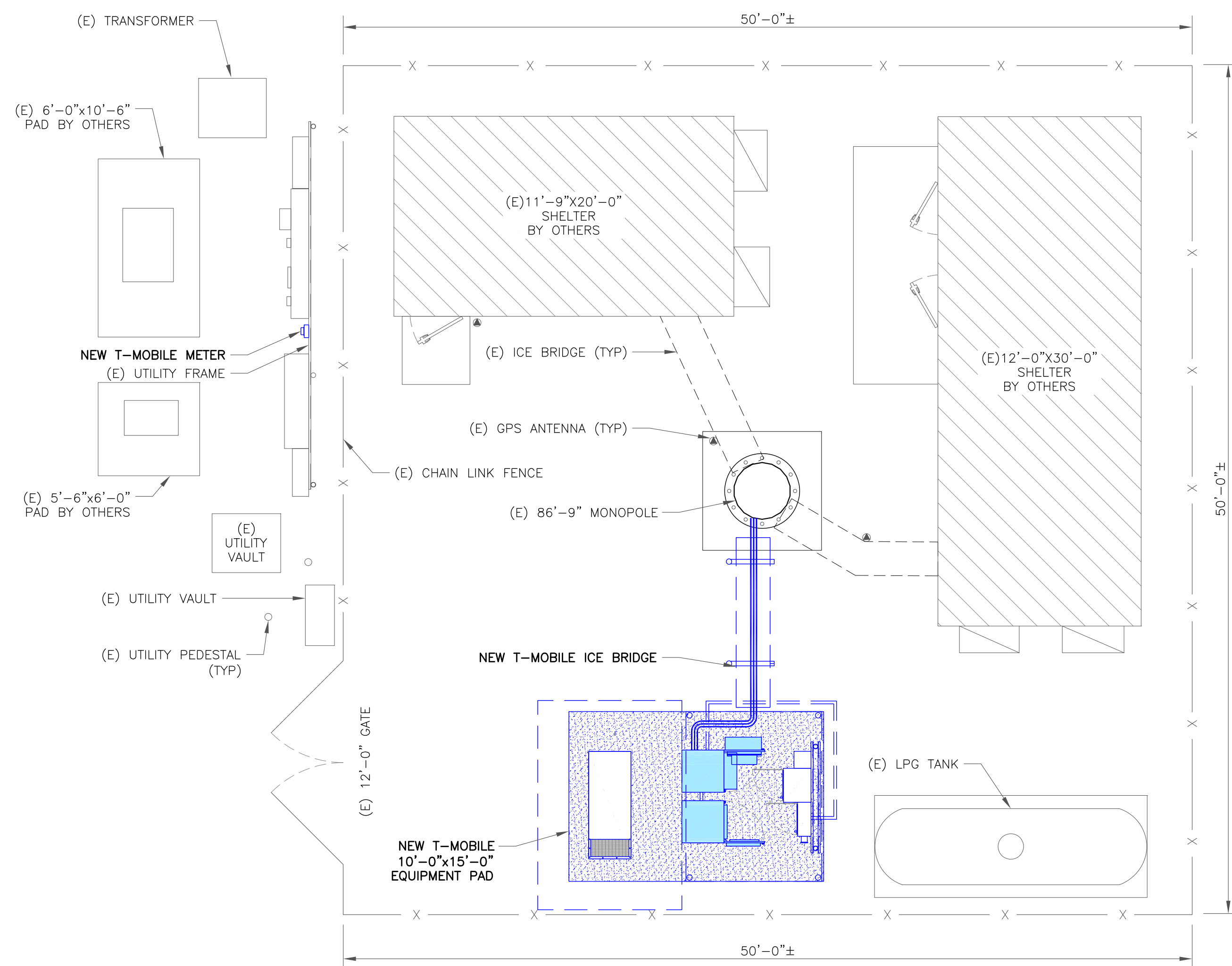
SHEET NUMBER: REVISION:

C-1.2

5

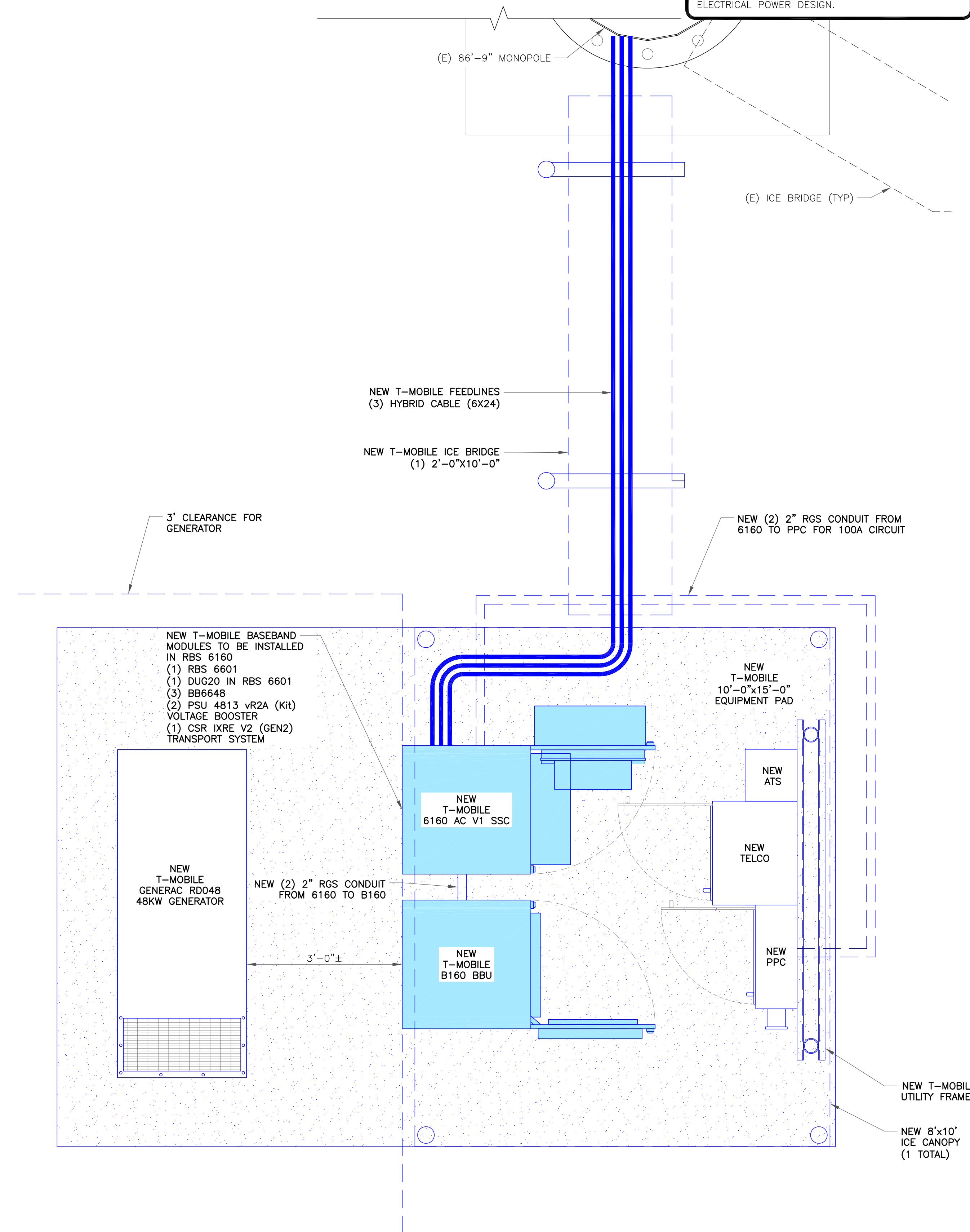
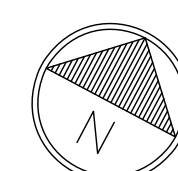
NOTES:

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



1 SITE PLAN

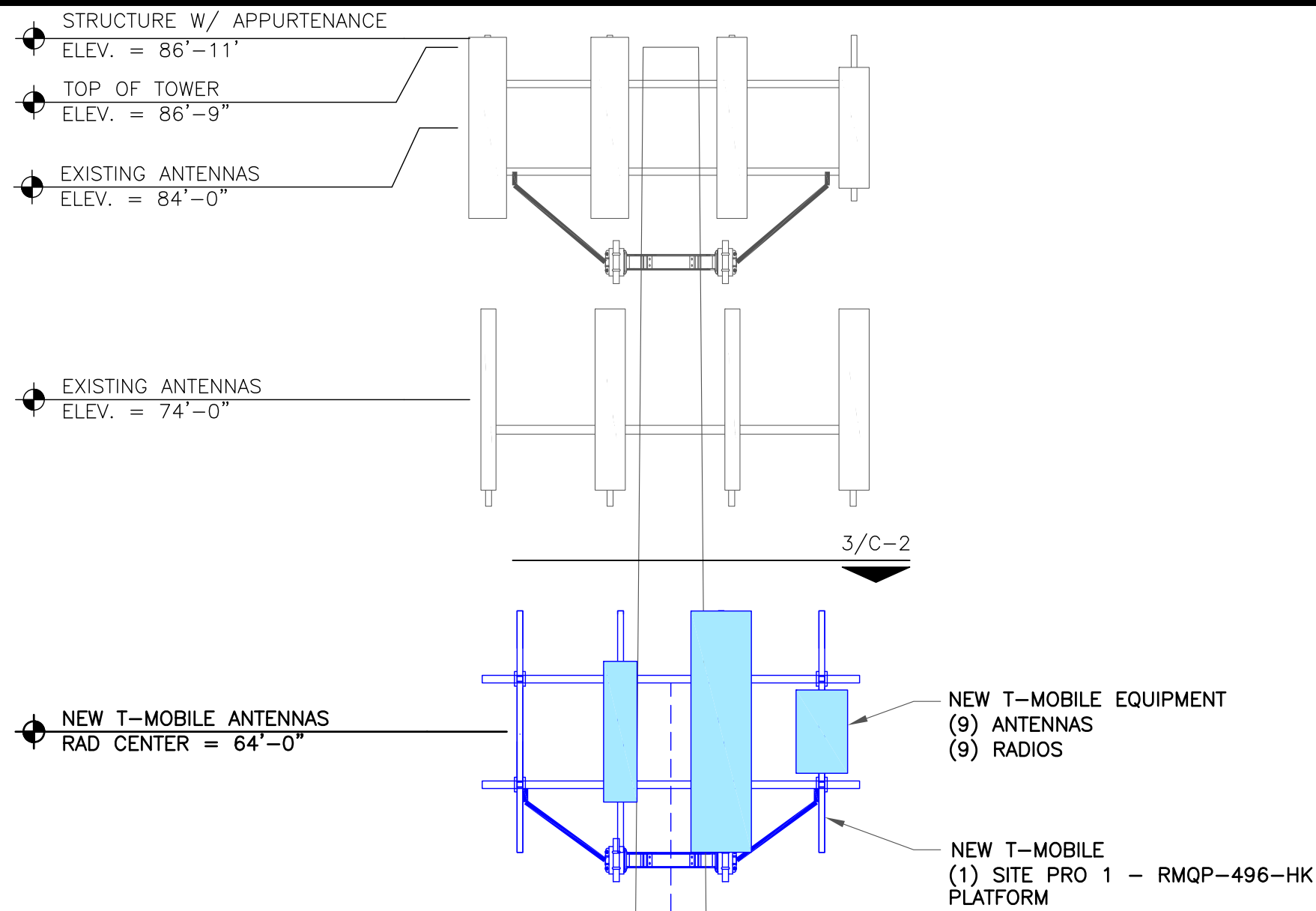
SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)



2 ENLARGED SITE PLAN

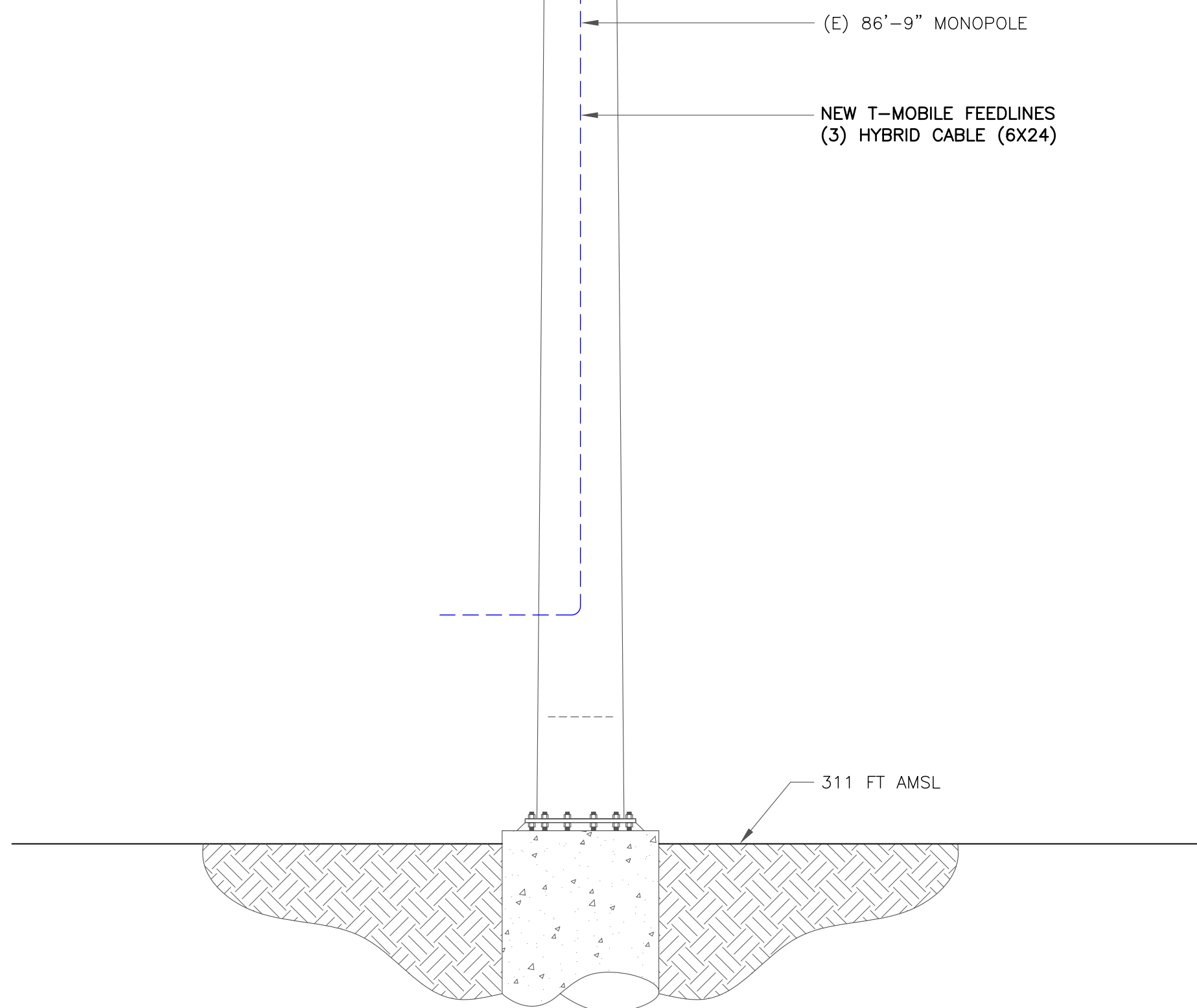
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)





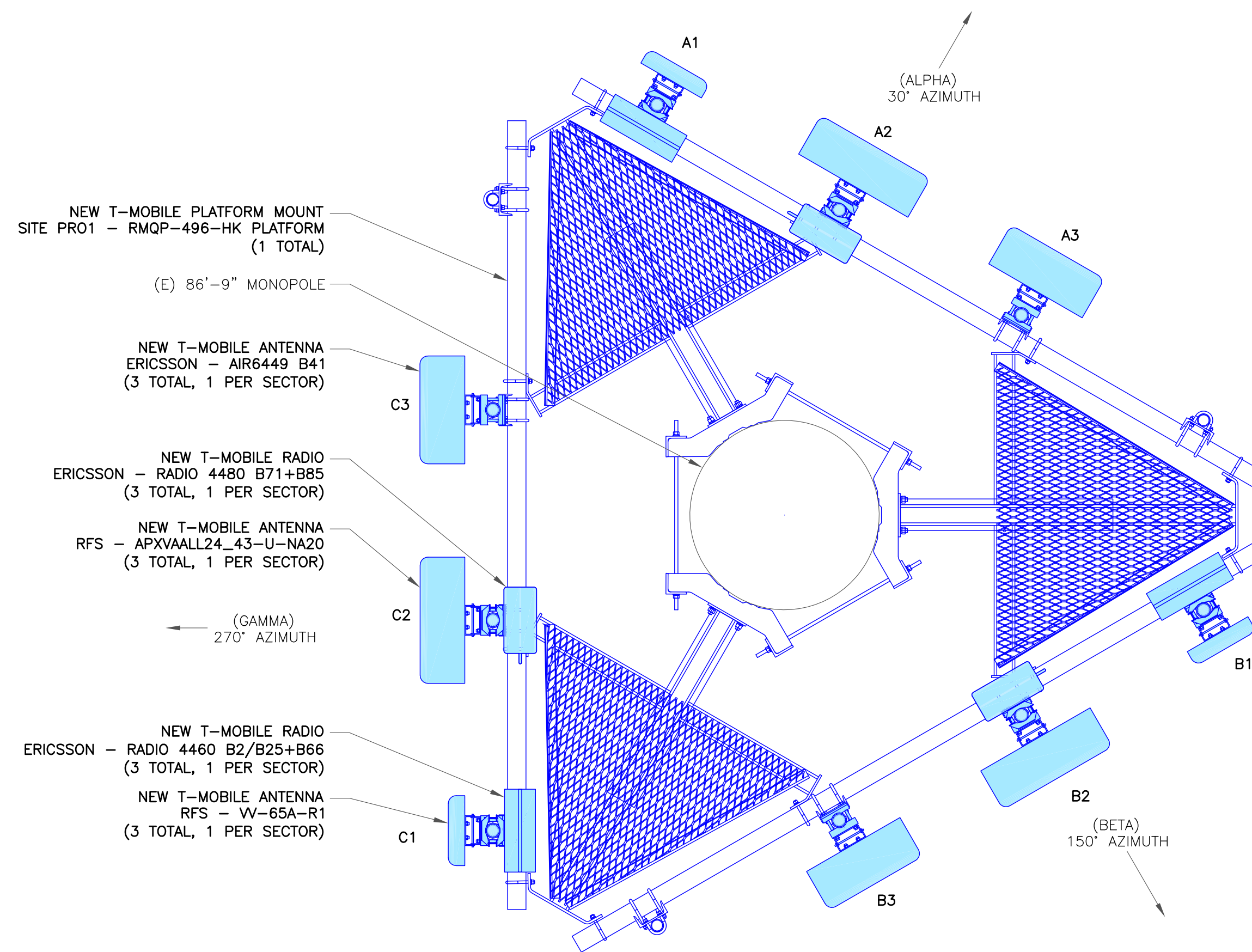
T-MOBILE EQUIPMENT
ANTENNA CL: 64'-0"
MOUNT CL: 64'-0"

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

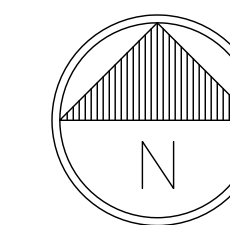


1 FINAL ELEVATION
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE



T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

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CLIFTON PARK, NY 12065

B+T GRP

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

T-MOBILE SITE NUMBER:
CTNL200A

BU #: 842423
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING
86'-9" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	9/9/21	JHW	CONSTRUCTION	JHW
2	10/11/21	YXI	CONSTRUCTION	YXI
3	11/19/21	JTS	CONSTRUCTION	JTS
4	3/8/22	JTS	CONSTRUCTION	KT
5	3/16/22	DAS	CONSTRUCTION	KT



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SHEET NUMBER:

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REVISION:

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SHEET NUMBER:

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REVISION:

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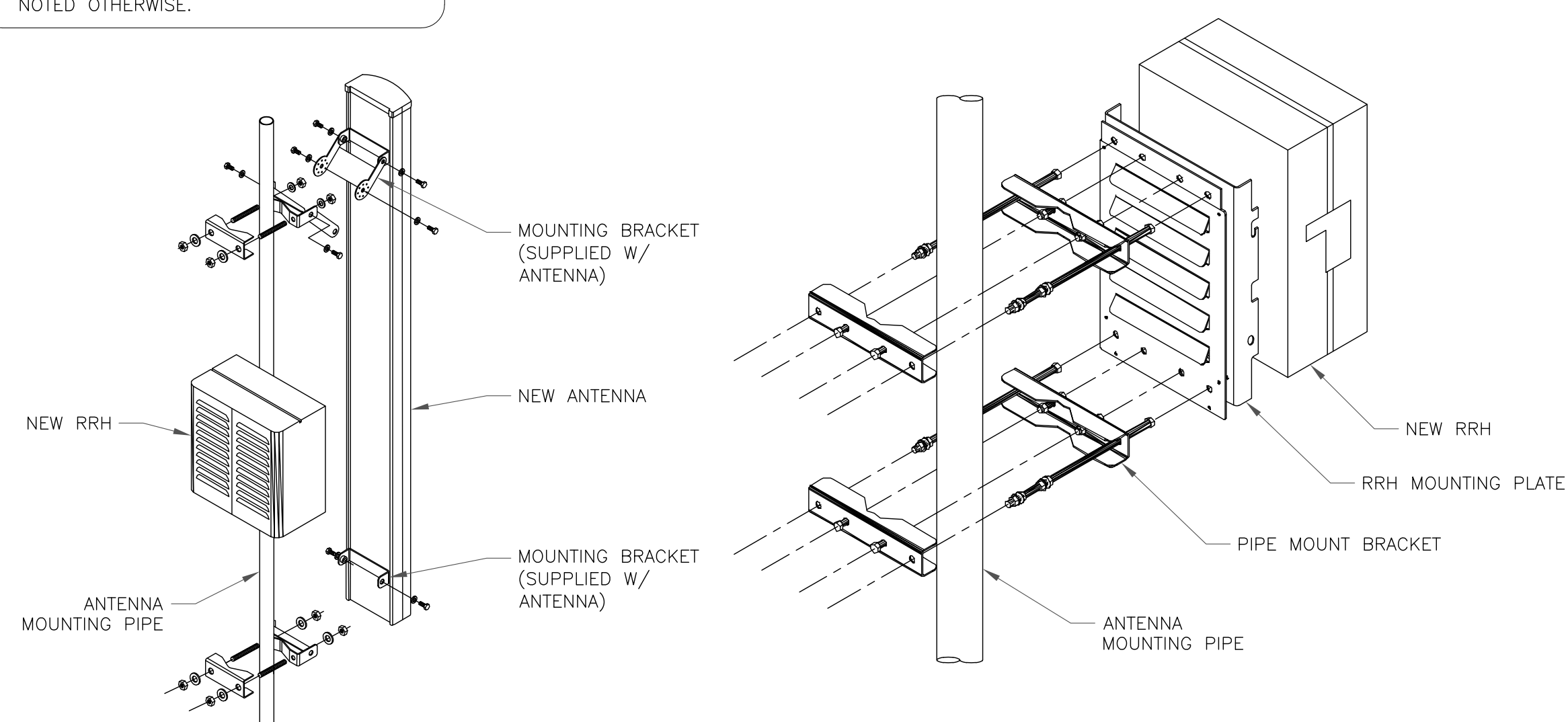
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	L2100 /L1900/G1900	RFS	W-65A-R1	30°	0°	2° / 2°	64'-0"	(1) ERICSSON - RADIO 4460 B2/B25+B66	(1) HYBRID CABLE (6X24)
	A2	L700 / L600 / N600	RFS	APXVAALL24_43-U-NA20	30°	0°	2° / 2° / 2° / 2°	64'-0"	(1) ERICSSON - RADIO 4480 B71+B85	
	A3	L2500 / N2500	ERICSSON	AIR6449 B41	30°	0°	2° / 2°	64'-0"	-	
BETA	B1	L2100 /L1900/G1900	RFS	W-65A-R1	150°	0°	2° / 2°	64'-0"	(1) ERICSSON - RADIO 4460 B2/B25+B66	(1) HYBRID CABLE (6X24)
	B2	L700 / L600 / N600	RFS	APXVAALL24_43-U-NA20	150°	0°	2° / 2° / 2° / 2°	64'-0"	(1) ERICSSON - RADIO 4480 B71+B85	
	B3	L2500 / N2500	ERICSSON	AIR6449 B41	150°	0°	2° / 2°	64'-0"	-	
GAMMA	C1	L2100 /L1900/G1900	RFS	W-65A-R1	270°	0°	2° / 2°	64'-0"	(1) ERICSSON - RADIO 4460 B2/B25+B66	(1) HYBRID CABLE (6X24)
	C2	L700 / L600 / N600	RFS	APXVAALL24_43-U-NA20	270°	0°	2° / 2° / 2° / 2°	64'-0"	(1) ERICSSON - RADIO 4480 B71+B85	
	C3	L2500 / N2500	ERICSSON	AIR6449 B41	270°	0°	2° / 2°	64'-0"	-	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

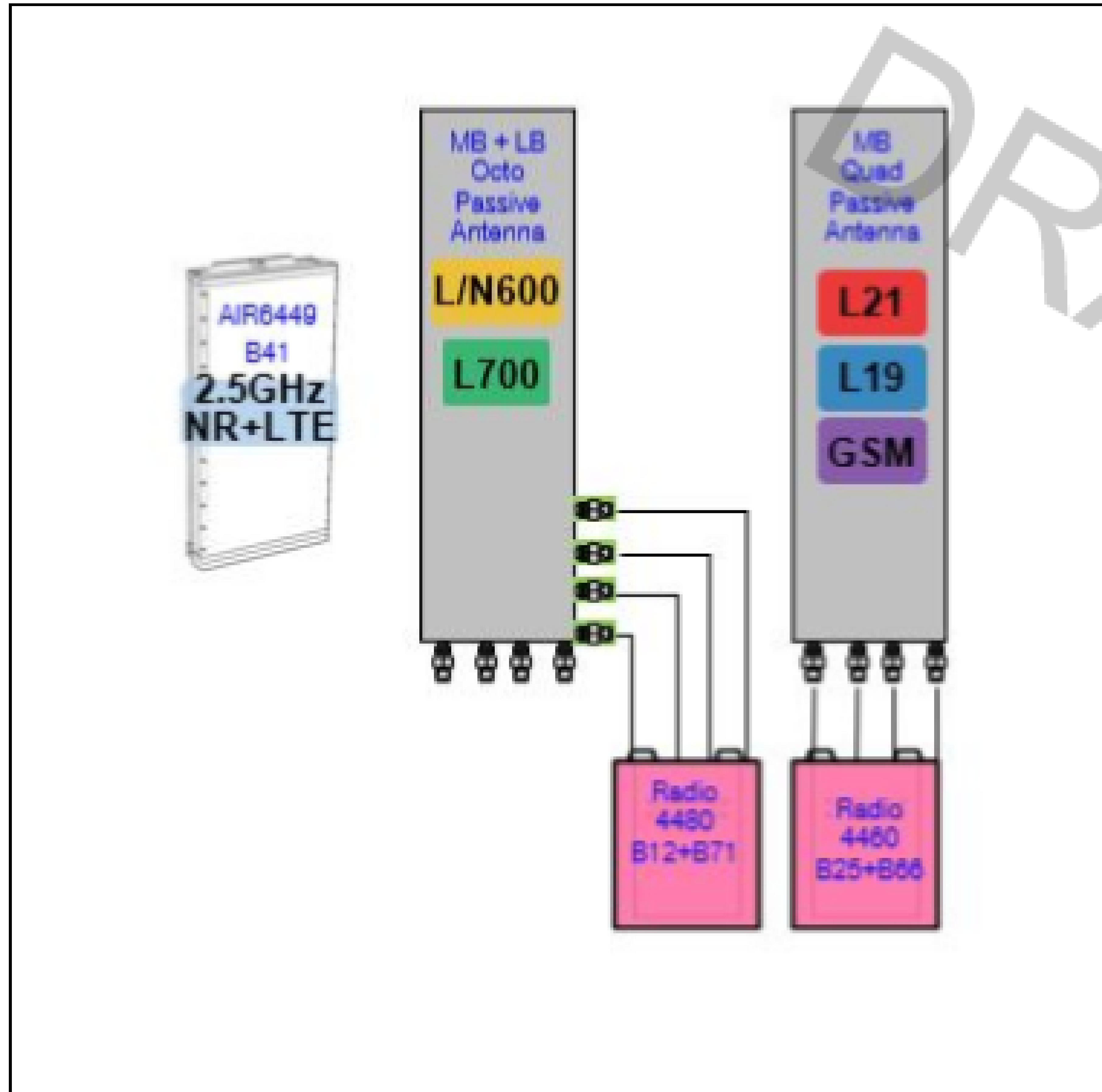
INSTALLER NOTES:

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



2 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

95362.012.01_WINDHAM NORTH RIDGE ROAD.dwg - Sheet: C-4 - User: kevin.turkall - Mar 16, 2022 - 1:39pm



Motor

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

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BLOOMFIELD, CT 06002

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B+T GRP

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www.btgrp.com

T-MOBILE SITE NUMBER:
CTNL200A

BU #: 842423
WINDHAM NORTH
RIDGE ROAD

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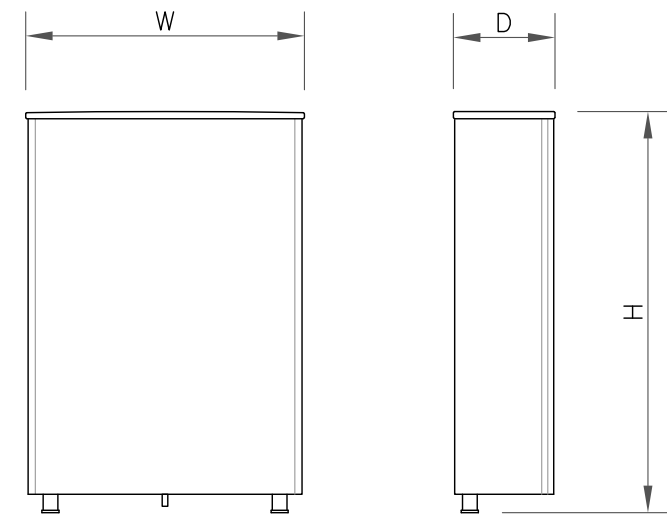
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SHEET NUMBER:

C-4

REVISION:

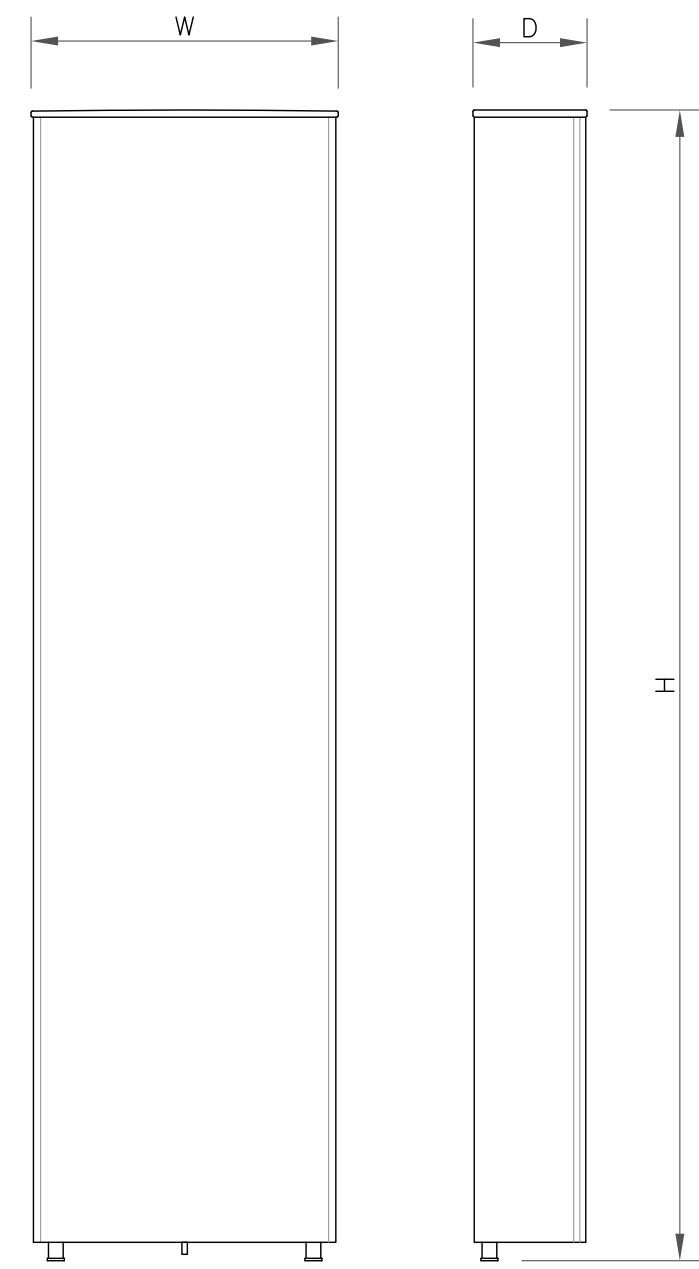
5



ANTENNA SPECS

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

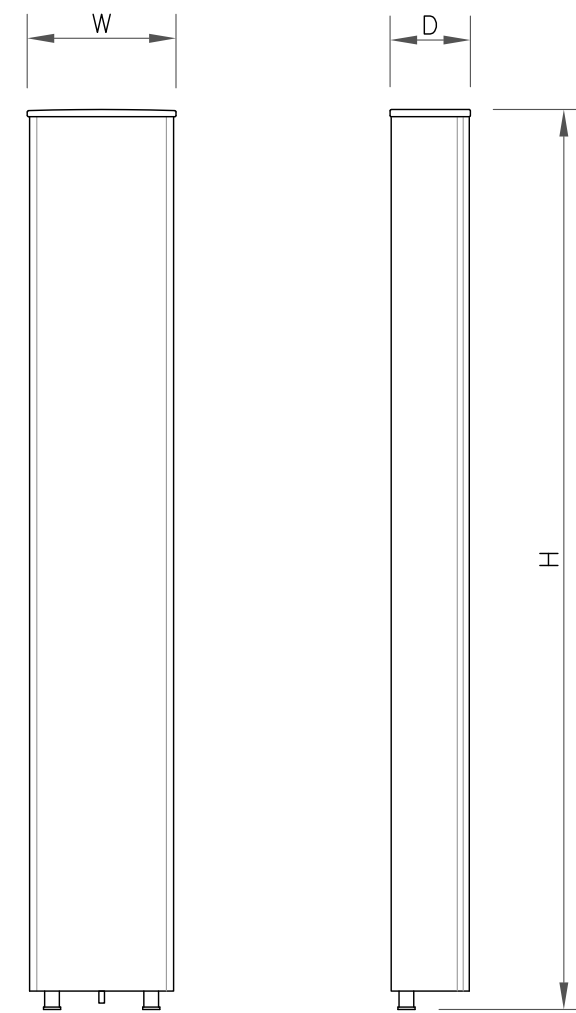
1 ANTENNA SPECS
SCALE: NOT TO SCALE



ANTENNA SPECS

MANUFACTURER	RFS/CELWAVE
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24.00"
DEPTH	8.50"
HEIGHT	95.90"
WEIGHT	149.90 LBS

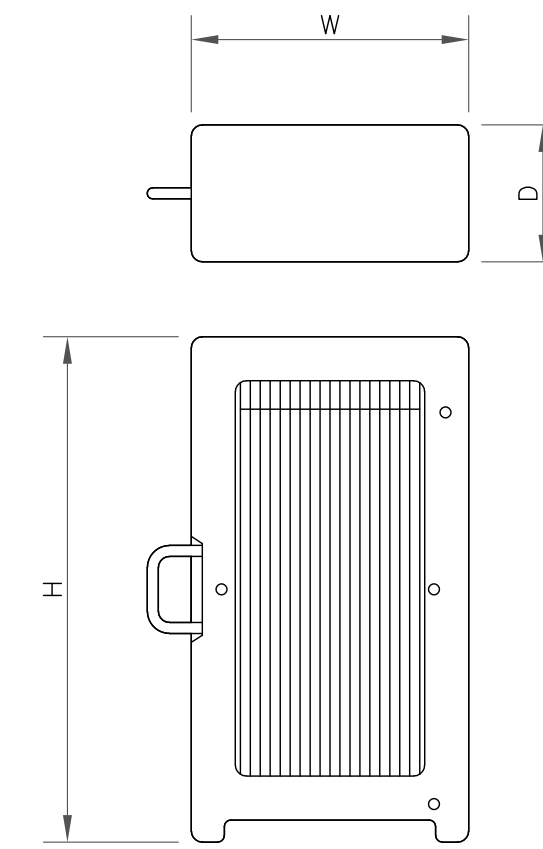
2 ANTENNA SPECS
SCALE: NOT TO SCALE



ANTENNA SPECS

MANUFACTURER	RFS/CELWAVE
MODEL #	VV-65A-R1
WIDTH	12.08"
DEPTH	4.64"
HEIGHT	54.72"
WEIGHT	41.88 LBS

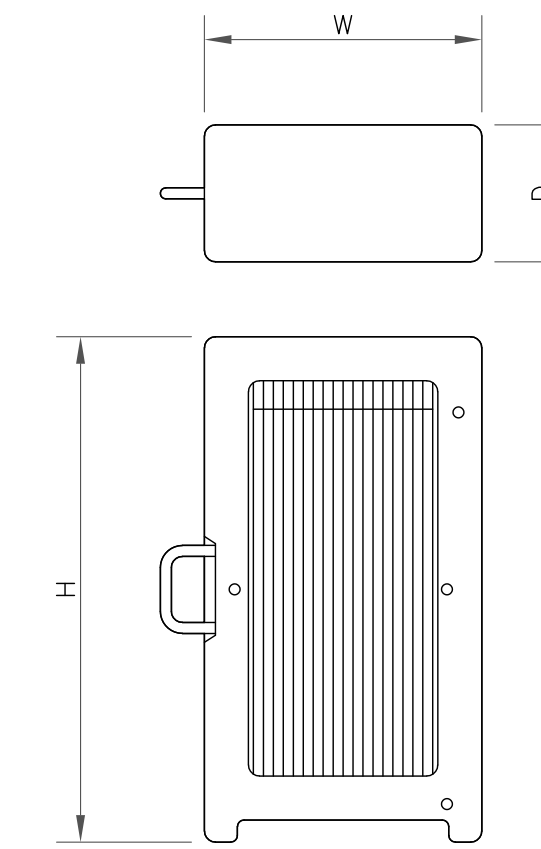
3 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	RADIO 4460 B25+B66
WIDTH	15.10"
DEPTH	11.90"
HEIGHT	17.00"
WEIGHT	109.00 LBS

4 RRU SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	RADIO 4480 B71+B85
WIDTH	15.70"
DEPTH	7.50"
HEIGHT	21.80"
WEIGHT	92.60 LBS

5 RRU SPECS
SCALE: NOT TO SCALE

T-Mobile

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PH: (918) 587-4630
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T-MOBILE SITE NUMBER:
CTNL200A

BU #: **842423**
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING
86'-9" MONOPOLE

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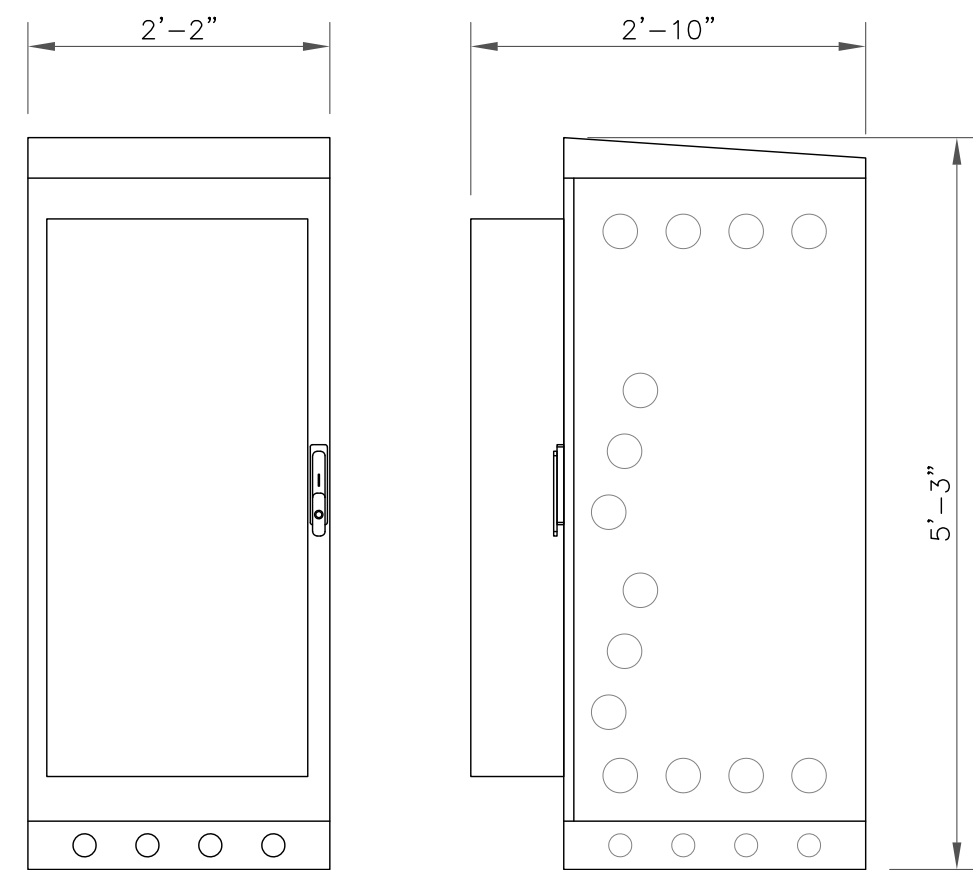
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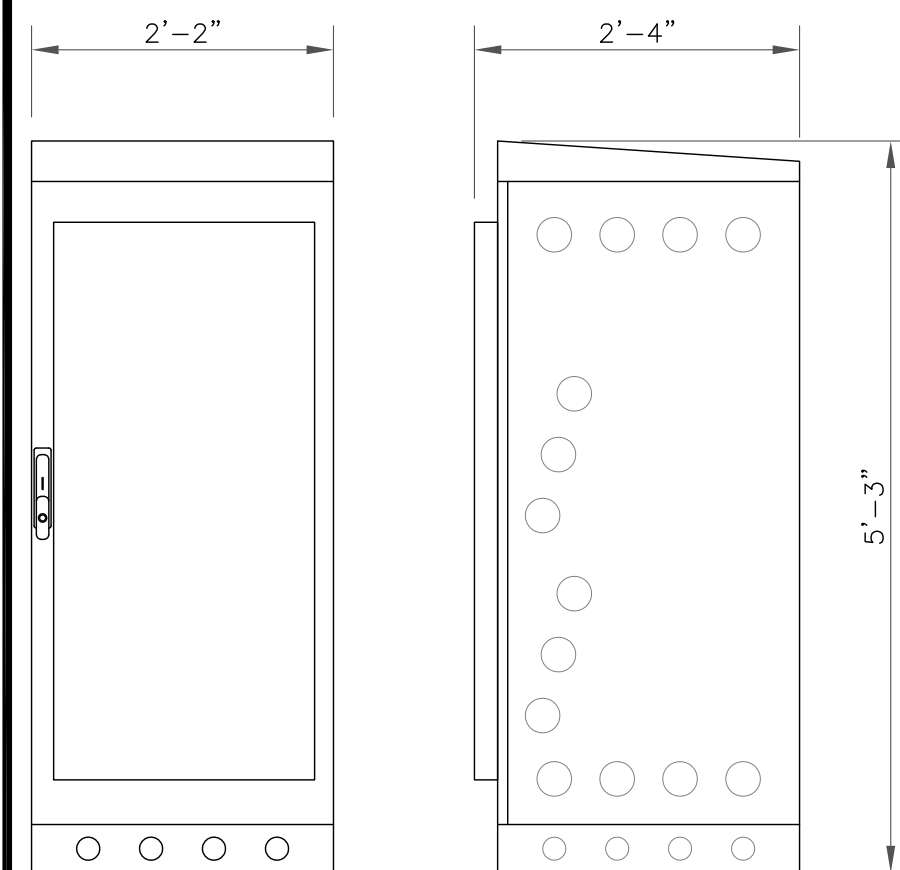
C-5

5



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

6 ERICSSON - 6160
SCALE: NOT TO SCALE



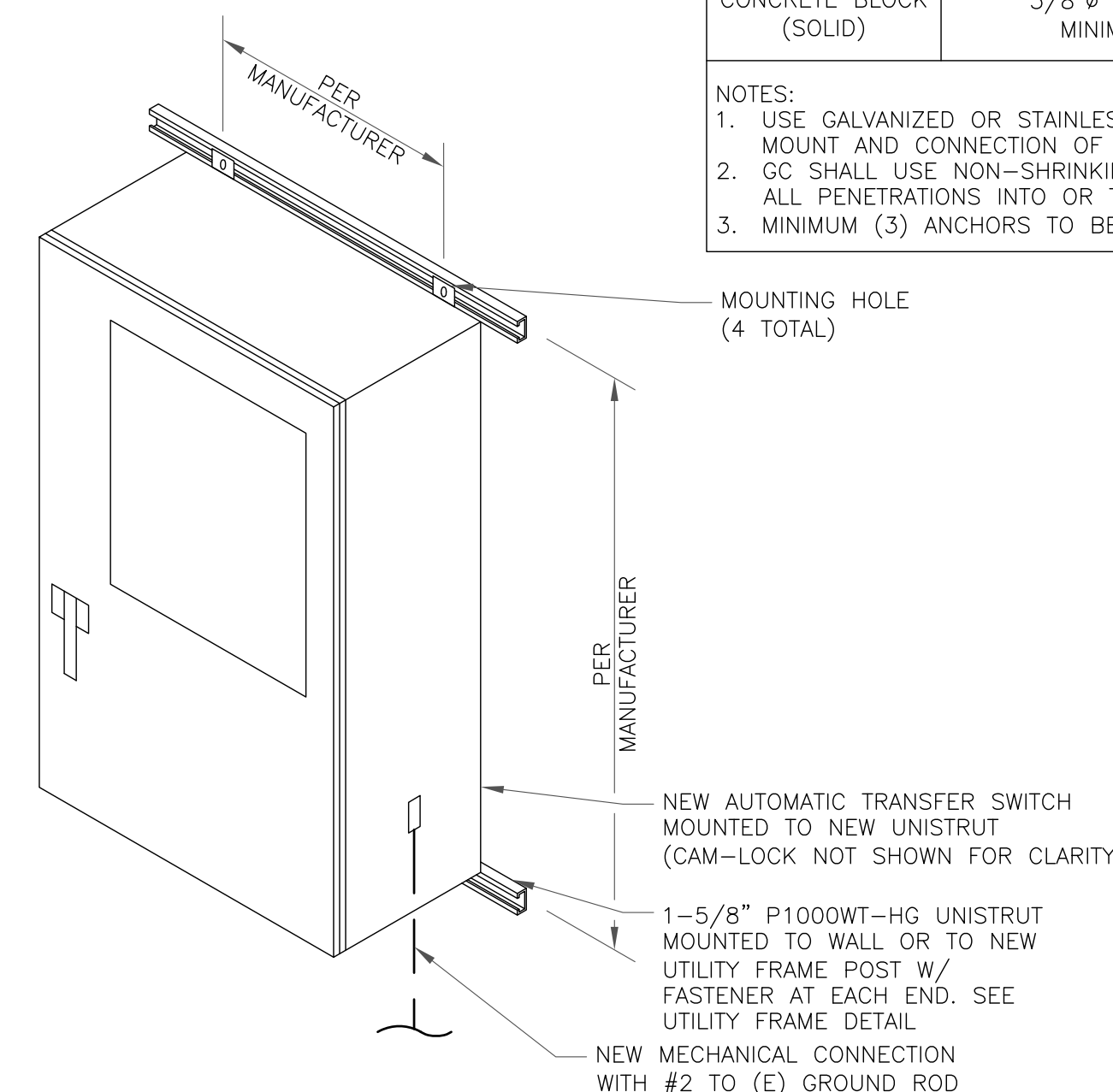
EQUIPMENT NOTES:
HEIGHTxWIDTHxDEPTH: 63.0" x
26.0" x 28.0" (1600.0mm x
660.0mm x 711.0mm)
WEIGHT (EMPTY): 295 LBS
(134 kg)
WEIGHT (FULLY LOADED): 2000 LBS
(908 kg)

7 ERICSSON - B160
SCALE: NOT TO SCALE



NOTE:
GC TO SUPPLY AND INSTALL
30A RELIANCE GENERATOR
PLUG WITH INTERLOCK KIT
(INSTALL ON PANEL COVER
OF THE RAYCAP PPC)

8 RAYCAP PPC DETAIL
SCALE: NOT TO SCALE



UNISTRUT WALL ATTACHMENT:		
WALL CONSTRUCTION TYPE	FASTENER	ANCHOR SPACING
WOOD STUD	3/8" DIA. LAG SCREW	16"
CONCRETE BLOCK (HOLLOW)	-	8"
CONCRETE BLOCK (SOLID)	3/8"Ø SIMPSON TITEN HD ANCHOR MINIMUM EMBEDMENT 2-3/4"	24"

NOTES:
1. USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALL MOUNT AND CONNECTION OF CHANNELS.
2. GC SHALL USE NON-SHRINKING CAULK TO WEATHER SEAL ALL PENETRATIONS INTO OR THROUGH SHELTER WALL.
3. MINIMUM (3) ANCHORS TO BE USED FOR EACH CHANNEL.

9 ATS MOUNTING DETAIL
SCALE: NOT TO SCALE



Ice Canopy, 8 ft x 10 ft, four 13 ft 4 in burial pipes

Product Classification

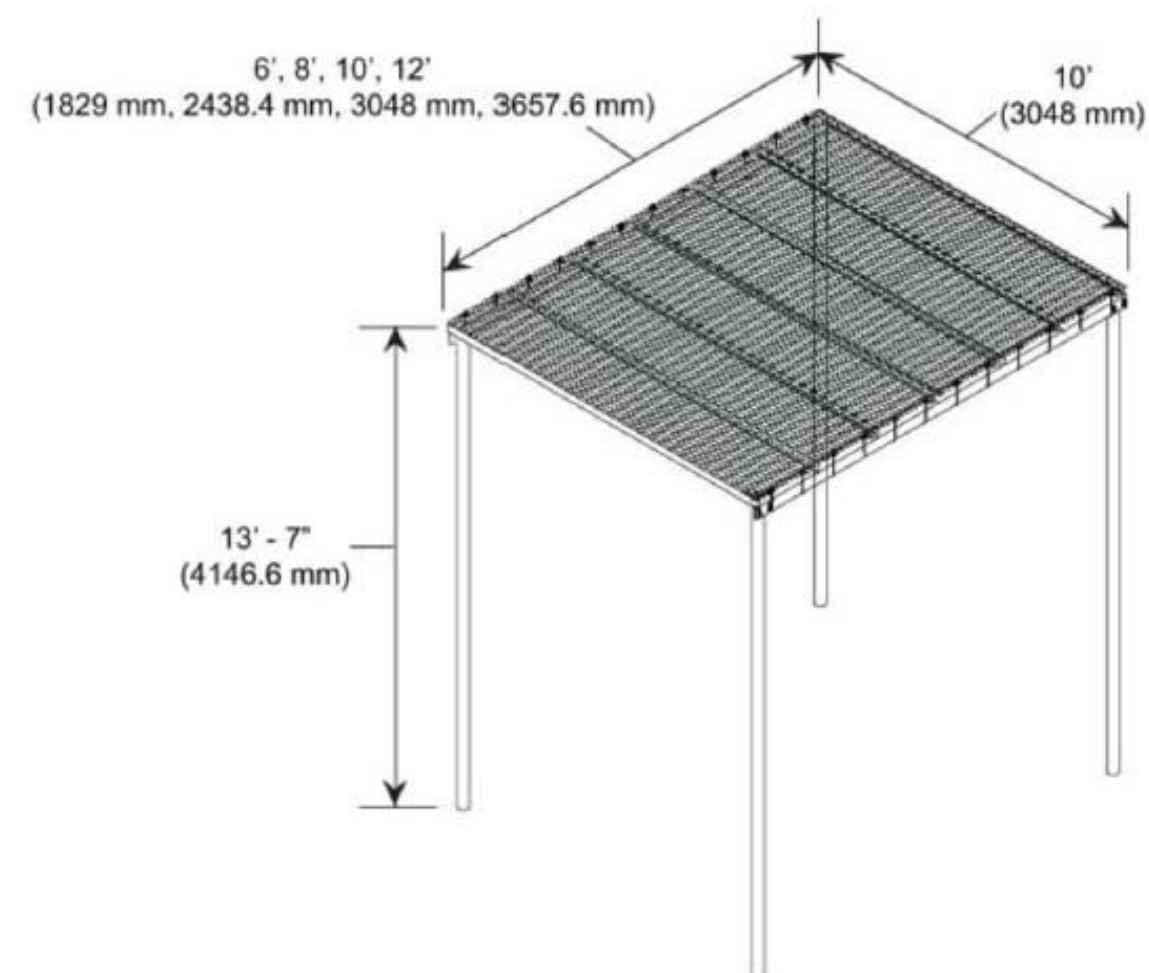
Product Type Ice canopies and shields

General Specifications

Pipe, quantity 4

Dimensions

Height 4064 mm | 160 in
 Width 2,438.4 mm | 96 in
 Length 3048 mm | 120 in
 Pipe Length 4064 mm | 160 in



Material Specifications

Material Type Hot dip galvanized steel

Included Products

- MF-130 - Direct Burial Pipe Column, 13 ft 4 in
- WB-CY210 - Safety Grated Waveguide Bridge Channel, 24 in x 10 ft

1 ICE CANOPY SPECS
 SCALE: NOT TO SCALE

2 NOT USED
 SCALE: NOT TO SCALE

3 NOT USED
 SCALE: NOT TO SCALE

4 NOT USED
 SCALE: NOT TO SCALE

5 NOT USED
 SCALE: NOT TO SCALE

T-Mobile
 35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

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

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10 NORTH RIDGE DRIVE
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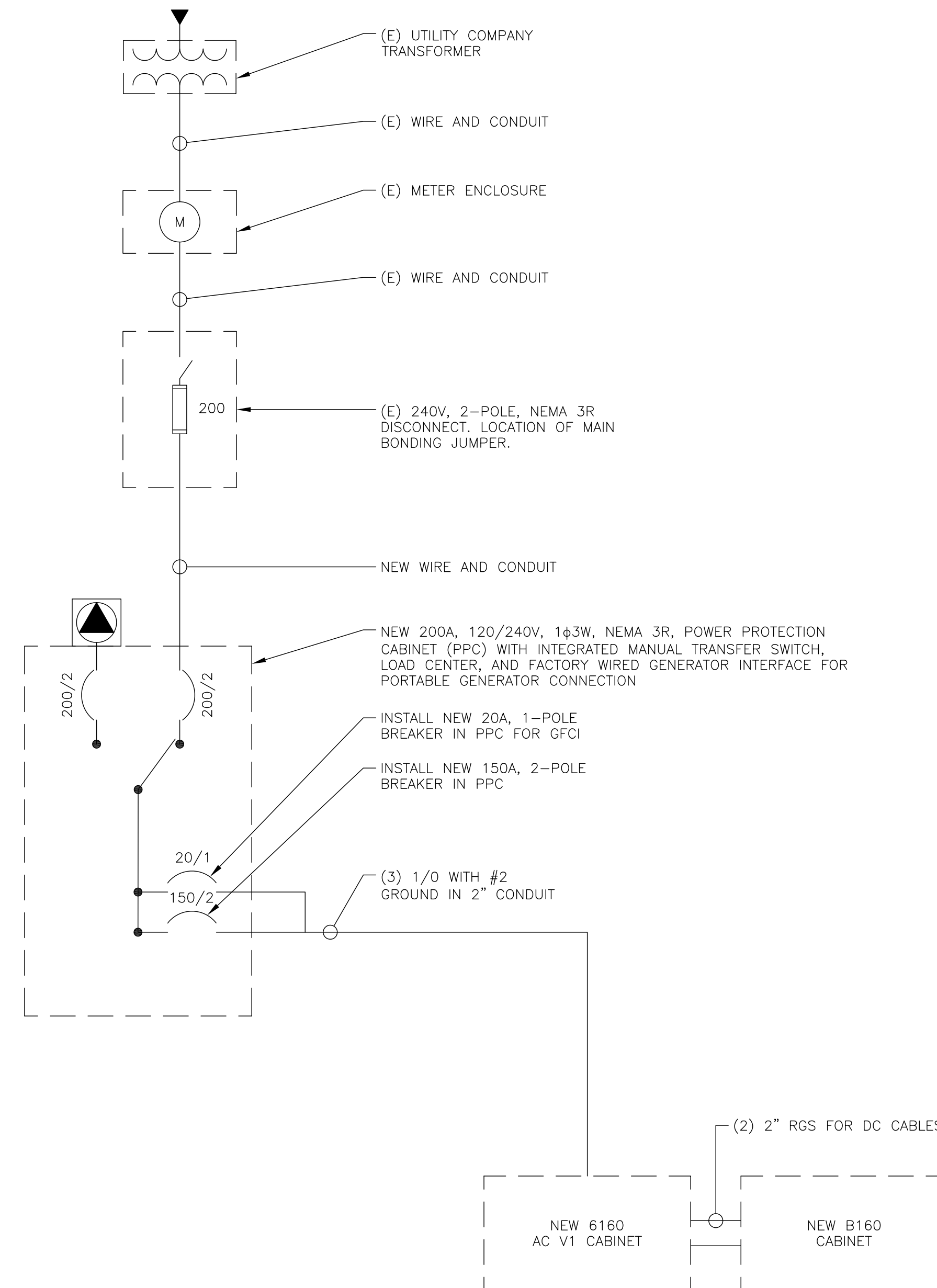
NOTE:
PANEL SCHEDULE PENDING FIELD VERIFICATION

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS		AMPS	POLES	LOAD
			L1	L2			
6160 AC V1 CABINET	2	150A	1	2	20A	1	GFCI
			3	4			
			5	6			
			7	8			
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			

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

ADD NEW BREAKER IN POSITION 1 AND 3 WITH A NEW 2P 150A BREAKER
 ADD NEW BREAKER IN POSITION 2 WITH A NEW 1P 20 BREAKER.
 UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
 FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:

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

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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SHEET NUMBER:

E-1

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T-Mobile

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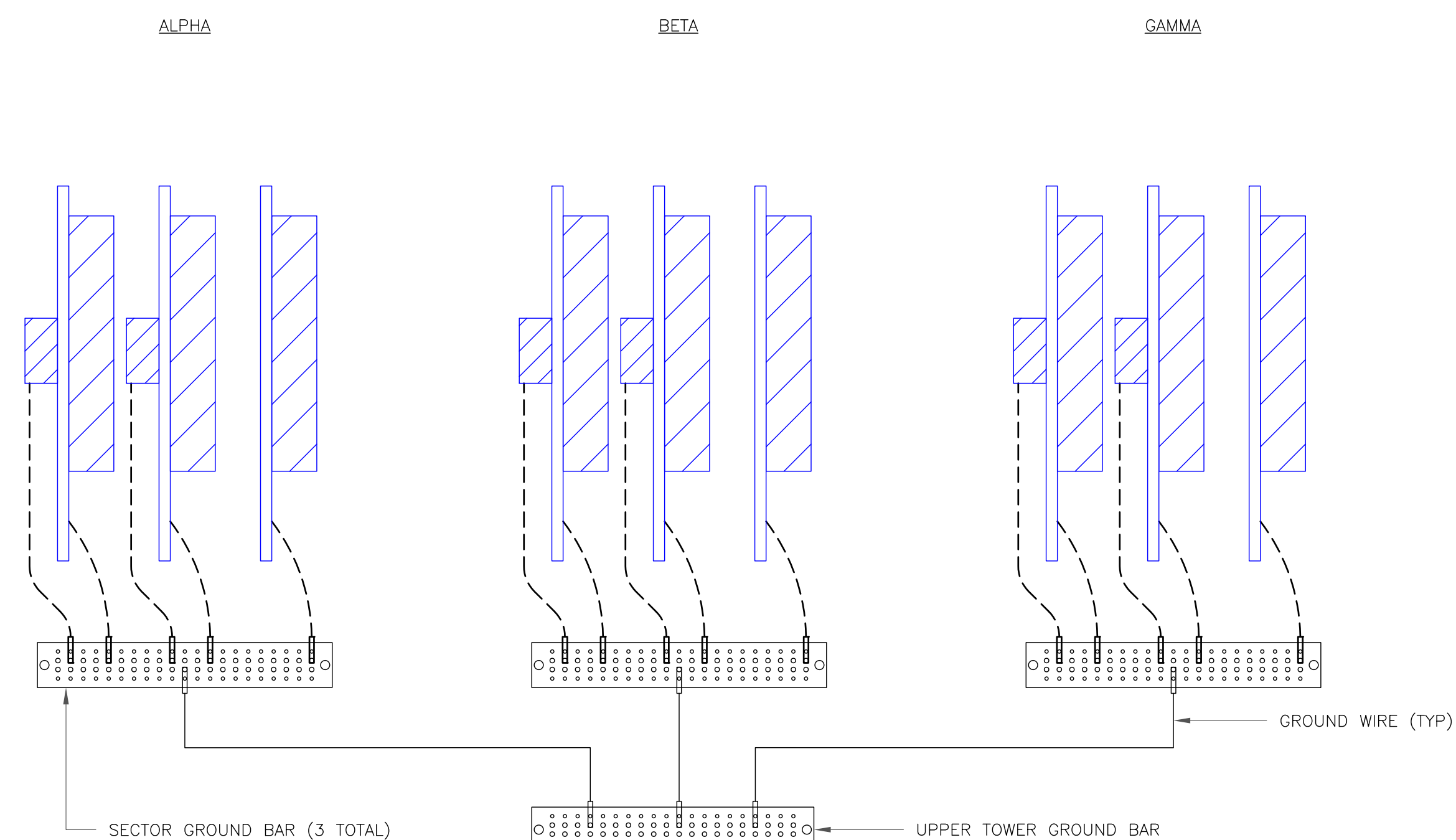
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G-1

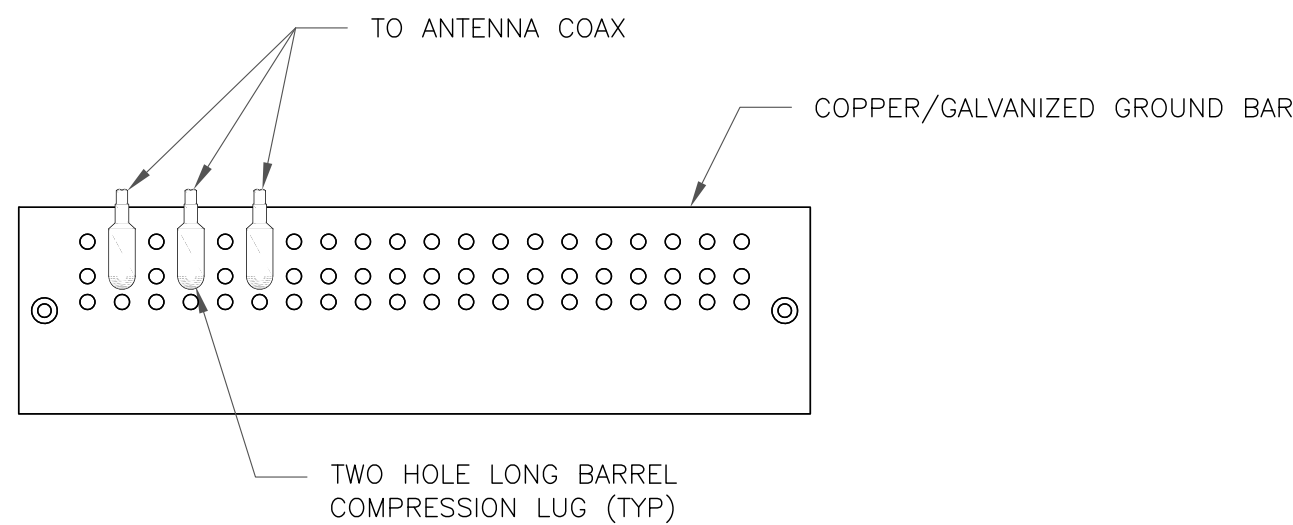
REVISION:

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

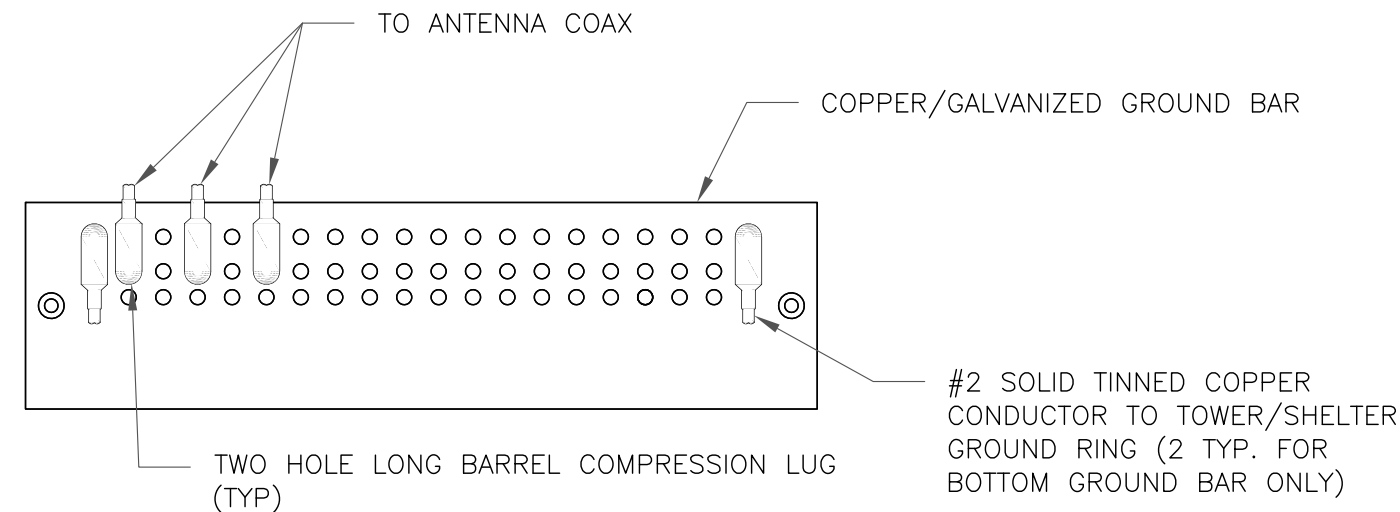
1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



NOTES:

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

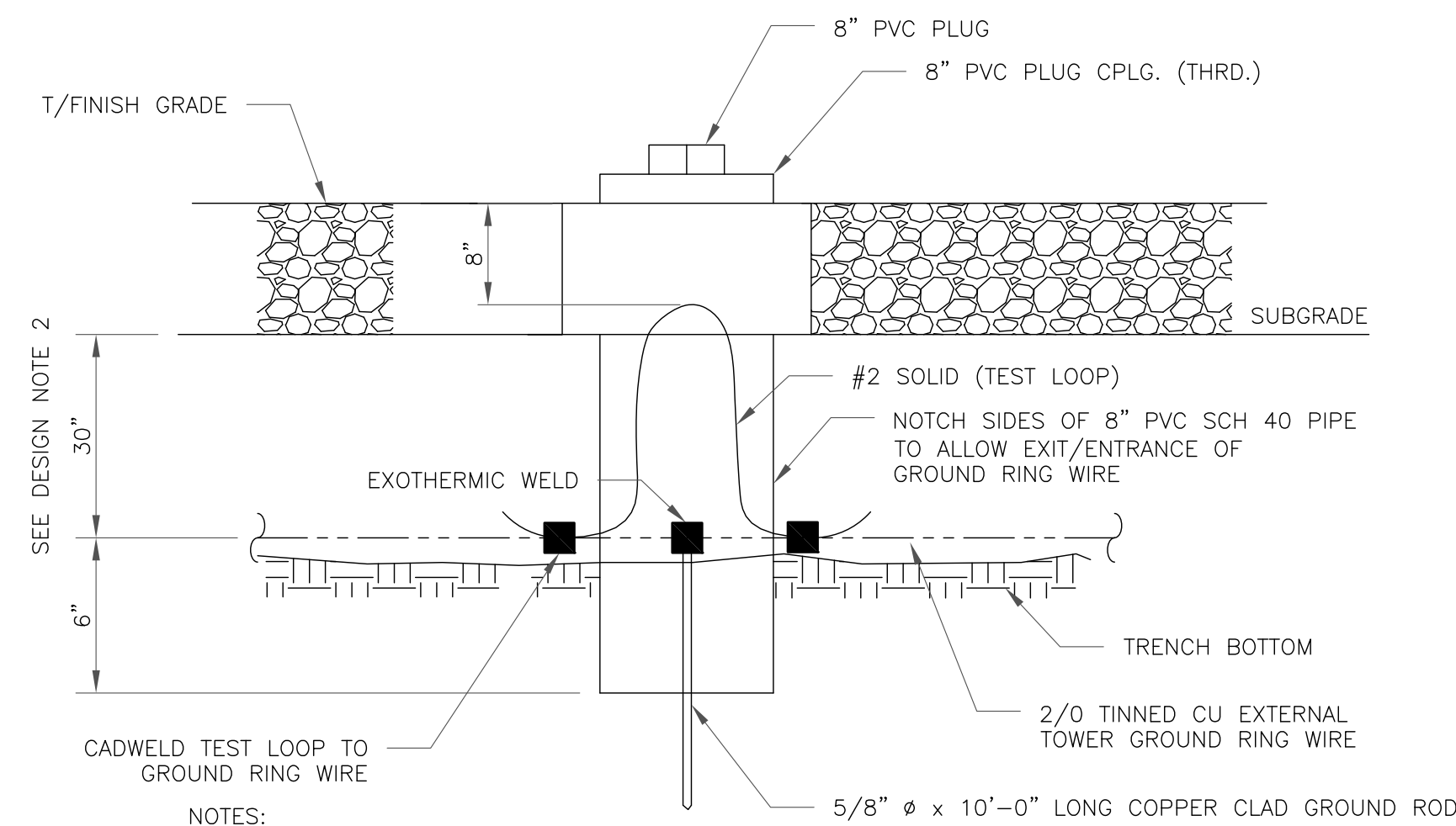
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

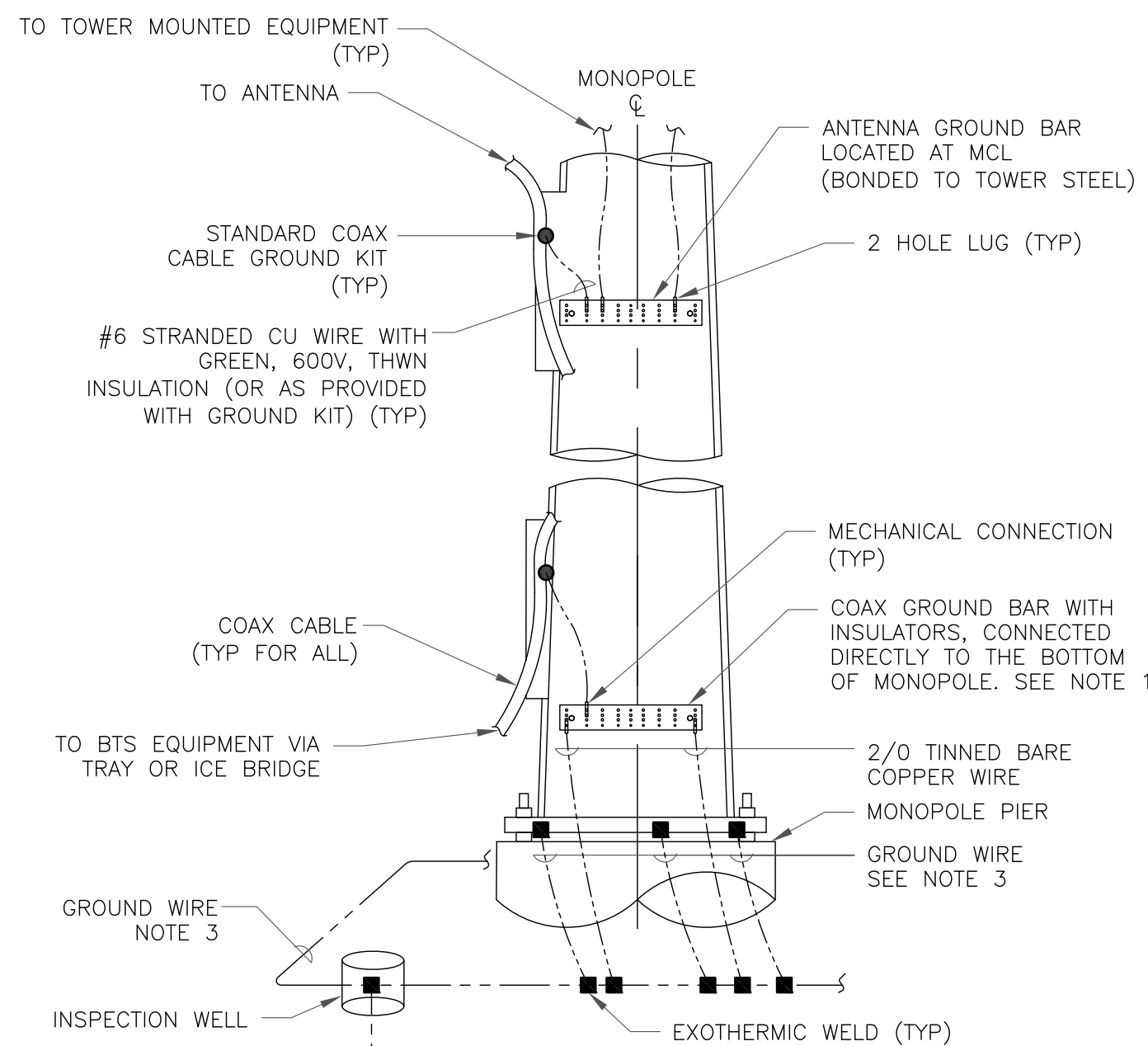
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

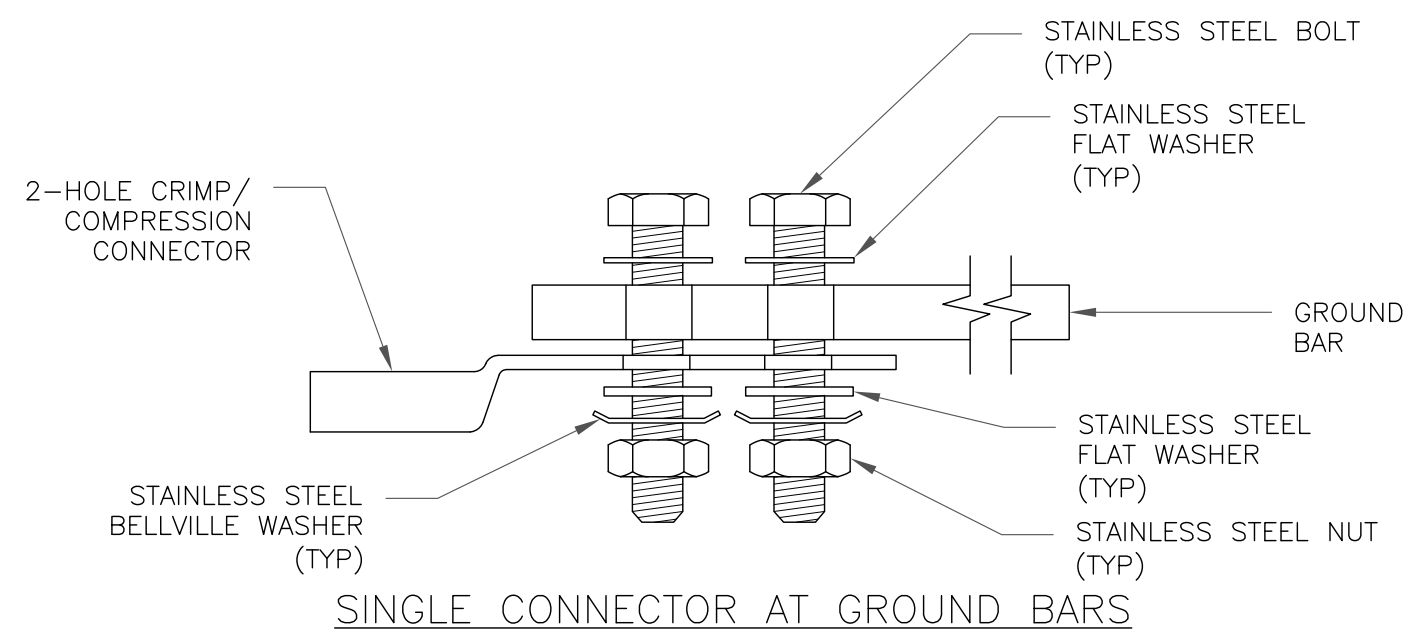
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



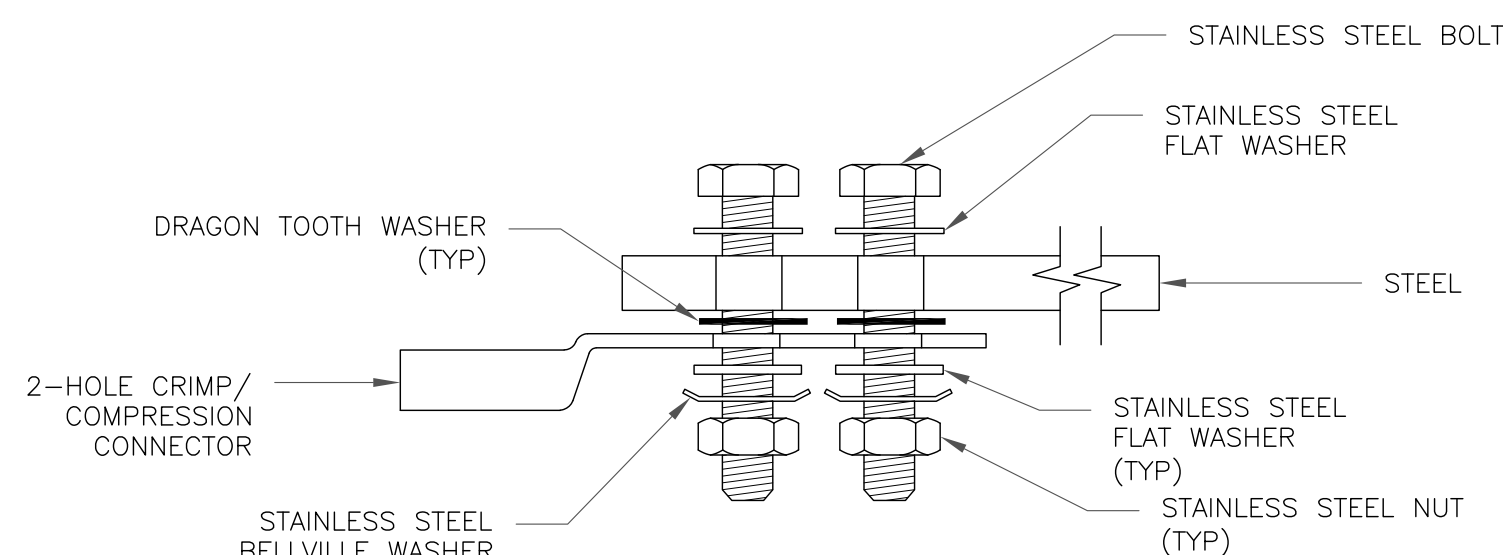
NOTES:

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

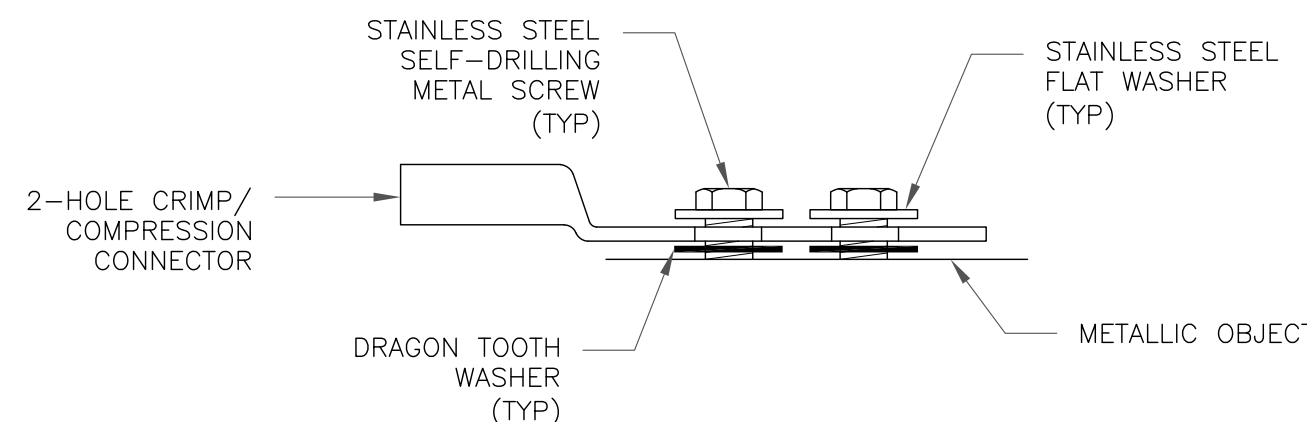
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

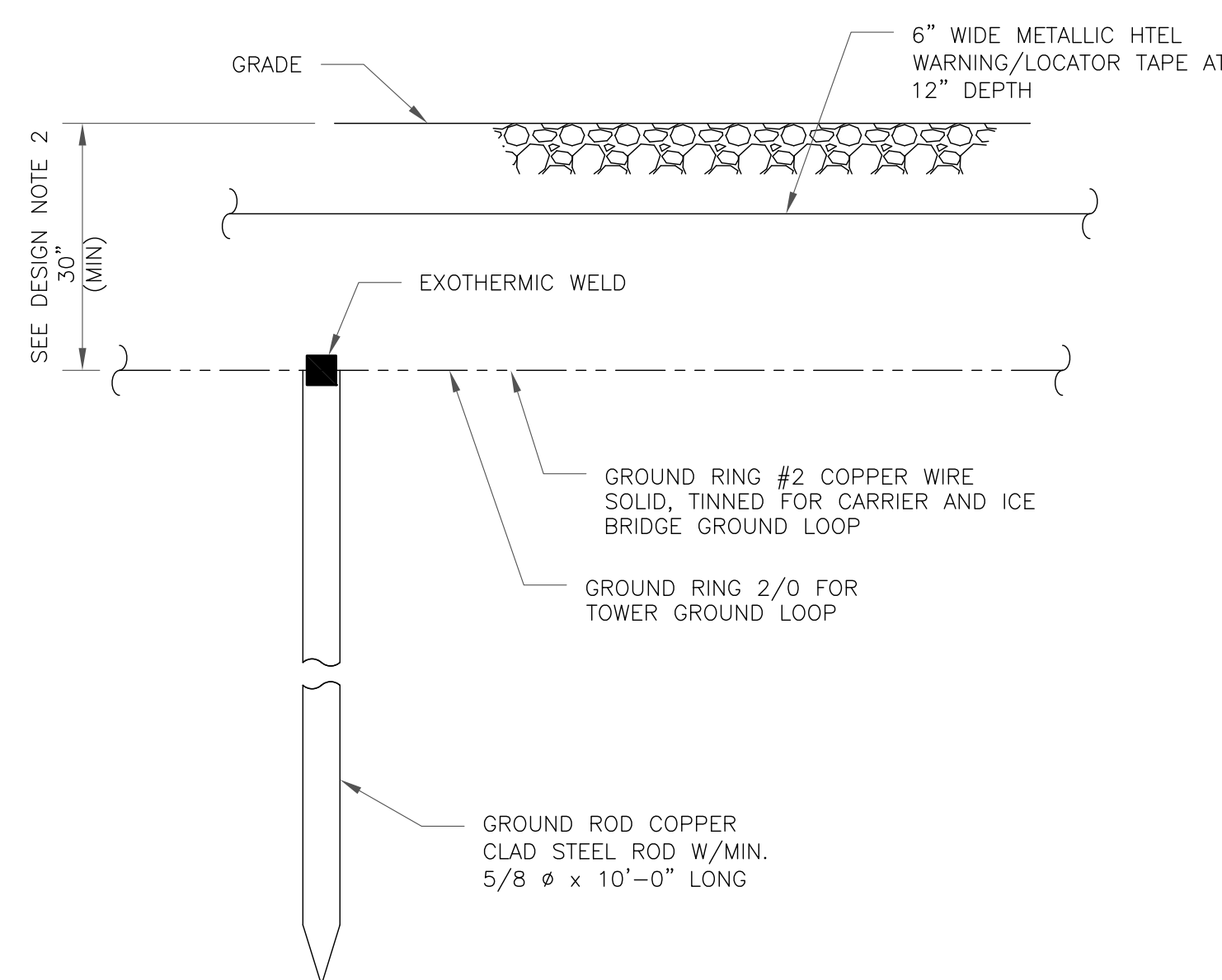


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

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

T-MOBILE SITE NUMBER:
CTNL200A

BU #: 842423
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING
86'-9" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	9/9/21	JHW	CONSTRUCTION	JHW
2	10/11/21	YXI	CONSTRUCTION	YXI
3	11/19/21	JTS	CONSTRUCTION	JTS
4	3/8/22	JTS	CONSTRUCTION	KT
5	3/16/22	DAS	CONSTRUCTION	KT

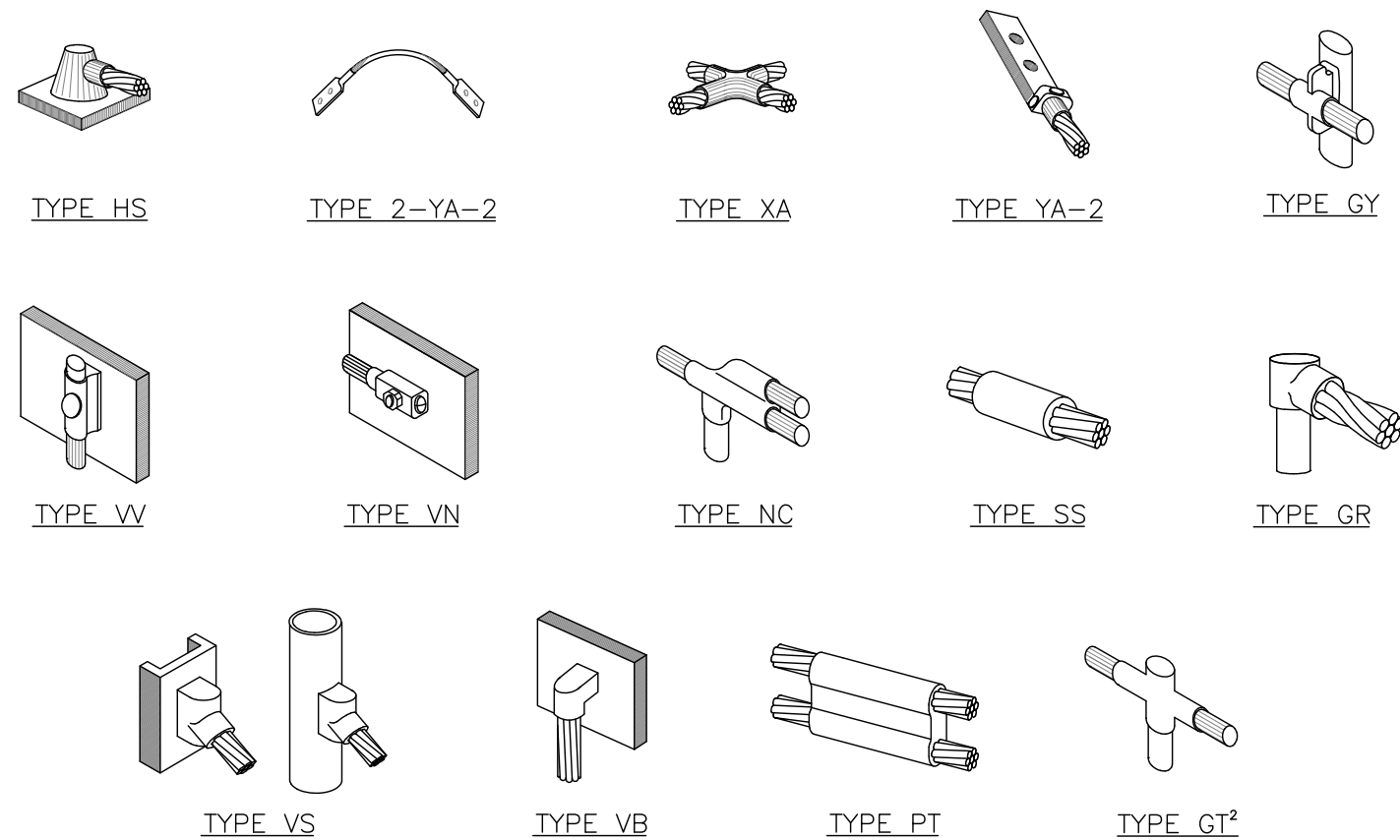


B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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SHEET NUMBER:
G-2

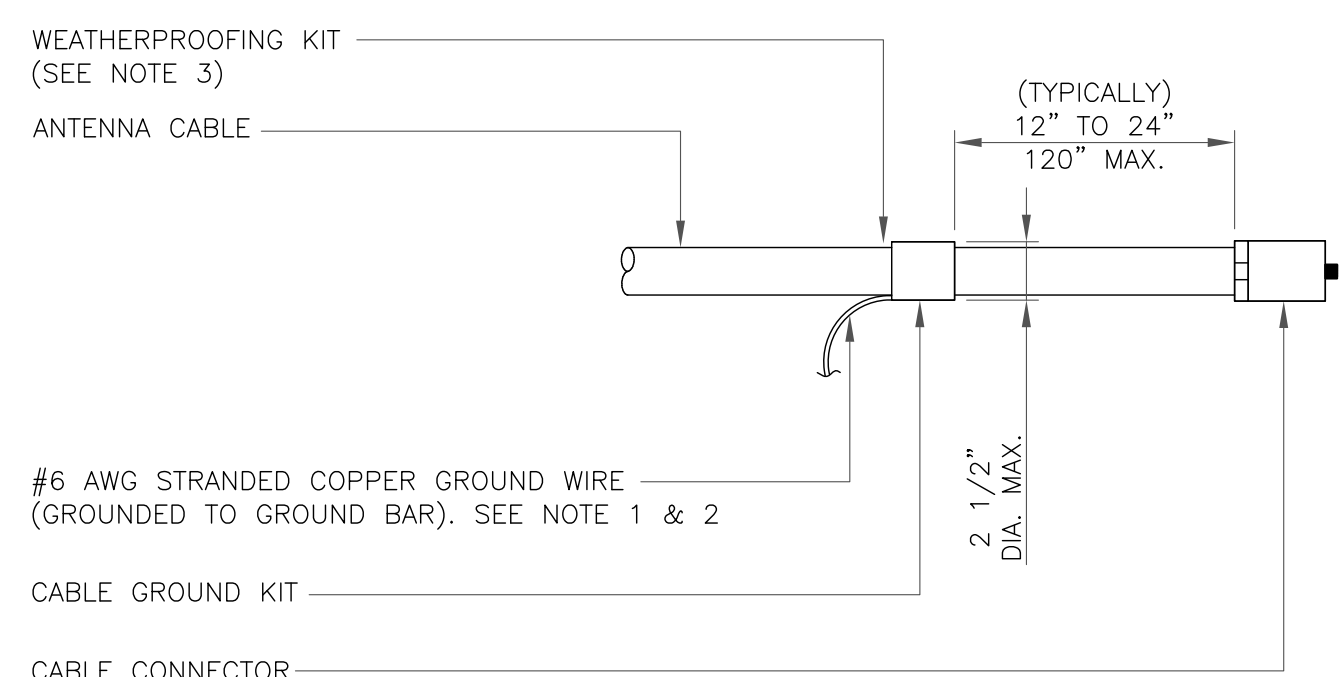
REVISION:
5



NOTE:

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

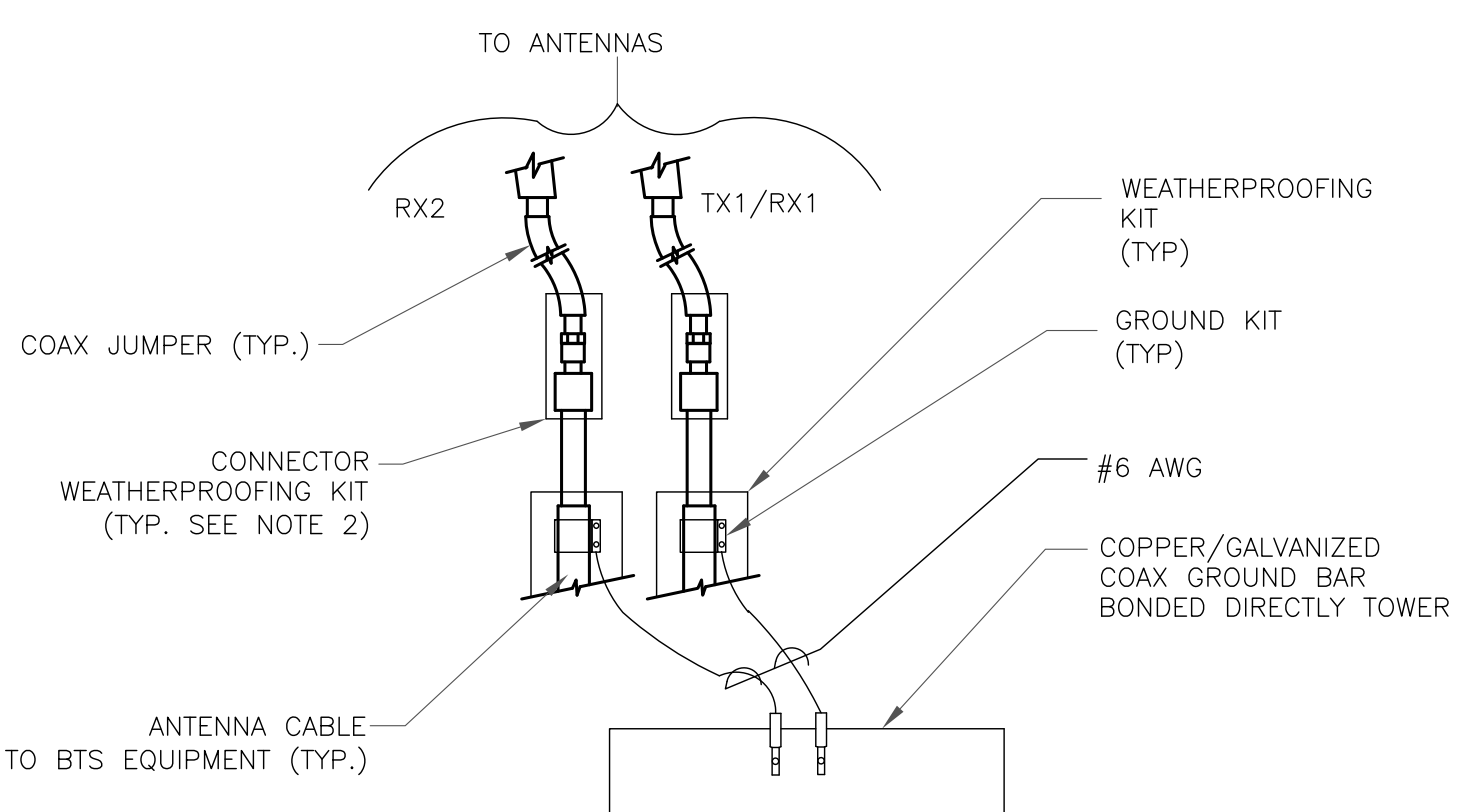
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

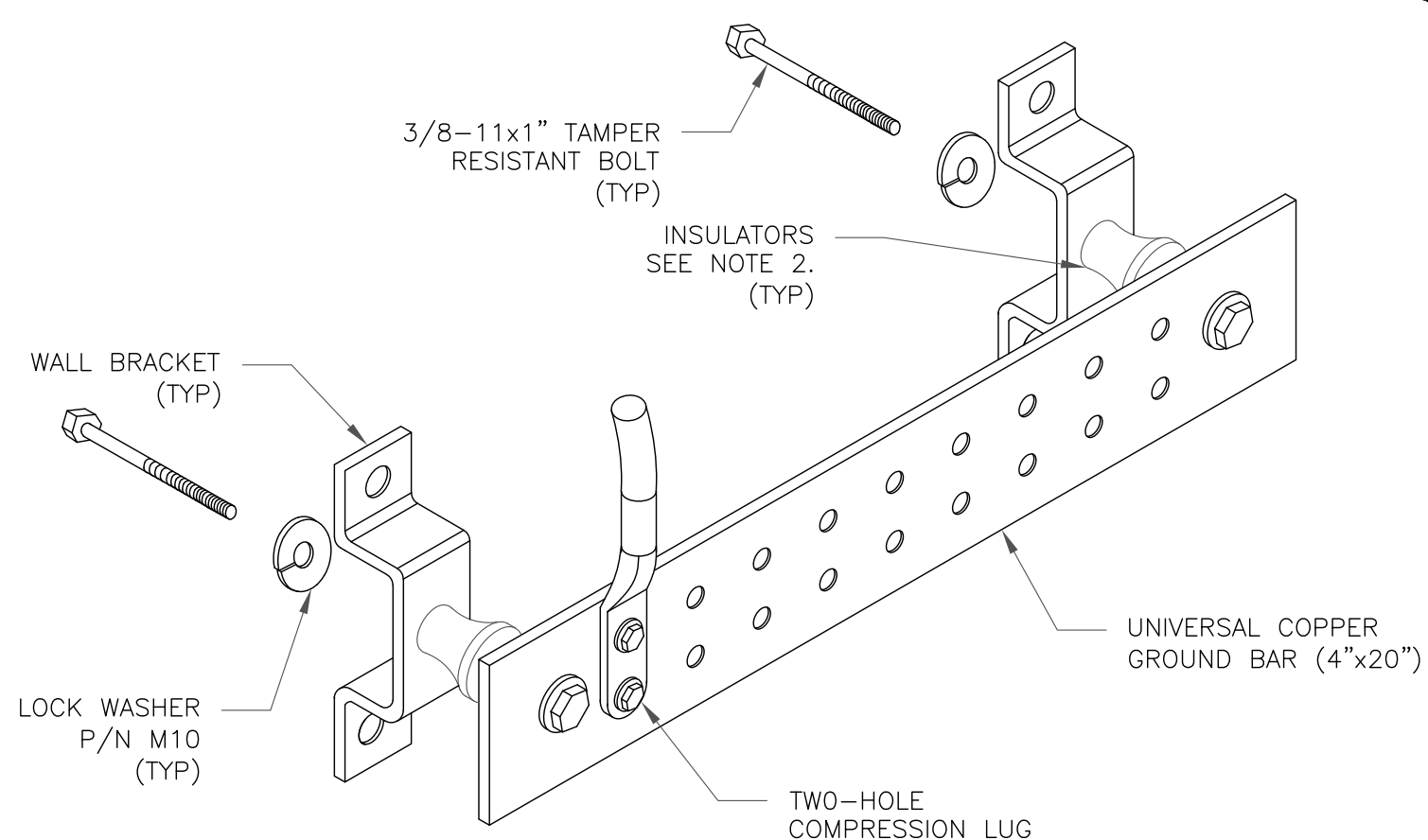
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

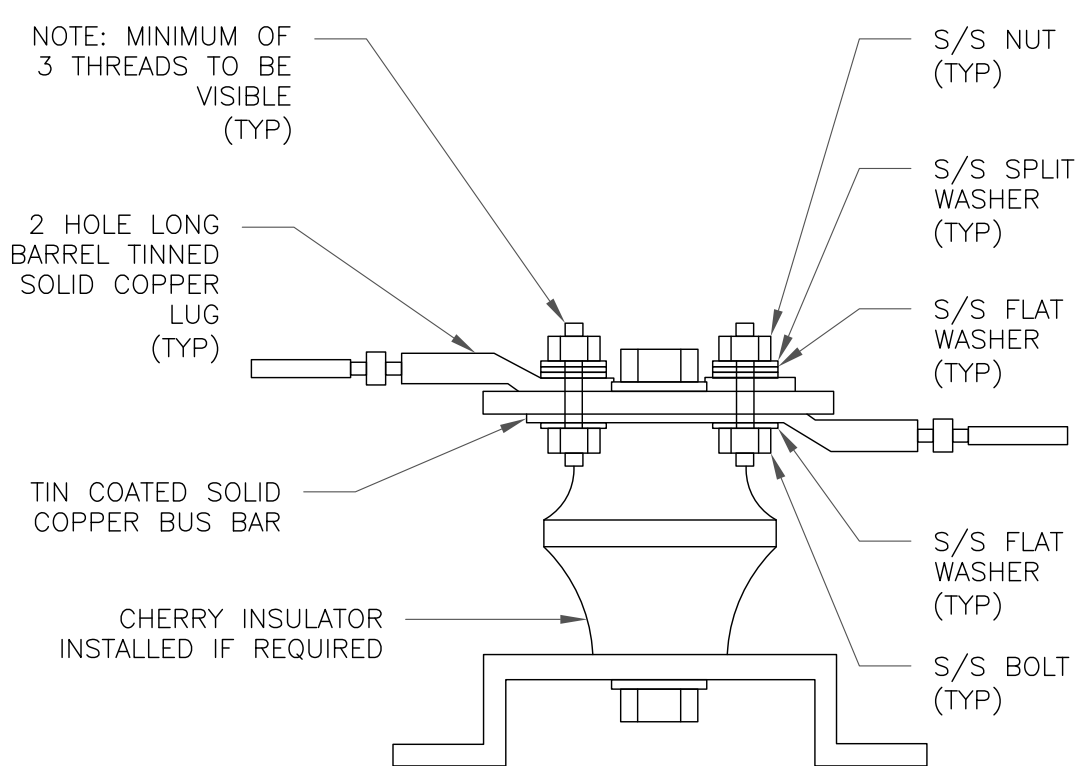
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

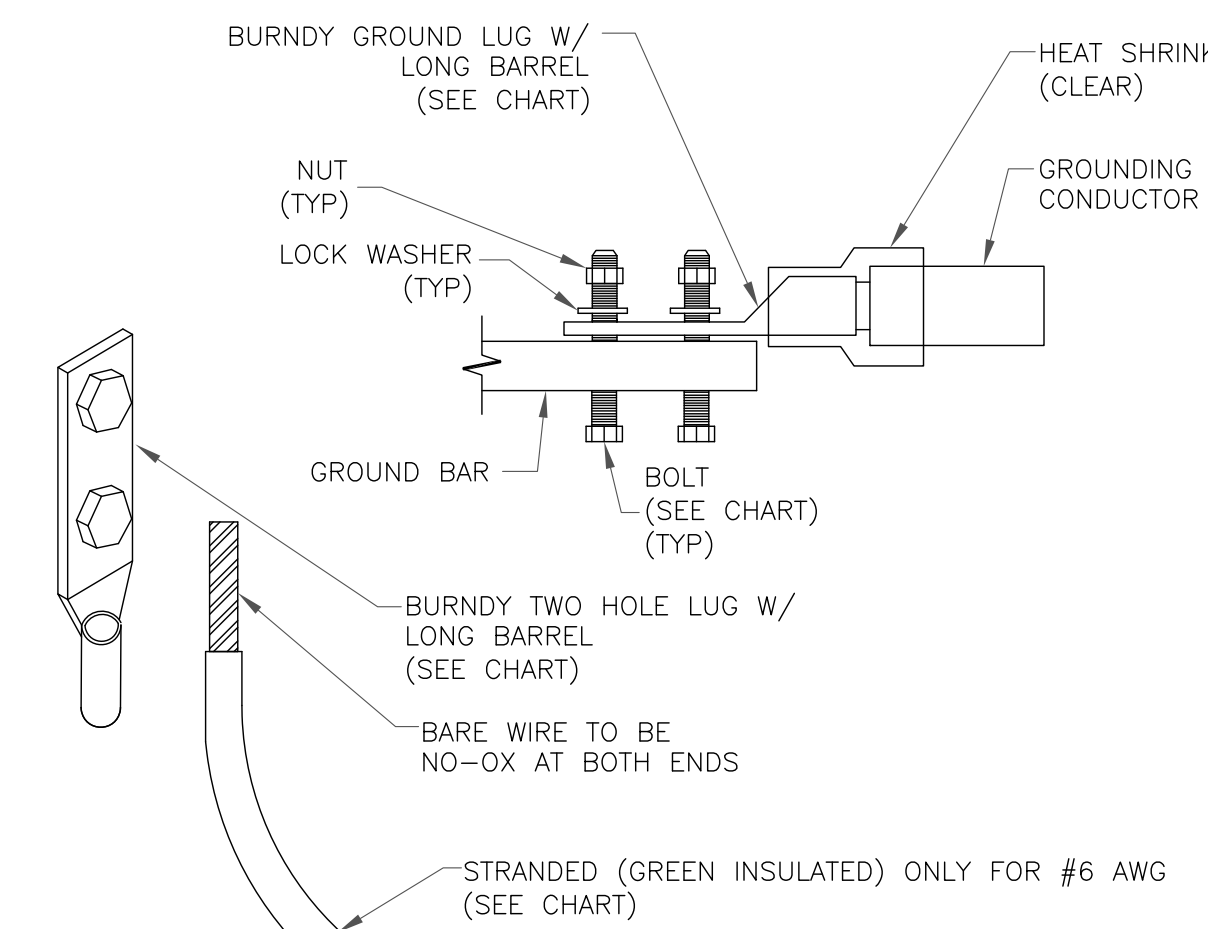
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

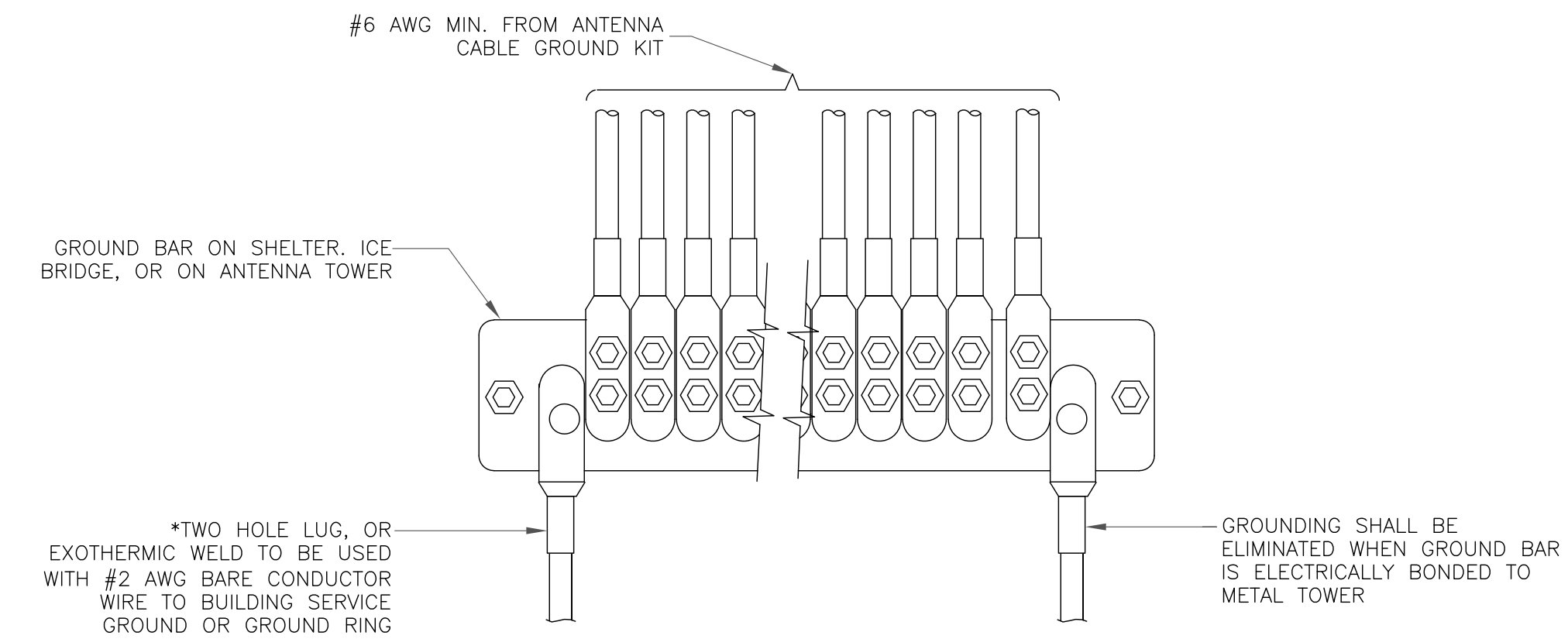
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



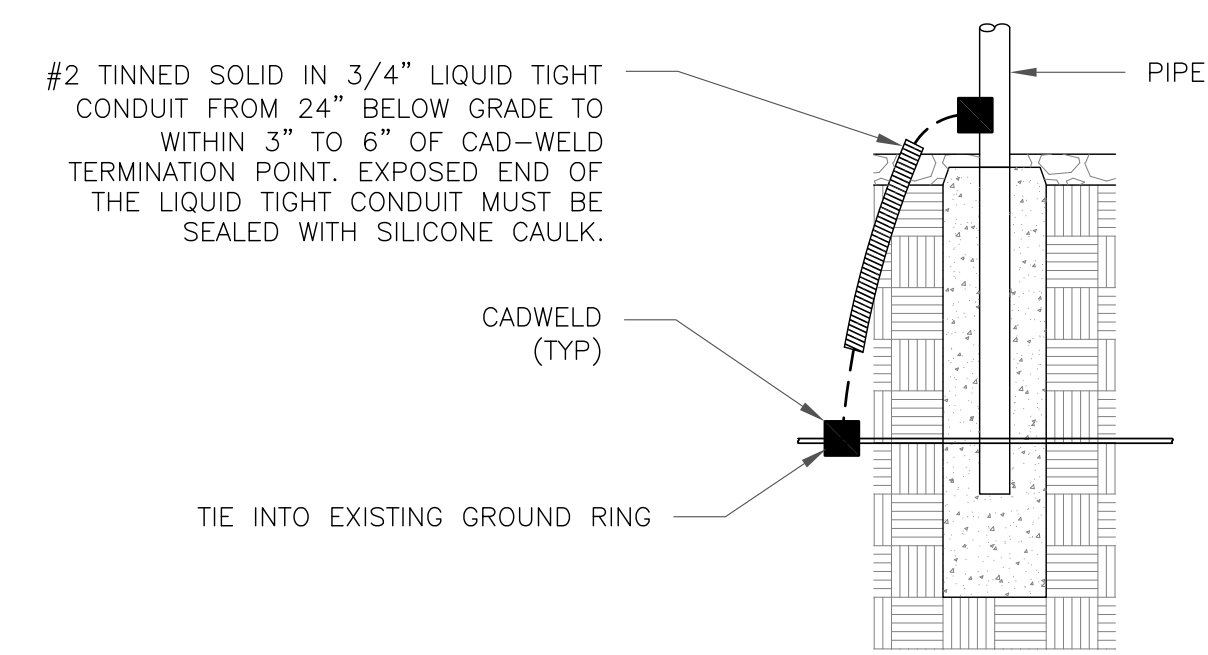
NOTES:

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

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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CTNL200A

BU #: **842423**
WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
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EXISTING
86'-9" MONOPOLE

ISSUED FOR:

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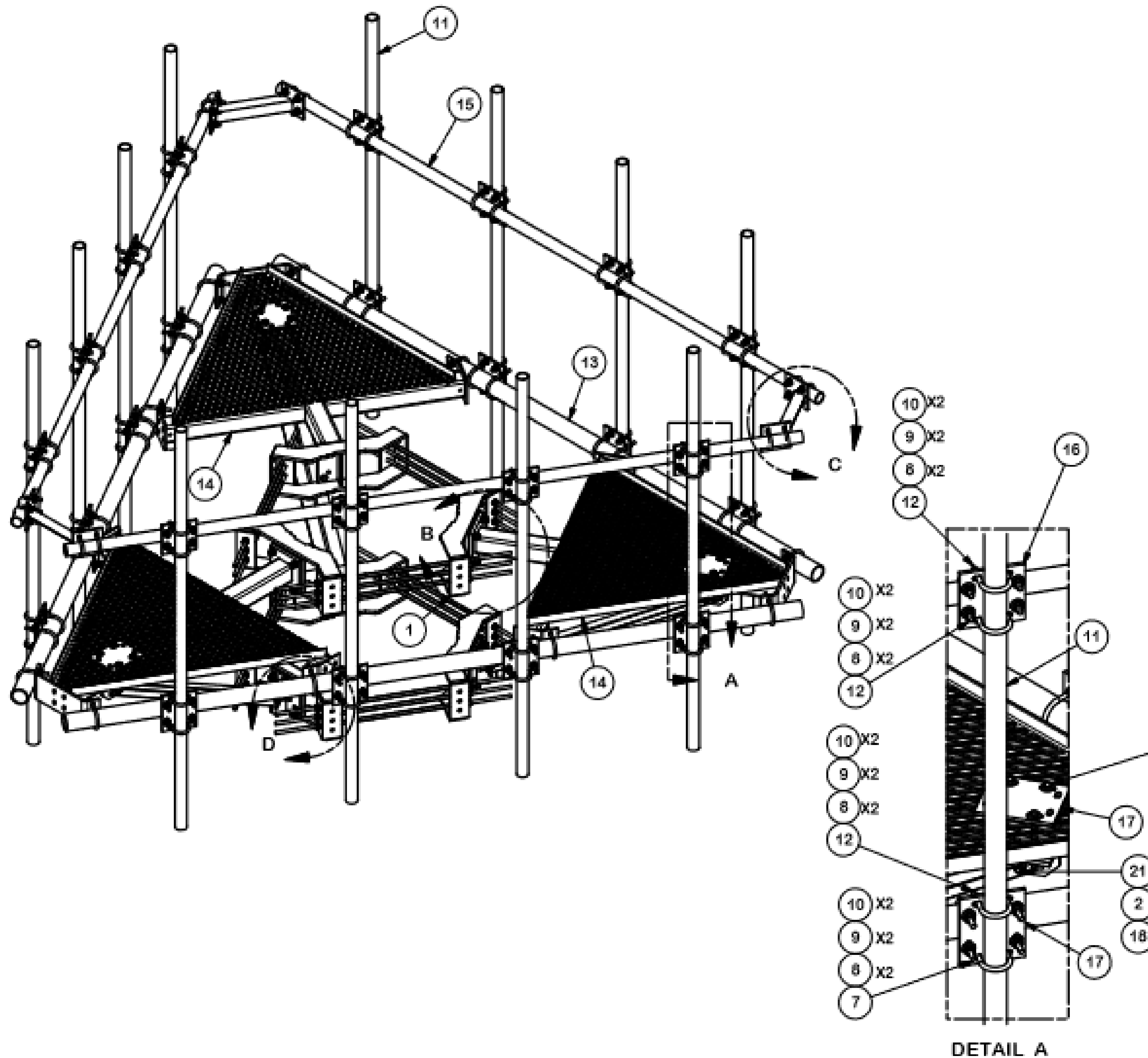
STATE OF CONNECTICUT
CHAD CASTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
3/16/22

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

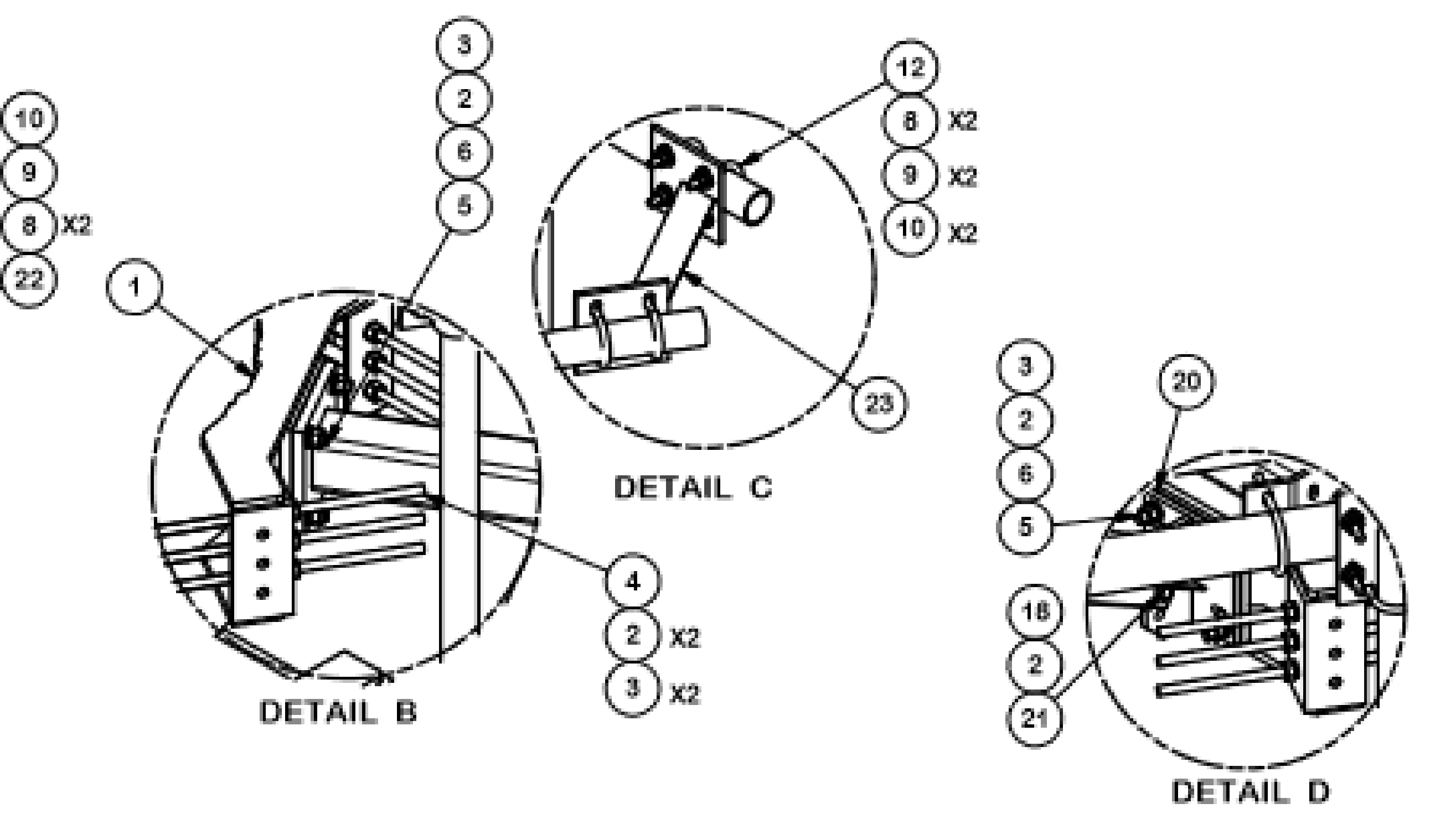
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SHEET NUMBER: **G-3** REVISION: **5**

95362.012.01_WINDHAM NORTH RIDGE ROAD.dwg - Sheet:G-3 - User: kevin.turkall - Mar 16, 2022 - 1:40pm



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
4	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
5	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
6	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
7	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
8	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
9	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
10	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
11	12	P296	2-3/8" X 96" SCH. 40 GALVANIZED PIPE	96 in	30.76	369.08
12	84	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	50.17
13	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
14	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
15	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
16	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
17	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
18	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
19	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
20	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
21	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
22	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
23	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2445.81



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

PROPRIETARY NOTE:
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DESCRIPTION
 12' 6" LOW PROFILE PLATFORM
 WITH TWELVE 2-3/8" ANTENNA MOUTING
 PIPES, AND HANDRAIL

CPD NO. 4488	DRAWN BY CEK 7/14/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
CHECKED BY BMC 7/14/2014		

SITE PRO 1
 A valmont COMPANY

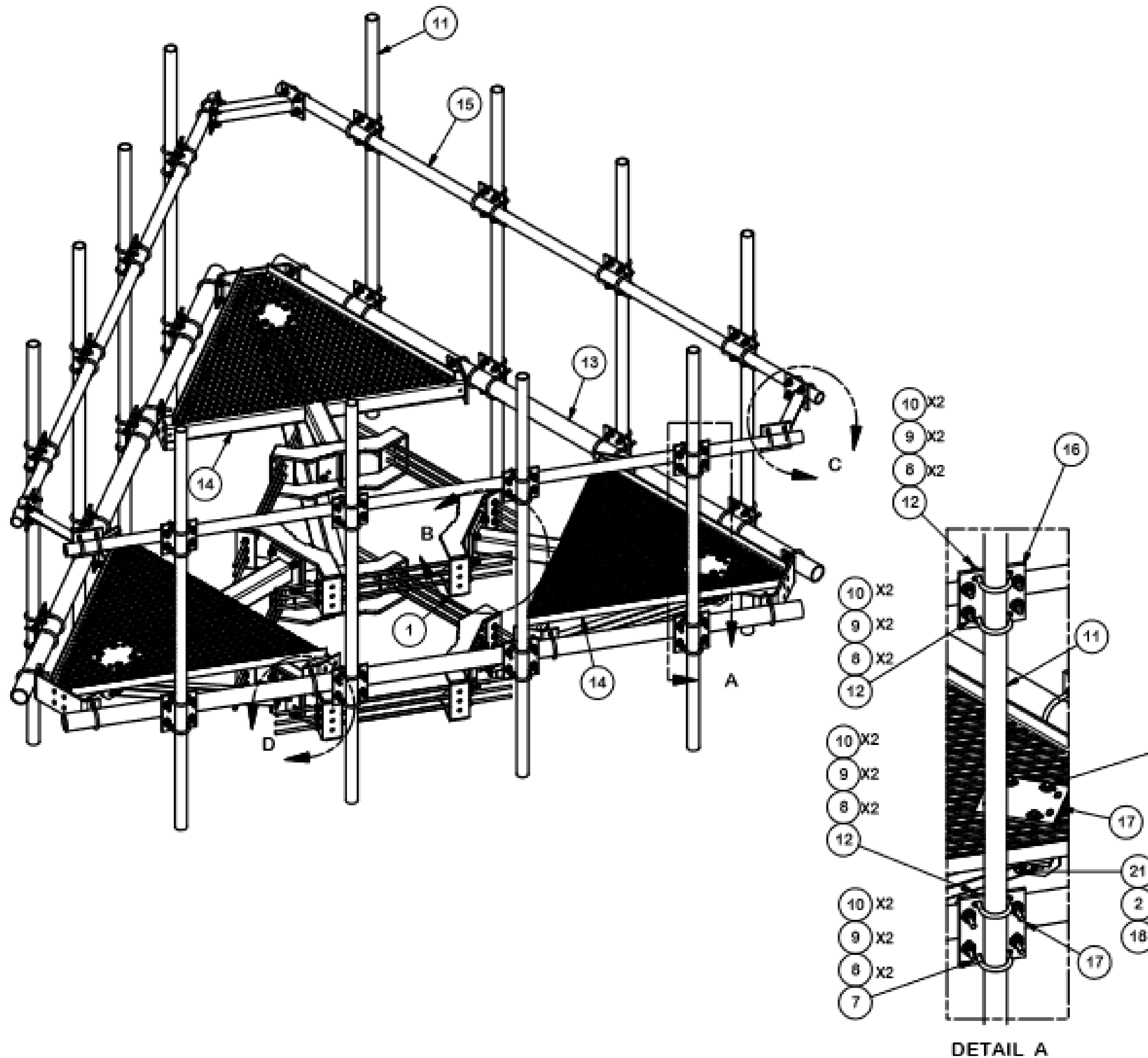
Engineering Support Team:
 1-888-753-7446

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

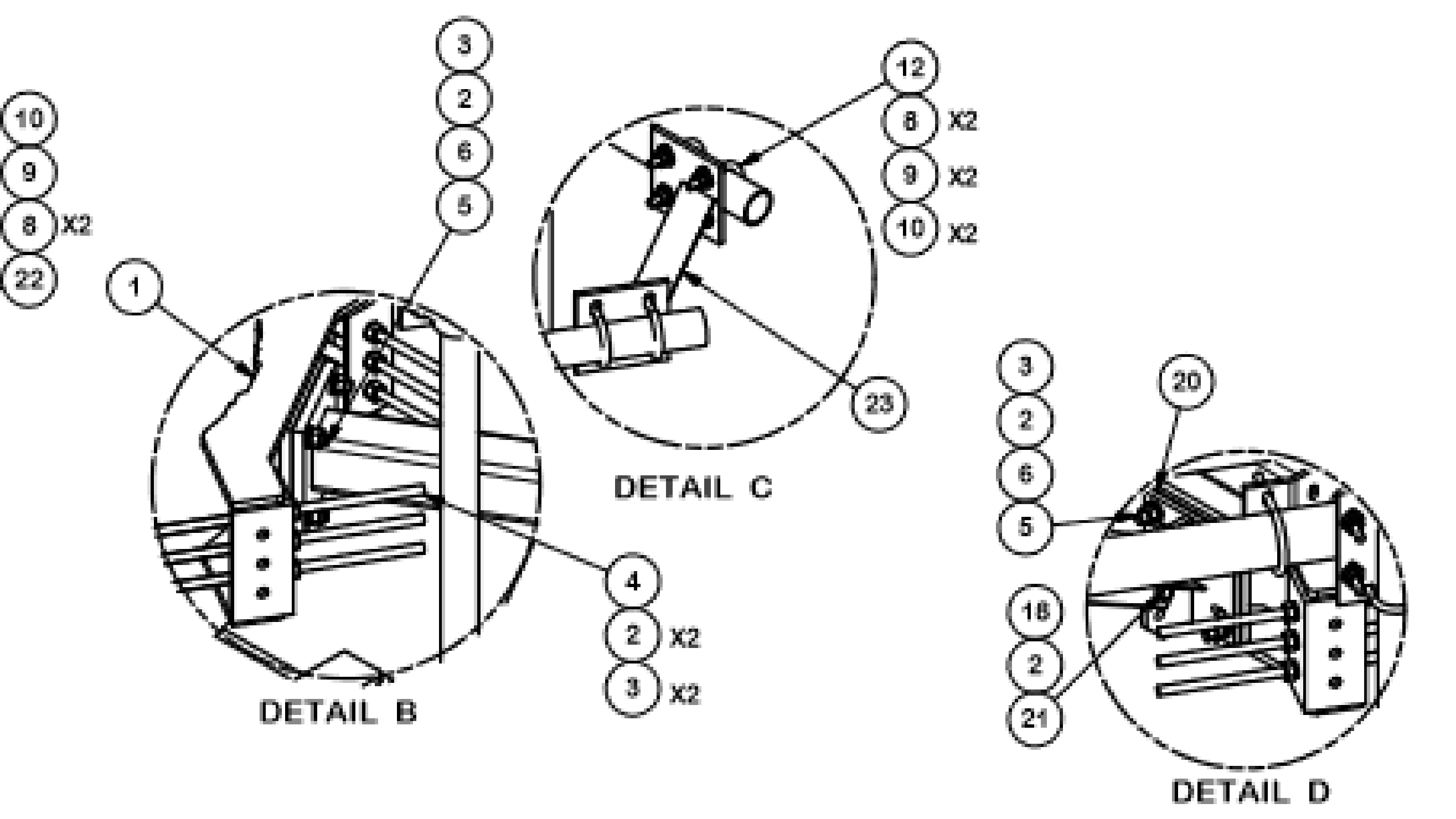
PART NO. RMQP-496-HK	1 OF 3
DWG. NO. RMQP-496-HK	

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED X-253992 TO X-TBW	4488	CEK	9/20/2018

REVISION HISTORY



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 12' 6" LOW PROFILE PLATFORM
 WITH TWELVE 2-3/8" ANTENNA MOUNTING
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CPD NO. 4488	DRAWN BY CEK 7/14/2014	ENG. APPROVAL
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SITE PRO 1
 A valmont COMPANY

Engineering Support Team:
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PART NO. RMQP-496-HK	1 OF 3
DWG. NO. RMQP-496-HK	

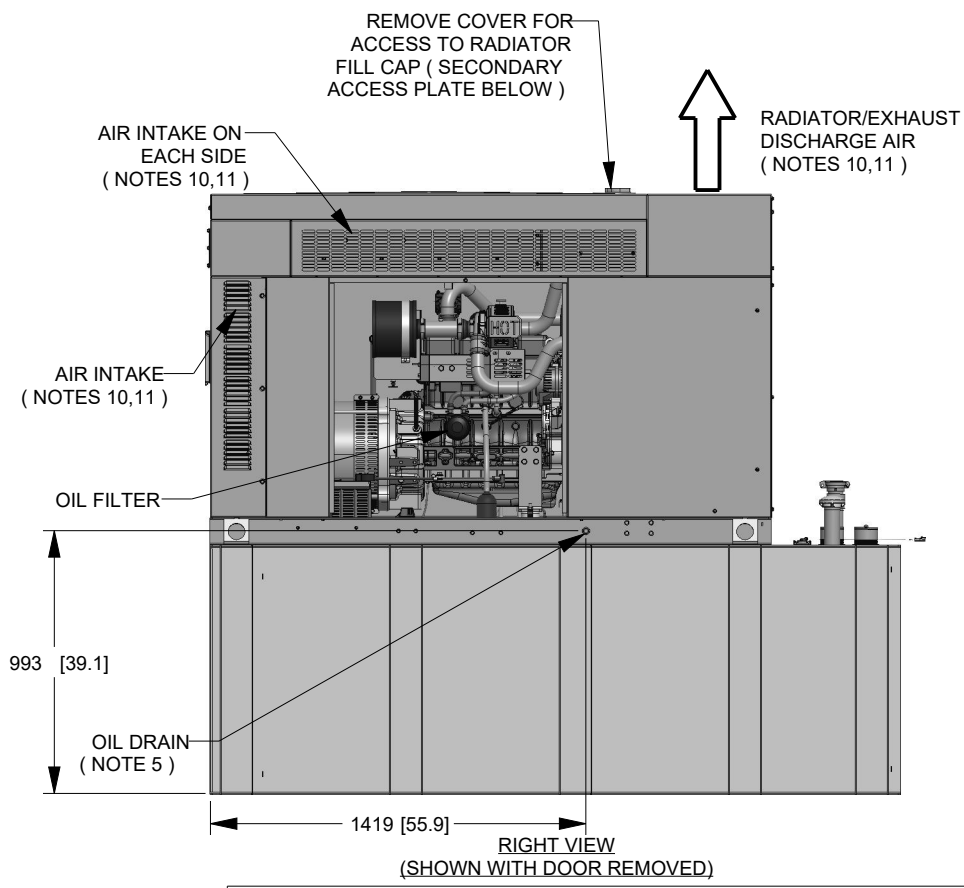
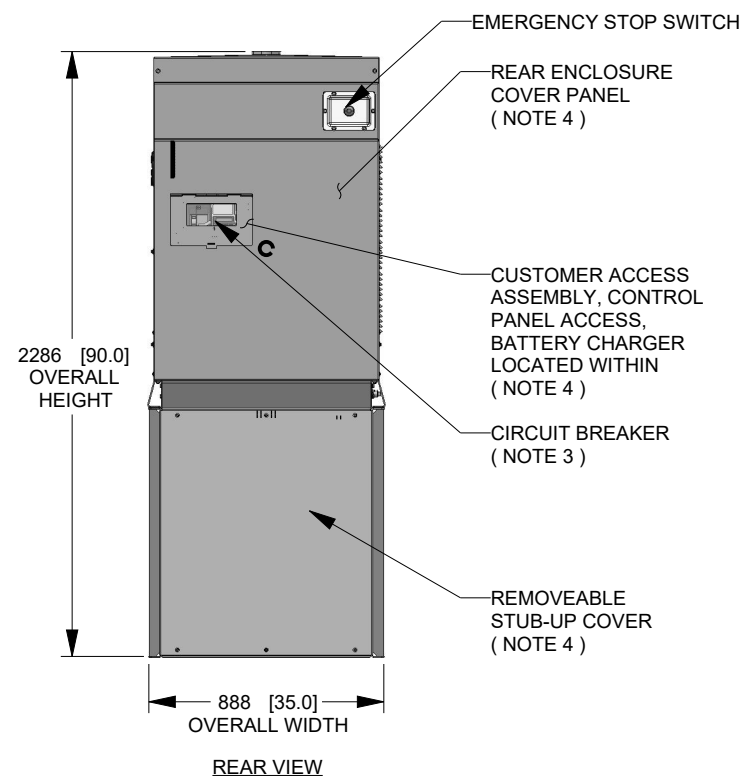
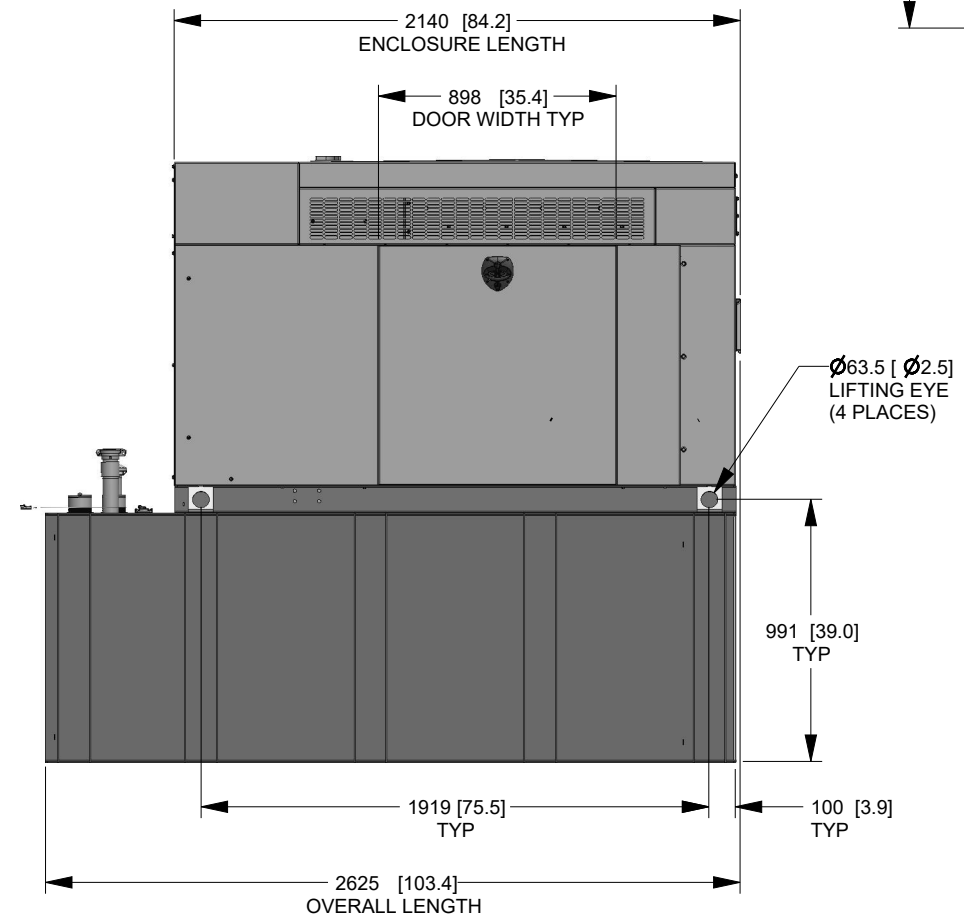
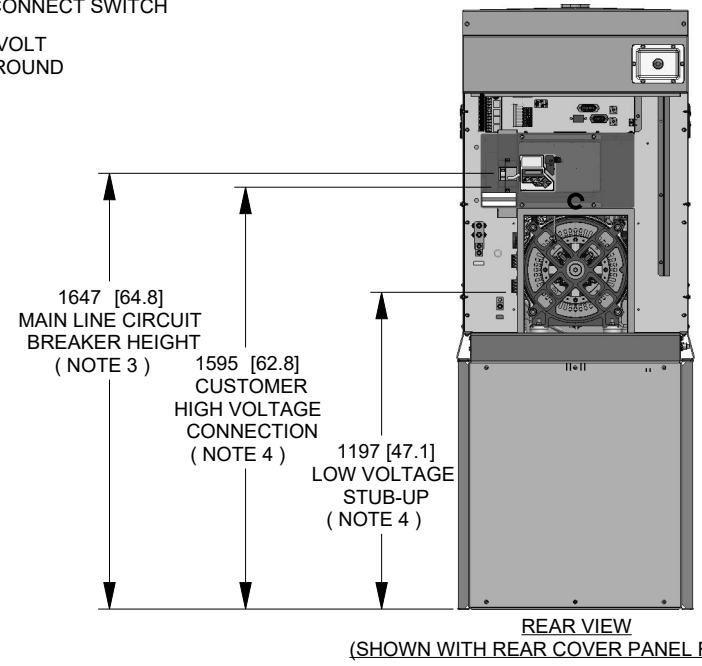
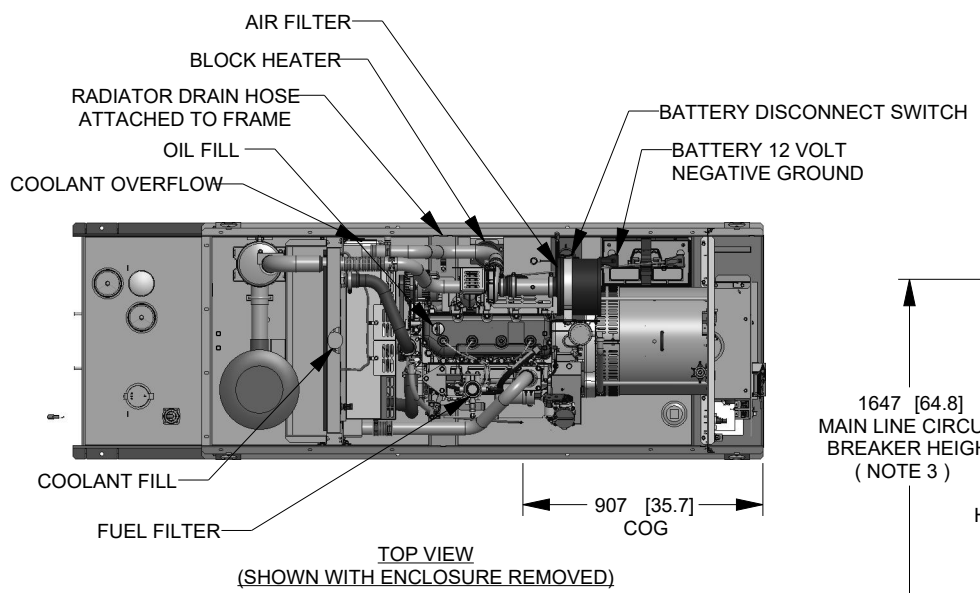
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED X-253992 TO X-TBW	4488	CEK	9/20/2018

REVISION HISTORY

WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1,322 [2,915]
WITH WOODEN SHIPPING SKID	1,340 [2,954]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCH]

- NOTES:
- THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
 - BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
 - CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
 - MAIN LINE CIRCUIT BREAKER 200 AMPS.
 - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
 - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
 - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER.
 - REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
 - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
 - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
 - ENGINE SERVICE CONNECTIONS:
 - OIL DRAIN = 1/2" NPT
 - RADIATOR DRAIN = HOSE CLAMPED TO FRAME
 - CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
 - BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
 - REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
 - MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
 - MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
 - GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER (3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
 - GENERATOR MUST BE GROUNDED.



DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

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ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC				
TITLE				
INSTALL D3.4L G16 48KW Y06 EXT				
ISSUE DATE:		8/8/18		
SIZE	CAGE NO	DWG NO	REV	
B	N/A	10000041950	A	
SCALE	0.035	WT-KG	SEE ABOVE	SHEET 1 of 2

4

3

SH

2/2

REV

A

WINDCHILL VERSION

A.1

1

2271 [89.4] TYP

259 [10.2] TYP
132 [5.2]

INNER TANK NORMAL VENT (2" NPT FEMALE)

INNER TANK EMERGENCY VENT (3" NPT FEMALE)

CUSTOMER OPTION (2" NPT FEMALE)

OUTER TANK LEAK DETECTOR

OUTER TANK EMERGENCY VENT (3" NPT FEMALE)

FUEL FILL (2" NPT FEMALE)

661 [26.0]
533 [21.0]
236 [9.3]

161 [6.3]
246 [9.7]

372 [14.6]

FUEL LEVEL GAUGE/SENDER

FUEL RETURN

FUEL SUPPLY

170 [6.7]

267 [10.5] TYP

62 [2.5]

253 [10.0]

2345 [92.3] TOP VIEW

718 [28.3]
786 [30.9]

HIGH AND LOW VOLTAGE STUB-UP AREA

125 [4.9] STUB-UP AREA

38 [1.5]

51 [2.0]

125 [4.9] STUB-UP AREA

FUEL TANK	
TOTAL CAPACITY	908 [240]
USABLE CAPACITY	867 [229]

CAPACITY: LITER [GALLON]
DIMENSIONS: MM [INCH]

TANK IS LISTED TO UL142 AND ULC5601

NOTE: STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.

LOCKING FUEL CAP

940 [37.0] FUEL TANK HEIGHT

110 [4.3] TYP

588 [23.2] TYP

1228 [48.3] TYP

1867 [73.5] TYP

2507 [98.7] TYP

2607 [102.6]

850 [33.5]

1043 [41.1]

REMOVABLE STUB-UP COVER SEE NOTE 4

Ø16.66 [.66] MTG HOLES (10 PLACES) SEE NOTE 9

19 [.7] TYP

851 [33.5] MTG CENTERS TYP

888 [35.0]

REAR VIEW

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

LEFT VIEW

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ELECTRONICALLY APPROVED
INSIDE WINDCHILL

TITLE

INSTALL D3.4L G16
48KW Y06 EXT

ISSUE DATE: 8/8/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A

SCALE	WT-KG	SHEET
0.060	SEE ABOVE	2 of 2

INSTALLATION DRAWING

4

3

2

1

RD048 | 3.4L | 48kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

Model Number
48kW: G0071940

Standby Power Rating

48 kW, 60 Hz

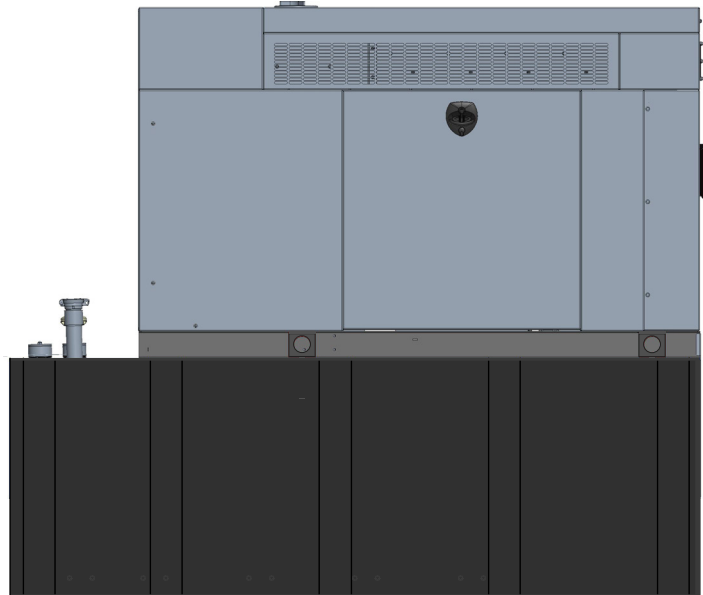


Image used for illustration purposes only



*Built in the USA using domestic and foreign parts

CODES AND STANDARDS

Not all codes and standards apply to all configurations.
Contact factory for details.



UL2200, UL508, UL489, UL142



CSA C22.2



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99



ISO 3046, 8528, 9001



NEMA ICS1, ICS10, MG1, 250, ICS6, AB1



ANSI/IEEE C62.41

POWERING AHEAD

For over 50 years, Generac has led the industry with innovative design and superior manufacturing. Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application. Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

INDUSTRIAL DIESEL GENERATOR SET

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STANDARD FEATURES

ENGINE SYSTEM

- Block Heater
- Oil Drain Extension
- Fan Guard
- Factory Filled Oil & Coolant

GENERATOR SET

- Sound Attenuated Aluminum Enclosure
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Wrapped Exhaust Piping
- Standard Factory Testing
- Ready to Accept Full Load in <10 Seconds
- External Emergency Stop Push Button

ENCLOSURE

- Lockable Doors- Keyed Lock with Padlock Hasp
- Rust Proof Hardware
- RhinoCoat™ Textured Polyester Powder Coat

Electrical System

- Battery
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Smart Battery Charger
- Battery Disconnect

ALTERNATOR SYSTEM

- 2/3 Pitch
- Skewed Stator
- Sealed Bearings
- Low Temperature Rise (<120°C)
- Low THD (<5%)

Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- Can Operate at up to 122°F (50°C) Ambient Temperature

Fuel System

- Primary Fuel Filter
- Stainless Steel Fuel Lines

FUEL TANKS

- 48 Minimum Hour Run Time
- UL142 Listed
- Lockable Fuel Cap

CONTROL SYSTEM



Evolution™ Controller

- Two-Line Plain Text LCD Display
- Programmable Start Delay Between 10-30 seconds
- 10 second Engine Start Sequence
- 5 second Engine Warm Up
- 1 minute Engine Cool-Down
- Starter Lock-Out
- Smart Battery Charger
- Automatic Voltage Regulation with Over and Under Protection
- Automatic Low Oil Pressure Shutdown
- Overspeed Shutdown
- High Temperature Shutdown
- Overcrank Protection
- Safety Fused
- Failure to Transfer Protection
- Low Battery Protection
- 50 Event Run Log
- Future Set Capable Exerciser
- Incorrect Wiring Protection
- Internal Fault Protection

- Common External Fault Capability
- Governor Failure Protection
- OBD2 Diagnostic Port

Alarms

- Door Open
- Fuel Level
 - 90% Full
 - 50% Low Fuel
 - 10% Shutdown
- Generator Running
- Not in Auto
- Common Shutdown

OPTIONAL SHIPPED LOOSE AND FIELD INSTALL KITS

GENERATOR SET

- Paint Kit
- Scheduled Maintenance Kit

FUEL TANK

- Fuel Fill Drop Tube
- Spill Box
- 90% Fuel Audible Alarm
- Tank Risers
- Spill Box Drainback Kit
- Vent Extension Support Kit
- Overfill Prevention Valve

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in ³ (L)	207.48 (3.4)
Bore - in (mm)	3.86 (98)
Stroke - in (mm)	4.45 (113)
Compression Ratio	18.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head	Cast Iron OHV
Piston Type	Aluminum

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Spin-On Canister
Crankcase Capacity - L (qts)	7.0 (7.4)

Cooling System

Cooling System Type	Pressurized Closed Recovery
Fan Type	Pusher
Fan Speed (rpm)	2,029
Fan Diameter - mm (in)	22 (559)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specification	ASTM
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line (mm/in)	7.94 (0.31) ID
Fuel Return Line (mm/in)	7.94 (0.31) ID
Fuel Filtering (microns)	10

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	Group 27F
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Generac
Poles	4
Field Type	Rotating
Insulation Class - Rotor	F
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Direct
Bearings	Sealed Ball
Coupling	Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Regulation Accuracy (Steady State)	±1.0%

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

OPERATING DATA

POWER RATINGS

		Standby	
Single-Phase 120/240 VAC @1.0pf	48 kW	Amps: 200	Circuit Breaker Size Amps: 200

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip at 30%

120/240 V, Single-Phase at 0.4pf	189
----------------------------------	-----

FUEL CONSUMPTION RATES*

Percent Load	Diesel gal/hr (L/hr)
25%	1.35 (5.11)
50%	2.15 (8.14)
75%	3.06 (11.58)
100%	3.98 (15.07)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Air Flow (Radiator and Alternator)	cfm (m³/min)	2824 (80)
Coolant System Capacity	gal (l)	2.8 (10.6)
Heat Rejection to Coolant	BTU/hr (MJ/hr)	135,900 (143.4)
Temperature Deration	3% for every 5°C above 25°C or 1.7% for every 5°F over 77°F	
Altitude Deration	1% for every 100 m above 915 or 3% for every 1000 ft over 3000 ft	
Maximum Ambient Temperature Operating Range	°F (°C)	-20 - 122 (-28 - 50)
Maximum Radiator Backpressure	in H ₂ O	0.5

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m³/min)	190 (5.38)

ENGINE

		Standby
Rated Engine Speed	rpm	1800

EXHAUST

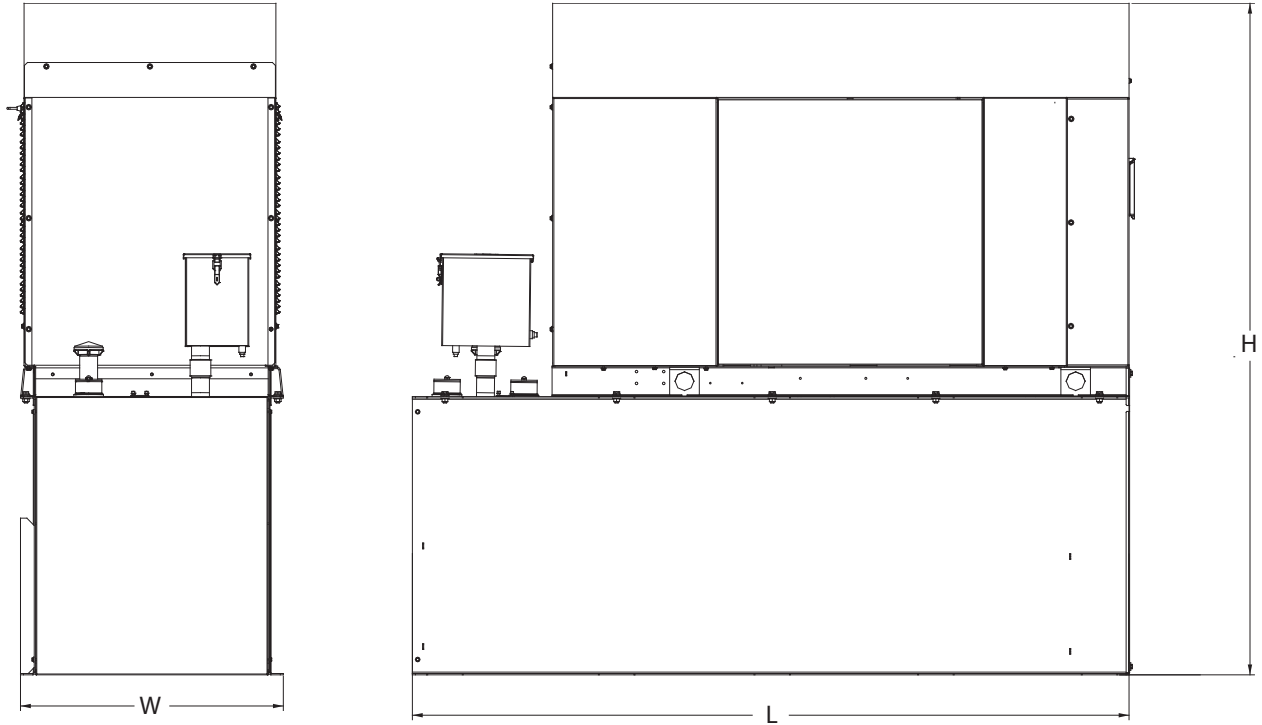
		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	448 (12.7)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1120 (604.4)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

DIMENSIONS AND WEIGHTS*



Weights and Dimensions

Unit Weight - lbs	Unit Weight with Skid - lbs	Dimensions (L x W x H) - in
2,915	2,954	103.4 (2,625) x 35.0 (888) x 90.0 (2,286)

48kW Fuel Consumption

Fuel Tank Gross Total Capacity	240
Fuel Tank Gross Usable Capacity	229
Fuel Tank Net Usable Capacity (Run Hours Based on Net Usable Capacity)	206
Run Hours 100% Load	52
Run Hours 75% Load	67
Run Hours 50% Load	96

* All measurements are approximate and for estimation purposes only.

Sound Emission Data

Rated Load Sound Output at 23ft - dB(A)	65
---	----

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

Exhibit D

Structural Analysis Report

Date: **February 18, 2022**



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

Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Site Number: CTNL200A

Crown Castle Designation: **BU Number:** 842423
Site Name: WINDHAM NORTH RIDGE ROAD
JDE Job Number: 671709
Work Order Number: 2081386
Order Number: 573238 Rev. 4

Engineering Firm Designation: **B+T Group Project Number:** 95362.017.01

Site Data: **10 North Ridge Drive, Windham, Windham County, CT**
Latitude 41° 44' 23.53", Longitude -72° 10' 22.47"
88.7 Foot - Monopole Tower

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

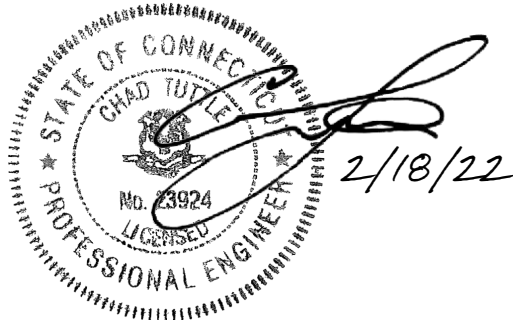
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 68.4%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Dominique E. Jones

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



Chad E. Tuttle, P.E.

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2) ANALYSIS CRITERIA

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Table 4 - Section Capacity (Summary)

Table 5 – Tower Component Stresses vs. Capacity - LC7

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is an 88.7 ft. Monopole tower designed by Engineered Endeavors Incorporated.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
64.0	64.0	1	Site Pro1	RMQP-496-HK Platform Mount	3	1-5/8
		3	Ericsson	AIR6449 B41_T-MOBILE		
		3	Commscope	VV-65A-R1_TMO		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
		3	Rfs Celwave	APXVAALL24_43-U-NA20_TMO		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
84.0	84.0	3	Cci Antennas	DMP65R-BU8D	12 6 3	1-5/8 7/8 3/8
		3	Cci Antennas	OPA-65R-LCUU-H8		
		3	Cci Antennas	OPA65R-BU8D		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14_CCIV2		
		3	Ericsson	RRUS 8843 B2/B66A_CCIV2		
		3	Ericsson	RRUS E2 B29		
		3	Ericsson	RRUS-32 B30		
		3	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		
		3	Raycap	DC6-48-60-18-8C-EV		
		1	--	Platform Mount [LP 715-1_KCKR]		
74.0	75.0	3	Antel	BXA-70063/6CF	8	1-5/8
		6	Commscope	NHH-65B-R2B		
		1	Raycap	RRFDC-3315-PF-48		
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	Samsung Telecomm.	MT6407-77A		
		3	Samsung Telecomm.	RF4439D-25A		
		3	Samsung Telecomm.	RF4440D-13A		
	74.0	1	--	Platform Mount [LP 303-1]		
	3	Commscope	BSAMNT-SBS-1-2			

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	4943145	CCI Sites
Foundation Drawing	4712164	CCI Sites
Geotech Report	4290426	CCI Sites
Crown CAD Package	Date: 10/12/2021	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

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

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	88.7 - 47.57	Pole	TP30.46x21.89x0.25	1	-16.560	1428.483	46.7	Pass
L2	47.57 - 0	Pole	TP39.75x29.058x0.313	2	-27.317	2402.767	68.4	Pass
							Summary	
						Pole (L2)	68.4	Pass
						Rating =	68.4	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	Base	50.0	Pass
1,2	Base Plate	Base	66.5	Pass
1,2	Base Foundation (Structure)	Base	52.1	Pass
1,2	Base Foundation (Soil Interaction)	Base	53.5	Pass

Structure Rating (max from all components) =	68.4%
---	--------------

Notes:

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

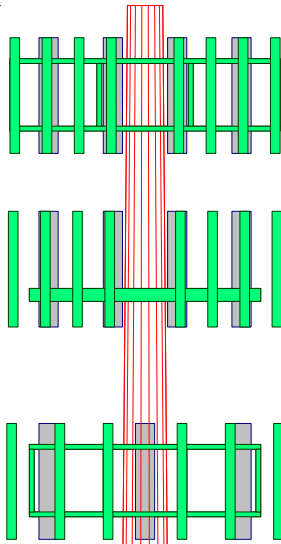
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

88.7 ft



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 68.4%

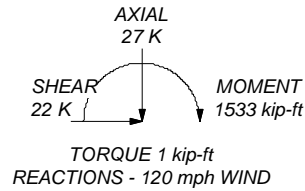
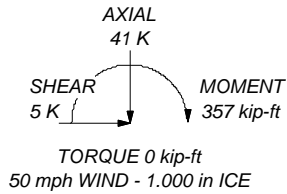
Section	1	2
Length (ft)	41.130	51.900
Number of Sides	18	18
Thickness (in)	0.250	0.313
Socket Length (ft)	4.330	29.058
Top Dia (in)	21.890	39.750
Bot Dia (in)	30.460	
Grade	A572-65	
Weight (K)	2.9	6.0


47.6 ft

0.0 ft



ALL REACTIONS ARE FACTORED



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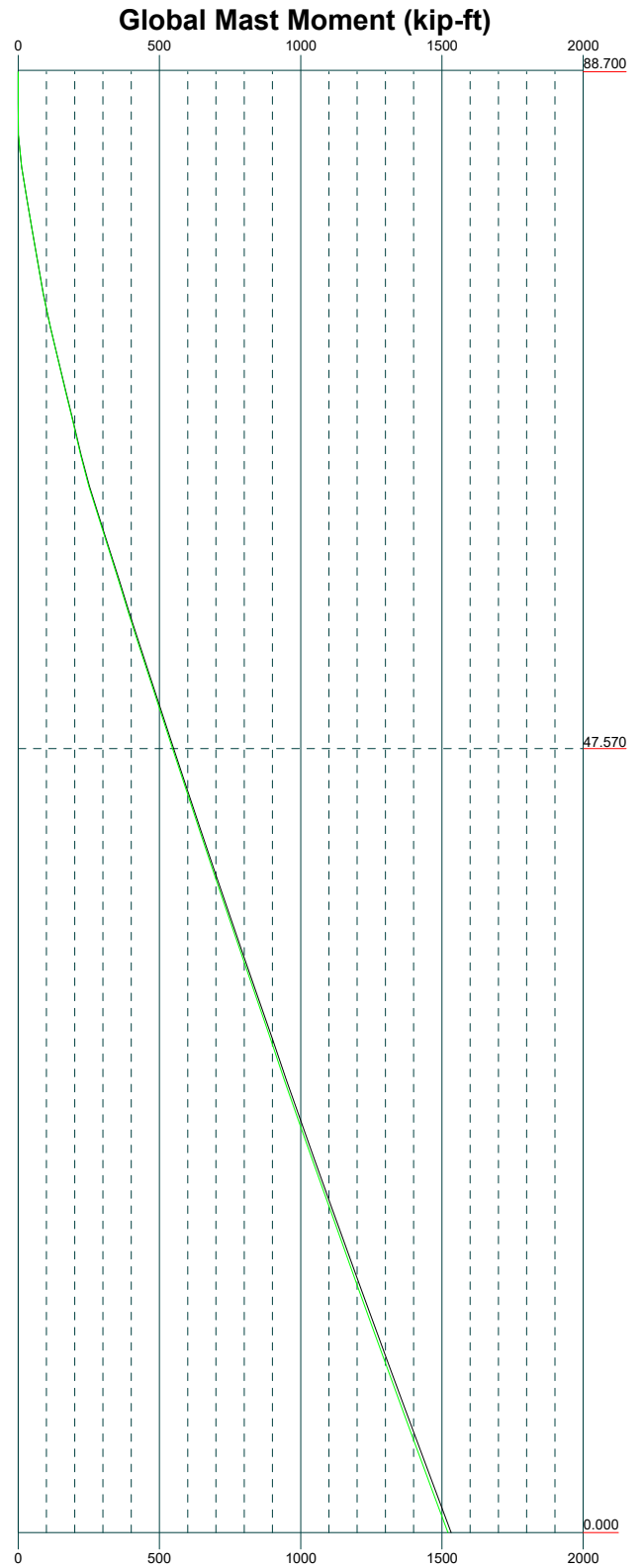
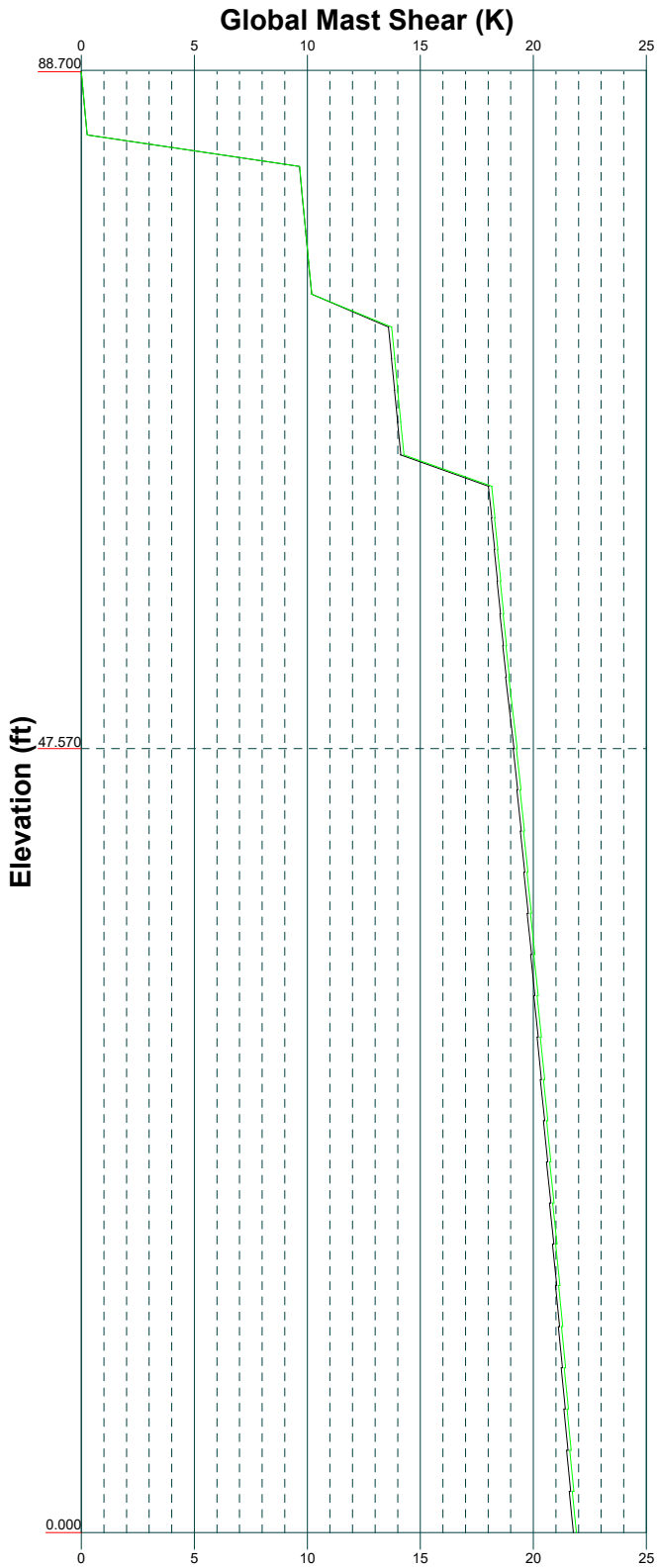
Job: 95362.017.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 84242)		
Project:		
Client: Crown Castle	Drawn by: S Shetty	App'd:
Code: TIA-222-H	Date: 02/17/22	Scale: NTS
Path:		Dwg No. E-1

Vx

Vz

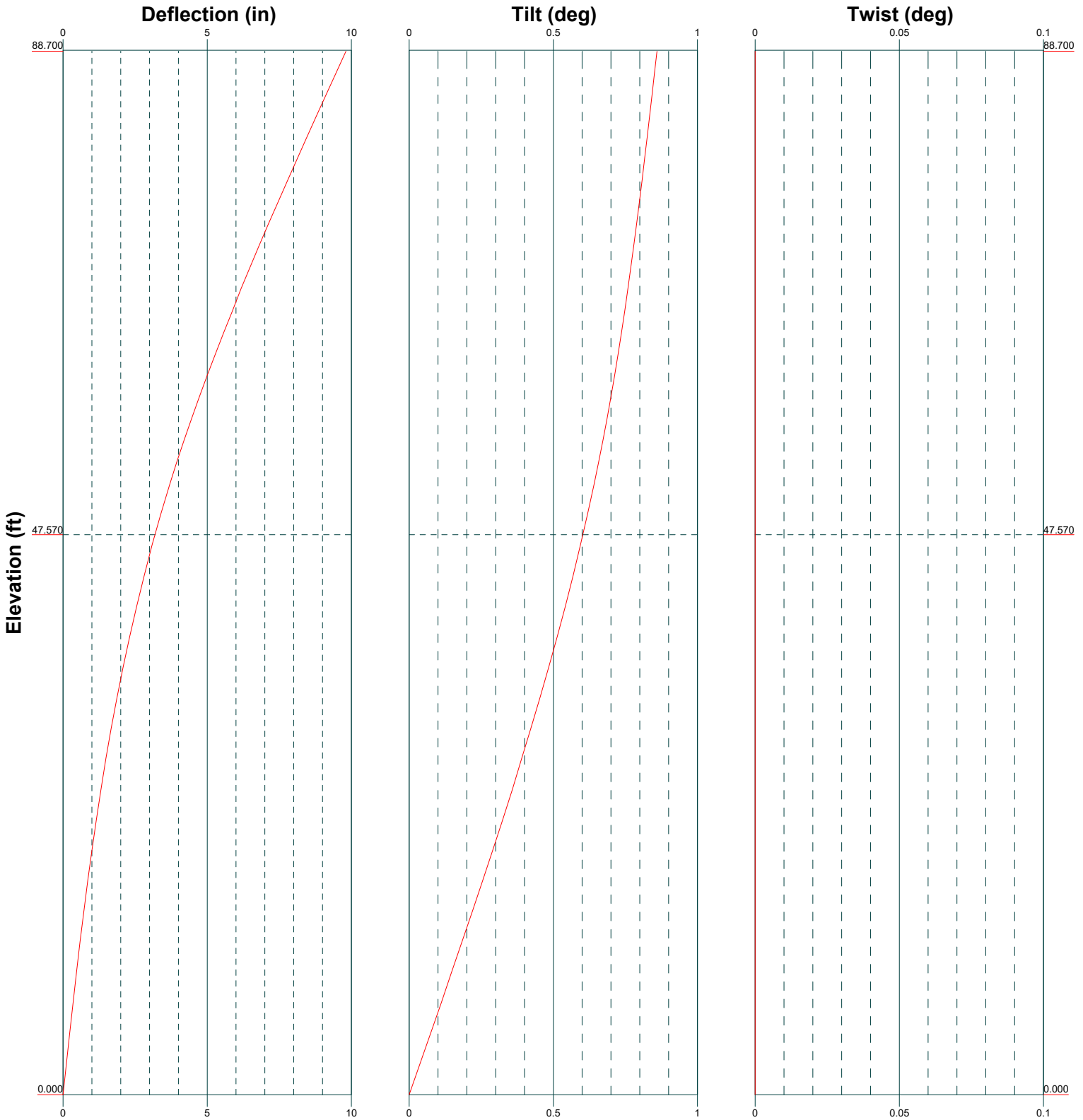
Mx

Mz



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Project:		
Client: Crown Castle	Drawn by: S Shetty	App'd:
Code: TIA-222-H	Date: 02/17/22	Scale: NTS
Path:	Dwg No. E-4	



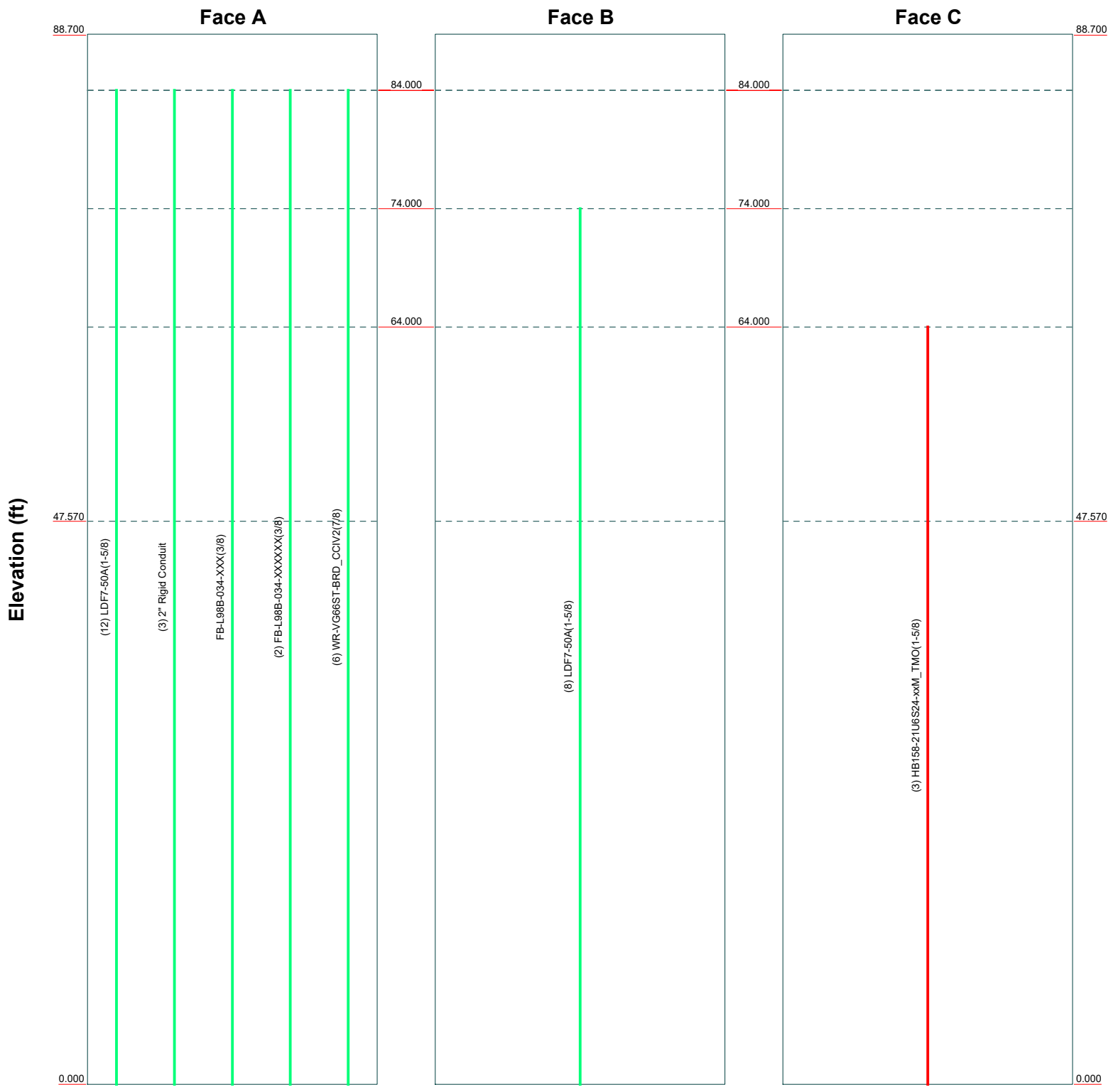
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Project:		
Client: Crown Castle	Drawn by: S Shetty	App'd:
Code: TIA-222-H	Date: 02/17/22	Scale: NTS
Path:	Dwg No. E-5	

Feed Line Distribution Chart

0' - 88'8-13/32"

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




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Project:		
Client: Crown Castle	Drawn by: S Shetty	App'd:
Code: TIA-222-H	Date: 02/17/22	Scale: NTS
Path:	Dwg No. E-7	

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 95362.017.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 842423)</p>	<p>Page 1 of 16</p>
	<p>Project</p>	<p>Date 16:33:46 02/17/22</p>
	<p>Client Crown Castle</p>	<p>Designed by S Shetty</p>

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower is located in Windham County, Connecticut.
- Tower base elevation above sea level: 313.000 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TIA-222-H Annex S.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 95362.017.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 842423)	Page 2 of 16
	Project	Date 16:33:46 02/17/22
	Client Crown Castle	Designed by S Shetty

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	88.700-47.570	41.130	4.330	18	21.890	30.460	0.250	1.000	A572-65 (65 ksi)
L2	47.570-0.000	51.900		18	29.058	39.750	0.313	1.250	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I _t /Q in ²	w in	w/t
L1	22.189	17.171	1015.912	7.682	11.120	91.358	2033.161	8.587	3.413	13.651
	30.891	23.972	2763.991	10.725	15.474	178.625	5531.618	11.988	4.921	19.684
L2	30.364	28.512	2976.420	10.205	14.761	201.636	5956.757	14.259	4.564	14.605
	40.315	39.117	7686.392	14.000	20.193	380.646	15382.898	19.562	6.446	20.627

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
88.700-47.570				1	1	1			
47.570-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
HB158-21U6S24-xxM_T MO(1-5/8)	C	No	Surface Ar (CaAa)	64.000 - 0.000	3	3	0.000 - 0.150	1.996		0.003

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf	
LDF7-50A(1-5/8)	A	No	No	Inside Pole	84.000 - 0.000	12	0.000	0.001	
2" Rigid Conduit	A	No	No	Inside Pole	84.000 - 0.000	3	No Ice	0.000	
							1/2" Ice	0.000	
							1" Ice	0.000	
							No Ice	0.000	0.003

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf	
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	84.000 - 0.000	1	1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
FB-L98B-034-XXX XXX(3/8)	A	No	No	Inside Pole	84.000 - 0.000	2	1" Ice	0.000	0.000
							No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
WR-VG66ST-BRD_ CCIV2(7/8)	A	No	No	Inside Pole	84.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							* LDF7-50A(1-5/8)	B	No
1/2" Ice	0.000	0.001							
1" Ice	0.000	0.001							
* *									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	88.700-47.570	A	0.000	0.000	0.000	0.000	0.863
		B	0.000	0.000	0.000	0.000	0.173
		C	0.000	0.000	9.838	0.000	0.123
L2	47.570-0.000	A	0.000	0.000	0.000	0.000	1.126
		B	0.000	0.000	0.000	0.000	0.312
		C	0.000	0.000	28.485	0.000	0.357

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	88.700-47.570	A	0.913	0.000	0.000	0.000	0.000	0.863
		B		0.000	0.000	0.000	0.000	0.173
		C		0.000	0.000	16.047	0.000	0.234
L2	47.570-0.000	A	0.822	0.000	0.000	0.000	0.000	1.126
		B		0.000	0.000	0.000	0.000	0.312
		C		0.000	0.000	46.462	0.000	0.678

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in

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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L1	88.700-47.570	-0.310	1.959	-0.275	1.733
L2	47.570-0.000	-0.628	3.964	-0.546	3.449

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	11	HB158-21U6S24-xxM_TMO (1-5/8)	47.57 - 64.00	1.0000	1.0000
L2	11	HB158-21U6S24-xxM_TMO (1-5/8)	0.00 - 47.57	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	CA _{AA} Front	CA _{AA} Side	Weight	
			ft ft ft	°	ft	ft ²	ft ²	K	
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	84.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	84.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	84.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
OPA65R-BU8D w/ Mount Pipe	A	From Leg	4.000	0.000	84.000	No Ice	17.460	8.580	0.109
			0.000			1/2" Ice	18.460	9.490	0.224
			0.000			1" Ice	19.480	10.420	0.353
OPA65R-BU8D w/ Mount Pipe	B	From Leg	4.000	0.000	84.000	No Ice	17.460	8.580	0.109
			0.000			1/2" Ice	18.460	9.490	0.224
			0.000			1" Ice	19.480	10.420	0.353
OPA65R-BU8D w/ Mount Pipe	C	From Leg	4.000	0.000	84.000	No Ice	17.460	8.580	0.109
			0.000			1/2" Ice	18.460	9.490	0.224
			0.000			1" Ice	19.480	10.420	0.353
OPA-65R-LCUU-H8 w/ Mount Pipe	A	From Leg	4.000	0.000	84.000	No Ice	11.930	8.060	0.103
			0.000			1/2" Ice	12.880	8.960	0.191
			0.000			1" Ice	13.840	9.890	0.292
OPA-65R-LCUU-H8 w/ Mount Pipe	B	From Leg	4.000	0.000	84.000	No Ice	11.930	8.060	0.103
			0.000			1/2" Ice	12.880	8.960	0.191
			0.000			1" Ice	13.840	9.890	0.292

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
OPA-65R-LCUU-H8 w/ Mount Pipe	C	From Leg	4.000	0.000	84.000	No Ice	11.930	8.060	0.103
			0.000	0.000	84.000	1/2" Ice	12.880	8.960	0.191
			0.000	0.000	84.000	1" Ice	13.840	9.890	0.292
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.000	0.000	84.000	No Ice	15.890	7.890	0.139
			0.000	0.000	84.000	1/2" Ice	16.810	8.740	0.252
			0.000	0.000	84.000	1" Ice	17.760	9.600	0.380
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.000	0.000	84.000	No Ice	15.890	7.890	0.139
			0.000	0.000	84.000	1/2" Ice	16.810	8.740	0.252
			0.000	0.000	84.000	1" Ice	17.760	9.600	0.380
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.000	0.000	84.000	No Ice	15.890	7.890	0.139
			0.000	0.000	84.000	1/2" Ice	16.810	8.740	0.252
			0.000	0.000	84.000	1" Ice	17.760	9.600	0.380
(2) LGP21401	A	From Leg	4.000	0.000	84.000	No Ice	1.104	0.207	0.014
			0.000	0.000	84.000	1/2" Ice	1.239	0.274	0.021
			0.000	0.000	84.000	1" Ice	1.381	0.348	0.030
(2) LGP21401	B	From Leg	4.000	0.000	84.000	No Ice	1.104	0.207	0.014
			0.000	0.000	84.000	1/2" Ice	1.239	0.274	0.021
			0.000	0.000	84.000	1" Ice	1.381	0.348	0.030
(2) LGP21401	C	From Leg	4.000	0.000	84.000	No Ice	1.104	0.207	0.014
			0.000	0.000	84.000	1/2" Ice	1.239	0.274	0.021
			0.000	0.000	84.000	1" Ice	1.381	0.348	0.030
RRUS-32 B30	A	From Leg	4.000	0.000	84.000	No Ice	3.314	2.424	0.077
			0.000	0.000	84.000	1/2" Ice	3.558	2.638	0.105
			0.000	0.000	84.000	1" Ice	3.809	2.860	0.136
RRUS-32 B30	B	From Leg	4.000	0.000	84.000	No Ice	3.314	2.424	0.077
			0.000	0.000	84.000	1/2" Ice	3.558	2.638	0.105
			0.000	0.000	84.000	1" Ice	3.809	2.860	0.136
RRUS-32 B30	C	From Leg	4.000	0.000	84.000	No Ice	3.314	2.424	0.077
			0.000	0.000	84.000	1/2" Ice	3.558	2.638	0.105
			0.000	0.000	84.000	1" Ice	3.809	2.860	0.136
RRUS E2 B29	A	From Leg	4.000	0.000	84.000	No Ice	3.145	1.285	0.060
			0.000	0.000	84.000	1/2" Ice	3.365	1.438	0.083
			0.000	0.000	84.000	1" Ice	3.592	1.600	0.110
RRUS E2 B29	B	From Leg	4.000	0.000	84.000	No Ice	3.145	1.285	0.060
			0.000	0.000	84.000	1/2" Ice	3.365	1.438	0.083
			0.000	0.000	84.000	1" Ice	3.592	1.600	0.110
RRUS E2 B29	C	From Leg	4.000	0.000	84.000	No Ice	3.145	1.285	0.060
			0.000	0.000	84.000	1/2" Ice	3.365	1.438	0.083
			0.000	0.000	84.000	1" Ice	3.592	1.600	0.110
DC6-48-60-18-8C-EV	A	From Leg	2.000	0.000	84.000	No Ice	2.736	2.736	0.026
			0.000	0.000	84.000	1/2" Ice	2.962	2.962	0.052
			0.000	0.000	84.000	1" Ice	3.195	3.195	0.082
DC6-48-60-18-8C-EV	B	From Leg	2.000	0.000	84.000	No Ice	2.736	2.736	0.026
			0.000	0.000	84.000	1/2" Ice	2.962	2.962	0.052
			0.000	0.000	84.000	1" Ice	3.195	3.195	0.082
DC6-48-60-18-8C-EV	C	From Leg	2.000	0.000	84.000	No Ice	2.736	2.736	0.026
			0.000	0.000	84.000	1/2" Ice	2.962	2.962	0.052
			0.000	0.000	84.000	1" Ice	3.195	3.195	0.082
RRUS 4478 B14_CCIV2	A	From Leg	4.000	0.000	84.000	No Ice	2.021	1.246	0.059
			0.000	0.000	84.000	1/2" Ice	2.200	1.396	0.077
			0.000	0.000	84.000	1" Ice	2.386	1.554	0.097
RRUS 4478 B14_CCIV2	B	From Leg	4.000	0.000	84.000	No Ice	2.021	1.246	0.059
			0.000	0.000	84.000	1/2" Ice	2.200	1.396	0.077
			0.000	0.000	84.000	1" Ice	2.386	1.554	0.097
RRUS 4478 B14_CCIV2	C	From Leg	4.000	0.000	84.000	No Ice	2.021	1.246	0.059
			0.000	0.000	84.000	1/2" Ice	2.200	1.396	0.077
			0.000	0.000	84.000	1" Ice	2.386	1.554	0.097

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	0.000	84.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			0.000				1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	0.000	84.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			0.000				1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	0.000	84.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			0.000				1" Ice	2.328	1.727	0.111
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.000	0.000	0.000	84.000	No Ice	1.980	1.695	0.075
			0.000				1/2" Ice	2.157	1.861	0.096
			0.000				1" Ice	2.341	2.035	0.119
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.000	0.000	0.000	84.000	No Ice	1.980	1.695	0.075
			0.000				1/2" Ice	2.157	1.861	0.096
			0.000				1" Ice	2.341	2.035	0.119
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.000	0.000	0.000	84.000	No Ice	1.980	1.695	0.075
			0.000				1/2" Ice	2.157	1.861	0.096
			0.000				1" Ice	2.341	2.035	0.119
6' x 2" Mount Pipe	A	From Leg	2.000	0.000	0.000	84.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			3.000				1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	2.000	0.000	0.000	84.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			3.000				1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	2.000	0.000	0.000	84.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			3.000				1" Ice	2.294	2.294	0.048
Platform Mount [LP 715-1_KCKR]	C	None		0.000	0.000	84.000	No Ice	57.990	57.990	2.050
							1/2" Ice	64.470	64.470	3.301
							1" Ice	71.360	71.360	4.691
*										
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	74.000	No Ice	7.340	5.510	0.058
			0.000				1/2" Ice	8.080	6.220	0.115
			1.000				1" Ice	8.830	6.940	0.183
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	74.000	No Ice	7.340	5.510	0.058
			0.000				1/2" Ice	8.080	6.220	0.115
			1.000				1" Ice	8.830	6.940	0.183
BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	74.000	No Ice	7.340	5.510	0.058
			0.000				1/2" Ice	8.080	6.220	0.115
			1.000				1" Ice	8.830	6.940	0.183
RRFDC-3315-PF-48	A	From Leg	4.000	0.000	0.000	74.000	No Ice	3.364	2.192	0.021
			0.000				1/2" Ice	3.597	2.395	0.050
			1.000				1" Ice	3.838	2.606	0.082
DB-T1-6Z-8AB-0Z	A	From Leg	1.000	0.000	0.000	74.000	No Ice	4.800	2.000	0.044
			0.000				1/2" Ice	5.070	2.193	0.080
			1.000				1" Ice	5.348	2.393	0.120
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	74.000	No Ice	4.090	3.290	0.069
			0.000				1/2" Ice	4.480	3.670	0.132
			1.000				1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	74.000	No Ice	4.090	3.290	0.069
			0.000				1/2" Ice	4.480	3.670	0.132
			1.000				1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	74.000	No Ice	4.090	3.290	0.069
			0.000				1/2" Ice	4.480	3.670	0.132
			1.000				1" Ice	4.880	4.060	0.205
MT6407-77A w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	74.000	No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136

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	Client		Crown Castle		Designed by		S Shetty	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
MT6407-77A w/ Mount Pipe	B	From Leg	1.000		0.000	74.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136
MT6407-77A w/ Mount Pipe	C	From Leg	1.000		0.000	74.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136
RF4439D-25A	A	From Leg	1.000		0.000	74.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	1.865	1.252	0.075
			0.000				1/2" Ice	2.035	1.394	0.093
RF4439D-25A	B	From Leg	1.000		0.000	74.000	1" Ice	2.212	1.544	0.114
			4.000				No Ice	1.865	1.252	0.075
			0.000				1/2" Ice	2.035	1.394	0.093
RF4439D-25A	C	From Leg	1.000		0.000	74.000	1" Ice	2.212	1.544	0.114
			4.000				No Ice	1.865	1.252	0.075
			0.000				1/2" Ice	2.035	1.394	0.093
RF4440D-13A	A	From Leg	1.000		0.000	74.000	1" Ice	2.212	1.544	0.114
			4.000				No Ice	1.865	1.129	0.073
			0.000				1/2" Ice	2.035	1.267	0.090
RF4440D-13A	B	From Leg	1.000		0.000	74.000	1" Ice	2.212	1.411	0.110
			4.000				No Ice	1.865	1.129	0.073
			0.000				1/2" Ice	2.035	1.267	0.090
RF4440D-13A	C	From Leg	1.000		0.000	74.000	1" Ice	2.212	1.411	0.110
			4.000				No Ice	1.865	1.129	0.073
			0.000				1/2" Ice	2.035	1.267	0.090
Platform Mount [LP 303-1]	C	None	1.000		0.000	74.000	1" Ice	2.212	1.411	0.110
							No Ice	14.690	14.690	1.250
							1/2" Ice	18.010	18.010	1.569
Side Arm Mount [SO 102-3]	C	None			0.000	74.000	1" Ice	21.340	21.340	1.942
							No Ice	3.600	3.600	0.075
							1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135	
*										
VV-65A-R1_TMO w/ Mount Pipe	A	From Leg	4.000		0.000	64.000	No Ice	4.460	2.690	0.054
			0.000				1/2" Ice	4.910	3.100	0.097
			0.000				1" Ice	5.360	3.520	0.149
VV-65A-R1_TMO w/ Mount Pipe	B	From Leg	4.000		0.000	64.000	No Ice	4.460	2.690	0.054
			0.000				1/2" Ice	4.910	3.100	0.097
			0.000				1" Ice	5.360	3.520	0.149
VV-65A-R1_TMO w/ Mount Pipe	C	From Leg	4.000		0.000	64.000	No Ice	4.460	2.690	0.054
			0.000				1/2" Ice	4.910	3.100	0.097
			0.000				1" Ice	5.360	3.520	0.149
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000		0.000	64.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000		0.000	64.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000		0.000	64.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.000		0.000	64.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			0.000				1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.000		0.000	64.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			0.000				1" Ice	16.230	8.250	0.453

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			Vert						
			ft	ft	°	ft	ft ²	ft ²	K
			ft						
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	64.000	No Ice 14.690	6.870	0.183
			0.000				1/2" Ice 15.460	7.550	0.311
			0.000				1" Ice 16.230	8.250	0.453
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000	0.000	0.000	64.000	No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			0.000				1" Ice 2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000	0.000	0.000	64.000	No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			0.000				1" Ice 2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000	0.000	0.000	64.000	No Ice 2.139	1.686	0.109
			0.000				1/2" Ice 2.321	1.850	0.131
			0.000				1" Ice 2.511	2.022	0.156
Radio 4480_TMOV2	A	From Leg	4.000	0.000	0.000	64.000	No Ice 2.878	1.397	0.081
			0.000				1/2" Ice 3.091	1.558	0.103
			0.000				1" Ice 3.312	1.727	0.128
Radio 4480_TMOV2	B	From Leg	4.000	0.000	0.000	64.000	No Ice 2.878	1.397	0.081
			0.000				1/2" Ice 3.091	1.558	0.103
			0.000				1" Ice 3.312	1.727	0.128
Radio 4480_TMOV2	C	From Leg	4.000	0.000	0.000	64.000	No Ice 2.878	1.397	0.081
			0.000				1/2" Ice 3.091	1.558	0.103
			0.000				1" Ice 3.312	1.727	0.128
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	0.000	64.000	No Ice 1.188	1.188	0.018
			0.000				1/2" Ice 1.496	1.496	0.027
			0.000				1" Ice 1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	0.000	64.000	No Ice 1.188	1.188	0.018
			0.000				1/2" Ice 1.496	1.496	0.027
			0.000				1" Ice 1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	0.000	64.000	No Ice 1.188	1.188	0.018
			0.000				1/2" Ice 1.496	1.496	0.027
			0.000				1" Ice 1.807	1.807	0.040
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	64.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	64.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	64.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
RMQP-496-HK	C	None		0.000	0.000	64.000	No Ice 23.140	23.140	1.945
							1/2" Ice 28.170	28.170	2.335
							1" Ice 33.200	33.200	2.725

*

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	88.7 - 47.57	Pole	Max Tension	27	0.000	0.000	-0.001
			Max. Compression	26	-28.978	0.000	0.364
			Max. Mx	8	-16.573	-464.097	0.052
			Max. My	2	-16.560	0.000	467.456
			Max. Vy	8	18.800	-464.097	0.052
			Max. Vx	14	18.943	0.000	-467.332

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	47.57 - 0	Pole	Max. Torque	9			0.516
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.207	0.000	-0.821
			Max. Mx	8	-27.318	-1521.601	-0.626
			Max. My	14	-27.317	0.000	-1532.813
			Max. Vy	8	21.769	-1521.601	-0.626
			Max. Vx	14	21.907	0.000	-1532.813
			Max. Torque	9			0.515

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	41.207	0.000	-5.174
	Max. H _x	20	27.344	21.735	0.000
	Max. H _z	2	27.344	0.000	21.872
	Max. M _x	2	1531.566	0.000	21.872
	Max. M _z	8	1521.601	-21.735	0.000
	Max. Torsion	9	0.514	-21.735	0.000
	Min. Vert	23	20.508	18.823	10.936
	Min. H _x	8	27.344	-21.735	0.000
	Min. H _z	14	27.344	0.000	-21.872
	Min. M _x	14	-1532.813	0.000	-21.872
	Min. M _z	20	-1521.601	21.735	0.000
	Min. Torsion	21	-0.514	21.735	0.000

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	22.787	0.000	0.000	0.510	0.000	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	27.344	0.000	-21.872	-1531.566	0.000	0.000
0.9 Dead+1.0 Wind 0 deg - No Ice	20.508	0.000	-21.872	-1519.195	0.000	0.000
1.2 Dead+1.0 Wind 30 deg - No Ice	27.344	10.868	-18.942	-1326.297	-760.797	-0.255
0.9 Dead+1.0 Wind 30 deg - No Ice	20.508	10.868	-18.942	-1315.603	-754.575	-0.256
1.2 Dead+1.0 Wind 60 deg - No Ice	27.344	18.823	-10.936	-765.477	-1317.745	-0.443
0.9 Dead+1.0 Wind 60 deg - No Ice	20.508	18.823	-10.936	-759.370	-1306.968	-0.444
1.2 Dead+1.0 Wind 90 deg - No Ice	27.344	21.735	-0.000	0.626	-1521.601	-0.512
0.9 Dead+1.0 Wind 90 deg - No Ice	20.508	21.735	-0.000	0.468	-1509.159	-0.514
1.2 Dead+1.0 Wind 120 deg -	27.344	18.823	10.936	766.728	-1317.742	-0.445

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
0.9 Dead+1.0 Wind 120 deg - No Ice	20.508	18.823	10.936	760.304	-1306.966	-0.446
1.2 Dead+1.0 Wind 150 deg - No Ice	27.344	10.868	18.942	1327.545	-760.794	-0.257
0.9 Dead+1.0 Wind 150 deg - No Ice	20.508	10.868	18.942	1316.535	-754.573	-0.258
1.2 Dead+1.0 Wind 180 deg - No Ice	27.344	0.000	21.872	1532.813	0.000	0.000
0.9 Dead+1.0 Wind 180 deg - No Ice	20.508	0.000	21.872	1520.126	0.000	0.000
1.2 Dead+1.0 Wind 210 deg - No Ice	27.344	-10.868	18.942	1327.545	760.794	0.257
0.9 Dead+1.0 Wind 210 deg - No Ice	20.508	-10.868	18.942	1316.535	754.573	0.258
1.2 Dead+1.0 Wind 240 deg - No Ice	27.344	-18.823	10.936	766.728	1317.742	0.445
0.9 Dead+1.0 Wind 240 deg - No Ice	20.508	-18.823	10.936	760.304	1306.966	0.446
1.2 Dead+1.0 Wind 270 deg - No Ice	27.344	-21.735	-0.000	0.626	1521.601	0.512
0.9 Dead+1.0 Wind 270 deg - No Ice	20.508	-21.735	-0.000	0.468	1509.159	0.514
1.2 Dead+1.0 Wind 300 deg - No Ice	27.344	-18.823	-10.936	-765.477	1317.745	0.443
0.9 Dead+1.0 Wind 300 deg - No Ice	20.508	-18.823	-10.936	-759.370	1306.968	0.444
1.2 Dead+1.0 Wind 330 deg - No Ice	27.344	-10.868	-18.942	-1326.297	760.797	0.255
0.9 Dead+1.0 Wind 330 deg - No Ice	20.508	-10.868	-18.942	-1315.603	754.575	0.256
1.2 Dead+1.0 Ice+1.0 Temp	41.207	0.000	0.000	0.821	0.000	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	41.207	0.000	-5.174	-354.849	0.000	0.000
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	41.207	2.575	-4.481	-307.197	-176.850	-0.051
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	41.207	4.459	-2.587	-177.009	-306.314	-0.088
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	41.207	5.149	0.000	0.831	-353.700	-0.102
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	41.207	4.459	2.587	178.672	-306.313	-0.089
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	41.207	2.575	4.481	308.859	-176.850	-0.051
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	41.207	0.000	5.174	356.511	0.000	0.000
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	41.207	-2.575	4.481	308.859	176.850	0.051
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	41.207	-4.459	2.587	178.672	306.313	0.089
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	41.207	-5.149	0.000	0.831	353.700	0.102
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	41.207	-4.459	-2.587	-177.009	306.314	0.088
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	41.207	-2.575	-4.481	-307.197	176.850	0.051
Dead+Wind 0 deg - Service	22.787	0.000	-5.150	-358.541	0.000	0.000
Dead+Wind 30 deg - Service	22.787	2.559	-4.460	-310.436	-178.287	-0.061
Dead+Wind 60 deg - Service	22.787	4.432	-2.575	-179.011	-308.802	-0.105
Dead+Wind 90 deg - Service	22.787	5.118	0.000	0.518	-356.574	-0.122
Dead+Wind 120 deg - Service	22.787	4.432	2.575	180.048	-308.802	-0.105

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 150 deg - Service	22.787	2.559	4.460	311.473	-178.287	-0.061
Dead+Wind 180 deg - Service	22.787	0.000	5.150	359.577	0.000	0.000
Dead+Wind 210 deg - Service	22.787	-2.559	4.460	311.473	178.287	0.061
Dead+Wind 240 deg - Service	22.787	-4.432	2.575	180.048	308.802	0.105
Dead+Wind 270 deg - Service	22.787	-5.118	0.000	0.518	356.574	0.122
Dead+Wind 300 deg - Service	22.787	-4.432	-2.575	-179.011	308.802	0.105
Dead+Wind 330 deg - Service	22.787	-2.559	-4.460	-310.436	178.287	0.061

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-22.787	0.000	0.000	22.787	0.000	0.000%
2	0.000	-27.344	-21.872	0.000	27.344	21.872	0.000%
3	0.000	-20.508	-21.872	0.000	20.508	21.872	0.000%
4	10.868	-27.344	-18.942	-10.868	27.344	18.942	0.000%
5	10.868	-20.508	-18.942	-10.868	20.508	18.942	0.000%
6	18.823	-27.344	-10.936	-18.823	27.344	10.936	0.000%
7	18.823	-20.508	-10.936	-18.823	20.508	10.936	0.000%
8	21.735	-27.344	0.000	-21.735	27.344	0.000	0.000%
9	21.735	-20.508	0.000	-21.735	20.508	0.000	0.000%
10	18.823	-27.344	10.936	-18.823	27.344	-10.936	0.000%
11	18.823	-20.508	10.936	-18.823	20.508	-10.936	0.000%
12	10.868	-27.344	18.942	-10.868	27.344	-18.942	0.000%
13	10.868	-20.508	18.942	-10.868	20.508	-18.942	0.000%
14	0.000	-27.344	21.872	0.000	27.344	-21.872	0.000%
15	0.000	-20.508	21.872	0.000	20.508	-21.872	0.000%
16	-10.868	-27.344	18.942	10.868	27.344	-18.942	0.000%
17	-10.868	-20.508	18.942	10.868	20.508	-18.942	0.000%
18	-18.823	-27.344	10.936	18.823	27.344	-10.936	0.000%
19	-18.823	-20.508	10.936	18.823	20.508	-10.936	0.000%
20	-21.735	-27.344	0.000	21.735	27.344	0.000	0.000%
21	-21.735	-20.508	0.000	21.735	20.508	0.000	0.000%
22	-18.823	-27.344	-10.936	18.823	27.344	10.936	0.000%
23	-18.823	-20.508	-10.936	18.823	20.508	10.936	0.000%
24	-10.868	-27.344	-18.942	10.868	27.344	18.942	0.000%
25	-10.868	-20.508	-18.942	10.868	20.508	18.942	0.000%
26	0.000	-41.207	0.000	0.000	41.207	0.000	0.000%
27	0.000	-41.207	-5.174	0.000	41.207	5.174	0.000%
28	2.574	-41.207	-4.481	-2.575	41.207	4.481	0.000%
29	4.459	-41.207	-2.587	-4.459	41.207	2.587	0.000%
30	5.149	-41.207	0.000	-5.149	41.207	0.000	0.000%
31	4.459	-41.207	2.587	-4.459	41.207	-2.587	0.000%
32	2.574	-41.207	4.481	-2.575	41.207	-4.481	0.000%
33	0.000	-41.207	5.174	0.000	41.207	-5.174	0.000%
34	-2.574	-41.207	4.481	2.575	41.207	-4.481	0.000%
35	-4.459	-41.207	2.587	4.459	41.207	-2.587	0.000%
36	-5.149	-41.207	0.000	5.149	41.207	0.000	0.000%
37	-4.459	-41.207	-2.587	4.459	41.207	2.587	0.000%
38	-2.574	-41.207	-4.481	2.575	41.207	4.481	0.000%
39	0.000	-22.787	-5.150	0.000	22.787	5.150	0.000%
40	2.559	-22.787	-4.460	-2.559	22.787	4.460	0.000%
41	4.432	-22.787	-2.575	-4.432	22.787	2.575	0.000%
42	5.118	-22.787	0.000	-5.118	22.787	0.000	0.000%
43	4.432	-22.787	2.575	-4.432	22.787	-2.575	0.000%
44	2.559	-22.787	4.460	-2.559	22.787	-4.460	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
45	0.000	-22.787	5.150	0.000	22.787	-5.150	0.000%
46	-2.559	-22.787	4.460	2.559	22.787	-4.460	0.000%
47	-4.432	-22.787	2.575	4.432	22.787	-2.575	0.000%
48	-5.118	-22.787	0.000	5.118	22.787	0.000	0.000%
49	-4.432	-22.787	-2.575	4.432	22.787	2.575	0.000%
50	-2.559	-22.787	-4.460	2.559	22.787	4.460	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00004757
3	Yes	4	0.00000001	0.00001740
4	Yes	5	0.00000001	0.00013484
5	Yes	5	0.00000001	0.00006011
6	Yes	5	0.00000001	0.00013874
7	Yes	5	0.00000001	0.00006203
8	Yes	4	0.00000001	0.00015443
9	Yes	4	0.00000001	0.00009561
10	Yes	5	0.00000001	0.00013376
11	Yes	5	0.00000001	0.00005962
12	Yes	5	0.00000001	0.00013793
13	Yes	5	0.00000001	0.00006159
14	Yes	4	0.00000001	0.00004763
15	Yes	4	0.00000001	0.00001741
16	Yes	5	0.00000001	0.00013793
17	Yes	5	0.00000001	0.00006159
18	Yes	5	0.00000001	0.00013376
19	Yes	5	0.00000001	0.00005962
20	Yes	4	0.00000001	0.00015443
21	Yes	4	0.00000001	0.00009561
22	Yes	5	0.00000001	0.00013874
23	Yes	5	0.00000001	0.00006203
24	Yes	5	0.00000001	0.00013484
25	Yes	5	0.00000001	0.00006011
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00058543
28	Yes	4	0.00000001	0.00067824
29	Yes	4	0.00000001	0.00067882
30	Yes	4	0.00000001	0.00058246
31	Yes	4	0.00000001	0.00067640
32	Yes	4	0.00000001	0.00067969
33	Yes	4	0.00000001	0.00058559
34	Yes	4	0.00000001	0.00067969
35	Yes	4	0.00000001	0.00067640
36	Yes	4	0.00000001	0.00058246
37	Yes	4	0.00000001	0.00067882
38	Yes	4	0.00000001	0.00067824
39	Yes	4	0.00000001	0.00000728
40	Yes	4	0.00000001	0.00006116
41	Yes	4	0.00000001	0.00006740
42	Yes	4	0.00000001	0.00001212
43	Yes	4	0.00000001	0.00005989
44	Yes	4	0.00000001	0.00006587
45	Yes	4	0.00000001	0.00000730

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46	Yes	4	0.00000001	0.00006587
47	Yes	4	0.00000001	0.00005989
48	Yes	4	0.00000001	0.00001212
49	Yes	4	0.00000001	0.00006740
50	Yes	4	0.00000001	0.00006116

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88.7 - 47.57	9.810	45	0.859	0.001
L2	51.9 - 0	3.706	45	0.640	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.000	7770.00 w/ Mount Pipe	45	8.940	0.837	0.001	27652
74.000	BXA-70063/6CF w/ Mount Pipe	45	7.130	0.788	0.001	9405
64.000	VV-65A-R1_TMO w/ Mount Pipe	45	5.447	0.730	0.001	5597

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88.7 - 47.57	41.867	14	3.667	0.004
L2	51.9 - 0	15.813	14	2.734	0.002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.000	7770.00 w/ Mount Pipe	14	38.153	3.574	0.004	6516
74.000	BXA-70063/6CF w/ Mount Pipe	14	30.426	3.364	0.003	2215
64.000	VV-65A-R1_TMO w/ Mount Pipe	14	23.244	3.117	0.003	1317

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Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	41.130	0.000	0.0	23.256	-16.560	1360.460	0.012
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	51.900	0.000	0.0	39.117	-27.317	2288.350	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	467.456	982.733	0.476	0.000	982.733	0.000
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	1532.817	2172.667	0.705	0.000	2172.667	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u K	φV _n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	φT _n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	18.942	408.138	0.046	0.000	1047.542	0.000
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	21.907	686.505	0.032	0.000	2371.008	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	88.7 - 47.57 (1)	0.012	0.476	0.000	0.046	0.000	0.490	1.050	4.8.2 ✓
L2	47.57 - 0 (2)	0.012	0.705	0.000	0.032	0.000	0.718	1.050	4.8.2 ✓

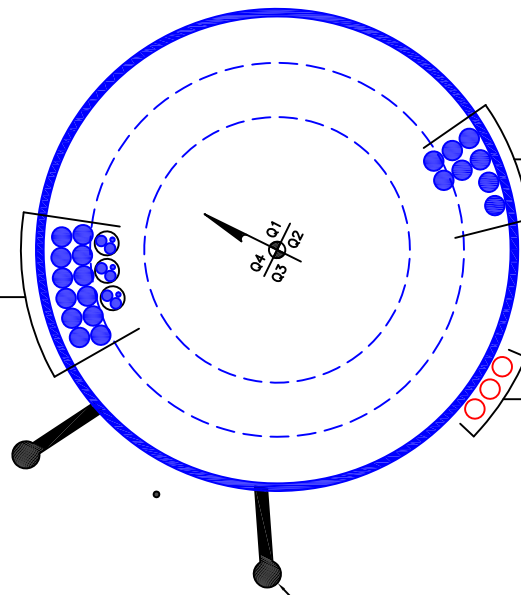
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	Client Crown Castle	Designed by S Shetty

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	88.7 - 47.57	Pole	TP30.46x21.89x0.25	1	-16.560	1428.483	46.7	Pass	
L2	47.57 - 0	Pole	TP39.75x29.058x0.313	2	-27.317	2402.767	68.4	Pass	
							Summary		
							Pole (L2)	68.4	Pass
							RATING =	68.4	Pass

APPENDIX B
BASE LEVEL DRAWING

(OTHER CONSIDERED EQUIPMENT—IN (3) 2" CONDUITS)
(3) 3/8" TO 84 FT LEVEL
(6) 7/8" TO 84 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1-5/8" TO 84 FT LEVEL



(OTHER CONSIDERED EQUIPMENT)
(8) 1-5/8" TO 74 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION)
(3) 1-5/8" TO 64 FT LEVEL

CLIMBING PEGS
W/ SAFETY CLIMB

BUSINESS UNIT: 842423

APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

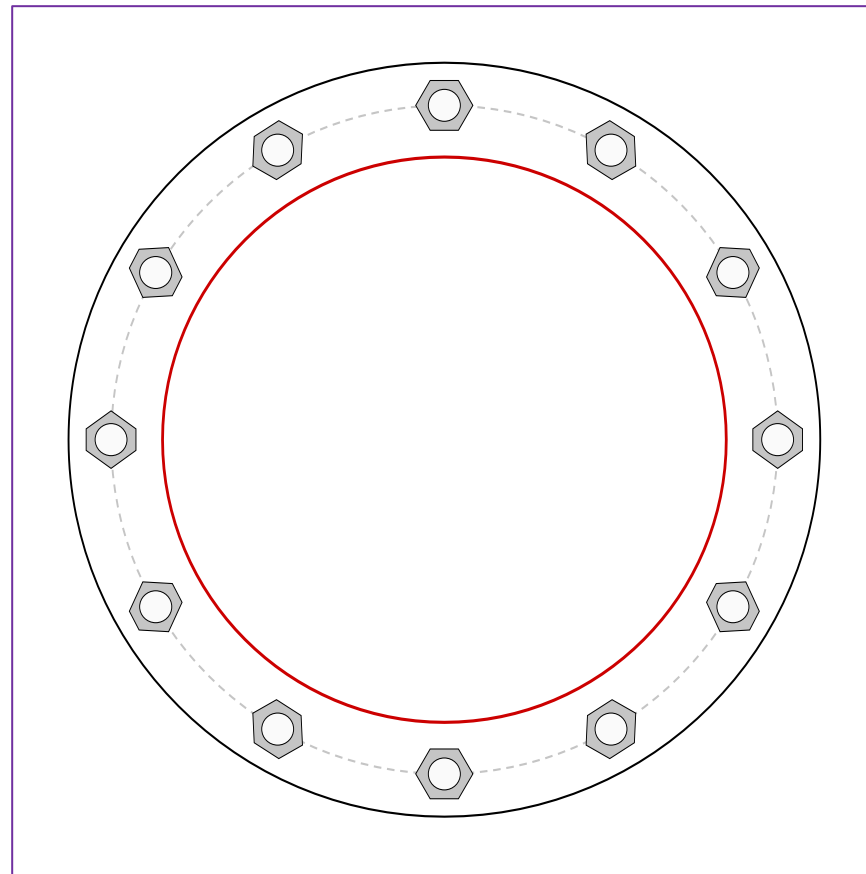


Site Info	
BU #	842423
Site Name	HAM NORTH RIDGE RO
Order #	573238 Rev#4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	1532.81
Axial Force (kips)	27.32
Shear Force (kips)	21.91

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
(12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 47" BC
Base Plate Data
53" OD x 1.75" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
N/A
Pole Data
39.75" x 0.3125" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		<i>(units of kips, kip-in)</i>
$P_{u,t} = 128.05$	$\phi P_{n,t} = 243.75$	Stress Rating
$V_u = 1.83$	$\phi V_n = 149.1$	50.0%
$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	37.7	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	66.5%	Pass

Pier and Pad Foundation



BU #: 842423
 Site Name: WINDHAM NORTH
 App. Number: 573238 Rev#4

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	27	kips
Base Shear, Vu_{comp} :	22	kips
Moment, M_u :	1533	ft-kips
Tower Height, H :	88.7	ft
BP Dist. Above Fdn, bp_{dist} :	5.5	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	186.49	22.00	11.2%	Pass
<i>Bearing Pressure (ksf)</i>	12.54	2.00	15.9%	Pass
<i>Overturning (kip*ft)</i>	3172.90	1697.08	53.5%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	2965.33	1621.00	52.1%	Pass
<i>Pier Compression (kip)</i>	13497.04	47.36	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	1523.05	570.82	35.7%	Pass
<i>Pad Shear - 1-way (kips)</i>	617.33	104.27	16.1%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.021	12.2%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	2142.83	972.60	43.2%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	22	
Pier Tie/Spiral Size, St :	3	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	4	in

*Rating per TIA-222-H Section 15.5

Structural Rating*:	52.1%
Soil Rating*:	53.5%

Pad Properties		
Depth, D :	6	ft
Pad Width, W_1 :	20	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	11	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Net Bearing, Q_{net} :	16.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :	99	
Base Friction, μ :	0.5	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	n/a	ft

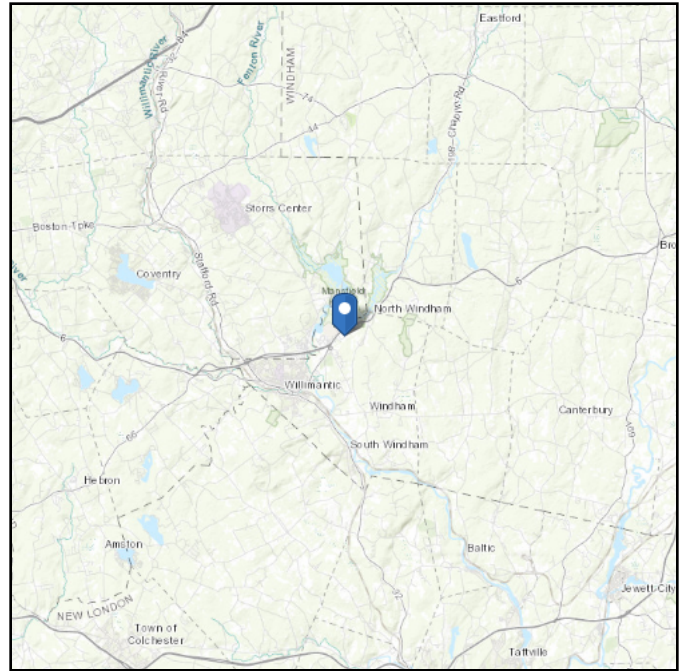
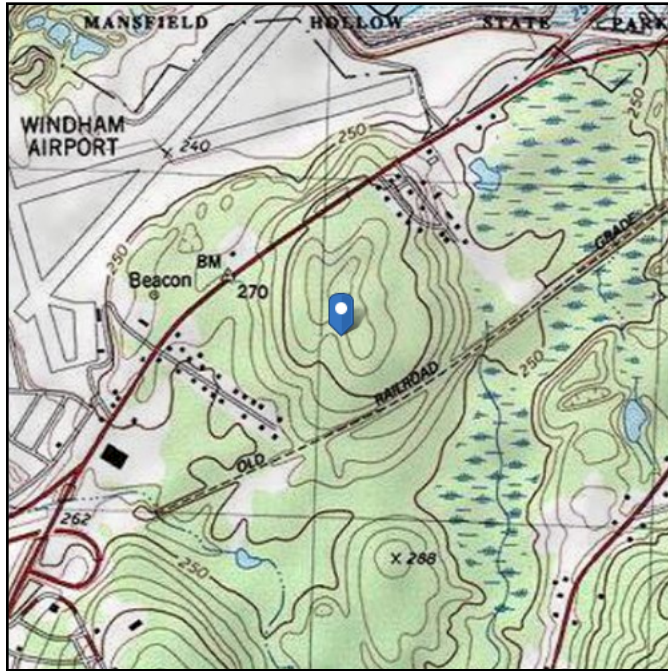
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ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 312.63 ft (NAVD 88)
Latitude: 41.739869
Longitude: -72.172908



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Sep 07 2021

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

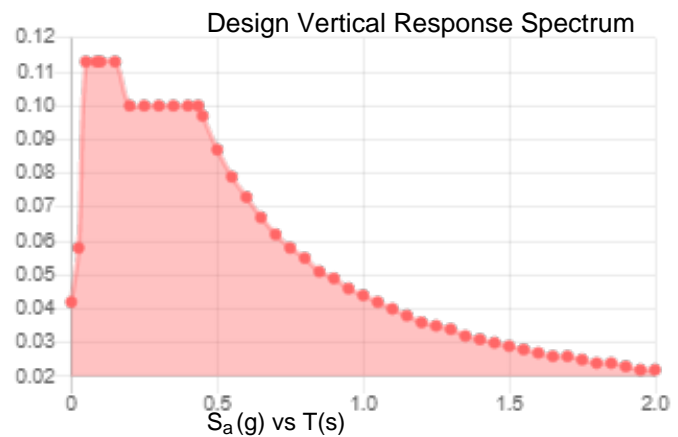
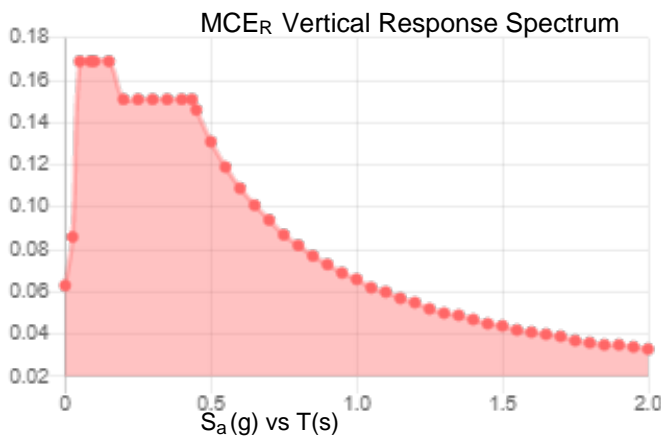
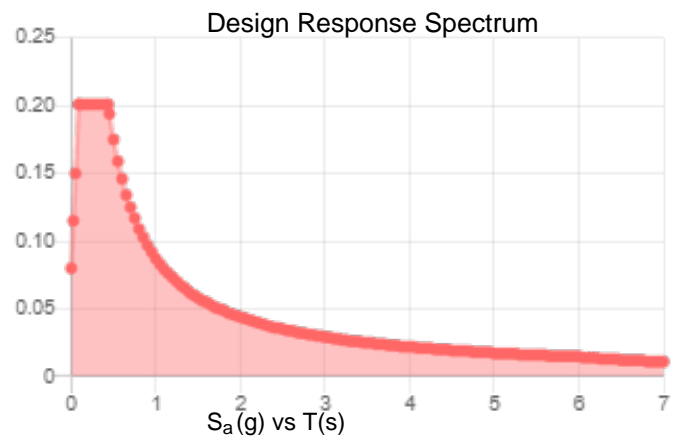
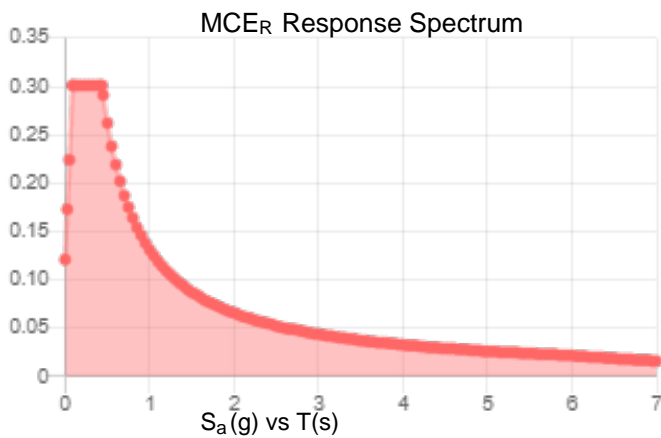
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.188	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.102
F_v :	2.4	PGA _M :	0.163
S_{MS} :	0.301	F_{PGA} :	1.596
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.201	C_v :	0.7

Seismic Design Category B



Data Accessed:

Tue Sep 07 2021

Date Source:

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

Ice

Results:

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

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

Date Accessed: Tue Sep 07 2021

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

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

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

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Exhibit E

Mount Analysis

Date: February 17, 2022



Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject: Mount Analysis Report

Carrier Designation: T-Mobile Coverage Strategy
Carrier Site Number: CTNL200A
Carrier Site Name: CTNL200A

Crown Castle Designation: BU Number: 842423
Site Name: WINDHAM NORTH RIDGE ROAD
JDE Job Number: 671709
Order Number: 573238 Rev. 4

Engineering Firm Designation: Trylon Report Designation: 202064

Site Data: 10 North Drive, Windham, Windham County, CT, 06256
Latitude 41°44'23.53" Longitude -72°10'22.47"

Structure Information: Tower Height & Type: 88.7 ft Monopole
Mount Elevation: 64.0 ft
Mount Width & Type: 12.5 ft Platform

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

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

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

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Arienna Lee Wilson-Muller, E.I.

Respectfully Submitted by:
Cliff Abernathy, P.E.

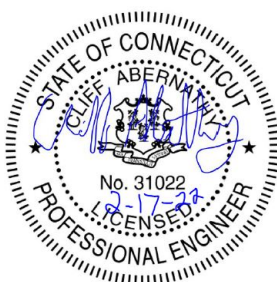


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Supplemental Drawings

1) INTRODUCTION

This is an existing (3) sector 12.5 ft Platform, designed by Site Pro 1.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.173
Seismic S1:	0.062
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
64.0	64.0	3	Commscope	VV-65A-R1_TMO	12.5 ft Platform [Site Pro 1, RMQP-496-HK]
		3	Ericsson	AIR6449 B41_T-MOBILE	
		3	RFS/Celwave	APXVAALL24_43-UNA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	573238, Rev.4	CCI Sites
Mount Assembly Drawings	Site Pro 1	RMQP-496-HK	Trylon
Handrail Kit Assembly Drawings	Site Pro 1	HRK12	Trylon
Kicker Kit Assembly Drawings	Site Pro 1	PRK1245	Trylon

3.1) Analysis Method

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

A tool internally developed, using Microsoft Excel, by Trylon was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 3	Mount Pipe(s)	MP6	64.0	39.7	Pass
	Horizontal(s)	H3		9.6	Pass
	Standoff(s)	S2		15.3	Pass
	Bracing(s)	M9		42.1	Pass
	Handrail(s)	HR3		47.6	Pass
	Kicker(s)	M95		10.1	Pass
2, 3	Mount Connection(s)	M100		32.9	Pass

Structure Rating (max from all components) =	47.6%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D – Additional Calculations" for detailed mount connection calculations.
- 3) Rating per TIA-222-H, Section 15.5

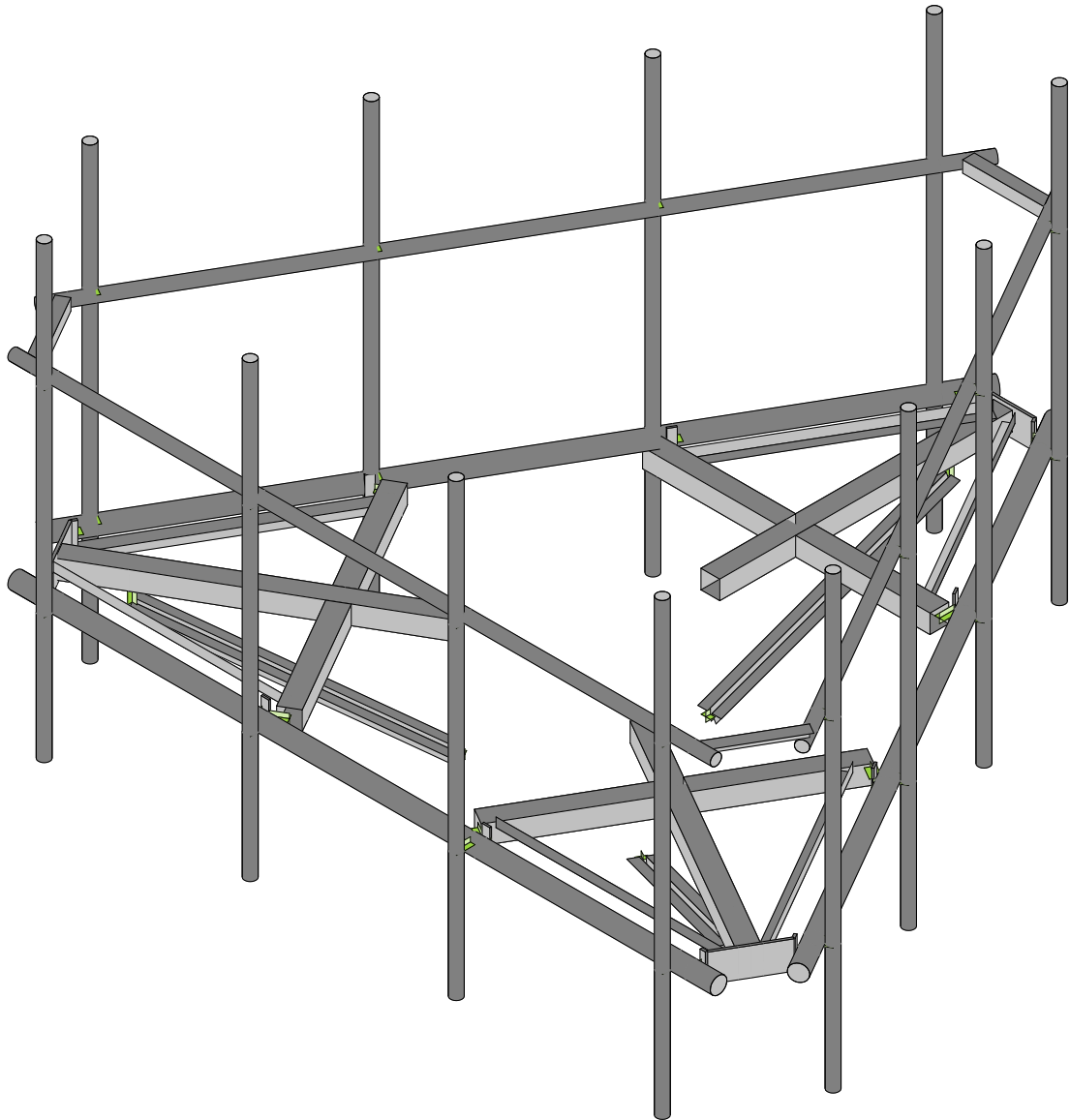
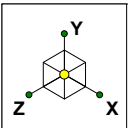
4.1) Recommendations

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

1. Site Pro 1 Platform, RMQP-496-HK, platform.

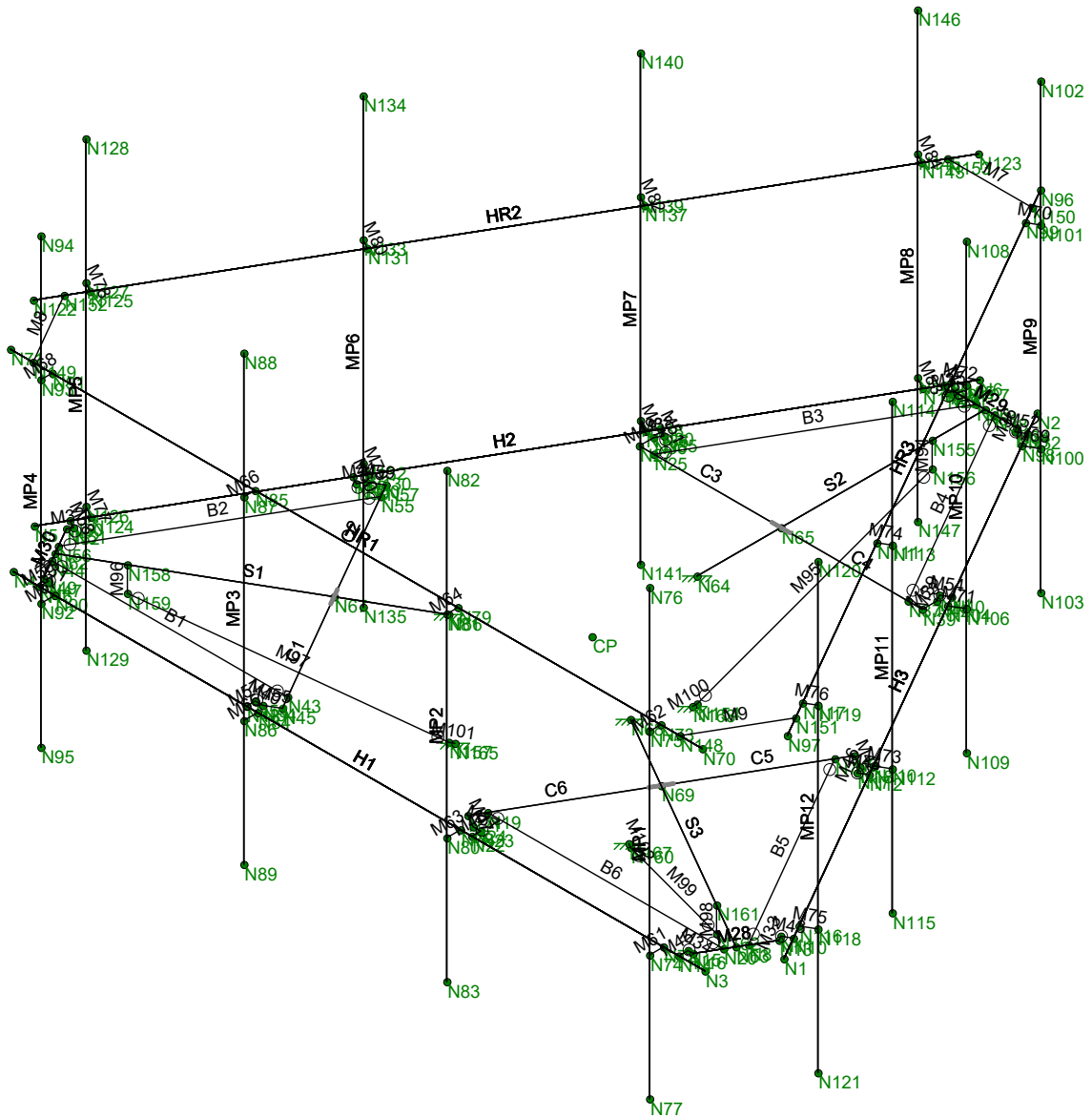
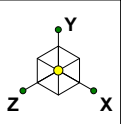
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Loads: BLC 58,
Envelope Only Solution

Trylon	842423	Mount Analysis
ALWM		Feb 17, 2022 at 2:38 AM
202064		842423_loaded.r3d



Loads: BLC 58,
Envelope Only Solution

Trylon	842423	Mount Analysis
ALWM		Feb 17, 2022 at 2:38 AM
202064		842423_loaded.r3d

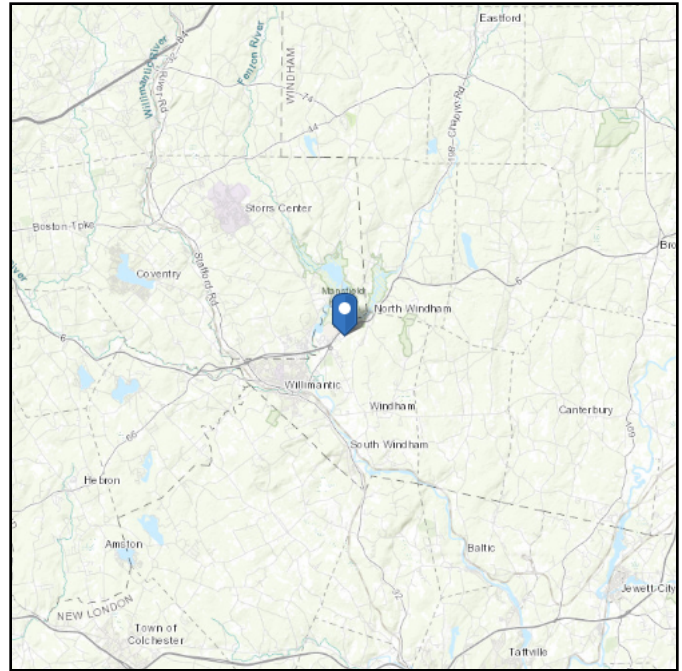
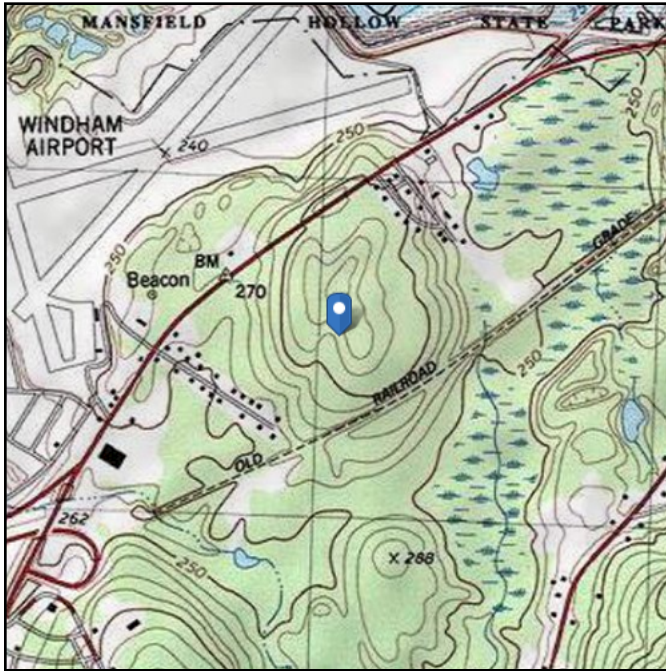
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 312.63 ft (NAVD 88)
Latitude: 41.739869
Longitude: -72.172908

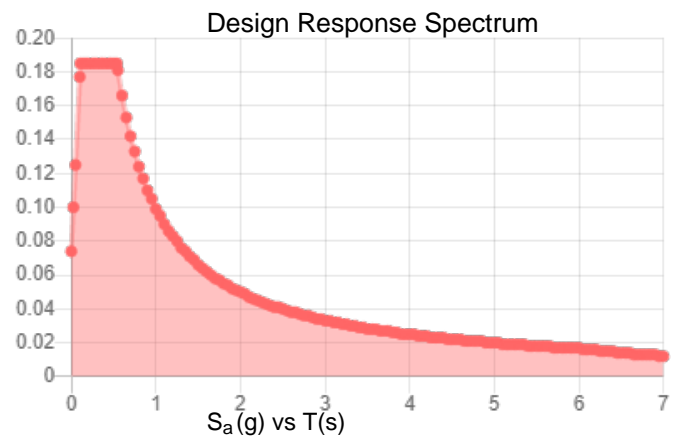
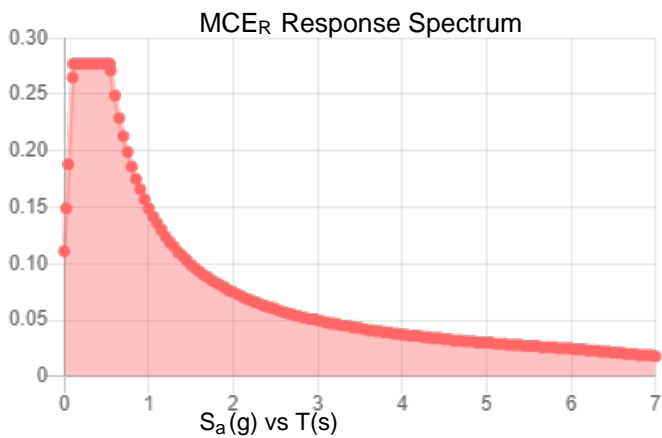


Site Soil Class: D - Stiff Soil

Results:

S_S :	0.173	S_{DS} :	0.185
S_1 :	0.062	S_{D1} :	0.099
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.086
S_{MS} :	0.277	PGA _M :	0.138
S_{M1} :	0.149	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Jun 17 2021

Date Source:

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

Ice

Results:

Ice Thickness: 0.75 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

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

Date Accessed: Thu Jun 17 2021

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

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

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

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

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



Trylon

1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.2

PROJECT DATA	
Job Code:	202064
Carrier Site ID:	CTNL200A
Carrier Site Name:	CTNL200AROAD

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	Connecticut State Building Co
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	64.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	88.7	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Default	--
Ground Elevation:	312.63	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	130	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.15	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (G _h):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	46.82	psf
Ground Elevation Factor (K_g):	0.99	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	6.42	psf
Mount Ice Thickness (t_{iz}):	1.60	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	84.28	psf
Round Member Pressure:	50.57	psf
Ice Wind Pressure:	6.94	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel. (S_s):	0.17	g
1 Second Accel. (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.18	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (C_s):	0.09	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

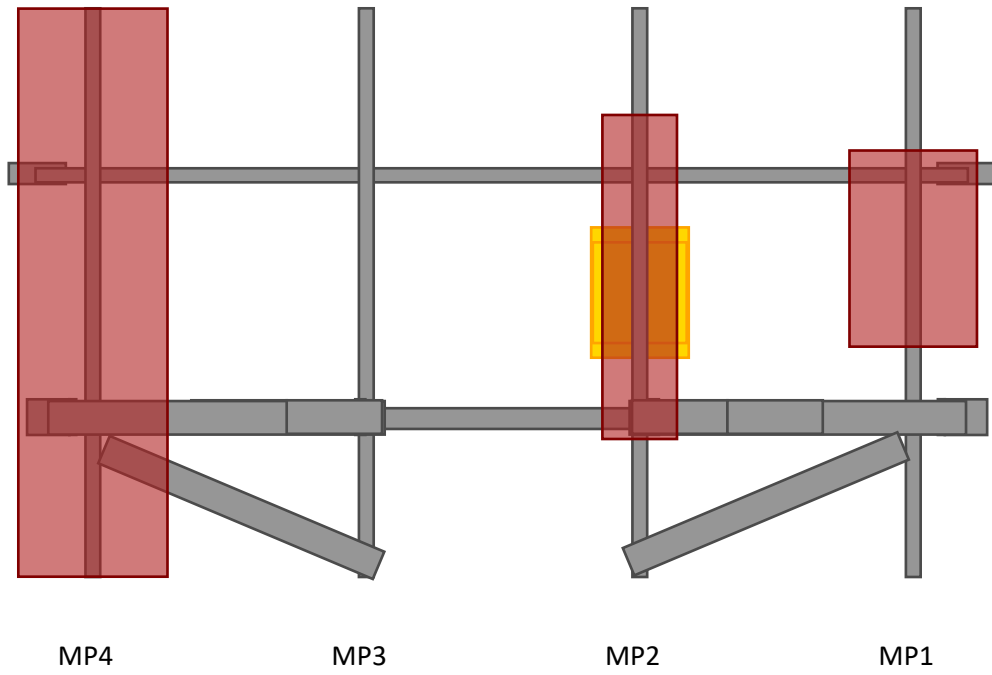
#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

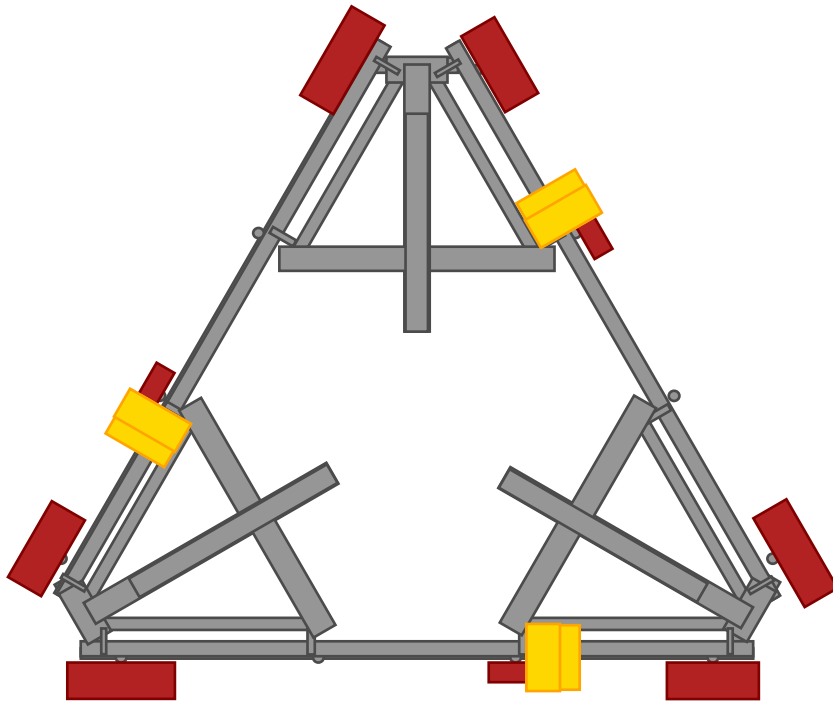
*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

ELEVATION VIEW



*Elevation View Shows Alpha Sector Only

PLAN VIEW



APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Company : Trylon
 Designer : ALWM
 Job Number : 202064
 Model Name : 842423

Feb 17, 2022
 2:51 AM
 Checked By: _____

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISACONNECTION CODE	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...Density[k/...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65 .49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65 .49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65 .49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65 .527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65 .527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65 .49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65 .49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65 .49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	HSS4X4X4	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
2	L2x2x3	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	L2.5x2.5x4	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
4	Plate 6"x0.5"	PL6"x0.5"	Beam	None	A36 Gr.36	Typical	3	.063	9	.237
5	Plate 6"x0.375"	PL 6x0.375	Beam	None	A36 Gr.36	Typical	2.25	.026	6.75	.101
6	HSS3.500X0.216	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
7	HSS2.375X0.154	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	PRK 1245	LL2.5x2.5x3x0	Beam	None	A36 Gr.36	Typical	1.8	1.91	1.07	.023

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	N64	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N68	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N66	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N154						
5	N155						



Company : Trylon
 Designer : ALWM
 Job Number : 202064
 Model Name : 842423

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Joint Boundary Conditions (Continued)

	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]
6	N156						
7	N157						
8	N158						
9	N159						
10	N160						
11	N161						
12	N162						
13	N163	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N165	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N167	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	B5	N7	N8			L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
2	B6	N19	N20		270	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
3	B3	N25	N26			L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
4	B4	N37	N38		270	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
5	B1	N43	N44			L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
6	B2	N55	N56		270	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N153	N150		180	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N149	N152		180	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N151	N148		180	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical
10	HR1	N70	N71			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
11	MP1	N76	N77			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
12	MP2	N82	N83			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
13	MP3	N88	N89			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
14	MP4	N94	N95			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
15	HR3	N96	N97			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
16	MP9	N102	N103			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
17	MP10	N108	N109			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
18	MP11	N114	N115			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
19	MP12	N120	N121			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
20	HR2	N122	N123			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
21	MP5	N128	N129			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
22	MP6	N134	N135			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
23	MP7	N140	N141			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
24	MP8	N146	N147			HSS2.375X0.1...	Beam	Pipe	A53 Gr.B	Typical
25	H3	N1	N2		180	HSS3.500X0.2...	Beam	Pipe	A53 Gr.B	Typical
26	H1	N3	N4		180	HSS3.500X0.2...	Beam	Pipe	A53 Gr.B	Typical
27	H2	N5	N6		180	HSS3.500X0.2...	Beam	Pipe	A53 Gr.B	Typical
28	M28	N16	N13			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
29	M29	N34	N31			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
30	M30	N52	N49			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
31	M31	N47	N49			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
32	M32	N51	N52			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
33	M33	N11	N13			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
34	M34	N15	N16			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
35	M35	N29	N31			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
36	M36	N33	N34			Plate 6"x0.5"	Beam	None	A36 Gr.36	Typical
37	M37	N23	N24			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
38	M38	N35	N36			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
39	M39	N41	N42			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
40	M40	N53	N54			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
41	M41	N59	N60			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
42	M42	N9	N18			RIGID	None	None	RIGID	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
43	M43	N10	N11			RIGID	None	None	RIGID	Typical
44	M44	N12	N17			RIGID	None	None	RIGID	Typical
45	M45	N14	N15			RIGID	None	None	RIGID	Typical
46	M46	N17	N18			Plate 6"x0.375"	Beam	None	A36 Gr.36	Typical
47	M47	N21	N24			RIGID	None	None	RIGID	Typical
48	M48	N22	N23			RIGID	None	None	RIGID	Typical
49	M49	N27	N36			RIGID	None	None	RIGID	Typical
50	M50	N28	N29			RIGID	None	None	RIGID	Typical
51	M51	N30	N35			RIGID	None	None	RIGID	Typical
52	M52	N32	N33			RIGID	None	None	RIGID	Typical
53	M53	N39	N42			RIGID	None	None	RIGID	Typical
54	M54	N40	N41			RIGID	None	None	RIGID	Typical
55	M55	N45	N54			RIGID	None	None	RIGID	Typical
56	M56	N46	N47			RIGID	None	None	RIGID	Typical
57	M57	N48	N53			RIGID	None	None	RIGID	Typical
58	M58	N50	N51			RIGID	None	None	RIGID	Typical
59	M59	N57	N60			RIGID	None	None	RIGID	Typical
60	M60	N58	N59			RIGID	None	None	RIGID	Typical
61	M61	N72	N74			RIGID	None	None	RIGID	Typical
62	M62	N73	N75			RIGID	None	None	RIGID	Typical
63	M63	N78	N80			RIGID	None	None	RIGID	Typical
64	M64	N79	N81			RIGID	None	None	RIGID	Typical
65	M65	N84	N86			RIGID	None	None	RIGID	Typical
66	M66	N85	N87			RIGID	None	None	RIGID	Typical
67	M67	N90	N92			RIGID	None	None	RIGID	Typical
68	M68	N91	N93			RIGID	None	None	RIGID	Typical
69	M69	N98	N100			RIGID	None	None	RIGID	Typical
70	M70	N99	N101			RIGID	None	None	RIGID	Typical
71	M71	N104	N106			RIGID	None	None	RIGID	Typical
72	M72	N105	N107			RIGID	None	None	RIGID	Typical
73	M73	N110	N112			RIGID	None	None	RIGID	Typical
74	M74	N111	N113			RIGID	None	None	RIGID	Typical
75	M75	N116	N118			RIGID	None	None	RIGID	Typical
76	M76	N117	N119			RIGID	None	None	RIGID	Typical
77	M77	N124	N126			RIGID	None	None	RIGID	Typical
78	M78	N125	N127			RIGID	None	None	RIGID	Typical
79	M79	N130	N132			RIGID	None	None	RIGID	Typical
80	M80	N131	N133			RIGID	None	None	RIGID	Typical
81	M81	N136	N138			RIGID	None	None	RIGID	Typical
82	M82	N137	N139			RIGID	None	None	RIGID	Typical
83	M83	N142	N144			RIGID	None	None	RIGID	Typical
84	M84	N143	N145			RIGID	None	None	RIGID	Typical
85	C4	N39	N65		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
86	S2	N64	N61		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
87	C3	N65	N27		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
88	C2	N57	N67		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
89	S1	N66	N62		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
90	C1	N67	N45		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
91	S3	N68	N63		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
92	C6	N21	N69		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
93	C5	N69	N9		180	HSS4X4X4	Beam	Tube	A500 Gr.B...	Typical
94	M94	N155	N156			RIGID	None	None	RIGID	Typical
95	M95	N154	N156			PRK 1245	Beam	None	A36 Gr.36	Typical
96	M96	N158	N159			RIGID	None	None	RIGID	Typical
97	M97	N157	N159			PRK 1245	Beam	None	A36 Gr.36	Typical
98	M98	N161	N162			RIGID	None	None	RIGID	Typical
99	M99	N160	N162			PRK 1245	Beam	None	A36 Gr.36	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
100	M100	N154	N163			RIGID	None	None	RIGID	Typical
101	M101	N157	N165			RIGID	None	None	RIGID	Typical
102	M102	N160	N167			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbby[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	B5	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
2	B6	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
3	B3	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
4	B4	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
5	B1	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
6	B2	L2x2x3	51.168	Segment	Segment	Lbby		Segm...	1	1		Lateral
7	M7	L2.5x2.5x4	18.357	Segment	Segment	Lbby		Segm...	1	1		Lateral
8	M8	L2.5x2.5x4	18.357	Segment	Segment	Lbby		Segm...	1	1		Lateral
9	M9	L2.5x2.5x4	18.357	Segment	Segment	Lbby		Segm...	1	1		Lateral
10	HR1	HSS2.375X...	150	140.25	150	Lbby		150	1	1		Lateral
11	MP1	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
12	MP2	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
13	MP3	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
14	MP4	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
15	HR3	HSS2.375X...	150	140.25	150	Lbby		150	1	1		Lateral
16	MP9	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
17	MP10	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
18	MP11	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
19	MP12	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
20	HR2	HSS2.375X...	150	140.25	150	Lbby		150	1	1		Lateral
21	MP5	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
22	MP6	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
23	MP7	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
24	MP8	HSS2.375X...	96	Segment	Segment	Lbby		Segm...	1	1		Lateral
25	H3	HSS3.500X...	150	48.8	150	Lbby		150	1	1		Lateral
26	H1	HSS3.500X...	150	48.8	150	Lbby		150	1	1		Lateral
27	H2	HSS3.500X...	150	48.8	150	Lbby		150	1	1		Lateral
28	M28	Plate 6"x0.5"	13.619	Segment	Segment	Lbby		Segm...	1	1		Lateral
29	M29	Plate 6"x0.5"	13.619	Segment	Segment	Lbby		Segm...	1	1		Lateral
30	M30	Plate 6"x0.5"	13.619	Segment	Segment	Lbby		Segm...	1	1		Lateral
31	M31	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
32	M32	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
33	M33	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
34	M34	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
35	M35	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
36	M36	Plate 6"x0.5"	1.108	Segment	Segment	Lbby		Segm...	1	1		Lateral
37	M37	Plate 6"x0.3...	1.625	Segment	Segment	Lbby		Segm...	1	1		Lateral
38	M38	Plate 6"x0.3...	1.625	Segment	Segment	Lbby		Segm...	1	1		Lateral
39	M39	Plate 6"x0.3...	1.625	Segment	Segment	Lbby		Segm...	1	1		Lateral
40	M40	Plate 6"x0.3...	1.625	Segment	Segment	Lbby		Segm...	1	1		Lateral
41	M41	Plate 6"x0.3...	1.625	Segment	Segment	Lbby		Segm...	1	1		Lateral
42	M46	Plate 6"x0.3...	1.625			Lbby						Lateral
43	C4	HSS4X4X4	30.688	Segment	Segment	Lbby		Segm...	.65	.65		Lateral
44	S2	HSS4X4X4	62.5	44	51	Lbby		44	1	1		Lateral
45	C3	HSS4X4X4	30.687	Segment	Segment	Lbby		Segm...	.65	.65		Lateral
46	C2	HSS4X4X4	30.688	Segment	Segment	Lbby		Segm...	.65	.65		Lateral
47	S1	HSS4X4X4	62.5	44	51	Lbby		44	1	1		Lateral
48	C1	HSS4X4X4	30.687	Segment	Segment	Lbby		Segm...	.65	.65		Lateral
49	S3	HSS4X4X4	62.5	44	51	Lbby		44	1	1		Lateral



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Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torg...	Kyy	Kzz	Cb	Function
50	C6	HSS4X4X4	30.687	Segment	Segment	Lbyy		.65	.65		Lateral
51	C5	HSS4X4X4	30.688	Segment	Segment	Lbyy		.65	.65		Lateral
52	M95	PRK 1245	54.294	Segment	Segment	Lbyy		1	1		Lateral
53	M97	PRK 1245	54.294	Segment	Segment	Lbyy		1	1		Lateral
54	M99	PRK 1245	54.294	Segment	Segment	Lbyy		1	1		Lateral

Basic Load Cases

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1 Self Weight	DL		-1			24		3	
2 Structure Wind Z	WLZ						102		
3 Structure Wind X	WLX						102		
4 Wind Load 0 AZI	WLZ					48			
5 Wind Load 30 AZI	None					48			
6 Wind Load 45 AZI	None					48			
7 Wind Load 60 AZI	None					48			
8 Wind Load 90 AZI	WLX					48			
9 Wind Load 120 AZI	None					48			
10 Wind Load 135 AZI	None					48			
11 Wind Load 150 AZI	None					48			
12 Ice Weight	OL1					24	102	3	
13 Ice Structure Wind Z	OL2						102		
14 Ice Structure Wind X	OL3						102		
15 Ice Wind Load 0 AZI	OL2					48			
16 Ice Wind Load 30 AZI	None					48			
17 Ice Wind Load 45 AZI	None					48			
18 Ice Wind Load 60 AZI	None					48			
19 Ice Wind Load 90 AZI	OL3					48			
20 Ice Wind Load 120 AZI	None					48			
21 Ice Wind Load 135 AZI	None					48			
22 Ice Wind Load 150 AZI	None					48			
23 Seismic Load Z	ELZ			-1.09		24			
24 Seismic Load X	ELX	-1.09				24			
25 Live Load 1 (Lv)	None					1			
26 Live Load 2 (Lv)	None					1			
27 Live Load 3 (Lv)	None					1			
28 Live Load 4 (Lv)	None					1			
29 Live Load 5 (Lv)	None					1			
30 Live Load 6 (Lv)	None					1			
31 Live Load 7 (Lv)	None					1			
32 Live Load 8 (Lv)	None					1			
33 Live Load 9 (Lv)	None					1			
34 Maintenance Load 1 (Lm)	None					1			
35 Maintenance Load 2 (Lm)	None					1			
36 Maintenance Load 3 (Lm)	None					1			
37 Maintenance Load 4 (Lm)	None					1			
38 Maintenance Load 5 (Lm)	None					1			
39 Maintenance Load 6 (Lm)	None					1			
40 Maintenance Load 7 (Lm)	None					1			
41 Maintenance Load 8 (Lm)	None					1			
42 Maintenance Load 9 (Lm)	None					1			
43 Maintenance Load 10 (Lm)	None					1			
44 Maintenance Load 11 (Lm)	None					1			
45 Maintenance Load 12 (Lm)	None					1			
46 BLC 1 Transient Area Loads	None						51		
47 BLC 12 Transient Area Loads	None						51		



Company : Trylon
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Load Combinations

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.4DL	Yes	Y		DL	1.4									
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1			
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1			
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1			
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1			
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1			
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1			
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.707	3	.707	10	1			
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.866	3	.5	11	1			
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1			
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1			
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.707	3	-.707	6	-1			
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.866	7	-1			
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1			
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.866	9	-1			
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.707	10	-1			
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1			
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1			
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1			
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1			
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1			
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1			
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1			
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.707	3	.707	10	1			
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.866	3	.5	11	1			
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1			
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1			
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.707	3	-.707	6	-1			
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.866	7	-1			
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1			
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.866	9	-1			
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.707	10	-1			
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1			
34	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	1	14		15	1	
35	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.866	14	.5	16	1	
36	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.707	14	.707	17	1	
37	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1	
38	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1	
39	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1	
40	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	.707	21	1	
41	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	.5	22	1	
42	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1	
43	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	-.5	16	-1	
44	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	-.707	17	-1	
45	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.866	18	-1	
46	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1	
47	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.866	20	-1	
48	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.707	21	-1	
49	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1	
50	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	1	24						
51	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.866	24	.5					
52	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.707	24	.707					
53	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.5	24	.866					
54	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23		24	1					
55	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.5	24	.866					
56	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.707	24	.707					



Load Combinations (Continued)

	Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
57	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.866	24	.5				
58	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-1	24					
59	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.866	24	-.5				
60	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.707	24	-.707				
61	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.5	24	-.866				
62	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23		24	-1				
63	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.5	24	-.866				
64	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.707	24	-.707				
65	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.866	24	-.5				
66	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	1	24					
67	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.866	24	.5				
68	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.707	24	.707				
69	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.5	24	.866				
70	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23		24	1				
71	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.5	24	.866				
72	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.707	24	.707				
73	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.866	24	.5				
74	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-1	24					
75	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.866	24	-.5				
76	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.707	24	-.707				
77	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	-.5	24	-.866				
78	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23		24	-1				
79	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.5	24	-.866				
80	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.707	24	-.707				
81	(0.9-0.2Sds)DL + 1E ...	Yes	Y		DL	.864	23	.866	24	-.5				
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5						
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5						
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5						
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5						
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5						
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5						
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5						
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5						
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5						
91	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.053	3		4	.053
92	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.046	3	.027	5	.053
93	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.038	3	.038	6	.053
94	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.027	3	.046	7	.053
95	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2		3	.053	8	.053
96	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.027	3	.046	9	.053
97	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.038	3	.038	10	.053
98	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.046	3	.027	11	.053
99	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.053	3		4	-.053
100	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.046	3	-.027	5	-.053
101	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.038	3	-.038	6	-.053
102	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.027	3	-.046	7	-.053
103	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2		3	-.053	8	-.053
104	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.027	3	-.046	9	-.053
105	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.038	3	-.038	10	-.053
106	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.046	3	-.027	11	-.053
107	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.053	3		4	.053
108	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.046	3	.027	5	.053
109	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.038	3	.038	6	.053
110	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.027	3	.046	7	.053
111	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2		3	.053	8	.053
112	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.027	3	.046	9	.053
113	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.038	3	.038	10	.053



Load Combinations (Continued)

	Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
114	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.046	3	.027	11	.053	
115	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.053	3		4	-.053	
116	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.046	3	-.027	5	-.053	
117	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.038	3	-.038	6	-.053	
118	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.027	3	-.046	7	-.053	
119	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2		3	-.053	8	-.053	
120	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.027	3	-.046	9	-.053	
121	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.038	3	-.038	10	-.053	
122	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.046	3	-.027	11	-.053	
123	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.053	3		4	.053	
124	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.046	3	.027	5	.053	
125	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.038	3	.038	6	.053	
126	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.027	3	.046	7	.053	
127	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2		3	.053	8	.053	
128	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.027	3	.046	9	.053	
129	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.038	3	.038	10	.053	
130	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.046	3	.027	11	.053	
131	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.053	3		4	-.053	
132	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.046	3	-.027	5	-.053	
133	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.038	3	-.038	6	-.053	
134	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.027	3	-.046	7	-.053	
135	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2		3	-.053	8	-.053	
136	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.027	3	-.046	9	-.053	
137	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.038	3	-.038	10	-.053	
138	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.046	3	-.027	11	-.053	
139	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.053	3		4	.053	
140	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.046	3	.027	5	.053	
141	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.038	3	.038	6	.053	
142	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.027	3	.046	7	.053	
143	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2		3	.053	8	.053	
144	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.027	3	.046	9	.053	
145	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.038	3	.038	10	.053	
146	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.046	3	.027	11	.053	
147	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.053	3		4	-.053	
148	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.046	3	-.027	5	-.053	
149	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.038	3	-.038	6	-.053	
150	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.027	3	-.046	7	-.053	
151	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2		3	-.053	8	-.053	
152	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.027	3	-.046	9	-.053	
153	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.038	3	-.038	10	-.053	
154	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.046	3	-.027	11	-.053	
155	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.053	3		4	.053	
156	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.046	3	.027	5	.053	
157	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.038	3	.038	6	.053	
158	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.027	3	.046	7	.053	
159	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2		3	.053	8	.053	
160	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.027	3	.046	9	.053	
161	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.038	3	.038	10	.053	
162	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.046	3	.027	11	.053	
163	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.053	3		4	-.053	
164	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.046	3	-.027	5	-.053	
165	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.038	3	-.038	6	-.053	
166	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.027	3	-.046	7	-.053	
167	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2		3	-.053	8	-.053	
168	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.027	3	-.046	9	-.053	
169	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.038	3	-.038	10	-.053	
170	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.046	3	-.027	11	-.053	



Company : Trylon
Designer : ALWM
Job Number : 202064
Model Name : 842423

Feb 17, 2022
2:51 AM
Checked By: _____

Load Combinations (Continued)

	Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
171	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.053	3		4	.053		
172	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.046	3	.027	5	.053		
173	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.038	3	.038	6	.053		
174	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.027	3	.046	7	.053		
175	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2		3	.053	8	.053		
176	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.027	3	.046	9	.053		
177	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.038	3	.038	10	.053		
178	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.046	3	.027	11	.053		
179	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.053	3		4	-.053		
180	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.046	3	-.027	5	-.053		
181	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.038	3	-.038	6	-.053		
182	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	-.027	3	-.046	7	-.053		
183	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2		3	-.053	8	-.053		
184	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.027	3	-.046	9	-.053		
185	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.038	3	-.038	10	-.053		
186	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	39	1.5	2	.046	3	-.027	11	-.053		
187	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.053	3		4	.053		
188	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.046	3	.027	5	.053		
189	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.038	3	.038	6	.053		
190	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.027	3	.046	7	.053		
191	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2		3	.053	8	.053		
192	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.027	3	.046	9	.053		
193	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.038	3	.038	10	.053		
194	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.046	3	.027	11	.053		
195	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.053	3		4	-.053		
196	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.046	3	-.027	5	-.053		
197	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.038	3	-.038	6	-.053		
198	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	-.027	3	-.046	7	-.053		
199	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2		3	-.053	8	-.053		
200	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.027	3	-.046	9	-.053		
201	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.038	3	-.038	10	-.053		
202	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	40	1.5	2	.046	3	-.027	11	-.053		
203	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.053	3		4	.053		
204	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.046	3	.027	5	.053		
205	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.038	3	.038	6	.053		
206	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.027	3	.046	7	.053		
207	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2		3	.053	8	.053		
208	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.027	3	.046	9	.053		
209	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.038	3	.038	10	.053		
210	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.046	3	.027	11	.053		
211	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.053	3		4	-.053		
212	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.046	3	-.027	5	-.053		
213	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.038	3	-.038	6	-.053		
214	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	-.027	3	-.046	7	-.053		
215	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2		3	-.053	8	-.053		
216	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.027	3	-.046	9	-.053		
217	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.038	3	-.038	10	-.053		
218	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	41	1.5	2	.046	3	-.027	11	-.053		
219	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	.053	3		4	.053		
220	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	.046	3	.027	5	.053		
221	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	.038	3	.038	6	.053		
222	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	.027	3	.046	7	.053		
223	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2		3	.053	8	.053		
224	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	-.027	3	.046	9	.053		
225	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	-.038	3	.038	10	.053		
226	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	-.046	3	.027	11	.053		
227	1.2DL + 1.5Lm + 1W...	Yes	Y		DL 1.2	42	1.5	2	-.053	3		4	-.053		



Load Combinations (Continued)

Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
228	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	-.046	3	-.027	5	-.053		
229	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	-.038	3	-.038	6	-.053		
230	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	-.027	3	-.046	7	-.053		
231	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2		3	-.053	8	-.053		
232	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	.027	3	-.046	9	-.053		
233	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	.038	3	-.038	10	-.053		
234	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	42	1.5	2	.046	3	-.027	11	-.053		
235	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.053	3		4	.053		
236	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.046	3	.027	5	.053		
237	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.038	3	.038	6	.053		
238	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.027	3	.046	7	.053		
239	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2		3	.053	8	.053		
240	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.027	3	.046	9	.053		
241	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.038	3	.038	10	.053		
242	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.046	3	.027	11	.053		
243	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.053	3		4	-.053		
244	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.046	3	-.027	5	-.053		
245	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.038	3	-.038	6	-.053		
246	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	-.027	3	-.046	7	-.053		
247	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2		3	-.053	8	-.053		
248	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.027	3	-.046	9	-.053		
249	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.038	3	-.038	10	-.053		
250	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	43	1.5	2	.046	3	-.027	11	-.053		
251	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.053	3		4	.053		
252	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.046	3	.027	5	.053		
253	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.038	3	.038	6	.053		
254	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.027	3	.046	7	.053		
255	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2		3	.053	8	.053		
256	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.027	3	.046	9	.053		
257	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.038	3	.038	10	.053		
258	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.046	3	.027	11	.053		
259	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.053	3		4	-.053		
260	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.046	3	-.027	5	-.053		
261	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.038	3	-.038	6	-.053		
262	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	-.027	3	-.046	7	-.053		
263	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2		3	-.053	8	-.053		
264	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.027	3	-.046	9	-.053		
265	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.038	3	-.038	10	-.053		
266	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	44	1.5	2	.046	3	-.027	11	-.053		
267	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.053	3		4	.053		
268	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.046	3	.027	5	.053		
269	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.038	3	.038	6	.053		
270	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.027	3	.046	7	.053		
271	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2		3	.053	8	.053		
272	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.027	3	.046	9	.053		
273	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.038	3	.038	10	.053		
274	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.046	3	.027	11	.053		
275	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.053	3		4	-.053		
276	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.046	3	-.027	5	-.053		
277	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.038	3	-.038	6	-.053		
278	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	-.027	3	-.046	7	-.053		
279	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2		3	-.053	8	-.053		
280	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.027	3	-.046	9	-.053		
281	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.038	3	-.038	10	-.053		
282	1.2DL + 1.5Lm + 1W...	Yes	Y	DL	1.2	45	1.5	2	.046	3	-.027	11	-.053		



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	N64	max	1230.387	6	1399.757	34	5456.399	2	1807.613	34	1721.474	30	746.759	182
2		min	-1228.563	30	303.636	26	-2836.212	26	221.328	26	-1720.454	22	-575.823	254
3	N68	max	2364.555	21	1399.669	44	1638.263	20	58.16	33	1444.754	25	1518.037	46
4		min	-4633.546	13	302.224	21	-2947.379	12	-1271.068	114	-1443.793	33	63.849	22
5	N66	max	4739	7	1402.101	39	1537.238	33	197	18	1444.921	19	-192.575	29
6		min	-2474.25	31	302.861	31	-2846.15	9	-1124.905	131	-1443.659	27	-1641.884	37
7	N163	max	38.774	22	1675.38	34	328.121	26	139.615	34	3.037	30	.625	13
8		min	-38.984	30	-117.334	26	-4465.4	34	-9.778	26	-3.046	22	-.539	21
9	N165	max	246.673	31	1669.99	39	2223.993	39	4.549	31	3.642	19	7.712	31
10		min	-3852.394	39	-107.44	31	-140.123	31	-69.595	39	-3.655	27	-120.514	39
11	N167	max	3858.448	45	1672.58	45	2227.709	45	4.334	21	3.641	25	120.722	45
12		min	-245.224	21	-106.812	21	-139.19	21	-69.667	45	-3.656	33	-7.775	21
13	Totals:	max	5275.343	6	8736.487	34	5405.56	2						
14		min	-5275.34	30	2535.375	74	-5405.556	26						

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

Member	Shape	Code Check	Lo...	LC	Sh...	Lo.....	LC	phi*...	phi*...	phi*...	phi*...	Eqn			
1	HR3	PIPE 2.0	.500	14..	32	.394	14..	8	6295..	32130	1871..	1871..	H3-6		
2	HR1	PIPE 2.0	.487	14..	27	.373	14..	3	6295..	32130	1871..	1871..	H3-6		
3	HR2	PIPE 2.0	.485	14..	22	.375	14..	14	6295..	32130	1871..	1871..	H3-6		
4	M9	L2.5x2.5x4	.442	0	8	.111	0	y	16	3572..	38556	1113..	2537..	H2-1	
5	M7	L2.5x2.5x4	.435	0	13	.110	0	y	5	3572..	38556	1113..	2537..	H2-1	
6	M8	L2.5x2.5x4	.434	0	2	.110	0	y	10	3572..	38556	1113..	2537..	H2-1	
7	MP6	PIPE 2.0	.417	69	17	.092	69		7	2774..	32130	1871..	1871..	H1-..	
8	MP10	PIPE 2.0	.416	69	11	.089	69		2	3023..	32130	1871..	1871..	H1-..	
9	MP4	PIPE 2.0	.413	27	10	.177	27		10	3023..	32130	1871..	1871..	H1-..	
10	MP2	PIPE 2.0	.404	69	6	.090	69		12	3023..	32130	1871..	1871..	H1-..	
11	MP8	PIPE 2.0	.398	69	5	.175	27		5	2774..	32130	1871..	1871..	H1-..	
12	MP12	PIPE 2.0	.398	27	15	.176	27		15	3023..	32130	1871..	1871..	H1-..	
13	MP7	PIPE 2.0	.377	69	17	.088	69		2	2774..	32130	1871..	1871..	H1-..	
14	MP11	PIPE 2.0	.376	69	11	.091	69		13	3023..	32130	1871..	1871..	H1-..	
15	M46	PL 6x0.375	.376	0	6	.215	1....	y	198	7204..	72900	569...	9112...	H1-..	
16	M40	PL 6x0.375	.373	0	16	.215	1....	y	128	7204..	72900	569...	9112...	H1-..	
17	M38	PL 6x0.375	.371	0	11	.215	1....	y	251	7204..	72900	569...	9112...	H1-..	
18	MP3	PIPE 2.0	.364	69	6	.090	69		8	2774..	32130	1871..	1871..	H1-..	
19	MP5	PIPE 2.0	.335	69	8	.151	69		11	2774..	32130	1871..	1871..	H1-..	
20	MP9	PIPE 2.0	.330	69	3	.152	69		6	2774..	32130	1871..	1871..	H1-..	
21	M41	PL 6x0.375	.325	0	14	.233	1....	y	237	7204..	72900	569...	9112...	H1-..	
22	MP1	PIPE 2.0	.322	69	14	.153	69		17	3023..	32130	1871..	1871..	H1-..	
23	M37	PL 6x0.375	.321	0	4	.233	1....	y	114	7204..	72900	569...	9112...	H1-..	
24	M39	PL 6x0.375	.320	0	9	.233	1....	y	183	7204..	72900	569...	9112...	H1-..	
25	M28	PL6"x0.5"	.282	6.81	14	.079	6....	y	205	9624..	97200	1012..	12150...	H1-..	
26	M30	PL6"x0.5"	.281	6.81	8	.093	6.81	y	148	9624..	97200	1012..	12150...	H1-..	
27	M29	PL6"x0.5"	.281	6.81	3	.093	6.81	y	271	9624..	97200	1012..	12150...	H1-..	
28	B1	L2x2x3	.219	25..	9	.010	0	z	2	9408..	2339..	557...	1066...	H2-1	
29	B5	L2x2x3	.208	25..	14	.009	51..	y	40	9408..	2339..	557...	1063...	H2-1	
30	B6	L2x2x3	.208	25..	11	.010	51..	z	48	9408..	2339..	557...	1064...	H2-1	
31	B2	L2x2x3	.196	26..	6	.010	0	z	43	9408..	2339..	557...	1066...	H2-1	
32	B3	L2x2x3	.196	25..	3	.009	51..	z	14	9408..	2339..	557...	1060...	H2-1	
33	B4	L2x2x3	.185	25..	17	.010	51..	z	38	9408..	2339..	557...	1060...	H2-1	
34	S2	HSS4X4X4	.161	0	14	.081	0	y	183	1293..	1395..	1618..	1618..	1	H1-..
35	S3	HSS4X4X4	.144	0	9	.081	0	y	113	1293..	1395..	1618..	1618..	1	H1-..
36	S1	HSS4X4X4	.143	0	3	.081	0	y	236	1293..	1395..	1618..	1618..	1	H1-..
37	M95	LL2.5x2.5x3x0	.106	0	34	.005	0	z	14	4486..	58320	3300..	2544..	1	H1-..



Company : Trylon
 Designer : ALWM
 Job Number : 202064
 Model Name : 842423

Feb 17, 2022
 2:51 AM
 Checked By: _____

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

Member	Shape	Code Check	Lo...	LC	Sh...	Lo.....	LC	phi*...	phi*...	phi*...	phi*...	Eqn	
38	M99	LL2.5x2.5x3x0	.106	0	45	.006	0 z	8	4486.	58320	3300.	2544.	H1-..
39	M97	LL2.5x2.5x3x0	.106	0	39	.006	0 z	3	4486.	58320	3300.	2544.	H1-..
40	C2	HSS4X4X4	.106	28..	38	.035	28..y	236	1384.	1395.	1618.	1618.	H1-..
41	C4	HSS4X4X4	.105	28..	49	.035	28..y	183	1384.	1395.	1618.	1618.	H1-..
42	C6	HSS4X4X4	.105	28..	43	.035	28..y	114	1384.	1395.	1618.	1618.	H1-..
43	H3	PIPE 3.0	.101	53..	13	.113	51..	7	2825.	65205	5748.	5748.	1 H1-..
44	H2	PIPE 3.0	.100	96..	2	.113	98..	13	2825.	65205	5748.	5748.	1 H1-..
45	H1	PIPE 3.0	.098	96..	7	.115	98..	2	2825.	65205	5748.	5748.	1 H1-..
46	C5	HSS4X4X4	.093	0	46	.044	25..z	6	1384.	1395.	1618.	1618.	H1-..
47	C3	HSS4X4X4	.093	0	251	.044	25..z	11	1384.	1395.	1618.	1618.	H1-..
48	C1	HSS4X4X4	.093	0	129	.044	25..z	17	1384.	1395.	1618.	1618.	H1-..
49	M33	PL6"x0.5"	.028	0	9	.209	1....y	216	9689.	97200	1012.	12150	...H1-..
50	M31	PL6"x0.5"	.028	0	6	.209	1....y	147	9689.	97200	1012.	12150	...H1-..
51	M35	PL6"x0.5"	.028	0	17	.209	1....y	270	9689.	97200	1012.	12150	...H1-..
52	M34	PL6"x0.5"	.026	0	13	.208	1....y	100	9689.	97200	1012.	12150	...H1-..
53	M36	PL6"x0.5"	.026	0	2	.208	1....y	169	9689.	97200	1012.	12150	...H1-..
54	M32	PL6"x0.5"	.025	0	8	.208	1....y	223	9689.	97200	1012.	12150	...H1-..

APPENDIX D
ADDITIONAL CALCULATIONS

BOLT TOOL 1.5.2

Project Data	
Job Code:	202064
Carrier Site ID:	CTNL200A
Carrier Site Name:	CTNL200A

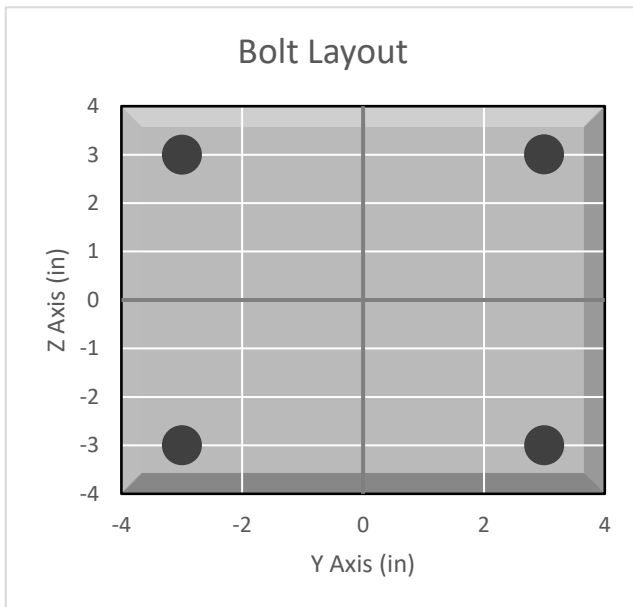
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in

Connection Description
Mount to Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	3134.8	lbs
Shear Force (V_u):	372.7	lbs
Tension Usage:	14.7%	--
Shear Usage:	2.6%	--
Interaction:	14.7%	Pass
Controlling Member:	S2	--
Controlling LC:	37	--

*Rating per TIA-222-H Section 15.5



BOLT TOOL 1.5.2

Project Data	
Job Code:	202064
Carrier Site ID:	CTNL200A
Carrier Site Name:	CTNL200A

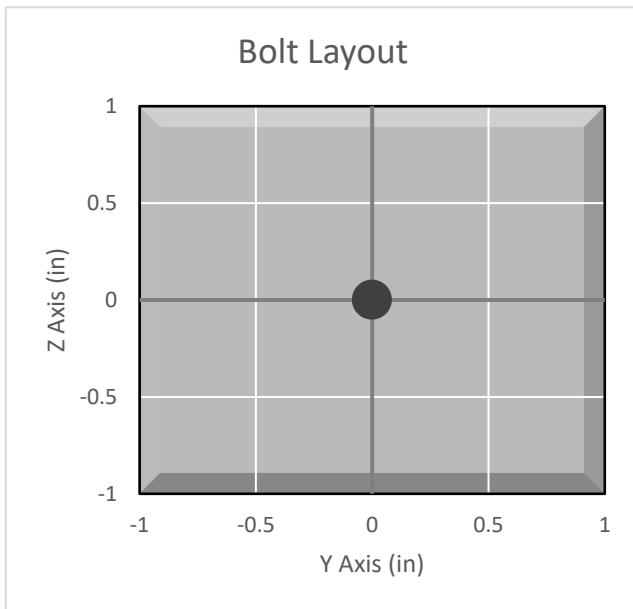
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	1	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in

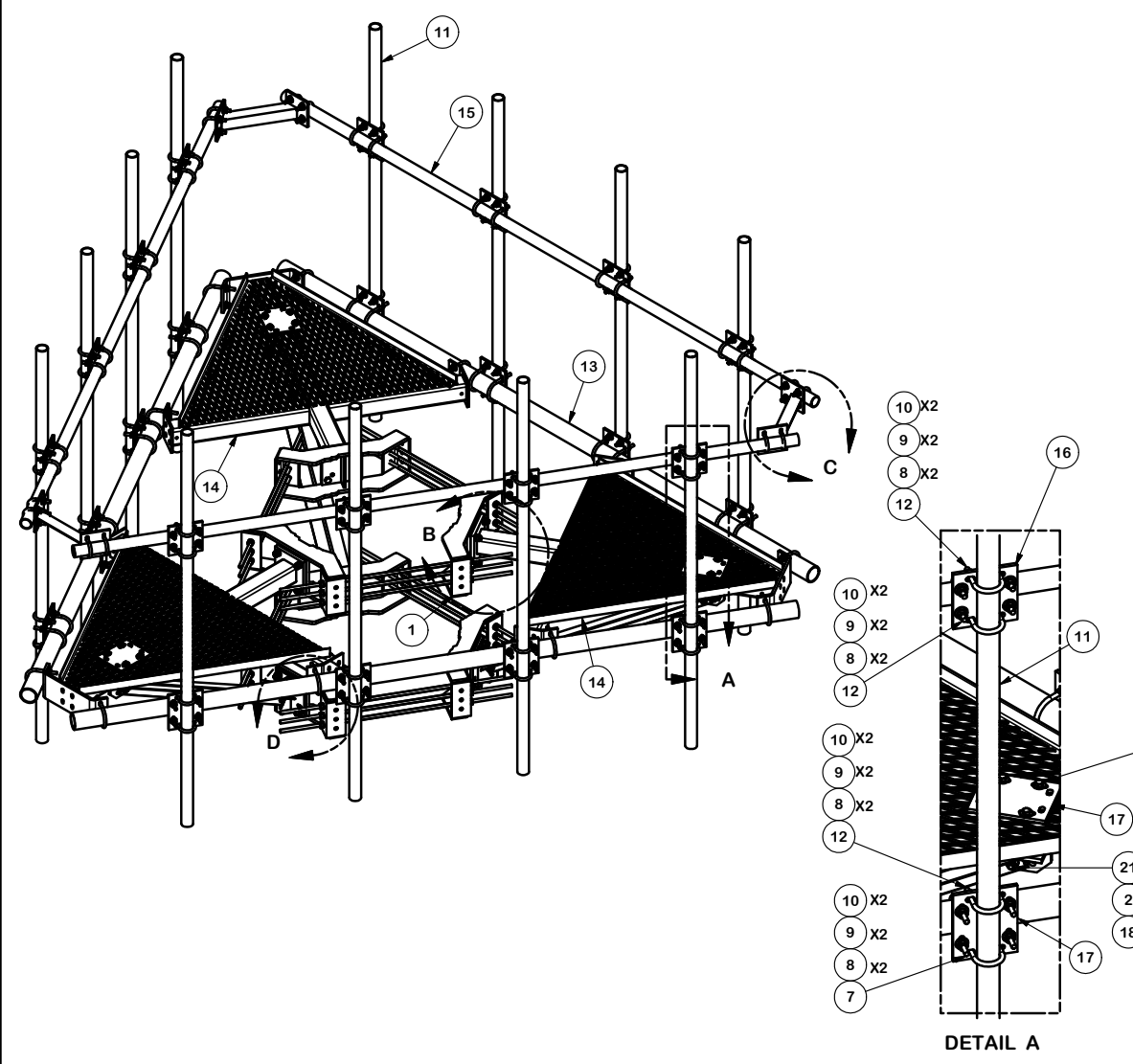
Connection Description
Kicker to Tower

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	0.1	lbs
Shear Force (V_u):	4769.3	lbs
Tension Usage:	0.0%	--
Shear Usage:	32.9%	--
Interaction:	32.9%	Pass
Controlling Member:	M100	--
Controlling LC:	34	--

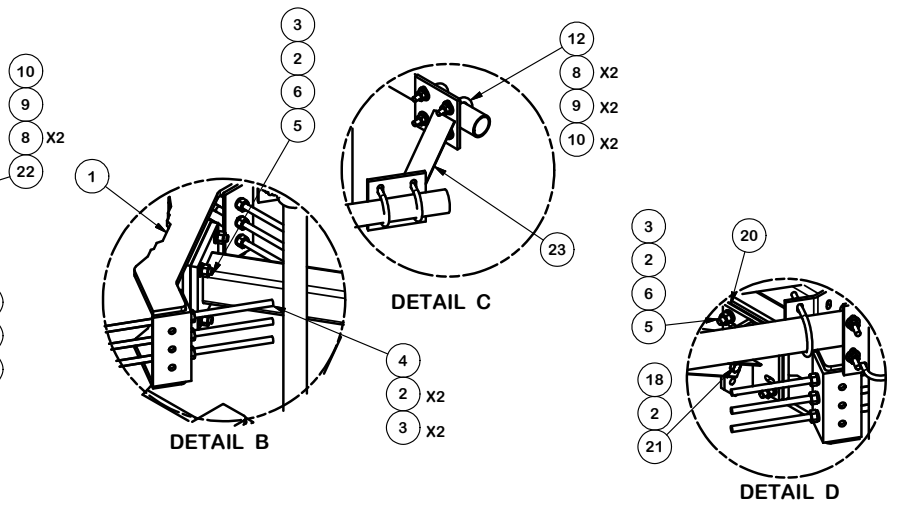
*Rating per TIA-222-H Section 15.5



APPENDIX E
SUPPLEMENTAL DRAWINGS



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMNT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
4	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
5	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
6	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
7	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
8	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
9	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
10	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
11	12	P296	2-3/8" X 96" SCH. 40 GALVANIZED PIPE	96 in	30.76	369.08
12	84	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	50.17
13	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
14	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
15	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
16	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
17	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
18	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
19	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
20	6	X-TBW	T-BRACKET WELDMNT		13.60	81.60
21	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
22	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
23	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2445.81



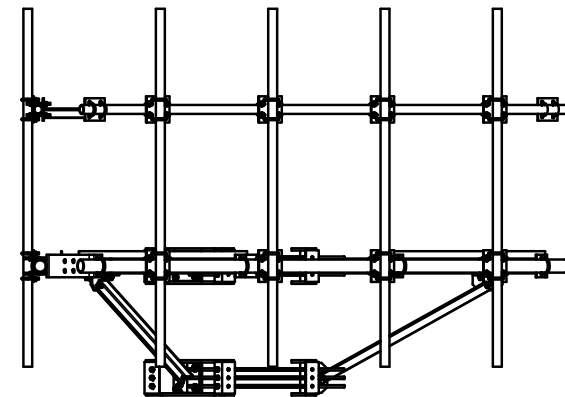
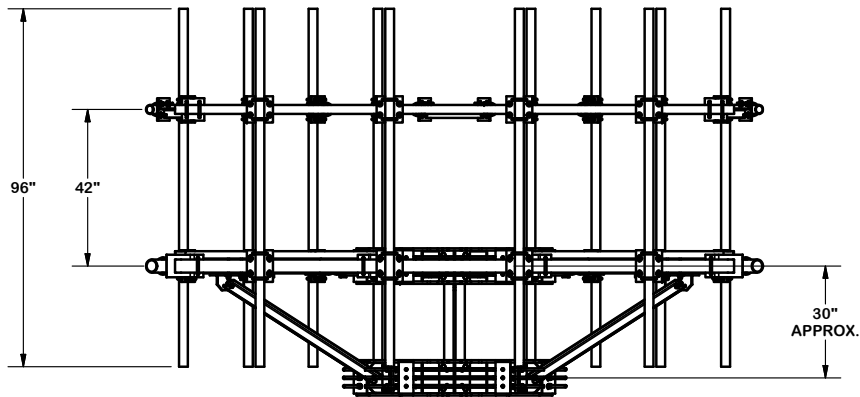
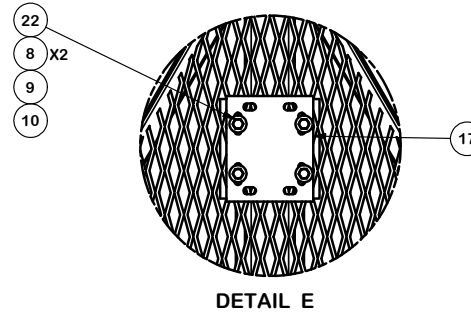
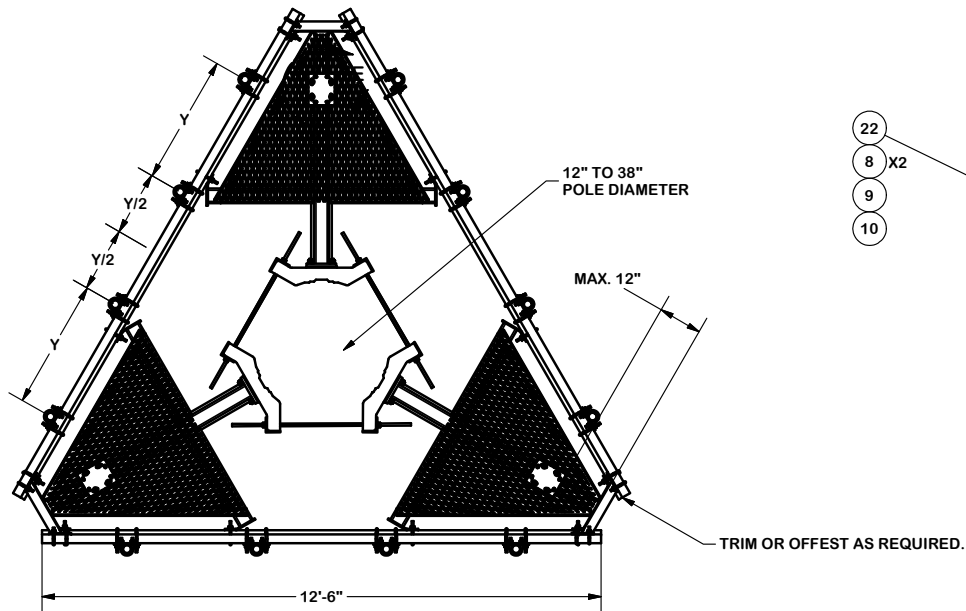
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED X-253992 TO X-TBW	4488	CEK	9/20/2018
REVISION HISTORY				

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

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

DESCRIPTION 12' 6" LOW PROFILE PLATFORM WITH TWELVE 2-3/8" ANTENNA MOUNTING PIPES, AND HANDRAIL	
CPD NO. 4488	DRAWN BY CEK 7/14/2014
CLASS 81	SUB 02
DRAWING USAGE CUSTOMER	ENG. APPROVAL BMC 7/14/2014

 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	Engineering Support Team: 1-888-753-7446
PART NO. RMQP-496-HK	DWG. NO. RMQP-496-HK



TOLERANCE NOTES

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

PROPRIETARY NOTE:
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DESCRIPTION
 12' 6" LOW PROFILE PLATFORM
 WITH TWELVE 2-3/8" ANTENNA MOUTING
 PIPES, AND HANDRAIL



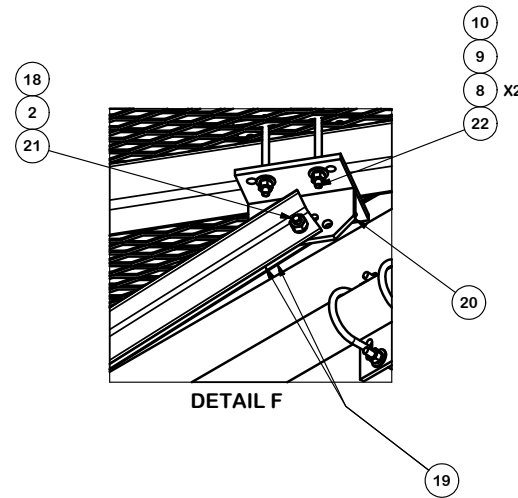
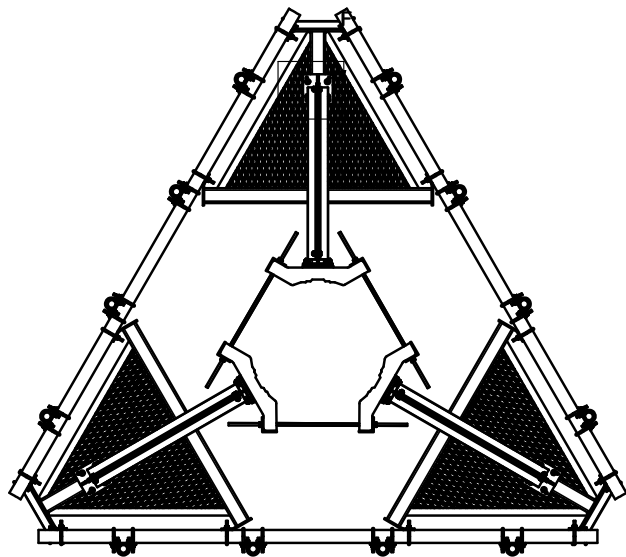
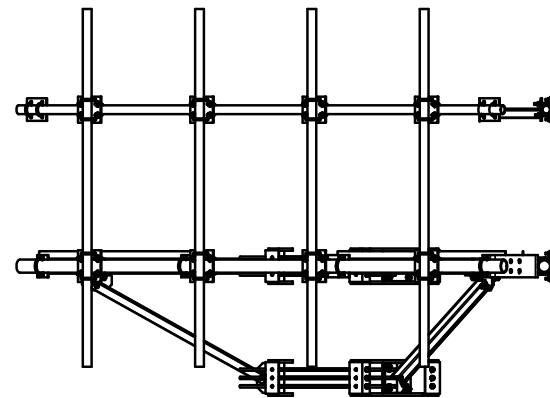
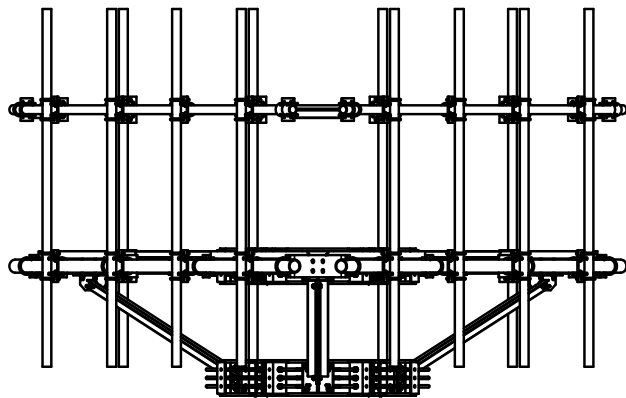
Engineering Support Team:
 1-888-753-7446

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED X-253992 TO X-TBW	4488	CEK	9/20/2018

CPD NO. 4488	DRAWN BY CEK 7/14/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
CHECKED BY BMC 7/14/2014		

PART NO. RMQP-496-HK	PAGE 2 OF 3
DWG. NO. RMQP-496-HK	



DETAIL F

TOLERANCE NOTES

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

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DESCRIPTION

12' 6" LOW PROFILE PLATFORM
 WITH TWELVE 2-3/8" ANTENNA MOUTING
 PIPES, AND HANDRAIL



A valmont COMPANY

Engineering
 Support Team:
 1-888-753-7446

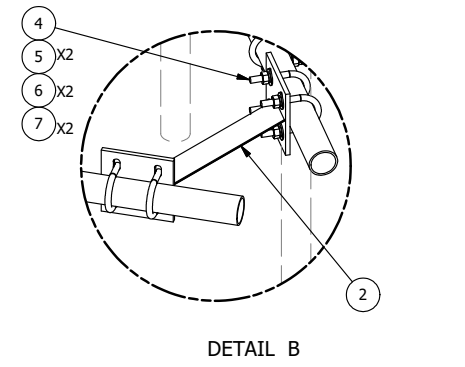
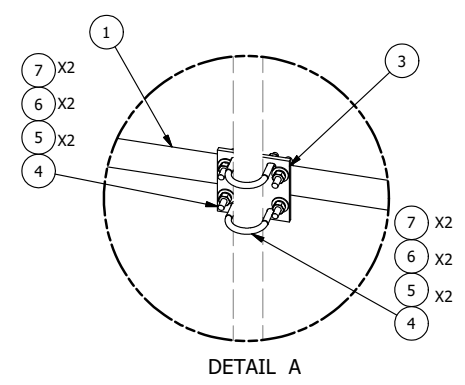
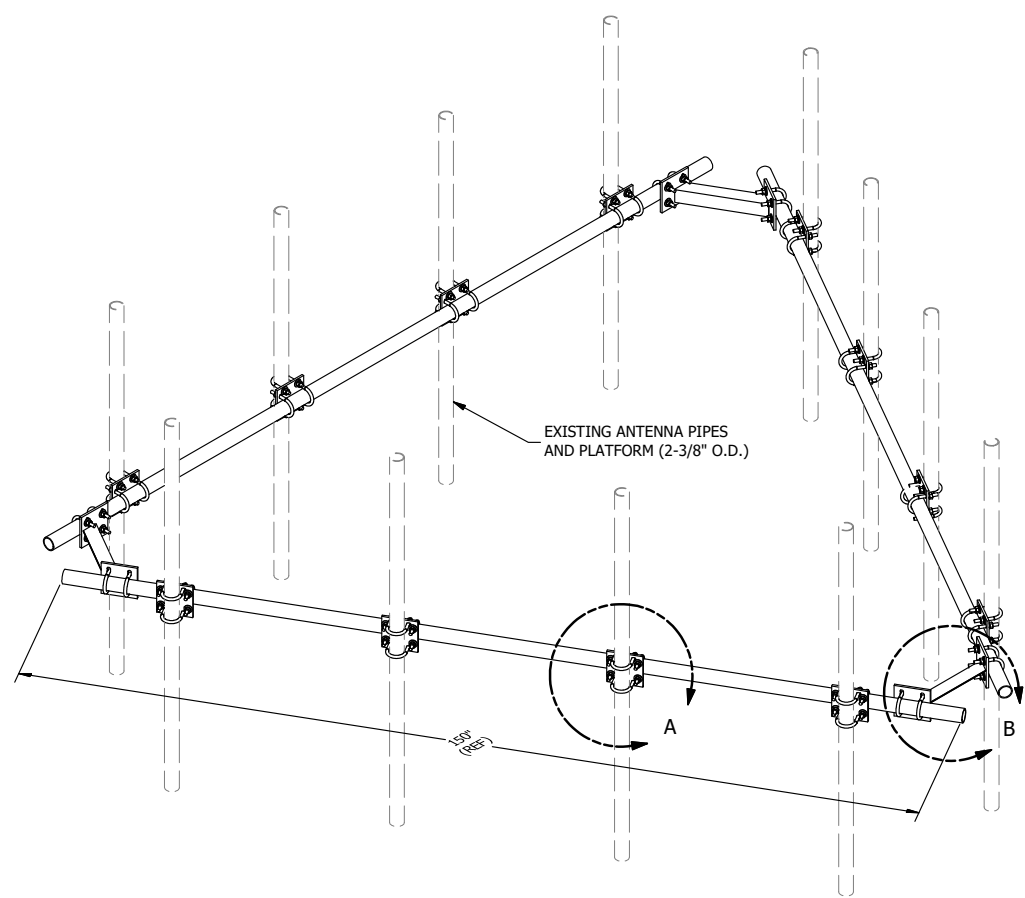
Locations:
 New York, NY
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 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED X-253992 TO X-TBW	4488	CEK	9/20/2018
REVISION HISTORY				

CPD NO. 4488	DRAWN BY CEK 7/14/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
CHECKED BY BMC 7/14/2014		

PART NO. RMQP-496-HK	3 OF 3 PAGE
DWG. NO. RMQP-496-HK	

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



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

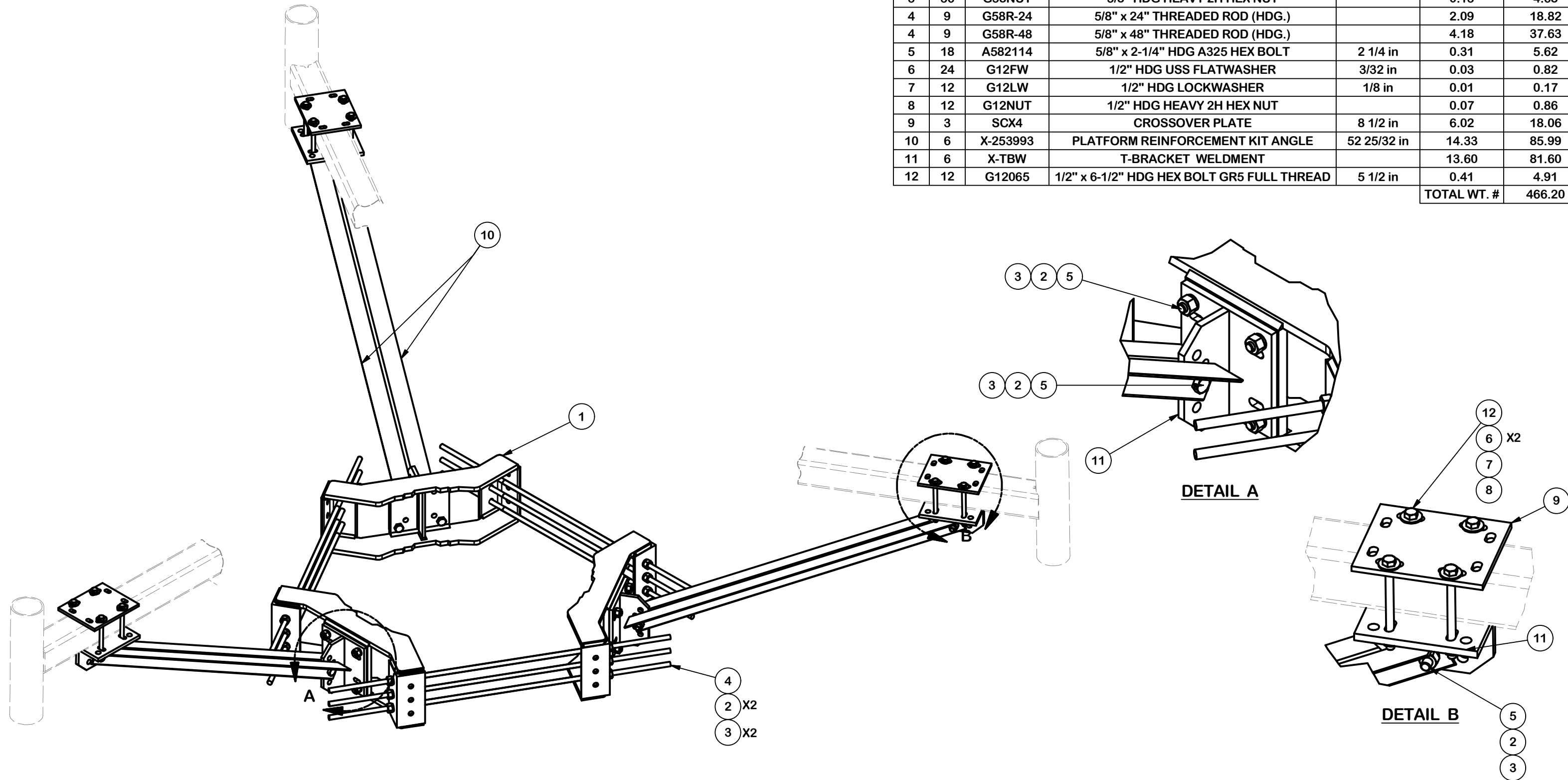
TOLERANCE NOTES
**TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm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

PROPRIETARY NOTE:
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DESCRIPTION			
HANDRAIL KIT FOR 12'-6" FACE			
CPD NO.	DRAWN BY	ENG. APPROVAL	
	KC8 5/30/2012		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 7/13/2014

 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX	
	Engineering Support Team: 1-888-753-7446	
PART NO.	HRK12	PAGE 1 OF 1
DWG. NO.	HRK12	

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	36	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	4.68
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	18.82
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	37.63
5	18	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	5.62
6	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
7	12	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.17
8	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
9	3	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	18.06
10	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
11	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
12	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
					TOTAL WT. #	466.20



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	CHANGED X-253992 TO X-TBW		CEK	9/19/2018
A	CHANGED ALL 5/8" BOLTS TO A582114	4488	CEK	10/1/2015

REVISION HISTORY

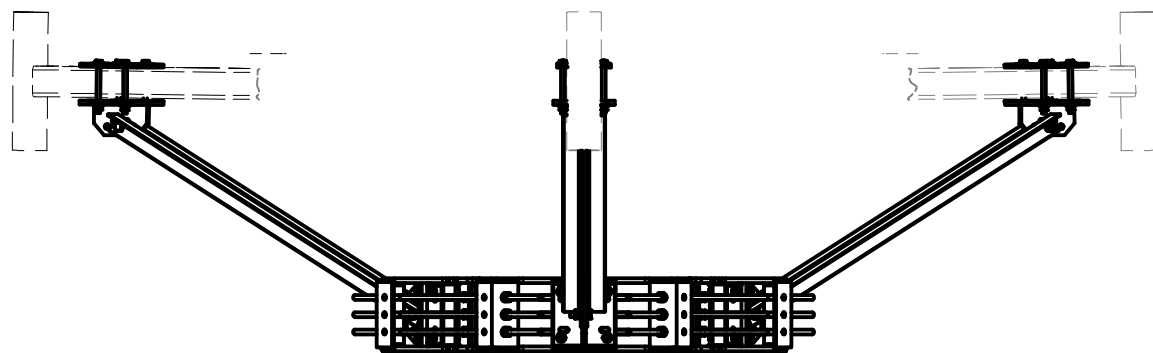
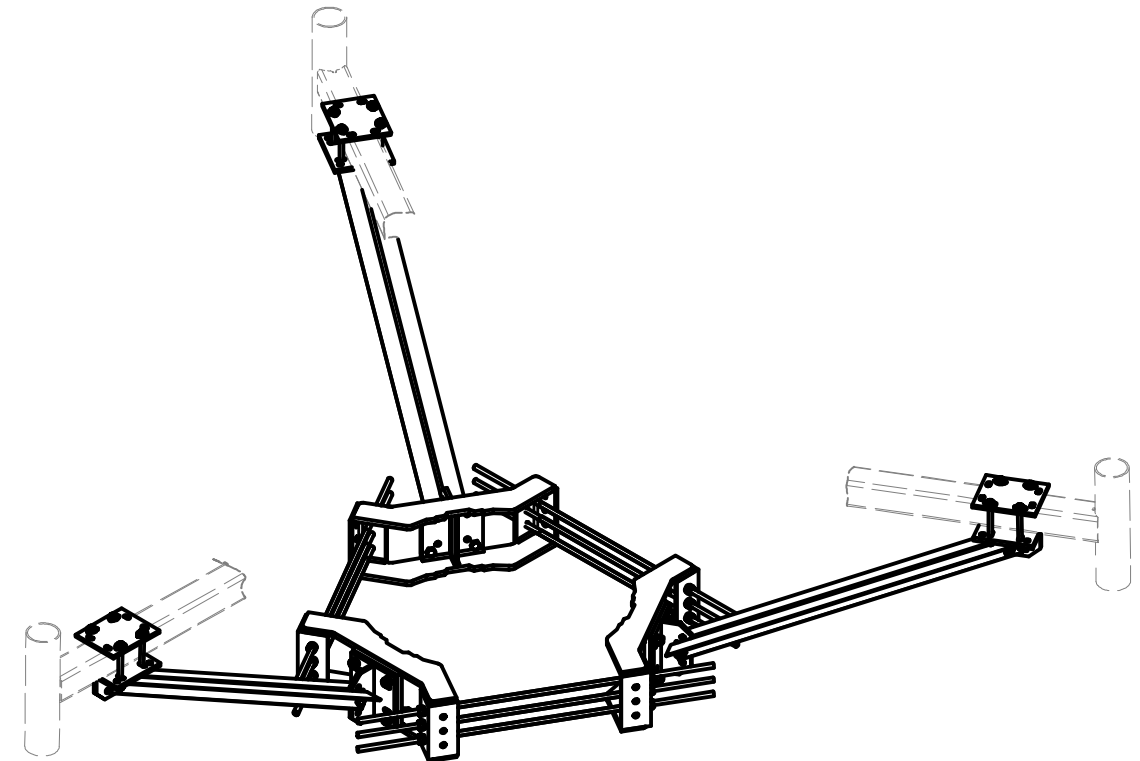
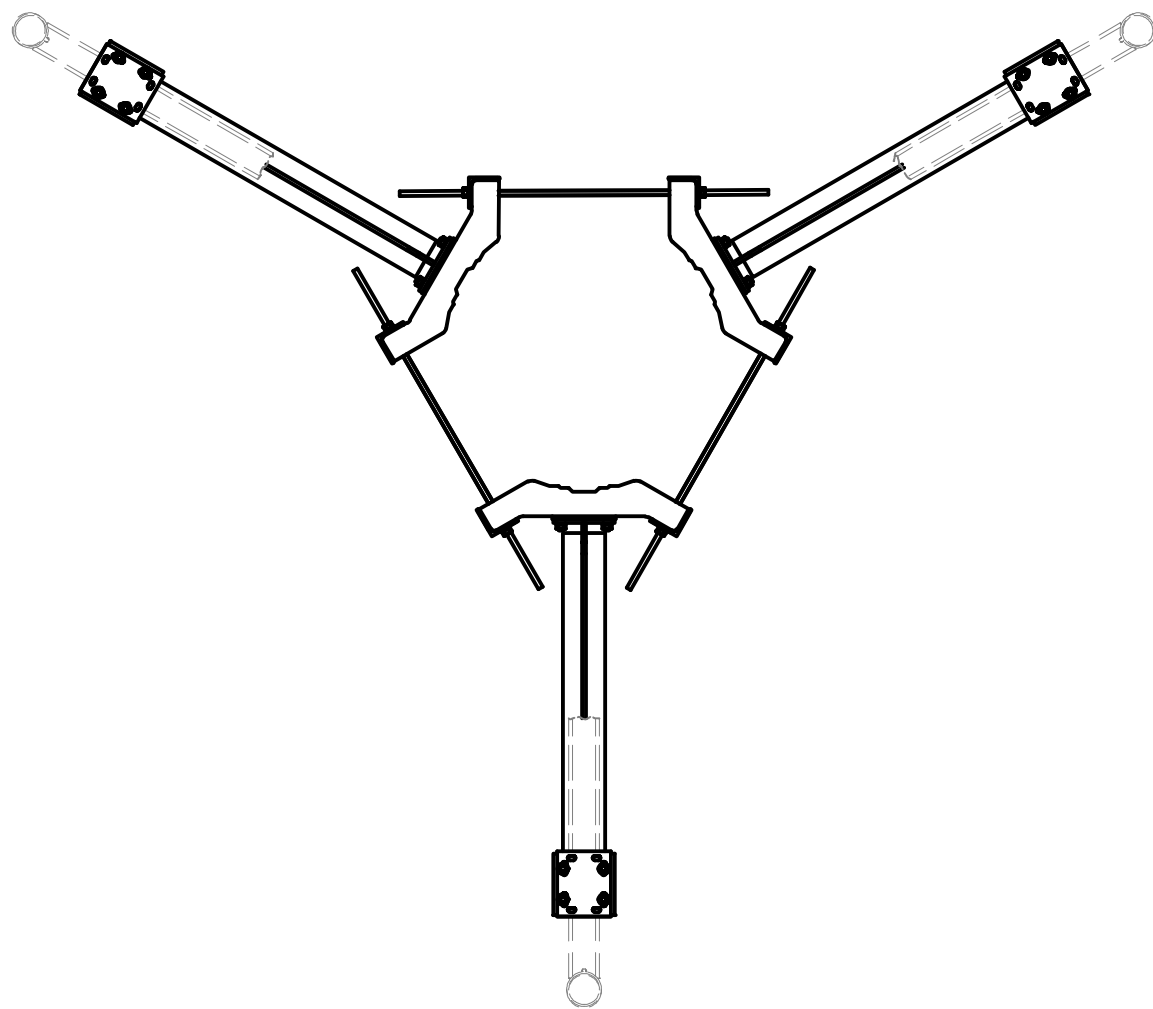
TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
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 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

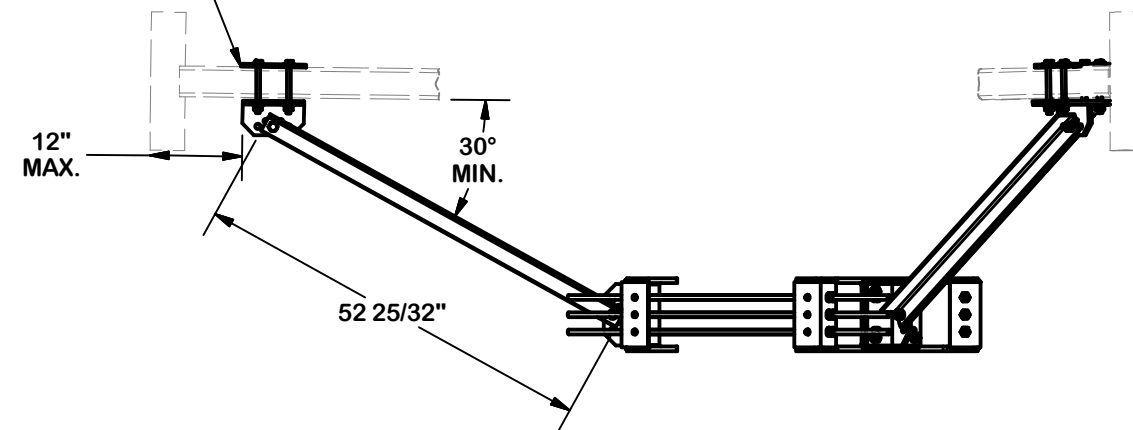
PROPRIETARY NOTE:
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DESCRIPTION			
PLATFORM REINFORCEMENT ON A 12" TO 45" POLE 4' 6" ANGLE			
CPD NO.	DRAWN BY	ENG. APPROVAL	
4488	CEK 4/11/2014		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 1/18/2016

 A valmont COMPANY	Engineering Support Team: 1-888-753-7446	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX	
	PART NO.	PRK-1245	
DWG. NO.	PRK-1245		1 OF 2



FITS UP TO 4" ROUND OR SQUARE TUBES



TOLERANCE NOTES

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

PROPRIETARY NOTE:
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DESCRIPTION
**PLATFORM REINFORCEMENT
 ON A 12" TO 45" POLE
 4' 6" ANGLE**

CPD NO. 4488	DRAWN BY CEK 4/11/2014	ENG. APPROVAL
CLASS 81	SUB 01	DRAWING USAGE CUSTOMER
CHECKED BY BMC 1/18/2016		

SITE PRO 1
 A valmont COMPANY

Engineering Support Team:
 1-888-753-7446

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	CHANGED X-253992 TO X-TBW		CEK	9/19/2018
A	CHANGED ALL 5/8" BOLTS TO A582114	4488	CEK	10/1/2015

REVISION HISTORY

PART NO. PRK-1245
DWG. NO. PRK-1245

Exhibit F

Power Density/RF Emissions Report



Radio Frequency Exposure Analysis Report

August 26, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: CTNL200A
Site Number: CTNL200A

Site Address: 10 N Ridge Dr, North Windham, CT 06256

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	116.88382 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	11.690720000000001%



August 26, 2022

Centerline
Attn: Jessica Meyer, Project Coordinator
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **CTNL200A**

Centerline Communications, LLC (“Centerline”) was contracted to analyze the proposed T-Mobile facility at **10 N Ridge Dr, North Windham, CT 06256** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.



Calculation Methodology

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

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



Data & Results

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

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

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



Maximum Calculated Cumulative Power Density (Location: approximately 174' southeast of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	COMMSCOPE VV-65A-R1	1900	15.77	64.00	2.00	140.00	10572.02	0.00002	1000.00	0.00000
T-Mobile A 1	COMMSCOPE VV-65A-R1	2100	16.47	64.00	2.00	140.00	12421.04	0.00001	1000.00	0.00000
T-Mobile A 1	COMMSCOPE VV-65A-R1	1900	15.77	64.00	1.00	15.00	566.36	0.00000	1000.00	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	700	13.65	64.00	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	4.00	60.00	4733.81	0.00003	400.00	0.00001
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	2.00	40.00	1577.94	0.00001	400.00	0.00000
T-Mobile A 3	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00000	1000.00	0.00000
T-Mobile A 3	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00000	1000.00	0.00000
T-Mobile A 3	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	0.56858	1000.00	0.05686
T-Mobile A 3	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	0.56858	1000.00	0.05686
T-Mobile B 4	COMMSCOPE VV-65A-R1	1900	15.77	64.00	2.00	140.00	10572.02	0.00002	1000.00	0.00000
T-Mobile B 4	COMMSCOPE VV-65A-R1	2100	16.47	64.00	2.00	140.00	12421.04	0.00001	1000.00	0.00000
T-Mobile B 4	COMMSCOPE VV-65A-R1	1900	15.77	64.00	1.00	15.00	566.36	0.00000	1000.00	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	700	13.65	64.00	2.00	40.00	1853.92	0.00001	466.67	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	4.00	60.00	4733.81	0.00001	400.00	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	2.00	40.00	1577.94	0.00000	400.00	0.00000
T-Mobile B 6	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00000	1000.00	0.00000
T-Mobile B 6	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00000	1000.00	0.00000
T-Mobile B 6	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	0.39750	1000.00	0.03975
T-Mobile B 6	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	0.39750	1000.00	0.03975
T-Mobile C 7	COMMSCOPE VV-65A-R1	1900	15.77	64.00	2.00	140.00	10572.02	0.00667	1000.00	0.00067
T-Mobile C 7	COMMSCOPE VV-65A-R1	2100	16.47	64.00	2.00	140.00	12421.04	0.00648	1000.00	0.00065
T-Mobile C 7	COMMSCOPE VV-65A-R1	1900	15.77	64.00	1.00	15.00	566.36	0.00036	1000.00	0.00004
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	700	13.65	64.00	2.00	40.00	1853.92	0.00167	466.67	0.00036
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	4.00	60.00	4733.81	0.00436	400.00	0.00109
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	64.00	2.00	40.00	1577.94	0.00145	400.00	0.00036
T-Mobile C 9	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00068	1000.00	0.00007
T-Mobile C 9	ERICSSON AIR6449	2500	15.15	64.00	1.00	30.00	982.02	0.00068	1000.00	0.00007
T-Mobile C 9	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	57.43998	1000.00	5.74400
T-Mobile C 9	ERICSSON AIR6449	2500	22.35	64.00	1.00	90.00	15461.18	57.43998	1000.00	5.74400
AT&T A 10	POWERWAVE 7770	850	11.35	84.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T A 11	CCI DMP65R-BU8D	700	12.25	84.00	2.00	40.00	1343.04	0.00000	466.67	0.00000
AT&T A 11	CCI DMP65R-BU8D	2300	14.25	84.00	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T A 12	CCI OPA-65R-LCUU-H8	700	12.76	84.00	4.00	40.00	3020.79	0.00001	466.67	0.00000
AT&T A 12	CCI OPA-65R-LCUU-H8-	1900	14.76	84.00	4.00	40.00	4787.62	0.00000	1000.00	0.00000



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
AT&T A 12	CCI OPA-65R-LCUU-H8-	2100	14.96	84.00	4.00	40.00	5013.26	0.00000	1000.00	0.00000
AT&T A 13	CCI OPA65R-BU8D	700	13.15	84.00	4.00	40.00	3304.61	0.00000	466.67	0.00000
AT&T A 13	CCI OPA65R-BU8D	850	13.75	84.00	4.00	40.00	3794.20	0.00000	566.67	0.00000
AT&T B 14	POWERWAVE 7770	850	11.35	84.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T B 15	CCI DMP65R-BU8D	700	12.25	84.00	2.00	40.00	1343.04	0.00000	466.67	0.00000
AT&T B 15	CCI DMP65R-BU8D	2300	14.25	84.00	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T B 16	CCI OPA-65R-LCUU-H8	700	12.76	84.00	4.00	40.00	3020.79	0.00001	466.67	0.00000
AT&T B 16	CCI OPA-65R-LCUU-H8-	1900	14.76	84.00	4.00	40.00	4787.62	0.00000	1000.00	0.00000
AT&T B 16	CCI OPA-65R-LCUU-H8-	2100	14.96	84.00	4.00	40.00	5013.26	0.00000	1000.00	0.00000
AT&T B 17	CCI OPA65R-BU8D	700	13.15	84.00	4.00	40.00	3304.61	0.00000	466.67	0.00000
AT&T B 17	CCI OPA65R-BU8D	850	13.75	84.00	4.00	40.00	3794.20	0.00000	566.67	0.00000
AT&T C 18	POWERWAVE 7770	850	11.35	84.00	1.00	40.00	545.83	0.00029	566.67	0.00005
AT&T C 19	CCI DMP65R-BU8D	700	12.25	84.00	2.00	40.00	1343.04	0.00087	466.67	0.00019
AT&T C 19	CCI DMP65R-BU8D	2300	14.25	84.00	4.00	25.00	2660.73	0.00116	1000.00	0.00012
AT&T C 20	CCI OPA-65R-LCUU-H8	700	12.76	84.00	4.00	40.00	3020.79	0.00191	466.67	0.00041
AT&T C 20	CCI OPA-65R-LCUU-H8-	1900	14.76	84.00	4.00	40.00	4787.62	0.00162	1000.00	0.00016
AT&T C 20	CCI OPA-65R-LCUU-H8-	2100	14.96	84.00	4.00	40.00	5013.26	0.00160	1000.00	0.00016
AT&T C 21	CCI OPA65R-BU8D	700	13.15	84.00	4.00	40.00	3304.61	0.00184	466.67	0.00039
AT&T C 21	CCI OPA65R-BU8D	850	13.75	84.00	4.00	40.00	3794.20	0.00218	566.67	0.00039
Verizon A 22	ANTEL BXA-70063-6CF	850	14.50	75.00	7.00	20.00	3945.74	0.00000	566.67	0.00000
Verizon A 23	COMMSCOPE NHH-65B-R2B	700	12.29	75.00	4.00	40.00	2710.94	0.00001	466.67	0.00000
Verizon A 23	COMMSCOPE NHH-65B-R2B	1900	15.65	75.00	4.00	40.00	5876.52	0.00000	1000.00	0.00000
Verizon A 24	COMMSCOPE NHH-65B-R2B	850	12.70	75.00	4.00	40.00	2979.34	0.00000	566.67	0.00000
Verizon A 24	COMMSCOPE NHH-65B-R2B	2100	16.22	75.00	4.00	40.00	6700.70	0.00000	1000.00	0.00000
Verizon A 25	SAMSUNG MT6407	3700	23.35	75.00	4.00	50.00	43254.37	0.00054	1000.00	0.00005
Verizon B 26	ANTEL BXA-70063-6CF	850	14.50	75.00	7.00	20.00	3945.74	0.00000	566.67	0.00000
Verizon B 27	COMMSCOPE NHH-65B-R2B	700	12.29	75.00	4.00	40.00	2710.94	0.00001	466.67	0.00000
Verizon B 27	COMMSCOPE NHH-65B-R2B	1900	15.65	75.00	4.00	40.00	5876.52	0.00000	1000.00	0.00000
Verizon B 28	COMMSCOPE NHH-65B-R2B	850	12.70	75.00	4.00	40.00	2979.34	0.00000	566.67	0.00000
Verizon B 28	COMMSCOPE NHH-65B-R2B	2100	16.22	75.00	4.00	40.00	6700.70	0.00000	1000.00	0.00000
Verizon B 29	SAMSUNG MT6407	3700	23.35	75.00	4.00	50.00	43254.37	0.00067	1000.00	0.00007
Verizon C 30	ANTEL BXA-70063-6CF	850	14.50	75.00	7.00	20.00	3945.74	0.00180	566.67	0.00032
Verizon C 31	COMMSCOPE NHH-65B-R2B	700	12.29	75.00	4.00	40.00	2710.94	0.00205	466.67	0.00044
Verizon C 31	COMMSCOPE NHH-65B-R2B	1900	15.65	75.00	4.00	40.00	5876.52	0.00193	1000.00	0.00019
Verizon C 32	COMMSCOPE NHH-65B-R2B	850	12.70	75.00	4.00	40.00	2979.34	0.00222	566.67	0.00039
Verizon C 32	COMMSCOPE NHH-65B-R2B	2100	16.22	75.00	4.00	40.00	6700.70	0.00203	1000.00	0.00020



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Verizon C 33	SAMSUNG MT6407	3700	23.35	75.00	4.00	50.00	43254.37	0.00000	1000.00	0.00265
							Cumulative Power Density:	116.88382 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	11.69072%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

A handwritten signature in black ink, appearing to read "Katrina Styx", with a long, sweeping horizontal stroke extending to the right.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC