UnwDate: June 13, 2021

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

Subject:	**Mount Analysis Report – Conditional Passing**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11280A
	Carrier Site Name:	Windsor Locks/Airport
Crown Castle Designation:	**BU Number:**	876326
	Site Name:	Hayden Station
	JDE Job Number:	652116
	Order Number:	559450, Rev. 0
Engineering Firm Designation:	**B+T Group Report Designation:**	136354.004.01
Site Data:	**440 Hayden Station Road, Windsor, CT, Hartford County, 06095** **Latitude 41° 53' 52.20" Longitude -72° 38' 38.70"**	
Structure Information:	**Tower Height & Type:**	**96 ft. Monopole**
	Mount Elevation:	**75 ft.**
	Mount Type:	**16 ft. Platform Mount**

B+T Group is pleased to submit this **"Mount Analysis – Conditional Passing Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the above mentioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

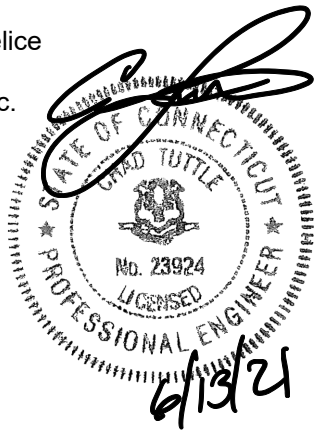
The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level to be:

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

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code (2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Anne Delice

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

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1) INTRODUCTION

This is an existing 3 - Sector 16' Platform Mount, mapped by B+T Group.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.178
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
75	75	3	Ericsson	AIR6449 B41_T-Mobile	16' Platform Mount
		3	RFS/Celwave	APX16DWV-16DWV-S-E-A20	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Commscope	SDX1926Q-43	
		6	Ericsson	Radio 4415 B66A	
		3	Ericsson	Radio 4424 B25_TMOV1	
		3	Ericsson	Radio 4449 B71 B85A_T-Mobile	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 06/07/2021	Crown Castle
RFDS		Date: 05/25/2021	
Mount Mapping	B+T Group	Date: 06/25/2019	On File
Previous MA		Date: 08/14/2019	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed by B+T Group, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision D). In addition, this analysis is in accordance with OTHER SOW.

Manufacturers drawing were used to create the model.

3.2) Assumptions

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

Component	Section	Length	Note
Proposed Mount Pipes	2" Std. Pipe	10'-0"	Position 2, All Sectors

5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
7. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
8. The following material grades were assumed (Unless Noted Otherwise):
   (a) Connection Bolts : ASTM A325
   (b) Steel Pipe : ASTM A53 (GR. 35)
   (c) HSS (Round) : ASTM 500 (GR. B-42)
   (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   (e) Channel : ASTM A36 (GR. 36)
   (f) Steel Solid Rod : ASTM A36 (GR. 36)
   (g) Steel Plate : ASTM A36 (GR. 36)
   (h) Steel Angle : ASTM A36 (GR. 36)
   (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1	Main Horizontals	75	27	39.2	Pass
	Support Tubes	75	41	73.7	Pass
	Support Angles	75	36	23.7	Pass
	Mount Pipes	75	74	91.7	Pass
	Connection Plates	75	16	96.6	Pass
	Support Rails	75	62	71.9	Pass
	Connection Angles	75	73	55.5	Pass
2	Connection Bolts	75	-	74.5	Pass

Structure Rating with Recommendations (max from all components) =	96.6%

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

4.1) Recommendations

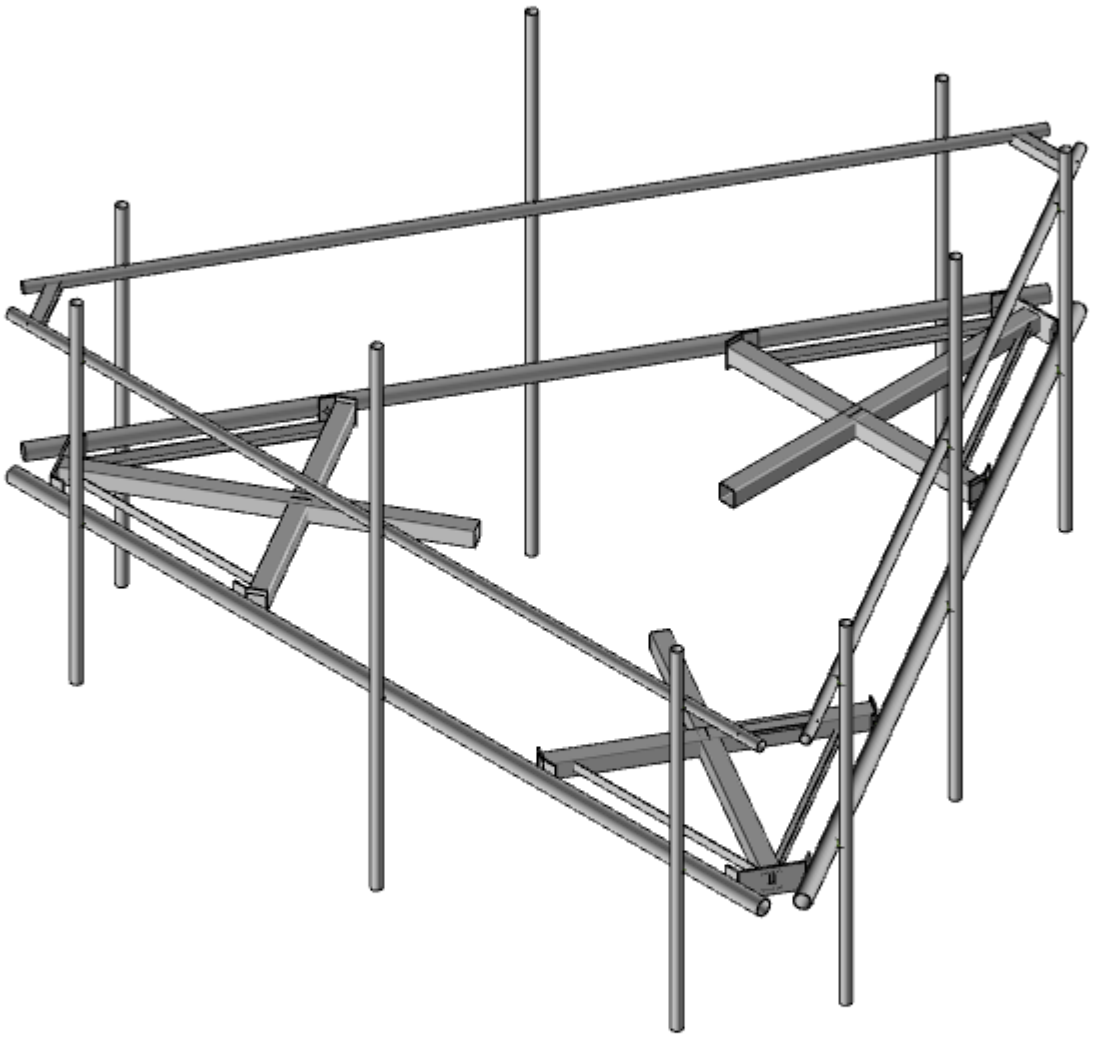
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the loading modification listed below must be completed.

1. Install Pipe 2.0 Std. x 16’-0” long support rail pipe connected with SitePro1 # X-AHCP.

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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VP		Jun 09, 2021
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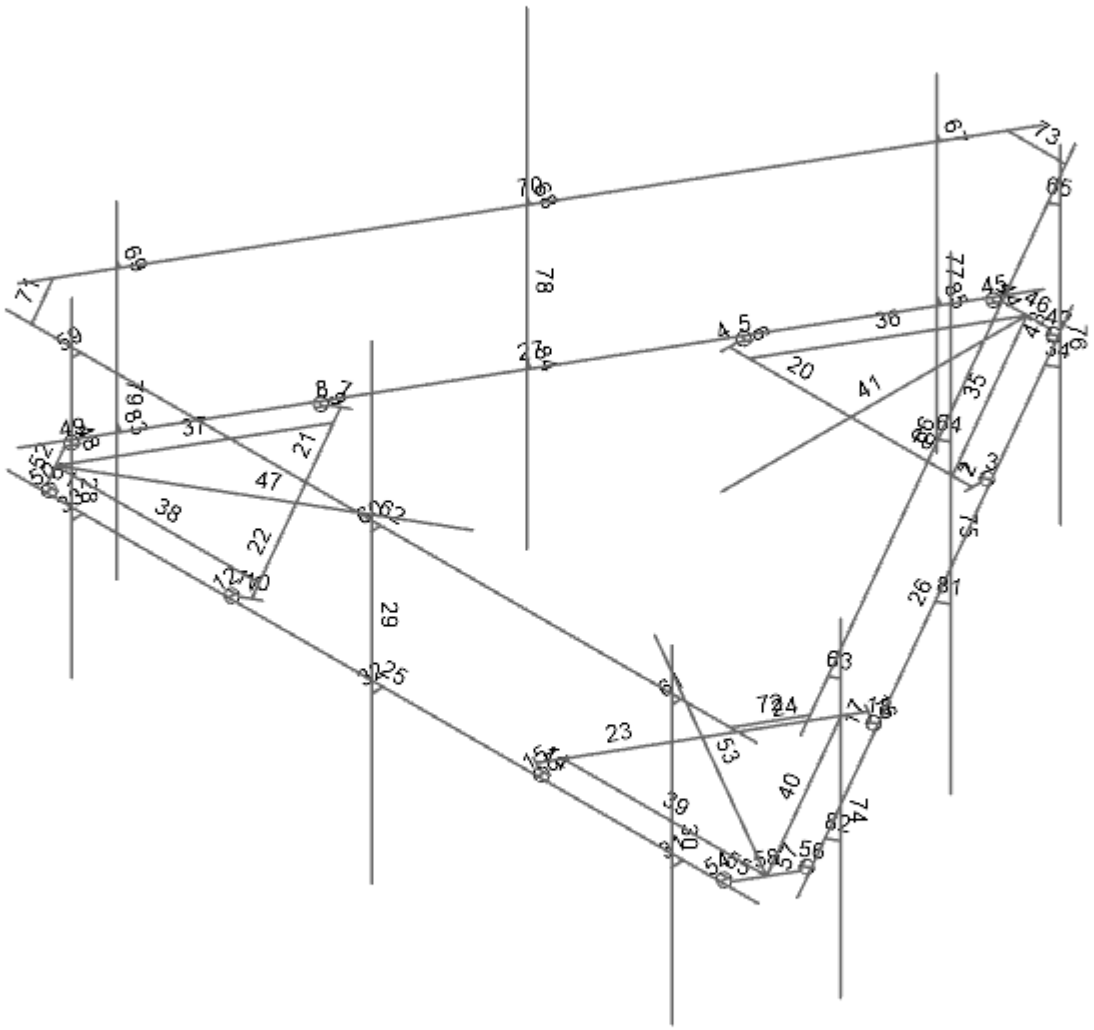

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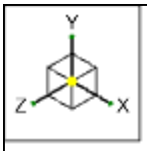

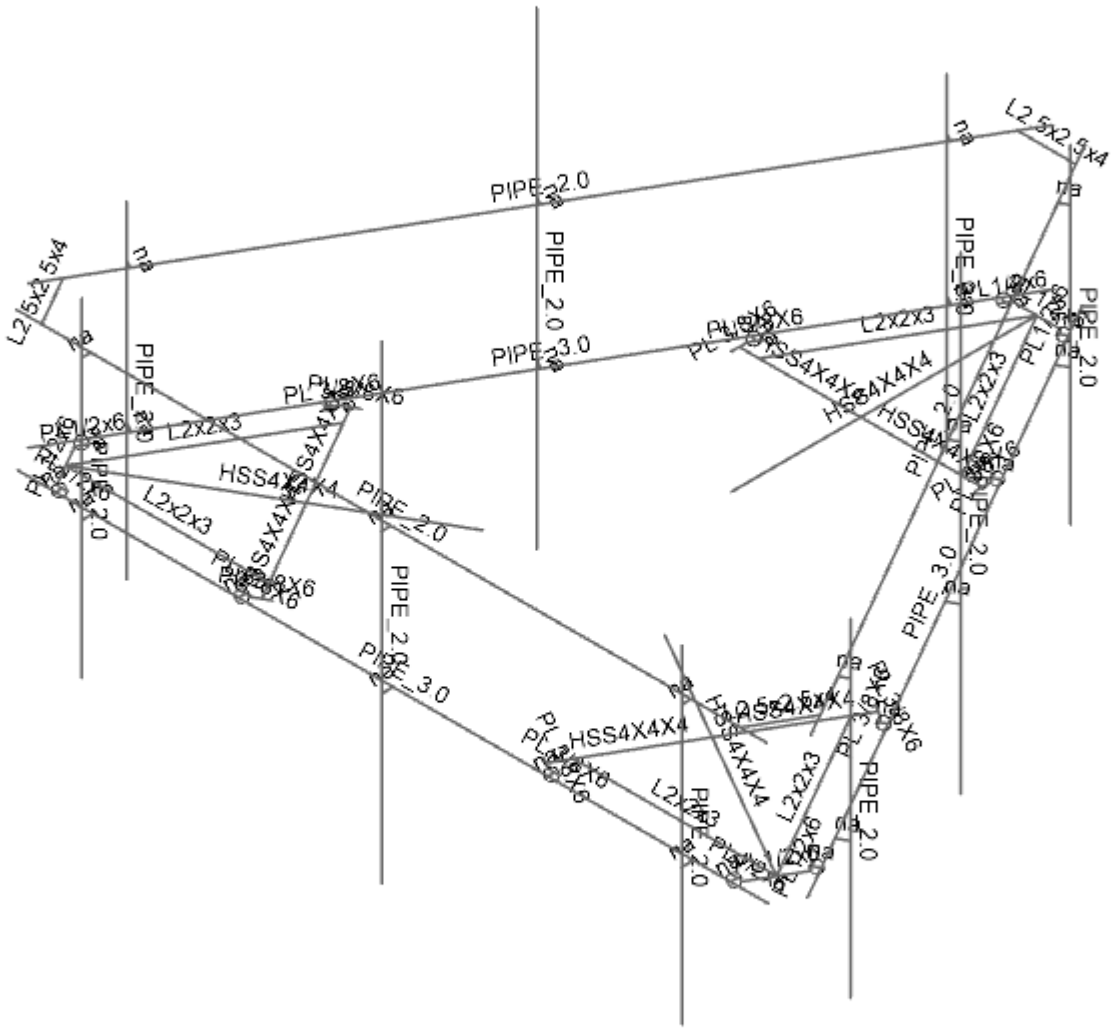

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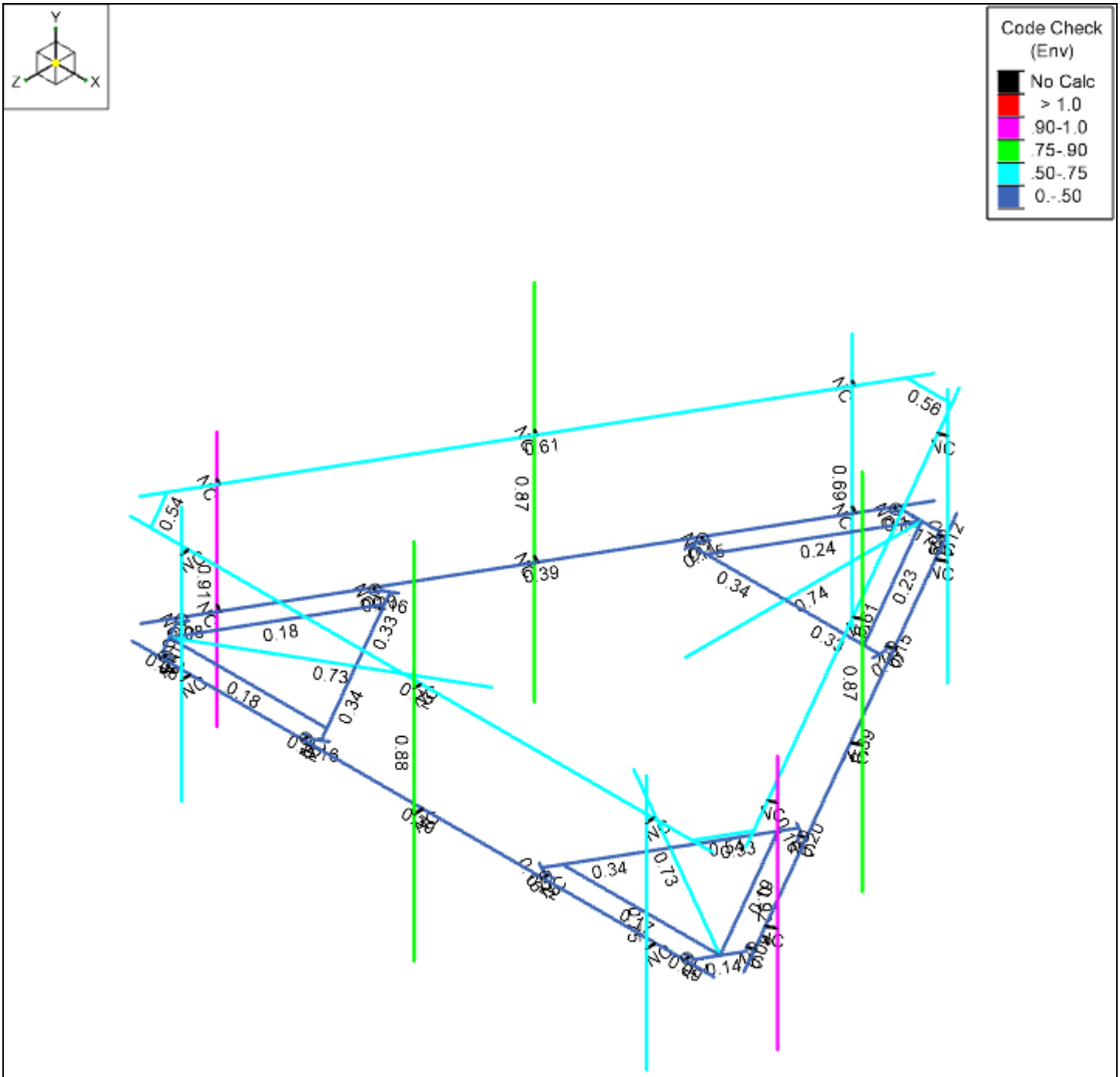

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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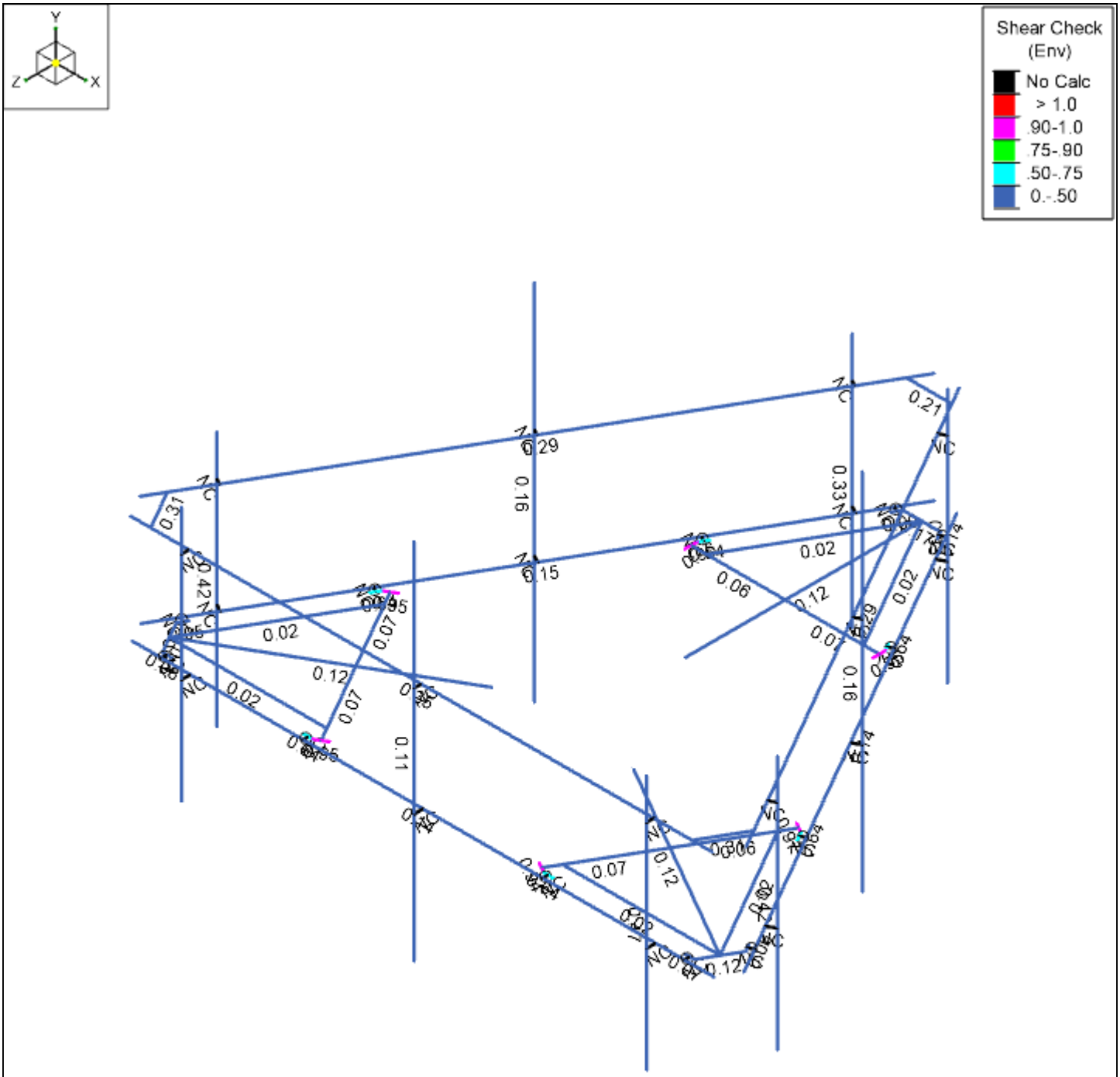


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876326 - Hayden Station	SK-5
VP		Jun 09, 2021
136354.004.01		136354_004_01_Hayden Station_...

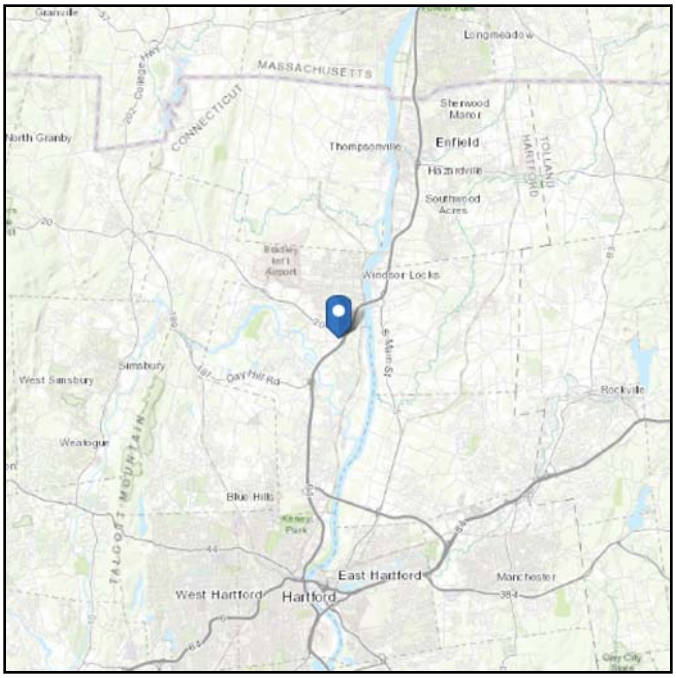
APPENDIX B

SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	141.24 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.897833
Soil Class:	D - Stiff Soil	**Longitude:**	-72.644083



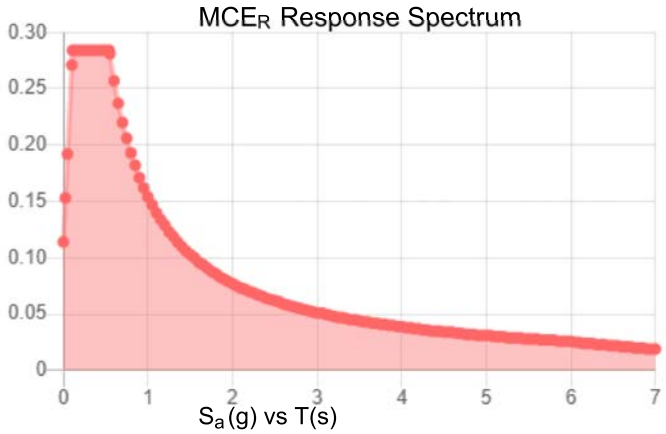
Seismic

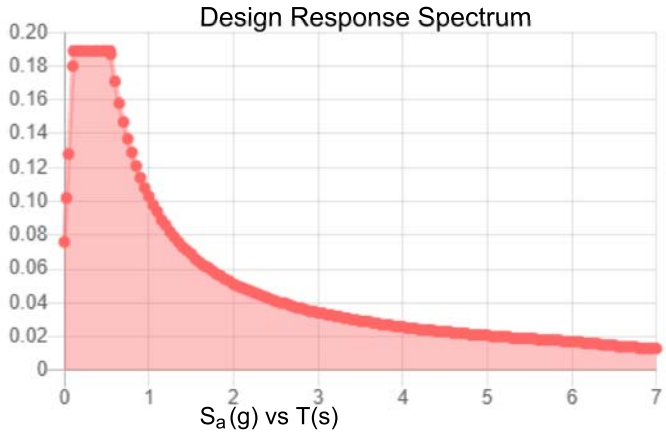
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.178	S_{DS} :	0.189
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.088
S_{MS} :	0.284	PGA_M :	0.141
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Jun 09 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Jun 09 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.

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SUBJECT	**Platform Mount Analysis**		
DATE	**06-09-21**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Tower Type		:	Monopole		
Ground Elevation	z_s	:	141	ft	[ASCE7 Hazard Tool]
Tower Height		:	96.00	ft	
Mount Elevation		:	75.00	ft	
Antenna Elevation		:	75.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	125	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	2.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.18		
	S_1	:	0.06		
	S_{DS}	:	0.19		
	S_{D1}	:	0.10		
Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.19		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	2.17	in	[Sec. 2.6.10]
Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.095		[Sec. 2.7.7.1]
Amplification	A_s	:	2.125		[Sec. 16.7]
	q_z	:	45.04	psf	

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B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat / round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
ERICSSON	RADIO 4424 B25_TMOV1	1	1.51	1.20	1.34	1.71	2.33	2.79	0.07	0.08	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBIL	1	1.68	1.20	1.32	1.64	2.31	2.71	0.06	0.08	0.01	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	0.04	0.01	0.01
COMMSCOPE	SDX1926Q-43	1	0.60	1.20	0.20	0.08	0.67	0.43	0.01	0.00	0.00	0.00
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	0.04	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
ERICSSON	RADIO 4424 B25_TMOV1	1	1.51	1.20	1.34	1.71	2.33	2.79	0.07	0.08	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBIL	1	1.68	1.20	1.32	1.64	2.31	2.71	0.06	0.08	0.01	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	1.21		0.08

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Manufacturer	Model	Qty	Aspect Ratio	C_a flat / round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
COMMSCOPE	SDX1926Q-43	1	0.60	1.20	0.20	0.08	0.67	0.43	0.01	0.00	0.00	0.00
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	0.04	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.12	0.05	0.03	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.33	0.12	0.06	0.03
ERICSSON	RADIO 4424 B25_TMOV1	1	1.51	1.20	1.34	1.71	2.33	2.79	0.07	0.08	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBIL	1	1.68	1.20	1.32	1.64	2.31	2.71	0.06	0.08	0.01	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	0.04	0.01	0.01
COMMSCOPE	SDX1926Q-43	1	0.60	1.20	0.20	0.08	0.67	0.43	0.01	0.00	0.00	0.00
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	0.5	4.20	1.28	3.13	0.75	4.36	1.81	0.14	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.58	1.54	0.08	0.04	0.01	0.01

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	F1-ST1	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
3	F1-SA1	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
4	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	F1-C1	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	0.063	9	0.237
6	F1-C2	PL 3/8X6	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105
7	Support rails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	F1-CA1	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	2	3		F1-C2	Beam	RECT	A36 Gr.36	Typical
2	2	3	4		F1-C2	Beam	RECT	A36 Gr.36	Typical
3	3	5	6		RIGID	None	None	RIGID	Typical
4	4	7	8		F1-C2	Beam	RECT	A36 Gr.36	Typical
5	5	8	9		F1-C2	Beam	RECT	A36 Gr.36	Typical
6	6	10	11		RIGID	None	None	RIGID	Typical
7	7	12	13		F1-C2	Beam	RECT	A36 Gr.36	Typical
8	8	13	14		F1-C2	Beam	RECT	A36 Gr.36	Typical
9	9	15	16		RIGID	None	None	RIGID	Typical
10	10	17	18		F1-C2	Beam	RECT	A36 Gr.36	Typical
11	11	18	19		F1-C2	Beam	RECT	A36 Gr.36	Typical
12	12	20	21		RIGID	None	None	RIGID	Typical
13	13	22	23		F1-C2	Beam	RECT	A36 Gr.36	Typical
14	14	23	24		F1-C2	Beam	RECT	A36 Gr.36	Typical
15	15	25	26		RIGID	None	None	RIGID	Typical
16	16	27	28		F1-C2	Beam	RECT	A36 Gr.36	Typical
17	17	28	29		F1-C2	Beam	RECT	A36 Gr.36	Typical
18	18	30	31		RIGID	None	None	RIGID	Typical
19	19	33	32		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
20	20	33	34		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
21	21	36	35		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
22	22	36	37		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
23	23	39	38		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
24	24	39	40		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
25	25	41	42		MF-H1	Beam	Pipe	A53 Gr.B	Typical
26	26	43	44		MF-H1	Beam	Pipe	A53 Gr.B	Typical
27	27	45	46		MF-H1	Beam	Pipe	A53 Gr.B	Typical
28	28	47	48		MF-P1	Column	Pipe	A53 Gr.B	Typical
29	29	49	50		MF-P1	Column	Pipe	A53 Gr.B	Typical
30	30	51	52		MF-P1	Column	Pipe	A53 Gr.B	Typical
31	31	53	54		RIGID	None	None	RIGID	Typical
32	32	55	56		RIGID	None	None	RIGID	Typical
33	33	57	58		RIGID	None	None	RIGID	Typical
34	34	59	60		RIGID	None	None	RIGID	Typical
35	35	68	61		F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
36	36	68	62	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
37	37	78	63		F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
38	38	78	64	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
39	39	88	65		F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
40	40	88	66	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
41	41	67	68		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
42	42	69	70		RIGID	None	None	RIGID	Typical
43	43	71	76		F1-C1	Beam	RECT	A36 Gr.36	Typical
44	44	72	73		RIGID	None	None	RIGID	Typical
45	45	74	75		F1-C1	Beam	RECT	A36 Gr.36	Typical
46	46	75	76		F1-C1	Beam	RECT	A36 Gr.36	Typical
47	47	77	78		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
48	48	79	80		RIGID	None	None	RIGID	Typical
49	49	81	86		F1-C1	Beam	RECT	A36 Gr.36	Typical
50	50	82	83		RIGID	None	None	RIGID	Typical
51	51	84	85		F1-C1	Beam	RECT	A36 Gr.36	Typical
52	52	85	86		F1-C1	Beam	RECT	A36 Gr.36	Typical
53	53	87	88		F1-ST1	Beam	Tube	A500 Gr.B Rect	Typical
54	54	89	90		RIGID	None	None	RIGID	Typical
55	55	91	96		F1-C1	Beam	RECT	A36 Gr.36	Typical
56	56	92	93		RIGID	None	None	RIGID	Typical
57	57	94	95		F1-C1	Beam	RECT	A36 Gr.36	Typical
58	58	95	96		F1-C1	Beam	RECT	A36 Gr.36	Typical
59	59	97	98		RIGID	None	None	RIGID	Typical
60	60	99	100		RIGID	None	None	RIGID	Typical
61	61	101	102		RIGID	None	None	RIGID	Typical
62	62	103	104		Support rails	Beam	Pipe	A53 Gr.B	Typical
63	63	105	106		RIGID	None	None	RIGID	Typical
64	64	107	108		RIGID	None	None	RIGID	Typical
65	65	109	110		RIGID	None	None	RIGID	Typical
66	66	111	112		Support rails	Beam	Pipe	A53 Gr.B	Typical
67	67	113	114		RIGID	None	None	RIGID	Typical
68	68	115	116		RIGID	None	None	RIGID	Typical
69	69	117	118		RIGID	None	None	RIGID	Typical
70	70	119	120		Support rails	Beam	Pipe	A53 Gr.B	Typical
71	71	121	126	180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
72	72	123	122	180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
73	73	125	124	180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
74	74	127	128		MF-P1	Column	Pipe	A53 Gr.B	Typical
75	75	129	130		MF-P1	Column	Pipe	A53 Gr.B	Typical
76	76	131	132		MF-P1	Column	Pipe	A53 Gr.B	Typical
77	77	133	134		MF-P1	Column	Pipe	A53 Gr.B	Typical
78	78	135	136		MF-P1	Column	Pipe	A53 Gr.B	Typical
79	79	137	138		MF-P1	Column	Pipe	A53 Gr.B	Typical
80	81	141	142		RIGID	None	None	RIGID	Typical
81	82	143	144		RIGID	None	None	RIGID	Typical
82	83	145	146		RIGID	None	None	RIGID	Typical
83	84	147	148		RIGID	None	None	RIGID	Typical
84	85	149	150		RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		60		3
2	0 Wind - No Ice	WLZ			60	54	
3	90 Wind - No Ice	WLX			60	54	
4	0 Wind - Ice	WLZ			60	54	
5	90 Wind - Ice	WLX			60	54	
6	0 Wind - Service	WLZ			60	54	
7	90 Wind - Service	WLX			60	54	
8	Ice	OL1			60	54	3
9	0 Seismic	ELZ			60	54	
10	90 Seismic	ELX			60	54	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		4			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				21	
31	BLC 8 Transient Area Loads	None				21	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Load Combinations (Continued)

Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.057	%5
2	30	Y	-0.057	%45
3	30	Y	0	0
4	30	Y	0	0
5	30	Y	0	0
6	29	Y	-0.075	%5
7	29	Y	-0.075	%85
8	29	Y	-0.097	%20
9	29	Y	-0.073	%20
10	29	Y	-0.05	%50
11	29	Y	-0.006	%75
12	29	Y	0	0
13	29	Y	0	0
14	29	Y	0	0
15	29	Y	0	0
16	28	Y	-0.021	%5
17	28	Y	-0.021	%70
18	28	Y	-0.05	%40
19	28	Y	0	0
20	28	Y	0	0
21	79	Y	-0.057	%5
22	79	Y	-0.057	%45
23	79	Y	0	0
24	79	Y	0	0
25	79	Y	0	0
26	78	Y	-0.075	%5
27	78	Y	-0.075	%85
28	78	Y	-0.097	%20
29	78	Y	-0.073	%20
30	78	Y	-0.05	%50
31	78	Y	-0.006	%75
32	78	Y	0	0
33	78	Y	0	0
34	78	Y	0	0
35	78	Y	0	0
36	77	Y	-0.021	%5
37	77	Y	-0.021	%70
38	77	Y	-0.05	%40
39	77	Y	0	0
40	77	Y	0	0
41	76	Y	-0.057	%5
42	76	Y	-0.057	%45
43	76	Y	0	0
44	76	Y	0	0
45	76	Y	0	0
46	75	Y	-0.075	%5
47	75	Y	-0.075	%85
48	75	Y	-0.097	%20
49	75	Y	-0.073	%20
50	75	Y	-0.05	%50
51	75	Y	-0.006	%75
52	75	Y	0	0
53	75	Y	0	0
54	75	Y	0	0
55	75	Y	0	0
56	74	Y	-0.021	%5
57	74	Y	-0.021	%70
58	74	Y	-0.05	%40

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
59	74	Y	0	0
60	74	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Z	-0.119	%5
2	30	Z	-0.119	%45
3	30	Z	0	0
4	30	Z	0	0
5	30	Z	0	0
6	29	Z	-0.33	%5
7	29	Z	-0.33	%85
8	29	Z	-0.065	%20
9	29	Z	-0.064	%20
10	29	Z	-0.075	%50
11	29	Z	-0.01	%75
12	29	Z	0	0
13	29	Z	0	0
14	29	Z	0	0
15	29	Z	0	0
16	28	Z	-0.141	%5
17	28	Z	-0.141	%70
18	28	Z	-0.075	%40
19	28	Z	0	0
20	28	Z	0	0
21	79	Z	-0.119	%5
22	79	Z	-0.119	%45
23	79	Z	0	0
24	79	Z	0	0
25	79	Z	0	0
26	78	Z	-0.33	%5
27	78	Z	-0.33	%85
28	78	Z	-0.065	%20
29	78	Z	-0.064	%20
30	78	Z	-0.075	%50
31	78	Z	-0.01	%75
32	78	Z	0	0
33	78	Z	0	0
34	78	Z	0	0
35	78	Z	0	0
36	77	Z	-0.141	%5
37	77	Z	-0.141	%70
38	77	Z	-0.075	%40
39	77	Z	0	0
40	77	Z	0	0
41	76	Z	-0.119	%5
42	76	Z	-0.119	%45
43	76	Z	0	0
44	76	Z	0	0
45	76	Z	0	0
46	75	Z	-0.33	%5
47	75	Z	-0.33	%85
48	75	Z	-0.065	%20
49	75	Z	-0.064	%20
50	75	Z	-0.075	%50
51	75	Z	-0.01	%75
52	75	Z	0	0
53	75	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
54	75	Z	0	0
55	75	Z	0	0
56	74	Z	-0.141	%5
57	74	Z	-0.141	%70
58	74	Z	-0.075	%40
59	74	Z	0	0
60	74	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	X	-0.046	%5
2	30	X	-0.046	%45
3	30	X	0	0
4	30	X	0	0
5	30	X	0	0
6	29	X	-0.12	%5
7	29	X	-0.12	%85
8	29	X	-0.083	%20
9	29	X	-0.08	%20
10	29	X	-0.035	%50
11	29	X	-0.004	%75
12	29	X	0	0
13	29	X	0	0
14	29	X	0	0
15	29	X	0	0
16	28	X	-0.034	%5
17	28	X	-0.034	%70
18	28	X	-0.035	%40
19	28	X	0	0
20	28	X	0	0
21	79	X	-0.046	%5
22	79	X	-0.046	%45
23	79	X	0	0
24	79	X	0	0
25	79	X	0	0
26	78	X	-0.12	%5
27	78	X	-0.12	%85
28	78	X	-0.083	%20
29	78	X	-0.08	%20
30	78	X	-0.035	%50
31	78	X	-0.004	%75
32	78	X	0	0
33	78	X	0	0
34	78	X	0	0
35	78	X	0	0
36	77	X	-0.034	%5
37	77	X	-0.034	%70
38	77	X	-0.035	%40
39	77	X	0	0
40	77	X	0	0
41	76	X	-0.046	%5
42	76	X	-0.046	%45
43	76	X	0	0
44	76	X	0	0
45	76	X	0	0
46	75	X	-0.12	%5
47	75	X	-0.12	%85
48	75	X	-0.083	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
49	75	X	-0.08	%20
50	75	X	-0.035	%50
51	75	X	-0.004	%75
52	75	X	0	0
53	75	X	0	0
54	75	X	0	0
55	75	X	0	0
56	74	X	-0.034	%5
57	74	X	-0.034	%70
58	74	X	-0.035	%40
59	74	X	0	0
60	74	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Z	-0.025	%5
2	30	Z	-0.025	%45
3	30	Z	0	0
4	30	Z	0	0
5	30	Z	0	0
6	29	Z	-0.064	%5
7	29	Z	-0.064	%85
8	29	Z	-0.01	%20
9	29	Z	-0.01	%20
10	29	Z	-0.012	%50
11	29	Z	-0.002	%75
12	29	Z	0	0
13	29	Z	0	0
14	29	Z	0	0
15	29	Z	0	0
16	28	Z	-0.031	%5
17	28	Z	-0.031	%70
18	28	Z	-0.012	%40
19	28	Z	0	0
20	28	Z	0	0
21	79	Z	-0.025	%5
22	79	Z	-0.025	%45
23	79	Z	0	0
24	79	Z	0	0
25	79	Z	0	0
26	78	Z	-0.064	%5
27	78	Z	-0.064	%85
28	78	Z	-0.01	%20
29	78	Z	-0.01	%20
30	78	Z	-0.012	%50
31	78	Z	-0.002	%75
32	78	Z	0	0
33	78	Z	0	0
34	78	Z	0	0
35	78	Z	0	0
36	77	Z	-0.031	%5
37	77	Z	-0.031	%70
38	77	Z	-0.012	%40
39	77	Z	0	0
40	77	Z	0	0
41	76	Z	-0.025	%5
42	76	Z	-0.025	%45
43	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
44	76	Z	0	0
45	76	Z	0	0
46	75	Z	-0.064	%5
47	75	Z	-0.064	%85
48	75	Z	-0.01	%20
49	75	Z	-0.01	%20
50	75	Z	-0.012	%50
51	75	Z	-0.002	%75
52	75	Z	0	0
53	75	Z	0	0
54	75	Z	0	0
55	75	Z	0	0
56	74	Z	-0.031	%5
57	74	Z	-0.031	%70
58	74	Z	-0.012	%40
59	74	Z	0	0
60	74	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	X	-0.012	%5
2	30	X	-0.012	%45
3	30	X	0	0
4	30	X	0	0
5	30	X	0	0
6	29	X	-0.029	%5
7	29	X	-0.029	%85
8	29	X	-0.013	%20
9	29	X	-0.013	%20
10	29	X	-0.006	%50
11	29	X	-0.0007	%75
12	29	X	0	0
13	29	X	0	0
14	29	X	0	0
15	29	X	0	0
16	28	X	-0.013	%5
17	28	X	-0.013	%70
18	28	X	-0.006	%40
19	28	X	0	0
20	28	X	0	0
21	79	X	-0.012	%5
22	79	X	-0.012	%45
23	79	X	0	0
24	79	X	0	0
25	79	X	0	0
26	78	X	-0.029	%5
27	78	X	-0.029	%85
28	78	X	-0.013	%20
29	78	X	-0.013	%20
30	78	X	-0.006	%50
31	78	X	-0.0007	%75
32	78	X	0	0
33	78	X	0	0
34	78	X	0	0
35	78	X	0	0
36	77	X	-0.013	%5
37	77	X	-0.013	%70
38	77	X	-0.006	%40

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
39	77	X	0	0
40	77	X	0	0
41	76	X	-0.012	%5
42	76	X	-0.012	%45
43	76	X	0	0
44	76	X	0	0
45	76	X	0	0
46	75	X	-0.029	%5
47	75	X	-0.029	%85
48	75	X	-0.013	%20
49	75	X	-0.013	%20
50	75	X	-0.006	%50
51	75	X	-0.0007	%75
52	75	X	0	0
53	75	X	0	0
54	75	X	0	0
55	75	X	0	0
56	74	X	-0.013	%5
57	74	X	-0.013	%70
58	74	X	-0.006	%40
59	74	X	0	0
60	74	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Z	-0.007	%5
2	30	Z	-0.007	%45
3	30	Z	0	0
4	30	Z	0	0
5	30	Z	0	0
6	29	Z	-0.019	%5
7	29	Z	-0.019	%85
8	29	Z	-0.004	%20
9	29	Z	-0.004	%20
10	29	Z	-0.004	%50
11	29	Z	-0.0006	%75
12	29	Z	0	0
13	29	Z	0	0
14	29	Z	0	0
15	29	Z	0	0
16	28	Z	-0.008	%5
17	28	Z	-0.008	%70
18	28	Z	-0.004	%40
19	28	Z	0	0
20	28	Z	0	0
21	79	Z	-0.007	%5
22	79	Z	-0.007	%45
23	79	Z	0	0
24	79	Z	0	0
25	79	Z	0	0
26	78	Z	-0.019	%5
27	78	Z	-0.019	%85
28	78	Z	-0.004	%20
29	78	Z	-0.004	%20
30	78	Z	-0.004	%50
31	78	Z	-0.0006	%75
32	78	Z	0	0
33	78	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
34	78	Z	0	0
35	78	Z	0	0
36	77	Z	-0.008	%5
37	77	Z	-0.008	%70
38	77	Z	-0.004	%40
39	77	Z	0	0
40	77	Z	0	0
41	76	Z	-0.007	%5
42	76	Z	-0.007	%45
43	76	Z	0	0
44	76	Z	0	0
45	76	Z	0	0
46	75	Z	-0.019	%5
47	75	Z	-0.019	%85
48	75	Z	-0.004	%20
49	75	Z	-0.004	%20
50	75	Z	-0.004	%50
51	75	Z	-0.0006	%75
52	75	Z	0	0
53	75	Z	0	0
54	75	Z	0	0
55	75	Z	0	0
56	74	Z	-0.008	%5
57	74	Z	-0.008	%70
58	74	Z	-0.004	%40
59	74	Z	0	0
60	74	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	X	-0.003	%5
2	30	X	-0.003	%45
3	30	X	0	0
4	30	X	0	0
5	30	X	0	0
6	29	X	-0.007	%5
7	29	X	-0.007	%85
8	29	X	-0.005	%20
9	29	X	-0.005	%20
10	29	X	-0.002	%50
11	29	X	-0.0002	%75
12	29	X	0	0
13	29	X	0	0
14	29	X	0	0
15	29	X	0	0
16	28	X	-0.002	%5
17	28	X	-0.002	%70
18	28	X	-0.002	%40
19	28	X	0	0
20	28	X	0	0
21	79	X	-0.003	%5
22	79	X	-0.003	%45
23	79	X	0	0
24	79	X	0	0
25	79	X	0	0
26	78	X	-0.007	%5
27	78	X	-0.007	%85
28	78	X	-0.005	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
29	78	X	-0.005	%20
30	78	X	-0.002	%50
31	78	X	-0.0002	%75
32	78	X	0	0
33	78	X	0	0
34	78	X	0	0
35	78	X	0	0
36	77	X	-0.002	%5
37	77	X	-0.002	%70
38	77	X	-0.002	%40
39	77	X	0	0
40	77	X	0	0
41	76	X	-0.003	%5
42	76	X	-0.003	%45
43	76	X	0	0
44	76	X	0	0
45	76	X	0	0
46	75	X	-0.007	%5
47	75	X	-0.007	%85
48	75	X	-0.005	%20
49	75	X	-0.005	%20
50	75	X	-0.002	%50
51	75	X	-0.0002	%75
52	75	X	0	0
53	75	X	0	0
54	75	X	0	0
55	75	X	0	0
56	74	X	-0.002	%5
57	74	X	-0.002	%70
58	74	X	-0.002	%40
59	74	X	0	0
60	74	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.148	%5
2	30	Y	-0.148	%45
3	30	Y	0	0
4	30	Y	0	0
5	30	Y	0	0
6	29	Y	-0.325	%5
7	29	Y	-0.325	%85
8	29	Y	-0.077	%20
9	29	Y	-0.076	%20
10	29	Y	-0.062	%50
11	29	Y	-0.009	%75
12	29	Y	0	0
13	29	Y	0	0
14	29	Y	0	0
15	29	Y	0	0
16	28	Y	-0.103	%5
17	28	Y	-0.103	%70
18	28	Y	-0.062	%40
19	28	Y	0	0
20	28	Y	0	0
21	79	Y	-0.148	%5
22	79	Y	-0.148	%45
23	79	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
24	79	Y	0	0
25	79	Y	0	0
26	78	Y	-0.325	%5
27	78	Y	-0.325	%85
28	78	Y	-0.077	%20
29	78	Y	-0.076	%20
30	78	Y	-0.062	%50
31	78	Y	-0.009	%75
32	78	Y	0	0
33	78	Y	0	0
34	78	Y	0	0
35	78	Y	0	0
36	77	Y	-0.103	%5
37	77	Y	-0.103	%70
38	77	Y	-0.062	%40
39	77	Y	0	0
40	77	Y	0	0
41	76	Y	-0.148	%5
42	76	Y	-0.148	%45
43	76	Y	0	0
44	76	Y	0	0
45	76	Y	0	0
46	75	Y	-0.325	%5
47	75	Y	-0.325	%85
48	75	Y	-0.077	%20
49	75	Y	-0.076	%20
50	75	Y	-0.062	%50
51	75	Y	-0.009	%75
52	75	Y	0	0
53	75	Y	0	0
54	75	Y	0	0
55	75	Y	0	0
56	74	Y	-0.103	%5
57	74	Y	-0.103	%70
58	74	Y	-0.062	%40
59	74	Y	0	0
60	74	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Z	-0.023	%5
2	30	Z	-0.023	%45
3	30	Z	0	0
4	30	Z	0	0
5	30	Z	0	0
6	29	Z	-0.03	%5
7	29	Z	-0.03	%85
8	29	Z	-0.02	%20
9	29	Z	-0.015	%20
10	29	Z	-0.01	%50
11	29	Z	-0.001	%75
12	29	Z	0	0
13	29	Z	0	0
14	29	Z	0	0
15	29	Z	0	0
16	28	Z	-0.008	%5
17	28	Z	-0.008	%70
18	28	Z	-0.01	%40

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
19	28	Z	0	0
20	28	Z	0	0
21	79	Z	-0.023	%5
22	79	Z	-0.023	%45
23	79	Z	0	0
24	79	Z	0	0
25	79	Z	0	0
26	78	Z	-0.03	%5
27	78	Z	-0.03	%85
28	78	Z	-0.02	%20
29	78	Z	-0.015	%20
30	78	Z	-0.01	%50
31	78	Z	-0.001	%75
32	78	Z	0	0
33	78	Z	0	0
34	78	Z	0	0
35	78	Z	0	0
36	77	Z	-0.008	%5
37	77	Z	-0.008	%70
38	77	Z	-0.01	%40
39	77	Z	0	0
40	77	Z	0	0
41	76	Z	-0.023	%5
42	76	Z	-0.023	%45
43	76	Z	0	0
44	76	Z	0	0
45	76	Z	0	0
46	75	Z	-0.03	%5
47	75	Z	-0.03	%85
48	75	Z	-0.02	%20
49	75	Z	-0.015	%20
50	75	Z	-0.01	%50
51	75	Z	-0.001	%75
52	75	Z	0	0
53	75	Z	0	0
54	75	Z	0	0
55	75	Z	0	0
56	74	Z	-0.008	%5
57	74	Z	-0.008	%70
58	74	Z	-0.01	%40
59	74	Z	0	0
60	74	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	X	-0.023	%5
2	30	X	-0.023	%45
3	30	X	0	0
4	30	X	0	0
5	30	X	0	0
6	29	X	-0.03	%5
7	29	X	-0.03	%85
8	29	X	-0.02	%20
9	29	X	-0.015	%20
10	29	X	-0.01	%50
11	29	X	-0.001	%75
12	29	X	0	0
13	29	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	29	X	0	0
15	29	X	0	0
16	28	X	-0.008	%5
17	28	X	-0.008	%70
18	28	X	-0.01	%40
19	28	X	0	0
20	28	X	0	0
21	79	X	-0.023	%5
22	79	X	-0.023	%45
23	79	X	0	0
24	79	X	0	0
25	79	X	0	0
26	78	X	-0.03	%5
27	78	X	-0.03	%85
28	78	X	-0.02	%20
29	78	X	-0.015	%20
30	78	X	-0.01	%50
31	78	X	-0.001	%75
32	78	X	0	0
33	78	X	0	0
34	78	X	0	0
35	78	X	0	0
36	77	X	-0.008	%5
37	77	X	-0.008	%70
38	77	X	-0.01	%40
39	77	X	0	0
40	77	X	0	0
41	76	X	-0.023	%5
42	76	X	-0.023	%45
43	76	X	0	0
44	76	X	0	0
45	76	X	0	0
46	75	X	-0.03	%5
47	75	X	-0.03	%85
48	75	X	-0.02	%20
49	75	X	-0.015	%20
50	75	X	-0.01	%50
51	75	X	-0.001	%75
52	75	X	0	0
53	75	X	0	0
54	75	X	0	0
55	75	X	0	0
56	74	X	-0.008	%5
57	74	X	-0.008	%70
58	74	X	-0.01	%40
59	74	X	0	0
60	74	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	25	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%95

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	25	Y	-0.25	%95

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	70	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	27	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	70	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	27	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%5

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.25	%5

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	47	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	41	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	53	Y	-0.25	%95

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.024	-0.024	0	%100
2	2	Z	-0.024	-0.024	0	%100
3	4	Z	-0.024	-0.024	0	%100
4	5	Z	-0.024	-0.024	0	%100
5	7	Z	-0.024	-0.024	0	%100
6	8	Z	-0.024	-0.024	0	%100
7	10	Z	-0.024	-0.024	0	%100
8	11	Z	-0.024	-0.024	0	%100
9	13	Z	-0.024	-0.024	0	%100
10	14	Z	-0.024	-0.024	0	%100
11	16	Z	-0.024	-0.024	0	%100
12	17	Z	-0.024	-0.024	0	%100
13	19	Z	-0.019	-0.019	0	%100
14	20	Z	-0.019	-0.019	0	%100
15	21	Z	-0.019	-0.019	0	%100
16	22	Z	-0.019	-0.019	0	%100
17	23	Z	-0.019	-0.019	0	%100
18	24	Z	-0.019	-0.019	0	%100
19	25	Z	-0.014	-0.014	0	%100
20	26	Z	-0.014	-0.014	0	%100
21	27	Z	-0.014	-0.014	0	%100
22	28	Z	-0.01	-0.01	0	%100
23	29	Z	-0.01	-0.01	0	%100
24	30	Z	-0.01	-0.01	0	%100
25	35	Z	-0.014	-0.014	0	%100
26	36	Z	-0.014	-0.014	0	%100
27	37	Z	-0.014	-0.014	0	%100
28	38	Z	-0.014	-0.014	0	%100
29	39	Z	-0.014	-0.014	0	%100
30	40	Z	-0.014	-0.014	0	%100
31	41	Z	-0.024	-0.024	0	%100
32	43	Z	-0.024	-0.024	0	%100
33	45	Z	-0.024	-0.024	0	%100
34	46	Z	-0.024	-0.024	0	%100
35	47	Z	-0.024	-0.024	0	%100
36	49	Z	-0.024	-0.024	0	%100
37	51	Z	-0.024	-0.024	0	%100
38	52	Z	-0.024	-0.024	0	%100
39	53	Z	-0.024	-0.024	0	%100
40	55	Z	-0.024	-0.024	0	%100
41	57	Z	-0.024	-0.024	0	%100
42	58	Z	-0.024	-0.024	0	%100
43	62	Z	-0.01	-0.01	0	%100
44	66	Z	-0.01	-0.01	0	%100
45	70	Z	-0.01	-0.01	0	%100
46	71	Z	-0.011	-0.011	0	%100
47	72	Z	-0.011	-0.011	0	%100
48	73	Z	-0.011	-0.011	0	%100
49	74	Z	-0.01	-0.01	0	%100
50	75	Z	-0.01	-0.01	0	%100
51	76	Z	-0.01	-0.01	0	%100
52	77	Z	-0.01	-0.01	0	%100
53	78	Z	-0.01	-0.01	0	%100
54	79	Z	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.024	-0.024	0	%100
2	2	X	-0.024	-0.024	0	%100
3	4	X	-0.024	-0.024	0	%100
4	5	X	-0.024	-0.024	0	%100
5	7	X	-0.024	-0.024	0	%100
6	8	X	-0.024	-0.024	0	%100
7	10	X	-0.024	-0.024	0	%100
8	11	X	-0.024	-0.024	0	%100
9	13	X	-0.024	-0.024	0	%100
10	14	X	-0.024	-0.024	0	%100
11	16	X	-0.024	-0.024	0	%100
12	17	X	-0.024	-0.024	0	%100
13	19	X	-0.019	-0.019	0	%100
14	20	X	-0.019	-0.019	0	%100
15	21	X	-0.019	-0.019	0	%100
16	22	X	-0.019	-0.019	0	%100
17	23	X	-0.019	-0.019	0	%100
18	24	X	-0.019	-0.019	0	%100
19	25	X	-0.014	-0.014	0	%100
20	26	X	-0.014	-0.014	0	%100
21	27	X	-0.014	-0.014	0	%100
22	28	X	-0.01	-0.01	0	%100
23	29	X	-0.01	-0.01	0	%100
24	30	X	-0.01	-0.01	0	%100
25	35	X	-0.014	-0.014	0	%100
26	36	X	-0.014	-0.014	0	%100
27	37	X	-0.014	-0.014	0	%100
28	38	X	-0.014	-0.014	0	%100
29	39	X	-0.014	-0.014	0	%100
30	40	X	-0.014	-0.014	0	%100
31	41	X	-0.024	-0.024	0	%100
32	43	X	-0.024	-0.024	0	%100
33	45	X	-0.024	-0.024	0	%100
34	46	X	-0.024	-0.024	0	%100
35	47	X	-0.024	-0.024	0	%100
36	49	X	-0.024	-0.024	0	%100
37	51	X	-0.024	-0.024	0	%100
38	52	X	-0.024	-0.024	0	%100
39	53	X	-0.024	-0.024	0	%100
40	55	X	-0.024	-0.024	0	%100
41	57	X	-0.024	-0.024	0	%100
42	58	X	-0.024	-0.024	0	%100
43	62	X	-0.01	-0.01	0	%100
44	66	X	-0.01	-0.01	0	%100
45	70	X	-0.01	-0.01	0	%100
46	71	X	-0.011	-0.011	0	%100
47	72	X	-0.011	-0.011	0	%100
48	73	X	-0.011	-0.011	0	%100
49	74	X	-0.01	-0.01	0	%100
50	75	X	-0.01	-0.01	0	%100
51	76	X	-0.01	-0.01	0	%100
52	77	X	-0.01	-0.01	0	%100
53	78	X	-0.01	-0.01	0	%100
54	79	X	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	2	Z	-0.016	-0.016	0	%100
3	4	Z	-0.014	-0.014	0	%100
4	5	Z	-0.016	-0.016	0	%100
5	7	Z	-0.014	-0.014	0	%100
6	8	Z	-0.016	-0.016	0	%100
7	10	Z	-0.014	-0.014	0	%100
8	11	Z	-0.016	-0.016	0	%100
9	13	Z	-0.014	-0.014	0	%100
10	14	Z	-0.016	-0.016	0	%100
11	16	Z	-0.014	-0.014	0	%100
12	17	Z	-0.016	-0.016	0	%100
13	19	Z	-0.007	-0.007	0	%100
14	20	Z	-0.007	-0.007	0	%100
15	21	Z	-0.007	-0.007	0	%100
16	22	Z	-0.007	-0.007	0	%100
17	23	Z	-0.007	-0.007	0	%100
18	24	Z	-0.007	-0.007	0	%100
19	25	Z	-0.003	-0.003	0	%100
20	26	Z	-0.003	-0.003	0	%100
21	27	Z	-0.003	-0.003	0	%100
22	28	Z	-0.002	-0.002	0	%100
23	29	Z	-0.002	-0.002	0	%100
24	30	Z	-0.002	-0.002	0	%100
25	35	Z	-0.007	-0.007	0	%100
26	36	Z	-0.007	-0.007	0	%100
27	37	Z	-0.007	-0.007	0	%100
28	38	Z	-0.007	-0.007	0	%100
29	39	Z	-0.007	-0.007	0	%100
30	40	Z	-0.007	-0.007	0	%100
31	41	Z	-0.009	-0.009	0	%100
32	43	Z	-0.016	-0.016	0	%100
33	45	Z	-0.016	-0.016	0	%100
34	46	Z	-0.009	-0.009	0	%100
35	47	Z	-0.009	-0.009	0	%100
36	49	Z	-0.016	-0.016	0	%100
37	51	Z	-0.016	-0.016	0	%100
38	52	Z	-0.009	-0.009	0	%100
39	53	Z	-0.009	-0.009	0	%100
40	55	Z	-0.016	-0.016	0	%100
41	57	Z	-0.016	-0.016	0	%100
42	58	Z	-0.009	-0.009	0	%100
43	62	Z	-0.002	-0.002	0	%100
44	66	Z	-0.002	-0.002	0	%100
45	70	Z	-0.002	-0.002	0	%100
46	71	Z	-0.006	-0.006	0	%100
47	72	Z	-0.006	-0.006	0	%100
48	73	Z	-0.006	-0.006	0	%100
49	74	Z	-0.002	-0.002	0	%100
50	75	Z	-0.002	-0.002	0	%100
51	76	Z	-0.002	-0.002	0	%100
52	77	Z	-0.002	-0.002	0	%100
53	78	Z	-0.002	-0.002	0	%100
54	79	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.014	-0.014	0	%100
2	2	X	-0.016	-0.016	0	%100
3	4	X	-0.014	-0.014	0	%100
4	5	X	-0.016	-0.016	0	%100
5	7	X	-0.014	-0.014	0	%100
6	8	X	-0.016	-0.016	0	%100
7	10	X	-0.014	-0.014	0	%100
8	11	X	-0.016	-0.016	0	%100
9	13	X	-0.014	-0.014	0	%100
10	14	X	-0.016	-0.016	0	%100
11	16	X	-0.014	-0.014	0	%100
12	17	X	-0.016	-0.016	0	%100
13	19	X	-0.007	-0.007	0	%100
14	20	X	-0.007	-0.007	0	%100
15	21	X	-0.007	-0.007	0	%100
16	22	X	-0.007	-0.007	0	%100
17	23	X	-0.007	-0.007	0	%100
18	24	X	-0.007	-0.007	0	%100
19	25	X	-0.003	-0.003	0	%100
20	26	X	-0.003	-0.003	0	%100
21	27	X	-0.003	-0.003	0	%100
22	28	X	-0.002	-0.002	0	%100
23	29	X	-0.002	-0.002	0	%100
24	30	X	-0.002	-0.002	0	%100
25	35	X	-0.007	-0.007	0	%100
26	36	X	-0.007	-0.007	0	%100
27	37	X	-0.007	-0.007	0	%100
28	38	X	-0.007	-0.007	0	%100
29	39	X	-0.007	-0.007	0	%100
30	40	X	-0.007	-0.007	0	%100
31	41	X	-0.009	-0.009	0	%100
32	43	X	-0.016	-0.016	0	%100
33	45	X	-0.016	-0.016	0	%100
34	46	X	-0.009	-0.009	0	%100
35	47	X	-0.009	-0.009	0	%100
36	49	X	-0.016	-0.016	0	%100
37	51	X	-0.016	-0.016	0	%100
38	52	X	-0.009	-0.009	0	%100
39	53	X	-0.009	-0.009	0	%100
40	55	X	-0.016	-0.016	0	%100
41	57	X	-0.016	-0.016	0	%100
42	58	X	-0.009	-0.009	0	%100
43	62	X	-0.002	-0.002	0	%100
44	66	X	-0.002	-0.002	0	%100
45	70	X	-0.002	-0.002	0	%100
46	71	X	-0.006	-0.006	0	%100
47	72	X	-0.006	-0.006	0	%100
48	73	X	-0.006	-0.006	0	%100
49	74	X	-0.002	-0.002	0	%100
50	75	X	-0.002	-0.002	0	%100
51	76	X	-0.002	-0.002	0	%100
52	77	X	-0.002	-0.002	0	%100
53	78	X	-0.002	-0.002	0	%100
54	79	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	4	Z	-0.001	-0.001	0	%100
4	5	Z	-0.001	-0.001	0	%100
5	7	Z	-0.001	-0.001	0	%100
6	8	Z	-0.001	-0.001	0	%100
7	10	Z	-0.001	-0.001	0	%100
8	11	Z	-0.001	-0.001	0	%100
9	13	Z	-0.001	-0.001	0	%100
10	14	Z	-0.001	-0.001	0	%100
11	16	Z	-0.001	-0.001	0	%100
12	17	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	20	Z	-0.001	-0.001	0	%100
15	21	Z	-0.001	-0.001	0	%100
16	22	Z	-0.001	-0.001	0	%100
17	23	Z	-0.001	-0.001	0	%100
18	24	Z	-0.001	-0.001	0	%100
19	25	Z	-0.0004	-0.0004	0	%100
20	26	Z	-0.0004	-0.0004	0	%100
21	27	Z	-0.0004	-0.0004	0	%100
22	28	Z	-0.0003	-0.0003	0	%100
23	29	Z	-0.0003	-0.0003	0	%100
24	30	Z	-0.0003	-0.0003	0	%100
25	35	Z	-0.0008	-0.0008	0	%100
26	36	Z	-0.0008	-0.0008	0	%100
27	37	Z	-0.0008	-0.0008	0	%100
28	38	Z	-0.0008	-0.0008	0	%100
29	39	Z	-0.0008	-0.0008	0	%100
30	40	Z	-0.0008	-0.0008	0	%100
31	41	Z	-0.001	-0.001	0	%100
32	43	Z	-0.001	-0.001	0	%100
33	45	Z	-0.001	-0.001	0	%100
34	46	Z	-0.001	-0.001	0	%100
35	47	Z	-0.001	-0.001	0	%100
36	49	Z	-0.001	-0.001	0	%100
37	51	Z	-0.001	-0.001	0	%100
38	52	Z	-0.001	-0.001	0	%100
39	53	Z	-0.001	-0.001	0	%100
40	55	Z	-0.001	-0.001	0	%100
41	57	Z	-0.001	-0.001	0	%100
42	58	Z	-0.001	-0.001	0	%100
43	62	Z	-0.0003	-0.0003	0	%100
44	66	Z	-0.0003	-0.0003	0	%100
45	70	Z	-0.0003	-0.0003	0	%100
46	71	Z	-0.0006	-0.0006	0	%100
47	72	Z	-0.0006	-0.0006	0	%100
48	73	Z	-0.0006	-0.0006	0	%100
49	74	Z	-0.0003	-0.0003	0	%100
50	75	Z	-0.0003	-0.0003	0	%100
51	76	Z	-0.0003	-0.0003	0	%100
52	77	Z	-0.0003	-0.0003	0	%100
53	78	Z	-0.0003	-0.0003	0	%100
54	79	Z	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	4	X	-0.001	-0.001	0	%100
4	5	X	-0.001	-0.001	0	%100
5	7	X	-0.001	-0.001	0	%100
6	8	X	-0.001	-0.001	0	%100
7	10	X	-0.001	-0.001	0	%100
8	11	X	-0.001	-0.001	0	%100
9	13	X	-0.001	-0.001	0	%100
10	14	X	-0.001	-0.001	0	%100
11	16	X	-0.001	-0.001	0	%100
12	17	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	20	X	-0.001	-0.001	0	%100
15	21	X	-0.001	-0.001	0	%100
16	22	X	-0.001	-0.001	0	%100
17	23	X	-0.001	-0.001	0	%100
18	24	X	-0.001	-0.001	0	%100
19	25	X	-0.0004	-0.0004	0	%100
20	26	X	-0.0004	-0.0004	0	%100
21	27	X	-0.0004	-0.0004	0	%100
22	28	X	-0.0003	-0.0003	0	%100
23	29	X	-0.0003	-0.0003	0	%100
24	30	X	-0.0003	-0.0003	0	%100
25	35	X	-0.0008	-0.0008	0	%100
26	36	X	-0.0008	-0.0008	0	%100
27	37	X	-0.0008	-0.0008	0	%100
28	38	X	-0.0008	-0.0008	0	%100
29	39	X	-0.0008	-0.0008	0	%100
30	40	X	-0.0008	-0.0008	0	%100
31	41	X	-0.001	-0.001	0	%100
32	43	X	-0.001	-0.001	0	%100
33	45	X	-0.001	-0.001	0	%100
34	46	X	-0.001	-0.001	0	%100
35	47	X	-0.001	-0.001	0	%100
36	49	X	-0.001	-0.001	0	%100
37	51	X	-0.001	-0.001	0	%100
38	52	X	-0.001	-0.001	0	%100
39	53	X	-0.001	-0.001	0	%100
40	55	X	-0.001	-0.001	0	%100
41	57	X	-0.001	-0.001	0	%100
42	58	X	-0.001	-0.001	0	%100
43	62	X	-0.0003	-0.0003	0	%100
44	66	X	-0.0003	-0.0003	0	%100
45	70	X	-0.0003	-0.0003	0	%100
46	71	X	-0.0006	-0.0006	0	%100
47	72	X	-0.0006	-0.0006	0	%100
48	73	X	-0.0006	-0.0006	0	%100
49	74	X	-0.0003	-0.0003	0	%100
50	75	X	-0.0003	-0.0003	0	%100
51	76	X	-0.0003	-0.0003	0	%100
52	77	X	-0.0003	-0.0003	0	%100
53	78	X	-0.0003	-0.0003	0	%100
54	79	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.022	-0.022	0	%100
2	2	Y	-0.022	-0.022	0	%100
3	4	Y	-0.022	-0.022	0	%100
4	5	Y	-0.022	-0.022	0	%100
5	7	Y	-0.022	-0.022	0	%100
6	8	Y	-0.022	-0.022	0	%100
7	10	Y	-0.022	-0.022	0	%100
8	11	Y	-0.022	-0.022	0	%100
9	13	Y	-0.022	-0.022	0	%100
10	14	Y	-0.022	-0.022	0	%100
11	16	Y	-0.022	-0.022	0	%100
12	17	Y	-0.022	-0.022	0	%100
13	19	Y	-0.021	-0.021	0	%100
14	20	Y	-0.021	-0.021	0	%100
15	21	Y	-0.021	-0.021	0	%100
16	22	Y	-0.021	-0.021	0	%100
17	23	Y	-0.021	-0.021	0	%100
18	24	Y	-0.021	-0.021	0	%100
19	25	Y	-0.015	-0.015	0	%100
20	26	Y	-0.015	-0.015	0	%100
21	27	Y	-0.015	-0.015	0	%100
22	28	Y	-0.012	-0.012	0	%100
23	29	Y	-0.012	-0.012	0	%100
24	30	Y	-0.012	-0.012	0	%100
25	35	Y	-0.013	-0.013	0	%100
26	36	Y	-0.013	-0.013	0	%100
27	37	Y	-0.013	-0.013	0	%100
28	38	Y	-0.013	-0.013	0	%100
29	39	Y	-0.013	-0.013	0	%100
30	40	Y	-0.013	-0.013	0	%100
31	41	Y	-0.021	-0.021	0	%100
32	43	Y	-0.022	-0.022	0	%100
33	45	Y	-0.022	-0.022	0	%100
34	46	Y	-0.022	-0.022	0	%100
35	47	Y	-0.021	-0.021	0	%100
36	49	Y	-0.022	-0.022	0	%100
37	51	Y	-0.022	-0.022	0	%100
38	52	Y	-0.022	-0.022	0	%100
39	53	Y	-0.021	-0.021	0	%100
40	55	Y	-0.022	-0.022	0	%100
41	57	Y	-0.022	-0.022	0	%100
42	58	Y	-0.022	-0.022	0	%100
43	62	Y	-0.012	-0.012	0	%100
44	66	Y	-0.012	-0.012	0	%100
45	70	Y	-0.012	-0.012	0	%100
46	71	Y	-0.015	-0.015	0	%100
47	72	Y	-0.015	-0.015	0	%100
48	73	Y	-0.015	-0.015	0	%100
49	74	Y	-0.012	-0.012	0	%100
50	75	Y	-0.012	-0.012	0	%100
51	76	Y	-0.012	-0.012	0	%100
52	77	Y	-0.012	-0.012	0	%100
53	78	Y	-0.012	-0.012	0	%100
54	79	Y	-0.012	-0.012	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	4	Z	-0.001	-0.001	0	%100
4	5	Z	-0.001	-0.001	0	%100
5	7	Z	-0.001	-0.001	0	%100
6	8	Z	-0.001	-0.001	0	%100
7	10	Z	-0.001	-0.001	0	%100
8	11	Z	-0.001	-0.001	0	%100
9	13	Z	-0.001	-0.001	0	%100
10	14	Z	-0.001	-0.001	0	%100
11	16	Z	-0.001	-0.001	0	%100
12	17	Z	-0.001	-0.001	0	%100
13	19	Z	-0.003	-0.003	0	%100
14	20	Z	-0.003	-0.003	0	%100
15	21	Z	-0.003	-0.003	0	%100
16	22	Z	-0.003	-0.003	0	%100
17	23	Z	-0.003	-0.003	0	%100
18	24	Z	-0.003	-0.003	0	%100
19	25	Z	-0.002	-0.002	0	%100
20	26	Z	-0.002	-0.002	0	%100
21	27	Z	-0.002	-0.002	0	%100
22	28	Z	-0.0007	-0.0007	0	%100
23	29	Z	-0.0007	-0.0007	0	%100
24	30	Z	-0.0007	-0.0007	0	%100
25	35	Z	-0.0005	-0.0005	0	%100
26	36	Z	-0.0005	-0.0005	0	%100
27	37	Z	-0.0005	-0.0005	0	%100
28	38	Z	-0.0005	-0.0005	0	%100
29	39	Z	-0.0005	-0.0005	0	%100
30	40	Z	-0.0005	-0.0005	0	%100
31	41	Z	-0.003	-0.003	0	%100
32	43	Z	-0.002	-0.002	0	%100
33	45	Z	-0.002	-0.002	0	%100
34	46	Z	-0.002	-0.002	0	%100
35	47	Z	-0.003	-0.003	0	%100
36	49	Z	-0.002	-0.002	0	%100
37	51	Z	-0.002	-0.002	0	%100
38	52	Z	-0.002	-0.002	0	%100
39	53	Z	-0.003	-0.003	0	%100
40	55	Z	-0.002	-0.002	0	%100
41	57	Z	-0.002	-0.002	0	%100
42	58	Z	-0.002	-0.002	0	%100
43	62	Z	-0.0007	-0.0007	0	%100
44	66	Z	-0.0007	-0.0007	0	%100
45	70	Z	-0.0007	-0.0007	0	%100
46	71	Z	-0.0008	-0.0008	0	%100
47	72	Z	-0.0008	-0.0008	0	%100
48	73	Z	-0.0008	-0.0008	0	%100
49	74	Z	-0.0007	-0.0007	0	%100
50	75	Z	-0.0007	-0.0007	0	%100
51	76	Z	-0.0007	-0.0007	0	%100
52	77	Z	-0.0007	-0.0007	0	%100
53	78	Z	-0.0007	-0.0007	0	%100
54	79	Z	-0.0007	-0.0007	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	4	X	-0.001	-0.001	0	%100
4	5	X	-0.001	-0.001	0	%100
5	7	X	-0.001	-0.001	0	%100
6	8	X	-0.001	-0.001	0	%100
7	10	X	-0.001	-0.001	0	%100
8	11	X	-0.001	-0.001	0	%100
9	13	X	-0.001	-0.001	0	%100
10	14	X	-0.001	-0.001	0	%100
11	16	X	-0.001	-0.001	0	%100
12	17	X	-0.001	-0.001	0	%100
13	19	X	-0.003	-0.003	0	%100
14	20	X	-0.003	-0.003	0	%100
15	21	X	-0.003	-0.003	0	%100
16	22	X	-0.003	-0.003	0	%100
17	23	X	-0.003	-0.003	0	%100
18	24	X	-0.003	-0.003	0	%100
19	25	X	-0.002	-0.002	0	%100
20	26	X	-0.002	-0.002	0	%100
21	27	X	-0.002	-0.002	0	%100
22	28	X	-0.0007	-0.0007	0	%100
23	29	X	-0.0007	-0.0007	0	%100
24	30	X	-0.0007	-0.0007	0	%100
25	35	X	-0.0005	-0.0005	0	%100
26	36	X	-0.0005	-0.0005	0	%100
27	37	X	-0.0005	-0.0005	0	%100
28	38	X	-0.0005	-0.0005	0	%100
29	39	X	-0.0005	-0.0005	0	%100
30	40	X	-0.0005	-0.0005	0	%100
31	41	X	-0.003	-0.003	0	%100
32	43	X	-0.002	-0.002	0	%100
33	45	X	-0.002	-0.002	0	%100
34	46	X	-0.002	-0.002	0	%100
35	47	X	-0.003	-0.003	0	%100
36	49	X	-0.002	-0.002	0	%100
37	51	X	-0.002	-0.002	0	%100
38	52	X	-0.002	-0.002	0	%100
39	53	X	-0.003	-0.003	0	%100
40	55	X	-0.002	-0.002	0	%100
41	57	X	-0.002	-0.002	0	%100
42	58	X	-0.002	-0.002	0	%100
43	62	X	-0.0007	-0.0007	0	%100
44	66	X	-0.0007	-0.0007	0	%100
45	70	X	-0.0007	-0.0007	0	%100
46	71	X	-0.0008	-0.0008	0	%100
47	72	X	-0.0008	-0.0008	0	%100
48	73	X	-0.0008	-0.0008	0	%100
49	74	X	-0.0007	-0.0007	0	%100
50	75	X	-0.0007	-0.0007	0	%100
51	76	X	-0.0007	-0.0007	0	%100
52	77	X	-0.0007	-0.0007	0	%100
53	78	X	-0.0007	-0.0007	0	%100
54	79	X	-0.0007	-0.0007	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	21	Y	-0.009	-0.009	0	0.979
2	22	Y	-0.009	-0.009	0	0.978
3	37	Y	-0.001	-0.005	0	2.167
4	37	Y	-0.005	-0.009	2.167	4.334
5	38	Y	-0.001	-0.005	0	2.167
6	38	Y	-0.005	-0.009	2.167	4.334
7	47	Y	-0.011	-0.011	3.7	5.427
8	19	Y	-0.009	-0.009	0	0.979
9	20	Y	-0.009	-0.009	0	0.979
10	35	Y	-0.001	-0.005	0	2.167
11	35	Y	-0.005	-0.009	2.167	4.334
12	36	Y	-0.001	-0.005	0	2.167
13	36	Y	-0.005	-0.009	2.167	4.334
14	41	Y	-0.011	-0.011	3.701	5.424
15	23	Y	-0.009	-0.009	0	0.979
16	24	Y	-0.009	-0.009	0	0.978
17	39	Y	-0.001	-0.005	0	2.167
18	39	Y	-0.005	-0.009	2.167	4.334
19	40	Y	-0.001	-0.005	0	2.167
20	40	Y	-0.005	-0.009	2.167	4.334
21	53	Y	-0.011	-0.011	3.7	5.427

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	21	Y	-0.009	-0.009	0	0.979
2	22	Y	-0.009	-0.009	0	0.979
3	37	Y	-0.001	-0.005	0	2.167
4	37	Y	-0.005	-0.009	2.167	4.334
5	38	Y	-0.001	-0.005	0	2.167
6	38	Y	-0.005	-0.009	2.167	4.334
7	47	Y	-0.012	-0.012	3.701	5.424
8	19	Y	-0.009	-0.009	0	0.979
9	20	Y	-0.009	-0.009	0	0.978
10	35	Y	-0.001	-0.005	0	2.167
11	35	Y	-0.005	-0.009	2.167	4.334
12	36	Y	-0.001	-0.005	0	2.167
13	36	Y	-0.005	-0.009	2.167	4.334
14	41	Y	-0.012	-0.012	3.7	5.427
15	23	Y	-0.009	-0.009	0	0.979
16	24	Y	-0.009	-0.009	0	0.978
17	39	Y	-0.001	-0.005	0	2.167
18	39	Y	-0.005	-0.009	2.167	4.334
19	40	Y	-0.001	-0.005	0	2.167
20	40	Y	-0.005	-0.009	2.167	4.334
21	53	Y	-0.012	-0.012	3.7	5.427

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	78	63	64	78	Y	Two Way	-0.01
2	62	68	61	62	Y	Two Way	-0.01
3	65	66	88	65	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [ksf]
1	78	63	64	Y	Two Way	-0.01
2	62	68	61	Y	Two Way	-0.01
3	65	66	88	Y	Two Way	-0.01

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	57	L	Y	-0.5
2	143	L	Y	-0.5
3	149	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	55	L	Y	-0.5
2	141	L	Y	-0.5
3	147	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	53	L	Y	-0.5
2	59	L	Y	-0.5
3	59	L	Y	-0.5
4	145	L	Y	-0.5

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	77	max	2.212	6	4.175	18	2.071	13	0.332	13	1.929	3	-0.423	12
2		min	-2.268	12	0.589	12	-2.036	7	-5.873	19	-1.927	9	-10.028	18
3	87	max	2.26	4	4.175	22	2.027	3	0.276	3	1.899	7	10.01	22
4		min	-2.204	10	0.588	4	-1.993	9	-5.896	21	-1.901	13	0.419	4
5	67	max	0.989	5	4.226	14	3.564	2	11.806	14	1.401	11	0.635	71
6		min	-0.989	11	0.302	8	-3.631	8	-0.903	8	-1.4	5	-0.563	5
7	Totals:	max	5.083	5	12.024	20	7.585	2						
8		min	-5.083	11	3.993	2	-7.585	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PL 3/8X6	0.11	0.166	11	0.946	0.166	y	15	68.936	73.872	0.585	9.234	1.457	H1-1b
2	2	PL 3/8X6	0.148	0.125	6	0.641	0	y	25	71.02	73.872	0.585	9.234	1.358	H1-1b
3	4	PL 3/8X6	0.11	0.166	5	0.959	0.166	y	25	68.936	73.872	0.585	9.234	1.462	H1-1b
4	5	PL 3/8X6	0.151	0.125	10	0.642	0	y	15	71.02	73.872	0.585	9.234	1.355	H1-1b
5	7	PL 3/8X6	0.165	0.166	3	0.953	0.166	y	20	68.936	73.872	0.585	9.234	1.413	H1-1b
6	8	PL 3/8X6	0.201	0.125	9	0.636	0	y	17	71.02	73.872	0.585	9.234	1.347	H1-1b
7	10	PL 3/8X6	0.164	0.166	9	0.951	0.166	y	16	68.936	73.872	0.585	9.234	1.433	H1-1b
8	11	PL 3/8X6	0.223	0.125	2	0.642	0	y	19	71.02	73.872	0.585	9.234	1.34	H1-1b
9	13	PL 3/8X6	0.161	0.166	7	0.937	0.166	y	24	68.936	73.872	0.585	9.234	1.432	H1-1b
10	14	PL 3/8X6	0.218	0.125	2	0.642	0	y	21	71.02	73.872	0.585	9.234	1.341	H1-1b
11	16	PL 3/8X6	0.165	0.166	13	0.967	0.166	y	20	68.936	73.872	0.585	9.234	1.417	H1-1b
12	17	PL 3/8X6	0.202	0.125	7	0.636	0	y	23	71.02	73.872	0.585	9.234	1.348	H1-1b
13	19	HSS4X4X4	0.335	0	25	0.065	0	y	24	135.653	139.518	16.181	16.181	1.609	H1-1b
14	20	HSS4X4X4	0.336	0	15	0.065	0	y	16	135.653	139.518	16.181	16.181	1.608	H1-1b
15	21	HSS4X4X4	0.332	0	16	0.066	0	y	15	135.653	139.518	16.181	16.181	1.611	H1-1b
16	22	HSS4X4X4	0.337	0	20	0.066	0	y	20	135.653	139.518	16.181	16.181	1.61	H1-1b
17	23	HSS4X4X4	0.337	0	20	0.067	0	y	20	135.653	139.518	16.181	16.181	1.612	H1-1b
18	24	HSS4X4X4	0.332	0	24	0.065	0	y	25	135.653	139.518	16.181	16.181	1.61	H1-1b
19	25	PIPE_3.0	0.385	4.833	19	0.137	4.833		7	17.466	65.205	5.749	5.749	1.667	H1-1b
20	26	PIPE_3.0	0.39	11.167	14	0.141	11.167		2	17.466	65.205	5.749	5.749	1.667	H1-1b
21	27	PIPE_3.0	0.392	4.833	14	0.148	4.833		2	17.466	65.205	5.749	5.749	1.672	H1-1b
22	28	PIPE_2.0	0.738	4.083	9	0.469	1.167		8	17.855	32.13	1.872	1.872	1.879	H3-6
23	29	PIPE_2.0	0.882	6.458	2	0.11	6.458		5	9.837	32.13	1.872	1.872	3	H1-1b
24	30	PIPE_2.0	0.746	4.083	7	0.472	1.167		8	17.855	32.13	1.872	1.872	1.884	H3-6
25	35	L2x2x3	0.232	4.334	2	0.018	0	y	19	9.124	23.393	0.558	1.089	1.259	H2-1
26	36	L2x2x3	0.237	4.334	2	0.019	0	z	21	9.124	23.393	0.558	1.111	1.378	H2-1
27	37	L2x2x3	0.18	0	6	0.018	0	y	23	9.124	23.393	0.558	1.107	1.356	H2-1
28	38	L2x2x3	0.179	0	6	0.019	0	z	14	9.124	23.393	0.558	1.131	1.5	H2-1
29	39	L2x2x3	0.168	0	10	0.018	0	y	15	9.124	23.393	0.558	1.129	1.486	H2-1
30	40	L2x2x3	0.187	0	10	0.019	0	z	18	9.124	23.393	0.558	1.121	1.438	H2-1
31	41	HSS4X4X4	0.737	0	15	0.124	0	y	72	116.906	139.518	16.181	16.181	3	H1-1b
32	43	PL1/2x6	0.116	0.25	2	0.139	0.25	y	73	95.031	97.2	1.012	12.15	2.925	H1-1b
33	45	PL1/2x6	0.115	0.25	2	0.089	0.125	y	69	95.031	97.2	1.012	12.15	2.175	H1-1b
34	46	PL1/2x6	0.169	0.519	2	0.171	0.519	y	66	65.844	97.2	1.012	12.15	1.258	H1-1b
35	47	HSS4X4X4	0.734	0	19	0.12	0	y	20	116.906	139.518	16.181	16.181	3	H1-1b
36	49	PL1/2x6	0.084	0.25	6	0.054	0.25	y	64	95.031	97.2	1.012	12.15	2.616	H1-1b
37	51	PL1/2x6	0.083	0.25	6	0.077	0.125	y	2	95.031	97.2	1.012	12.15	1.762	H1-1b
38	52	PL1/2x6	0.134	0.519	13	0.12	0.519	y	14	65.844	97.2	1.012	12.15	1.483	H1-1b
39	53	HSS4X4X4	0.733	0	21	0.122	0	y	20	116.906	139.518	16.181	16.181	3	H1-1b
40	55	PL1/2x6	0.086	0.25	9	0.073	0.125	y	2	95.031	97.2	1.012	12.15	1.833	H1-1b
41	57	PL1/2x6	0.087	0.25	9	0.063	0.125	y	66	95.031	97.2	1.012	12.15	1.829	H1-1b
42	58	PL1/2x6	0.138	0.519	9	0.12	0.519	y	14	65.844	97.2	1.012	12.15	1.409	H1-1b
43	62	PIPE_2.0	0.719	1.5	9	0.351	14.333		8	3.842	32.13	1.872	1.872	2.345	H3-6
44	66	PIPE_2.0	0.61	8	2	0.292	8		13	3.842	32.13	1.872	1.872	1.78	H3-6
45	70	PIPE_2.0	0.607	8	2	0.292	1.667		3	3.842	32.13	1.872	1.872	1.777	H3-6
46	71	L2.5x2.5x4	0.536	1.245	7	0.312	0	y	9	36.654	38.556	1.114	2.537	1.5	H2-1
47	72	L2.5x2.5x4	0.539	0	9	0.309	1.245	y	7	36.654	38.556	1.114	2.537	1.5	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
48	73	L2.5x2.5x4	0.555	0	13	0.209	0	y	5	36.654	38.556	1.114	2.537	1.377	H2-1
49	74	PIPE_2.0	0.917	4.083	2	0.417	4.083		13	17.855	32.13	1.872	1.872	2.008	H3-6
50	75	PIPE_2.0	0.87	6.458	8	0.158	6.458		9	9.837	32.13	1.872	1.872	2.603	H1-1b
51	76	PIPE_2.0	0.688	4.083	9	0.331	1.167		12	17.855	32.13	1.872	1.872	1.981	H1-1b
52	77	PIPE_2.0	0.691	4.083	7	0.33	1.167		4	17.855	32.13	1.872	1.872	1.963	H1-1b
53	78	PIPE_2.0	0.866	6.458	8	0.157	6.458		13	9.837	32.13	1.872	1.872	2.574	H1-1b
54	79	PIPE_2.0	0.914	4.083	2	0.422	4.083		3	17.855	32.13	1.872	1.872	2.016	H3-6

APPENDIX D

ADDITIONAL CALCUATIONS

PROJECT	**151730.001.01 - Nelsonville, OH**				**AD**
SUBJECT	**Sector Mount Analysis**				
DATE	**06/13/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	3.564	k
Vertical Shear	:	4.226	k
Horizontal Shear	:	0.989	k
Torsion	:	0.635	k.ft
Moment from Horizontal Forces	:	1.401	k.ft
Moment from Vertical Forces	:	11.806	k.ft

Bolt Parameters

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

Summary of Forces

Shear Resultant Force	:	4.34	k
Force from Horz. Moment	:	3.64	k
Force from Vert. Moment	:	21.38	k
Shear Load / Bolt	:	1.09	k
Tension Load / Bolt	:	0.89	k
Resultant from Moments / Bolt	:	10.85	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**56.64%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**17.88%**		**OKAY**
Unity Check, Combined	:	**74.52%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**3.13%**		**OKAY**

PROJECT	**151730.001.01 - Nelsonville, OH**				**AD**
SUBJECT	**Sector Mount Analysis**				
DATE	**06/13/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	8.00	in	
Plate Width	:	8.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.00	in^2	
Gross Shear Area, A_{gv}	:	0.75	in^2	
Net Area for tension, A_{nv}	:	3.66	in^2	
Net Area for shear, A_{nt}	:	2.50	in^2	

Plate Check

Available Tensile Yield	:	129.60	k	[Eq. J4-1]
Available Tensile Rupture	:	159.05	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**9.06%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	87.00	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**26.79%**		**OKAY**
Available Block Shear, ΦRn	:	66.53	k	[Eq. J4-5]
Unity Check, Block Shear	:	**6.52%**		**OKAY**

INFINIGY

Non-Ionizing Radiation Report

Compiled For: Northeast Site Solutions on behalf of T-Mobile

Site Name: CT11280A

Site ID: CT11280A

450 Hayden Station Road, Windsor, CT 06095

Latitude: 41.897842; Longitude: -72.644001

Structure Type: Monopole

Report Date: August 5, 2021

Report Written By: Tim Harris

Status: T-Mobile will be compliant with FCC rules on RF Exposure.

Table of Contents

1. Executive Summary:

Northeast Site Solutions on behalf of T-Mobile has contracted Infinigy Solutions, LLC to determine whether the site CT11280A located at 450 Hayden Station Road in Windsor, CT Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as "Occupational or Controlled" and "General Public or Uncontrolled" (see Appendix A and B).

This document and the conclusions herein are based on information provided by Northeast Site Solutions on behalf of T-Mobile.

As a result of the analysis, **T-Mobile Will Be Compliant with FCC rules.**

T-Mobile, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0545
	% Exposure	6.76 %
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0545
	% Exposure	1.37 %

2. Site Summary:

Site Information	
Site Name: CT11280A	
Site Address: 450 Hayden Station Road, Windsor, CT 06095	
Site Type: Monopole	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

Base of tower

Install an RF caution sign. Note: The recommendation for alerting signage is moot if there is an RF caution, or greater already installed.

5. Antenna Inventory Table

Ant ID	Sector	Azimuth	Operator	Antenna manufacturer	Antenna Model	Operating Frequency/Technology	Rad Ctr (Ft)	Az (Deg)	Total ERP Power (Watts)
1a	Alpha	75	T-Mobile	Ericsson	AIR6449 B41	2500 MHz LTE	75	75	3590
1b	Alpha	75	T-Mobile	Ericsson	AIR6449 B41	2500 MHz 5G	75	75	3591
2a	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	700 MHz LTE	75	75	2256
2b	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz LTE	75	75	1128
2c	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz 5G	75	75	1128
2d	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz LTE	75	75	1583
2e	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz GSM	75	75	1583
2f	Alpha	75	T-Mobile	RFS	APXVARR24_43-C-NA20	2100 MHz UMTS	75	75	4308
3	Alpha	75	T-Mobile	RFS	APX16DW-16DWV-S-E-A20	2100 MHz LTE	75	75	4308
4a	Alpha	175	T-Mobile	Ericsson	AIR6449 B41	2500 MHz LTE	75	175	3590
4b	Alpha	175	T-Mobile	Ericsson	AIR6449 B41	2500 MHz 5G	75	175	3591
5a	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	700 MHz LTE	75	175	2256
5b	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz LTE	75	175	1128
5c	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz 5G	75	175	1128
5d	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz LTE	75	175	1583
5e	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz GSM	75	175	1583
5f	Alpha	175	T-Mobile	RFS	APXVARR24_43-C-NA20	2100 MHz UMTS	75	175	4308
6	Alpha	175	T-Mobile	RFS	APX16DW-16DWV-S-E-A20	2100 MHz LTE	75	175	4308
7a	Alpha	285	T-Mobile	Ericsson	AIR6449 B41	2500 MHz LTE	75	285	3590
7b	Alpha	285	T-Mobile	Ericsson	AIR6449 B41	2500 MHz 5G	75	285	3591
8a	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	700 MHz LTE	75	285	2256
8b	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz LTE	75	285	1128
8c	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	600 MHz 5G	75	285	1128
8d	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz LTE	75	285	1583

Ant ID	Sector	Azimuth	Operator	Antenna manufacturer	Antenna Model	Operating Frequency/Technology	Rad Ctr (Ft)	Az (Deg)	Total ERP Power (Watts)
8e	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	1900 MHz GSM	75	285	1583
8f	Alpha	285	T-Mobile	RFS	APXVARR24_43-C-NA20	2100 MHz UMTS	75	285	4308
9	Alpha	285	T-Mobile	RFS	APX16DW-16DWV-S-E-A20	2100 MHz LTE	75	285	4308

6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

a) Worksite: Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.

b) RF Safety Training and Awareness: All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.

c) Site Access: Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:
   - Locked doors/gates/ladder access
   - Alarmed doors
   - Restrictive barriers

d) Three-foot Buffer: There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.

e) Antennas: Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

7. T-Mobile Exposure Analysis By Band and Technology

T-Mobile 600 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.4**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.65%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.0**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.13%**

T-Mobile 600 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.4**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.65%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.0**
	Exposure values at the site (mW/cm^2)	**0.0026**
	% Exposure	**0.13%**

T-Mobile 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0052**
	% Exposure	**1.05%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0052**
	% Exposure	**0.23%**

T-Mobile 1900 MHz GSM		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0037**
	% Exposure	**0.37%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0037**
	% Exposure	**0.07%**

T-Mobile 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0037**
	% Exposure	**0.37%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0037**
	% Exposure	**0.07%**

T-Mobile 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0100**
	% Exposure	**1.00%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0100**
	% Exposure	**0.20%**

T-Mobile 2100 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0100**
	% Exposure	**1.00%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0100**
	% Exposure	**0.20%**

T-Mobile 2500 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0083**
	% Exposure	**0.83%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0083**
	% Exposure	**0.17%**

T-Mobile 2500 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0083**
	% Exposure	**0.83%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0083**
	% Exposure	**0.17%**

8. Appendix A: FCC Guidelines

FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm^2.

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. limits for Occupational/Controlled exposure can be found on Table 1(A).

General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

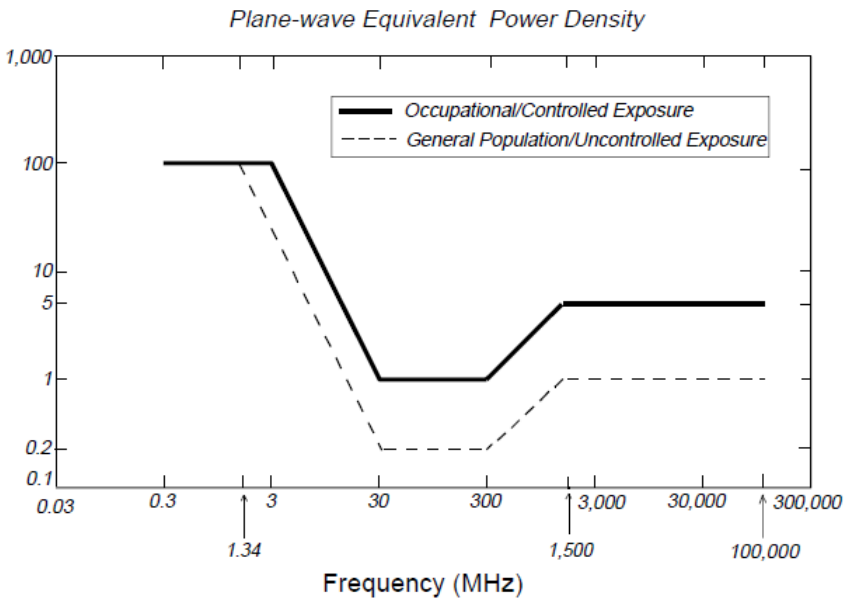
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Figure 1. *FCC Limits for Maximum Permissible Exposure (MPE)*



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

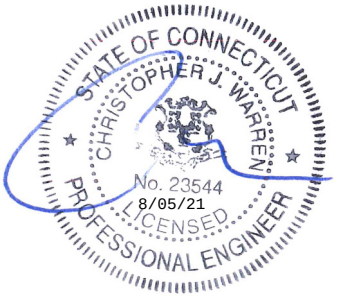
9. Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Heath Administration regarding Human Exposure to Radio Frequency Radiation. In addition, I have been trained in RF safety practices, rules, and regulations.

I certify that the information contained in this report is true and correct to the best of my knowledge.

Timothy A. Harris *8/5/2021*

Signature Date



T-Mobile

T-MOBILE SITE NUMBER: CT11280A
T-MOBILE SITE NAME: WINDSOR LOCKS/AIRPORT
SITE TYPE: MONOPOLE
TOWER HEIGHT: 96'-0"

BUSINESS UNIT #: 876326
SITE ADDRESS: 440 HAYDEN STATION ROAD WINDSOR, CT 06095
COUNTY: HARTFORD
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5A998C 6160

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	HAYDEN STATION
SITE ADDRESS:	440 HAYDEN STATION ROAD WINDSOR, CT 06095
COUNTY:	HARTFORD
MAP/PARCEL #:	6739
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.89784200
LONGITUDE:	-72.64400100
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	144 FT
CURRENT ZONING:	I
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:	CB BAGGS LLP TAX DEPT PO BOX 8430 KANSAS CITY, MO 64114
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	NOT PROVIDED
TELCO PROVIDER:	NOT PROVIDED

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S BOULDER AVE, SUITE 300 TULSA, OK 74119 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

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	CODE SUMMARY
T-3	CODE SUMMARY
T-4	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-5.1 & C-5.2	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

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

PROJECT DESCRIPTION

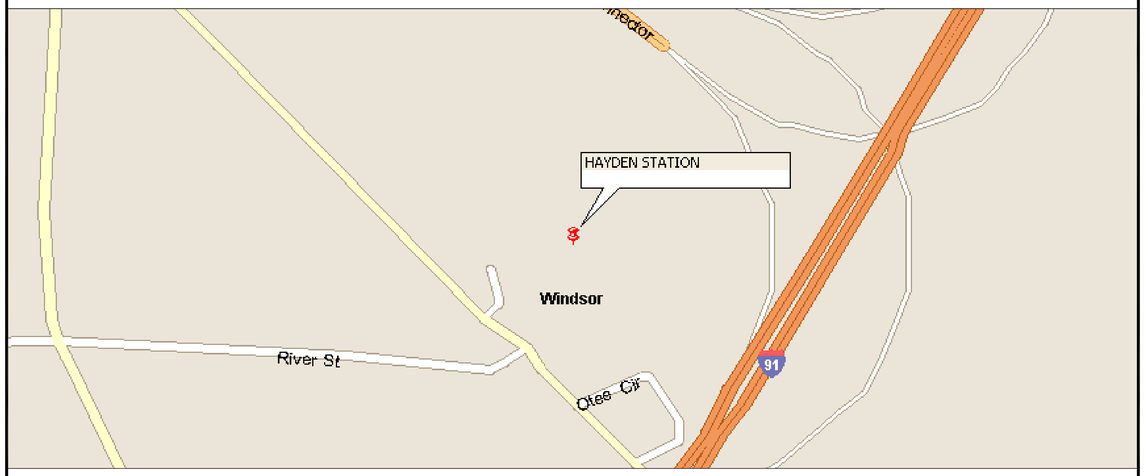
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (9) ANTENNAS
- REMOVE (3) RRUs
- REMOVE (3) TMAs
- REMOVE (12) COAX CABLES (7/8")
- REMOVE (1) HYBRID CABLE
- INSTALL (3) 2.0 STD. X 16'-0" LONG SUPPORT RAIL PIPE PER MOUNT ANALYSIS BY B+T GROUP DATED JUNE 13, 2021
- INSTALL (9) ANTENNAS
- INSTALL (12) RRUs
- REMOVE (3) DIPLEXERs
- INSTALL (4) HYBRID CABLES (1-5/8")

GROUND SCOPE OF WORK:
- REMOVE (1) RBS 6131 CABINET
- REMOVE (1) NORTEL CABINET
- REMOVE (1) DUW30
- REMOVE (6) RADIO RU22
- RELOCATE (1) DUW20, (1) DUG20, (1) BB 6630
- RELOCATE EXISTING BATTERIES
- INSTALL (1) 6160 CABINET
- INSTALL (1) B160 BATTERY CABINET
- ISNTALL (1) AAV CABINET
- INSTALL H-FRAME
- INSTALL (2) BB 6648 IN NEW RBS 6160 CABINET
- INSTALL (2) RBS 6601 IN NEW RBS 6160 CABINET
- INSTALL (1) PSU 4813 VOLTAGE BOOSTER
- INSTALL (1) CSR IXRE V2 (GEN2) ROUTER

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

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC W/AMENDMENTS
MECHANICAL	2015 IMC W/AMENDMENTS
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	6/17/21
MOUNT ANALYSIS:	B+T GROUP
DATED:	6/13/21
RFDS REVISION:	6
DATED:	5/25/21
ORDER ID:	559450
REVISION:	0

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

APPROVALS

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

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
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CLIFTON PARK, NY 12065

B+T GRP
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SUITE 300
TULSA, OK 74119
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www.btgrp.com

T-MOBILE SITE NUMBER:
CT11280A

BU #: **876326**
HAYDEN STATION

440 HAYDEN STATION ROAD
WINDSOR, CT 06095

EXISTING
96'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-1
REVISION: 1

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Verizon Antenna Removal and Addition
Address: 440 Hayden Station Road, Windsor, CT Zip Code 06095
Owner/Authorized Agent: _____ Phone # (____) ____ - ____ E-Mail _____
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☐ City_____ ☒ County HARTFORD ☐ State

CONTACT: _____

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				(___)	
Civil	Crown Castle	Andrew Fandozzi, P.E., C.P.E.	042222	(724)416-2864	andrew.fandozzi@crowncastle.com
Electrical	Crown Castle	Andrew Fandozzi, P.E., C.P.E.	042222	(724)416-2864	andrew.fandozzi@crowncastle.com
Fire Alarm				(___)	
Plumbing				(___)	
Mechanical				(___)	
Sprinkler-Standpipe				(___)	
Structural	John W. Kelly P.E. Engineering, P.C.	John W/Kelly, III	042719	(918)587-4630	
Retaining Walls >5' High				(___)	
Other				(___)	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☐ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction - Shell/Core- Contact the local inspection jurisdiction for possible additional procedures and requirements

2018 NC EXISTING BUILDING CODE: EXISTING: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): U
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): U

RISK CATEGORY (Table 1604.5): **Current:** ☐ I ☒ II ☐ III ☐ IV
Proposed: ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes **Flood Hazard Area:** ☐ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

Gross Building Area Table

FLOOR	EXISTING (SQ.FT)	NEW (SQ.FT)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor			
Basement			
TOTAL			

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☒

Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: ☒ No ☐ Yes Separation: ____ Hr. Exception: _____

☐ Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + ... = _____ ≤ 1.00

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☐ Yes
Exit Signs: ☐ No ☐ Yes
Fire Alarm: ☐ No ☐ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☐ Partial _____
Carbon Monoxide Detection: ☐ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,2]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30$ = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]			
Building Height in Stories (Table 504.4) [3]			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED: REGULAR WITH 5' ACCESS AISLE	# OF ACCESSIBLE SPACES PROVIDED: VAN SPACES WITH 132" ACCESS AISLE	# OF ACCESSIBLE SPACES PROVIDED: VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
TOTAL						

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G										
	NEW										
	REQ'D										

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

_____

_____

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EXISTING
96'-0" MONOPOLE

ISSUED FOR:

REV.	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-2
REVISION: 1

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☐ Yes (Provide code or statutory reference): _____

Climate Zone: ☐ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here)_____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
slab heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_s) _____
Seismic (I_E) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ psf

Wind Load: Ultimate Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_S_____ %g S_1_____ %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system ☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☐

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____

Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System
Unitary
description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category. If oversized, state reason.: _____
Chiller
Size category. If oversized, state reason.: _____

List equipment efficiencies: _____

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-3

REVISION: 1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

GREENFIELD GROUNDING NOTES:

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

ELECTRICAL INSTALLATION NOTES:

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

CONDUCTOR COLOR CODE

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

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

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

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

T–Mobile
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:
CT11280A

BU #: **876326**
HAYDEN STATION

440 HAYDEN STATION ROAD
WINDSOR, CT 06095

EXISTING
96'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

No. 23924 LICENSED PROFESSIONAL ENGINEER
8/6/21

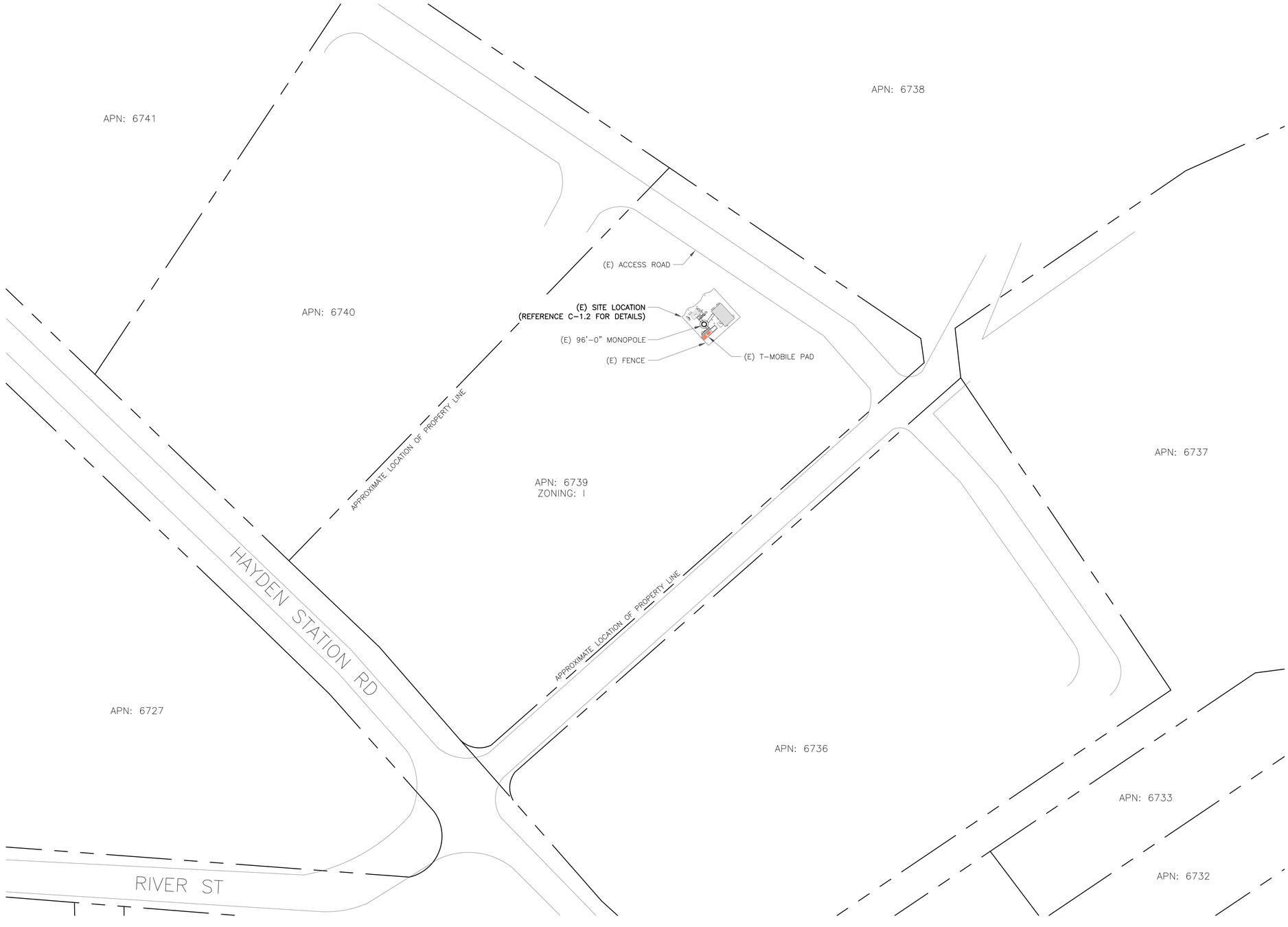
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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

SHEET NUMBER:	REVISION:
T-4	1

SITE PLAN DISCLAIMER:

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



1 OVERALL SITE PLAN
SCALE: 50' 25' 0 50' 1" = 50'-0" (FULL SIZE) 1" = 100'-0" (11x17)

N

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
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T-MOBILE SITE NUMBER:
CT11280A

BU #: **876326**
HAYDEN STATION

440 HAYDEN STATION ROAD
WINDSOR, CT 06095

EXISTING
96'-0" MONOPOLE

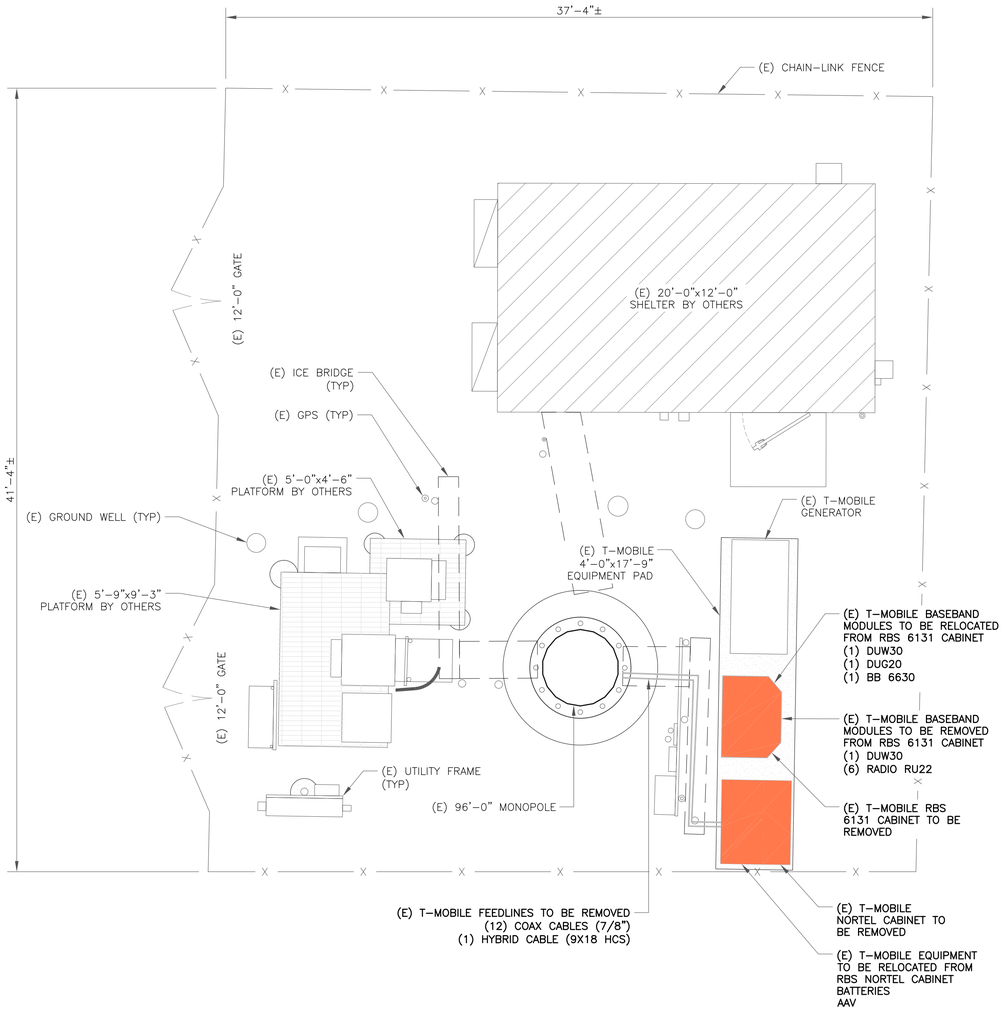
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

STATE OF CONNECTICUT
GREG T. CLANCY
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/6/21

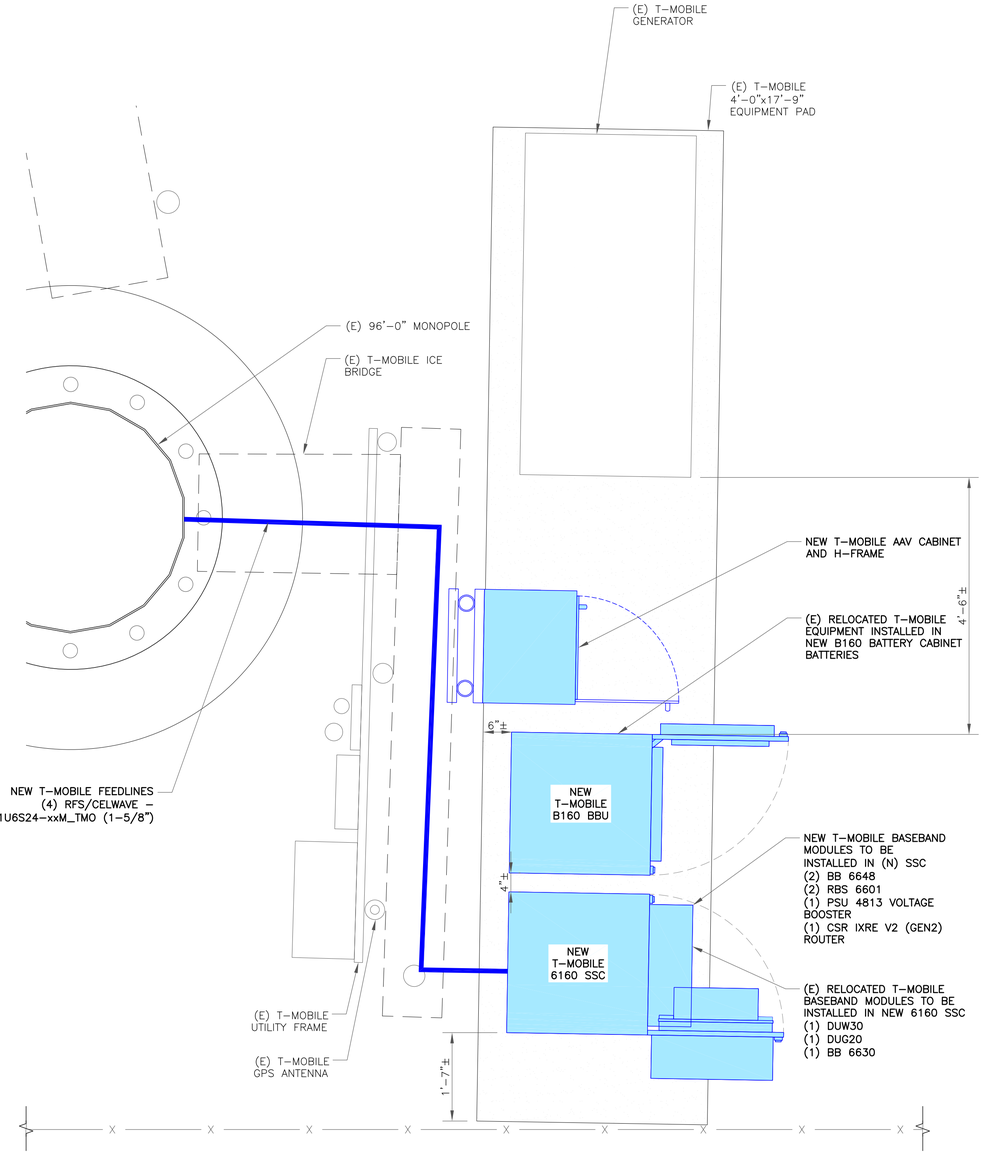
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: C-1.1
REVISION: 1



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

N



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

N

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:
CT11280A

BU #: **876326**
HAYDEN STATION

440 HAYDEN STATION ROAD
WINDSOR, CT 06095

EXISTING
96'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

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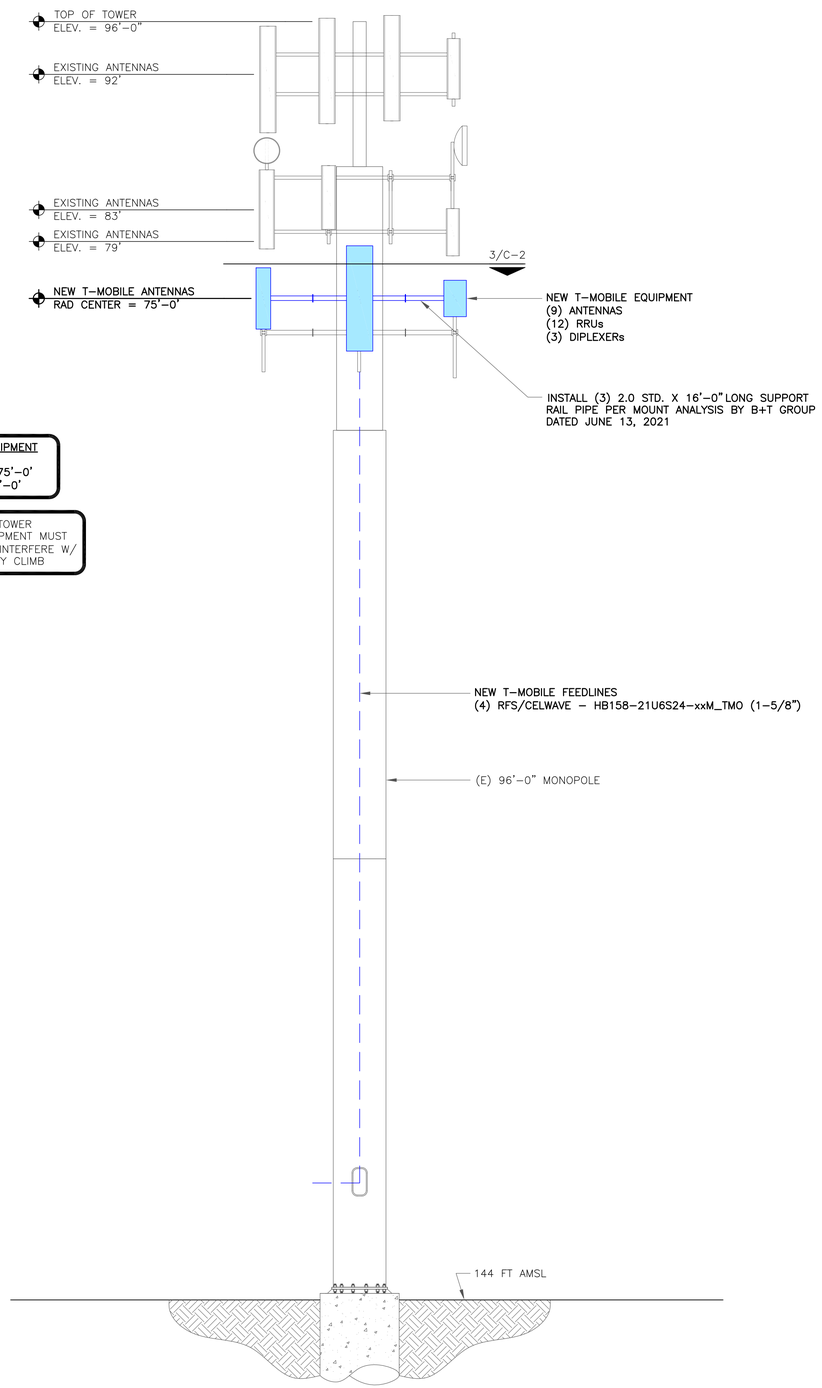
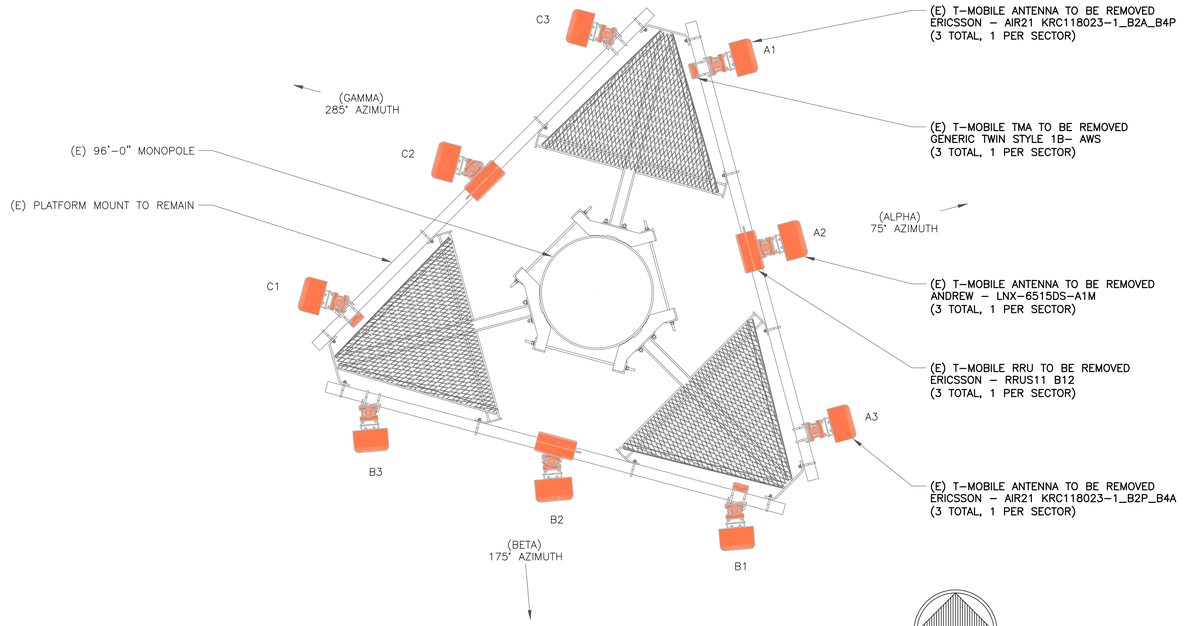
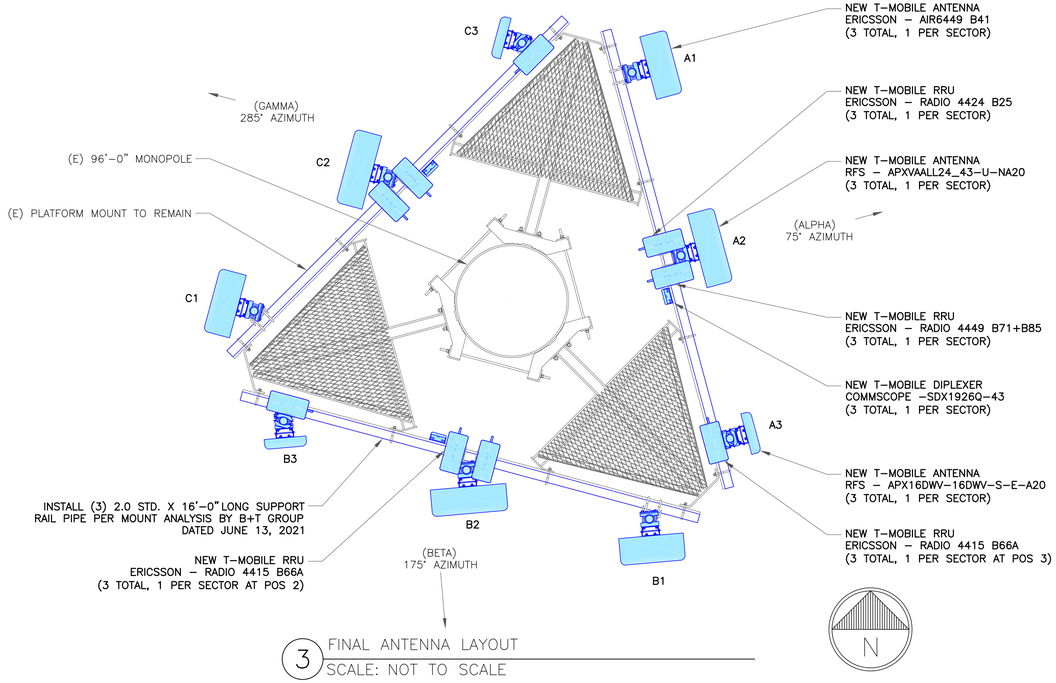
REVISION: 1



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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SHEET NUMBER: C-2

REVISION: 1

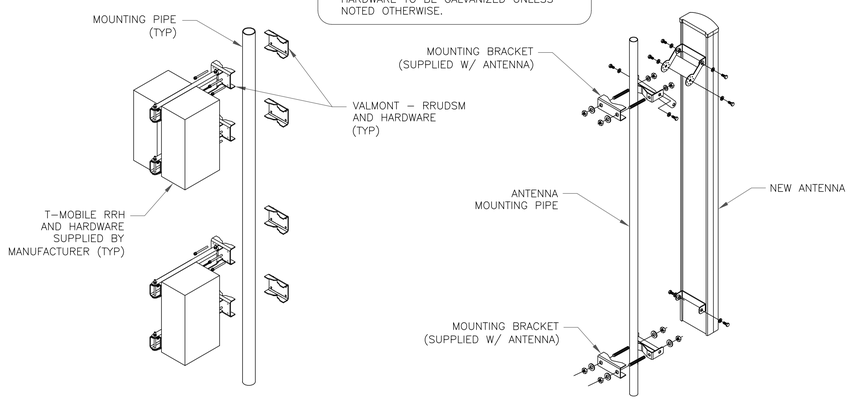
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	L2500/N2500	ERICSSON	AIR6449 B41	75°	0°	–	75'-0'	–	(2) 1-5/8" HYBRID
	A2	L700/L600/N600/ L1900/G1900/U2100	RFS	APXVAALL24_43-U-NA20	75°	0°	–	75'-0'	(1) ERICSSON – RADIO 4449 B71+B85 (1) ERICSSON – RADIO 4424 B25 (1) ERICSSON – RADIO 4415 B66A	
	A3	L2100	RFS	APX16DWV-16DWV-S-E-A20	75°	0°	–	75'-0'	(1) ERICSSON – RADIO 4415 B66A	
BETA	B1	L2500/N2500	ERICSSON	AIR6449 B41	175°	0°	–	75'-0'	–	(1) 1-5/8" HYBRID
	B2	L700/L600/N600/ L1900/G1900/U2100	RFS	APXVAALL24_43-U-NA20	175°	0°	–	75'-0'	(1) ERICSSON – RADIO 4449 B71+B85 (1) ERICSSON – RADIO 4424 B25 (1) ERICSSON – RADIO 4415 B66A	
	B3	L2100	RFS	APX16DWV-16DWV-S-E-A20	175°	0°	–	75'-0'	(1) ERICSSON – RADIO 4415 B66A	
GAMMA	C1	L2500/N2500	ERICSSON	AIR6449 B41	285°	0°	–	75'-0'	–	(1) 1-5/8" HYBRID
	C2	L700/L600/N600/ L1900/G1900/U2100	RFS	APXVAALL24_43-U-NA20	285°	0°	–	75'-0'	(1) ERICSSON – RADIO 4449 B71+B85 (1) ERICSSON – RADIO 4424 B25 (1) ERICSSON – RADIO 4415 B66A	
	C3	L2100	RFS	APX16DWV-16DWV-S-E-A20	285°	0°	–	75'-0'	(1) ERICSSON – RADIO 4415 B66A	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

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REVISION: 1

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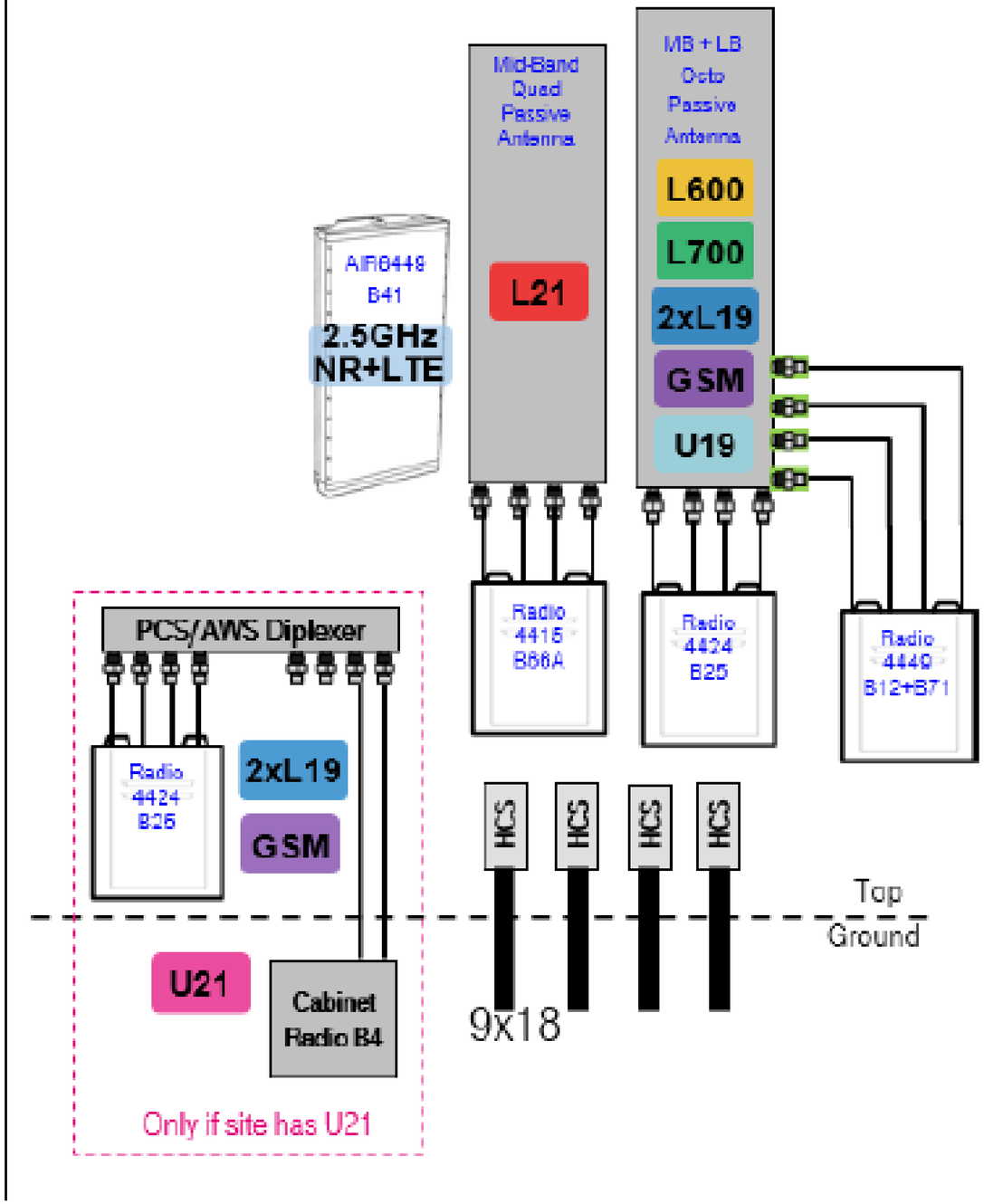

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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HAYDEN STATION

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EXISTING
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ISSUED FOR:

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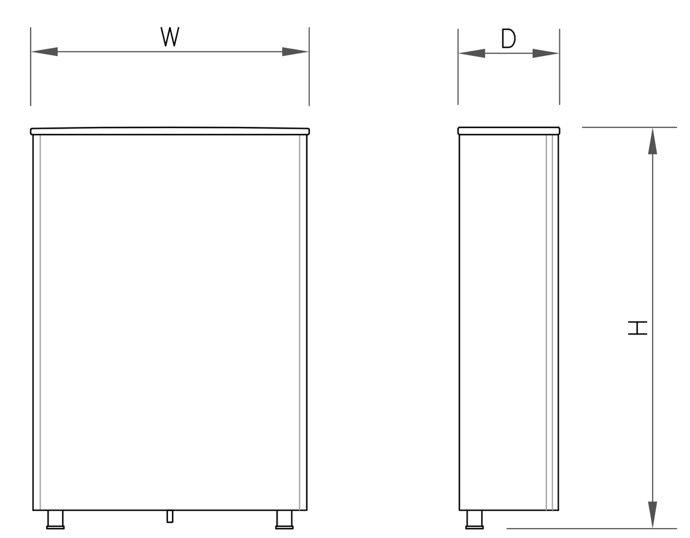
SHEET NUMBER: C-4

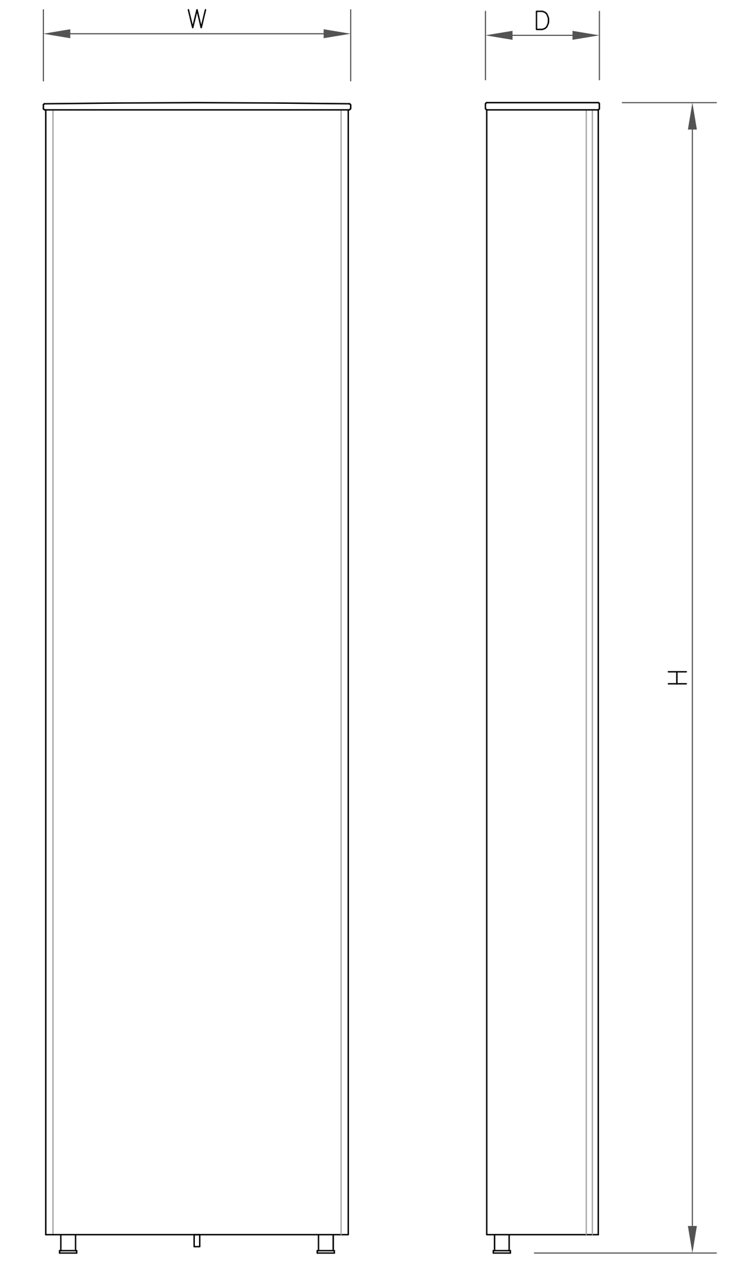
REVISION: 1



ANTENNA SPECS

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

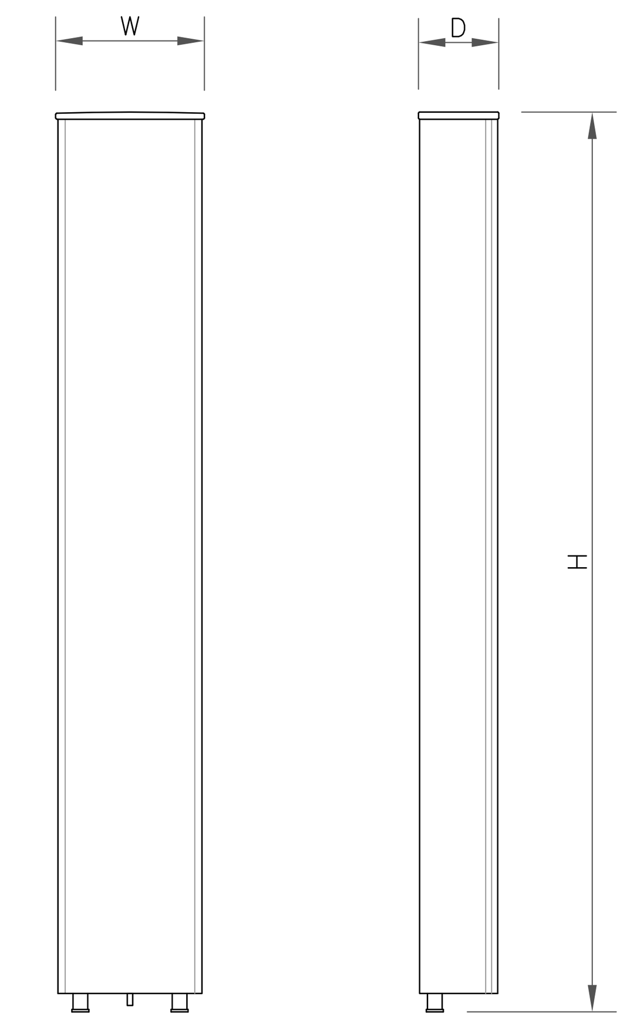
1 ANTENNA SPECS
SCALE: NOT TO SCALE



ANTENNA SPECS

MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24"
DEPTH	8.5"
HEIGHT	95.90"
WEIGHT	149.9 LBS

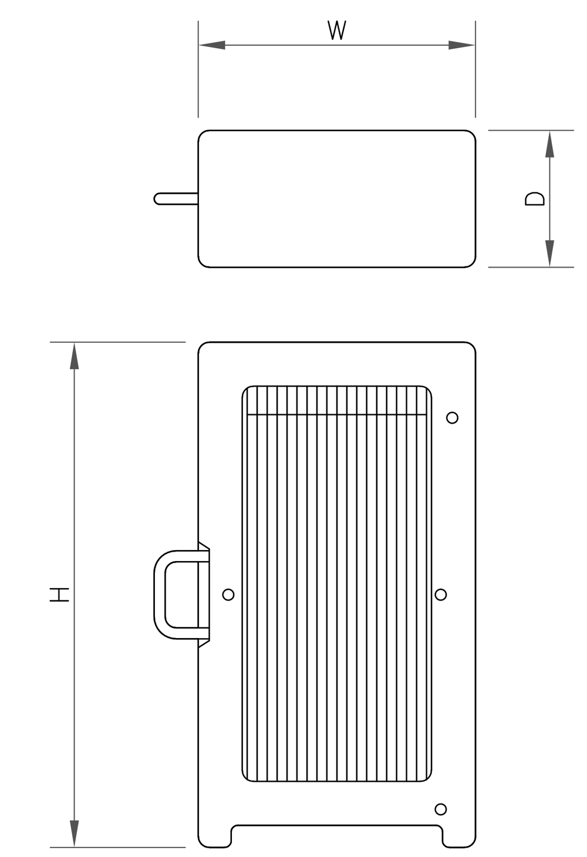
2 ANTENNA SPECS
SCALE: NOT TO SCALE



ANTENNA SPECS

MANUFACTURER	RFS
MODEL #	APX16DWV-16DWV-S-E-A20
WIDTH	13.3"
DEPTH	3.15"
HEIGHT	55.9"
WEIGHT	41 LBS

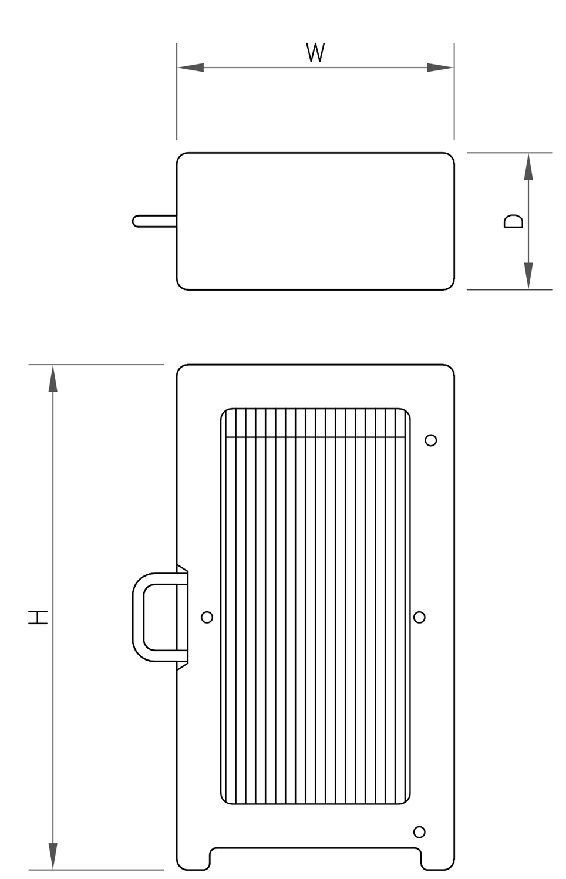
3 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	RADIO 4449 B71+B85
WIDTH	13.2"
DEPTH	10.63"
HEIGHT	17.91"
WEIGHT	73.21 LBS

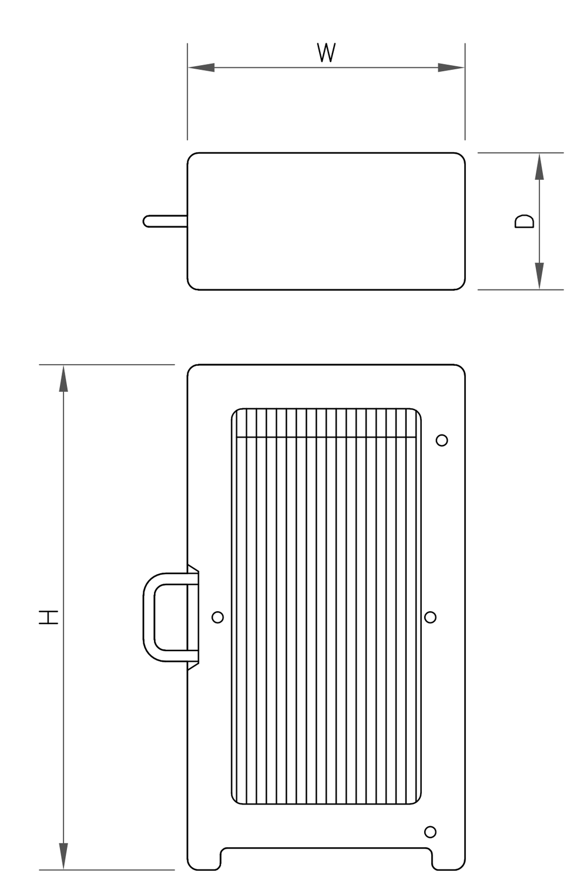
4 RRU SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	RADIO 4424 B25
WIDTH	14.4"
DEPTH	11.3"
HEIGHT	17.1"
WEIGHT	97 LBS

5 RRU SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	RADIO 4415 B66A
WIDTH	13.5"
DEPTH	6.3"
HEIGHT	16.5"
WEIGHT	49.6 LBS

6 RRU SPECS
SCALE: NOT TO SCALE

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

7 ERICSSON 6160 SSC
SCALE: NOT TO SCALE

BATTERY CABINET SPECIFICATIONS

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

8 ERICSSON B160 BATTERY CABINET
SCALE: NOT TO SCALE

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8/6/21

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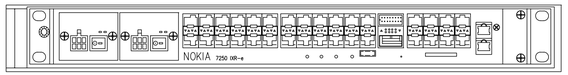
SHEET NUMBER: C-5.1
REVISION: 1



NOKIA CSR IXRE V1 ROUTER
WEIGHT: 11.2 LBS.
SIZE (HxWxD): 1.75x17.25x10.0 IN.

1 NOKIA CSR IXRE V2 TRANSPORT SYSTEM
SCALE: NOT TO SCALE

2 General Product Overview

Figure 1

A	Mounting bracket	Bracket for 19" rack installations. Bracket can be reversed.
B	DC input terminals	Covered interface for connecting power cables from the power distribution.
C	External alarm port	Interface for connecting alarm cable to site external alarms.

T··Mobile·

Ericsson PSU 48 13 Voltage Booster Design Specification

The general specifications for the PSU 48 13 are as follows:

Electrical Operating Limits	
Input Voltage	-38.0 – -58.5 VDC
Input Voltage, nominal	-48 VDC
Input Current, max	166 A; 30 A total for all four -48V inputs
Output Voltage, fixed	-58 VDC
Output Power, max.	2000 watts each
Environmental Operating Limits	
Temperature, operation	-40 – +60 °C
Temperature, storage	-40 – +55 °C
Temperature, trasport	-40 – +70 °C
Humidity, operation and storage	5% – 95%
Altitude, operation and storage	0 – 4000 m
Cooling	Internal fans
Vibration	ETS300019-2
Shock	ETS300019-2
Drop	ETS300019-2
EMC	FCC Part 15
Safety	UL 62368-1
Noise	< 6.8 bel sound power
Lightning Protection	4 kA; 10/350 µs; 20 kA, 8/20 µs
Fuse Options	30 A, 40 A, 50 A
Mechanical Specification	
Weight	< 7.8 kg (17.2 lb)
Dimensions (H x W x D)	44 x 483 x 363 mm (1.7" x 19.0" x 14.3") (include brackets, cover)

PSU Unit Kit: SKU 34132

UTPSU4813DCBoostMU

	Part Number	Part Description	Qty	Comments
1	BMR 911 93/1	D.C. CONVERTER/PSU 48 13	1	
2	SNG 818 12/1	CABLE LUG/Power dual lug 6 awg Right angled	6	3 DC ports, facing hybrid cable
3	SNG 818 13/1	CABLE LUG/Power dual lug 4 awg Right angled	6	3 DC ports, facing hybrid cable
4.1	NFN95021/30	FUSE HOLDER/30A, 80V, UL	1	3 fuses in each kit
4.2	NFN95021/40	FUSE HOLDER/40A, 80V, UL	1	3 fuses in each kit
4.3	NFN95021/50	FUSE HOLDER/50A, 80V, UL	1	3 fuses in each kit

PSU 4813 VOLTAGE BOOSTER
WEIGHT : 17.2 LBS.
SIZE (HxWxD): 1.7x19.0x14.4 IN.

2 PSU 4813 VOLTAGE BOOSTER SPECS
SCALE: NOT TO SCALE

DIPLEXER SPECIFICATIONS	
MANUFACTURER	COMMSCOPE
MODEL #	SDX1926Q-43
WIDTH	6.9"
DEPTH	2.9"
HEIGHT	4.2"
WEIGHT	6.2 LBS

3 DIPLEXER SPEC
SCALE: NOT TO SCALE

AAV CABINET	
MANUF.	EMERSON
WIDTH	24"
DEPTH	16"
HEIGHT	24"
WEIGHT	64 LBS

4 AAV CABINET
SCALE: NOT TO SCALE

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SHEET NUMBER: C-5.2

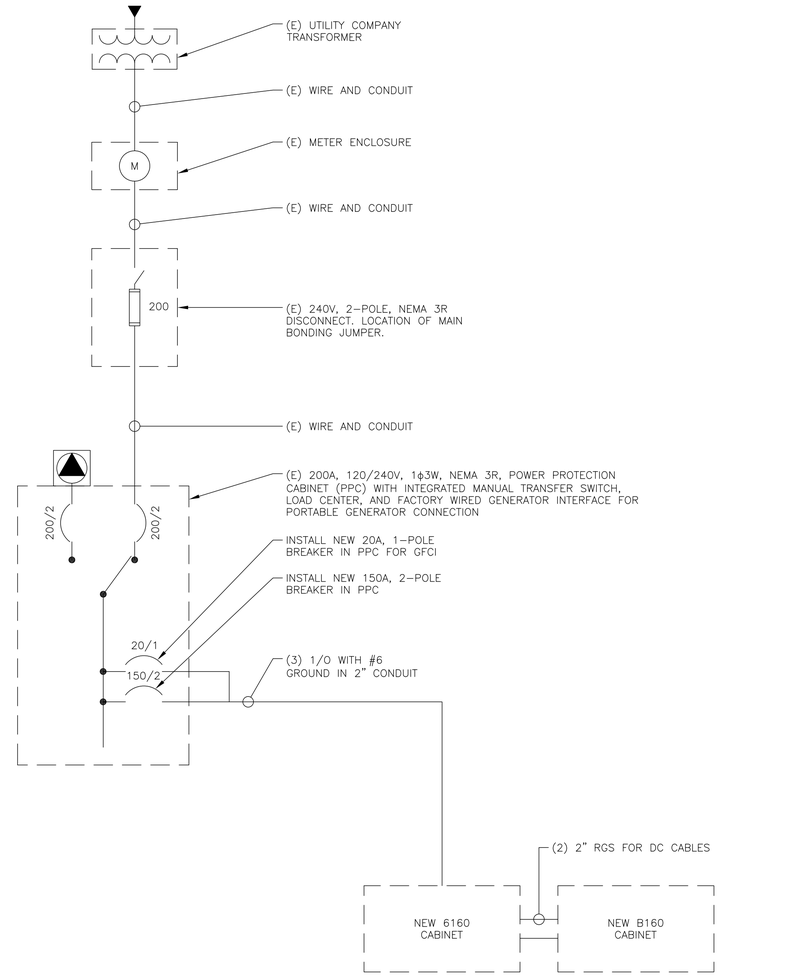
REVISION: 1

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
BTS	2	30A	1	2	20A	1	GFI
			3	4	40A	2	BTS (VOICESTREAM)
6131	2	60A	5	6			
			7	8	70A	2	BTS (VOICESTREAM)
LED LIGHT	1	20A	9	10			
6160	**2**	**150A**	11	12	**20A**	**1**	**GFI**
			13	14			
			15	16			

RATED VOLTAGE: ■120/240 ☐ _____, 1 PHASE, 3 WIRE	BRANCH POLES: ■16 ☐24 ☐30 ☐42	APPROVED MF'RS
RATED AMPS: ☐100 ■200 ☐400 ☐_____,	CABINET: ■SURFACE ☐FLUSH	NEMA ☐1 ■3R ☐4X
☐MAIN LUGS ONLY ☐MAIN 200 AMPS ■BREAKER ☐FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH
☐FUSED ■CIRCUIT BREAKER BRANCH DEVICES	☐ _____ TO BE GFCI BREAKERS	FULL NEUTRAL BUS / GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL		

INSTALL NEW BREAKER IN POSITION 11 AND 13 WITH A 2P 150A BREAKER FOR NEW 6160 CABINET
INSTALL NEW BREAKER IN POSITION 12 WITH A 1P 20A BREAKER FOR NEW GFCI (B160 CABINET)
INSTALL WIRES FOR NEW 6160 CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #6G AWG. MINIMUM CONDUIT SIZE TO BE 2".
IF 150A OR 20A BREAKERS WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:

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

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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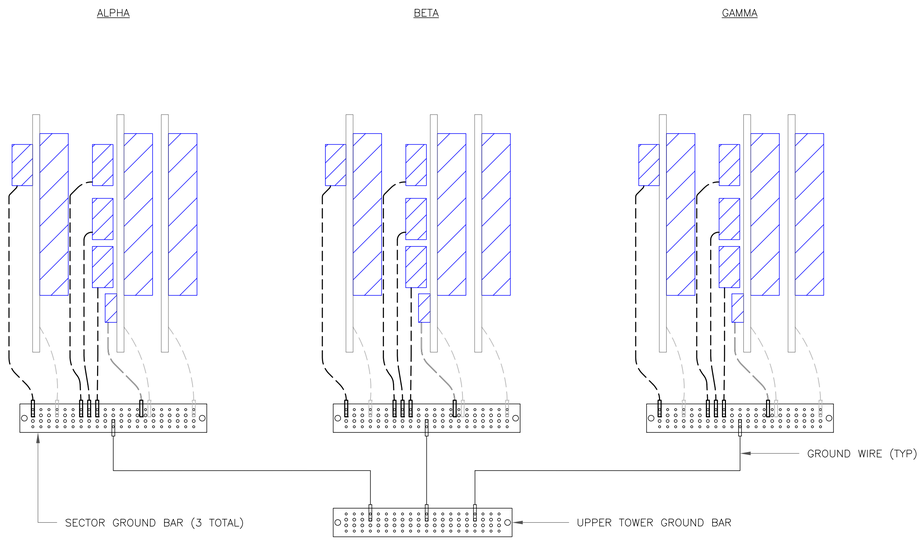
SHEET NUMBER: E-1
REVISION: 1



NOTE:

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

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

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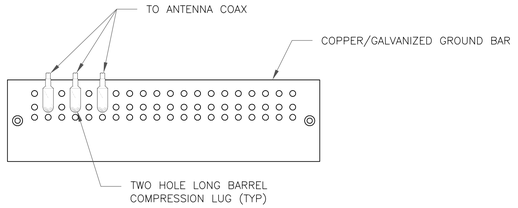
1	8/6/21	YXI	CONSTRUCTION	YXI

STATE OF CONNECTICUT
GUO YUANXI
No. 23924
LICENSED
PROFESSIONAL ENGINEER
8/6/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

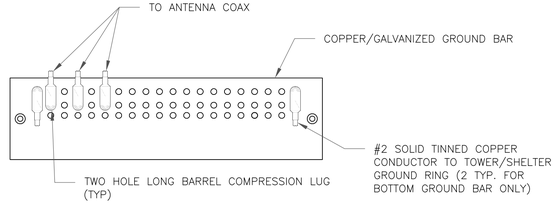
SHEET NUMBER: G-1
REVISION: 1



NOTES:

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

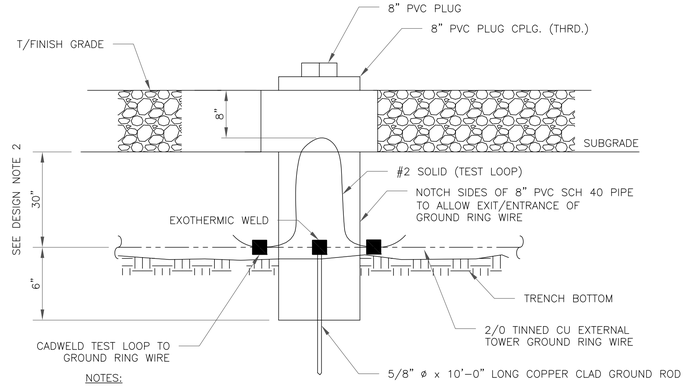
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

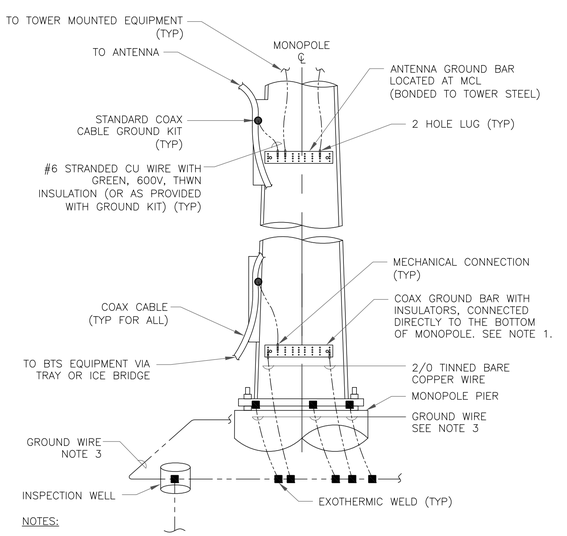
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

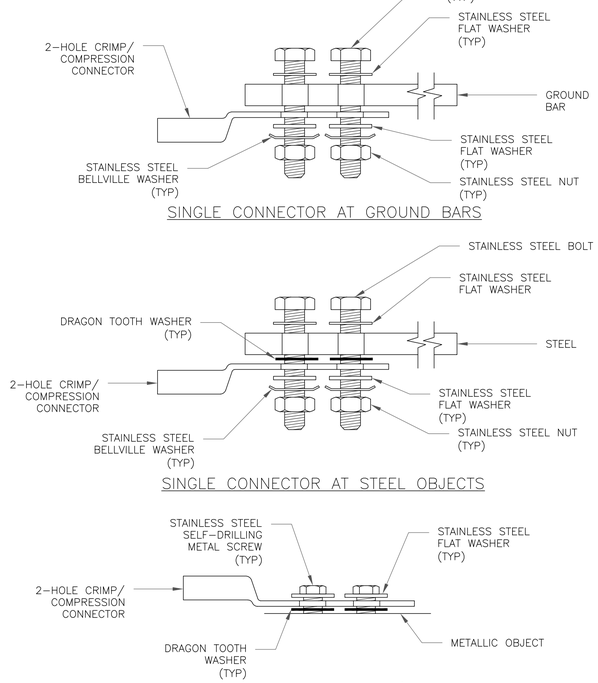
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



NOTES:

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

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE

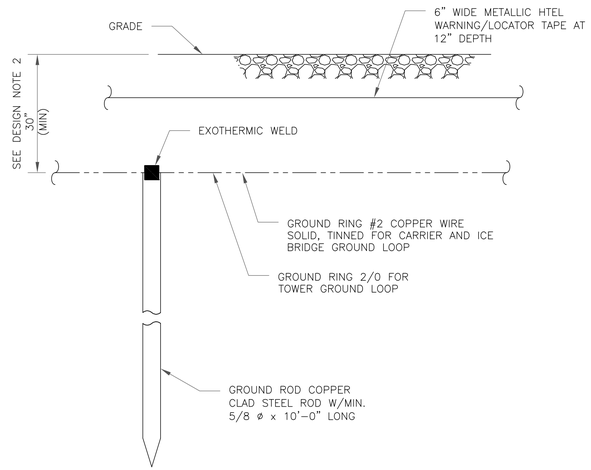


SINGLE CONNECTOR AT GROUND BARS

SINGLE CONNECTOR AT STEEL OBJECTS

SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
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:
CT11280A

BU #: **876326**
HAYDEN STATION

440 HAYDEN STATION ROAD
WINDSOR, CT 06095

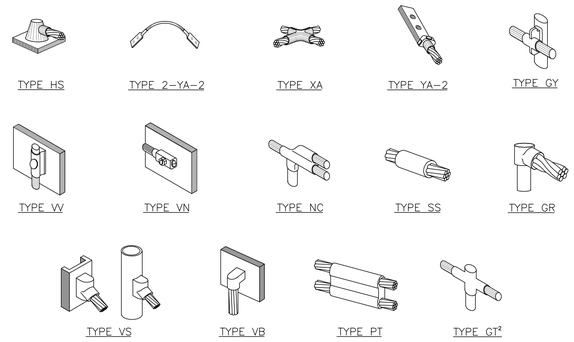
EXISTING
96'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	7/9/21	JHW	CONSTRUCTION	JHW
1	8/6/21	YXI	CONSTRUCTION	YXI

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: G-2
REVISION: 1

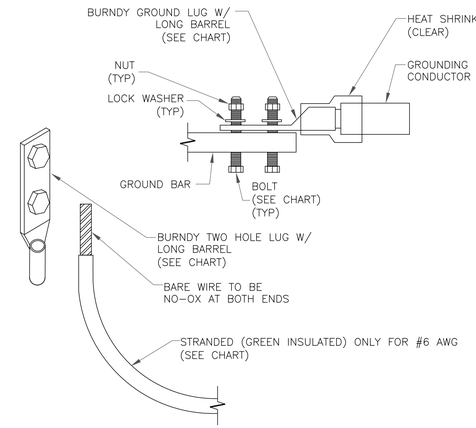


NOTE:

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

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

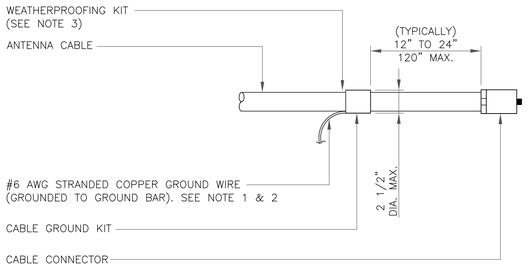
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

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

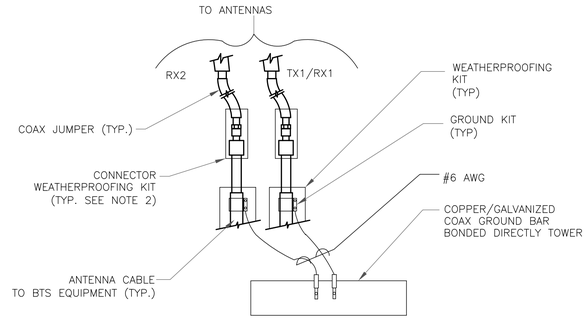
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

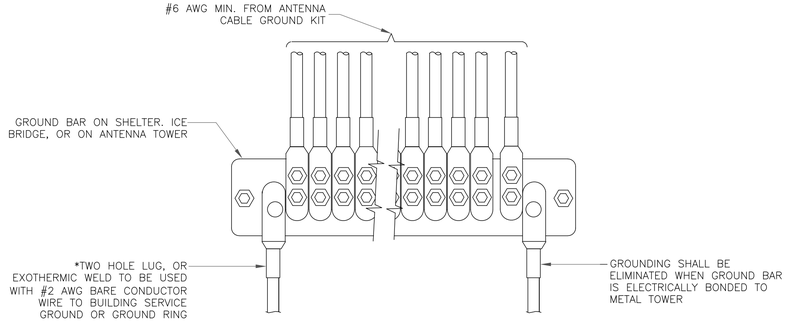
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



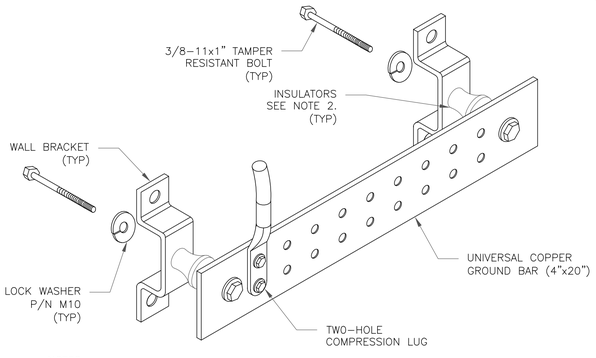
NOTES:

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

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



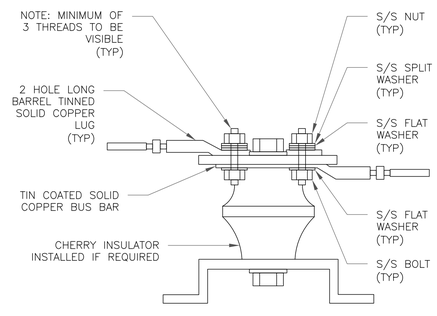
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



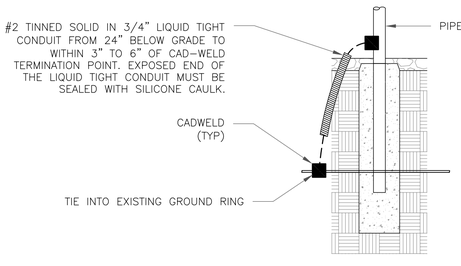
NOTES:

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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: G-3
REVISION: 1

20010

CROWN CASTLE - ETA PROPERTY
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

DATE 8/19/2021 32-61/1110

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