

Alex Murshteyn, Site Acquisition
c/o T-Mobile Northeast LLC ("T-Mobile")
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

July 13, 2017

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

**RE: Notice of Exempt Modification // Site Number: CTHA532A (ATC: 302488)
309 East Hill Rd (aka 4 Hoffman Road, aka Off Hoffmann Road; located 200' east of
the intersection of Hoffmann Road and East Hill Road), Canton, CT 06019
N 41.85530 // W -72.89250**

Dear Ms. Bachman:

T-Mobile Northeast LLC ("T-Mobile") currently maintains 3 antennas at the 141-foot mount and leased rights to 3 reserved antennas at its former 134-foot level on the existing 150-foot monopole tower, officially located at 309 East Hill Road (aka 4 Hoffmann Road), Canton, CT. The tower is owned by American Tower. The property, leased to American Tower, is owned by James H and Katharine E Hart. T-Mobile now intends to replace all of its existing antennas and mounts with 9 new LTE (L700/L2100) antennas on a new platform, as detailed on sheet C-501 of the drawings enclosed herewith, for its LTE/UMTS/AWS upgrade. Note that this modification will consolidate all existing and leased tower equipment, mounts and cabling (including all items previously owned by MetroPCS) at the new 140-foot level. The 18 existing T-Mobile coax lines at 2 different levels will now run solely to the new platform. Additionally, T-Mobile will install 3 new Smart Bias Ts with its new antennas, as well as 1 new hybrid fiber (HCS) cable.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to L Leslee Hill, First Selectman for the Town of Canton, the Town's Planning & Zoning Commission, American Tower, the tower owner, and the ground owners identified by the Town and by American Tower for the subject parcel, James H and Katharine E Hart.

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

Enclosed to accommodate this filing are construction drawings dated July 10, 2017 by ATC Tower Services, a structural analysis dated June 13, 2017 together with reinforcement drawings dated May 8, 2017 by A.T. Engineering Service, PLLC and an RF Emissions Analysis Report dated May 3, 2017 by EBI Consulting.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading, pursuant to the monopole modifications reinforcements drawings and analysis by A.T. Engineering Service, PLLC, dated May 8, 2017 and July 10, 2017, respectively.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Alex Murshteyn, Site Acquisition
c/o T-Mobile Northeast LLC
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Attachments

cc: Leslee Hill, First Selectman, Town of Canton - as elected official - 1ZF9N17T0322398884
Town of Canton Planning & Zoning Commission - as P&Z officials-1ZF9N17T0336255494
American Tower Corporation - as tower owner - 1ZF9N17T0331935508
James H and Katharine E Hart - as property owners - 1ZF9N17T0326834912



AMERICAN TOWER®
CORPORATION

Post – Modification Structural Analysis Report

Structure : 150 ft Monopole
ATC Site Name : Cntn - Canton, CT
ATC Site Number : 302488
Engineering Number : OAA694941_C4_07
Proposed Carrier : T-Mobile
Carrier Site Name : ATC Canton Monopole
Carrier Site Number : CTHA532A
Site Location : 4 Hoffmann Road
Canton, CT 06019-2122
41.855300,-72.892500
County : Hartford
Date : June 13, 2017
Max Usage : 98%
Result : Pass

Prepared By:
Aaron Black
Structural Engineer I

Reviewed By:



Jun 19 2017 4:56 PM

cosign

COA: PEC.0001553



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Introduction

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

Supporting Documents

Tower Drawings	ITT Meyer, AT&T Spec. AT-8935 B, dated April 13, 1984
Foundation Drawing	Girard & Co. Drawing dated April 2, 1986
Geotechnical Report	GEOServices Project #21-07254, dated September 12, 2008
Modifications	ATC Project #51822034, dated March 12, 2013 ATC Project #OAA694941_C6_06, dated May 8, 2017 (Pending)

Analysis

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

Basic Wind Speed:	93 mph (3-Second Gust, V_{ASD}) / 120 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Spectral Response:	$S_s = 0.18$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report. If the pending modifications cited in the Supporting Documents table are not completed, the results of this analysis are no longer valid, and T-Mobile should contact American Tower's Site Manager for further direction on how to proceed.

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier			
Mount	RAD								
150.0	160.0	1	12' Dipole	Platform w/ Handrails	(1) 7/8" Coax	Town Of Canton			
	158.0	1	12' Omni		(1) 1 5/8 Coax	Spok Holdings			
	155.5	1	6' Yagi		(1) 1/2" Coax				
	153.0		3		Andrew ABT-DMDF-ADBH	Platform w/ Handrails	(4) 0.78" 8 AWG 6 (12) 1 1/4" Coax (2) 3" Conduit (2) 0.39" Fiber Trunk	AT&T Mobility	
			6		Powerwave TT19-08BP111-001				
			1		Raycap DC6-48-60-18-8F				
			3		Ericsson RRUS 11 (Band 12)				
			3		Ericsson RRUS 32 B2				
			6		Powerwave 7770.00A				
	3	CCI HPA-65R-BUU-H8							
150.0	6	Powerwave 7020.00 Dual Band RET							
140.0	140.0	3	RFS ATMAA1412D-1A20	Low Profile Platform	-				T-Mobile
		3	RFS ATMPP1412D-1CWA						
123.0	123.0	1	75" x 16.8" Panel	Stand-Off	(1) 7/8" Coax	Town Of Canton			
10.0	10.0	1	Channel Master Type 120	Flush	(1) 0.28" RG-6	Spok Holdings			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
141.0	141.0	3	RFS APXV18-206517S-C	-	(6) 1 5/8" Coax	Metro PCS
134.0	134.0	3	RFS APX16DWV-16DWV-S-E-ACU	-	(12) 1 5/8" Coax	T-Mobile

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	6	Ericsson AIR 21 B4A B2P	Low Profile Platform	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Andrew LNX-6515DS-A1M			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	44%	Pass
Shaft	98%	Pass
Base Plate	67%	Pass
Flanges	80%	Pass
Reinforcement	69%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,072.9	91%
Axial (Kips)	36.5	51%
Shear (Kips)	20.2	29%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
140.0	Ericsson AIR 21 B4A B2P	T-Mobile	2.331	2.315
	Andrew LNX-6515DS-A1M			
10.0	Channel Master Type 120	Spok Holdings	0.011	0.120

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



Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

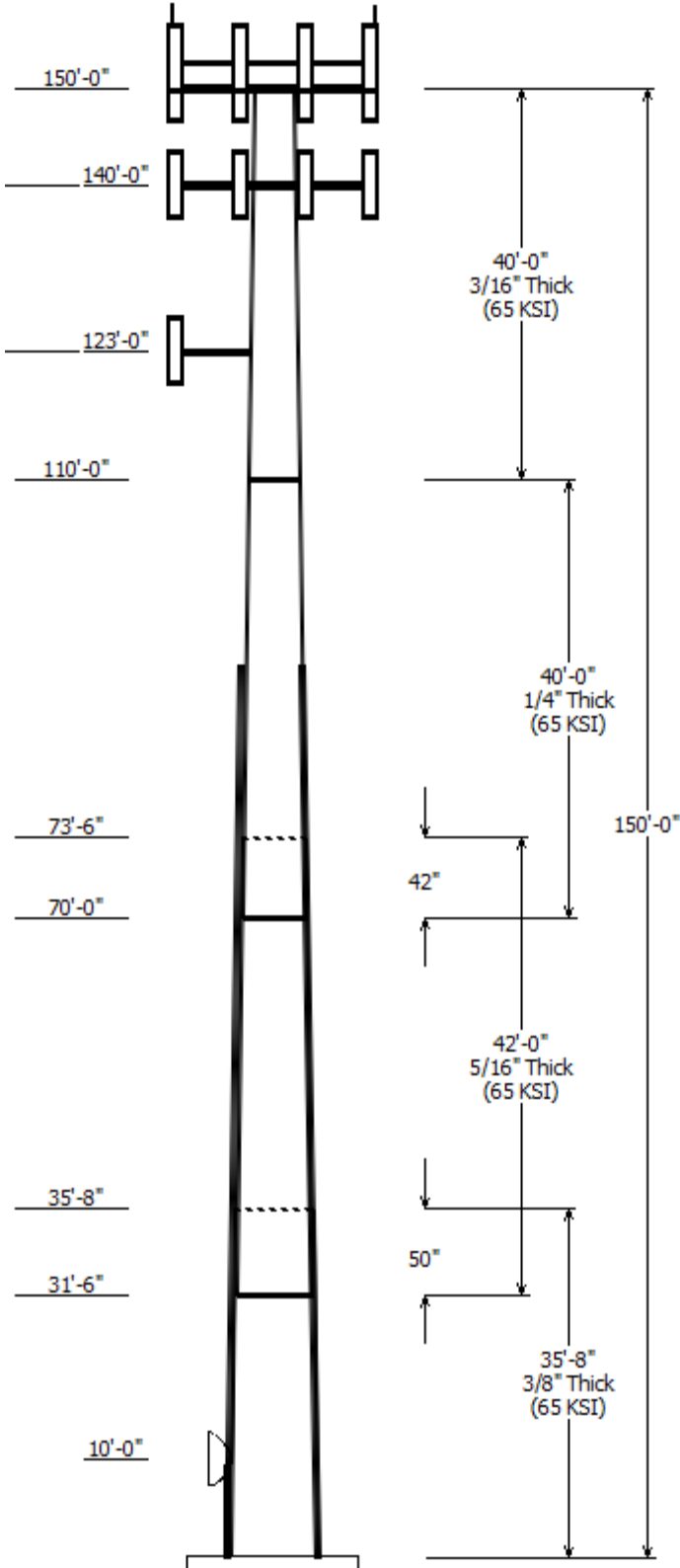
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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

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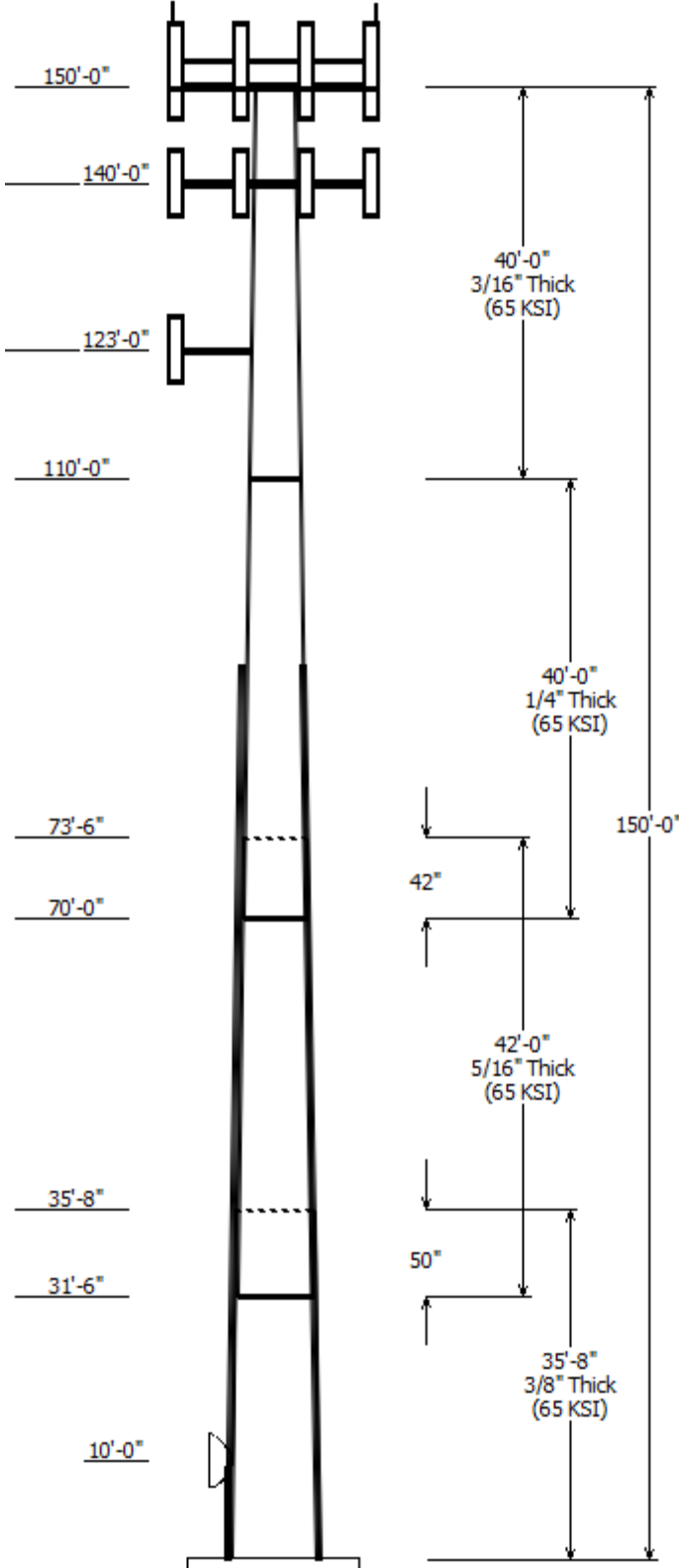


Job Information	
Pole :	302488
Code :	ANSI/TIA-222-G
Description :	150 ft ITT Meyer Type "B" Monopole
Client :	T-MOBILE
Struct Class :	II
Location :	Cntn - Canton, CT
Shape :	12 Sides
Exposure :	B
Height :	150.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.156707(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom					
1	35.666	31.79	37.38	0.375		0.000	0.156700	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	0.156700	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	0.156700	65
4	40.001	14.99	21.26	0.188	Butt Joint	0.000	0.156700	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	160.000	1	12' Dipole
150.000	153.000	1	Raycap DC6-48-60-18-8F
150.000	150.000	6	Powerwave Allgon 7020.00
150.000	153.000	3	Andrew ABT-DMDF-ADBH
150.000	153.000	3	Ericsson RRUS 11 (Band 12)
150.000	153.000	6	Powerwave TT19-08BP111-001
150.000	153.000	3	Ericsson RRUS 32 B2
150.000	153.000	3	CCI HPA-65R-BUU-H8
150.000	155.500	1	6' Yagi
150.000	153.000	6	Powerwave 7770.00A
150.000	158.000	1	12' Omni
150.000	150.000	1	Flat Platform w/ Handrails
140.000	140.000	3	Andrew LNX-6515DS-A1M
140.000	140.000	1	Flat Low Profile Platform
140.000	140.000	6	Ericsson AIR 21 B4A B2P
140.000	140.000	3	RFS ATMAA1412D-1A20
140.000	140.000	3	RFS ATMPP1412D-1CWA
123.000	123.000	1	75" x 16.8" Panel
123.000	123.000	1	Stand-Off
10.000	10.000	1	Channel Master Type 120

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
15.500	95.500	reinforcement	Yes
0.000	123.0	7/8" Coax	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	140.0	1 5/8" Coax	No
0.000	150.0	0.39" Fiber Trunk	No
0.000	150.0	0.78" 8 AWG 6	No
0.000	150.0	1 1/4" Coax	No
0.000	150.0	1 5/8 Coax	No
0.000	150.0	1/2" Coax	No
0.000	150.0	3" Conduit	No
0.000	150.0	3" Conduit	No
0.000	150.0	7/8" Coax	No
0.000	10.000	0.28" RG-6	No
0.000	15.500	reinforcement	Yes

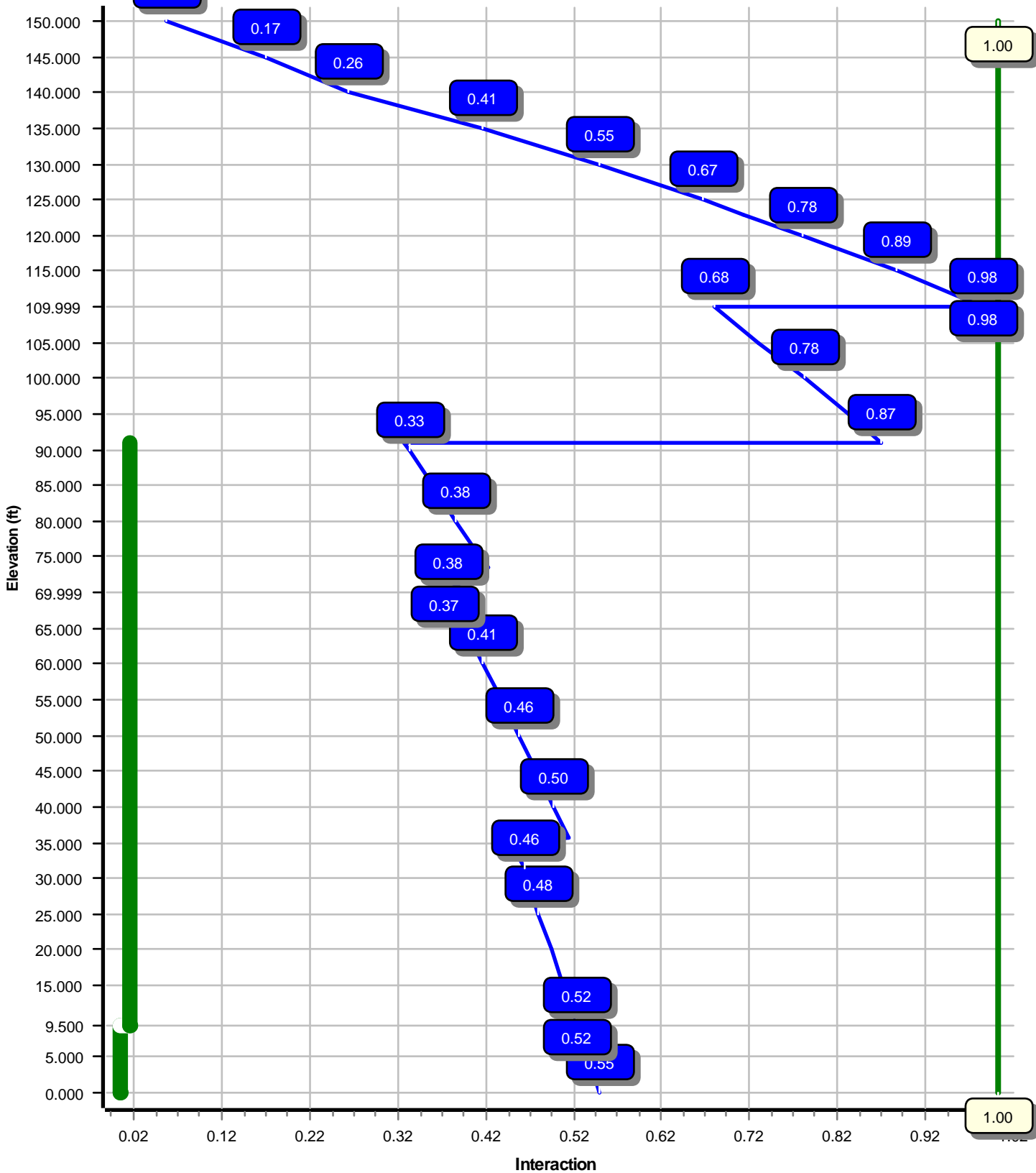


Load Cases	
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2072.93	20.16	36.48
0.9D + 1.6W	2039.96	20.14	27.35
1.2D + 1.0Di + 1.0Wi	659.95	5.76	61.07
(1.2 + 0.2Sds) * DL + E ELFM	152.16	1.19	36.11
(1.2 + 0.2Sds) * DL + E EMAM	263.73	2.15	36.11
(0.9 - 0.2Sds) * DL + E ELFM	149.14	1.19	25.13
(0.9 - 0.2Sds) * DL + E EMAM	258.10	2.14	25.13
1.0D + 1.0W	544.67	5.43	30.43

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	10.00	0.127	0.120

Load Case : 1.2D + 1.6W
Max Ratio 98.36% at 110.0 ft



Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:28 AM

Customer: T-MOBILE

Analysis Parameters

Location:	HARTFORD County, CT	Height (ft):	150
Code:	ANSI/TIA-222-G	Base Diameter (in):	37.38
Shape:	12 Sides	Top Diameter (in):	15.00
Pole Type:	Taper	Taper (in/ft) :	0.157
Pole Manufacturer:	ITT Meyer	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.78		
T _L (sec):	6	p:	1.3
S _s :	0.179	S ₁ :	0.065
F _a :	1.600	F _v :	2.400
S _{ds} :	0.191	S _{d1} :	0.104
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

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Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	35.666	0.3750	65		0.00	5,013	37.38	0.00	44.68	7810.1	24.03	99.68	31.79	35.67	37.93	4778.8	20.04	84.78	0.156707
2-12	42.000	0.3125	65	Slip	50.00	4,237	33.06	31.50	32.96	4514.2	25.67	105.82	26.48	73.50	26.34	2303.2	20.03	84.76	0.156707
3-12	40.000	0.2500	65	Slip	42.00	2,646	27.53	70.00	21.96	2087.3	26.83	110.14	21.26	110.00	16.92	953.9	20.11	85.07	0.156707
4-12	40.001	0.1875	65	Butt	0.00	1,475	21.26	110.00	12.73	721.8	27.71	113.43	14.99	150.00	8.94	250.4	18.75	79.99	0.156707
Shaft Weight						13,372													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	12' Dipole	1	40.00	4.510	1.00	217.85	14.057	1.00	0.000	10.000
150.00	12' Omni	1	40.00	3.600	1.00	279.63	8.496	1.00	0.000	8.000
150.00	6' Yagi	1	25.00	8.950	1.00	364.40	40.769	1.00	0.000	5.500
150.00	Andrew ABT-DMDF-ADBH	3	1.10	0.050	0.50	10.87	0.201	0.50	0.000	3.000
150.00	CCI HPA-65R-BUU-H8	3	68.00	12.980	0.67	476.77	15.173	0.67	0.000	3.000
150.00	Ericsson RRUS 11 (Band 12)	3	50.00	2.570	0.50	167.26	3.464	0.50	0.000	3.000
150.00	Ericsson RRUS 32 B2	3	53.00	2.740	0.50	179.76	3.740	0.50	0.000	3.000
150.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,895.59	70.373	1.00	0.000	0.000
150.00	Powerwave 7770.00A	6	27.00	5.560	0.65	221.40	7.016	0.65	0.000	3.000
150.00	Powerwave Allgon 7020.00	6	2.20	0.400	0.50	27.30	0.744	0.50	0.000	0.000
150.00	Powerwave TT19-08BP111-	6	16.00	0.640	0.50	58.28	1.037	0.50	0.000	3.000
150.00	Raycap DC6-48-60-18-8F	1	32.80	1.280	1.00	165.95	3.095	1.00	0.000	3.000
140.00	Andrew LNX-6515DS-A1M	3	49.80	11.410	0.70	418.93	13.657	0.70	0.000	0.000
140.00	Ericsson AIR 21 B4A B2P	6	90.00	5.800	0.71	320.06	7.241	0.71	0.000	0.000
140.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,358.13	51.387	1.00	0.000	0.000
140.00	RFS ATMAA1412D-1A20	3	13.00	1.000	0.50	65.22	1.597	0.50	0.000	0.000
140.00	RFS ATMPP1412D-1CWA	3	12.50	1.000	0.50	61.72	1.609	0.50	0.000	0.000
123.00	75" x 16.8" Panel	1	31.20	12.250	1.00	438.87	12.939	1.00	0.000	0.000
123.00	Stand-Off	1	100.00	3.000	0.67	163.80	5.051	0.67	0.000	0.000
10.00	Channel Master Type 120	1	126.00	20.190	1.00	335.07	23.250	1.00	0.000	0.000
Totals		54	5448.40			16,123.00			Number of Loadings : 20	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Width (in)	Exposed To Wind	Carrier
0.00	150.00	2	0.39" Fiber Trunk	0.39	0.07	N	0.00	N	AT&T Mobility
0.00	150.00	4	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	150.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
0.00	150.00	1	1 5/8 Coax	1.98	0.82	N	0.00	N	Spok Holdings
0.00	150.00	1	1 1/2" Coax	0.63	0.15	N	0.00	N	Spok Holdings
0.00	150.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	150.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	150.00	1	7/8" Coax	1.09	0.33	N	0.00	N	Town of Canton
0.00	140.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	T-Mobile
0.00	140.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	123.00	1	7/8" Coax	1.09	0.33	N	0.00	N	Town of Canton
15.50	95.50	4	reinforcement	4.00	0.00	N	8.00	Y	--
0.00	15.50	4	reinforcement	4.00	0.00	N	8.00	Y	--
0.00	10.00	1	0.28" RG-6	0.28	0.03	N	0.00	N	Spok Holdings

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntr - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:28 AM

Customer: T-MOBILE

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	9.50	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	40.0	3.31	5/8" A36 U-Bolt	No
9.50	91.00	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)	Additional Reinforcing		
												Area (in ²)	Ix (in ⁴)	Weight (lb)
0.00		0.3750	37.380	44.684	7,810.1	24.03	99.68	78.5	403.6	0.0	0.0	19.64	4,816	0.0
5.00		0.3750	36.596	43.737	7,324.4	23.47	97.59	79.1	386.6	0.0	752.2	19.64	4,648	334.0
9.50	Reinf. Top Reinf	0.3750	35.891	42.886	6,904.9	22.97	95.71	79.7	371.7	0.0	663.2	19.64	4,498	300.6
10.00		0.3750	35.813	42.791	6,859.3	22.91	95.50	79.7	370.0	0.0	72.9	19.64	4,482	33.4
15.00		0.3750	35.029	41.845	6,414.3	22.35	93.41	80.3	353.7	0.0	720.0	19.64	4,319	334.0
20.00		0.3750	34.246	40.899	5,989.0	21.79	91.32	80.9	337.8	0.0	703.9	19.64	4,159	334.0
25.00		0.3750	33.462	39.953	5,582.9	21.23	89.23	81.6	322.3	0.0	687.8	19.64	4,003	334.0
30.00		0.3750	32.679	39.007	5,195.6	20.67	87.14	81.9	307.1	0.0	671.7	19.64	3,849	334.0
31.50	Bot - Section 2	0.3750	32.444	38.723	5,083.0	20.50	86.52	81.9	302.7	0.0	198.3	19.64	3,804	100.2
35.00		0.3750	31.895	38.061	4,826.6	20.11	85.05	81.9	292.3	0.0	846.7	19.64	3,818	233.8
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.6	25.12	103.73	77.3	253.3	0.0	159.4	19.64	3,798	44.5
40.00		0.3125	31.737	31.621	3,985.5	24.53	101.56	78.0	242.6	0.0	471.4	19.64	3,668	289.5
45.00		0.3125	30.953	30.832	3,694.8	23.86	99.05	78.7	230.6	0.0	531.3	19.64	3,521	334.0
50.00		0.3125	30.170	30.044	3,418.5	23.19	96.54	79.4	218.9	0.0	517.9	19.64	3,377	334.0
55.00		0.3125	29.386	29.255	3,156.4	22.52	94.04	80.2	207.5	0.0	504.5	19.64	3,236	334.0
60.00		0.3125	28.603	28.467	2,908.0	21.85	91.53	80.9	196.4	0.0	491.0	19.64	3,098	334.0
65.00		0.3125	27.819	27.678	2,673.0	21.17	89.02	81.6	185.6	0.0	477.6	19.64	2,963	334.0
70.00	Bot - Section 3	0.3125	27.036	26.890	2,451.1	20.50	86.51	81.9	175.1	0.0	464.2	19.64	2,831	334.0
70.00		0.3125	27.035	26.890	2,451.0	20.50	86.51	81.9	175.1	0.0	0.1	19.64	2,915	0.0
73.50	Top - Section 2	0.2500	26.987	21.523	1,963.9	26.25	107.95	76.1	140.6	0.0	575.8	19.64	2,823	233.8
75.00		0.2500	26.752	21.334	1,912.6	25.99	107.01	76.4	138.1	0.0	109.4	19.64	2,784	100.2
80.00		0.2500	25.968	20.703	1,747.9	25.15	103.87	77.3	130.0	0.0	357.6	19.64	2,656	334.0
85.00		0.2500	25.185	20.073	1,593.0	24.31	100.74	78.2	122.2	0.0	346.9	19.64	2,531	334.0
90.00		0.2500	24.401	19.442	1,447.5	23.47	97.61	79.1	114.6	0.0	336.1	19.64	2,409	334.0
91.00	Reinf. Top	0.2500	24.245	19.316	1,419.5	23.31	96.98	79.3	113.1	0.0	65.9	19.64	2,385	66.8
95.00		0.2500	23.618	18.811	1,311.1	22.63	94.47	80.0	107.2	0.0	259.5			
100.0		0.2500	22.834	18.180	1,183.6	21.79	91.34	80.9	100.1	0.0	314.7			
105.0		0.2500	22.051	17.550	1,064.6	20.95	88.20	81.9	93.3	0.0	304.0			
110.0	Top - Section 3	0.2500	21.267	16.919	953.9	20.11	85.07	81.9	86.7	0.0	293.2			
110.0	Bot - Section 4	0.1875	21.267	12.727	721.8	27.71	113.43	74.5	65.6	0.0				
110.0		0.1875	21.267	12.727	721.8	27.71	113.43	74.5	65.6	0.0	0.0			
115.0		0.1875	20.484	12.254	644.3	26.59	109.25	75.7	60.8	0.0	212.5			
120.0		0.1875	19.700	11.781	572.5	25.47	105.07	76.9	56.1	0.0	204.5			
123.0		0.1875	19.230	11.497	532.1	24.80	102.56	77.7	53.5	0.0	118.8			
125.0		0.1875	18.917	11.308	506.3	24.35	100.89	78.2	51.7	0.0	77.6			
130.0		0.1875	18.133	10.835	445.4	23.23	96.71	79.4	47.4	0.0	188.4			
135.0		0.1875	17.350	10.362	389.5	22.11	92.53	80.6	43.4	0.0	180.3			
140.0		0.1875	16.566	9.889	338.6	20.99	88.35	81.8	39.5	0.0	172.3			
145.0		0.1875	15.782	9.415	292.3	19.87	84.17	81.9	35.8	0.0	164.2			
150.0		0.1875	14.999	8.942	250.4	18.75	79.99	81.9	32.3	0.0	156.2			
											13,371.8			6,078.8

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:28 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W	93 mph with No Ice	26 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Shaft Segment Forces (Factored)

Seg Top	Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
	0.00		1.00	0.70	14.724	16.19	250.92	1.000	0.000	0.00	0.000	0.00	206.7	0.0	0.0
	5.00		1.00	0.70	14.724	16.19	248.29	1.000	0.000	5.00	15.955	15.96	389.1	0.0	902.6
	9.50	Reinf. Top Reinf Bottom	1.00	0.70	14.724	16.19	243.30	1.000	0.000	4.50	14.071	14.07	202.4	0.0	795.9
	10.00	Appertunance(s)	1.00	0.70	14.724	16.19	240.67	1.000	0.000	0.50	1.547	1.55	218.0	0.0	87.5
	15.00		1.00	0.70	14.724	16.19	237.77	1.000	0.000	5.00	15.279	15.28	391.6	0.0	864.0
	20.00		1.00	0.70	14.724	16.19	232.51	1.000	0.000	5.00	14.941	14.94	382.8	0.0	844.7
	25.00		1.00	0.70	14.724	16.19	227.25	1.000	0.000	5.00	14.603	14.60	374.1	0.0	825.4
	30.00		1.00	0.70	14.724	16.19	221.99	1.000	0.000	5.00	14.265	14.27	239.8	0.0	806.0
	31.50	Bot - Section 2	1.00	0.70	14.841	16.32	219.44	1.000	0.000	1.50	4.212	4.21	187.3	0.0	237.9
	35.00		1.00	0.72	15.176	16.69	219.23	1.000	0.000	3.50	9.904	9.90	157.6	0.0	1,016.0
	35.67	Top - Section 1	1.00	0.73	15.442	16.98	218.90	1.000	0.000	0.67	1.866	1.87	191.5	0.0	191.3
	40.00		1.00	0.74	15.746	17.32	222.67	1.000	0.000	4.33	11.994	11.99	359.9	0.0	565.6
	45.00		1.00	0.77	16.278	17.90	221.24	1.000	0.000	5.00	13.521	13.52	388.6	0.0	637.5
	50.00		1.00	0.79	16.804	18.48	219.16	1.000	0.000	5.00	13.183	13.18	390.4	0.0	621.4
	55.00		1.00	0.82	17.292	19.02	216.62	1.000	0.000	5.00	12.845	12.85	390.8	0.0	605.3
	60.00		1.00	0.84	17.747	19.52	213.68	1.000	0.000	5.00	12.507	12.51	390.0	0.0	589.2
	65.00		1.00	0.86	18.175	19.99	210.39	1.000	0.000	5.00	12.169	12.17	388.0	0.0	573.2
	70.00	Bot - Section 3	1.00	0.88	18.579	20.43	206.81	1.000	0.000	5.00	11.830	11.83	193.4	0.0	557.0
	70.00		1.00	0.89	18.773	20.65	204.92	1.000	0.000	0.00	0.002	0.00	137.0	0.0	0.1
	73.50	Top - Section 2	1.00	0.89	18.906	20.79	203.56	1.000	0.000	3.50	8.230	8.23	195.4	0.0	691.0
	75.00		1.00	0.90	19.092	21.00	205.38	1.000	0.000	1.50	3.479	3.48	251.8	0.0	131.3
	80.00		1.00	0.91	19.327	21.25	202.73	1.000	0.000	5.00	11.371	11.37	384.4	0.0	429.1
	85.00		1.00	0.93	19.675	21.64	198.47	1.000	0.000	5.00	11.033	11.03	379.3	0.0	416.3
	90.00		1.00	0.95	20.009	22.01	194.01	1.000	0.000	5.00	10.695	10.69	225.6	0.0	403.4
	91.00	Reinf. Top	1.00	0.96	20.202	22.22	191.25	1.000	0.000	1.00	2.098	2.10	185.3	0.0	79.1
	95.00		1.00	0.96	20.360	22.39	188.90	1.000	0.000	4.00	8.258	8.26	329.9	0.0	311.4
	100.0		1.00	0.98	20.637	22.70	184.58	1.000	0.000	5.00	10.019	10.02	360.3	0.0	377.6
	105.0		1.00	0.99	20.934	23.02	179.63	1.000	0.000	5.00	9.681	9.68	352.8	0.0	364.7
	110.0	Top - Section 3	1.00	1.00	21.221	23.34	174.54	1.000	0.000	5.00	9.342	9.34	174.5	0.0	351.8
	110.0		1.00	1.01	21.361	23.49	171.95	1.000	0.000	0.00	0.001	0.00	170.4	0.0	0.0
	115.0		1.00	1.02	21.498	23.64	169.32	1.000	0.000	5.00	9.005	9.00	336.4	0.0	255.0
	120.0		1.00	1.03	21.767	23.94	163.98	1.000	0.000	5.00	8.667	8.67	263.4	0.0	245.4
	123.0	Appertunance(s)	1.00	1.04	21.976	24.17	159.63	1.000	0.000	3.00	5.038	5.04	161.4	0.0	142.6
	125.0		1.00	1.05	22.104	24.31	156.87	1.000	0.000	2.00	3.291	3.29	220.7	0.0	93.1
	130.0		1.00	1.05	22.281	24.50	152.97	1.000	0.000	5.00	7.991	7.99	308.4	0.0	226.0
	135.0		1.00	1.07	22.527	24.78	147.31	1.000	0.000	5.00	7.653	7.65	298.3	0.0	216.4
	140.0	Appertunance(s)	1.00	1.08	22.767	25.04	141.55	1.000	0.000	5.00	7.315	7.31	287.8	0.0	206.7
	145.0		1.00	1.09	23.000	25.30	135.70	1.000	0.000	5.00	6.977	6.98	276.9	0.0	197.1
	150.0	Appertunance(s)	1.00	1.10	23.228	25.55	129.76	1.000	0.000	5.00	6.639	6.64	135.7	0.0	187.4
Totals:										150.00			10,877.7	0.0	16,046.2

Load Case: 1.2D + 1.6W	93 mph with No Ice	26 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		206.7	0.0					0.0	0.0	206.7	0.0	0.0	0.0
5.00		389.1	902.6					63.9	627.1	453.0	1,529.7	0.0	0.0
9.50	Reinf. Top Reinf	202.4	795.9					57.6	564.4	259.9	1,360.2	0.0	0.0
10.00	Appertunance(s)	218.0	87.5	523.2	0.0	0.0	151.2	6.4	62.7	747.6	301.4	0.0	0.0
15.00		391.6	864.0					63.9	626.9	455.5	1,490.9	0.0	0.0
20.00		382.8	844.7					63.9	626.9	446.8	1,471.6	0.0	0.0
25.00		374.1	825.4					63.9	626.9	438.0	1,452.3	0.0	0.0
30.00		239.8	806.0					63.9	626.9	303.8	1,433.0	0.0	0.0
31.50	Bot - Section 2	187.3	237.9					19.3	188.0	206.5	425.9	0.0	0.0
35.00		157.6	1,016.0					45.5	438.9	203.1	1,454.9	0.0	0.0
35.67	Top - Section 1	191.5	191.3					8.7	83.5	200.3	274.8	0.0	0.0
40.00		359.9	565.6					57.3	543.4	417.2	1,109.1	0.0	0.0
45.00		388.6	637.5					67.2	626.9	455.9	1,264.5	0.0	0.0
50.00		390.4	621.4					68.3	626.9	458.7	1,248.4	0.0	0.0
55.00		390.8	605.3					69.3	626.9	460.1	1,232.3	0.0	0.0
60.00		390.0	589.2					70.2	626.9	460.2	1,216.2	0.0	0.0
65.00		388.0	573.2					71.0	626.9	459.1	1,200.1	0.0	0.0
70.00	Bot - Section 3	193.4	557.0					71.8	626.8	265.3	1,183.8	0.0	0.0
70.00		137.0	0.1					0.0	0.1	137.0	0.2	0.0	0.0
73.50	Top - Section 2	195.4	691.0					50.7	438.8	246.1	1,129.8	0.0	0.0
75.00		251.8	131.3					21.9	188.2	273.7	319.5	0.0	0.0
80.00		384.4	429.1					73.3	626.9	457.7	1,056.1	0.0	0.0
85.00		379.3	416.3					73.9	626.9	453.3	1,043.2	0.0	0.0
90.00		225.6	403.4					74.5	626.9	300.2	1,030.3	0.0	0.0
91.00	Reinf. Top	185.3	79.1					15.0	125.4	200.3	204.5	0.0	0.0
95.00		329.9	311.4					60.2	180.9	390.1	492.3	0.0	0.0
100.00		360.3	377.6					7.6	226.1	367.9	603.7	0.0	0.0
105.00		352.8	364.7					0.0	226.1	352.8	590.9	0.0	0.0
110.00	Top - Section 3	174.5	351.8					0.0	226.1	174.5	577.9	0.0	0.0
110.00		170.4	0.0					0.0	0.0	170.4	0.1	0.0	0.0
115.00		336.4	255.0					0.0	226.1	336.4	481.1	0.0	0.0
120.00		263.4	245.4					0.0	226.1	263.4	471.5	0.0	0.0
123.00	Appertunance(s)	161.4	142.6	553.5	0.0	0.0	157.4	0.0	135.7	714.9	435.7	0.0	0.0
125.00		220.7	93.1					0.0	89.7	220.7	182.8	0.0	0.0
130.00		308.4	226.0					0.0	224.1	308.4	450.2	0.0	0.0
135.00		298.3	216.4					0.0	224.1	298.3	440.5	0.0	0.0
140.00	Appertunance(s)	287.8	206.7	2,716.1	0.0	0.0	2,719.1	0.0	224.1	3,003.8	3,149.9	0.0	0.0
145.00		276.9	197.1					0.0	159.1	276.9	356.2	0.0	0.0
150.00	Appertunance(s)	135.7	187.4	4,317.4	0.0	10,616.2	3,510.4	0.0	159.1	4,453.1	3,856.9	0.0	0.0
Totals:										20,297.2	36,522.1	0.00	0.00

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:31 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W

93 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-36.48	-20.16	0.00	-2,072.93	0.00	2,072.93	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.548
5.00	-34.88	-19.84	0.00	-1,972.11	0.00	1,972.11	3,114.35	1,557.18	4,645.51	2,294.24	0.12	-0.23	0.534
9.50	-33.48	-19.64	0.00	-1,882.83	0.00	1,882.83	3,074.93	1,537.47	4,496.49	2,220.65	0.44	-0.43	0.521
9.50	-33.48	-19.64	0.00	-1,882.83	0.00	1,882.83	3,074.93	1,537.47	4,496.49	2,220.65	0.44	-0.43	0.521
10.00	-33.14	-18.96	0.00	-1,873.01	0.00	1,873.01	3,070.50	1,535.25	4,480.00	2,212.50	0.48	-0.46	0.520
15.00	-31.58	-18.62	0.00	-1,778.20	0.00	1,778.20	3,025.61	1,512.80	4,315.88	2,131.45	1.09	-0.69	0.506
20.00	-30.04	-18.27	0.00	-1,685.11	0.00	1,685.11	2,979.67	1,489.84	4,153.23	2,051.12	1.93	-0.92	0.492
25.00	-28.53	-17.92	0.00	-1,593.76	0.00	1,593.76	2,932.70	1,466.35	3,992.16	1,971.58	3.01	-1.15	0.477
30.00	-27.06	-17.66	0.00	-1,504.15	0.00	1,504.15	2,875.19	1,437.60	3,820.15	1,886.63	4.33	-1.38	0.464
31.50	-26.60	-17.49	0.00	-1,477.67	0.00	1,477.67	2,854.28	1,427.14	3,764.46	1,859.13	4.78	-1.45	0.461
35.00	-25.12	-17.29	0.00	-1,416.43	0.00	1,416.43	2,805.45	1,402.73	3,636.04	1,795.70	5.90	-1.61	0.446
35.67	-24.82	-17.14	0.00	-1,404.92	0.00	1,404.92	2,248.06	1,124.03	2,973.88	1,468.69	6.12	-1.64	0.512
40.00	-23.66	-16.78	0.00	-1,330.65	0.00	1,330.65	2,218.58	1,109.29	2,872.19	1,418.47	7.70	-1.84	0.495
45.00	-22.34	-16.37	0.00	-1,246.77	0.00	1,246.77	2,183.59	1,091.79	2,755.72	1,360.95	9.75	-2.08	0.476
50.00	-21.05	-15.95	0.00	-1,164.92	0.00	1,164.92	2,147.56	1,073.78	2,640.25	1,303.92	12.05	-2.31	0.456
55.00	-19.77	-15.52	0.00	-1,085.16	0.00	1,085.16	2,110.50	1,055.25	2,525.88	1,247.44	14.60	-2.55	0.435
60.00	-18.52	-15.08	0.00	-1,007.56	0.00	1,007.56	2,072.39	1,036.20	2,412.72	1,191.55	17.39	-2.78	0.415
65.00	-17.28	-14.63	0.00	-932.16	0.00	932.16	2,033.25	1,016.62	2,300.87	1,136.31	20.43	-3.01	0.394
70.00	-16.09	-14.33	0.00	-859.03	0.00	859.03	1,982.07	991.04	2,178.36	1,075.81	23.70	-3.24	0.375
70.00	-16.08	-14.22	0.00	-859.02	0.00	859.02	1,982.06	991.03	2,178.34	1,075.80	23.70	-3.24	0.370
73.50	-14.94	-13.93	0.00	-809.28	0.00	809.28	1,473.95	736.98	1,624.53	802.30	26.13	-3.39	0.419
75.00	-14.60	-13.68	0.00	-788.37	0.00	788.37	1,466.26	733.13	1,601.72	791.03	27.21	-3.46	0.411
80.00	-13.52	-13.21	0.00	-719.97	0.00	719.97	1,439.98	719.99	1,526.06	753.66	30.95	-3.69	0.384
85.00	-12.46	-12.74	0.00	-653.92	0.00	653.92	1,412.66	706.33	1,451.06	716.62	34.93	-3.91	0.357
90.00	-11.43	-12.39	0.00	-590.24	0.00	590.24	1,384.29	692.15	1,376.80	679.95	39.14	-4.12	0.330
91.00	-11.22	-12.20	0.00	-577.85	0.00	577.85	1,378.50	689.25	1,362.04	672.66	40.00	-4.17	0.325
91.00	-11.22	-12.20	0.00	-577.85	0.00	577.85	1,378.50	689.25	1,362.04	672.66	40.00	-4.17	0.868
95.00	-10.68	-11.84	0.00	-529.07	0.00	529.07	1,354.89	677.44	1,303.39	643.69	43.56	-4.33	0.830
100.00	-10.00	-11.52	0.00	-469.88	0.00	469.88	1,324.45	662.22	1,230.93	607.91	48.39	-4.87	0.781
105.00	-9.34	-11.20	0.00	-412.30	0.00	412.30	1,292.96	646.48	1,159.52	572.64	53.77	-5.40	0.728
110.00	-8.74	-11.01	0.00	-356.32	0.00	356.32	1,247.09	623.55	1,077.74	532.25	59.69	-5.92	0.677
110.00	-8.74	-11.01	0.00	-356.32	0.00	356.32	853.22	426.61	741.75	366.32	59.69	-5.92	0.984
110.00	-8.69	-10.89	0.00	-356.31	0.00	356.31	853.22	426.61	741.74	366.32	59.69	-5.92	0.984
115.00	-8.13	-10.59	0.00	-301.88	0.00	301.88	834.98	417.49	698.66	345.04	66.23	-6.57	0.885
120.00	-7.61	-10.34	0.00	-248.93	0.00	248.93	815.69	407.84	655.93	323.94	73.42	-7.17	0.778
123.00	-7.22	-9.61	0.00	-217.93	0.00	217.93	803.62	401.81	630.51	311.38	78.03	-7.52	0.709
125.00	-7.01	-9.41	0.00	-198.72	0.00	198.72	795.36	397.68	613.66	303.06	81.22	-7.74	0.665
130.00	-6.54	-9.09	0.00	-151.68	0.00	151.68	774.00	387.00	571.95	282.46	89.57	-8.24	0.546
135.00	-6.09	-8.77	0.00	-106.21	0.00	106.21	751.59	375.80	530.89	262.19	98.40	-8.65	0.414
140.00	-3.41	-5.33	0.00	-62.36	0.00	62.36	728.15	364.07	490.59	242.29	107.60	-8.96	0.262
145.00	-3.09	-5.01	0.00	-35.69	0.00	35.69	694.01	347.01	444.97	219.76	117.06	-9.16	0.167
150.00	0.00	-4.45	0.00	-10.62	0.00	10.62	659.14	329.57	401.13	198.10	126.68	-9.27	0.054

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:31 AM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.19	250.92	1.000	0.000	0.00	0.000	0.00	206.7	0.0	0.0
5.00		1.00	0.70	14.724	16.19	248.29	1.000	0.000	5.00	15.955	15.96	389.1	0.0	677.0
9.50	Reinf. Top Reinf Bottom	1.00	0.70	14.724	16.19	243.30	1.000	0.000	4.50	14.071	14.07	202.4	0.0	596.9
10.00	Appertunance(s)	1.00	0.70	14.724	16.19	240.67	1.000	0.000	0.50	1.547	1.55	218.0	0.0	65.6
15.00		1.00	0.70	14.724	16.19	237.77	1.000	0.000	5.00	15.279	15.28	391.6	0.0	648.0
20.00		1.00	0.70	14.724	16.19	232.51	1.000	0.000	5.00	14.941	14.94	382.8	0.0	633.5
25.00		1.00	0.70	14.724	16.19	227.25	1.000	0.000	5.00	14.603	14.60	374.1	0.0	619.0
30.00		1.00	0.70	14.724	16.19	221.99	1.000	0.000	5.00	14.265	14.27	239.8	0.0	604.5
31.50	Bot - Section 2	1.00	0.70	14.841	16.32	219.44	1.000	0.000	1.50	4.212	4.21	187.3	0.0	178.5
35.00		1.00	0.72	15.176	16.69	219.23	1.000	0.000	3.50	9.904	9.90	157.6	0.0	762.0
35.67	Top - Section 1	1.00	0.73	15.442	16.98	218.90	1.000	0.000	0.67	1.866	1.87	191.5	0.0	143.5
40.00		1.00	0.74	15.746	17.32	222.67	1.000	0.000	4.33	11.994	11.99	359.9	0.0	424.2
45.00		1.00	0.77	16.278	17.90	221.24	1.000	0.000	5.00	13.521	13.52	388.6	0.0	478.2
50.00		1.00	0.79	16.804	18.48	219.16	1.000	0.000	5.00	13.183	13.18	390.4	0.0	466.1
55.00		1.00	0.82	17.292	19.02	216.62	1.000	0.000	5.00	12.845	12.85	390.8	0.0	454.0
60.00		1.00	0.84	17.747	19.52	213.68	1.000	0.000	5.00	12.507	12.51	390.0	0.0	441.9
65.00		1.00	0.86	18.175	19.99	210.39	1.000	0.000	5.00	12.169	12.17	388.0	0.0	429.9
70.00	Bot - Section 3	1.00	0.88	18.579	20.43	206.81	1.000	0.000	5.00	11.830	11.83	193.4	0.0	417.7
70.00		1.00	0.89	18.773	20.65	204.92	1.000	0.000	0.00	0.002	0.00	137.0	0.0	0.1
73.50	Top - Section 2	1.00	0.89	18.906	20.79	203.56	1.000	0.000	3.50	8.230	8.23	195.4	0.0	518.2
75.00		1.00	0.90	19.092	21.00	205.38	1.000	0.000	1.50	3.479	3.48	251.8	0.0	98.5
80.00		1.00	0.91	19.327	21.25	202.73	1.000	0.000	5.00	11.371	11.37	384.4	0.0	321.8
85.00		1.00	0.93	19.675	21.64	198.47	1.000	0.000	5.00	11.033	11.03	379.3	0.0	312.2
90.00		1.00	0.95	20.009	22.01	194.01	1.000	0.000	5.00	10.695	10.69	225.6	0.0	302.5
91.00	Reinf. Top	1.00	0.96	20.202	22.22	191.25	1.000	0.000	1.00	2.098	2.10	185.3	0.0	59.3
95.00		1.00	0.96	20.360	22.39	188.90	1.000	0.000	4.00	8.258	8.26	329.9	0.0	233.5
100.00		1.00	0.98	20.637	22.70	184.58	1.000	0.000	5.00	10.019	10.02	360.3	0.0	283.2
105.00		1.00	0.99	20.934	23.02	179.63	1.000	0.000	5.00	9.681	9.68	352.8	0.0	273.6
110.00	Top - Section 3	1.00	1.00	21.221	23.34	174.54	1.000	0.000	5.00	9.342	9.34	174.5	0.0	263.9
110.00		1.00	1.01	21.361	23.49	171.95	1.000	0.000	0.00	0.001	0.00	170.4	0.0	0.0
115.00		1.00	1.02	21.498	23.64	169.32	1.000	0.000	5.00	9.005	9.00	336.4	0.0	191.3
120.00		1.00	1.03	21.767	23.94	163.98	1.000	0.000	5.00	8.667	8.67	263.4	0.0	184.0
123.00	Appertunance(s)	1.00	1.04	21.976	24.17	159.63	1.000	0.000	3.00	5.038	5.04	161.4	0.0	106.9
125.00		1.00	1.05	22.104	24.31	156.87	1.000	0.000	2.00	3.291	3.29	220.7	0.0	69.8
130.00		1.00	1.05	22.281	24.50	152.97	1.000	0.000	5.00	7.991	7.99	308.4	0.0	169.5
135.00		1.00	1.07	22.527	24.78	147.31	1.000	0.000	5.00	7.653	7.65	298.3	0.0	162.3
140.00	Appertunance(s)	1.00	1.08	22.767	25.04	141.55	1.000	0.000	5.00	7.315	7.31	287.8	0.0	155.0
145.00		1.00	1.09	23.000	25.30	135.70	1.000	0.000	5.00	6.977	6.98	276.9	0.0	147.8
150.00	Appertunance(s)	1.00	1.10	23.228	25.55	129.76	1.000	0.000	5.00	6.639	6.64	135.7	0.0	140.6
Totals:									150.00			10,877.7	0.0	12,034.7

Load Case: 0.9D + 1.6W	93 mph with No Ice (Reduced DL)	26 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		206.7	0.0					0.0	0.0	206.7	0.0	0.0	0.0
5.00		389.1	677.0					63.9	470.3	453.0	1,147.3	0.0	0.0
9.50	Reinf. Top Reinf	202.4	596.9					57.6	423.3	259.9	1,020.2	0.0	0.0
10.00	Appertunance(s)	218.0	65.6	523.2	0.0	0.0	113.4	6.4	47.0	747.6	226.0	0.0	0.0
15.00		391.6	648.0					63.9	470.2	455.5	1,118.2	0.0	0.0
20.00		382.8	633.5					63.9	470.2	446.8	1,103.7	0.0	0.0
25.00		374.1	619.0					63.9	470.2	438.0	1,089.2	0.0	0.0
30.00		239.8	604.5					63.9	470.2	303.8	1,074.7	0.0	0.0
31.50	Bot - Section 2	187.3	178.5					19.3	141.0	206.5	319.5	0.0	0.0
35.00		157.6	762.0					45.5	329.2	203.1	1,091.2	0.0	0.0
35.67	Top - Section 1	191.5	143.5					8.7	62.6	200.3	206.1	0.0	0.0
40.00		359.9	424.2					57.3	407.6	417.2	831.8	0.0	0.0
45.00		388.6	478.2					67.2	470.2	455.9	948.3	0.0	0.0
50.00		390.4	466.1					68.3	470.2	458.7	936.3	0.0	0.0
55.00		390.8	454.0					69.3	470.2	460.1	924.2	0.0	0.0
60.00		390.0	441.9					70.2	470.2	460.2	912.1	0.0	0.0
65.00		388.0	429.9					71.0	470.2	459.1	900.1	0.0	0.0
70.00	Bot - Section 3	193.4	417.7					71.8	470.1	265.3	887.9	0.0	0.0
70.00		137.0	0.1					0.0	0.1	137.0	0.2	0.0	0.0
73.50	Top - Section 2	195.4	518.2					50.7	329.1	246.1	847.3	0.0	0.0
75.00		251.8	98.5					21.9	141.1	273.7	239.6	0.0	0.0
80.00		384.4	321.8					73.3	470.2	457.7	792.0	0.0	0.0
85.00		379.3	312.2					73.9	470.2	453.3	782.4	0.0	0.0
90.00		225.6	302.5					74.5	470.2	300.2	772.7	0.0	0.0
91.00	Reinf. Top	185.3	59.3					15.0	94.0	200.3	153.4	0.0	0.0
95.00		329.9	233.5					60.2	135.7	390.1	369.2	0.0	0.0
100.00		360.3	283.2					7.6	169.6	367.9	452.8	0.0	0.0
105.00		352.8	273.6					0.0	169.6	352.8	443.2	0.0	0.0
110.00	Top - Section 3	174.5	263.9					0.0	169.6	174.5	433.4	0.0	0.0
110.00		170.4	0.0					0.0	0.0	170.4	0.0	0.0	0.0
115.00		336.4	191.3					0.0	169.6	336.4	360.9	0.0	0.0
120.00		263.4	184.0					0.0	169.6	263.4	353.6	0.0	0.0
123.00	Appertunance(s)	161.4	106.9	553.5	0.0	0.0	118.1	0.0	101.8	714.9	326.8	0.0	0.0
125.00		220.7	69.8					0.0	67.2	220.7	137.1	0.0	0.0
130.00		308.4	169.5					0.0	168.1	308.4	337.6	0.0	0.0
135.00		298.3	162.3					0.0	168.1	298.3	330.4	0.0	0.0
140.00	Appertunance(s)	287.8	155.0	2,716.1	0.0	0.0	2,039.3	0.0	168.1	3,003.8	2,362.5	0.0	0.0
145.00		276.9	147.8					0.0	119.3	276.9	267.1	0.0	0.0
150.00	Appertunance(s)	135.7	140.6	4,317.4	0.0	10,616.2	2,632.8	0.0	119.3	4,453.1	2,892.7	0.0	0.0
Totals:										20,297.2	27,391.6	0.00	0.00

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-27.35	-20.14	0.00	-2,039.96	0.00	2,039.96	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.537
5.00	-26.13	-19.79	0.00	-1,939.24	0.00	1,939.24	3,114.35	1,557.18	4,645.51	2,294.24	0.12	-0.22	0.523
9.50	-25.07	-19.57	0.00	-1,850.20	0.00	1,850.20	3,074.93	1,537.47	4,496.49	2,220.65	0.43	-0.43	0.510
9.50	-25.07	-19.57	0.00	-1,850.20	0.00	1,850.20	3,074.93	1,537.47	4,496.49	2,220.65	0.43	-0.43	0.510
10.00	-24.81	-18.87	0.00	-1,840.42	0.00	1,840.42	3,070.50	1,535.25	4,480.00	2,212.50	0.48	-0.45	0.509
15.00	-23.63	-18.50	0.00	-1,746.04	0.00	1,746.04	3,025.61	1,512.80	4,315.88	2,131.45	1.07	-0.67	0.495
20.00	-22.46	-18.13	0.00	-1,653.54	0.00	1,653.54	2,979.67	1,489.84	4,153.23	2,051.12	1.89	-0.90	0.481
25.00	-21.31	-17.75	0.00	-1,562.90	0.00	1,562.90	2,932.70	1,466.35	3,992.16	1,971.58	2.96	-1.13	0.467
30.00	-20.20	-17.48	0.00	-1,474.13	0.00	1,474.13	2,875.19	1,437.60	3,820.15	1,886.63	4.26	-1.35	0.454
31.50	-19.85	-17.30	0.00	-1,447.93	0.00	1,447.93	2,854.28	1,427.14	3,764.46	1,859.13	4.69	-1.42	0.450
35.00	-18.73	-17.10	0.00	-1,387.35	0.00	1,387.35	2,805.45	1,402.73	3,636.04	1,795.70	5.79	-1.58	0.436
35.67	-18.50	-16.93	0.00	-1,375.96	0.00	1,375.96	2,248.06	1,124.03	2,973.88	1,468.69	6.02	-1.61	0.500
40.00	-17.62	-16.56	0.00	-1,302.57	0.00	1,302.57	2,218.58	1,109.29	2,872.19	1,418.47	7.57	-1.80	0.483
45.00	-16.62	-16.14	0.00	-1,219.78	0.00	1,219.78	2,183.59	1,091.79	2,755.72	1,360.95	9.58	-2.04	0.464
50.00	-15.64	-15.71	0.00	-1,139.09	0.00	1,139.09	2,147.56	1,073.78	2,640.25	1,303.92	11.83	-2.27	0.444
55.00	-14.67	-15.27	0.00	-1,060.55	0.00	1,060.55	2,110.50	1,055.25	2,525.88	1,247.44	14.33	-2.50	0.424
60.00	-13.72	-14.82	0.00	-984.20	0.00	984.20	2,072.39	1,036.20	2,412.72	1,191.55	17.07	-2.73	0.404
65.00	-12.79	-14.37	0.00	-910.09	0.00	910.09	2,033.25	1,016.62	2,300.87	1,136.31	20.05	-2.95	0.384
70.00	-11.89	-14.08	0.00	-838.26	0.00	838.26	1,982.07	991.04	2,178.36	1,075.81	23.25	-3.17	0.365
70.00	-11.88	-13.96	0.00	-838.25	0.00	838.25	1,982.06	991.03	2,178.34	1,075.80	23.25	-3.17	0.360
73.50	-11.03	-13.68	0.00	-789.41	0.00	789.41	1,473.95	736.98	1,624.53	802.30	25.63	-3.32	0.408
75.00	-10.77	-13.43	0.00	-768.87	0.00	768.87	1,466.26	733.13	1,601.72	791.03	26.69	-3.39	0.400
80.00	-9.96	-12.96	0.00	-701.75	0.00	701.75	1,439.98	719.99	1,526.06	753.66	30.35	-3.61	0.373
85.00	-9.16	-12.49	0.00	-636.96	0.00	636.96	1,412.66	706.33	1,451.06	716.62	34.25	-3.83	0.347
90.00	-8.38	-12.15	0.00	-574.52	0.00	574.52	1,384.29	692.15	1,376.80	679.95	38.36	-4.03	0.320
91.00	-8.22	-11.96	0.00	-562.36	0.00	562.36	1,378.50	689.25	1,362.04	672.66	39.21	-4.08	0.315
91.00	-8.22	-11.96	0.00	-562.36	0.00	562.36	1,378.50	689.25	1,362.04	672.66	39.21	-4.08	0.842
95.00	-7.81	-11.59	0.00	-514.53	0.00	514.53	1,354.89	677.44	1,303.39	643.69	42.69	-4.24	0.805
100.00	-7.29	-11.26	0.00	-456.57	0.00	456.57	1,324.45	662.22	1,230.93	607.91	47.41	-4.76	0.757
105.00	-6.78	-10.93	0.00	-400.30	0.00	400.30	1,292.96	646.48	1,159.52	572.64	52.67	-5.28	0.705
110.00	-6.32	-10.74	0.00	-345.68	0.00	345.68	1,247.09	623.55	1,077.74	532.25	58.46	-5.78	0.655
110.00	-6.32	-10.74	0.00	-345.68	0.00	345.68	853.22	426.61	741.75	366.32	58.46	-5.78	0.952
110.00	-6.28	-10.60	0.00	-345.67	0.00	345.67	853.22	426.61	741.74	366.32	58.46	-5.78	0.952
115.00	-5.84	-10.29	0.00	-292.66	0.00	292.66	834.98	417.49	698.66	345.04	64.84	-6.41	0.856
120.00	-5.44	-10.03	0.00	-241.19	0.00	241.19	815.69	407.84	655.93	323.94	71.85	-7.00	0.752
123.00	-5.16	-9.31	0.00	-211.09	0.00	211.09	803.62	401.81	630.51	311.38	76.35	-7.33	0.685
125.00	-5.00	-9.10	0.00	-192.48	0.00	192.48	795.36	397.68	613.66	303.06	79.46	-7.55	0.642
130.00	-4.64	-8.79	0.00	-146.96	0.00	146.96	774.00	387.00	571.95	282.46	87.60	-8.03	0.527
135.00	-4.31	-8.47	0.00	-103.02	0.00	103.02	751.59	375.80	530.89	262.19	96.20	-8.42	0.399
140.00	-2.40	-5.16	0.00	-60.66	0.00	60.66	728.15	364.07	490.59	242.29	105.16	-8.72	0.254
145.00	-2.16	-4.85	0.00	-34.87	0.00	34.87	694.01	347.01	444.97	219.76	114.38	-8.92	0.162
150.00	0.00	-4.45	0.00	-10.62	0.00	10.62	659.14	329.57	401.13	198.10	123.76	-9.04	0.054

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	26 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	48.4	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.545	5.00	17.243	20.69	91.6	381.5	1,284.1
9.50	Reinf. Top Reinf Bottom	1.00	0.70	4.256	4.682	0.000	1.200	1.719	4.50	15.360	18.43	47.9	376.5	1,172.4
10.00	Appertunance(s)	1.00	0.70	4.256	4.682	0.000	1.200	1.770	0.50	1.694	2.03	51.9	43.1	130.5
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.815	5.00	16.792	20.15	93.5	432.7	1,296.7
20.00		1.00	0.70	4.256	4.682	0.000	1.200	1.877	5.00	16.506	19.81	91.9	438.7	1,283.4
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.925	5.00	16.208	19.45	90.2	440.7	1,266.1
30.00		1.00	0.70	4.256	4.682	0.000	1.200	1.964	5.00	15.902	19.08	58.0	440.1	1,246.2
31.50	Bot - Section 2	1.00	0.70	4.290	4.719	0.000	1.200	1.986	1.50	4.708	5.65	45.4	132.6	370.6
35.00		1.00	0.72	4.387	4.825	0.000	1.200	2.002	3.50	11.072	13.29	38.2	313.0	1,329.0
35.67	Top - Section 1	1.00	0.73	4.463	4.910	0.000	1.200	2.014	0.67	2.089	2.51	46.6	59.7	251.1
40.00		1.00	0.74	4.551	5.007	0.000	1.200	2.028	4.33	13.458	16.15	87.7	383.8	949.5
45.00		1.00	0.77	4.705	5.176	0.000	1.200	2.051	5.00	15.230	18.28	95.1	437.9	1,075.4
50.00		1.00	0.79	4.857	5.343	0.000	1.200	2.074	5.00	14.912	17.89	95.9	432.6	1,054.0
55.00		1.00	0.82	4.998	5.498	0.000	1.200	2.095	5.00	14.591	17.51	96.4	426.5	1,031.9
60.00		1.00	0.84	5.130	5.643	0.000	1.200	2.114	5.00	14.269	17.12	96.7	420.0	1,009.2
65.00		1.00	0.86	5.253	5.779	0.000	1.200	2.132	5.00	13.946	16.73	96.6	412.9	986.0
70.00	Bot - Section 3	1.00	0.88	5.370	5.907	0.000	1.200	2.148	5.00	13.620	16.34	48.3	405.3	962.3
70.00		1.00	0.89	5.426	5.969	0.000	1.200	2.156	0.00	0.002	0.00	34.2	0.1	0.2
73.50	Top - Section 2	1.00	0.89	5.465	6.011	0.000	1.200	2.162	3.50	9.491	11.39	48.9	285.1	976.1
75.00		1.00	0.90	5.518	6.070	0.000	1.200	2.169	1.50	4.021	4.83	63.3	121.7	253.0
80.00		1.00	0.91	5.586	6.145	0.000	1.200	2.178	5.00	13.186	15.82	96.9	396.4	825.5
85.00		1.00	0.93	5.687	6.256	0.000	1.200	2.192	5.00	12.859	15.43	96.1	387.9	804.2
90.00		1.00	0.95	5.784	6.362	0.000	1.200	2.205	5.00	12.532	15.04	57.3	379.2	782.6
91.00	Reinf. Top	1.00	0.96	5.840	6.423	0.000	1.200	2.212	1.00	2.467	2.96	47.3	75.7	154.8
95.00		1.00	0.96	5.885	6.474	0.000	1.200	2.218	4.00	9.737	11.68	84.6	296.3	607.7
100.00		1.00	0.98	5.965	6.562	0.000	1.200	2.229	5.00	11.876	14.25	92.9	361.0	738.6
105.00		1.00	0.99	6.051	6.656	0.000	1.200	2.240	5.00	11.548	13.86	91.5	351.6	716.3
110.00	Top - Section 3	1.00	1.00	6.134	6.747	0.000	1.200	2.251	5.00	11.217	13.46	45.4	341.9	693.8
110.00		1.00	1.01	6.174	6.792	0.000	1.200	2.256	0.00	0.001	0.00	44.7	0.0	0.1
115.00		1.00	1.02	6.214	6.835	0.000	1.200	2.261	5.00	10.889	13.07	88.5	332.2	587.2
120.00		1.00	1.03	6.292	6.921	0.000	1.200	2.271	5.00	10.559	12.67	69.7	322.3	567.6
123.00	Appertunance(s)	1.00	1.04	6.352	6.987	0.000	1.200	2.278	3.00	6.177	7.41	43.0	189.9	332.5
125.00		1.00	1.05	6.389	7.028	0.000	1.200	2.283	2.00	4.052	4.86	59.2	125.0	218.2
130.00		1.00	1.05	6.440	7.084	0.000	1.200	2.289	5.00	9.899	11.88	83.2	301.9	528.0
135.00		1.00	1.07	6.511	7.163	0.000	1.200	2.298	5.00	9.568	11.48	81.2	291.5	507.9
140.00	Appertunance(s)	1.00	1.08	6.581	7.239	0.000	1.200	2.307	5.00	9.237	11.08	79.2	281.0	487.7
145.00		1.00	1.09	6.648	7.313	0.000	1.200	2.315	5.00	8.906	10.69	77.1	270.4	467.5
150.00	Appertunance(s)	1.00	1.10	6.714	7.386	0.000	1.200	2.323	5.00	8.575	10.29	38.0	259.6	447.0
Totals:								150.00				2,742.6	11,348.6	27,394.8

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	26 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		48.4	0.0					0.0	0.0	48.4	0.0	0.0	0.0
5.00		91.6	1,284.1					26.0	764.5	117.5	2,048.7	0.0	0.0
9.50	Reinf. Top Reinf	47.9	1,172.4					24.1	700.9	72.0	1,873.3	0.0	0.0
10.00	Appertunance(s)	51.9	130.5	108.8	0.0	0.0	301.3	2.7	78.3	163.5	510.1	0.0	0.0
15.00		93.5	1,296.7					27.2	786.7	120.8	2,083.4	0.0	0.0
20.00		91.9	1,283.4					27.5	791.9	119.4	2,075.4	0.0	0.0
25.00		90.2	1,266.1					27.7	796.0	117.9	2,062.1	0.0	0.0
30.00		58.0	1,246.2					27.9	799.4	85.9	2,045.6	0.0	0.0
31.50	Bot - Section 2	45.4	370.6					8.5	240.3	53.9	610.9	0.0	0.0
35.00		38.2	1,329.0					20.3	562.0	58.5	1,890.9	0.0	0.0
35.67	Top - Section 1	46.6	251.1					3.9	107.1	50.5	358.1	0.0	0.0
40.00		87.7	949.5					26.2	697.7	113.9	1,647.2	0.0	0.0
45.00		95.1	1,075.4					31.3	807.0	126.4	1,882.4	0.0	0.0
50.00		95.9	1,054.0					32.5	809.0	128.4	1,863.0	0.0	0.0
55.00		96.4	1,031.9					33.5	810.8	130.0	1,842.7	0.0	0.0
60.00		96.7	1,009.2					34.5	812.5	131.2	1,821.7	0.0	0.0
65.00		96.6	986.0					35.4	814.0	132.1	1,800.1	0.0	0.0
70.00	Bot - Section 3	48.3	962.3					36.3	815.4	84.6	1,777.7	0.0	0.0
70.00		34.2	0.2					0.0	0.1	34.2	0.3	0.0	0.0
73.50	Top - Section 2	48.9	976.1					25.9	571.6	74.8	1,547.6	0.0	0.0
75.00		63.3	253.0					11.2	245.3	74.5	498.3	0.0	0.0
80.00		96.9	825.5					38.0	818.1	134.9	1,643.6	0.0	0.0
85.00		96.1	804.2					38.7	819.4	134.8	1,623.5	0.0	0.0
90.00		57.3	782.6					39.5	820.5	96.8	1,603.1	0.0	0.0
91.00	Reinf. Top	47.3	154.8					8.0	164.2	55.3	319.0	0.0	0.0
95.00		84.6	607.7					32.2	336.7	116.8	944.4	0.0	0.0
100.00		92.9	738.6					4.1	245.7	97.0	984.3	0.0	0.0
105.00		91.5	716.3					0.0	226.1	91.5	942.5	0.0	0.0
110.00	Top - Section 3	45.4	693.8					0.0	226.1	45.4	919.9	0.0	0.0
110.00		44.7	0.1					0.0	0.0	44.7	0.1	0.0	0.0
115.00		88.5	587.2					0.0	226.1	88.5	813.3	0.0	0.0
120.00		69.7	567.6					0.0	226.1	69.7	793.7	0.0	0.0
123.00	Appertunance(s)	43.0	332.5	114.5	0.0	0.0	578.9	0.0	135.7	157.4	1,047.1	0.0	0.0
125.00		59.2	218.2					0.0	89.7	59.2	307.8	0.0	0.0
130.00		83.2	528.0					0.0	224.1	83.2	752.1	0.0	0.0
135.00		81.2	507.9					0.0	224.1	81.2	732.1	0.0	0.0
140.00	Appertunance(s)	79.2	487.7	748.4	0.0	0.0	6,169.2	0.0	224.1	827.6	6,881.1	0.0	0.0
145.00		77.1	467.5					0.0	159.1	77.1	626.6	0.0	0.0
150.00	Appertunance(s)	38.0	447.0	1,431.4	0.0	4,518.1	9,293.1	0.0	159.1	1,469.4	9,899.2	0.0	0.0
Totals:										5,768.84	61,072.8	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

26 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-61.07	-5.76	0.00	-659.95	0.00	659.95	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.185
5.00	-59.01	-5.71	0.00	-631.16	0.00	631.16	3,114.35	1,557.18	4,645.51	2,294.24	0.04	-0.07	0.181
9.50	-57.14	-5.67	0.00	-605.45	0.00	605.45	3,074.93	1,537.47	4,496.49	2,220.65	0.14	-0.14	0.178
9.50	-57.14	-5.67	0.00	-605.45	0.00	605.45	3,074.93	1,537.47	4,496.49	2,220.65	0.14	-0.14	0.178
10.00	-56.62	-5.55	0.00	-602.62	0.00	602.62	3,070.50	1,535.25	4,480.00	2,212.50	0.15	-0.15	0.177
15.00	-54.53	-5.49	0.00	-574.87	0.00	574.87	3,025.61	1,512.80	4,315.88	2,131.45	0.35	-0.22	0.173
20.00	-52.45	-5.43	0.00	-547.41	0.00	547.41	2,979.67	1,489.84	4,153.23	2,051.12	0.62	-0.29	0.169
25.00	-50.38	-5.37	0.00	-520.26	0.00	520.26	2,932.70	1,466.35	3,992.16	1,971.58	0.97	-0.37	0.165
30.00	-48.33	-5.31	0.00	-493.42	0.00	493.42	2,875.19	1,437.60	3,820.15	1,886.63	1.39	-0.44	0.161
31.50	-47.72	-5.28	0.00	-485.46	0.00	485.46	2,854.28	1,427.14	3,764.46	1,859.13	1.54	-0.47	0.160
35.00	-45.83	-5.23	0.00	-466.97	0.00	466.97	2,805.45	1,402.73	3,636.04	1,795.70	1.90	-0.52	0.156
35.67	-45.47	-5.21	0.00	-463.49	0.00	463.49	2,248.06	1,124.03	2,973.88	1,468.69	1.97	-0.53	0.179
40.00	-43.81	-5.13	0.00	-440.92	0.00	440.92	2,218.58	1,109.29	2,872.19	1,418.47	2.49	-0.60	0.174
45.00	-41.93	-5.04	0.00	-415.25	0.00	415.25	2,183.59	1,091.79	2,755.72	1,360.95	3.15	-0.68	0.168
50.00	-40.06	-4.95	0.00	-390.03	0.00	390.03	2,147.56	1,073.78	2,640.25	1,303.92	3.90	-0.76	0.162
55.00	-38.21	-4.85	0.00	-365.29	0.00	365.29	2,110.50	1,055.25	2,525.88	1,247.44	4.74	-0.83	0.155
60.00	-36.38	-4.74	0.00	-341.06	0.00	341.06	2,072.39	1,036.20	2,412.72	1,191.55	5.65	-0.91	0.149
65.00	-34.58	-4.62	0.00	-317.39	0.00	317.39	2,033.25	1,016.62	2,300.87	1,136.31	6.65	-0.99	0.142
70.00	-32.80	-4.53	0.00	-294.28	0.00	294.28	1,982.07	991.04	2,178.36	1,075.81	7.73	-1.07	0.137
70.00	-32.80	-4.51	0.00	-294.28	0.00	294.28	1,982.06	991.03	2,178.34	1,075.80	7.73	-1.07	0.135
73.50	-31.25	-4.42	0.00	-278.51	0.00	278.51	1,473.95	736.98	1,624.53	802.30	8.53	-1.12	0.154
75.00	-30.75	-4.37	0.00	-271.87	0.00	271.87	1,466.26	733.13	1,601.72	791.03	8.89	-1.14	0.151
80.00	-29.10	-4.24	0.00	-250.04	0.00	250.04	1,439.98	719.99	1,526.06	753.66	10.13	-1.22	0.142
85.00	-27.48	-4.10	0.00	-228.85	0.00	228.85	1,412.66	706.33	1,451.06	716.62	11.45	-1.30	0.133
90.00	-25.87	-3.99	0.00	-208.33	0.00	208.33	1,384.29	692.15	1,376.80	679.95	12.85	-1.38	0.124
91.00	-25.55	-3.94	0.00	-204.34	0.00	204.34	1,378.50	689.25	1,362.04	672.66	13.14	-1.39	0.123
91.00	-25.55	-3.94	0.00	-204.34	0.00	204.34	1,378.50	689.25	1,362.04	672.66	13.14	-1.39	0.322
95.00	-24.60	-3.86	0.00	-188.57	0.00	188.57	1,354.89	677.44	1,303.39	643.69	14.33	-1.45	0.311
100.00	-23.61	-3.81	0.00	-169.28	0.00	169.28	1,324.45	662.22	1,230.93	607.91	15.96	-1.64	0.296
105.00	-22.66	-3.77	0.00	-150.21	0.00	150.21	1,292.96	646.48	1,159.52	572.64	17.78	-1.84	0.280
110.00	-21.73	-3.73	0.00	-131.36	0.00	131.36	1,247.09	623.55	1,077.74	532.25	19.80	-2.02	0.264
110.00	-21.73	-3.73	0.00	-131.36	0.00	131.36	853.22	426.61	741.75	366.32	19.80	-2.02	0.384
110.00	-21.73	-3.73	0.00	-131.36	0.00	131.36	853.22	426.61	741.74	366.32	19.81	-2.02	0.384
115.00	-20.90	-3.70	0.00	-112.71	0.00	112.71	834.98	417.49	698.66	345.04	22.05	-2.26	0.352
120.00	-20.10	-3.66	0.00	-94.23	0.00	94.23	815.69	407.84	655.93	323.94	24.55	-2.49	0.316
123.00	-19.06	-3.49	0.00	-83.26	0.00	83.26	803.62	401.81	630.51	311.38	26.16	-2.63	0.291
125.00	-18.74	-3.46	0.00	-76.28	0.00	76.28	795.36	397.68	613.66	303.06	27.28	-2.71	0.275
130.00	-17.99	-3.40	0.00	-58.97	0.00	58.97	774.00	387.00	571.95	282.46	30.22	-2.90	0.232
135.00	-17.25	-3.32	0.00	-41.99	0.00	41.99	751.59	375.80	530.89	262.19	33.34	-3.06	0.183
140.00	-10.42	-2.14	0.00	-25.39	0.00	25.39	728.15	364.07	490.59	242.29	36.62	-3.18	0.119
145.00	-9.80	-2.04	0.00	-14.70	0.00	14.70	694.01	347.01	444.97	219.76	40.00	-3.27	0.081
150.00	0.00	-1.47	0.00	-4.52	0.00	4.52	659.14	329.57	401.13	198.10	43.45	-3.32	0.023

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:36 AM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	161.88	1.000	0.000	0.00	0.000	0.00	53.8	0.0	0.0
5.00		1.00	0.70	6.129	6.742	160.19	1.000	0.000	5.00	15.955	15.96	101.2	0.0	752.2
9.50	Reinf. Top Reinf Bottom	1.00	0.70	6.129	6.742	156.96	1.000	0.000	4.50	14.071	14.07	52.6	0.0	663.2
10.00	Appertunance(s)	1.00	0.70	6.129	6.742	155.27	1.000	0.000	0.50	1.547	1.55	56.7	0.0	72.9
15.00		1.00	0.70	6.129	6.742	153.40	1.000	0.000	5.00	15.279	15.28	101.9	0.0	720.0
20.00		1.00	0.70	6.129	6.742	150.01	1.000	0.000	5.00	14.941	14.94	99.6	0.0	703.9
25.00		1.00	0.70	6.129	6.742	146.61	1.000	0.000	5.00	14.603	14.60	97.3	0.0	687.8
30.00		1.00	0.70	6.129	6.742	143.22	1.000	0.000	5.00	14.265	14.27	62.4	0.0	671.7
31.50	Bot - Section 2	1.00	0.70	6.177	6.795	141.57	1.000	0.000	1.50	4.212	4.21	48.7	0.0	198.3
35.00		1.00	0.72	6.317	6.948	141.44	1.000	0.000	3.50	9.904	9.90	41.0	0.0	846.7
35.67	Top - Section 1	1.00	0.73	6.427	7.070	141.22	1.000	0.000	0.67	1.866	1.87	49.8	0.0	159.4
40.00		1.00	0.74	6.554	7.210	143.66	1.000	0.000	4.33	11.994	11.99	93.6	0.0	471.4
45.00		1.00	0.77	6.776	7.453	142.73	1.000	0.000	5.00	13.521	13.52	101.1	0.0	531.3
50.00		1.00	0.79	6.994	7.694	141.39	1.000	0.000	5.00	13.183	13.18	101.6	0.0	517.9
55.00		1.00	0.82	7.197	7.917	139.75	1.000	0.000	5.00	12.845	12.85	101.7	0.0	504.5
60.00		1.00	0.84	7.387	8.126	137.85	1.000	0.000	5.00	12.507	12.51	101.4	0.0	491.0
65.00		1.00	0.86	7.565	8.321	135.74	1.000	0.000	5.00	12.169	12.17	100.9	0.0	477.6
70.00	Bot - Section 3	1.00	0.88	7.733	8.506	133.43	1.000	0.000	5.00	11.830	11.83	50.3	0.0	464.2
70.00		1.00	0.89	7.814	8.595	132.20	1.000	0.000	0.00	0.002	0.00	35.6	0.0	0.1
73.50	Top - Section 2	1.00	0.89	7.869	8.656	131.33	1.000	0.000	3.50	8.230	8.23	50.8	0.0	575.8
75.00		1.00	0.90	7.947	8.741	132.50	1.000	0.000	1.50	3.479	3.48	65.5	0.0	109.4
80.00		1.00	0.91	8.044	8.849	130.79	1.000	0.000	5.00	11.371	11.37	100.0	0.0	357.6
85.00		1.00	0.93	8.189	9.008	128.04	1.000	0.000	5.00	11.033	11.03	98.7	0.0	346.9
90.00		1.00	0.95	8.328	9.161	125.17	1.000	0.000	5.00	10.695	10.69	58.7	0.0	336.1
91.00	Reinf. Top	1.00	0.96	8.409	9.250	123.39	1.000	0.000	1.00	2.098	2.10	48.2	0.0	65.9
95.00		1.00	0.96	8.475	9.322	121.87	1.000	0.000	4.00	8.258	8.26	85.8	0.0	259.5
100.00		1.00	0.98	8.590	9.449	119.08	1.000	0.000	5.00	10.019	10.02	93.7	0.0	314.7
105.00		1.00	0.99	8.713	9.585	115.89	1.000	0.000	5.00	9.681	9.68	91.8	0.0	304.0
110.00	Top - Section 3	1.00	1.00	8.833	9.716	112.61	1.000	0.000	5.00	9.342	9.34	45.4	0.0	293.2
110.00		1.00	1.01	8.891	9.780	110.93	1.000	0.000	0.00	0.001	0.00	44.3	0.0	0.0
115.00		1.00	1.02	8.948	9.843	109.24	1.000	0.000	5.00	9.005	9.00	87.5	0.0	212.5
120.00		1.00	1.03	9.060	9.966	105.79	1.000	0.000	5.00	8.667	8.67	68.5	0.0	204.5
123.00	Appertunance(s)	1.00	1.04	9.147	10.06	102.99	1.000	0.000	3.00	5.038	5.04	42.0	0.0	118.8
125.00		1.00	1.05	9.201	10.12	101.21	1.000	0.000	2.00	3.291	3.29	57.4	0.0	77.6
130.00		1.00	1.05	9.274	10.20	98.692	1.000	0.000	5.00	7.991	7.99	80.2	0.0	188.4
135.00		1.00	1.07	9.377	10.31	95.039	1.000	0.000	5.00	7.653	7.65	77.6	0.0	180.3
140.00	Appertunance(s)	1.00	1.08	9.476	10.42	91.323	1.000	0.000	5.00	7.315	7.31	74.9	0.0	172.3
145.00		1.00	1.09	9.574	10.53	87.549	1.000	0.000	5.00	6.977	6.98	72.0	0.0	164.2
150.00	Appertunance(s)	1.00	1.10	9.668	10.63	83.720	1.000	0.000	5.00	6.639	6.64	35.3	0.0	156.2
Totals:									150.00			2,829.8	0.0	13,371.8

Load Case: 1.0D + 1.0W	Serviceability 60 mph	25 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		53.8	0.0					0.0	0.0	53.8	0.0	0.0	0.0
5.00		101.2	752.2					25.8	522.6	127.0	1,274.8	0.0	0.0
9.50	Reinf. Top Reinf	52.6	663.2					23.2	470.3	75.8	1,133.5	0.0	0.0
10.00	Appertunance(s)	56.7	72.9	136.1	0.0	0.0	126.0	2.6	52.3	195.4	251.1	0.0	0.0
15.00		101.9	720.0					25.8	522.4	127.7	1,242.4	0.0	0.0
20.00		99.6	703.9					25.8	522.4	125.4	1,226.3	0.0	0.0
25.00		97.3	687.8					25.8	522.4	123.1	1,210.2	0.0	0.0
30.00		62.4	671.7					25.8	522.4	88.2	1,194.1	0.0	0.0
31.50	Bot - Section 2	48.7	198.3					7.8	156.7	56.5	354.9	0.0	0.0
35.00		41.0	846.7					18.3	365.8	59.3	1,212.4	0.0	0.0
35.67	Top - Section 1	49.8	159.4					3.5	69.6	53.3	229.0	0.0	0.0
40.00		93.6	471.4					23.1	452.8	116.7	924.2	0.0	0.0
45.00		101.1	531.3					27.1	522.4	128.2	1,053.7	0.0	0.0
50.00		101.6	517.9					27.5	522.4	129.1	1,040.3	0.0	0.0
55.00		101.7	504.5					27.9	522.4	129.6	1,026.9	0.0	0.0
60.00		101.4	491.0					28.3	522.4	129.8	1,013.5	0.0	0.0
65.00		100.9	477.6					28.6	522.4	129.6	1,000.1	0.0	0.0
70.00	Bot - Section 3	50.3	464.2					29.0	522.4	79.3	986.5	0.0	0.0
70.00		35.6	0.1					0.0	0.1	35.6	0.2	0.0	0.0
73.50	Top - Section 2	50.8	575.8					20.4	365.6	71.3	941.5	0.0	0.0
75.00		65.5	109.4					8.8	156.8	74.3	266.2	0.0	0.0
80.00		100.0	357.6					29.5	522.4	129.5	880.0	0.0	0.0
85.00		98.7	346.9					29.8	522.4	128.5	869.3	0.0	0.0
90.00		58.7	336.1					30.1	522.4	88.8	858.6	0.0	0.0
91.00	Reinf. Top	48.2	65.9					6.0	104.5	54.2	170.4	0.0	0.0
95.00		85.8	259.5					24.3	150.8	110.1	410.2	0.0	0.0
100.00		93.7	314.7					3.1	188.4	96.8	503.1	0.0	0.0
105.00		91.8	304.0					0.0	188.4	91.8	492.4	0.0	0.0
110.00	Top - Section 3	45.4	293.2					0.0	188.4	45.4	481.6	0.0	0.0
110.00		44.3	0.0					0.0	0.0	44.3	0.1	0.0	0.0
115.00		87.5	212.5					0.0	188.4	87.5	400.9	0.0	0.0
120.00		68.5	204.5					0.0	188.4	68.5	392.9	0.0	0.0
123.00	Appertunance(s)	42.0	118.8	144.0	0.0	0.0	131.2	0.0	113.1	186.0	363.1	0.0	0.0
125.00		57.4	77.6					0.0	74.7	57.4	152.3	0.0	0.0
130.00		80.2	188.4					0.0	186.8	80.2	375.2	0.0	0.0
135.00		77.6	180.3					0.0	186.8	77.6	367.1	0.0	0.0
140.00	Appertunance(s)	74.9	172.3	706.6	0.0	0.0	2,265.9	0.0	186.8	781.4	2,625.0	0.0	0.0
145.00		72.0	164.2					0.0	132.6	72.0	296.8	0.0	0.0
150.00	Appertunance(s)	35.3	156.2	1,123.2	0.0	2,761.8	2,925.3	0.0	132.6	1,158.5	3,214.1	0.0	0.0
Totals:										5,467.57	30,435.1	0.00	0.00

Load Case: 1.0D + 1.0W	Serviceability 60 mph	25 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.43	-5.43	0.00	-544.67	0.00	544.67	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.148
5.00	-29.15	-5.33	0.00	-517.52	0.00	517.52	3,114.35	1,557.18	4,645.51	2,294.24	0.03	-0.06	0.144
9.50	-28.02	-5.27	0.00	-493.53	0.00	493.53	3,074.93	1,537.47	4,496.49	2,220.65	0.11	-0.11	0.141
9.50	-28.02	-5.27	0.00	-493.53	0.00	493.53	3,074.93	1,537.47	4,496.49	2,220.65	0.11	-0.11	0.141
10.00	-27.76	-5.09	0.00	-490.90	0.00	490.90	3,070.50	1,535.25	4,480.00	2,212.50	0.13	-0.12	0.140
15.00	-26.52	-4.98	0.00	-465.46	0.00	465.46	3,025.61	1,512.80	4,315.88	2,131.45	0.28	-0.18	0.136
20.00	-25.28	-4.88	0.00	-440.53	0.00	440.53	2,979.67	1,489.84	4,153.23	2,051.12	0.51	-0.24	0.132
25.00	-24.07	-4.78	0.00	-416.13	0.00	416.13	2,932.70	1,466.35	3,992.16	1,971.58	0.79	-0.30	0.128
30.00	-22.87	-4.70	0.00	-392.24	0.00	392.24	2,875.19	1,437.60	3,820.15	1,886.63	1.14	-0.36	0.125
31.50	-22.52	-4.65	0.00	-385.20	0.00	385.20	2,854.28	1,427.14	3,764.46	1,859.13	1.25	-0.38	0.124
35.00	-21.30	-4.59	0.00	-368.91	0.00	368.91	2,805.45	1,402.73	3,636.04	1,795.70	1.54	-0.42	0.120
35.67	-21.07	-4.55	0.00	-365.85	0.00	365.85	2,248.06	1,124.03	2,973.88	1,468.69	1.60	-0.43	0.137
40.00	-20.14	-4.44	0.00	-346.14	0.00	346.14	2,218.58	1,109.29	2,872.19	1,418.47	2.02	-0.48	0.133
45.00	-19.09	-4.33	0.00	-323.92	0.00	323.92	2,183.59	1,091.79	2,755.72	1,360.95	2.55	-0.54	0.127
50.00	-18.04	-4.21	0.00	-302.28	0.00	302.28	2,147.56	1,073.78	2,640.25	1,303.92	3.15	-0.60	0.122
55.00	-17.01	-4.08	0.00	-281.24	0.00	281.24	2,110.50	1,055.25	2,525.88	1,247.44	3.82	-0.66	0.116
60.00	-16.00	-3.96	0.00	-260.82	0.00	260.82	2,072.39	1,036.20	2,412.72	1,191.55	4.55	-0.73	0.111
65.00	-14.99	-3.83	0.00	-241.02	0.00	241.02	2,033.25	1,016.62	2,300.87	1,136.31	5.34	-0.78	0.105
70.00	-14.01	-3.75	0.00	-221.86	0.00	221.86	1,982.07	991.04	2,178.36	1,075.81	6.19	-0.84	0.100
70.00	-14.01	-3.72	0.00	-221.86	0.00	221.86	1,982.06	991.03	2,178.34	1,075.80	6.19	-0.84	0.098
73.50	-13.06	-3.64	0.00	-208.86	0.00	208.86	1,473.95	736.98	1,624.53	802.30	6.83	-0.88	0.111
75.00	-12.80	-3.57	0.00	-203.40	0.00	203.40	1,466.26	733.13	1,601.72	791.03	7.11	-0.90	0.109
80.00	-11.92	-3.43	0.00	-185.57	0.00	185.57	1,439.98	719.99	1,526.06	753.66	8.08	-0.96	0.102
85.00	-11.05	-3.30	0.00	-168.40	0.00	168.40	1,412.66	706.33	1,451.06	716.62	9.12	-1.02	0.095
90.00	-10.19	-3.20	0.00	-151.89	0.00	151.89	1,384.29	692.15	1,376.80	679.95	10.21	-1.07	0.088
91.00	-10.02	-3.15	0.00	-148.68	0.00	148.68	1,378.50	689.25	1,362.04	672.66	10.44	-1.08	0.086
91.00	-10.02	-3.15	0.00	-148.68	0.00	148.68	1,378.50	689.25	1,362.04	672.66	10.44	-1.08	0.228
95.00	-9.60	-3.05	0.00	-136.08	0.00	136.08	1,354.89	677.44	1,303.39	643.69	11.36	-1.13	0.219
100.00	-9.09	-2.96	0.00	-120.84	0.00	120.84	1,324.45	662.22	1,230.93	607.91	12.62	-1.26	0.206
105.00	-8.60	-2.88	0.00	-106.03	0.00	106.03	1,292.96	646.48	1,159.52	572.64	14.01	-1.40	0.192
110.00	-8.11	-2.83	0.00	-91.63	0.00	91.63	1,247.09	623.55	1,077.74	532.25	15.55	-1.53	0.179
110.00	-8.11	-2.83	0.00	-91.63	0.00	91.63	853.22	426.61	741.75	366.32	15.55	-1.53	0.260
110.00	-8.11	-2.80	0.00	-91.63	0.00	91.63	853.22	426.61	741.74	366.32	15.55	-1.53	0.260
115.00	-7.71	-2.72	0.00	-77.63	0.00	77.63	834.98	417.49	698.66	345.04	17.25	-1.70	0.234
120.00	-7.31	-2.66	0.00	-64.02	0.00	64.02	815.69	407.84	655.93	323.94	19.11	-1.86	0.207
123.00	-6.95	-2.47	0.00	-56.05	0.00	56.05	803.62	401.81	630.51	311.38	20.31	-1.95	0.189
125.00	-6.80	-2.42	0.00	-51.11	0.00	51.11	795.36	397.68	613.66	303.06	21.13	-2.00	0.177
130.00	-6.42	-2.34	0.00	-39.03	0.00	39.03	774.00	387.00	571.95	282.46	23.30	-2.13	0.147
135.00	-6.05	-2.25	0.00	-27.35	0.00	27.35	751.59	375.80	530.89	262.19	25.59	-2.24	0.112
140.00	-3.46	-1.37	0.00	-16.08	0.00	16.08	728.15	364.07	490.59	242.29	27.98	-2.31	0.071
145.00	-3.16	-1.29	0.00	-9.22	0.00	9.22	694.01	347.01	444.97	219.76	30.43	-2.37	0.047
150.00	0.00	-1.16	0.00	-2.76	0.00	2.76	659.14	329.57	401.13	198.10	32.93	-2.40	0.014

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.78
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	30.44 k
Seismic Base Shear (E):	1.19 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147.50	289	6,282	0.027	33	358
37	142.50	297	6,027	0.026	31	368
36	137.50	359	6,788	0.030	35	445
35	132.50	367	6,445	0.028	33	455
34	127.50	375	6,099	0.027	32	465
33	124.00	152	2,342	0.010	12	189
32	121.50	232	3,423	0.015	18	287
31	117.50	393	5,424	0.024	28	486
30	112.50	401	5,074	0.022	26	496
29	110.00	0	1	0.000	0	0
28	107.50	482	5,565	0.024	29	596
27	102.50	492	5,173	0.023	27	610
26	97.50	503	4,783	0.021	25	623
25	93.00	410	3,548	0.015	18	508
24	90.50	170	1,396	0.006	7	211
23	87.50	859	6,574	0.029	34	1,063
22	82.50	869	5,917	0.026	31	1,076
21	77.50	880	5,286	0.023	27	1,090
20	74.25	266	1,468	0.006	8	330
19	71.75	941	4,847	0.021	25	1,166
18	70.00	0	1	0.000	0	0
17	67.50	987	4,495	0.020	23	1,221
16	62.50	1,000	3,906	0.017	20	1,238

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

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Customer: T-MOBILE

15	57.50	1,013	3,351	0.015	17	1,255
14	52.50	1,027	2,830	0.012	15	1,271
13	47.50	1,040	2,347	0.010	12	1,288
12	42.50	1,054	1,903	0.008	10	1,305
11	37.83	924	1,323	0.006	7	1,144
10	35.33	229	286	0.001	1	284
9	33.25	1,212	1,340	0.006	7	1,501
8	30.75	355	336	0.001	2	439
7	27.50	1,194	903	0.004	5	1,479
6	22.50	1,210	613	0.003	3	1,499
5	17.50	1,226	376	0.002	2	1,518
4	12.50	1,242	194	0.001	1	1,538
3	9.75	125	12	0.000	0	155
2	7.25	1,134	60	0.000	0	1,404
1	2.50	1,275	8	0.000	0	1,578
Andrew ABT-DMDF-ADBH	150.00	3	74	0.000	0	4
Powerwave Allgon 702	150.00	13	297	0.001	2	16
Powerwave TT19-08BP1	150.00	96	2,160	0.009	11	119
Raycap DC6-48-60-18-	150.00	33	738	0.003	4	41
Ericsson RRUS 11 (Ba	150.00	150	3,375	0.015	17	186
Ericsson RRUS 32 B2	150.00	159	3,577	0.016	19	197
12' Omni	150.00	40	900	0.004	5	50
12' Dipole	150.00	40	900	0.004	5	50
Powerwave 7770.00A	150.00	162	3,645	0.016	19	201
6' Yagi	150.00	25	563	0.002	3	31
CCI HPA-65R-BUU-H8	150.00	204	4,590	0.020	24	253
Flat Platform w/ Han	150.00	2,000	45,000	0.197	233	2,476
RFS ATMPP1412D-1CWA	140.00	38	735	0.003	4	46
RFS ATMAA1412D-1A20	140.00	39	764	0.003	4	48
Ericsson AIR 21 B4A	140.00	540	10,584	0.046	55	669
Andrew LNX-6515DS-A1	140.00	149	2,928	0.013	15	185
Flat Low Profile Pla	140.00	1,500	29,400	0.128	152	1,857
Stand-Off	123.00	100	1,513	0.007	8	124
75" x 16.8" Panel	123.00	31	472	0.002	2	39
Channel Master Type	10.00	126	13	0.000	0	156
		30,435	228,974	1.000	1,187	37,684

Load Case (0.9 - 0.2Sds) * DL + E ELMF

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147.50	289	6,282	0.027	33	249
37	142.50	297	6,027	0.026	31	256
36	137.50	359	6,788	0.030	35	309
35	132.50	367	6,445	0.028	33	316
34	127.50	375	6,099	0.027	32	323
33	124.00	152	2,342	0.010	12	131
32	121.50	232	3,423	0.015	18	200
31	117.50	393	5,424	0.024	28	339
30	112.50	401	5,074	0.022	26	346
29	110.00	0	1	0.000	0	0
28	107.50	482	5,565	0.024	29	415
27	102.50	492	5,173	0.023	27	424
26	97.50	503	4,783	0.021	25	434
25	93.00	410	3,548	0.015	18	354
24	90.50	170	1,396	0.006	7	147
23	87.50	859	6,574	0.029	34	740
22	82.50	869	5,917	0.026	31	749
21	77.50	880	5,286	0.023	27	758
20	74.25	266	1,468	0.006	8	229

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntr - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:39 AM

Customer: T-MOBILE

19	71.75	941	4,847	0.021	25	811
18	70.00	0	1	0.000	0	0
17	67.50	987	4,495	0.020	23	850
16	62.50	1,000	3,906	0.017	20	862
15	57.50	1,013	3,351	0.015	17	873
14	52.50	1,027	2,830	0.012	15	885
13	47.50	1,040	2,347	0.010	12	897
12	42.50	1,054	1,903	0.008	10	908
11	37.83	924	1,323	0.006	7	797
10	35.33	229	286	0.001	1	197
9	33.25	1,212	1,340	0.006	7	1,045
8	30.75	355	336	0.001	2	306
7	27.50	1,194	903	0.004	5	1,029
6	22.50	1,210	613	0.003	3	1,043
5	17.50	1,226	376	0.002	2	1,057
4	12.50	1,242	194	0.001	1	1,071
3	9.75	125	12	0.000	0	108
2	7.25	1,134	60	0.000	0	977
1	2.50	1,275	8	0.000	0	1,099
Andrew ABT-DMDF-ADBH	150.00	3	74	0.000	0	3
Powerwave Allgon 702	150.00	13	297	0.001	2	11
Powerwave TT19-08BP1	150.00	96	2,160	0.009	11	83
Raycap DC6-48-60-18-	150.00	33	738	0.003	4	28
Ericsson RRUS 11 (Ba	150.00	150	3,375	0.015	17	129
Ericsson RRUS 32 B2	150.00	159	3,577	0.016	19	137
12' Omni	150.00	40	900	0.004	5	34
12' Dipole	150.00	40	900	0.004	5	34
Powerwave 7770.00A	150.00	162	3,645	0.016	19	140
6' Yagi	150.00	25	563	0.002	3	22
CCI HPA-65R-BUU-H8	150.00	204	4,590	0.020	24	176
Flat Platform w/ Han	150.00	2,000	45,000	0.197	233	1,724
RFS ATMPP1412D-1CWA	140.00	38	735	0.003	4	32
RFS ATMAA1412D-1A20	140.00	39	764	0.003	4	34
Ericsson AIR 21 B4A	140.00	540	10,584	0.046	55	465
Andrew LNX-6515DS-A1	140.00	149	2,928	0.013	15	129
Flat Low Profile Pla	140.00	1,500	29,400	0.128	152	1,293
Stand-Off	123.00	100	1,513	0.007	8	86
75" x 16.8" Panel	123.00	31	472	0.002	2	27
Channel Master Type	10.00	126	13	0.000	0	109
		30,435	228,974	1.000	1,187	26,229

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.11	-1.19	0.00	-152.16	0.00	152.16	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.048
5.00	-34.70	-1.20	0.00	-146.20	0.00	146.20	3,114.35	1,557.18	4,645.51	2,294.24	0.01	-0.02	0.047
9.50	-34.55	-1.21	0.00	-140.80	0.00	140.80	3,074.93	1,537.47	4,496.49	2,220.65	0.03	-0.03	0.046
9.50	-34.55	-1.21	0.00	-140.80	0.00	140.80	3,074.93	1,537.47	4,496.49	2,220.65	0.03	-0.03	0.046
10.00	-32.85	-1.21	0.00	-140.20	0.00	140.20	3,070.50	1,535.25	4,480.00	2,212.50	0.04	-0.03	0.046
15.00	-31.33	-1.22	0.00	-134.15	0.00	134.15	3,025.61	1,512.80	4,315.88	2,131.45	0.08	-0.05	0.045
20.00	-29.83	-1.22	0.00	-128.07	0.00	128.07	2,979.67	1,489.84	4,153.23	2,051.12	0.14	-0.07	0.044
25.00	-28.36	-1.22	0.00	-121.97	0.00	121.97	2,932.70	1,466.35	3,992.16	1,971.58	0.22	-0.09	0.043
30.00	-27.92	-1.23	0.00	-115.86	0.00	115.86	2,875.19	1,437.60	3,820.15	1,886.63	0.32	-0.10	0.042
31.50	-26.41	-1.22	0.00	-114.03	0.00	114.03	2,854.28	1,427.14	3,764.46	1,859.13	0.36	-0.11	0.041
35.00	-26.13	-1.22	0.00	-109.76	0.00	109.76	2,805.45	1,402.73	3,636.04	1,795.70	0.44	-0.12	0.040
35.67	-24.99	-1.22	0.00	-108.94	0.00	108.94	2,248.06	1,124.03	2,973.88	1,468.69	0.46	-0.12	0.046
40.00	-23.68	-1.21	0.00	-103.67	0.00	103.67	2,218.58	1,109.29	2,872.19	1,418.47	0.58	-0.14	0.045
45.00	-22.39	-1.20	0.00	-97.63	0.00	97.63	2,183.59	1,091.79	2,755.72	1,360.95	0.73	-0.16	0.043
50.00	-21.12	-1.19	0.00	-91.62	0.00	91.62	2,147.56	1,073.78	2,640.25	1,303.92	0.91	-0.18	0.041
55.00	-19.87	-1.17	0.00	-85.67	0.00	85.67	2,110.50	1,055.25	2,525.88	1,247.44	1.11	-0.20	0.040
60.00	-18.63	-1.16	0.00	-79.79	0.00	79.79	2,072.39	1,036.20	2,412.72	1,191.55	1.32	-0.21	0.038
65.00	-17.41	-1.13	0.00	-74.01	0.00	74.01	2,033.25	1,016.62	2,300.87	1,136.31	1.55	-0.23	0.036
70.00	-17.41	-1.14	0.00	-68.35	0.00	68.35	1,982.07	991.04	2,178.36	1,075.81	1.81	-0.25	0.035
70.00	-16.24	-1.11	0.00	-68.35	0.00	68.35	1,982.06	991.03	2,178.34	1,075.80	1.81	-0.25	0.034
73.50	-15.91	-1.10	0.00	-64.47	0.00	64.47	1,473.95	736.98	1,624.53	802.30	1.99	-0.26	0.039
75.00	-14.82	-1.07	0.00	-62.82	0.00	62.82	1,466.26	733.13	1,601.72	791.03	2.08	-0.27	0.038
80.00	-13.74	-1.04	0.00	-57.46	0.00	57.46	1,439.98	719.99	1,526.06	753.66	2.37	-0.29	0.035
85.00	-12.68	-1.00	0.00	-52.25	0.00	52.25	1,412.66	706.33	1,451.06	716.62	2.68	-0.30	0.033
90.00	-12.47	-1.00	0.00	-47.23	0.00	47.23	1,384.29	692.15	1,376.80	679.95	3.00	-0.32	0.031
91.00	-11.96	-0.98	0.00	-46.23	0.00	46.23	1,378.50	689.25	1,362.04	672.66	3.07	-0.32	0.030
91.00	-11.96	-0.98	0.00	-46.23	0.00	46.23	1,378.50	689.25	1,362.04	672.66	3.07	-0.32	0.077
95.00	-11.34	-0.96	0.00	-42.31	0.00	42.31	1,354.89	677.44	1,303.39	643.69	3.35	-0.34	0.074
100.00	-10.73	-0.93	0.00	-37.53	0.00	37.53	1,324.45	662.22	1,230.93	607.91	3.72	-0.38	0.070
105.00	-10.13	-0.91	0.00	-32.86	0.00	32.86	1,292.96	646.48	1,159.52	572.64	4.14	-0.42	0.065
110.00	-10.13	-0.91	0.00	-28.32	0.00	28.32	1,247.09	623.55	1,077.74	532.25	4.61	-0.46	0.061
110.00	-10.13	-0.91	0.00	-28.32	0.00	28.32	853.22	426.61	741.75	366.32	4.61	-0.46	0.089
110.00	-9.63	-0.89	0.00	-28.32	0.00	28.32	853.22	426.61	741.74	366.32	4.61	-0.46	0.089
115.00	-9.15	-0.86	0.00	-23.89	0.00	23.89	834.98	417.49	698.66	345.04	5.12	-0.52	0.080
120.00	-8.86	-0.85	0.00	-19.59	0.00	19.59	815.69	407.84	655.93	323.94	5.69	-0.56	0.071
123.00	-8.51	-0.82	0.00	-17.05	0.00	17.05	803.62	401.81	630.51	311.38	6.05	-0.59	0.065
125.00	-8.04	-0.79	0.00	-15.40	0.00	15.40	795.36	397.68	613.66	303.06	6.30	-0.61	0.061
130.00	-7.59	-0.76	0.00	-11.44	0.00	11.44	774.00	387.00	571.95	282.46	6.96	-0.65	0.050
135.00	-7.14	-0.72	0.00	-7.65	0.00	7.65	751.59	375.80	530.89	262.19	7.65	-0.68	0.039
140.00	-3.97	-0.42	0.00	-4.04	0.00	4.04	728.15	364.07	490.59	242.29	8.37	-0.70	0.022
145.00	-3.62	-0.39	0.00	-1.93	0.00	1.93	694.01	347.01	444.97	219.76	9.11	-0.71	0.014
150.00	0.00	-0.34	0.00	0.00	0.00	0.00	659.14	329.57	401.13	198.10	9.86	-0.71	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.13	-1.19	0.00	-149.14	0.00	149.14	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.044
5.00	-24.15	-1.20	0.00	-143.19	0.00	143.19	3,114.35	1,557.18	4,645.51	2,294.24	0.01	-0.02	0.044
9.50	-24.05	-1.20	0.00	-137.81	0.00	137.81	3,074.93	1,537.47	4,496.49	2,220.65	0.03	-0.03	0.043
9.50	-24.05	-1.20	0.00	-137.81	0.00	137.81	3,074.93	1,537.47	4,496.49	2,220.65	0.03	-0.03	0.043
10.00	-22.87	-1.20	0.00	-137.21	0.00	137.21	3,070.50	1,535.25	4,480.00	2,212.50	0.03	-0.03	0.043
15.00	-21.81	-1.21	0.00	-131.20	0.00	131.20	3,025.61	1,512.80	4,315.88	2,131.45	0.08	-0.05	0.042
20.00	-20.77	-1.21	0.00	-125.18	0.00	125.18	2,979.67	1,489.84	4,153.23	2,051.12	0.14	-0.07	0.041
25.00	-19.74	-1.21	0.00	-119.14	0.00	119.14	2,932.70	1,466.35	3,992.16	1,971.58	0.22	-0.08	0.040
30.00	-19.43	-1.21	0.00	-113.10	0.00	113.10	2,875.19	1,437.60	3,820.15	1,886.63	0.32	-0.10	0.039
31.50	-18.38	-1.20	0.00	-111.29	0.00	111.29	2,854.28	1,427.14	3,764.46	1,859.13	0.35	-0.11	0.039
35.00	-18.19	-1.20	0.00	-107.08	0.00	107.08	2,805.45	1,402.73	3,636.04	1,795.70	0.43	-0.12	0.038
35.67	-17.39	-1.20	0.00	-106.28	0.00	106.28	2,248.06	1,124.03	2,973.88	1,468.69	0.45	-0.12	0.043
40.00	-16.48	-1.19	0.00	-101.09	0.00	101.09	2,218.58	1,109.29	2,872.19	1,418.47	0.57	-0.14	0.042
45.00	-15.59	-1.18	0.00	-95.14	0.00	95.14	2,183.59	1,091.79	2,755.72	1,360.95	0.72	-0.15	0.040
50.00	-14.70	-1.17	0.00	-89.24	0.00	89.24	2,147.56	1,073.78	2,640.25	1,303.92	0.89	-0.17	0.039
55.00	-13.83	-1.15	0.00	-83.40	0.00	83.40	2,110.50	1,055.25	2,525.88	1,247.44	1.08	-0.19	0.037
60.00	-12.96	-1.13	0.00	-77.64	0.00	77.64	2,072.39	1,036.20	2,412.72	1,191.55	1.29	-0.21	0.035
65.00	-12.11	-1.11	0.00	-71.97	0.00	71.97	2,033.25	1,016.62	2,300.87	1,136.31	1.52	-0.23	0.034
70.00	-12.11	-1.11	0.00	-66.42	0.00	66.42	1,982.07	991.04	2,178.36	1,075.81	1.76	-0.24	0.032
70.00	-11.30	-1.08	0.00	-66.42	0.00	66.42	1,982.06	991.03	2,178.34	1,075.80	1.76	-0.24	0.031
73.50	-11.07	-1.08	0.00	-62.62	0.00	62.62	1,473.95	736.98	1,624.53	802.30	1.95	-0.26	0.036
75.00	-10.31	-1.05	0.00	-61.01	0.00	61.01	1,466.26	733.13	1,601.72	791.03	2.03	-0.26	0.035
80.00	-9.56	-1.02	0.00	-55.76	0.00	55.76	1,439.98	719.99	1,526.06	753.66	2.31	-0.28	0.033
85.00	-8.82	-0.98	0.00	-50.67	0.00	50.67	1,412.66	706.33	1,451.06	716.62	2.61	-0.30	0.030
90.00	-8.68	-0.98	0.00	-45.76	0.00	45.76	1,384.29	692.15	1,376.80	679.95	2.93	-0.31	0.028
91.00	-8.32	-0.96	0.00	-44.78	0.00	44.78	1,378.50	689.25	1,362.04	672.66	3.00	-0.32	0.028
91.00	-8.32	-0.96	0.00	-44.78	0.00	44.78	1,378.50	689.25	1,362.04	672.66	3.00	-0.32	0.073
95.00	-7.89	-0.93	0.00	-40.96	0.00	40.96	1,354.89	677.44	1,303.39	643.69	3.27	-0.33	0.069
100.00	-7.46	-0.91	0.00	-36.29	0.00	36.29	1,324.45	662.22	1,230.93	607.91	3.63	-0.37	0.065
105.00	-7.05	-0.88	0.00	-31.74	0.00	31.74	1,292.96	646.48	1,159.52	572.64	4.04	-0.41	0.061
110.00	-7.05	-0.89	0.00	-27.33	0.00	27.33	1,247.09	623.55	1,077.74	532.25	4.50	-0.45	0.057
110.00	-7.05	-0.89	0.00	-27.33	0.00	27.33	853.22	426.61	741.75	366.32	4.50	-0.45	0.083
110.00	-6.70	-0.86	0.00	-27.33	0.00	27.33	853.22	426.61	741.74	366.32	4.50	-0.45	0.082
115.00	-6.36	-0.83	0.00	-23.03	0.00	23.03	834.98	417.49	698.66	345.04	4.99	-0.50	0.074
120.00	-6.16	-0.82	0.00	-18.86	0.00	18.86	815.69	407.84	655.93	323.94	5.54	-0.55	0.066
123.00	-5.92	-0.80	0.00	-16.41	0.00	16.41	803.62	401.81	630.51	311.38	5.90	-0.57	0.060
125.00	-5.60	-0.76	0.00	-14.82	0.00	14.82	795.36	397.68	613.66	303.06	6.14	-0.59	0.056
130.00	-5.28	-0.73	0.00	-11.00	0.00	11.00	774.00	387.00	571.95	282.46	6.78	-0.63	0.046
135.00	-4.97	-0.69	0.00	-7.36	0.00	7.36	751.59	375.80	530.89	262.19	7.45	-0.66	0.035
140.00	-2.77	-0.41	0.00	-3.89	0.00	3.89	728.15	364.07	490.59	242.29	8.15	-0.68	0.020
145.00	-2.52	-0.37	0.00	-1.86	0.00	1.86	694.01	347.01	444.97	219.76	8.86	-0.69	0.012
150.00	0.00	-0.34	0.00	0.00	0.00	0.00	659.14	329.57	401.13	198.10	9.59	-0.69	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.78
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	147.50	289	1.828	1.667	1.025	0.322	80	358
37	142.50	297	1.706	1.144	0.823	0.249	64	368
36	137.50	359	1.588	0.742	0.654	0.184	57	445
35	132.50	367	1.475	0.441	0.513	0.128	41	455
34	127.50	375	1.366	0.222	0.397	0.079	26	465
33	124.00	152	1.292	0.109	0.329	0.050	7	189
32	121.50	232	1.240	0.046	0.286	0.031	6	287
31	117.50	393	1.160	-0.030	0.226	0.005	2	486
30	112.50	401	1.063	-0.088	0.165	-0.020	-7	496
29	110.00	0	1.016	-0.105	0.140	-0.030	0	0
28	107.50	482	0.971	-0.116	0.117	-0.038	-16	596
27	102.50	492	0.883	-0.121	0.081	-0.048	-21	610
26	97.50	503	0.799	-0.112	0.053	-0.051	-22	623
25	93.00	410	0.727	-0.095	0.035	-0.047	-17	508
24	90.50	170	0.688	-0.083	0.028	-0.042	-6	211
23	87.50	859	0.643	-0.068	0.020	-0.034	-26	1,063
22	82.50	869	0.572	-0.043	0.012	-0.018	-13	1,076
21	77.50	880	0.505	-0.018	0.007	0.001	1	1,090
20	74.25	266	0.463	-0.003	0.006	0.013	3	330
19	71.75	941	0.432	0.008	0.006	0.022	18	1,166
18	70.00	0	0.412	0.014	0.006	0.027	0	0
17	67.50	987	0.383	0.023	0.007	0.034	29	1,221
16	62.50	1,000	0.328	0.039	0.010	0.044	38	1,238
15	57.50	1,013	0.278	0.050	0.014	0.051	44	1,255
14	52.50	1,027	0.232	0.058	0.019	0.053	48	1,271
13	47.50	1,040	0.190	0.064	0.025	0.054	49	1,288
12	42.50	1,054	0.152	0.068	0.030	0.054	49	1,305
11	37.83	924	0.120	0.070	0.034	0.053	42	1,144
10	35.33	229	0.105	0.071	0.037	0.052	10	284
9	33.25	1,212	0.093	0.071	0.038	0.052	54	1,501
8	30.75	355	0.079	0.072	0.040	0.051	16	439
7	27.50	1,194	0.064	0.072	0.041	0.050	52	1,479
6	22.50	1,210	0.043	0.070	0.042	0.049	51	1,499
5	17.50	1,226	0.026	0.067	0.040	0.046	49	1,518

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

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Customer: T-MOBILE

4	12.50	1,242	0.013	0.059	0.034	0.042	45	1,538
3	9.75	125	0.008	0.052	0.030	0.038	4	155
2	7.25	1,134	0.004	0.043	0.024	0.033	32	1,404
1	2.50	1,275	0.001	0.018	0.010	0.016	18	1,578
Andrew ABT-DMDF-	150.00	3	1.890	1.980	1.140	0.361	1	4
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	16
Powerwave TT19-	150.00	96	1.890	1.980	1.140	0.361	30	119
Raycap DC6-48-60-18-	150.00	33	1.890	1.980	1.140	0.361	10	41
Ericsson RRUS 11 (Ba	150.00	150	1.890	1.980	1.140	0.361	47	186
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.361	50	197
12' Omni	150.00	40	1.890	1.980	1.140	0.361	13	50
12' Dipole	150.00	40	1.890	1.980	1.140	0.361	13	50
Powerwave 7770.00A	150.00	162	1.890	1.980	1.140	0.361	51	201
6' Yagi	150.00	25	1.890	1.980	1.140	0.361	8	31
CCI HPA-65R-BUU-H8	150.00	204	1.890	1.980	1.140	0.361	64	253
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.361	626	2,476
RFS ATMPP1412D-1CWA	140.00	38	1.646	0.929	0.735	0.216	7	46
RFS ATMAA1412D-1A20	140.00	39	1.646	0.929	0.735	0.216	7	48
Ericsson AIR 21 B4A	140.00	540	1.646	0.929	0.735	0.216	101	669
Andrew LNX-6515DS-A1	140.00	149	1.646	0.929	0.735	0.216	28	185
Flat Low Profile Pla	140.00	1,500	1.646	0.929	0.735	0.216	280	1,857
Stand-Off	123.00	100	1.271	0.082	0.311	0.042	4	124
75" x 16.8" Panel	123.00	31	1.271	0.082	0.311	0.042	1	39
Channel Master Type	10.00	126	0.008	0.052	0.030	0.038	4	156
		30,435	56.404	33.099	23.410	7.088	2,156	37,684

Load Case (0.9 - 0.2Sds) * DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	147.50	289	1.828	1.667	1.025	0.322	80	249
37	142.50	297	1.706	1.144	0.823	0.249	64	256
36	137.50	359	1.588	0.742	0.654	0.184	57	309
35	132.50	367	1.475	0.441	0.513	0.128	41	316
34	127.50	375	1.366	0.222	0.397	0.079	26	323
33	124.00	152	1.292	0.109	0.329	0.050	7	131
32	121.50	232	1.240	0.046	0.286	0.031	6	200
31	117.50	393	1.160	-0.030	0.226	0.005	2	339
30	112.50	401	1.063	-0.088	0.165	-0.020	-7	346
29	110.00	0	1.016	-0.105	0.140	-0.030	0	0
28	107.50	482	0.971	-0.116	0.117	-0.038	-16	415
27	102.50	492	0.883	-0.121	0.081	-0.048	-21	424
26	97.50	503	0.799	-0.112	0.053	-0.051	-22	434
25	93.00	410	0.727	-0.095	0.035	-0.047	-17	354
24	90.50	170	0.688	-0.083	0.028	-0.042	-6	147
23	87.50	859	0.643	-0.068	0.020	-0.034	-26	740
22	82.50	869	0.572	-0.043	0.012	-0.018	-13	749
21	77.50	880	0.505	-0.018	0.007	0.001	1	758
20	74.25	266	0.463	-0.003	0.006	0.013	3	229
19	71.75	941	0.432	0.008	0.006	0.022	18	811
18	70.00	0	0.412	0.014	0.006	0.027	0	0
17	67.50	987	0.383	0.023	0.007	0.034	29	850
16	62.50	1,000	0.328	0.039	0.010	0.044	38	862
15	57.50	1,013	0.278	0.050	0.014	0.051	44	873
14	52.50	1,027	0.232	0.058	0.019	0.053	48	885
13	47.50	1,040	0.190	0.064	0.025	0.054	49	897
12	42.50	1,054	0.152	0.068	0.030	0.054	49	908
11	37.83	924	0.120	0.070	0.034	0.053	42	797
10	35.33	229	0.105	0.071	0.037	0.052	10	197

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

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Customer: T-MOBILE

9	33.25	1,212	0.093	0.071	0.038	0.052	54	1,045
8	30.75	355	0.079	0.072	0.040	0.051	16	306
7	27.50	1,194	0.064	0.072	0.041	0.050	52	1,029
6	22.50	1,210	0.043	0.070	0.042	0.049	51	1,043
5	17.50	1,226	0.026	0.067	0.040	0.046	49	1,057
4	12.50	1,242	0.013	0.059	0.034	0.042	45	1,071
3	9.75	125	0.008	0.052	0.030	0.038	4	108
2	7.25	1,134	0.004	0.043	0.024	0.033	32	977
1	2.50	1,275	0.001	0.018	0.010	0.016	18	1,099
Andrew ABT-DMDF-	150.00	3	1.890	1.980	1.140	0.361	1	3
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	11
Powerwave TT19-	150.00	96	1.890	1.980	1.140	0.361	30	83
Raycap DC6-48-60-18-	150.00	33	1.890	1.980	1.140	0.361	10	28
Ericsson RRUS 11 (Ba	150.00	150	1.890	1.980	1.140	0.361	47	129
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.361	50	137
12' Omni	150.00	40	1.890	1.980	1.140	0.361	13	34
12' Dipole	150.00	40	1.890	1.980	1.140	0.361	13	34
Powerwave 7770.00A	150.00	162	1.890	1.980	1.140	0.361	51	140
6' Yagi	150.00	25	1.890	1.980	1.140	0.361	8	22
CCI HPA-65R-BUU-H8	150.00	204	1.890	1.980	1.140	0.361	64	176
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.361	626	1,724
RFS ATMPP1412D-1CWA	140.00	38	1.646	0.929	0.735	0.216	7	32
RFS ATMAA1412D-1A20	140.00	39	1.646	0.929	0.735	0.216	7	34
Ericsson AIR 21 B4A	140.00	540	1.646	0.929	0.735	0.216	101	465
Andrew LNX-6515DS-A1	140.00	149	1.646	0.929	0.735	0.216	28	129
Flat Low Profile Pla	140.00	1,500	1.646	0.929	0.735	0.216	280	1,293
Stand-Off	123.00	100	1.271	0.082	0.311	0.042	4	86
75" x 16.8" Panel	123.00	31	1.271	0.082	0.311	0.042	1	27
Channel Master Type	10.00	126	0.008	0.052	0.030	0.038	4	109
		30,435	56.404	33.099	23.410	7.088	2,156	26,229

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.11	-2.15	0.00	-263.73	0.00	263.73	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.077
5.00	-34.70	-2.13	0.00	-252.99	0.00	252.99	3,114.35	1,557.18	4,645.51	2,294.24	0.02	-0.03	0.075
9.50	-34.55	-2.14	0.00	-243.40	0.00	243.40	3,074.93	1,537.47	4,496.49	2,220.65	0.06	-0.06	0.074
9.50	-34.55	-2.14	0.00	-243.40	0.00	243.40	3,074.93	1,537.47	4,496.49	2,220.65	0.06	-0.06	0.074
10.00	-32.85	-2.09	0.00	-242.33	0.00	242.33	3,070.50	1,535.25	4,480.00	2,212.50	0.06	-0.06	0.074
15.00	-31.33	-2.06	0.00	-231.86	0.00	231.86	3,025.61	1,512.80	4,315.88	2,131.45	0.14	-0.09	0.072
20.00	-29.83	-2.02	0.00	-221.56	0.00	221.56	2,979.67	1,489.84	4,153.23	2,051.12	0.25	-0.12	0.071
25.00	-28.35	-1.98	0.00	-211.46	0.00	211.46	2,932.70	1,466.35	3,992.16	1,971.58	0.39	-0.15	0.069
30.00	-27.91	-1.97	0.00	-201.55	0.00	201.55	2,875.19	1,437.60	3,820.15	1,886.63	0.56	-0.18	0.068
31.50	-26.41	-1.92	0.00	-198.59	0.00	198.59	2,854.28	1,427.14	3,764.46	1,859.13	0.62	-0.19	0.067
35.00	-26.13	-1.92	0.00	-191.87	0.00	191.87	2,805.45	1,402.73	3,636.04	1,795.70	0.76	-0.21	0.066
35.67	-24.98	-1.88	0.00	-190.59	0.00	190.59	2,248.06	1,124.03	2,973.88	1,468.69	0.79	-0.21	0.075
40.00	-23.68	-1.83	0.00	-182.45	0.00	182.45	2,218.58	1,109.29	2,872.19	1,418.47	1.00	-0.24	0.074
45.00	-22.39	-1.79	0.00	-173.28	0.00	173.28	2,183.59	1,091.79	2,755.72	1,360.95	1.27	-0.27	0.071
50.00	-21.12	-1.75	0.00	-164.31	0.00	164.31	2,147.56	1,073.78	2,640.25	1,303.92	1.58	-0.31	0.069
55.00	-19.86	-1.71	0.00	-155.56	0.00	155.56	2,110.50	1,055.25	2,525.88	1,247.44	1.92	-0.34	0.067
60.00	-18.62	-1.68	0.00	-147.00	0.00	147.00	2,072.39	1,036.20	2,412.72	1,191.55	2.29	-0.38	0.065
65.00	-17.40	-1.65	0.00	-138.62	0.00	138.62	2,033.25	1,016.62	2,300.87	1,136.31	2.71	-0.41	0.063
70.00	-17.40	-1.65	0.00	-130.38	0.00	130.38	1,982.07	991.04	2,178.36	1,075.81	3.15	-0.44	0.061
70.00	-16.23	-1.63	0.00	-130.37	0.00	130.37	1,982.06	991.03	2,178.34	1,075.80	3.15	-0.44	0.060
73.50	-15.90	-1.63	0.00	-124.67	0.00	124.67	1,473.95	736.98	1,624.53	802.30	3.49	-0.47	0.069
75.00	-14.81	-1.63	0.00	-122.22	0.00	122.22	1,466.26	733.13	1,601.72	791.03	3.63	-0.48	0.068
80.00	-13.73	-1.64	0.00	-114.09	0.00	114.09	1,439.98	719.99	1,526.06	753.66	4.15	-0.51	0.065
85.00	-12.67	-1.66	0.00	-105.90	0.00	105.90	1,412.66	706.33	1,451.06	716.62	4.71	-0.55	0.062
90.00	-12.46	-1.67	0.00	-97.59	0.00	97.59	1,384.29	692.15	1,376.80	679.95	5.30	-0.58	0.058
91.00	-11.95	-1.69	0.00	-95.92	0.00	95.92	1,378.50	689.25	1,362.04	672.66	5.43	-0.59	0.057
91.00	-11.95	-1.69	0.00	-95.92	0.00	95.92	1,378.50	689.25	1,362.04	672.66	5.43	-0.59	0.151
95.00	-11.32	-1.71	0.00	-89.18	0.00	89.18	1,354.89	677.44	1,303.39	643.69	5.93	-0.62	0.147
100.00	-10.71	-1.74	0.00	-80.61	0.00	80.61	1,324.45	662.22	1,230.93	607.91	6.63	-0.71	0.141
105.00	-10.11	-1.77	0.00	-71.89	0.00	71.89	1,292.96	646.48	1,159.52	572.64	7.42	-0.80	0.133
110.00	-10.11	-1.78	0.00	-63.05	0.00	63.05	1,247.09	623.55	1,077.74	532.25	8.31	-0.89	0.127
110.00	-10.11	-1.78	0.00	-63.05	0.00	63.05	853.22	426.61	741.75	366.32	8.31	-0.89	0.184
110.00	-9.61	-1.79	0.00	-63.05	0.00	63.05	853.22	426.61	741.74	366.32	8.31	-0.89	0.183
115.00	-9.12	-1.79	0.00	-54.12	0.00	54.12	834.98	417.49	698.66	345.04	9.31	-1.01	0.168
120.00	-8.83	-1.80	0.00	-45.16	0.00	45.16	815.69	407.84	655.93	323.94	10.42	-1.12	0.150
123.00	-8.48	-1.78	0.00	-39.77	0.00	39.77	803.62	401.81	630.51	311.38	11.14	-1.18	0.138
125.00	-8.01	-1.76	0.00	-36.20	0.00	36.20	795.36	397.68	613.66	303.06	11.65	-1.22	0.130
130.00	-7.56	-1.72	0.00	-27.41	0.00	27.41	774.00	387.00	571.95	282.46	12.98	-1.31	0.107
135.00	-7.11	-1.66	0.00	-18.82	0.00	18.82	751.59	375.80	530.89	262.19	14.39	-1.38	0.081
140.00	-3.95	-1.10	0.00	-10.52	0.00	10.52	728.15	364.07	490.59	242.29	15.87	-1.44	0.049
145.00	-3.60	-1.01	0.00	-5.04	0.00	5.04	694.01	347.01	444.97	219.76	17.39	-1.47	0.028
150.00	0.00	-0.92	0.00	0.00	0.00	0.00	659.14	329.57	401.13	198.10	18.94	-1.48	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.13	-2.14	0.00	-258.10	0.00	258.10	3,157.17	1,578.58	4,812.28	2,376.61	0.00	0.00	0.073
5.00	-24.15	-2.12	0.00	-247.38	0.00	247.38	3,114.35	1,557.18	4,645.51	2,294.24	0.02	-0.03	0.071
9.50	-24.04	-2.12	0.00	-237.83	0.00	237.83	3,074.93	1,537.47	4,496.49	2,220.65	0.05	-0.05	0.070
9.50	-24.04	-2.12	0.00	-237.83	0.00	237.83	3,074.93	1,537.47	4,496.49	2,220.65	0.05	-0.05	0.070
10.00	-22.86	-2.08	0.00	-236.77	0.00	236.77	3,070.50	1,535.25	4,480.00	2,212.50	0.06	-0.06	0.070
15.00	-21.81	-2.04	0.00	-226.36	0.00	226.36	3,025.61	1,512.80	4,315.88	2,131.45	0.14	-0.09	0.068
20.00	-20.76	-2.00	0.00	-216.16	0.00	216.16	2,979.67	1,489.84	4,153.23	2,051.12	0.24	-0.12	0.067
25.00	-19.73	-1.96	0.00	-206.16	0.00	206.16	2,932.70	1,466.35	3,992.16	1,971.58	0.38	-0.15	0.065
30.00	-19.43	-1.95	0.00	-196.38	0.00	196.38	2,875.19	1,437.60	3,820.15	1,886.63	0.55	-0.18	0.064
31.50	-18.38	-1.89	0.00	-193.47	0.00	193.47	2,854.28	1,427.14	3,764.46	1,859.13	0.60	-0.18	0.064
35.00	-18.18	-1.89	0.00	-186.84	0.00	186.84	2,805.45	1,402.73	3,636.04	1,795.70	0.75	-0.21	0.062
35.67	-17.39	-1.85	0.00	-185.59	0.00	185.59	2,248.06	1,124.03	2,973.88	1,468.69	0.78	-0.21	0.072
40.00	-16.48	-1.80	0.00	-177.59	0.00	177.59	2,218.58	1,109.29	2,872.19	1,418.47	0.98	-0.24	0.070
45.00	-15.58	-1.76	0.00	-168.59	0.00	168.59	2,183.59	1,091.79	2,755.72	1,360.95	1.24	-0.27	0.068
50.00	-14.69	-1.71	0.00	-159.80	0.00	159.80	2,147.56	1,073.78	2,640.25	1,303.92	1.54	-0.30	0.066
55.00	-13.82	-1.67	0.00	-151.24	0.00	151.24	2,110.50	1,055.25	2,525.88	1,247.44	1.87	-0.33	0.064
60.00	-12.96	-1.64	0.00	-142.88	0.00	142.88	2,072.39	1,036.20	2,412.72	1,191.55	2.24	-0.37	0.062
65.00	-12.11	-1.61	0.00	-134.70	0.00	134.70	2,033.25	1,016.62	2,300.87	1,136.31	2.64	-0.40	0.060
70.00	-12.11	-1.61	0.00	-126.67	0.00	126.67	1,982.07	991.04	2,178.36	1,075.81	3.07	-0.43	0.058
70.00	-11.29	-1.59	0.00	-126.67	0.00	126.67	1,982.06	991.03	2,178.34	1,075.80	3.07	-0.43	0.057
73.50	-11.06	-1.59	0.00	-121.10	0.00	121.10	1,473.95	736.98	1,624.53	802.30	3.40	-0.45	0.066
75.00	-10.31	-1.58	0.00	-118.72	0.00	118.72	1,466.26	733.13	1,601.72	791.03	3.54	-0.46	0.065
80.00	-9.56	-1.60	0.00	-110.80	0.00	110.80	1,439.98	719.99	1,526.06	753.66	4.05	-0.50	0.062
85.00	-8.81	-1.62	0.00	-102.81	0.00	102.81	1,412.66	706.33	1,451.06	716.62	4.59	-0.53	0.059
90.00	-8.67	-1.63	0.00	-94.71	0.00	94.71	1,384.29	692.15	1,376.80	679.95	5.17	-0.57	0.055
91.00	-8.31	-1.65	0.00	-93.08	0.00	93.08	1,378.50	689.25	1,362.04	672.66	5.29	-0.57	0.055
91.00	-8.31	-1.65	0.00	-93.08	0.00	93.08	1,378.50	689.25	1,362.04	672.66	5.29	-0.57	0.144
95.00	-7.88	-1.67	0.00	-86.50	0.00	86.50	1,354.89	677.44	1,303.39	643.69	5.78	-0.60	0.140
100.00	-7.45	-1.70	0.00	-78.14	0.00	78.14	1,324.45	662.22	1,230.93	607.91	6.46	-0.69	0.134
105.00	-7.03	-1.72	0.00	-69.65	0.00	69.65	1,292.96	646.48	1,159.52	572.64	7.23	-0.78	0.127
110.00	-7.03	-1.73	0.00	-61.05	0.00	61.05	1,247.09	623.55	1,077.74	532.25	8.09	-0.87	0.120
110.00	-7.03	-1.73	0.00	-61.05	0.00	61.05	853.22	426.61	741.75	366.32	8.09	-0.87	0.175
110.00	-6.68	-1.73	0.00	-61.05	0.00	61.05	853.22	426.61	741.74	366.32	8.09	-0.87	0.175
115.00	-6.34	-1.74	0.00	-52.38	0.00	52.38	834.98	417.49	698.66	345.04	9.06	-0.98	0.159
120.00	-6.14	-1.74	0.00	-43.69	0.00	43.69	815.69	407.84	655.93	323.94	10.15	-1.08	0.142
123.00	-5.89	-1.73	0.00	-38.47	0.00	38.47	803.62	401.81	630.51	311.38	10.85	-1.15	0.131
125.00	-5.57	-1.70	0.00	-35.02	0.00	35.02	795.36	397.68	613.66	303.06	11.34	-1.19	0.123
130.00	-5.25	-1.66	0.00	-26.52	0.00	26.52	774.00	387.00	571.95	282.46	12.62	-1.27	0.101
135.00	-4.94	-1.60	0.00	-18.22	0.00	18.22	751.59	375.80	530.89	262.19	14.00	-1.34	0.076
140.00	-2.74	-1.06	0.00	-10.21	0.00	10.21	728.15	364.07	490.59	242.29	15.43	-1.40	0.046
145.00	-2.50	-0.98	0.00	-4.89	0.00	4.89	694.01	347.01	444.97	219.76	16.91	-1.43	0.026
150.00	0.00	-0.92	0.00	0.00	0.00	0.00	659.14	329.57	401.13	198.10	18.42	-1.44	0.000

Site Number: 302488

Code: ANSI/TIA-222-G

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Site Name: Cntn - Canton, CT

Engineering Number: OAA694941_C4_07

6/13/2017 9:20:39 AM

Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	20.16	0.00	36.48	0.00	0.00	2072.93	110.00	0.98
0.9D + 1.6W	20.14	0.00	27.35	0.00	0.00	2039.96	110.00	0.95
1.2D + 1.0Di + 1.0Wi	5.76	0.00	61.07	0.00	0.00	659.95	110.00	0.38
(1.2 + 0.2Sds) * DL + E ELFM	1.19	0.00	36.11	0.00	0.00	152.16	110.00	0.09
(1.2 + 0.2Sds) * DL + E EMAM	2.15	0.00	36.11	0.00	0.00	263.73	110.00	0.18
(0.9 - 0.2Sds) * DL + E ELFM	1.19	0.00	25.13	0.00	0.00	149.14	110.00	0.08
(0.9 - 0.2Sds) * DL + E EMAM	2.14	0.00	25.13	0.00	0.00	258.10	110.00	0.17
1.0D + 1.0W	5.43	0.00	30.43	0.00	0.00	544.67	110.00	0.26

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Upper Termination Connectors				Lower Termination Connectors				Max Member		
			VQ/I (lb/in)	Applied (kips)	phiVn (kips)	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Pu (kip)	phiPn (kip)	Ratio
0.00	9.50	(4) SOL-#20 All Thre	180.8	7.2	16.8	0.0	12.0	0	0	0.0	12.0	0	0	216.8	313.6	0.691
9.50	91.0	(4) SOL-#20 All Thre	246.7	7.4	16.8	139.2	12.0	12	12	0.0	12.0	0	0	210.7	330.5	0.637

Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	37.38 in
	Pole Thickness	0.375 in
	Plate Length	44 in
	Plate Thickness	2.5 in
	Plate Fy	60 ksi
	Weld Length	0.25 in
	ϕ_s Resistance	1400.64 k-in
	Applied	610.26 k-in
Stiffeners	#	0

Code Rev. **G**

Date 6/13/2017
 Engineer Aaron.Black
 Site # 302488
 Carrier T-MOBILE

Moment 2072.9 k-ft
 Axial 36.5 k

Bolts	#	8
	Bolt Circle	44 in
	(R)adial / (S)quare	S
	Bolt Gap	6 in
	Diameter	2.25 in
	Hole Diameter	2.625 in
	Type	A615-75
	Fy	75 ksi
	Fu	100 ksi
	ϕ_s Resistance	259.82 k
Applied	174.61 k	
Reinforcement	#	4
	DYW. Circle	44.255 in
	Offset Angle	0°
	Type	#20
	Diameter	2.5 in
	Fu	100 ksi
ϕ_s Resistance	392.70 k	
Applied	155.61 k	
Extra Bolts O	#	0

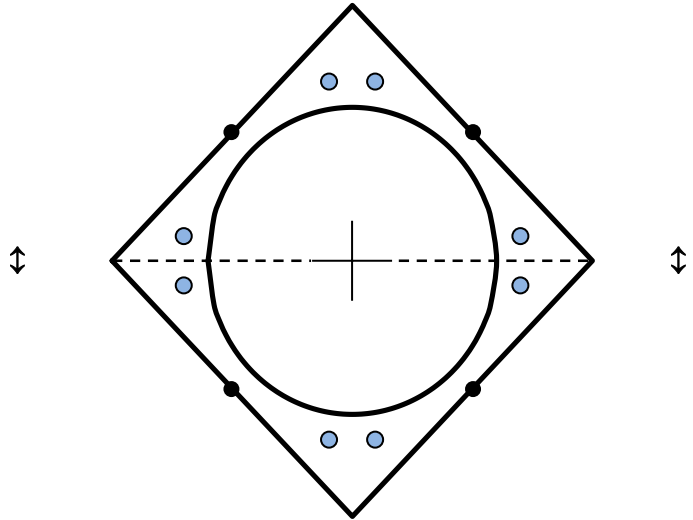


Plate Stress Ratio:
0.44 (Pass)

Bolt Stress Ratio:
0.67 (Pass)

Reinforcement Stress Ratio:
0.40 (Pass)

Base/Flange Plate	Plate Type	Flange @ 110.0 ft
	Pole Diameter	21.25 in
	Pole Thickness	0.1875 in
	Plate Diameter	28.5 in
	Plate Thickness	1 in
	Plate Fy	60 ksi
	Weld Length	0.25 in
	ϕ_s Resistance	148.00 k-in
	Applied	78.47 k-in
	Stiffeners	#
	Thickness	0.25 in
	Length	3 in
	Height	6 in
	Chamfer	0.75 in
	Offset Angle	0°
	Fy	36 ksi

Code Rev. **G**

Date **6/13/2017**
 Engineer **Aaron.Black**
 Site # **302488**
 Carrier **T-MOBILE**

Moment **356.3 k-ft**
 Axial **8.7 k**

Bolts	#	12
	Bolt Circle	25.75 in
	(R)adial / (S)quare	R
	Diameter	1 in
	Hole Diameter	1.125 in
	Type	A490
	Fy	130 ksi
	Fu	150 ksi
	ϕ_s Resistance	68.15 k
	Applied	54.59 k
Reinforcement	#	0
Extra Bolts	#	0

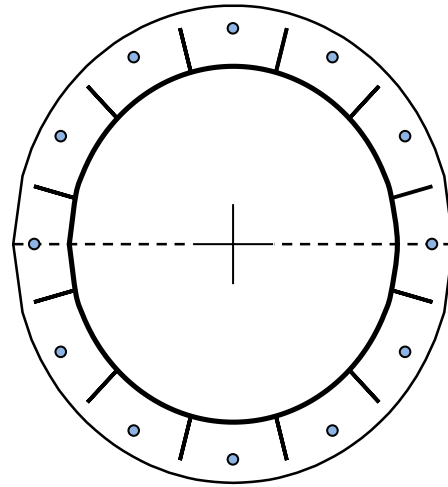
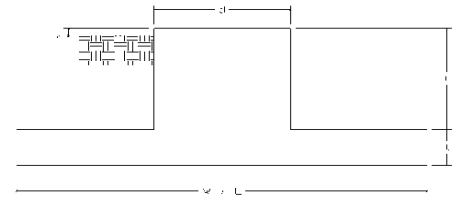


Plate Stress Ratio:
0.53 (Pass)

Bolt Stress Ratio:
0.80 (Pass)

Site Name: Cntn - Canton, CT
 Site Number: 302488
 Engineering Number: OAA694941
 Engineer: Aaron.Black
 Date: 06/13/17
 Tower Type: MP

Program Last Updated: 5/13/2014



Design Loads (Factored) - Analysis per TIA-222-G Standards

Design / Analysis / Mapping:

	Analysis		
Compression/Leg:	36.5 k	Concrete Strength (f'_c):	4000 psi
Uplift/Leg:	0.0 k	Pad Tension Steel Depth:	32.00 in
Total Shear:	20.2 k	ϕ_{Shear} :	0.75
Moment:	2072.9 k-ft	$\phi_{\text{Flexure / Tension}}$:	0.90
Tower + Appurtenance Weight:	36.5 k	$\phi_{\text{Compression}}$:	0.65
Depth to Base of Foundation (l + t - h):	8.00 ft	β :	0.85
Diameter of Pier (d):	5.00 ft	Bottom Pad Rebar Size #:	10
Height of Pier above Ground (h):	0.50	# of Bottom Pad Rebar:	35
Width of Pad (W):	18.00 ft	Pad Bottom Steel Area:	44.45 in ²
Length of Pad (L):	18.00 ft	Pad Steel F_y :	60000 psi
Thickness of Pad (t):	3.00 ft	Top Pad Rebar Size #:	10
Tower Leg Center to Center:	0.00 ft	# of Top Pad Rebar:	35
Number of Tower Legs:	1.0 (1 if MP or GT)	Pad Top Steel Area:	44.45 in ²
Tower Center from Mat Center:	0.00 ft	Pier Rebar Size #:	11
Depth Below Ground Surface to Water Table:	3.50 ft	Pier Steel Area (Single Bar):	1.56 in ²
Unit Weight of Concrete:	150.0 pcf	# of Pier Rebar:	14
Unit Weight of Soil Above Water Table:	115.0 pcf	Pier Steel F_y :	60000 psi
Unit Weight of Water:	62.4 pcf	Pier Cage Diameter:	52.0 in
Unit Weight of Soil Below Water Table:	50.0 pcf	Rebar Strain Limit:	0.008
Friction Angle of Uplift:	15.0 Degrees	Steel Elastic Modulus:	29000 ksi
Ultimate Coefficient of Shear Friction:	0.35	Tie Rebar Size #:	4
Ultimate Compressive Bearing Pressure:	12000.0 psf	Tie Steel Area (Single Bar):	0.20 in ²
Ultimate Passive Pressure on Pad Face:	0.0 psf	Tie Spacing:	12 in
$\phi_{\text{Soil and Concrete Weight}}$:	0.9	Tie Steel F_y :	60000 psi
ϕ_{Soil} :	0.75		

Overturning Moment Usage

Design OTM: 2244.3 k-ft
 OTM Resistance: 2477.2 k-ft
 Design OTM / OTM Resistance: 0.91 Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure: 4624 psf
 Factored Nominal Bearing Pressure: 9000 psf
 Net Bearing Pressure/Factored Nominal Bearing Pressure: 0.51 Result: OK
 Load Direction Controlling Design Bearing Pressure: Diagonal to Pad Edge

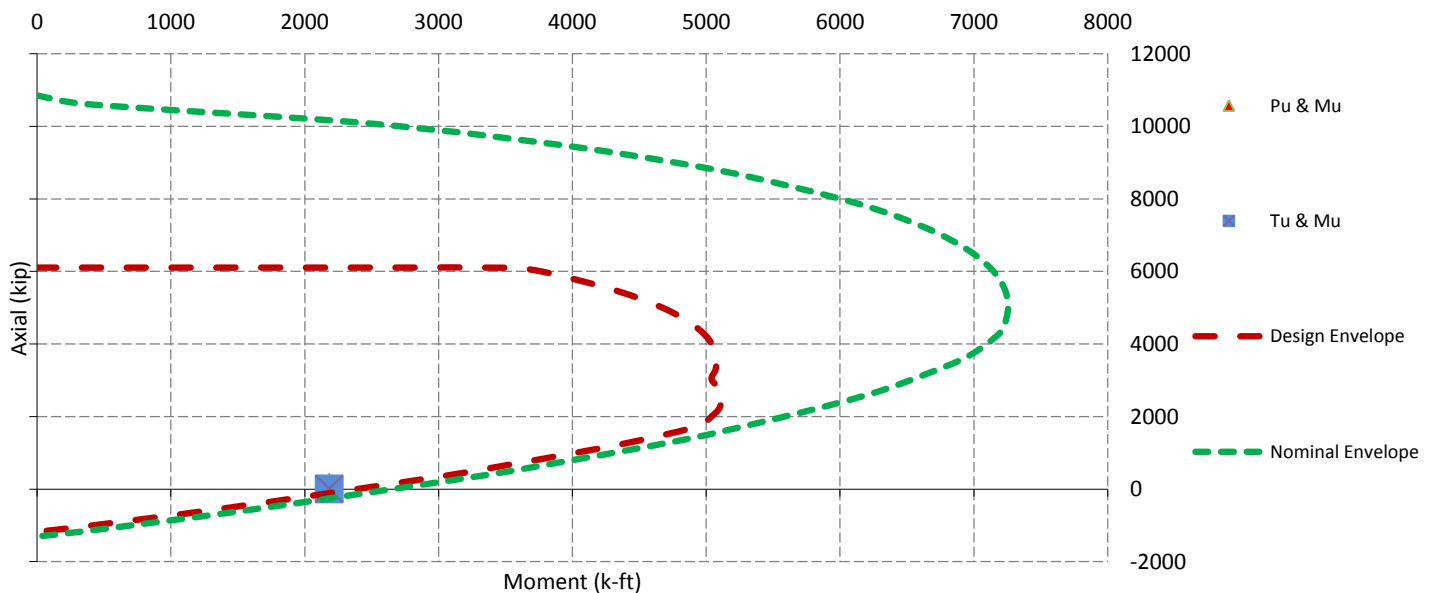
Sliding Factor of Safety

Total Factored Sliding Resistance: 72.3 k
 Sliding Design / Sliding Resistance: 0.28 Result: OK

One Way Shear, Flexural Capacity, and Punching Shear

Factored One Way Shear (V_u):	158.9 k
One Way Shear Capacity (ϕV_c):	550.9 k - ACI11.3.1.1
$V_u / \phi V_c$:	0.29 Result: OK
Load Direction Controlling Shear Capacity:	Diagonal to Pad Edge
Lower Steel Pad Factored Moment (M_u):	900.8 k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	6092.1 k-ft - ACI10.3
$M_u / \phi M_n$:	0.15 Result: OK
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge
Upper Steel Pad Factored Moment (M_u):	450.4 k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	6092.1 k-ft
$M_u / \phi M_n$:	0.07 Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0064 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0064 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0 k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1754.8 k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00 Result: OK
Factored Moment in Pier (M_u):	2183.8 k-ft
Pier Moment Capacity (ϕM_n):	2508.6 k-ft
$M_u / \phi M_n$:	0.87 Result: OK
Factored Shear in Pier (V_u):	20.2 k
Pier Shear Capacity (ϕV_n):	270.0 k
$V_u / \phi V_c$:	0.07 Result: OK
Pier Shear Reinforcement Ratio:	0.0007 No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0 k
Pier Tension Capacity (ϕT_n):	1179.4 k
$T_u / \phi T_n$:	0.00 Result: OK
Factored Compression in Pier (P_u):	36.5 k
Pier Compression Capacity (ϕP_n):	4960.3 k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01 Result: OK
Pier Compression Reinforcement Ratio:	0.008 OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.87 Result: OK

Nominal and Design Moment Capacity and Factored Design Loads





AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: PEC.0001553

302488 - CNTN - CANTON, CONNECTICUT

150 FT MONOPOLE MODIFICATIONS

AS-BUILT SIGN-OFF

DESCRIPTION	SIGNATURE	DATE
CONTRACTOR NAME		
CONTRACTOR REPRESENTATIVE (PRINT NAME)		
CONTRACTOR REPRESENTATIVE (SIGNATURE)		
REDEVELOPMENT P.M. (PRINT NAME)		
REDEVELOPMENT P.M. (SIGNATURE)		

PROJECT SUMMARY

PROJECT DESCRIPTION

SHEET

SHEET TITLE

REV.

ATC PROJECT NUMBER: OAA694941_C6_06

CUSTOMER: T-MOBILE

CUSTOMER SITE NAME: ATC CANTON MONOPOLE

CUSTOMER SITE NUMBER: CTHA532A

SITE ADDRESS: 4 HOFFMANN ROAD
CANTON, CT 06019

DATE: 05/08/17

GEOGRAPHIC COORDINATES: 41.85527
-72.8925

THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER OAA694941_C3_04 DATED 04/06/17. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.

B-1	BILL OF MATERIALS	0
IGN	IBC GENERAL NOTES	0
SIC	SPECIAL INSPECTION CHECKLIST	0
A-1	MODIFICATION PROFILE	0
A-2	REINFORCEMENT INSTALLATION DETAILS	0
A-2A	REINFORCEMENT INSTALLATION DETAILS (CONT'D)	0
A-3	STIFFENER INSTALLATION DETAILS	0
BR-20C	#20 BAR BRACKET [CONCENTRIC]	0
TB-20C-12	#20 BAR TERMINATION BRACKET [CONCENTRIC 12 U-BOLT]	0
#20SB	#20 STEP BOLT BRACKET FABRICATION AND INSTALLATION DETAILS	0
F-1	STIFFENER FABRICATION DETAILS	0



AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	NHK	05/08/17

ATC SITE NUMBER:

302488

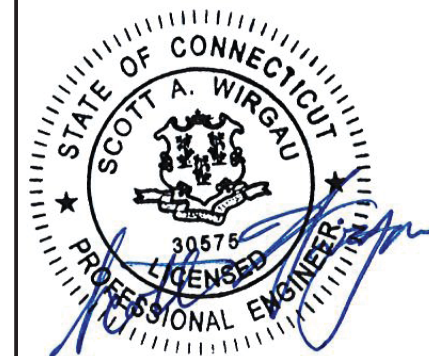
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DATE DRAWN:	05/08/17
ATC JOB NO:	OAA694941_C6_06

COVER

SHEET NUMBER:	REVISION:
COVER	0

BILL OF MATERIALS

QUANTITY REQUIRED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTION	LENGTH	SHEET LIST	PART WEIGHT	WEIGHT (lb)	NOTES
DYWIDAG REINFORCEMENT MATERIAL & HARDWARE								
8	8	----	#20 DYWIDAG THREADBAR	30'-0"	A-1, A-2	501.0	4008	GALVANIZED
4	4	----	#20 DYWIDAG THREADBAR	20'-0"	A-1, A-2	334.0	1336	GALVANIZED
12	12	----	#20 COUPLER W/ (2) HEX NUTS EA.	----	----	----	----	GALVANIZED
124	124	BR-20C	L 6" X 3 1/2" X 3/8"	1'-0"	A-2, BR-20C	12.3	1525	CONCENTRIC
4	4	TB-20C-12	L 6" X 3 1/2" X 3/8"	3'-6 3/4"	A-2, TB-20C-12	43.8	175	CONCENTRIC
360	378	RUH4	RU-BOLT, 5/8"Ø X 3 1/8" C/C	----	BR-20C	----	----	(2) HHN-LKW / GALVANIZED
276	290	LHMB16#1-HDG	HOLLO-BOLT, 5/8"Ø (M16) LINDAPTER	----	----	----	----	HOT-DIPPED GALVANIZED
64	69	#20SB	STEP BOLT WELDMENT	0'-7 1/4"	#20SB	2.5	173	
STIFFENER MATERIAL								
12	12	302488-1	PL 1/4' X 3"	0'-6"	A-3, F-1	1.3	16	
FLANGE BOLTS MAERIAL & HARDWARE - EL: 110'-0"								
12	13	----	BOLT, 1"Ø ASTM A490	3 1/2"	----	----	----	HHN-FW / WITH MAGNI 565 COATING
12	13	----	DTI SQUIRTER WASHER, 1"Ø (A490 RATED)	----	----	----	----	MAGNI 565 COATING
TOTAL WEIGHT (lb)						7,233		



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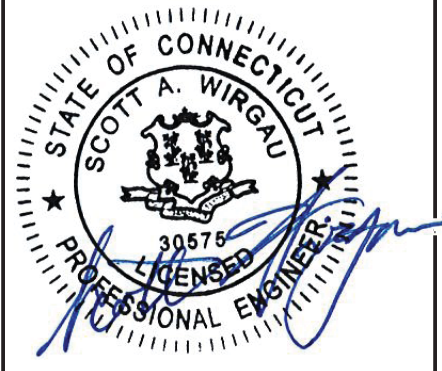
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BILL OF MATERIALS

SHEET NUMBER: B-1	REVISION: 0
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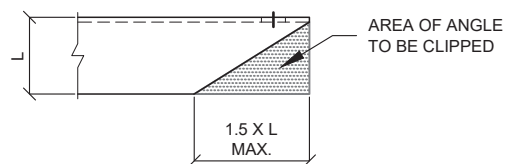
GENERAL

- ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL CODES AND ORDINANCES AND COMPLY WITH ATC MASTER SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ABIDING BY ALL REQUIRED PERMITS.
- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER TIA-1019-A-2011, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
- ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
- ALL U-BOLTS SHALL BE ASTM A36 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
- ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYGUARD CA-14 MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYGUARD 400 WRAP IS NOT ESSENTIAL.
- CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACE/REINFORCE ONE (1) BOLT/MEMBER AT A TIME.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.

MAXIMUM ALLOWABLE ANGLE CLIP



PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1K.

WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
- INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
- ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES. ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E80XX ELECTRODES UNLESS NOTED OTHERWISE.
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2004 (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS.)
- FLANGE BOLTS SHALL BE INSTALLED AND TIGHTENED USING DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS. DTI SQUIRTER WASHERS ARE TO BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
- IN LIEU OF USING DTI SQUIRTER WASHERS, FLANGE BOLTS MAY BE TIGHTENED USING AISC / RCSC "TURN-OF-THE-NUT" METHOD, PENDING APPROVAL BY THE ENGINEER OF RECORD (EOR). TIGHTEN FLANGE BOLTS USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

1/2"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

1/2"	BOLTS 2.25 TO 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
5/8"	BOLTS 2.75 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4"	BOLTS 3.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8"	BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS 5.75 TO 11.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

- SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

8.2.1 TURN-OF-NUT PRETENSIONING

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

APPLICABLE CODES AND STANDARDS

- ANSI/TIA: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-G EDITION.
- 2016 CONNECTICUT STATE BUILDING CODE.
- 2012 INTERNATIONAL BUILDING CODE.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-02.
- CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

SPECIAL INSPECTION

- A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2012, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELD ONLY)
 - HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 EXTENSION FLANGE BOLTS TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD)
- THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2012, SECTION 1704, UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.



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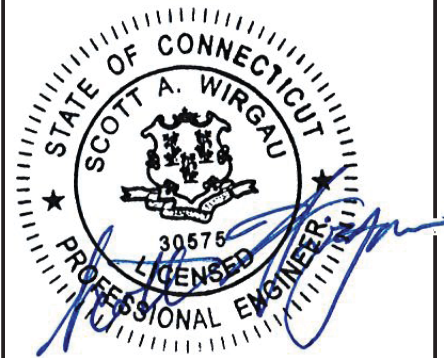
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IBC GENERAL NOTES

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IGN

REVISION:
0

MODIFICATION INSPECTION NOTES

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

SPECIAL INSPECTOR

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR IS REQUIRED TO CONTACT THE SI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE SI TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

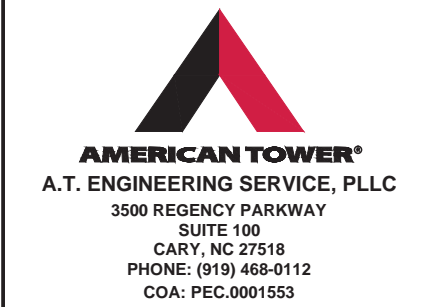
SPECIAL INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S STANDARD SPECIFICATION FOR WIRELESS TOWER SITES.	✓	SI			✓		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	✓	GC	✓				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	✓	SI	✓				
CERTIFIED WELD INSPECTION	INSPECTION AND REPORT OF STRUCTURAL WELDING PERFORMED DURING PROJECT COMPLETED BY A CWI AND INCLUDED WITHIN SI REPORT	✓	GC / TA			✓	✓	
FOUNDATION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF FOUNDATION EXCAVATION, REBAR PLACEMENT, CASING/SHORING/FORMING PLACEMENT, AND ANCHOR TEMPLATE AND ANCHOR PLACEMENT - TO BE SI APPROVED PRIOR TO CONCRETE POUR AND DOCUMENTED IN THE SI REPORT		SI					
ANCHOR, ROCK ANCHOR OR HELICAL PULL-OUT TEST	PULL TESTING OF INSTALLED ANCHORS TO BE COMPLETED AND DOCUMENTED IN SI REPORT		GC / TA					
CONCRETE INSPECTION & VERIFICATION	CONCRETE MIX DESIGN, SLUMP TEST, COMPRESSIVE TESTING, AND SAMPLE GATHERING TECHNIQUES ARE TO BE PROVIDED FOR INCLUSION IN THE SI REPORT. SI SHALL VERIFY CONCRETE PLACEMENT AS REQUIRED BY THE DESIGN DOCUMENTS (INSPECTION FREQUENCY IS MARKED CONTINUOUS)		GC / TA					
DYWIDAG PLACEMENT/ANCHOR BOLT EMBEDMENT - EPOXY/GROUT INSTALL	ANCHOR/BAR EMBEDMENT, HOLE SIZE, EPOXY/GROUT TYPE, INSTALLATION TEMPERATURE AND INSTALLATION SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
BASE PLATE GROUT INSPECTION & VERIFICATION	BASE PLATE GROUTING TYPE AND PLACEMENT SHALL BE CONFIRMED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
EARTHWORK INSPECTION & VERIFICATION	EXCAVATION, FILL, SLOPE, GRADE AND OTHER EARTHWORK REQUIREMENTS PER PLANS SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT		GC / TA					
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.		GC / TA					
GROUND TESTING & VERIFICATION	GC SHALL PROVIDE DOCUMENTATION SHOWING THAT THE GROUNDING SYSTEM SHALL HAVE A MEASURED RESISTANCE TO THE GROUND OF NOT MORE THAN THE RECOMMENDED 10 OHMS. PER THE ATC CONSTRUCTION SPECIFICATION UNDER SECTION 2.15 THIS DOCUMENTATION MUST BE AN INDEPENDENT CERTIFICATION.		GC					
STEEL CONSTRUCTION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF STEEL CONSTRUCTION TO BE PERFORMED BY THE SI. INSPECTION TO INCLUDE VERIFICATION OF NEW CONSTRUCTION OR MODIFICATION OF EXISTING CONSTRUCTION PER ENGINEERED PLANS. DETAILED VERIFICATION SHALL BE INCLUDED IN SI REPORT.	✓	SI			✓	✓	
ON-SITE COLD GALVANIZING VERIFICATION	SI SHALL VERIFY WITH GC ALL COLD GALVANIZATION TYPE AND APPLICATION AND INCLUDE SUMMARY IN SI REPORT	✓	GC			✓	✓	
GUY WIRE TENSIONING & TOWER ALIGNMENT REPORT	GC SHALL PROVIDE SI EVIDENCE OF PROPER GUY TENSIONING AND TOWER PLUMB PER PLANS. SI SHALL VERIFY AND INCLUDE PLUMB AND TENSION REPORTING IN SI REPORT.		GC					
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	✓	GC			✓		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	✓	SI			✓		
TIA INSPECTION	SI SHALL COMPLETE TIA INSPECTION AND PROVIDE SEPARATE TIA INSPECTION DOCUMENTATION TO ATC CM		SI					
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	✓	GC / SI			✓		

NOTE: SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPILE EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.

TABLE KEY:

SI - ATC APPROVED SPECIAL INSPECTOR	CX - CONSTRUCTION
GC - GENERAL CONTRACTOR	CM - CONSTRUCTION MANAGER
TA - 3RD PARTY TESTING AGENCY	ATC - AMERICAN TOWER CORPORATION



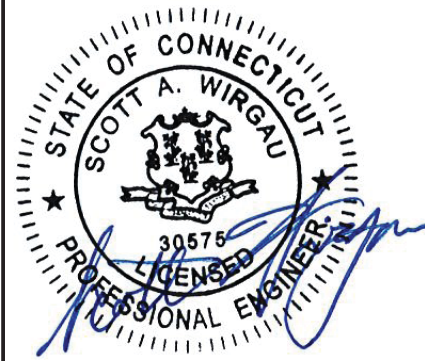
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ATC SITE NAME:
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CONNECTICUT

SITE ADDRESS:
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CANTON, CT 06019



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SPECIAL INSPECTION CHECKLIST	
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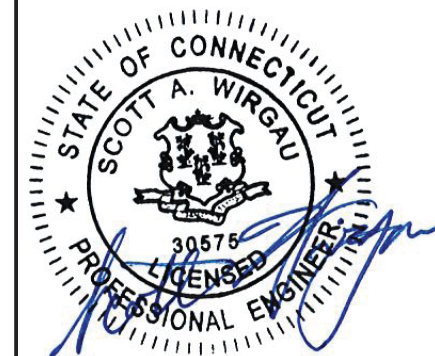
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MODIFICATION PROFILE

SHEET NUMBER: **A-1** REVISION: **0**

T-MOBILE
EL: 140.0' [PROPOSED]

EL: 150.0'
[TOP OF STRUCTURE]

SECTION 4

EL: 110.0'

SECTION 3

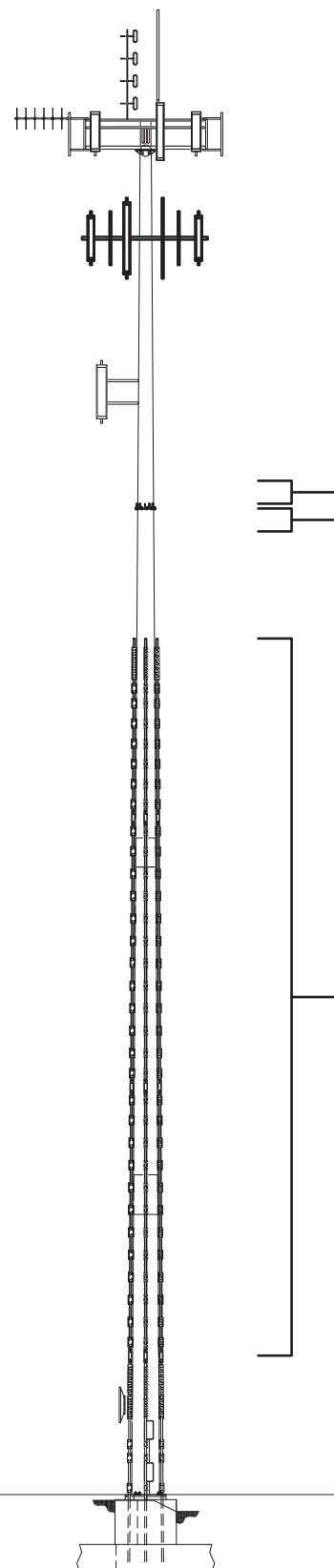
EL: 73.5'

SECTION 2

EL: 35.7'

SECTION 1

EL: 0.0'
[BOTTOM OF STRUCTURE]

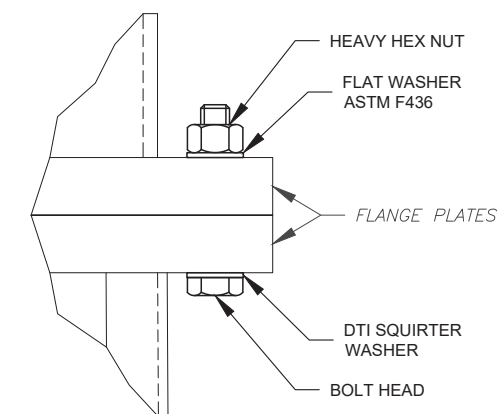


TOWER ELEVATION VIEW

INSTALL STIFFENERS
[PL 1/4" X 3" X 6"]
AT EL: 110.0'±.
SEE SHEET A-3 FOR
INSTALLATION DETAILS.

UPGRADE EXISTING 1"Ø
FLANGE BOLTS WITH (12) NEW
1"Ø X 3/4" A490 BOLTS W/
NUT-FW & DTI SQUIRTER
WASHER EA. AT EL: 110.0'±.
SEE FLANGE BOLT
INSTALLATION DETAIL.

INSTALL (4) #20 DYWIDAG REINFORCEMENT BARS
FROM EL: 15.5' TO 95.5'. SEE SHEETS
A-2 TO A-2A FOR INSTALLATION DETAILS.



FLANGE BOLT INSTALLATION
TYPICAL DETAIL

- ALL FLANGE BOLTS SHALL BE TIGHTENED USING DTI SQUIRTER WASHERS FOR TENSION VERIFICATION. SEE SHEET IGN FOR DETAILS.
- PROPER TORQUE GENERATING EQUIPMENT, WHICH MAY INCLUDE IMPACT WRENCHES, IS REQUIRED IN ORDER TO ACHIEVE DTI COMPRESSION WITH SQUIRT INDICATION. MANUFACTURER GUIDELINES FOR DTI INSTALLATION ARE TO BE FOLLOWED.

NOTES:

- PROPOSED T-MOBILE COAX TO BE INSTALLED INSIDE MONOPOLE.
- CONTACT AMERICAN TOWER FIELD OPERATIONS WHEN EXISTING EQUIPMENT INTERFERES WITH INSTALLATION OF MODIFICATIONS. ONCE APPROVED, EXISTING EQUIPMENT MAY BE TEMPORARILY MOVED DURING INSTALLATION & REINSTALLED TO THE ORIGINAL HEIGHT & LOCATION BY CONTRACTOR POST COMPLETION OF MODIFICATIONS.



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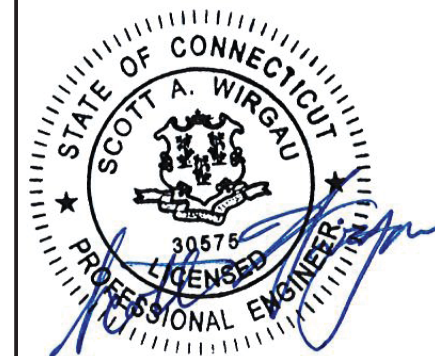
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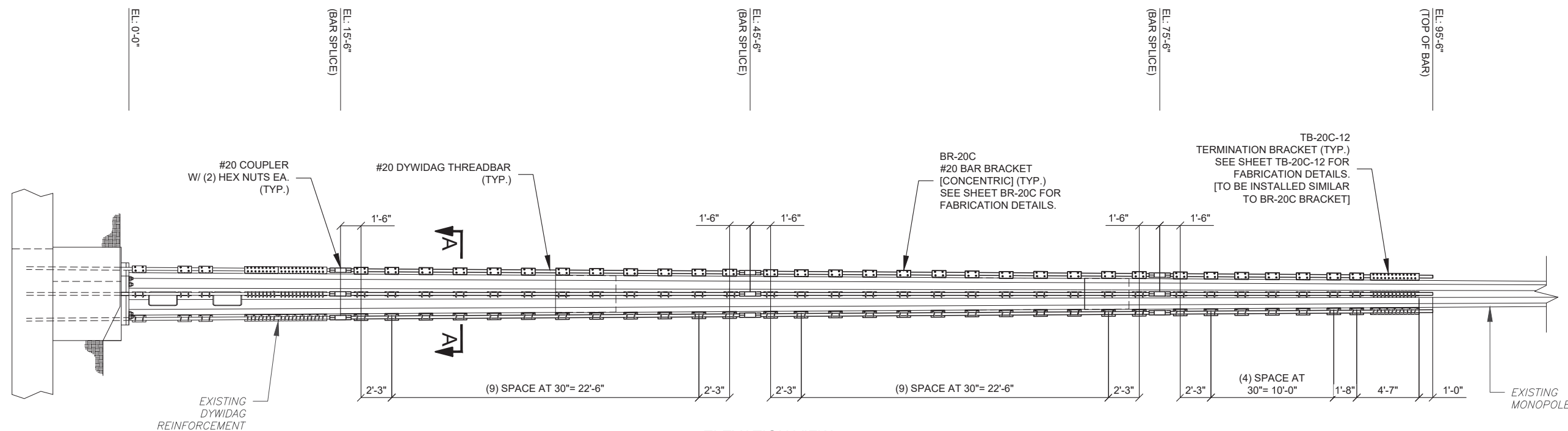


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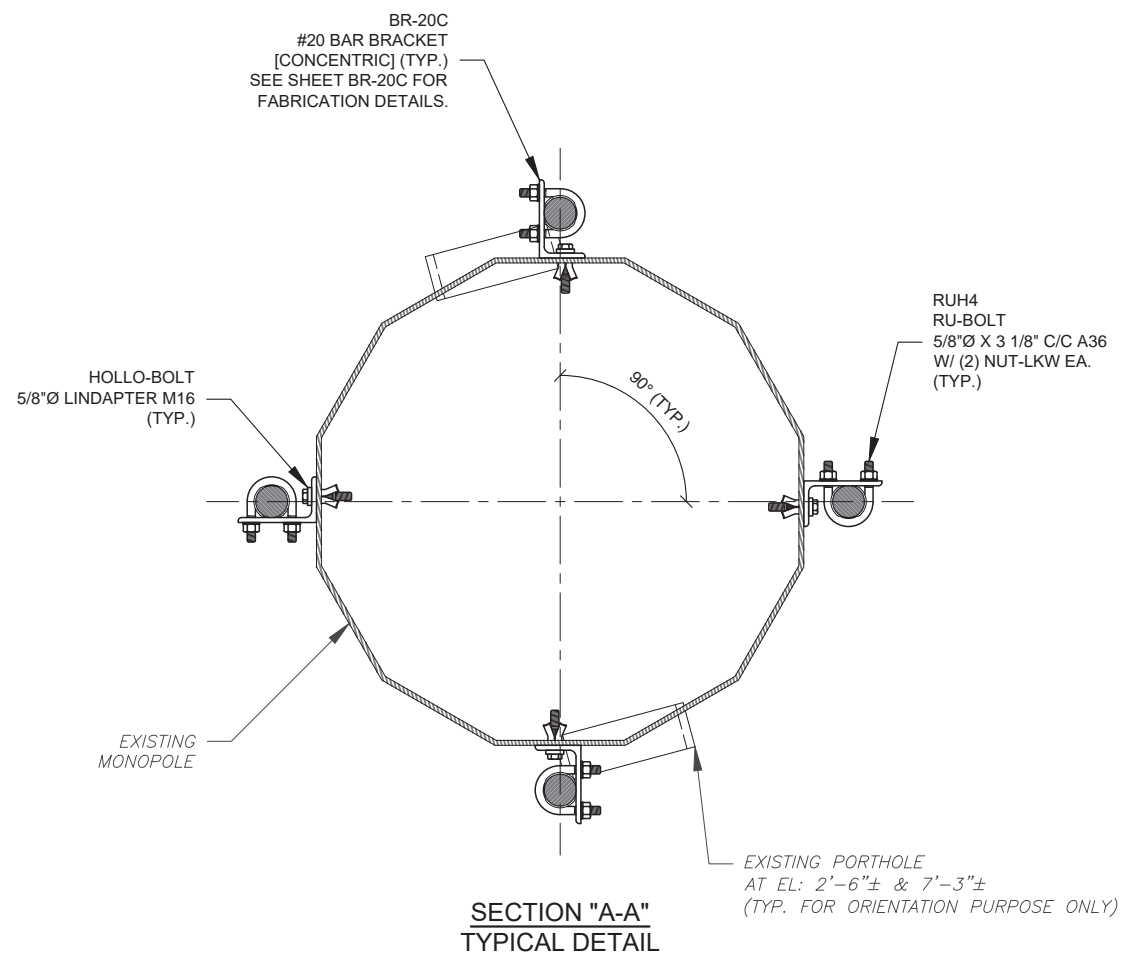
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**REINFORCEMENT
INSTALLATION DETAILS**

SHEET NUMBER: **A-2** REVISION: **0**



**ELEVATION VIEW
#20 BAR BRACKET SPACING DETAIL**



**SECTION "A-A"
TYPICAL DETAIL**

- NOTES:**
1. REPLACE ANY EXISTING STEP BOLTS THAT INTERFERE WITH NEW REINFORCING BARS. THE NEW STEP SHALL BE ATTACHED TO THE REINFORCING BARS IN THE SAME APPROXIMATE LOCATION. SEE SHEET #20SB FOR INSTALLATION DETAILS.
 2. PLACE A BRACKET (BR-20C) DIRECTLY ABOVE AND BELOW ANY EXISTING PORTHOLE AS REQUIRED.
 3. SEE SHEET A-2A FOR #20 BAR BRACKET INSTALLATION DETAILS.



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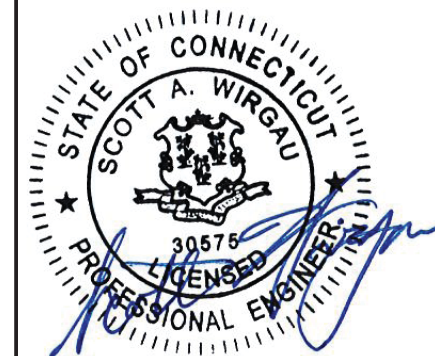
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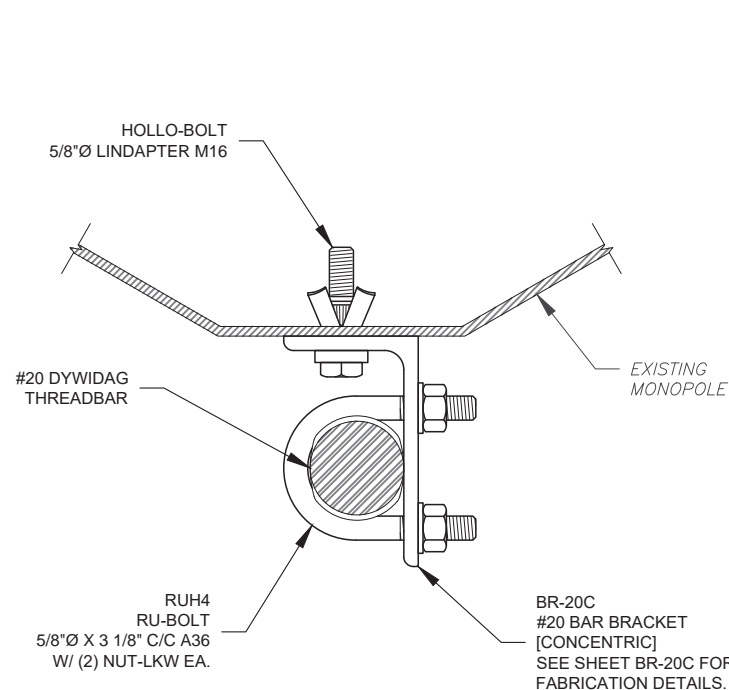


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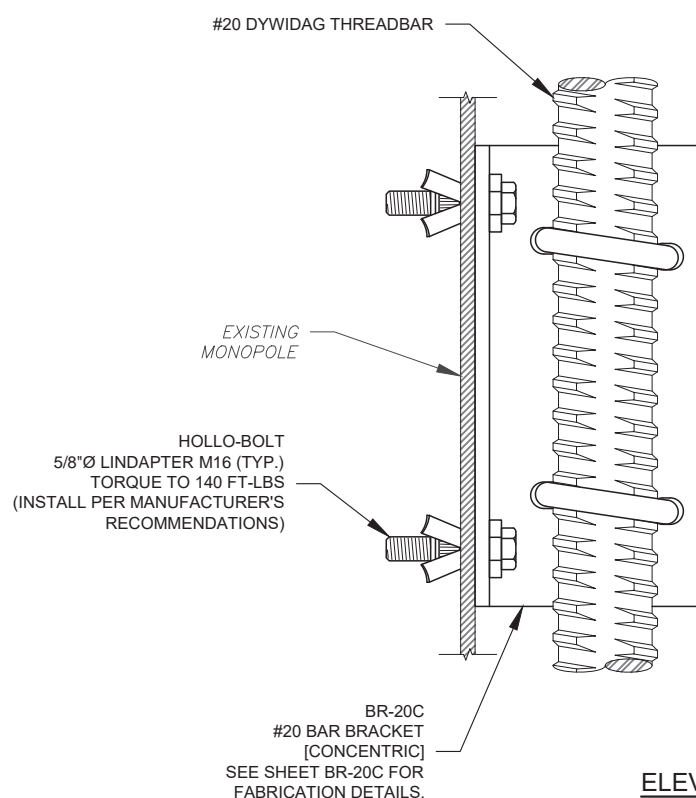
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REINFORCEMENT
INSTALLATION DETAILS
(CONT'D)

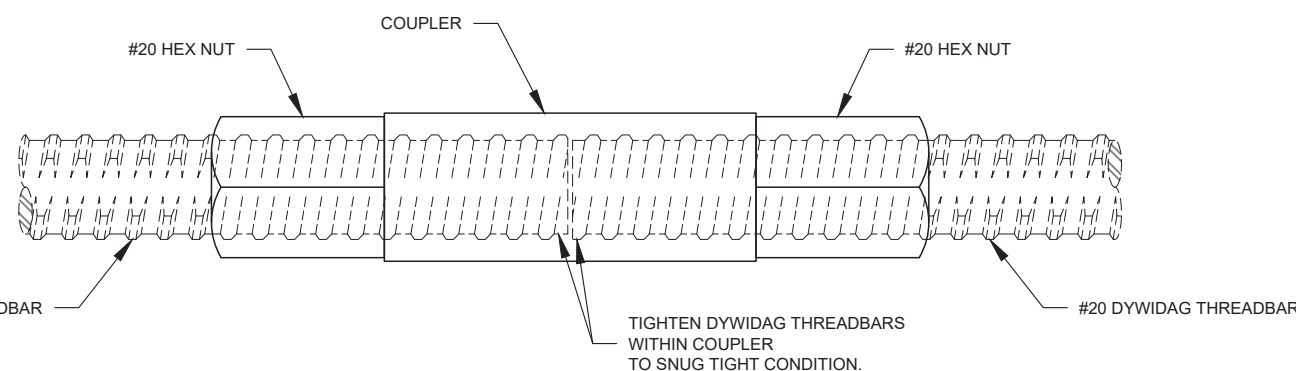
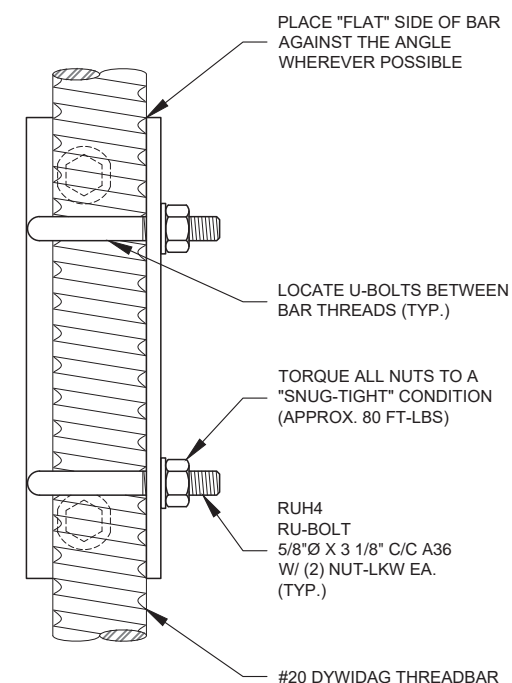
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PLAN VIEW
#20 BAR BRACKET ORIENTATION
[CONCENTRIC]



ELEVATION VIEW
#20 BAR BRACKET ORIENTATION
[CONCENTRIC]



COUPLER DETAIL
TYPICAL DETAIL

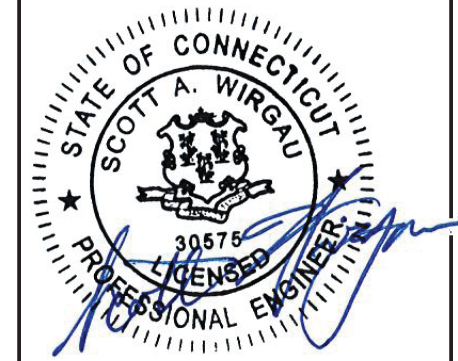


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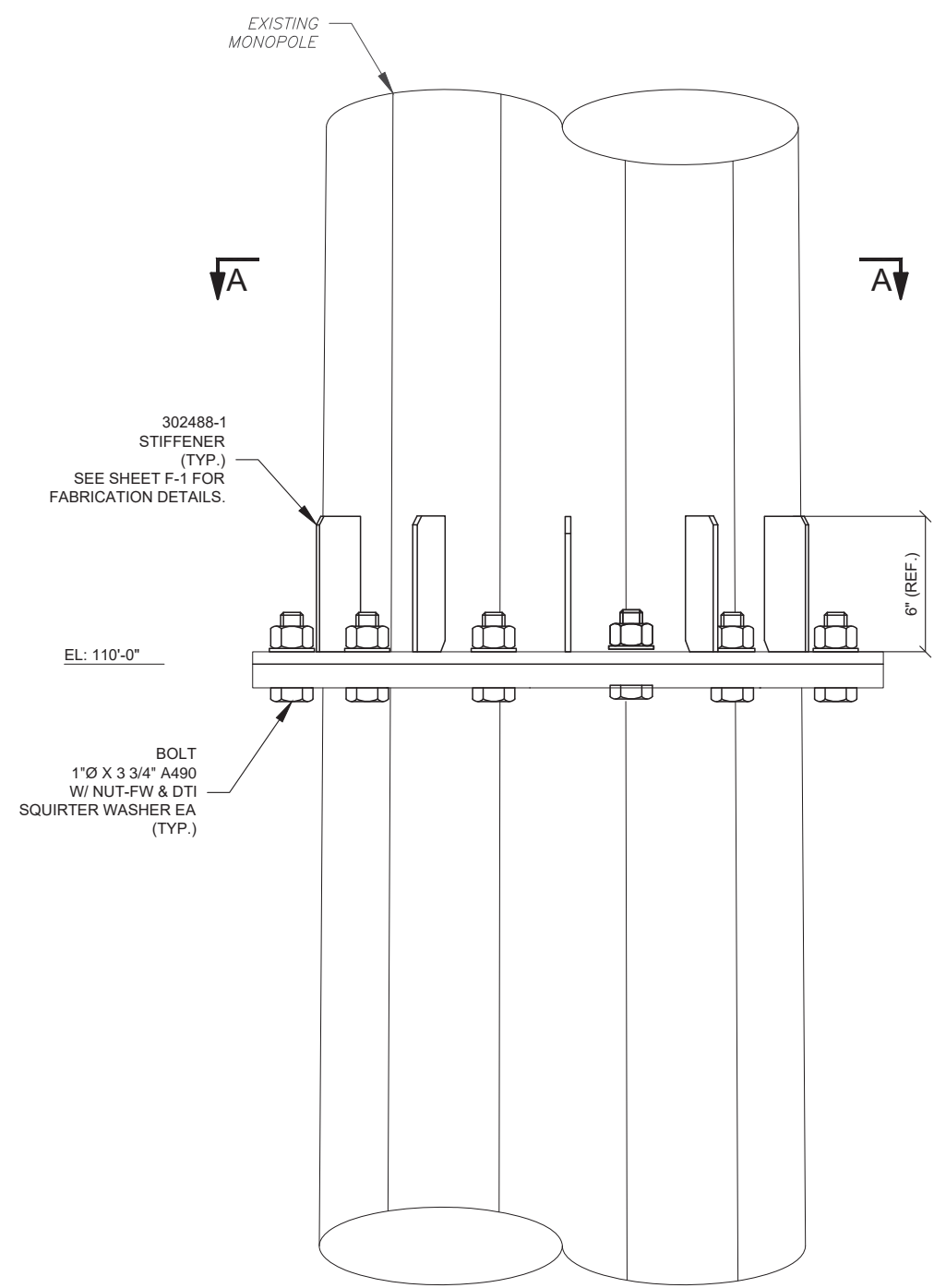


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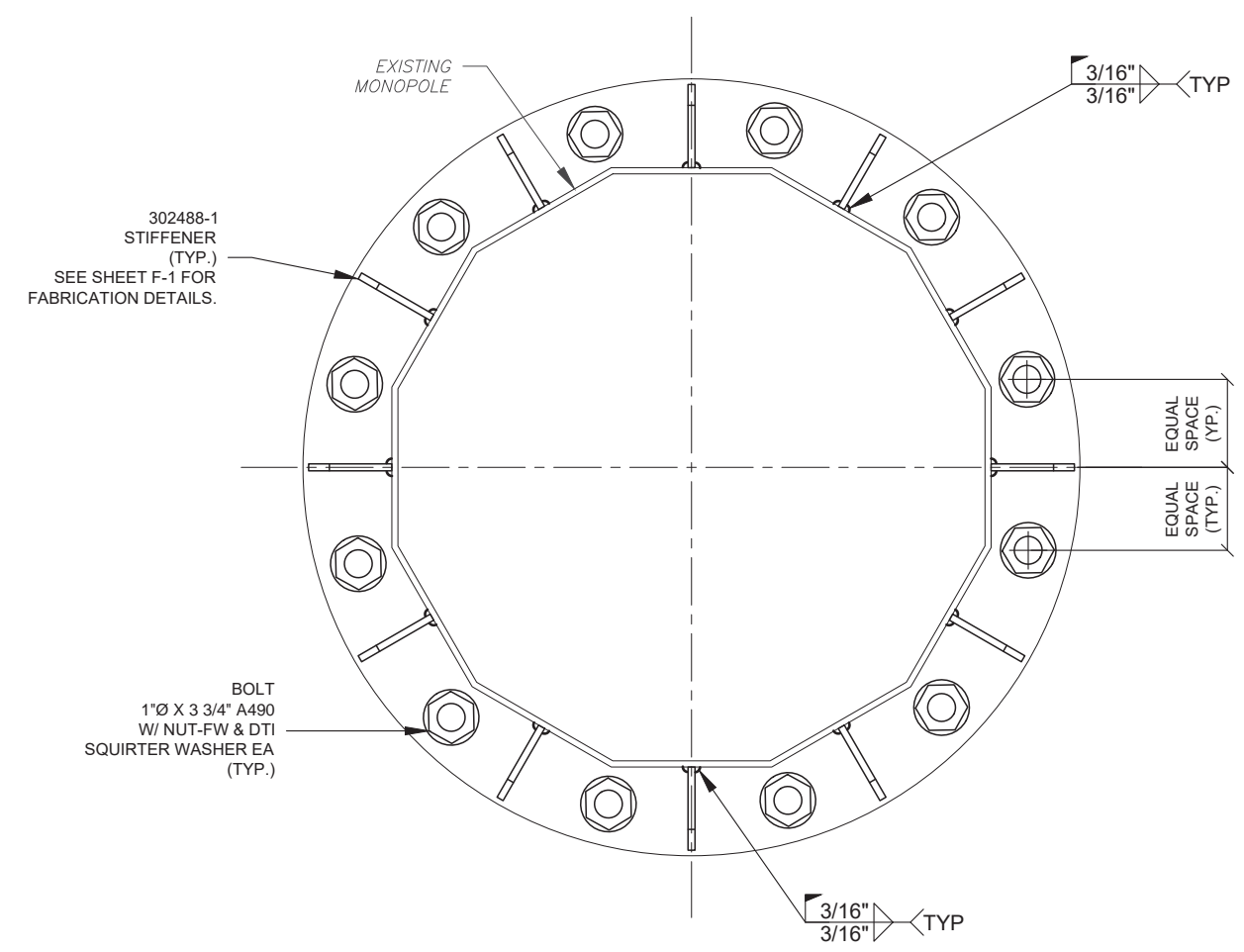
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**STIFFENER
 INSTALLATION DETAILS**

SHEET NUMBER:	REVISION:
A-3	0



**ELEVATION VIEW
 EL: 110'-0"**



**SECTION "A-A"
 TYPICAL DETAIL**



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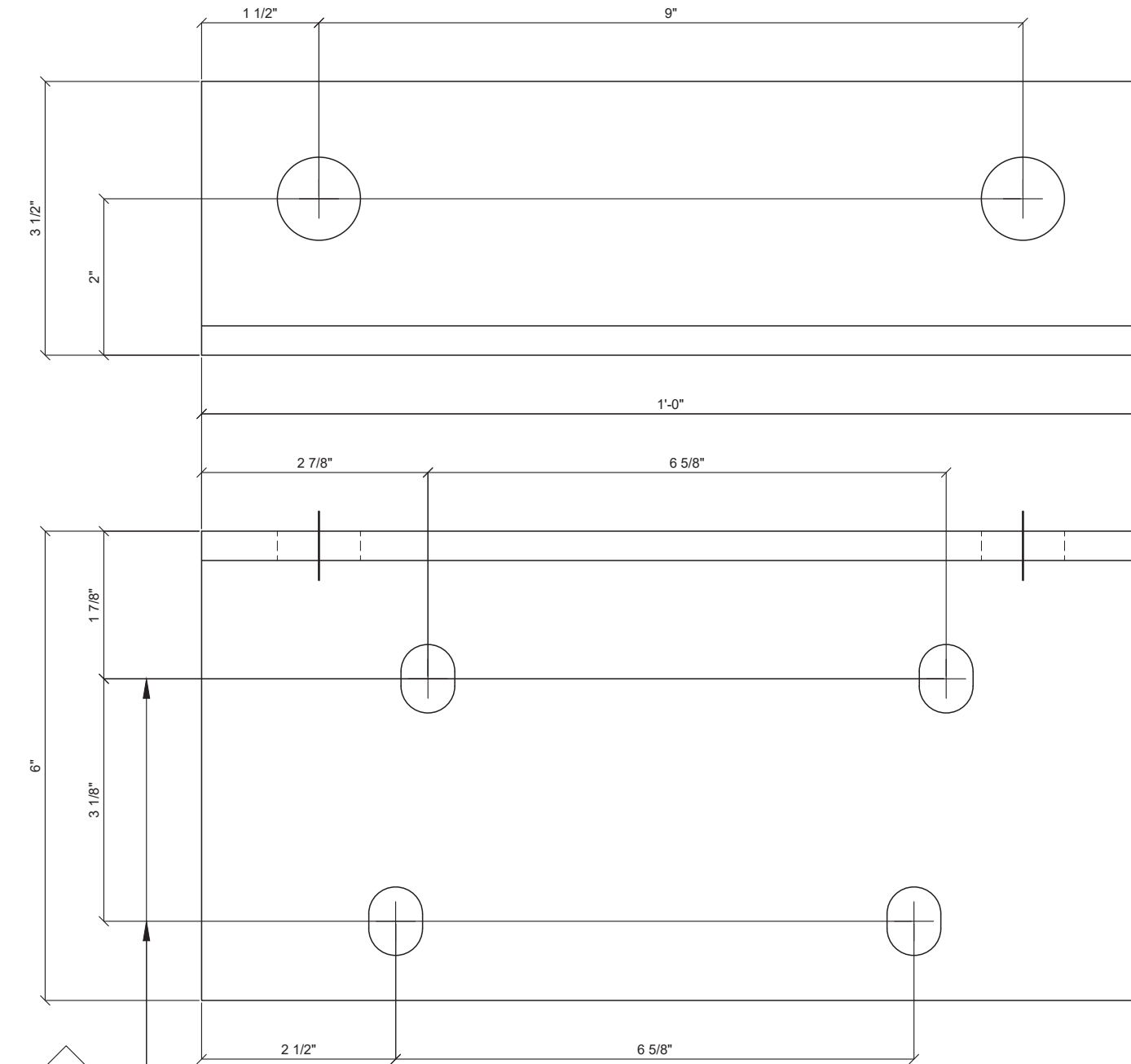


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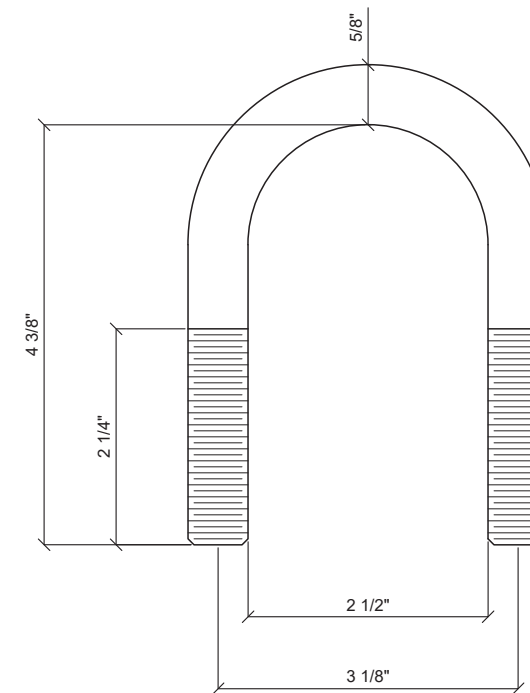
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#20 BAR BRACKET
 [CONCENTRIC]

SHEET NUMBER:
BR-20C
 REVISION:
0



BR-20C
 #20 BAR BRACKET
 [CONCENTRIC]



RUH4
 RU-BOLT 5/8"Ø X 3 1/8" C/C

PART NO.	DESCRIPTION	LENGTH	NOTES	BLK WT	GALV WT
BR-20C	L 6" X 3 1/2" X 3/8"	1'-0"		11.7#	12.3#
MATERIAL: A36		FINISH: GALVANIZED		HOLES: 1 1/16"Ø U.N.O.	

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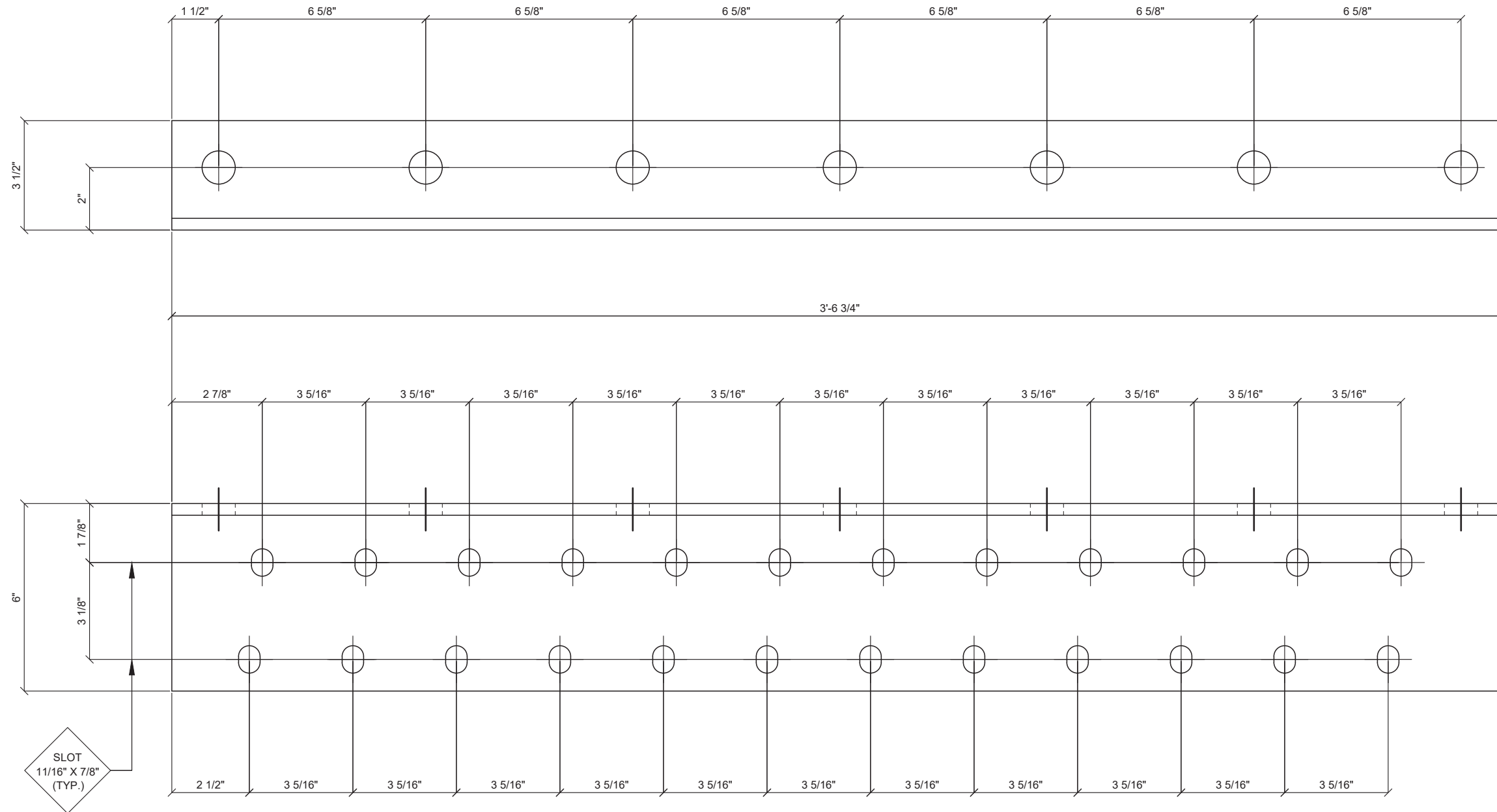


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#20 BAR
 TERMINATION BRACKET
 [CONCENTRIC 12 U-BOLT]

SHEET NUMBER:	REVISION:
TB-20C-12	0



TB-20C-12
 #20 BAR TERMINATION BRACKET
 [CONCENTRIC 12 U-BOLT]

PART NO.	DESCRIPTION	LENGTH	NOTES	BLK WT	GALV WT
TB-20C-12	L 6" X 3 1/2" X 3/8"	3'-6 3/4"		41.7#	43.8#
MATERIAL: A36		FINISH: GALVANIZED	HOLES: 1 1/16" Ø U.N.O.		

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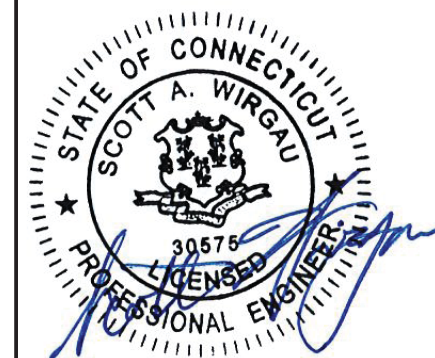
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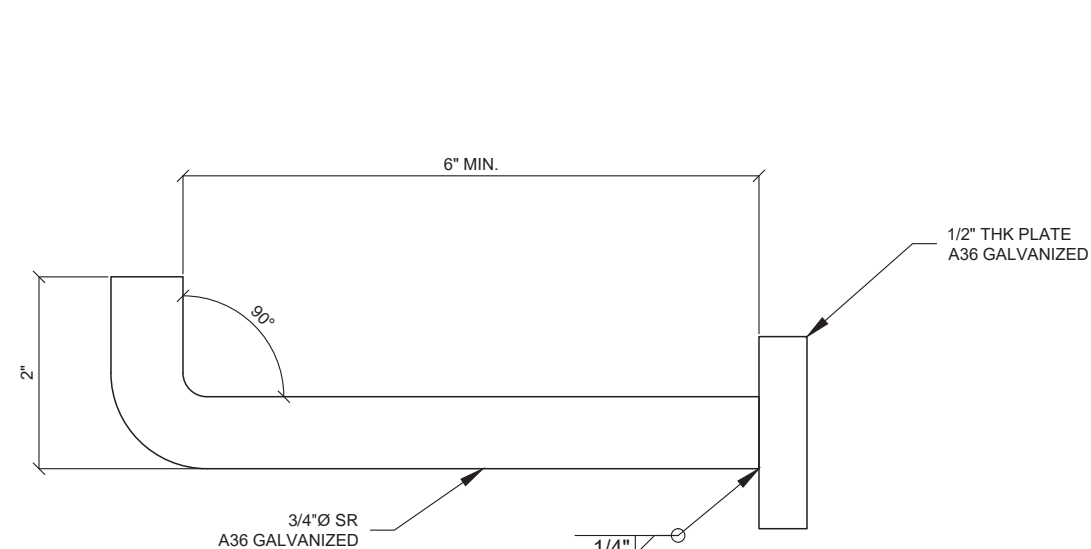
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 FABRICATION AND
 INSTALLATION DETAILS**

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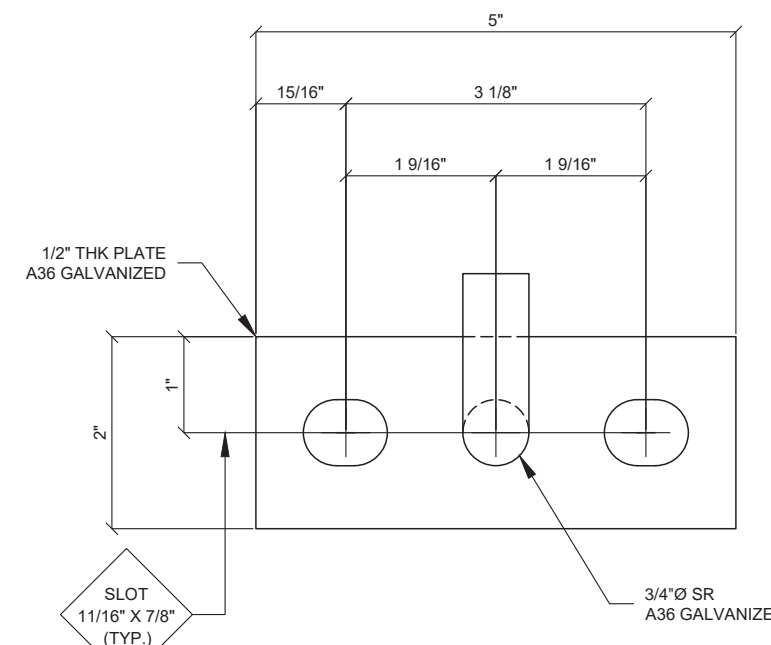
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REVISION:

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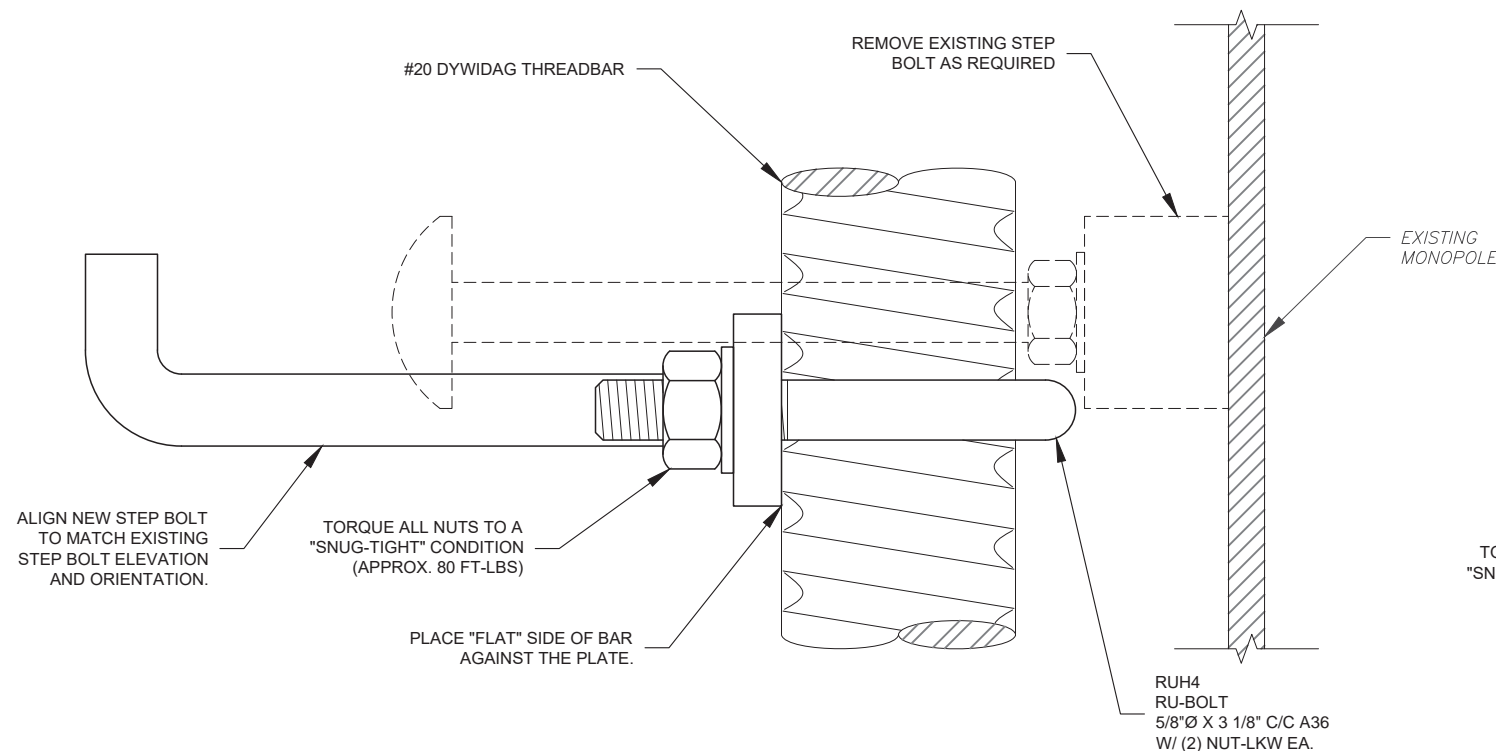


**#20SB
 SIDE VIEW**

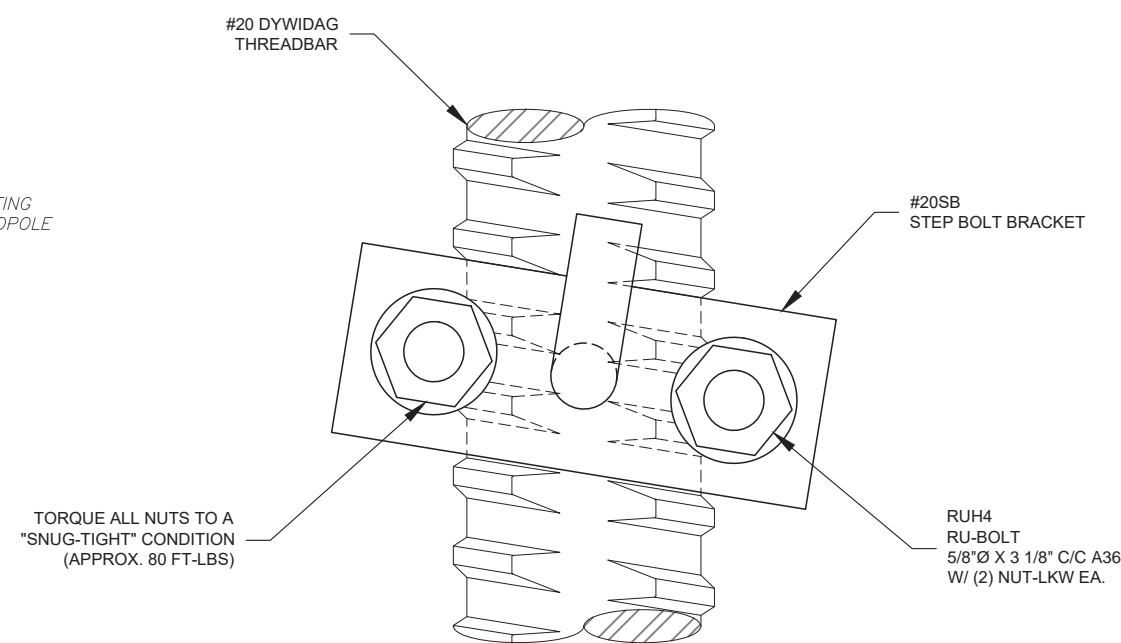


**#20SB
 FRONT VIEW**

NOTE
 STEP PEG SPACING IS NOT TO EXCEED 15\"/>



**#20SB INSTALLATION DETAILS
 SIDE VIEW**



**#20SB INSTALLATION DETAILS
 FRONT VIEW**

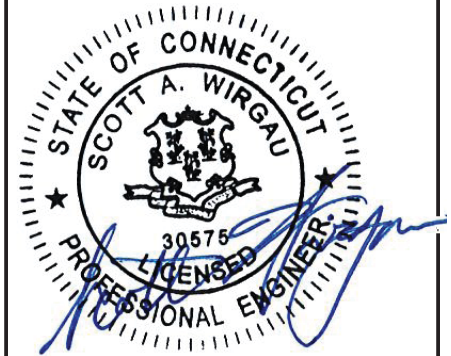


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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	NHK	05/08/17

ATC SITE NUMBER:
 302488
 ATC SITE NAME:
 CNTN - CANTON
 CONNECTICUT
 SITE ADDRESS:
 4 HOFFMANN ROAD
 CANTON, CT 06019

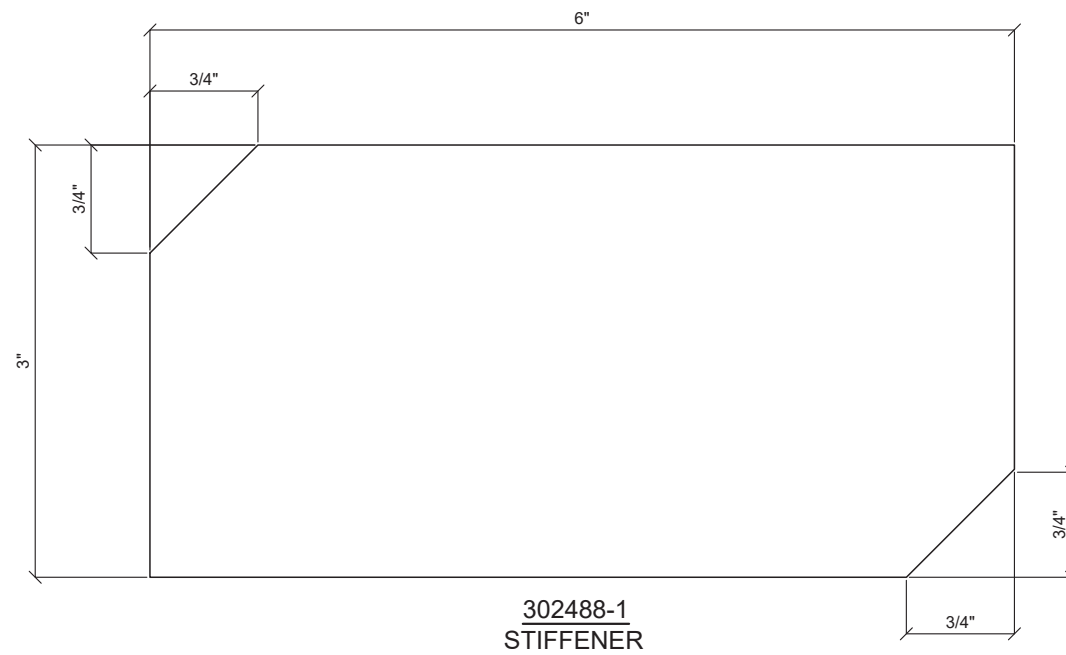


May 11 2017 4:10 PM

DRAWN BY:	NHK
APPROVED BY:	AT
DATE DRAWN:	05/08/17
ATC JOB NO:	OAA694941_C6_06

**STIFFENER
 FABRICATION DETAILS**

SHEET NUMBER:	REVISION:
F-1	0



PART NO.	DESCRIPTION	LENGTH	NOTES	BLK WT	GALV WT
302488-1	PL 1/4" X 3"	0'-6"		1.2#	1.3#
MATERIAL: A36		FINISH: GALVANIZED		HOLES: N/A	

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

T-Mobile Existing Facility

Site ID: CTHA532A

ATC Canton Monopole
4 Hoffman Road
Canton, CT 06019

May 3, 2017

EBI Project Number: 6217001899

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	4.31 %

May 3, 2017

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

Emissions Analysis for Site: **CTHA532A – ATC Canton Monopole**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **4 Hoffman Road, Canton, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **4 Hoffman Road, Canton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel
- 3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 4) Since the 700 MHz LTE radios are ground mounted there are additional cabling losses accounted for. For each ground mounted 700 MHz LTE RF path an additional 1.90 dB of loss was factored into the calculations used for this analysis. This is based on manufacturers Specifications for 200 feet of 7/8” coax cable on each path.

- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 6) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** for 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe at 2100 MHz. The **Commscope LNX-6515DS-A1M** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **140 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 10) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	140	Height (AGL):	140	Height (AGL):	140
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.93	Antenna B1 MPE%	0.93	Antenna C1 MPE%	0.93
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	140	Height (AGL):	140	Height (AGL):	140
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60
ERP (W):	2,334.27	ERP (W):	2,334.27	ERP (W):	2,334.27
Antenna A2 MPE%	0.47	Antenna B2 MPE%	0.47	Antenna C2 MPE%	0.47
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	140	Height (AGL):	140	Height (AGL):	140
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	558.63	ERP (W):	558.63	ERP (W):	558.63
Antenna A3 MPE%	0.24	Antenna B3 MPE%	0.24	Antenna C3 MPE%	0.24

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.64 %
AT&T	2.31 %
MetroPCS	0.36 %
Site Total MPE %:	4.31 %

T-Mobile Sector A Total:	1.64 %
T-Mobile Sector B Total:	1.64 %
T-Mobile Sector C Total:	1.64 %
Site Total:	4.31 %

T-Mobile _Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	140	9.35	AWS - 2100 MHz	1000	0.93%
T-Mobile AWS - 2100 MHz UMTS	2	1,167.14	140	4.67	AWS - 2100 MHz	1000	0.47%
T-Mobile 700 MHz LTE	1	558.63	140	1.12	700 MHz	467	0.24%
						Total:	1.64%

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	1.64 %
Sector B:	1.64 %
Sector C:	1.64 %
T-Mobile Per Sector Maximum:	1.64 %
Site Total:	4.31 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **4.31%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Town of Canton

Geographic Information System (GIS)



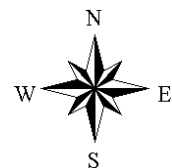
Date Printed: 7/11/2017

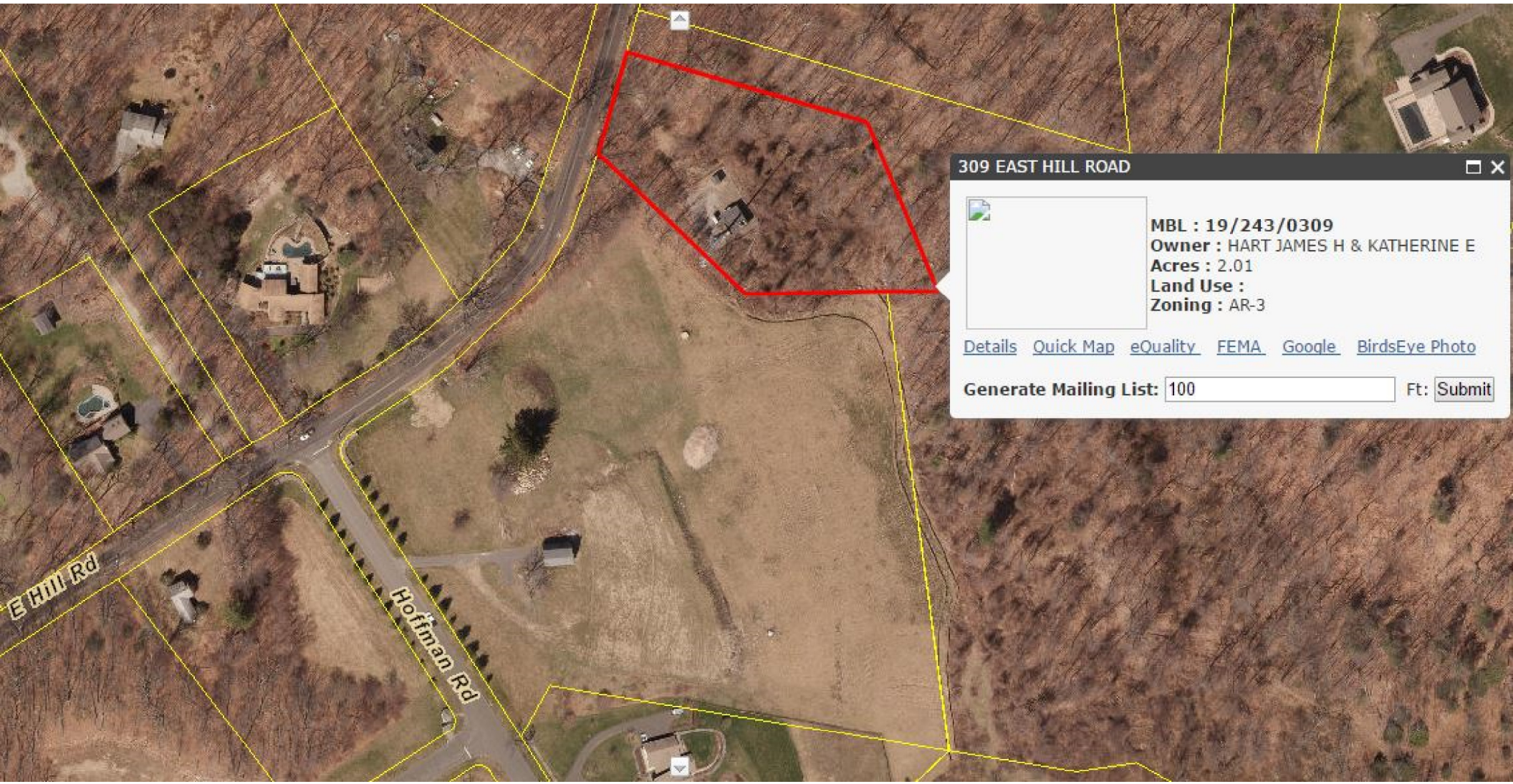


MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Canton and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 150 feet





309 EAST HILL ROAD



MBL : 19/243/0309
Owner : HART JAMES H & KATHERINE E
Acres : 2.01
Land Use :
Zoning : AR-3

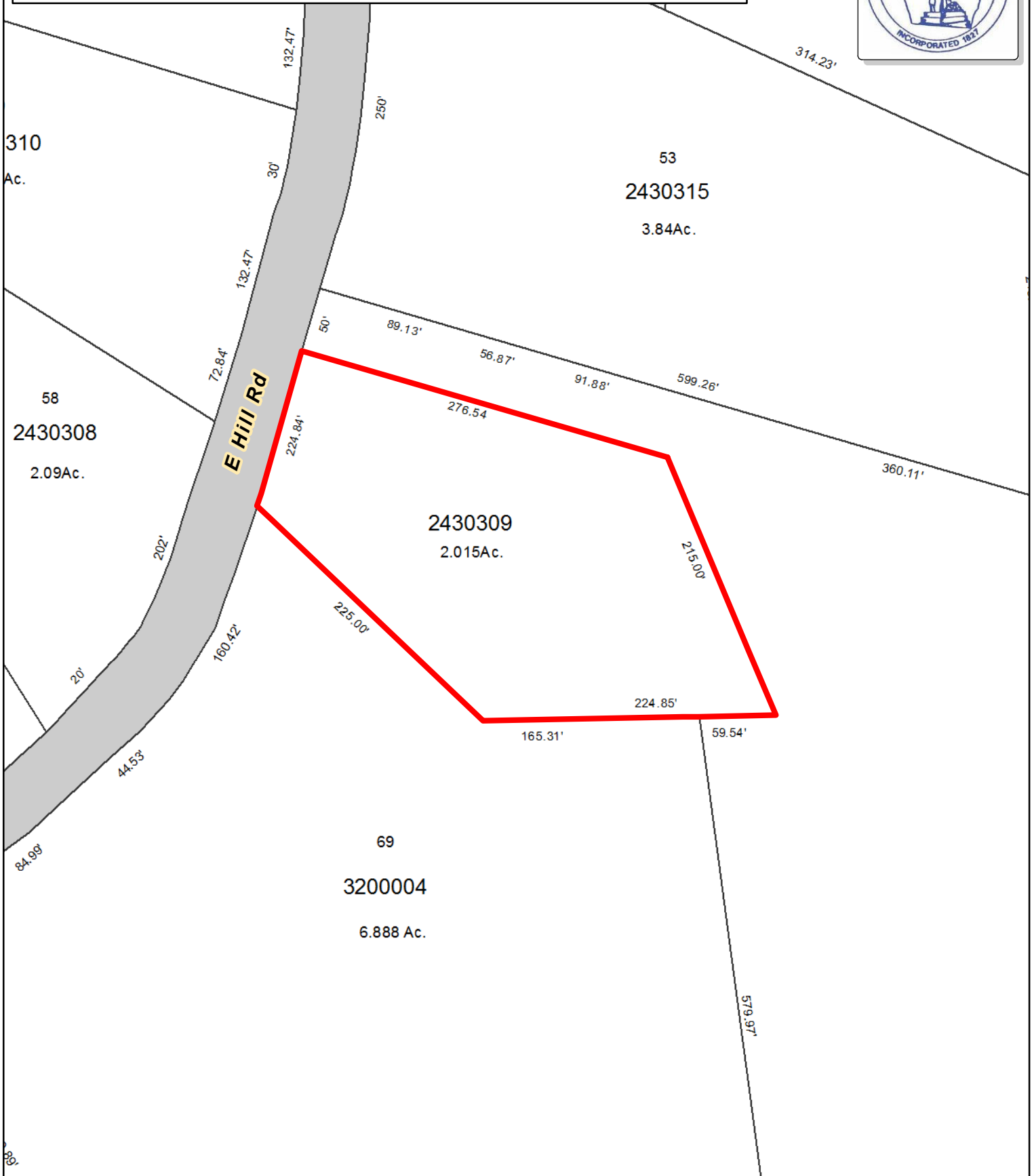
[Details](#) [Quick Map](#) [eQuality](#) [FEMA](#) [Google](#) [BirdsEye Photo](#)

Generate Mailing List: Ft:

Town of Canton, Connecticut - Assessment Parcel Map

Unique ID: 2430309

Address: 309 EAST HILL ROAD



Approximate Scale:
1 inch = 100 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Canton and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced
May 2017

Sublot 4850007 Parcel ID
Easement 89' Dimension
Misc

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.



TOWN OF CANTON_{CT}

Information on the Property Records for the Municipality of Canton was last updated on 7/10/2017.

Parcel Information

Location:	309 EAST HILL ROAD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	2430309	Map Block Lot:	19/243/0309	Acres:	2.01
490 Acres:	0.00	Zone:	AR-3	Volume / Page:	360 /841
Developers Map / Lot:	B	Census:			

Value Information

	Appraised Value	70% Assessed Value
Land	155,340	108,740
Buildings	0	0
Detached Outbuildings	0	0
Total	155,340	108,740

Owner's Information

Owner's Data

HART JAMES H & KATHERINE E
C/O AMERICAN TOWER LAND MGMT
P.O. BOX 723597
ATLANTA GA 31 39 31139

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
HART JAMES H & KATHERINE E	360	841			No	\$0
HOFFMANN HERMAN A &	123	628			No	\$0

Information Published With Permission From The Assessor

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.



TOWN OF CANTON_{CT}

Information on the Property Records for the Municipality of Canton was last updated on 7/10/2017.

Parcel Information

Location:	4 HOFFMANN ROAD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	3200004	Map Block Lot:	23/320/0004	Acres:	6.88
490 Acres:	0.00	Zone:	AR-3	Volume / Page:	0421/1046
Developers Map / Lot:	A	Census:			

Value Information

	Appraised Value	70% Assessed Value
Land	264,640	185,250
Buildings	0	0
Detached Outbuildings	5,560	3,890
Total	270,200	189,140

Owner's Information

Owner's Data

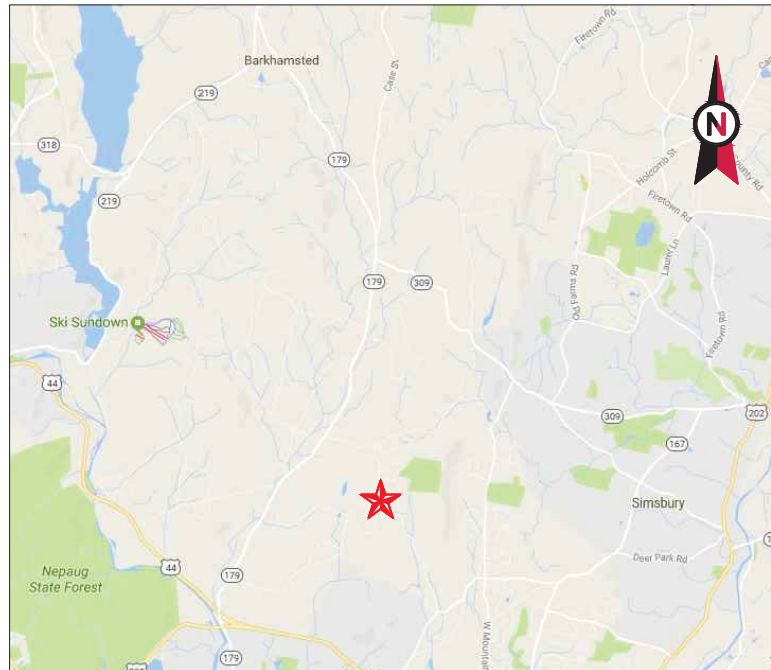
BISKUPIAK BRIAN &
BISKUPIAK KELLEY
14 CROWN POINT
CANTON CT 09019

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Det FR/CB Garage	1985	31.00	24.00	744

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
BISKUPIAK BRIAN &	0421	1046	09/23/2015		Yes	\$300,000
MACK IV LLC	403	1013	04/23/2013		Yes	\$260,000
HART JAMES H &	360	841			No	\$0
HOFFMANN EDITH L	123	628			No	\$0
HOFFMANN HERMAN A &	123	628			No	\$0
HOFFMANN HERMAN A - ESTATE OF &	123	628			No	\$0



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: CNTN - CANTON
 ATC SITE NUMBER: 302488
 T-MOBILE SITE ID: CTHA532A
 SITE ADDRESS: 4 HOFFMANN ROAD
 CANTON, CT 06019



LOCATION MAP

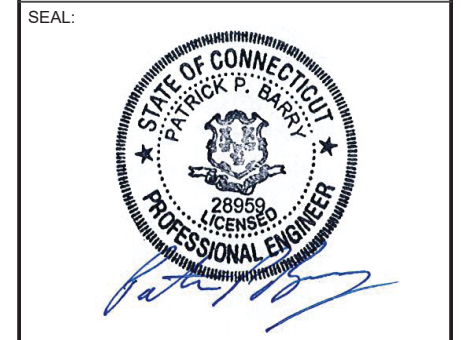
**T-MOBILE ANTENNA AMENDMENT
 705A CONFIGURATION**

AMERICAN TOWER®
ATC TOWER SERVICES
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: 6260F

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NRP	05/02/17
1	UPDATE ANTENNA LAYOUT	JDC	06/27/17
2	UPDATE RAD HEIGHT	JDC	07/10/17

ATC SITE NUMBER:
302488
 ATC SITE NAME:
CNTN - CANTON
 SITE ADDRESS:
 4 HOFFMANN ROAD
 CANTON, CT 06019



Jul 10 2017 4:57 PM cosign



DRAWN BY:	NRP
APPROVED BY:	PPB
DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

TITLE SHEET
 SHEET NUMBER:
G-001
 REVISION:
2

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 4 HOFFMANN ROAD CANTON, CT 06019 COUNTY: HARTFORD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.85527 LONGITUDE: -72.8925 GROUND ELEVATION: 784' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (6) PANELS INSTALL (9) NEW PANELS, AND (3) SMART BIAS T	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
		PROJECT NOTES 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-001	TITLE SHEET	2	07/07/17	JDC
UTILITY COMPANIES POWER COMPANY: CONNECTICUT LIGHT & POWER PHONE: (888) 783-6617 TELEPHONE COMPANY: AT&T PHONE: (800) 331-0500	PROJECT TEAM <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> JAMES H. & KATHERINE E. HART 90 PARK RD BARKHAMSTED, CT 06063	PROJECT LOCATION DIRECTIONS FROM BARKHAMSTED, CT: HEAD SOUTHWEST ON CT-179 S TOWARD BRIARWOOD RD. TURN LEFT ONTO N MOUNTAIN RD. TURN RIGHT ONTO E HILL RD, TOWER IS ON THE LEFT.	G-002	GENERAL NOTES	0	05/02/17	NRP
		<u>APPLICANT:</u> T-MOBILE 15 COMMERCE WAY, SUITE B NORTON, MA 02766 <u>CARRIER CONTACT:</u> RICH BANCROFT (617) 586-6776	C-101	DETAILED SITE PLAN & TOWER ELEVATION	2	07/07/17	JDC
			C-501	ANTENNA INFORMATION & SCHEDULE	2	07/07/17	JDC
			C-502	CONSTRUCTION DETAILS	0	05/02/17	NRP
			E-501	GROUNDING DETAILS	0	05/02/17	NRP
			R-601	SUPPLEMENTAL			

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GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH T-MOBILE WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY T-MOBILE WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE WIRELESS REP. ANY WORK FOUND BY THE T-MOBILE WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
 - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
 - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
 - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
 - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
 - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
 - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
 - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
 - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
 - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
 - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
 - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
 - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NRP	05/02/17

ATC SITE NUMBER:

302488

ATC SITE NAME:

CNTN - CANTON

SITE ADDRESS:

4 HOFFMANN ROAD
CANTON, CT 06019

SEAL:



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DRAWN BY:	NRP
APPROVED BY:	PPB
DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

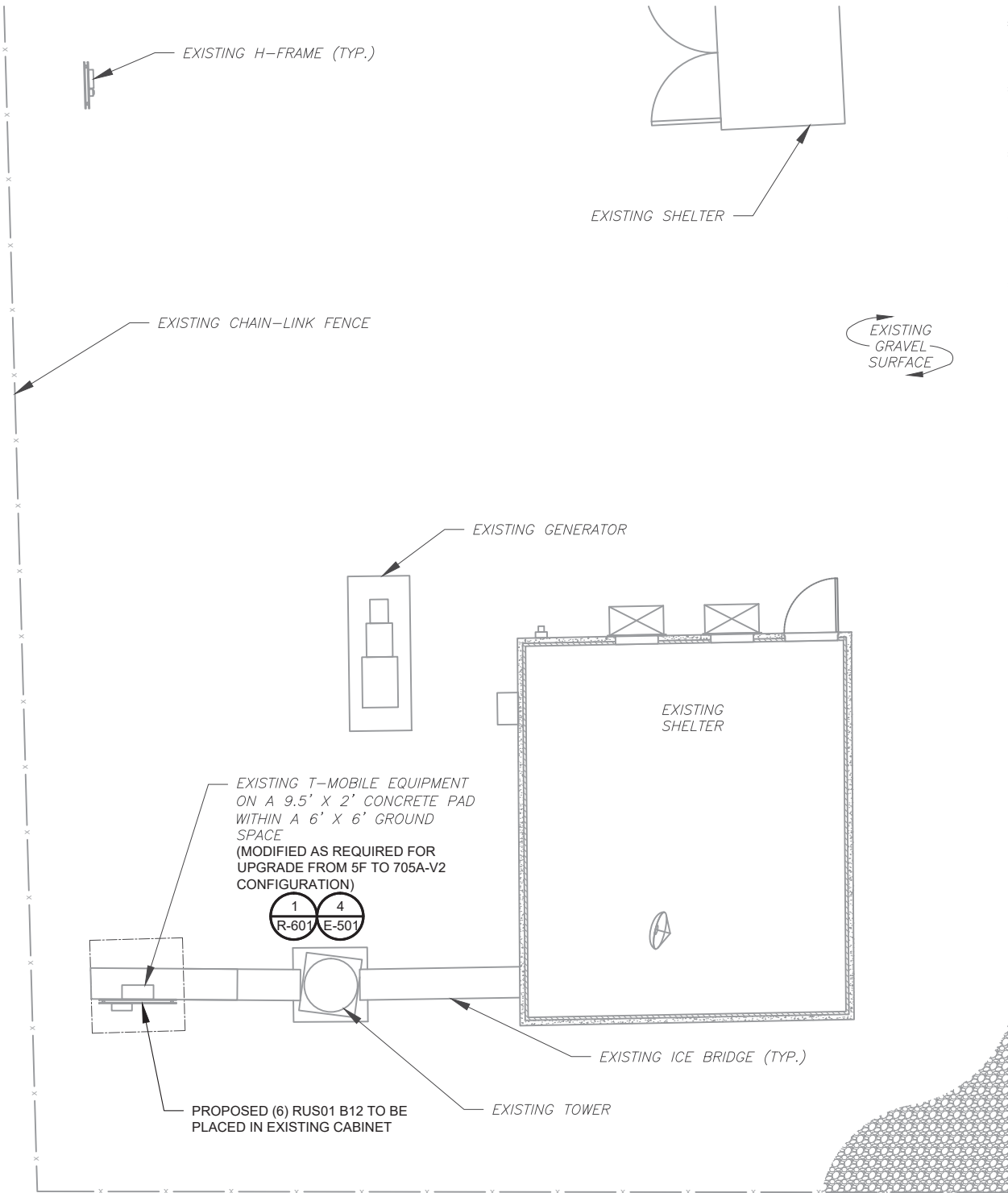
GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

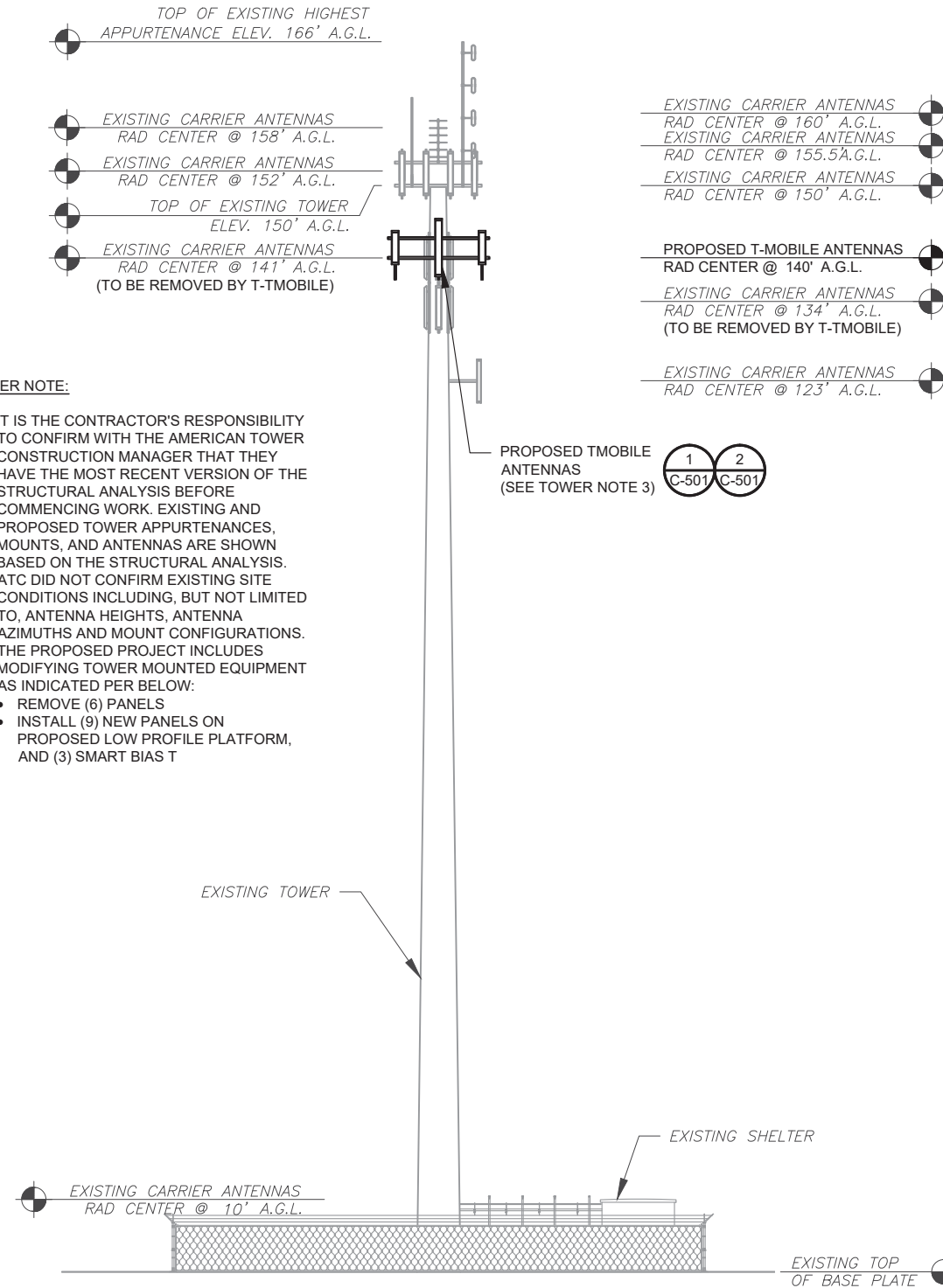
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SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



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



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
3. THE PROPOSED PROJECT INCLUDES MODIFYING TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
 - REMOVE (6) PANELS
 - INSTALL (9) NEW PANELS ON PROPOSED LOW PROFILE PLATFORM, AND (3) SMART BIAS T

2 TOWER ELEVATION
 SCALE: NOT TO SCALE



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NRP	05/02/17
1	UPDATE ANTENNA LAYOUT	JDC	06/27/17
2	UPDATE RAD HEIGHT	JDC	07/10/17

ATC SITE NUMBER:
302488
 ATC SITE NAME:
CNTN - CANTON

SITE ADDRESS:
 4 HOFFMANN ROAD
 CANTON, CT 06019

SEAL:



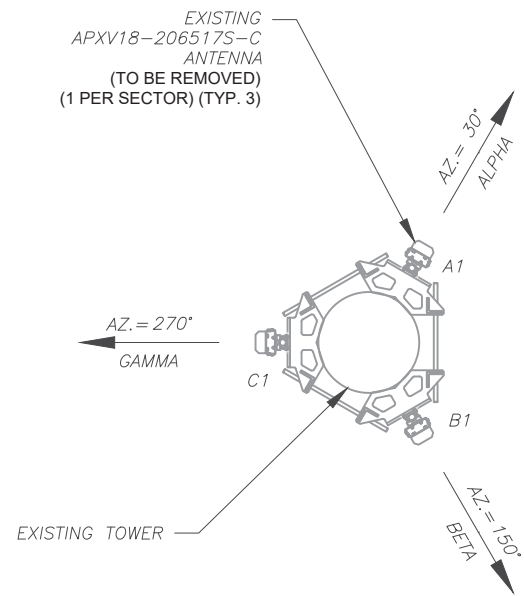
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APPROVED BY:	PPB
DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

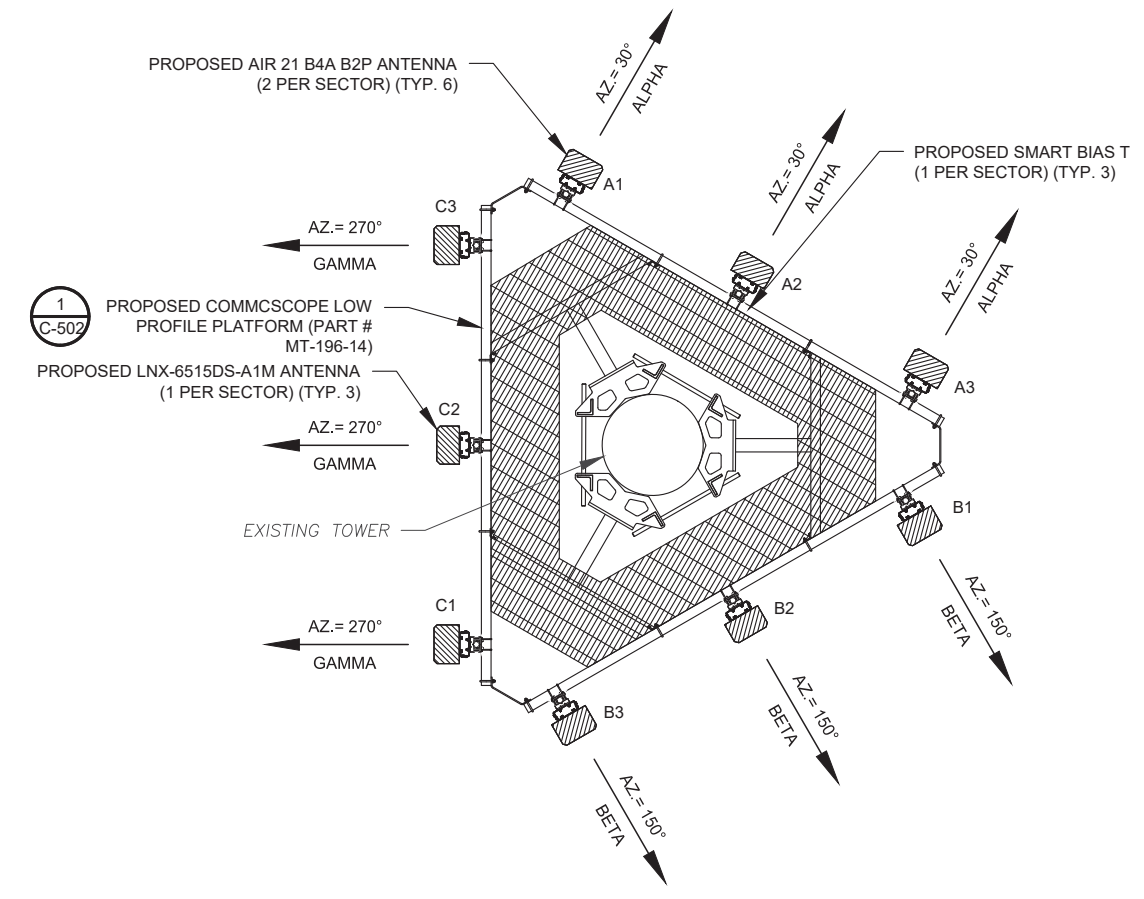
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	2



1 EXISTING ANTENNA PLAN

NOTES:
 1. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION. CONTRACTOR TO VERIFY MOUNT CONFIGURATION HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (I.E. CLEARANCES, MOUNT PIPE OR SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.



2 PROPOSED ANTENNA PLAN

NOTES:
 1. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
 2. SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED FOR TOWER CONFLICTS AND PROPOSED MOUNTS SHALL NOT IMPEDE TOWER CLIMBING PEGS.

EXISTING ANTENNA/ COAX SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	APXV18-206517S-C	141'-0"	30°	0	2	-	(2) 7/8"
BETA	B1	APXV18-206517S-C	141'-0"	150°	0	2	-	(2) 7/8"
GAMMA	C1	APXV18-206517S-C	141'-0"	270°	0	2	-	(2) 7/8"

FINAL ANTENNA/ COAX SCHEDULE

SECTOR	ANT.	MANUFACTURER MODEL #	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	AIR 21 B4A B2P	140'-0"	30°	-	2	-	-
ALPHA	A2	LNx-6515DS-A1M	140'-0"	30°	-	2	SMART BIAS T	(2) 7/8"
ALPHA	A3	AIR 21 B4A B2P	140'-0"	30°	-	2	-	-
BETA	B1	AIR 21 B4A B2P	140'-0"	150°	-	2	-	-
BETA	B2	LNx-6515DS-A1M	140'-0"	150°	-	2	SMART BIAS T	(2) 7/8"
BETA	B3	AIR 21 B4A B2P	140'-0"	150°	-	2	-	-
GAMMA	C1	AIR 21 B4A B2P	140'-0"	270°	-	2	-	-
GAMMA	C2	LNx-6515DS-A1M	140'-0"	270°	-	2	SMART BIAS T	(2) 7/8"
GAMMA	C3	AIR 21 B4A B2P	140'-0"	270°	-	2	-	-

1. BASED ON APPROVED ATC APPLICATION OAA694941, DATED 01-18-2016. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
 2. INSTALL (1) 6X12 HCS TRUNK CABLE - ±169"

3 ANTENNA SCHEDULE



AMERICAN TOWER®
ATC TOWER SERVICES
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: 6260F

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0	FOR CONSTRUCTION	NRP	05/02/17
1	UPDATE ANTENNA LAYOUT	JDC	06/27/17
2	UPDATE RAD HEIGHT	JDC	07/10/17

ATC SITE NUMBER:
302488

ATC SITE NAME:
CNTN - CANTON

SITE ADDRESS:
 4 HOFFMANN ROAD
 CANTON, CT 06019

SEAL:



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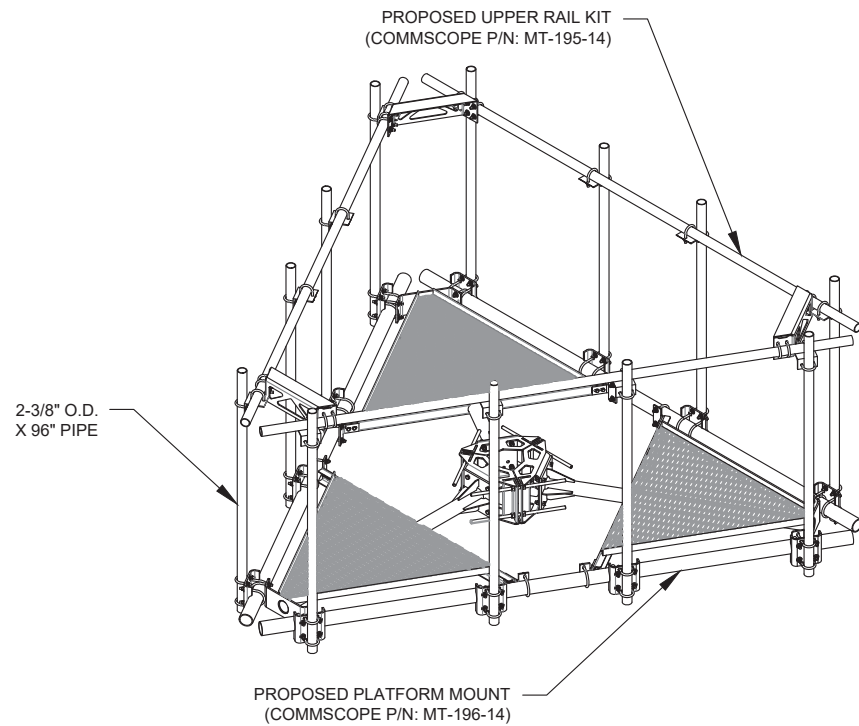
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APPROVED BY:	PPB
DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:
C-501

REVISION:
2

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1 ISOMETRIC PLATFORM DETAIL
SCALE: NOT TO SCALE

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ATC TOWER SERVICES
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: 6260F

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0	FOR CONSTRUCTION	NRP	05/02/17

ATC SITE NUMBER:
302488
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CNTN - CANTON

SITE ADDRESS:
 4 HOFFMANN ROAD
 CANTON, CT 06019

SEAL:



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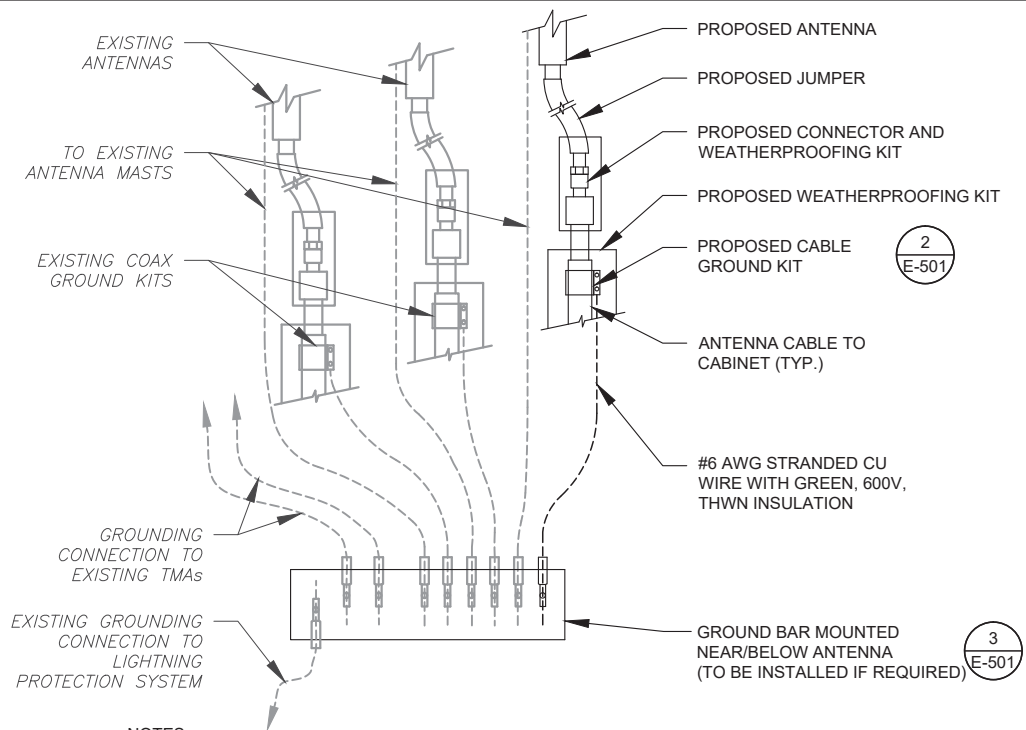


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DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

**CONSTRUCTION
 DETAILS**

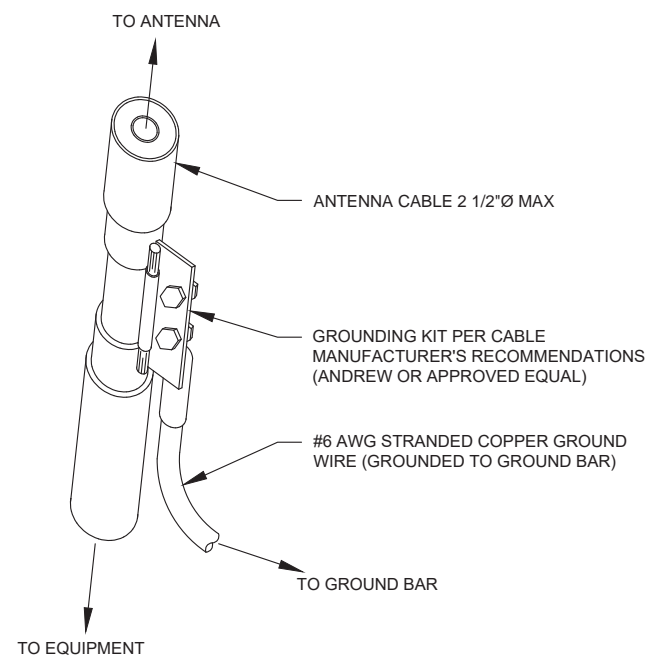
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C-502

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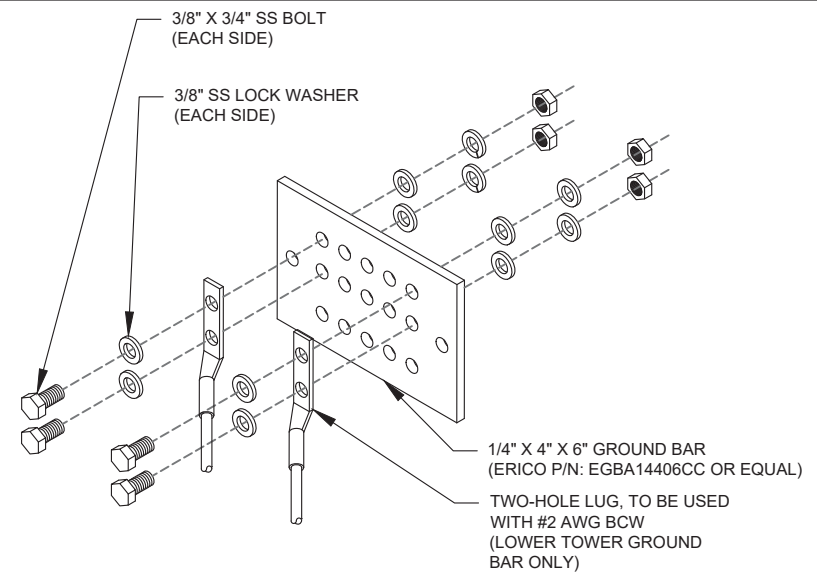
- NOTES:**
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
 2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE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

1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



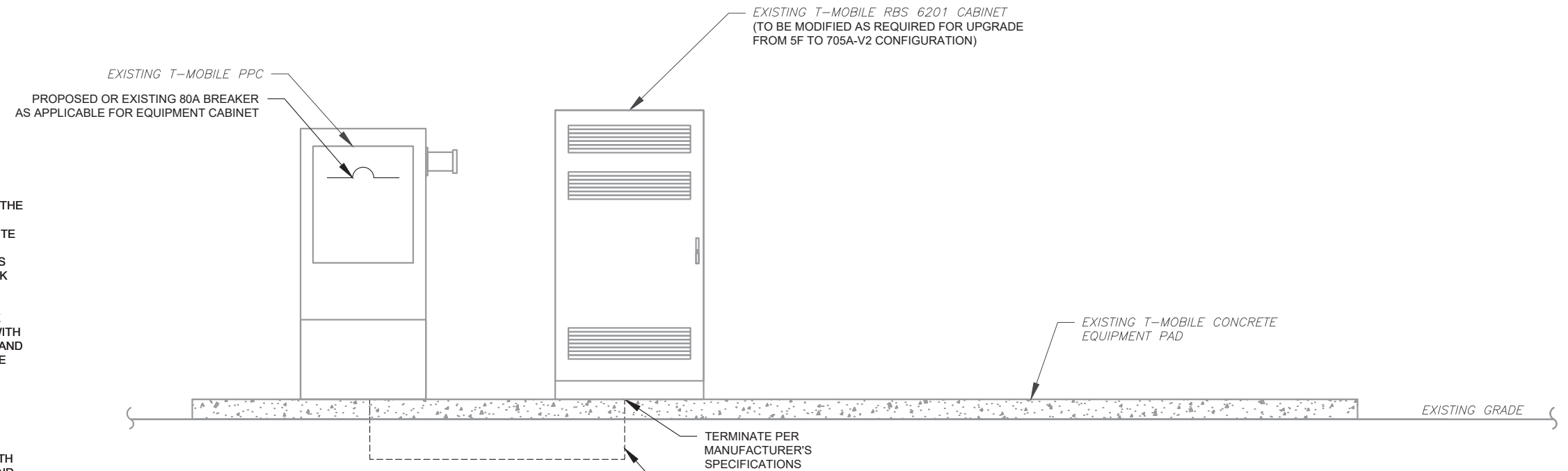
- GROUND KIT NOTES:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: NOT TO SCALE



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

3 TOWER GROUND BAR DETAIL
SCALE: NOT TO SCALE



- ELECTRICAL NOTES:**
1. THIS DIAGRAM REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
 3. ATC HAS NOT YET VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER.

4 ELECTRICAL UPGRADE DIAGRAM
SCALE: NOT TO SCALE

AMERICAN TOWER®
ATC TOWER SERVICES
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: 6260F

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ATC SITE NUMBER:
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SITE ADDRESS:
4 HOFFMANN ROAD
CANTON, CT 06019

SEAL:

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DRAWN BY:	NRP
APPROVED BY:	PPB
DATE DRAWN:	05/02/17
ATC JOB NO:	12034197

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

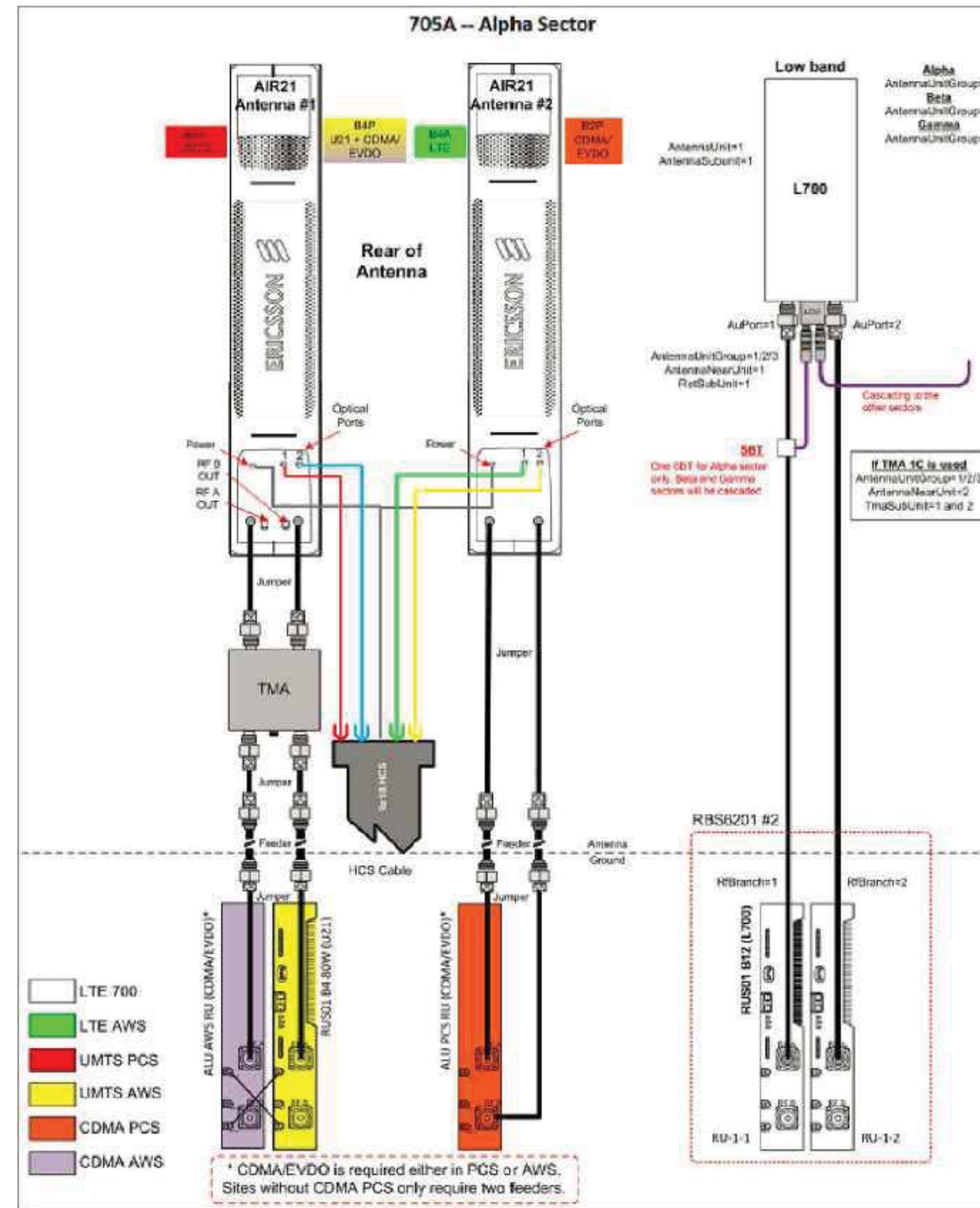
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Existing RAN Equipment	
Template: 5F	
Enclosure	1
Enclosure Type	Legacy ODE
Baseband	DUW30 DUS31
Radio	RUS01 B2 (x3) RUS01 B4 (x6)

Proposed RAN Equipment			
Template: 705A-V2			
Enclosure	1	2	3
Enclosure Type	RBS 6201 ODE	Ancillary Equipment	Battery Cabinet
Baseband	DUW30 (U1900) DUS41 (L2100) (L700)		
Hybrid Cable System	Ericsson 6x12 HCS "Select Length & AWG"		
Multiplexer	XMU		
Radio	RUS01 B12 (x6) L700		

RAN Scope of Work:

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER: R-601
REVISION: 0