Alex Murshteyn, Site Acquisition Consultant
c/o T-Mobile Northeast LLC ("T-Mobile")
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

June 14, 2018

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

RE: Notice of Exempt Modification // Site Number: CTNH403A (ATC: 302506)
15 (108) Oakdale Avenue, Winchester, CT 06098
N 41.9217 // W 73.0495

Dear Ms. Bachman:

T-Mobile Northeast LLC ("T-Mobile") currently maintains 6 antennas at the 166-foot level of the existing 180-foot monopole tower located (off Oakdale Avenue aka 15 aka) at 108 Oakdale Avenue, Winchester (Winstead), CT. The Council approved T-Mobile use of the existing tower in 2008. The tower and property are both owned and controlled by American Tower; latter c/o William P. Stow Revocable Trust. T-Mobile now intends to install 1 temporary new microwave backhaul channel (5.0 GHz) at the 166-foot level of the tower. T-Mobile will also install 2 new CATs and 1 new fiber cable in order to connect the microwave dish.

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 Althea Candy Perez, Mayor for the City of Winchester, Director of Planning and Community Development Steven Sadlowski, including for Winchester's Planning and Zoning Commission, and American Tower, the tower owner and ground owner.

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

Enclosed to accommodate this filing are construction drawings dated June 4, 2018 by A.T. Engineering Service, PLLC a structural analysis dated May 14, 2018 by A.T. Engineering Service, PLLC and an RF Emissions Analysis Report dated April 16, 2018 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 antenna 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, as shown in the attached structural analysis by A.T. Engineering Service, PLLC, dated May 14, 2018.

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 Consultant
c/o T-Mobile Northeast LLC
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Attachments

cc: Althea Candy Perez, Mayor - as elected official - 1Z9Y45030335286677
Steven Sadlowski, Director of Planning - as P&Z official - 1Z9Y45030327977285
American Tower Corporation - as tower & property owner - 1Z9Y45030338460893

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Structural Analysis Report

Structure	:	**180 ft Monopole**
ATC Site Name	:	**Winchester CT 3, CT**
ATC Site Number	:	**302506**
Engineering Number	:	**OAA727483_C3_02**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTNH403A**
Carrier Site Number	:	**CTNH403A**
Site Location	:	**15 Oakdale Avenue** **Winsted, CT 06098-1862** **41.921700,-73.049500**
County	:	**Litchfield**
Date	:	**May 14, 2018**
Max Usage	:	**94%**
Result	:	**Pass**

Prepared By:
Trevor Ridilla, E.I.
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32599
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
May 14 2018 5:06 PM cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Job #7676, dated August 21, 2000
Foundation Drawing	SNET Project #F301804.10/F04, dated August 23, 2000
Geotechnical Report	Welti Project: Whalen's Hill, dated February 8, 2000
Modifications	ATC Job #42523432, dated October 24, 2008 ATC Job #50492933, dated October 15, 2012

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:	90 mph (3-Second Gust, Vasd) / 115 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	III
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$Ss = 0.18$, $S_1 = 0.06$
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 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					
180.0	184.0	2	Raycap DC6-48-60-18-8F (23.5" Height)	Low Profile Platform	(12) 1 5/8" Coax (4) 0.78" 8 AWG 6 (1) 0.40" Fiber (1) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
	183.0	1	Andrew ABT-DMDF-ADBH			
		6	Powerwave LGP21401			
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson RRUS 32 (50.8 lbs)			
		3	Ericsson RRUS-12 B2			
		3	Powerwave 7770.00			
		3	KMW AM-X-CD-16-65-00T-RET			
		3	CCI HPA-65R-BUU-H6			
	179.0	1	2' x 4' Rectangular Grid Dish			
	182.0	1	4' Omni			Other
166.0	166.0	3	Ericsson KRY 112 144/1	T-Arms	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
150.0	150.0	1	Sinclair SD210-SF2P4SNM	Side Arm	(1) 1 5/8" Coax	Litchfield County Dispatch
140.0	149.0	1	Sinclair SC479-HF1LDF(E5765)	Side Arms	(8) 1 5/8" Coax (2) 1/2" Coax	Ct Police Dept.
		2	Decibel DB809DK-XT			
		1	Sinclair SC442D-HF1LDF(DXX-I30-G9-NUFP)			
	141.0	1	Telewave ANT150D (5 lbs)			
		1	Bird 432-83H-01-T			
135.0	135.0	3	Alcatel-Lucent 800MHz RRH w/ Notch Filter	Platform w/ Handrails	(3) 1 1/4" Hybriflex (1) 7/8" Fiber	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSPP18-C-A20			
125.0	125.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent B25 RRH4x30			
		3	Alcatel-Lucent RRH2x60 700			
		1	RFS DB-B1-6C-12AB-0Z			
		3	Alcatel-Lucent B66a RRH4x45 (AWS-3)			
		2	Antel LPA-80080/6CF			
		6	Commscope JAHH-65B-R3B			
		1	Antel LPA-80063/6CF			
112.0	112.0	12	Decibel DB844H90E-XY	Low Profile Platform	(12) 1 1/4" Coax	Sprint Nextel
105.0	105.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS
96.0	96.0	2	Andrew DB586	Side Arms	(2) 7/8" Coax (1) 1/2" Coax	Eversource Energy
		1	Bird 429-83H-01-T			
80.0	80.0	1	RFS PA6-65AC	Leg	(1) EW63	Ct Police Dept.
79.0	79.0	1	PCTEL GPS-TMG-HR-26N	Flush	(1) 1/2" Coax	Sprint Nextel
30.0	30.0	1	GPS	Flush	(1) 7/8" Coax	Verizon

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
166.0	166.0	1	Fastback Networks Intelligent Backhaul Radio 1300 Series	T-Arms	(2) 0.25" Cat 6 UTP (1) 1.4" Hybrid	T-Mobile

[1]Mount 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	55%	Pass
Shaft	68%	Pass
Base Plate	70%	Pass
Reinforcement	69%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,335.9	48%
Axial (Kips)	71.0	6%
Shear (Kips)	37.0	94%

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) (°)
166.0	Fastback Networks Intelligent Backhaul Radio 1300 Series	T-Mobile	2.681	2.104
80.0	RFS PA6-65AC	CT Police Dept.	0.567	0.827

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

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Standard Conditions

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

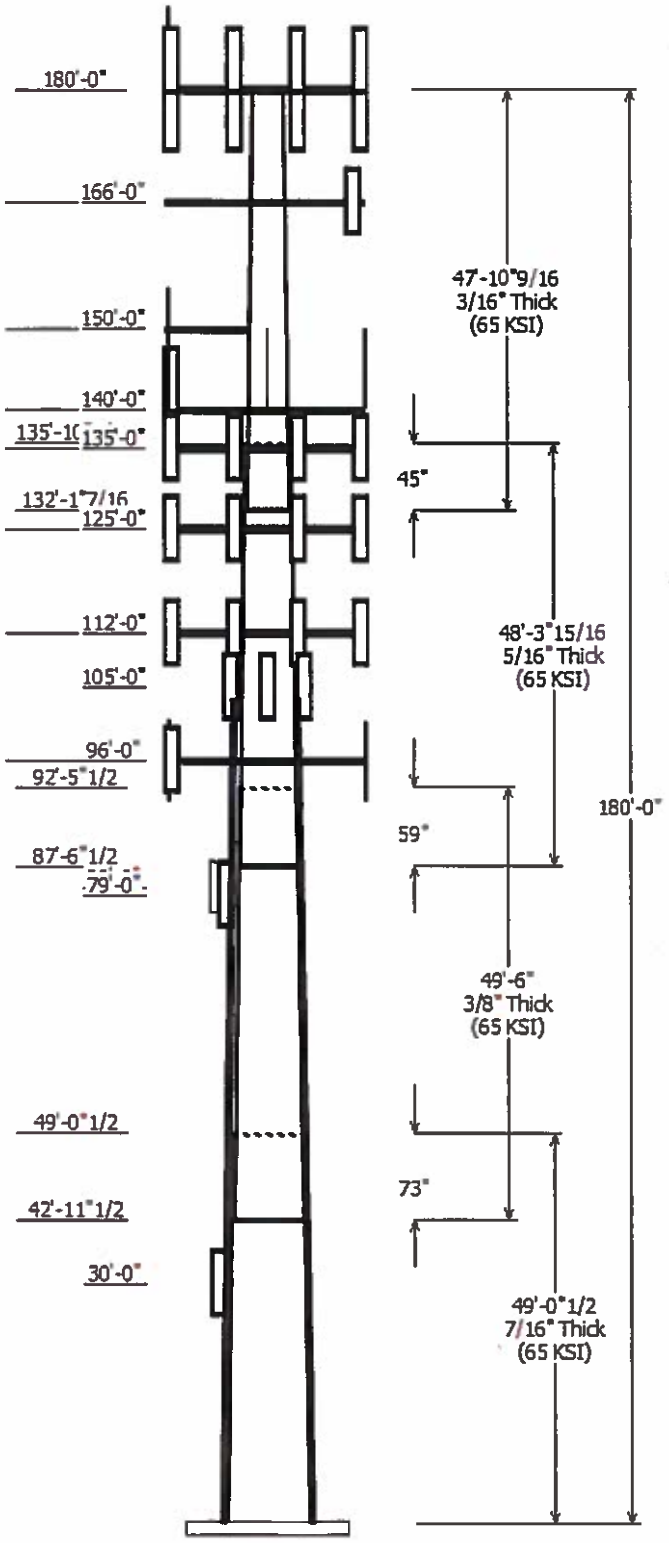
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

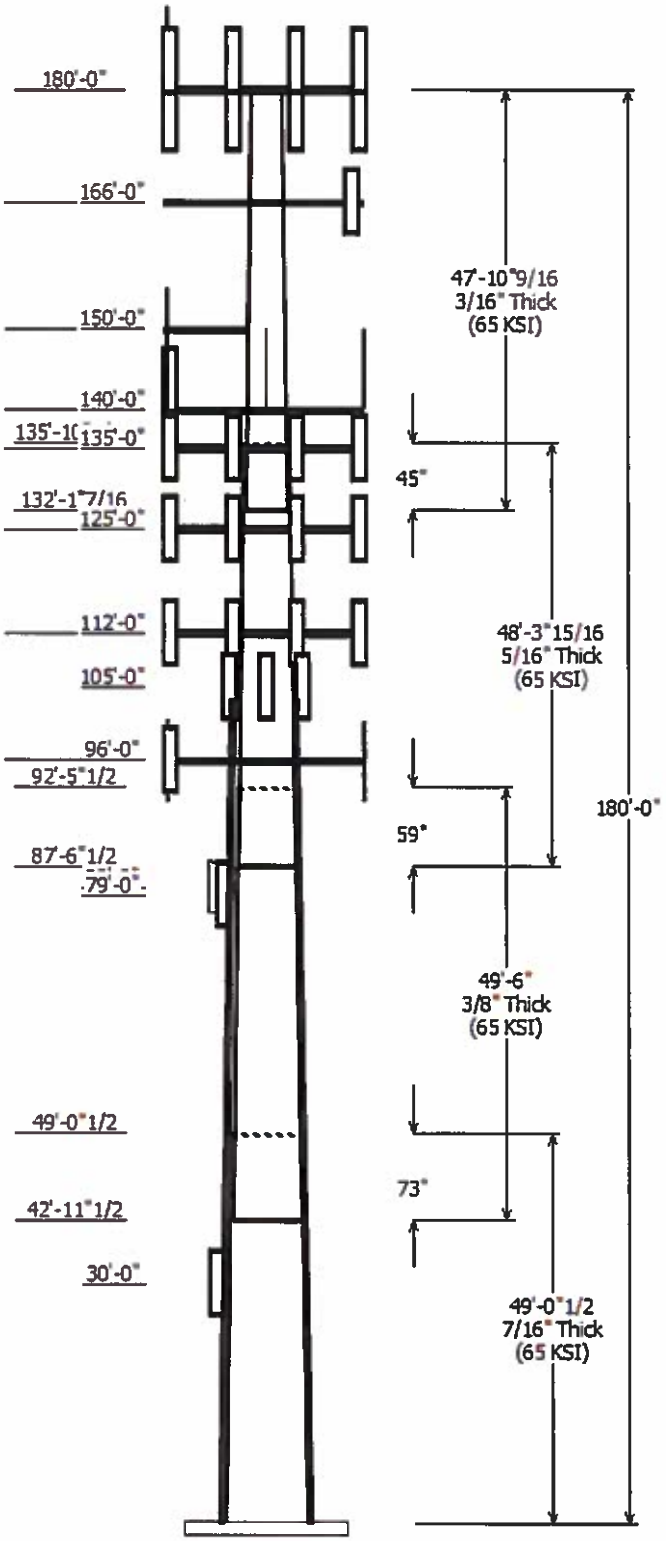
Pole : 302506	Code: ANSI/TIA-222-G
Location : Winchester CT 3, CT	
Description : 180 ft EEI Monopole	
Client : T-MOBILE	Struct Class : III
Shape : 18 Sides	Exposure : B
Height : 180.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.219444in/ft	

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	49.040	41.98	52.75	0.438		0.000	18 Sides	65
2	49.500	33.21	44.07	0.375	Slip Joint	73.000	18 Sides	65
3	48.330	24.30	34.91	0.313	Slip Joint	59.000	18 Sides	65
4	47.880	15.00	25.50	0.188	Slip Joint	45.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.000	183.000	3	CCI HPA-65R-BUU-H6
180.000	183.000	1	Andrew ABT-DMDF-ADBH
180.000	183.000	3	Powerwave Allgon 7770.00
180.000	184.000	2	Raycap DC6-48-60-18-8F (23.5"
180.000	183.000	3	Ericsson RRUS 32 (50.8 lbs)
180.000	180.000	1	Flat Low Profile Platform
180.000	183.000	3	KMW AM-X-CD-16-65-00T-RET
180.000	179.000	1	2' x 4' Rectangular Grid Dish
180.000	183.000	3	Ericsson RRUS-12 B2
180.000	183.000	3	Ericsson RRUS 11 (Band 12)
180.000	183.000	6	Powerwave Allgon LGP21401
180.000	182.000	1	4' Omni
166.000	166.000	3	Ericsson AIR 21, 1.3M, B4A B2P
166.000	166.000	3	Round T-Arm
166.000	166.000	1	Fastback Networks Intelligent
166.000	166.000	3	Ericsson AIR 21, 1.3 M, B2A B4
166.000	166.000	3	Ericsson KRY 112 144/1
150.000	150.000	1	Round Side Arm
150.000	150.000	1	Sinclair SD210-SF2P4SNM
140.000	149.000	1	Sinclair SC442D-HF1LDF(DXX-
140.000	149.000	2	Decibel DB809DK-XT
140.000	149.000	1	Sinclair SC479-HF1LDF(E5765)
140.000	141.000	1	Bird 432-83H-01-T
140.000	140.000	3	Round Side Arm
140.000	141.000	1	Telewave ANT150D (5 lbs)
135.000	135.000	1	Flat Platform w/ Handrails
135.000	135.000	3	RFS APXVSPP18-C-A20
135.000	135.000	3	RFS APXVTM14-C-I20
135.000	135.000	3	Alcatel-Lucent TD-RRH8x20-25
135.000	135.000	3	Alcatel-Lucent 1900MHz RRH
135.000	135.000	3	Alcatel-Lucent 800 MHz RRH
125.000	125.000	3	Alcatel-Lucent RRH2x60 700
125.000	125.000	2	Antel LPA-80080/6CF
125.000	125.000	3	Alcatel-Lucent B66a RRH4x45
125.000	125.000	1	RFS DB-B1-6C-12AB-0Z
125.000	125.000	3	Alcatel-Lucent B25 RRH4x30
125.000	125.000	3	Nokia B5 RRH4x40-850
125.000	125.000	1	Round Low Profile Platform
125.000	125.000	1	Antel LPA-80063/6CF
125.000	125.000	6	Commscope JAHH-65B-R3B
112.000	112.000	1	Round Low Profile Platform
112.000	112.000	12	Decibel DB844H90E-XY
105.000	105.000	3	RFS APXV18-206517S-C
96.000	96.000	3	Flat Side Arm



96.000	96.000	1	Bird 429-83H-01-T
96.000	96.000	2	Andrew DB586
80.000	80.000	1	RFS PA6-65AC
79.000	79.000	1	PCTEL GPS-TMG-HR-26N
30.000	30.000	1	GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
112.5	125.0	1 5/8" Coax	Yes
112.5	166.0	1 5/8" Coax	Yes
0.000	180.0	0.39" (10mm)	No
0.000	180.0	0.40" Fiber Cable	No
0.000	180.0	0.78" 8 AWG 6	No
0.000	180.0	0.78" 8 AWG 6	No
0.000	180.0	1 5/8" Coax	No
0.000	180.0	3" Conduit	No
0.000	135.0	1 1/4" Hybriflex	No
0.000	135.0	7/8" Fiber	No
0.000	140.0	1 5/8" Coax	No
0.000	140.0	1/2" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	166.0	0.25" (6.4mm) Cat	No
0.000	166.0	1 1/4" Hybriflex	No
0.000	166.0	1.4" (35.6mm)	No
0.000	30.000	7/8" Coax	Yes
0.000	79.000	1/2" Coax	No
0.000	80.000	EW63	No
0.000	96.000	1/2" Coax	No
0.000	96.000	7/8" Coax	No
0.000	105.0	1 5/8" Coax	Yes
0.000	112.0	1 1/4" Coax	Yes
0.000	112.0	Reinforcement	Yes
0.000	112.5	1 5/8" Coax	Yes
0.000	112.5	1 5/8" Coax	Yes
0.000	125.0	1 5/8" Hybriflex	No

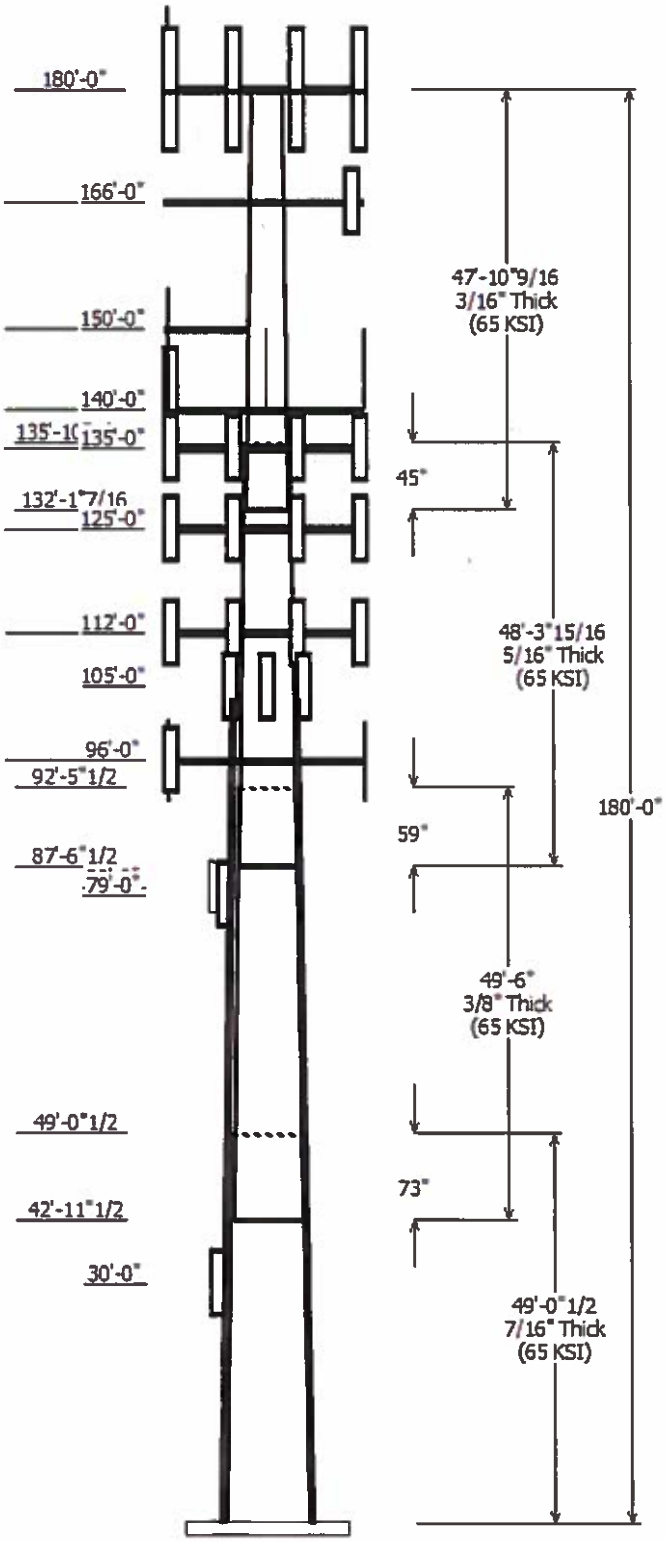
Load Cases

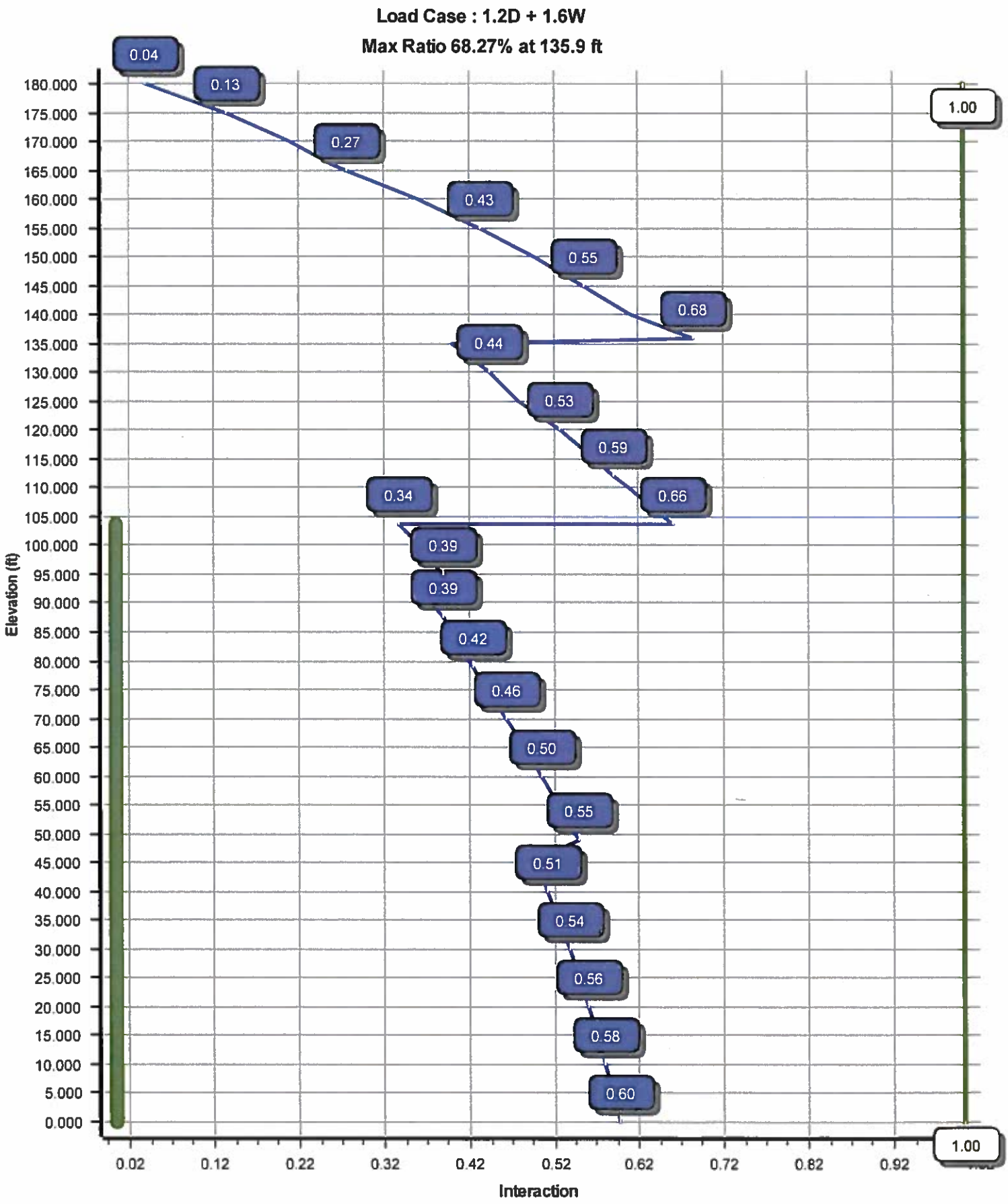
1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	4335.86	36.97	71.01
0.9D + 1.6W	4178.32	35.50	53.25
1.2D + 1.0Di + 1.0Wi	930.93	6.92	146.16
(1.2 + 0.2Sds) * DL + E ELFM	406.37	3.01	70.72
(1.2 + 0.2Sds) * DL + E EMAM	376.13	3.23	70.72
(0.9 - 0.2Sds) * DL + E ELFM	399.40	3.00	49.26
(0.9 - 0.2Sds) * DL + E EMAM	368.79	3.23	49.26
1.0D + 1.0W	1170.71	9.89	59.22

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	80.00	6.802	0.827




Load Case : 1.2D + 1.6W
Max Ratio 68.27% at 135.9 ft
0.04
0.13
0.27
0.43
0.55
0.68
0.44
0.53
0.59
0.66
0.34
0.39
0.39
0.42
0.46
0.50
0.55
0.51
0.54
0.56
0.58
0.60
1.00
1.00
180.000
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302506 Code: ANSI/TIA-222-G

Site Name: Winchester CT 3, CT Engineering Number:OAA727483_C3_02 5/14/2018 1:20:26 PM

Customer: T-MOBILE

Analysis Parameters

Location :	LITCHFIELD County, CT	Height (ft) :	180
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.75
Shape :	18 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.219
Pole Manfacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	III	Design Wind Speed Without Ice:	90 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	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):	2.67				
T_L (sec):	6	p:	1.3	C_s:	0.039
S_s:	0.177	S_1:	0.065	C_s Max:	0.039
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.189	S_{d1}:	0.104		

Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 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

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	49.040	0.4375	65		0.00	10,875	52.75	0.00	72.64	25115.3	19.85	120.57	41.98	49.04	57.70	12585.4	15.51	95.97	0.219444
2-18	49.500	0.3750	65	Slip	73.00	7,672	44.07	42.96	52.01	12548.0	19.31	117.53	33.21	92.46	39.08	5323.8	14.21	88.56	0.219444
3-18	48.330	0.3125	65	Slip	59.00	4,779	34.91	87.54	34.32	5191.7	18.29	111.73	24.30	135.87	23.80	1731.6	12.31	77.79	0.219444
4-18	47.880	0.1875	65	Slip	45.00	1,946	25.50	132.12	15.07	1220.4	22.58	136.04	15.00	180.00	8.81	244.4	12.70	80.00	0.219444
				Shaft Weight		25,271													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
180.00	2' x 4' Rectangular Grid Dish	1	0.000	-1.000	40.00	4.750	1.00
180.00	4' Omni	1	0.000	2.000	10.00	1.000	1.00
180.00	Andrew ABT-DMDF-ADBH	1	0.000	3.000	1.10	0.050	0.50
180.00	CCI HPA-65R-BUU-H6	3	0.000	3.000	51.00	9.660	0.69
180.00	Ericsson RRUS 11 (Band 12)	3	0.000	3.000	50.00	2.570	0.50
180.00	Ericsson RRUS 32 (50.8 lbs)	3	0.000	3.000	50.80	2.690	0.67
180.00	Ericsson RRUS-12 B2	3	0.000	3.000	58.00	3.150	0.50
180.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
180.00	KMW AM-X-CD-16-65-00T-RET	3	0.000	3.000	48.50	8.020	0.67
180.00	Powerwave Allgon 7770.00	3	0.000	3.000	35.00	5.510	0.65
180.00	Powerwave Allgon LGP21401	6	0.000	3.000	14.10	1.100	0.50
180.00	Raycap DC6-48-60-18-8F (23.5"	2	0.000	4.000	20.00	1.110	1.00
166.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
166.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.000	0.000	81.50	6.090	0.70
166.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
166.00	Fastback Networks Intelligent	1	0.000	0.000	8.80	0.780	0.50
166.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
150.00	Round Side Arm	1	0.000	0.000	150.00	5.200	0.67
150.00	Sinclair SD210-SF2P4SNM	1	0.000	0.000	8.30	1.370	1.00
140.00	Bird 432-83H-01-T	1	0.000	1.000	25.00	1.400	0.50
140.00	Decibel DB809DK-XT	2	0.000	9.000	64.00	6.350	1.00
140.00	Round Side Arm	3	0.000	0.000	150.00	5.200	0.67
140.00	Sinclair SC442D-HF1LDF(DXX-I30	1	0.000	9.000	79.00	10.480	1.00
140.00	Sinclair SC479-HF1LDF(E5765)	1	0.000	9.000	34.00	5.030	1.00
140.00	Telewave ANT150D (5 lbs)	1	0.000	1.000	5.00	1.090	0.50
135.00	Alcatel-Lucent 1900MHz RRH	3	0.000	0.000	44.00	3.260	0.50
135.00	Alcatel-Lucent 800 MHz RRH w/	3	0.000	0.000	61.80	2.500	0.50
135.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	0.000	70.00	4.050	0.50
135.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	31.600	1.00
135.00	RFS APXVSPP18-C-A20	3	0.000	0.000	57.00	8.020	0.69
135.00	RFS APXVTM14-C-I20	3	0.000	0.000	52.90	6.340	0.66
125.00	Alcatel-Lucent B25 RRH4x30	3	0.000	0.000	53.00	2.120	0.50
125.00	Alcatel-Lucent B66a RRH4x45 (A	3	0.000	0.000	67.00	2.660	0.50
125.00	Alcatel-Lucent RRH2x60 700	3	0.000	0.000	56.70	2.150	0.50
125.00	Antel LPA-80063/6CF	1	0.000	0.000	27.00	9.590	0.76
125.00	Antel LPA-80080/6CF	2	0.000	0.000	21.00	8.630	0.65
125.00	Commscope JAHH-65B-R3B	6	0.000	0.000	60.60	9.110	0.69
125.00	Nokia B5 RRH4x40-850	3	0.000	0.000	48.50	1.320	0.50
125.00	RFS DB-B1-6C-12AB-0Z	1	0.000	0.000	21.40	2.510	0.67
125.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
112.00	Decibel DB844H90E-XY	12	0.000	0.000	14.00	3.610	0.74
112.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
105.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.160	0.68
96.00	Andrew DB586	2	0.000	0.000	8.30	0.740	1.00
96.00	Bird 429-83H-01-T	1	0.000	0.000	20.00	0.920	0.50
96.00	Flat Side Arm	3	0.000	0.000	150.00	6.300	0.67
80.00	RFS PA6-65AC	1	0.000	0.000	278.00	47.050	1.00

79.00	PCTEL GPS-TMG-HR-26N	1	0.000	0.000	0.60	0.090	1.00
30.00	GPS	1	0.000	0.000	10.00	1.000	1.00
Totals	Num Loadings:49	118			12729.30		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	180.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	180.00	1	0.40" Fiber Cable	0.40	0.09	N	0.00	N	AT&T Mobility
0.00	180.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	180.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	180.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	180.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	166.00	2	0.25" (6.4mm) Cat 6	0.25	0.04	N	0.00	N	T-Mobile
0.00	166.00	1	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	T-Mobile
0.00	166.00	1	1.4" (35.6mm) Hybrid	1.40	1.30	N	0.00	N	T-Mobile
112.50	166.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	T-Mobile
0.00	150.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	Litchfield County Dispatch
0.00	140.00	8	1 5/8" Coax	1.98	0.82	N	0.00	N	CT Police Dept.
0.00	140.00	2	1/2" Coax	0.63	0.15	N	0.00	N	CT Police Dept.
0.00	135.00	3	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	135.00	1	7/8" Fiber	0.88	0.70	N	0.00	N	Sprint Nextel
0.00	125.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon
112.50	125.00	6	1 5/8" Coax	1.98	0.82	N	3.96	Y	Verizon
0.00	112.50	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	Verizon
0.00	112.50	12	1 5/8" Coax	1.98	0.82	N	0.00	Y	T-Mobile
0.00	112.00	12	1 1/4" Coax	1.55	0.63	N	4.65	Y	Sprint Nextel
0.00	112.00	1	Reinforcement	9.27	43.00	N	3.35	Y	--
0.00	105.00	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	Metro PCS
0.00	96.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Eversource Energy
0.00	96.00	2	7/8" Coax	1.09	0.33	N	0.00	N	Eversource Energy
0.00	80.00	1	EW63	2.01	0.51	N	0.00	N	CT Police Dept.
0.00	79.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
0.00	30.00	1	7/8" Coax	1.09	0.33	N	0.00	Y	Verizon

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections: Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	103.7	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.13	5/8" A36 U-Bolt	No

Segment Properties

(Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	52.750	72.640	25,115.3	19.85	120.57	78.1	937.8	0.0	0.0	19.64	8,846	0.0
5.00		0.4375	51.653	71.116	23,567.9	19.41	118.06	78.6	898.7	0.0	1,222.9	19.64	8,521	334.0
10.00		0.4375	50.556	69.593	22,085.4	18.96	115.56	79.1	860.4	0.0	1,197.0	19.64	8,202	334.0
15.00		0.4375	49.458	68.069	20,666.4	18.52	113.05	79.6	823.0	0.0	1,171.1	19.64	7,889	334.0
20.00		0.4375	48.361	66.546	19,309.5	18.08	110.54	80.1	786.4	0.0	1,145.2	19.64	7,582	334.0
25.00		0.4375	47.264	65.022	18,013.3	17.64	108.03	80.7	750.7	0.0	1,119.2	19.64	7,281	334.0
30.00		0.4375	46.167	63.498	16,776.5	17.20	105.52	81.2	715.7	0.0	1,093.3	19.64	6,986	334.0
35.00		0.4375	45.069	61.975	15,597.7	16.75	103.02	81.7	681.6	0.0	1,067.4	19.64	6,698	334.0
40.00		0.4375	43.972	60.451	14,475.4	16.31	100.51	82.2	648.4	0.0	1,041.5	19.64	6,415	334.0
42.96	Bot - Section 2	0.4375	43.323	59.550	13,837.8	16.05	99.02	82.5	629.1	0.0	603.6	19.64	6,251	197.5
45.00		0.4375	42.875	58.928	13,408.2	15.87	98.00	82.6	616.0	0.0	771.7	19.64	6,327	136.5
49.04	Top - Section 1	0.3750	42.738	50.421	11,432.7	18.69	113.97	79.4	526.9	0.0	1,502.0	19.64	6,105	269.9
50.00		0.3750	42.528	50.171	11,263.0	18.59	113.41	79.5	521.6	0.0	164.3	19.64	6,053	64.1
55.00		0.3750	41.431	48.865	10,406.2	18.07	110.48	80.1	494.7	0.0	842.5	19.64	5,784	334.0
60.00		0.3750	40.333	47.559	9,594.0	17.55	107.56	80.8	468.5	0.0	820.3	19.64	5,522	334.0
65.00		0.3750	39.236	46.253	8,825.1	17.04	104.63	81.4	443.0	0.0	798.0	19.64	5,266	334.0
70.00		0.3750	38.139	44.947	8,098.5	16.52	101.70	82.0	418.2	0.0	775.8	19.64	5,015	334.0
75.00		0.3750	37.042	43.641	7,412.9	16.01	98.78	82.6	394.2	0.0	753.6	19.64	4,771	334.0
79.00		0.3750	36.164	42.596	6,893.2	15.59	96.44	82.6	375.4	0.0	586.9	19.64	4,581	267.2
80.00		0.3750	35.944	42.335	6,767.2	15.49	95.85	82.6	370.8	0.0	144.5	19.64	4,533	66.8
85.00		0.3750	34.847	41.029	6,160.0	14.97	92.93	82.6	348.2	0.0	709.2	19.64	4,302	334.0
87.54	Bot - Section 3	0.3750	34.290	40.366	5,866.0	14.71	91.44	82.6	336.9	0.0	351.7	19.64	4,186	169.7
90.00		0.3750	33.750	39.723	5,590.4	14.46	90.00	82.6	326.2	0.0	620.3	19.64	4,204	164.3
92.46	Top - Section 2	0.3125	33.836	33.250	4,721.1	17.68	108.27	80.6	274.8	0.0	609.5	19.64	4,093	164.1
95.00		0.3125	33.278	32.696	4,489.2	17.37	106.49	81.0	265.7	0.0	285.4	19.64	3,981	169.9
96.00		0.3125	33.058	32.479	4,400.1	17.24	105.79	81.1	262.2	0.0	110.9	19.64	3,937	66.8
100.0		0.3125	32.181	31.608	4,055.7	16.75	102.98	81.7	248.2	0.0	436.1	19.64	3,764	267.2
103.7	Reinf. Top	0.3125	31.358	30.792	3,749.5	16.28	100.34	82.2	235.5	0.0	398.1	19.64	3,605	250.5
105.0		0.3125	31.083	30.520	3,651.0	16.13	99.47	82.4	231.3	0.0	130.4			
110.0		0.3125	29.986	29.431	3,274.2	15.51	95.96	82.6	215.1	0.0	510.0			
112.0		0.3125	29.547	28.996	3,131.1	15.26	94.55	82.6	208.7	0.0	198.8			
115.0		0.3125	28.889	28.343	2,924.3	14.89	92.44	82.6	199.4	0.0	292.7			
120.0		0.3125	27.792	27.255	2,600.2	14.27	88.93	82.6	184.3	0.0	473.0			
125.0		0.3125	26.694	26.167	2,301.0	13.65	85.42	82.6	169.8	0.0	454.5			
130.0		0.3125	25.597	25.078	2,025.7	13.03	81.91	82.6	155.9	0.0	435.9			
132.1	Bot - Section 4	0.3125	25.132	24.617	1,915.9	12.77	80.42	82.6	150.2	0.0	179.2			
135.0		0.3125	24.500	23.990	1,773.2	12.41	78.40	82.6	142.6	0.0	384.0			
135.8	Top - Section 3	0.1875	24.684	14.578	1,105.3	21.80	131.65	75.8	88.2	0.0	114.0			
140.0		0.1875	23.778	14.039	987.1	20.95	126.81	76.8	81.8	0.0	201.1			
145.0		0.1875	22.681	13.386	855.6	19.92	120.96	78.0	74.3	0.0	233.3			
150.0		0.1875	21.583	12.733	736.4	18.89	115.11	79.2	67.2	0.0	222.2			
155.0		0.1875	20.486	12.080	628.8	17.85	109.26	80.4	60.5	0.0	211.1			
160.0		0.1875	19.389	11.427	532.3	16.82	103.41	81.6	54.1	0.0	200.0			
165.0		0.1875	18.292	10.774	446.2	15.79	97.56	82.6	48.0	0.0	188.9			
166.0		0.1875	18.072	10.643	430.1	15.58	96.39	82.6	46.9	0.0	36.4			
170.0		0.1875	17.194	10.121	369.8	14.76	91.70	82.6	42.4	0.0	141.3			
175.0		0.1875	16.097	9.468	302.8	13.73	85.85	82.6	37.0	0.0	166.6			
180.0		0.1875	15.000	8.815	244.4	12.70	80.00	82.6	32.1	0.0	155.5			
											25,271.1			6,930.5

Load Case: 1.2D + 1.6W 90 mph with No Ice 26 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.15
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		230.9	0.0					0.0	0.0	230.9	0.0	0.0	0.0
5.00		458.9	1,467.5					0.0	1,042.9	458.9	2,510.5	0.0	0.0
10.00		453.0	1,436.4					0.0	1,042.9	453.0	2,479.3	0.0	0.0
15.00		447.1	1,405.3					0.0	1,042.9	447.1	2,448.2	0.0	0.0
20.00		441.3	1,374.2					0.0	1,042.9	441.3	2,417.1	0.0	0.0
25.00		435.4	1,343.1					0.0	1,042.9	435.4	2,386.0	0.0	0.0
30.00	Appurtenance(s)	434.6	1,312.0	27.9	0.0	0.0	12.0	0.0	1,042.9	462.5	2,366.9	0.0	0.0
35.00		442.7	1,280.9					0.0	1,041.0	442.7	2,321.8	0.0	0.0
40.00		359.4	1,249.8					0.0	1,041.0	359.4	2,290.7	0.0	0.0
42.96	Bot - Section 2	230.9	724.4					0.0	615.5	230.9	1,339.9	0.0	0.0
45.00		287.4	926.0					0.0	425.4	287.4	1,351.5	0.0	0.0
49.04	Top - Section 1	237.1	1,802.4					0.0	841.1	237.1	2,643.5	0.0	0.0
50.00		284.5	197.2					0.0	199.9	284.5	397.1	0.0	0.0
55.00		480.7	1,011.0					0.0	1,041.0	480.7	2,051.9	0.0	0.0
60.00		485.6	984.3					0.0	1,041.0	485.6	2,025.3	0.0	0.0
65.00		589.8	957.7					0.0	1,041.0	589.8	1,998.6	0.0	0.0
70.00		688.9	931.0					133.5	1,041.0	822.4	1,972.0	0.0	0.0
75.00		614.8	904.3					135.5	1,041.0	750.3	1,945.3	0.0	0.0
79.00	Appurtenance(s)	339.4	704.3	3.3	0.0	0.0	0.7	109.8	832.8	452.5	1,537.8	0.0	0.0
80.00	Appurtenance(s)	402.7	173.4	1,739.4	0.0	0.0	333.6	27.6	208.0	2,169.6	715.0	0.0	0.0
85.00		503.5	851.0					139.2	1,037.0	642.7	1,888.0	0.0	0.0
87.54	Bot - Section 3	333.2	422.1					71.4	526.8	404.5	948.9	0.0	0.0
90.00		328.1	744.3					69.5	510.2	397.6	1,254.6	0.0	0.0
92.46	Top - Section 2	330.9	731.5					69.8	509.5	400.7	1,240.9	0.0	0.0
95.00		233.1	342.4					72.7	527.5	305.8	870.0	0.0	0.0
96.00	Appurtenance(s)	325.0	133.1	565.1	0.0	0.0	583.9	28.7	207.4	918.8	924.4	0.0	0.0
100.00		499.1	523.4					115.4	825.7	614.5	1,349.1	0.0	0.0
103.75	Reinf. Top	318.6	477.7					109.1	774.1	427.7	1,251.9	0.0	0.0
105.00	Appurtenance(s)	390.8	156.5	420.6	0.0	0.0	95.0	36.5	157.8	847.9	409.3	0.0	0.0
110.00		434.5	612.0					147.0	601.8	581.5	1,213.8	0.0	0.0
112.00	Appurtenance(s)	304.5	238.6	1,926.9	0.0	0.0	2,001.6	59.2	240.7	2,290.6	2,480.9	0.0	0.0
115.00		478.7	351.2					80.3	179.1	558.9	530.3	0.0	0.0
120.00		585.6	567.6					161.4	298.5	747.0	866.0	0.0	0.0
125.00	Appurtenance(s)	463.0	545.3	3,272.5	0.0	0.0	3,155.5	162.3	298.5	3,897.8	3,999.3	0.0	0.0
130.00		247.3	523.1					0.0	261.2	247.3	784.3	0.0	0.0
132.12	Bot - Section 4	173.1	215.1					0.0	110.7	173.1	325.8	0.0	0.0
135.00	Appurtenance(s)	130.1	460.8	2,769.0	0.0	0.0	3,428.5	0.0	150.4	2,899.1	4,039.8	0.0	0.0
135.87	Top - Section 3	170.7	136.8					0.0	41.6	170.7	178.4	0.0	0.0
140.00	Appurtenance(s)	308.2	241.3	1,630.2	0.0	10,244.9	865.2	0.0	197.4	1,938.4	1,303.9	0.0	0.0
145.00		332.2	280.0					0.0	197.8	332.2	477.8	0.0	0.0
150.00	Appurtenance(s)	326.1	266.6	202.6	0.0	0.0	190.0	0.0	197.8	528.8	654.4	0.0	0.0
155.00		319.8	253.3					0.0	192.9	319.8	446.2	0.0	0.0
160.00		374.8	240.0					0.0	192.9	374.8	432.8	0.0	0.0
165.00		258.5	226.6					84.5	192.9	343.0	419.5	0.0	0.0
166.00	Appurtenance(s)	130.6	43.7	1,638.0	0.0	0.0	1,542.4	16.9	38.6	1,785.6	1,624.7	0.0	0.0
170.00		194.0	169.6					0.0	95.7	194.0	265.2	0.0	0.0
175.00		204.6	200.0					0.0	119.6	204.6	319.5	0.0	0.0
180.00	Appurtenance(s)	99.2	186.6	3,918.0	0.0	7,443.3	3,066.7	0.0	119.6	4,017.3	3,372.9	0.0	0.0

Site Number:	302506	Code:	ANSI/TIA-222-G	
Site Name:	Winchester CT 3, CT	Engineering Number:	OAA727483_C3_02	5/14/2018 1:20:37 PM
Customer:	T-MOBILE			

Load Case: 1.2D + 1.6W — 90 mph with No Ice — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.15

Totals:	37,086.7	71,071.1	0.00	0.00

Site Number: 302506 Code: ANSI/TIA-222-G

Site Name: Winchester CT 3, CT Engineering Number: OAA727483_C3_02 5/14/2018 1:20:37 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 90 mph with No Ice 26 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.15

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-71.01	-36.97	0.00	-4,335.86	0.00	4,335.86	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.595
5.00	-68.39	-36.72	0.00	-4,151.02	0.00	4,151.02	5,029.12	2,514.56	10,576.3	5,296.03	0.10	-0.18	0.587
10.00	-65.80	-36.46	0.00	-3,967.43	0.00	3,967.43	4,953.95	2,476.98	10,193.1	5,104.17	0.38	-0.36	0.577
15.00	-63.24	-36.20	0.00	-3,785.13	0.00	3,785.13	4,877.36	2,438.68	9,813.98	4,914.28	0.85	-0.54	0.568
20.00	-60.71	-35.93	0.00	-3,604.14	0.00	3,604.14	4,799.34	2,399.67	9,438.93	4,726.48	1.52	-0.72	0.558
25.00	-58.21	-35.65	0.00	-3,424.51	0.00	3,424.51	4,719.90	2,359.95	9,068.23	4,540.86	2.37	-0.91	0.547
30.00	-55.74	-35.33	0.00	-3,246.28	0.00	3,246.28	4,639.03	2,319.51	8,702.08	4,357.51	3.43	-1.10	0.535
35.00	-53.31	-35.01	0.00	-3,069.66	0.00	3,069.66	4,556.73	2,278.36	8,340.67	4,176.53	4.68	-1.29	0.523
40.00	-50.94	-34.73	0.00	-2,894.60	0.00	2,894.60	4,473.00	2,236.50	7,984.18	3,998.03	6.13	-1.48	0.511
42.96	-49.55	-34.55	0.00	-2,791.91	0.00	2,791.91	4,422.82	2,211.41	7,775.79	3,893.68	7.08	-1.59	0.503
45.00	-48.13	-34.32	0.00	-2,721.31	0.00	2,721.31	4,378.03	2,189.01	7,615.75	3,813.53	7.78	-1.67	0.493
49.04	-45.44	-34.08	0.00	-2,582.66	0.00	2,582.66	3,604.17	1,802.08	6,267.69	3,138.50	9.26	-1.83	0.546
50.00	-44.98	-33.88	0.00	-2,549.94	0.00	2,549.94	3,591.50	1,795.75	6,214.33	3,111.78	9.63	-1.86	0.542
55.00	-42.83	-33.48	0.00	-2,380.54	0.00	2,380.54	3,524.70	1,762.35	5,938.60	2,973.71	11.69	-2.07	0.524
60.00	-40.71	-33.06	0.00	-2,213.15	0.00	2,213.15	3,456.48	1,728.24	5,666.60	2,837.51	13.96	-2.27	0.504
65.00	-38.62	-32.52	0.00	-2,047.85	0.00	2,047.85	3,386.83	1,693.41	5,398.53	2,703.28	16.45	-2.47	0.483
70.00	-36.58	-31.74	0.00	-1,885.23	0.00	1,885.23	3,315.75	1,657.87	5,134.58	2,571.11	19.14	-2.67	0.461
75.00	-34.58	-31.00	0.00	-1,726.54	0.00	1,726.54	3,242.30	1,621.15	4,873.54	2,440.39	22.04	-2.86	0.438
79.00	-33.02	-30.53	0.00	-1,602.53	0.00	1,602.53	3,164.68	1,582.34	4,641.84	2,324.37	24.50	-3.02	0.422
80.00	-32.36	-28.39	0.00	-1,572.00	0.00	1,572.00	3,145.28	1,572.64	4,584.79	2,295.80	25.14	-3.06	0.417
85.00	-30.44	-27.72	0.00	-1,430.06	0.00	1,430.06	3,048.26	1,524.13	4,304.87	2,155.63	28.44	-3.25	0.398
87.54	-29.47	-27.31	0.00	-1,359.66	0.00	1,359.66	2,998.97	1,499.48	4,166.05	2,086.12	30.19	-3.34	0.387
90.00	-28.20	-26.88	0.00	-1,292.49	0.00	1,292.49	2,951.23	1,475.62	4,033.76	2,019.88	31.94	-3.43	0.372
92.46	-26.94	-26.45	0.00	-1,226.45	0.00	1,226.45	2,412.07	1,206.04	3,317.78	1,661.36	33.73	-3.52	0.403
95.00	-26.07	-26.12	0.00	-1,159.18	0.00	1,159.18	2,382.81	1,191.41	3,222.46	1,613.62	35.63	-3.62	0.388
96.00	-25.16	-25.19	0.00	-1,133.06	0.00	1,133.06	2,371.21	1,185.60	3,185.22	1,594.98	36.39	-3.65	0.382
100.00	-23.79	-24.54	0.00	-1,032.32	0.00	1,032.32	2,324.22	1,162.11	3,037.61	1,521.06	39.52	-3.80	0.359
103.75	-22.54	-24.07	0.00	-940.29	0.00	940.29	2,279.33	1,139.67	2,901.28	1,452.80	42.56	-3.94	0.336
103.75	-22.54	-24.07	0.00	-940.29	0.00	940.29	2,279.33	1,139.67	2,901.28	1,452.80	42.56	-3.94	0.658
105.00	-22.11	-23.27	0.00	-910.21	0.00	910.21	2,264.20	1,132.10	2,856.29	1,430.27	43.59	-3.98	0.647
110.00	-20.85	-22.68	0.00	-793.88	0.00	793.88	2,186.61	1,093.30	2,659.07	1,331.51	47.94	-4.31	0.606
112.00	-18.49	-20.26	0.00	-748.51	0.00	748.51	2,154.27	1,077.13	2,580.59	1,292.21	49.78	-4.45	0.588
115.00	-17.92	-19.74	0.00	-687.73	0.00	687.73	2,105.76	1,052.88	2,465.08	1,234.37	52.63	-4.64	0.566
120.00	-17.02	-19.02	0.00	-589.01	0.00	589.01	2,024.90	1,012.45	2,278.43	1,140.91	57.66	-4.95	0.525
125.00	-13.31	-14.85	0.00	-493.93	0.00	493.93	1,944.05	972.03	2,099.13	1,051.12	63.00	-5.25	0.477
130.00	-12.50	-14.57	0.00	-419.71	0.00	419.71	1,863.20	931.60	1,927.17	965.02	68.64	-5.53	0.442
132.12	-12.16	-14.39	0.00	-388.82	0.00	388.82	1,828.92	914.46	1,856.49	929.62	71.12	-5.65	0.425
135.00	-8.41	-11.12	0.00	-347.37	0.00	347.37	1,782.35	891.17	1,762.57	882.59	74.58	-5.81	0.398
135.87	-8.22	-10.95	0.00	-337.69	0.00	337.69	993.95	496.97	1,000.68	501.09	75.64	-5.86	0.683
140.00	-7.08	-8.93	0.00	-282.21	0.00	282.21	969.84	484.92	940.01	470.70	80.79	-6.07	0.607
145.00	-6.59	-8.59	0.00	-237.58	0.00	237.58	939.35	469.68	867.78	434.53	87.34	-6.45	0.554
150.00	-5.95	-8.02	0.00	-194.66	0.00	194.66	907.44	453.72	797.07	399.13	94.28	-6.81	0.495
155.00	-5.50	-7.68	0.00	-154.55	0.00	154.55	874.09	437.05	728.06	364.57	101.57	-7.14	0.431
160.00	-5.08	-7.28	0.00	-116.14	0.00	116.14	839.33	419.66	660.97	330.98	109.20	-7.45	0.357
165.00	-4.70	-6.90	0.00	-79.75	0.00	79.75	800.44	400.22	593.98	297.43	117.13	-7.71	0.274
166.00	-3.32	-4.91	0.00	-72.85	0.00	72.85	790.74	395.37	579.60	290.23	118.74	-7.76	0.255
170.00	-3.07	-4.70	0.00	-53.19	0.00	53.19	751.93	375.97	523.82	262.30	125.30	-7.93	0.207
175.00	-2.77	-4.45	0.00	-29.71	0.00	29.71	703.42	351.71	458.07	229.37	133.66	-8.09	0.134
180.00	0.00	-4.02	0.00	-7.44	0.00	7.44	654.91	327.45	396.72	198.65	142.16	-8.17	0.038

Load Case: 0.9D + 1.6W — 90 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.15

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		200.3	0.0					0.0	0.0	200.3	0.0	0.0	0.0
5.00		396.5	1,100.6					0.0	782.2	396.5	1,882.8	0.0	0.0
10.00		388.0	1,077.3					0.0	782.2	388.0	1,859.5	0.0	0.0
15.00		379.6	1,054.0					0.0	782.2	379.6	1,836.2	0.0	0.0
20.00		371.2	1,030.6					0.0	782.2	371.2	1,812.9	0.0	0.0
25.00		362.8	1,007.3					0.0	782.2	362.8	1,789.5	0.0	0.0
30.00	Appurtenance(s)	358.6	984.0	27.9	0.0	0.0	9.0	0.0	782.2	386.5	1,775.2	0.0	0.0
35.00		361.5	960.7					0.0	780.7	361.5	1,741.4	0.0	0.0
40.00		291.0	937.3					0.0	780.7	291.0	1,718.0	0.0	0.0
42.96	Bot - Section 2	185.5	543.3					0.0	461.7	185.5	1,004.9	0.0	0.0
45.00		229.2	694.5					0.0	319.1	229.2	1,013.6	0.0	0.0
49.04	Top - Section 1	188.7	1,351.8					0.0	630.8	188.7	1,982.6	0.0	0.0
50.00		225.5	147.9					0.0	149.9	225.5	297.8	0.0	0.0
55.00		378.3	758.2					0.0	780.7	378.3	1,539.0	0.0	0.0
60.00		377.6	738.2					0.0	780.7	377.6	1,519.0	0.0	0.0
65.00		534.3	718.2					0.0	780.7	534.3	1,499.0	0.0	0.0
70.00		688.9	698.2					133.5	780.7	822.4	1,479.0	0.0	0.0
75.00		614.8	678.3					135.5	780.7	750.3	1,459.0	0.0	0.0
79.00	Appurtenance(s)	339.4	528.2	3.3	0.0	0.0	0.5	109.8	624.6	452.5	1,153.3	0.0	0.0
80.00	Appurtenance(s)	402.7	130.1	1,739.4	0.0	0.0	250.2	27.6	156.0	2,169.6	536.3	0.0	0.0
85.00		503.5	638.3					139.2	777.8	642.7	1,416.0	0.0	0.0
87.54	Bot - Section 3	333.2	316.6					71.4	395.1	404.5	711.6	0.0	0.0
90.00		328.1	558.2					69.5	382.7	397.6	940.9	0.0	0.0
92.46	Top - Section 2	330.9	548.6					69.8	382.1	400.7	930.7	0.0	0.0
95.00		233.1	256.8					72.7	395.6	305.8	652.5	0.0	0.0
96.00	Appurtenance(s)	325.0	99.8	565.1	0.0	0.0	437.9	28.7	155.6	918.8	693.3	0.0	0.0
100.00		499.1	392.5					115.4	619.3	614.5	1,011.8	0.0	0.0
103.75	Reinf. Top	318.6	358.3					109.1	580.6	427.7	938.9	0.0	0.0
105.00	Appurtenance(s)	390.8	117.4	420.6	0.0	0.0	71.3	36.5	118.4	847.9	307.0	0.0	0.0
110.00		434.5	459.0					147.0	451.4	581.5	910.4	0.0	0.0
112.00	Appurtenance(s)	304.5	178.9	1,926.9	0.0	0.0	1,501.2	59.2	180.5	2,290.6	1,860.7	0.0	0.0
115.00		478.7	263.4					80.3	134.3	558.9	397.7	0.0	0.0
120.00		585.6	425.7					161.4	223.9	747.0	649.5	0.0	0.0
125.00	Appurtenance(s)	440.6	409.0	3,272.5	0.0	0.0	2,366.6	162.3	223.9	3,875.4	2,999.5	0.0	0.0
130.00		214.8	392.3					0.0	195.9	214.8	588.2	0.0	0.0
132.12	Bot - Section 4	148.3	161.3					0.0	83.0	148.3	244.3	0.0	0.0
135.00	Appurtenance(s)	110.9	345.6	2,769.0	0.0	0.0	2,571.4	0.0	112.8	2,879.9	3,029.8	0.0	0.0
135.87	Top - Section 3	144.4	102.6					0.0	31.2	144.4	133.8	0.0	0.0
140.00	Appurtenance(s)	258.1	181.0	1,630.2	0.0	10,244.9	648.9	0.0	148.0	1,888.3	977.9	0.0	0.0
145.00		273.3	210.0					0.0	148.4	273.3	358.3	0.0	0.0
150.00	Appurtenance(s)	262.6	200.0	202.6	0.0	0.0	142.5	0.0	148.4	465.2	490.8	0.0	0.0
155.00		251.6	190.0					0.0	144.7	251.6	334.6	0.0	0.0
160.00		339.5	180.0					0.0	144.7	339.5	324.6	0.0	0.0
165.00		258.5	170.0					84.5	144.7	343.0	314.6	0.0	0.0
166.00	Appurtenance(s)	130.6	32.8	1,638.0	0.0	0.0	1,156.8	16.9	28.9	1,785.6	1,218.5	0.0	0.0
170.00		194.0	127.2					0.0	71.7	194.0	198.9	0.0	0.0
175.00		204.6	150.0					0.0	89.7	204.6	239.7	0.0	0.0
180.00	Appurtenance(s)	99.2	140.0	3,918.0	0.0	7,443.3	2,300.0	0.0	89.7	4,017.3	2,529.7	0.0	0.0

Site Number:	302506	Code:	ANSI/TIA-222-G	
Site Name:	Winchester CT 3, CT	Engineering Number:	OAA727483_C3_02	5/14/2018 1:20:48 PM
Customer:	T-MOBILE			

Load Case: 0.9D + 1.6W — 90 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.15

Totals:	35,614.7	53,303.3	0.00	0.00

Site Number: 302506 Code: ANSI/TIA-222-G

Site Name: Winchester CT 3, CT Engineering Number: OAA727483_C3_02 5/14/2018 1:20:48 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W — 90 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.15

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	-53.25	-35.50	0.00	-4,178.32	0.00	4,178.32	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.571
5.00	-51.26	-35.25	0.00	-4,000.85	0.00	4,000.85	5,029.12	2,514.56	10,576.3	5,296.03	0.09	-0.17	0.563
10.00	-49.30	-35.00	0.00	-3,824.60	0.00	3,824.60	4,953.95	2,476.98	10,193.1	5,104.17	0.37	-0.34	0.554
15.00	-47.36	-34.76	0.00	-3,649.58	0.00	3,649.58	4,877.36	2,438.68	9,813.98	4,914.28	0.82	-0.52	0.545
20.00	-45.44	-34.51	0.00	-3,475.80	0.00	3,475.80	4,799.34	2,399.67	9,438.93	4,726.48	1.46	-0.70	0.536
25.00	-43.55	-34.26	0.00	-3,303.26	0.00	3,303.26	4,719.90	2,359.95	9,068.23	4,540.86	2.29	-0.88	0.525
30.00	-41.67	-33.97	0.00	-3,131.98	0.00	3,131.98	4,639.03	2,319.51	8,702.08	4,357.51	3.31	-1.06	0.515
35.00	-39.83	-33.70	0.00	-2,962.11	0.00	2,962.11	4,556.73	2,278.36	8,340.67	4,176.53	4.51	-1.24	0.503
40.00	-38.04	-33.47	0.00	-2,793.59	0.00	2,793.59	4,473.00	2,236.50	7,984.18	3,998.03	5.91	-1.42	0.491
42.96	-36.98	-33.32	0.00	-2,694.63	0.00	2,694.63	4,422.82	2,211.41	7,775.79	3,893.68	6.83	-1.53	0.483
45.00	-35.91	-33.13	0.00	-2,626.55	0.00	2,626.55	4,378.03	2,189.01	7,615.75	3,813.53	7.50	-1.61	0.474
49.04	-33.88	-32.94	0.00	-2,492.69	0.00	2,492.69	3,604.17	1,802.08	6,267.69	3,138.50	8.93	-1.76	0.525
50.00	-33.52	-32.78	0.00	-2,461.06	0.00	2,461.06	3,591.50	1,795.75	6,214.33	3,111.78	9.29	-1.80	0.521
55.00	-31.89	-32.46	0.00	-2,297.19	0.00	2,297.19	3,524.70	1,762.35	5,938.60	2,973.71	11.28	-1.99	0.503
60.00	-30.27	-32.13	0.00	-2,134.91	0.00	2,134.91	3,456.48	1,728.24	5,666.60	2,837.51	13.47	-2.19	0.484
65.00	-28.69	-31.63	0.00	-1,974.29	0.00	1,974.29	3,386.83	1,693.41	5,398.53	2,703.28	15.86	-2.38	0.464
70.00	-27.15	-30.83	0.00	-1,816.15	0.00	1,816.15	3,315.75	1,657.87	5,134.58	2,571.11	18.46	-2.57	0.442
75.00	-25.64	-30.09	0.00	-1,661.99	0.00	1,661.99	3,242.30	1,621.15	4,873.54	2,440.39	21.25	-2.76	0.420
79.00	-24.46	-29.62	0.00	-1,541.62	0.00	1,541.62	3,164.68	1,582.34	4,641.84	2,324.37	23.63	-2.91	0.404
80.00	-23.98	-27.47	0.00	-1,512.00	0.00	1,512.00	3,145.28	1,572.64	4,584.79	2,295.80	24.24	-2.95	0.400
85.00	-22.54	-26.81	0.00	-1,374.63	0.00	1,374.63	3,048.26	1,524.13	4,304.87	2,155.63	27.43	-3.13	0.381
87.54	-21.81	-26.40	0.00	-1,306.54	0.00	1,306.54	2,998.97	1,499.48	4,166.05	2,086.12	29.12	-3.22	0.371
90.00	-20.85	-25.98	0.00	-1,241.59	0.00	1,241.59	2,951.23	1,475.62	4,033.76	2,019.88	30.80	-3.31	0.356
92.46	-19.91	-25.56	0.00	-1,177.76	0.00	1,177.76	2,412.07	1,206.04	3,317.78	1,661.36	32.53	-3.40	0.385
95.00	-19.25	-25.24	0.00	-1,112.75	0.00	1,112.75	2,382.81	1,191.41	3,222.46	1,613.62	34.36	-3.48	0.371
96.00	-18.57	-24.31	0.00	-1,087.52	0.00	1,087.52	2,371.21	1,185.60	3,185.22	1,594.98	35.10	-3.52	0.365
100.00	-17.54	-23.67	0.00	-990.30	0.00	990.30	2,324.22	1,162.11	3,037.61	1,521.06	38.11	-3.66	0.343
103.75	-16.60	-23.21	0.00	-901.53	0.00	901.53	2,279.33	1,139.67	2,901.28	1,452.80	41.04	-3.79	0.321
103.75	-16.60	-23.21	0.00	-901.53	0.00	901.53	2,279.33	1,139.67	2,901.28	1,452.80	41.04	-3.79	0.628
105.00	-16.28	-22.39	0.00	-872.53	0.00	872.53	2,264.20	1,132.10	2,856.29	1,430.27	42.03	-3.84	0.618
110.00	-15.33	-21.81	0.00	-760.56	0.00	760.56	2,186.61	1,093.30	2,659.07	1,331.51	46.22	-4.15	0.579
112.00	-13.59	-19.42	0.00	-716.95	0.00	716.95	2,154.27	1,077.13	2,580.59	1,292.21	47.99	-4.28	0.561
115.00	-13.15	-18.89	0.00	-658.67	0.00	658.67	2,105.76	1,052.88	2,465.08	1,234.37	50.74	-4.47	0.540
120.00	-12.47	-18.16	0.00	-564.21	0.00	564.21	2,024.90	1,012.45	2,278.43	1,140.91	55.57	-4.77	0.501
125.00	-9.75	-14.09	0.00	-473.41	0.00	473.41	1,944.05	972.03	2,099.13	1,051.12	60.72	-5.05	0.456
130.00	-9.14	-13.85	0.00	-402.96	0.00	402.96	1,863.20	931.60	1,927.17	965.02	66.15	-5.32	0.423
132.12	-8.88	-13.70	0.00	-373.60	0.00	373.60	1,828.92	914.46	1,856.49	929.62	68.53	-5.44	0.407
135.00	-6.12	-10.56	0.00	-334.13	0.00	334.13	1,782.35	891.17	1,762.57	882.59	71.85	-5.59	0.382
135.87	-5.98	-10.41	0.00	-324.95	0.00	324.95	993.95	496.97	1,000.68	501.09	72.88	-5.63	0.655
140.00	-5.15	-8.46	0.00	-271.71	0.00	271.71	969.84	484.92	940.01	470.70	77.83	-5.84	0.583
145.00	-4.77	-8.18	0.00	-229.40	0.00	229.40	939.35	469.68	867.78	434.53	84.14	-6.20	0.533
150.00	-4.29	-7.69	0.00	-188.49	0.00	188.49	907.44	453.72	797.07	399.13	90.81	-6.55	0.477
155.00	-3.95	-7.42	0.00	-150.04	0.00	150.04	874.09	437.05	728.06	364.57	97.83	-6.88	0.416
160.00	-3.63	-7.06	0.00	-112.93	0.00	112.93	839.33	419.66	660.97	330.98	105.18	-7.17	0.346
165.00	-3.35	-6.69	0.00	-77.61	0.00	77.61	800.44	400.22	593.98	297.43	112.81	-7.43	0.265
166.00	-2.36	-4.77	0.00	-70.92	0.00	70.92	790.74	395.37	579.60	290.23	114.37	-7.48	0.247
170.00	-2.18	-4.56	0.00	-51.85	0.00	51.85	751.93	375.97	523.82	262.30	120.69	-7.64	0.201
175.00	-1.96	-4.32	0.00	-29.07	0.00	29.07	703.42	351.71	458.07	229.37	128.75	-7.79	0.130
180.00	0.00	-4.02	0.00	-7.44	0.00	7.44	654.91	327.45	396.72	198.65	136.94	-7.88	0.038

Site Number: 302506 Code: ANSI/TIA-222-G

Site Name: Winchester CT 3, CT Engineering Number: OAA727483_C3_02 5/14/2018 1:20:49 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi 40 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 : 1.25

Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		42.6	0.0					0.0	0.0	42.6	0.0	0.0	0.0
5.00		84.7	2,115.7					0.0	1,841.8	84.7	3,957.5	0.0	0.0
10.00		83.5	2,148.0					0.0	1,942.1	83.5	4,090.1	0.0	0.0
15.00		82.2	2,140.2					0.0	1,994.0	82.2	4,134.2	0.0	0.0
20.00		80.7	2,119.3					0.0	2,030.2	80.7	4,149.5	0.0	0.0
25.00		79.2	2,091.5					0.0	2,058.4	79.2	4,149.8	0.0	0.0
30.00	Appurtenance(s)	78.6	2,059.4	6.0	0.0	0.0	45.0	0.0	2,081.6	84.6	4,185.9	0.0	0.0
35.00		79.5	2,024.3					0.0	2,050.3	79.5	4,074.6	0.0	0.0
40.00		64.2	1,987.1					0.0	2,066.3	64.2	4,053.4	0.0	0.0
42.96	Bot - Section 2	41.0	1,158.9					0.0	1,228.7	41.0	2,387.5	0.0	0.0
45.00		50.7	1,230.2					0.0	851.9	50.7	2,082.1	0.0	0.0
49.04	Top - Section 1	41.8	2,396.3					0.0	1,690.6	41.8	4,086.9	0.0	0.0
50.00		50.2	338.4					0.0	402.9	50.2	741.4	0.0	0.0
55.00		84.4	1,733.2					0.0	2,105.4	84.4	3,838.6	0.0	0.0
60.00		84.5	1,695.4					0.0	2,116.2	84.5	3,811.6	0.0	0.0
65.00		84.5	1,656.7					0.0	2,126.3	84.5	3,783.0	0.0	0.0
70.00		84.2	1,617.3					35.4	2,135.7	119.7	3,753.0	0.0	0.0
75.00		75.5	1,577.3					36.3	2,144.5	111.8	3,721.8	0.0	0.0
79.00	Appurtenance(s)	41.8	1,234.2	1.5	0.0	0.0	7.0	29.7	1,721.6	72.9	2,962.8	0.0	0.0
80.00	Appurtenance(s)	49.8	305.6	215.3	0.0	0.0	938.7	7.5	431.0	272.6	1,675.3	0.0	0.0
85.00		62.4	1,495.7					38.0	2,156.7	100.3	3,652.4	0.0	0.0
87.54	Bot - Section 3	41.4	746.2					19.6	1,098.4	61.0	1,844.7	0.0	0.0
90.00		40.8	1,060.0					19.2	1,065.7	59.9	2,125.7	0.0	0.0
92.46	Top - Section 2	41.3	1,043.0					19.3	1,065.9	60.6	2,108.9	0.0	0.0
95.00		29.1	661.0					20.2	1,105.4	49.3	1,766.4	0.0	0.0
96.00	Appurtenance(s)	40.7	257.8	111.9	0.0	0.0	936.1	8.0	435.1	160.6	1,629.0	0.0	0.0
100.00		62.7	1,011.4					32.2	1,739.1	94.9	2,750.5	0.0	0.0
103.75	Reinf. Top	40.2	926.4					30.6	1,634.1	70.8	2,560.6	0.0	0.0
105.00	Appurtenance(s)	49.5	305.2	78.5	0.0	0.0	462.7	10.3	445.3	138.3	1,213.2	0.0	0.0
110.00		55.2	1,189.5					41.6	1,567.4	96.8	2,756.9	0.0	0.0
112.00	Appurtenance(s)	38.9	467.3	371.5	0.0	0.0	5,338.0	16.8	628.4	427.2	6,433.6	0.0	0.0
115.00		61.4	688.1					21.1	490.6	82.5	1,178.7	0.0	0.0
120.00		75.5	1,111.6					42.7	819.8	118.2	1,931.4	0.0	0.0
125.00	Appurtenance(s)	74.0	1,072.3	595.1	0.0	0.0	9,306.7	43.3	822.2	712.4	11,201.3	0.0	0.0
130.00		51.8	1,032.7					0.0	595.3	51.8	1,628.0	0.0	0.0
132.12	Bot - Section 4	36.0	428.2					0.0	252.8	36.0	681.0	0.0	0.0
135.00	Appurtenance(s)	26.9	748.4	504.2	0.0	0.0	7,794.8	0.0	343.9	531.1	8,887.0	0.0	0.0
135.87	Top - Section 3	35.3	223.2					0.0	100.1	35.3	323.3	0.0	0.0
140.00	Appurtenance(s)	63.5	638.8	407.5	0.0	2,778.8	3,513.1	0.0	475.7	471.0	4,627.6	0.0	0.0
145.00		67.8	742.9					0.0	536.0	67.8	1,278.9	0.0	0.0
150.00	Appurtenance(s)	65.9	711.4	64.9	0.0	0.0	332.7	0.0	537.3	130.8	1,581.4	0.0	0.0
155.00		63.8	679.7					0.0	533.6	63.8	1,213.3	0.0	0.0
160.00		61.8	647.8					0.0	534.8	61.8	1,182.6	0.0	0.0
165.00		36.3	615.8					23.9	536.0	60.2	1,151.7	0.0	0.0
166.00	Appurtenance(s)	29.3	120.9	345.5	0.0	0.0	3,929.3	4.8	107.3	379.6	4,157.5	0.0	0.0
170.00		51.5	465.9					0.0	95.7	51.5	561.6	0.0	0.0
175.00		55.2	551.2					0.0	119.6	55.2	670.8	0.0	0.0
180.00	Appurtenance(s)	27.0	518.7	961.7	0.0	1,061.3	8,784.4	0.0	119.6	988.7	9,422.7	0.0	0.0

Site Number:	302506	Code:	ANSI/TIA-222-G	
Site Name:	Winchester CT 3, CT	Engineering Number:	OAA727483_C3_02	5/14/2018 1:21:00 PM
Customer:	T-MOBILE			

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 mph with 1.00 in Radial Ice — 26 Iterations

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

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
Ice Importance Factor : 1.25

Totals:	6,912.62	146,159.	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 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 : 1.25
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	-146.16	-6.92	0.00	-930.93	0.00	930.93	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.148
5.00	-142.20	-6.93	0.00	-896.33	0.00	896.33	5,029.12	2,514.56	10,576.3	5,296.03	0.02	-0.04	0.146
10.00	-138.10	-6.94	0.00	-861.69	0.00	861.69	4,953.95	2,476.98	10,193.1	5,104.17	0.08	-0.08	0.145
15.00	-133.96	-6.94	0.00	-827.01	0.00	827.01	4,877.36	2,438.68	9,813.98	4,914.28	0.18	-0.12	0.143
20.00	-129.81	-6.94	0.00	-792.30	0.00	792.30	4,799.34	2,399.67	9,438.93	4,726.48	0.33	-0.16	0.141
25.00	-125.65	-6.94	0.00	-757.59	0.00	757.59	4,719.90	2,359.95	9,068.23	4,540.86	0.51	-0.20	0.139
30.00	-121.46	-6.93	0.00	-722.89	0.00	722.89	4,639.03	2,319.51	8,702.08	4,357.51	0.74	-0.24	0.137
35.00	-117.38	-6.92	0.00	-688.25	0.00	688.25	4,556.73	2,278.36	8,340.67	4,176.53	1.02	-0.28	0.135
40.00	-113.33	-6.90	0.00	-653.66	0.00	653.66	4,473.00	2,236.50	7,984.18	3,998.03	1.34	-0.32	0.132
42.96	-110.94	-6.89	0.00	-633.26	0.00	633.26	4,422.82	2,211.41	7,775.79	3,893.68	1.55	-0.35	0.131
45.00	-108.85	-6.87	0.00	-619.18	0.00	619.18	4,378.03	2,189.01	7,615.75	3,813.53	1.70	-0.37	0.129
49.04	-104.76	-6.85	0.00	-591.41	0.00	591.41	3,604.17	1,802.08	6,267.69	3,138.50	2.03	-0.40	0.144
50.00	-104.02	-6.84	0.00	-584.84	0.00	584.84	3,591.50	1,795.75	6,214.33	3,111.78	2.11	-0.41	0.143
55.00	-100.17	-6.81	0.00	-550.64	0.00	550.64	3,524.70	1,762.35	5,938.60	2,973.71	2.57	-0.46	0.139
60.00	-96.36	-6.77	0.00	-516.60	0.00	516.60	3,456.48	1,728.24	5,666.60	2,837.51	3.07	-0.51	0.135
65.00	-92.57	-6.73	0.00	-482.74	0.00	482.74	3,386.83	1,693.41	5,398.53	2,703.28	3.63	-0.55	0.131
70.00	-88.81	-6.64	0.00	-449.11	0.00	449.11	3,315.75	1,657.87	5,134.58	2,571.11	4.23	-0.60	0.127
75.00	-85.09	-6.55	0.00	-415.89	0.00	415.89	3,242.30	1,621.15	4,873.54	2,440.39	4.89	-0.65	0.122
79.00	-82.12	-6.48	0.00	-389.68	0.00	389.68	3,164.68	1,582.34	4,641.84	2,324.37	5.45	-0.68	0.118
80.00	-80.45	-6.23	0.00	-383.20	0.00	383.20	3,145.28	1,572.64	4,584.79	2,295.80	5.59	-0.69	0.117
85.00	-76.79	-6.13	0.00	-352.07	0.00	352.07	3,048.26	1,524.13	4,304.87	2,155.63	6.34	-0.74	0.113
87.54	-74.95	-6.07	0.00	-336.51	0.00	336.51	2,998.97	1,499.48	4,166.05	2,086.12	6.75	-0.76	0.111
90.00	-72.82	-6.01	0.00	-321.57	0.00	321.57	2,951.23	1,475.62	4,033.76	2,019.88	7.15	-0.79	0.107
92.46	-70.71	-5.95	0.00	-306.81	0.00	306.81	2,412.07	1,206.04	3,317.78	1,661.36	7.56	-0.81	0.117
95.00	-68.94	-5.90	0.00	-291.67	0.00	291.67	2,382.81	1,191.41	3,222.46	1,613.62	7.99	-0.83	0.114
96.00	-67.31	-5.74	0.00	-285.78	0.00	285.78	2,371.21	1,185.60	3,185.22	1,594.98	8.17	-0.84	0.112
100.00	-64.56	-5.64	0.00	-262.82	0.00	262.82	2,324.22	1,162.11	3,037.61	1,521.06	8.89	-0.88	0.107
103.75	-62.00	-5.56	0.00	-241.66	0.00	241.66	2,279.33	1,139.67	2,901.28	1,452.80	9.60	-0.91	0.101
103.75	-62.00	-5.56	0.00	-241.66	0.00	241.66	2,279.33	1,139.67	2,901.28	1,452.80	9.60	-0.91	0.194
105.00	-60.79	-5.45	0.00	-234.72	0.00	234.72	2,264.20	1,132.10	2,856.29	1,430.27	9.84	-0.93	0.191
110.00	-58.03	-5.37	0.00	-207.46	0.00	207.46	2,186.61	1,093.30	2,659.07	1,331.51	10.85	-1.01	0.182
112.00	-51.60	-4.87	0.00	-196.72	0.00	196.72	2,154.27	1,077.13	2,580.59	1,292.21	11.29	-1.05	0.176
115.00	-50.41	-4.82	0.00	-182.13	0.00	182.13	2,105.76	1,052.88	2,465.08	1,234.37	11.96	-1.10	0.172
120.00	-48.48	-4.73	0.00	-158.03	0.00	158.03	2,024.90	1,012.45	2,278.43	1,140.91	13.16	-1.18	0.162
125.00	-37.29	-3.83	0.00	-134.36	0.00	134.36	1,944.05	972.03	2,099.13	1,051.12	14.44	-1.26	0.147
130.00	-35.66	-3.78	0.00	-115.20	0.00	115.20	1,863.20	931.60	1,927.17	965.02	15.80	-1.34	0.139
132.12	-34.98	-3.75	0.00	-107.20	0.00	107.20	1,828.92	914.46	1,856.49	929.62	16.40	-1.37	0.134
135.00	-26.10	-3.01	0.00	-96.40	0.00	96.40	1,782.35	891.17	1,762.57	882.59	17.24	-1.42	0.124
135.87	-25.78	-2.99	0.00	-93.78	0.00	93.78	993.95	496.97	1,000.68	501.09	17.50	-1.43	0.213
140.00	-21.16	-2.43	0.00	-78.66	0.00	78.66	969.84	484.92	940.01	470.70	18.77	-1.49	0.189
145.00	-19.88	-2.36	0.00	-66.51	0.00	66.51	939.35	469.68	867.78	434.53	20.38	-1.59	0.174
150.00	-18.30	-2.22	0.00	-54.70	0.00	54.70	907.44	453.72	797.07	399.13	22.10	-1.69	0.157
155.00	-17.09	-2.14	0.00	-43.60	0.00	43.60	874.09	437.05	728.06	364.57	23.93	-1.79	0.139
160.00	-15.90	-2.07	0.00	-32.88	0.00	32.88	839.33	419.66	660.97	330.98	25.85	-1.87	0.118
165.00	-14.75	-1.98	0.00	-22.54	0.00	22.54	800.44	400.22	593.98	297.43	27.85	-1.95	0.094
166.00	-10.61	-1.46	0.00	-20.56	0.00	20.56	790.74	395.37	579.60	290.23	28.26	-1.96	0.084
170.00	-10.05	-1.40	0.00	-14.71	0.00	14.71	751.93	375.97	523.82	262.30	29.93	-2.01	0.069
175.00	-9.38	-1.33	0.00	-7.70	0.00	7.70	703.42	351.71	458.07	229.37	32.06	-2.05	0.047
180.00	0.00	-0.99	0.00	-1.06	0.00	1.06	654.91	327.45	396.72	198.65	34.22	-2.07	0.005

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

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

Wind Importance Factor : 1.15

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		55.6	0.0					0.0	0.0	55.6	0.0	0.0	0.0
5.00		110.1	1,222.9					0.0	869.1	110.1	2,092.0	0.0	0.0
10.00		107.8	1,197.0					0.0	869.1	107.8	2,066.1	0.0	0.0
15.00		105.4	1,171.1					0.0	869.1	105.4	2,040.2	0.0	0.0
20.00		103.1	1,145.2					0.0	869.1	103.1	2,014.3	0.0	0.0
25.00		100.8	1,119.2					0.0	869.1	100.8	1,988.4	0.0	0.0
30.00	Appurtenance(s)	99.6	1,093.3	7.8	0.0	0.0	10.0	0.0	869.1	107.4	1,972.4	0.0	0.0
35.00		100.4	1,067.4					0.0	867.5	100.4	1,934.9	0.0	0.0
40.00		80.8	1,041.5					0.0	867.5	80.8	1,908.9	0.0	0.0
42.96	Bot - Section 2	51.5	603.6					0.0	512.9	51.5	1,116.6	0.0	0.0
45.00		63.7	771.7					0.0	354.5	63.7	1,126.2	0.0	0.0
49.04	Top - Section 1	52.4	1,502.0					0.0	700.9	52.4	2,202.9	0.0	0.0
50.00		62.6	164.3					0.0	166.6	62.6	330.9	0.0	0.0
55.00		105.1	842.5					0.0	867.5	105.1	1,710.0	0.0	0.0
60.00		104.9	820.3					0.0	867.5	104.9	1,687.7	0.0	0.0
65.00		148.4	798.0					0.0	867.5	148.4	1,665.5	0.0	0.0
70.00		191.3	775.8					39.1	867.5	230.5	1,643.3	0.0	0.0
75.00		170.8	753.6					39.9	867.5	210.7	1,621.1	0.0	0.0
79.00	Appurtenance(s)	94.3	586.9	0.9	0.0	0.0	0.6	32.5	694.0	127.7	1,281.5	0.0	0.0
80.00	Appurtenance(s)	111.9	144.5	483.2	0.0	0.0	278.0	8.2	173.3	603.2	595.8	0.0	0.0
85.00		139.9	709.2					41.4	864.2	181.3	1,573.3	0.0	0.0
87.54	Bot - Section 3	92.6	351.7					21.3	439.0	113.9	790.7	0.0	0.0
90.00		91.1	620.3					20.8	425.2	111.9	1,045.5	0.0	0.0
92.46	Top - Section 2	91.9	609.5					21.0	424.6	112.9	1,034.1	0.0	0.0
95.00		64.7	285.4					21.9	439.6	86.6	725.0	0.0	0.0
96.00	Appurtenance(s)	90.3	110.9	157.0	0.0	0.0	486.6	8.6	172.8	255.9	770.3	0.0	0.0
100.00		138.6	436.1					34.8	688.1	173.5	1,124.2	0.0	0.0
103.75	Reinf. Top	88.5	398.1					33.0	645.1	121.5	1,043.2	0.0	0.0
105.00	Appurtenance(s)	108.6	130.4	116.8	0.0	0.0	79.2	11.1	131.5	236.5	341.1	0.0	0.0
110.00		120.7	510.0					44.7	501.5	165.4	1,011.5	0.0	0.0
112.00	Appurtenance(s)	84.6	198.8	535.2	0.0	0.0	1,668.0	18.0	200.6	637.9	2,067.4	0.0	0.0
115.00		133.0	292.7					22.5	149.2	155.4	441.9	0.0	0.0
120.00		162.7	473.0					45.4	248.7	208.1	721.7	0.0	0.0
125.00	Appurtenance(s)	122.4	454.5	909.0	0.0	0.0	2,629.6	45.9	248.7	1,077.3	3,332.8	0.0	0.0
130.00		59.7	435.9					0.0	217.6	59.7	653.6	0.0	0.0
132.12	Bot - Section 4	41.2	179.2					0.0	92.3	41.2	271.5	0.0	0.0
135.00	Appurtenance(s)	30.8	384.0	769.2	0.0	0.0	2,857.1	0.0	125.4	800.0	3,366.5	0.0	0.0
135.87	Top - Section 3	40.1	114.0					0.0	34.6	40.1	148.7	0.0	0.0
140.00	Appurtenance(s)	71.7	201.1	452.8	0.0	2,845.8	721.0	0.0	164.5	524.5	1,086.6	0.0	0.0
145.00		75.9	233.3					0.0	164.8	75.9	398.1	0.0	0.0
150.00	Appurtenance(s)	72.9	222.2	56.3	0.0	0.0	158.3	0.0	164.8	129.2	545.3	0.0	0.0
155.00		69.9	211.1					0.0	160.7	69.9	371.8	0.0	0.0
160.00		94.3	200.0					0.0	160.7	94.3	360.7	0.0	0.0
165.00		71.8	188.9					24.9	160.7	96.7	349.6	0.0	0.0
166.00	Appurtenance(s)	36.3	36.4	455.0	0.0	0.0	1,285.3	5.0	32.1	496.3	1,353.9	0.0	0.0
170.00		53.9	141.3					0.0	79.7	53.9	221.0	0.0	0.0
175.00		56.8	166.6					0.0	99.6	56.8	266.3	0.0	0.0
180.00	Appurtenance(s)	27.6	155.5	1,088.3	0.0	2,067.6	2,555.6	0.0	99.6	1,115.9	2,810.8	0.0	0.0

Site Number:	302506	Code:	ANSI/TIA-222-G	
Site Name:	Winchester CT 3, CT	Engineering Number:	OAA727483_C3_02	5/14/2018 1:21:11 PM
Customer:	T-MOBILE			

Load Case: 1.0D + 1.0W — Serviceability 60 mph — 25 Iterations

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

Wind Importance Factor : 1.15

Totals:	9,924.68	59,225.9	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.15
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	-59.22	-9.89	0.00	-1,170.71	0.00	1,170.71	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.167
5.00	-57.12	-9.83	0.00	-1,121.25	0.00	1,121.25	5,029.12	2,514.56	10,576.3	5,296.03	0.03	-0.05	0.164
10.00	-55.05	-9.77	0.00	-1,072.09	0.00	1,072.09	4,953.95	2,476.98	10,193.1	5,104.17	0.10	-0.10	0.162
15.00	-53.00	-9.70	0.00	-1,023.26	0.00	1,023.26	4,877.36	2,438.68	9,813.98	4,914.28	0.23	-0.15	0.159
20.00	-50.98	-9.64	0.00	-974.74	0.00	974.74	4,799.34	2,399.67	9,438.93	4,726.48	0.41	-0.20	0.156
25.00	-48.98	-9.57	0.00	-926.55	0.00	926.55	4,719.90	2,359.95	9,068.23	4,540.86	0.64	-0.25	0.153
30.00	-47.00	-9.50	0.00	-878.68	0.00	878.68	4,639.03	2,319.51	8,702.08	4,357.51	0.93	-0.30	0.150
35.00	-45.06	-9.43	0.00	-831.19	0.00	831.19	4,556.73	2,278.36	8,340.67	4,176.53	1.26	-0.35	0.147
40.00	-43.14	-9.37	0.00	-784.05	0.00	784.05	4,473.00	2,236.50	7,984.18	3,998.03	1.66	-0.40	0.143
42.96	-42.02	-9.33	0.00	-756.36	0.00	756.36	4,422.82	2,211.41	7,775.79	3,893.68	1.91	-0.43	0.141
45.00	-40.89	-9.28	0.00	-737.31	0.00	737.31	4,378.03	2,189.01	7,615.75	3,813.53	2.10	-0.45	0.138
49.04	-38.68	-9.22	0.00	-699.84	0.00	699.84	3,604.17	1,802.08	6,267.69	3,138.50	2.50	-0.49	0.153
50.00	-38.35	-9.18	0.00	-690.98	0.00	690.98	3,591.50	1,795.75	6,214.33	3,111.78	2.60	-0.50	0.152
55.00	-36.63	-9.09	0.00	-645.09	0.00	645.09	3,524.70	1,762.35	5,938.60	2,973.71	3.16	-0.56	0.147
60.00	-34.94	-9.00	0.00	-599.62	0.00	599.62	3,456.48	1,728.24	5,666.60	2,837.51	3.78	-0.61	0.141
65.00	-33.26	-8.87	0.00	-554.61	0.00	554.61	3,386.83	1,693.41	5,398.53	2,703.28	4.45	-0.67	0.135
70.00	-31.62	-8.65	0.00	-510.26	0.00	510.26	3,315.75	1,657.87	5,134.58	2,571.11	5.18	-0.72	0.129
75.00	-29.99	-8.44	0.00	-467.03	0.00	467.03	3,242.30	1,621.15	4,873.54	2,440.39	5.96	-0.77	0.123
79.00	-28.71	-8.31	0.00	-433.27	0.00	433.27	3,164.68	1,582.34	4,641.84	2,324.37	6.63	-0.82	0.118
80.00	-28.12	-7.71	0.00	-424.96	0.00	424.96	3,145.28	1,572.64	4,584.79	2,295.80	6.80	-0.83	0.117
85.00	-26.54	-7.52	0.00	-386.40	0.00	386.40	3,048.26	1,524.13	4,304.87	2,155.63	7.70	-0.88	0.111
87.54	-25.75	-7.41	0.00	-367.29	0.00	367.29	2,998.97	1,499.48	4,166.05	2,086.12	8.17	-0.90	0.109
90.00	-24.70	-7.29	0.00	-349.06	0.00	349.06	2,951.23	1,475.62	4,033.76	2,019.88	8.64	-0.93	0.104
92.46	-23.67	-7.17	0.00	-331.15	0.00	331.15	2,412.07	1,206.04	3,317.78	1,661.36	9.13	-0.95	0.113
95.00	-22.94	-7.08	0.00	-312.91	0.00	312.91	2,382.81	1,191.41	3,222.46	1,613.62	9.64	-0.98	0.109
96.00	-22.17	-6.82	0.00	-305.83	0.00	305.83	2,371.21	1,185.60	3,185.22	1,594.98	9.85	-0.99	0.107
100.00	-21.05	-6.64	0.00	-278.55	0.00	278.55	2,324.22	1,162.11	3,037.61	1,521.06	10.70	-1.03	0.101
103.75	-20.00	-6.51	0.00	-253.64	0.00	253.64	2,279.33	1,139.67	2,901.28	1,452.80	11.52	-1.06	0.094
103.75	-20.00	-6.51	0.00	-253.64	0.00	253.64	2,279.33	1,139.67	2,901.28	1,452.80	11.52	-1.06	0.183
105.00	-19.66	-6.28	0.00	-245.50	0.00	245.50	2,264.20	1,132.10	2,856.29	1,430.27	11.80	-1.08	0.180
110.00	-18.65	-6.12	0.00	-214.08	0.00	214.08	2,186.61	1,093.30	2,659.07	1,331.51	12.98	-1.17	0.169
112.00	-16.59	-5.45	0.00	-201.84	0.00	201.84	2,154.27	1,077.13	2,580.59	1,292.21	13.47	-1.20	0.164
115.00	-16.14	-5.31	0.00	-185.49	0.00	185.49	2,105.76	1,052.88	2,465.08	1,234.37	14.24	-1.26	0.158
120.00	-15.42	-5.10	0.00	-158.95	0.00	158.95	2,024.90	1,012.45	2,278.43	1,140.91	15.61	-1.34	0.147
125.00	-12.11	-3.96	0.00	-133.43	0.00	133.43	1,944.05	972.03	2,099.13	1,051.12	17.05	-1.42	0.133
130.00	-11.45	-3.90	0.00	-113.62	0.00	113.62	1,863.20	931.60	1,927.17	965.02	18.58	-1.50	0.124
132.12	-11.18	-3.86	0.00	-105.35	0.00	105.35	1,828.92	914.46	1,856.49	929.62	19.25	-1.53	0.119
135.00	-7.83	-2.97	0.00	-94.24	0.00	94.24	1,782.35	891.17	1,762.57	882.59	20.19	-1.57	0.111
135.87	-7.68	-2.93	0.00	-91.66	0.00	91.66	993.95	496.97	1,000.68	501.09	20.47	-1.58	0.191
140.00	-6.61	-2.39	0.00	-76.71	0.00	76.71	969.84	484.92	940.01	470.70	21.87	-1.64	0.170
145.00	-6.21	-2.31	0.00	-64.79	0.00	64.79	939.35	469.68	867.78	434.53	23.64	-1.74	0.156
150.00	-5.67	-2.17	0.00	-53.25	0.00	53.25	907.44	453.72	797.07	399.13	25.52	-1.84	0.140
155.00	-5.29	-2.10	0.00	-42.39	0.00	42.39	874.09	437.05	728.06	364.57	27.50	-1.93	0.122
160.00	-4.93	-2.00	0.00	-31.90	0.00	31.90	839.33	419.66	660.97	330.98	29.57	-2.02	0.102
165.00	-4.59	-1.89	0.00	-21.91	0.00	21.91	800.44	400.22	593.98	297.43	31.73	-2.09	0.079
166.00	-3.25	-1.35	0.00	-20.02	0.00	20.02	790.74	395.37	579.60	290.23	32.17	-2.10	0.073
170.00	-3.03	-1.29	0.00	-14.63	0.00	14.63	751.93	375.97	523.82	262.30	33.95	-2.15	0.060
175.00	-2.77	-1.22	0.00	-8.18	0.00	8.18	703.42	351.71	458.07	229.37	36.23	-2.19	0.040
180.00	0.00	-1.12	0.00	-2.07	0.00	2.07	654.91	327.45	396.72	198.65	38.54	-2.22	0.010

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):	1.50
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.67
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	59.23 k
Seismic Base Shear (E):	3.00 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)
47	177.50	255	8,040	0.015	46	316
46	172.50	266	7,924	0.015	45	330
45	168.00	221	6,238	0.012	35	274
44	165.50	69	1,879	0.004	11	85
43	162.50	350	9,232	0.017	52	433
42	157.50	361	8,948	0.017	51	446
41	152.50	372	8,647	0.016	49	460
40	147.50	387	8,420	0.016	48	479
39	142.50	398	8,085	0.015	46	493
38	137.93	366	6,956	0.013	39	453
37	135.43	149	2,727	0.005	15	184
36	133.56	509	9,087	0.017	52	631
35	131.06	271	4,663	0.009	26	336
34	127.50	654	10,625	0.020	60	809
33	122.50	703	10,552	0.020	60	870
32	117.50	722	9,964	0.019	56	893
31	113.50	442	5,693	0.011	32	547
30	111.00	399	4,921	0.009	28	494
29	107.50	1,012	11,689	0.022	66	1,252
28	104.38	262	2,853	0.005	16	324
27	101.88	1,043	10,827	0.020	61	1,291
26	98.00	1,124	10,797	0.020	61	1,392
25	95.50	284	2,588	0.005	15	351

24	93.73	725	6,369	0.012	36	897
23	91.23	1,034	8,607	0.016	49	1,280
22	88.77	1,045	8,238	0.016	47	1,294
21	86.27	791	5,885	0.011	33	979
20	82.50	1,573	10,709	0.020	61	1,947
19	79.50	318	2,009	0.004	11	393
18	77.00	1,281	7,594	0.014	43	1,585
17	72.50	1,621	8,521	0.016	48	2,007
16	67.50	1,643	7,487	0.014	42	2,034
15	62.50	1,666	6,506	0.012	37	2,062
14	57.50	1,688	5,580	0.011	32	2,089
13	52.50	1,710	4,713	0.009	27	2,117
12	49.52	331	811	0.002	5	410
11	47.02	2,203	4,870	0.009	28	2,727
10	43.98	1,126	2,178	0.004	12	1,394
9	41.48	1,117	1,921	0.004	11	1,382
8	37.50	1,909	2,684	0.005	15	2,363
7	32.50	1,935	2,044	0.004	12	2,395
6	27.50	1,962	1,484	0.003	8	2,429
5	22.50	1,988	1,007	0.002	6	2,461
4	17.50	2,014	617	0.001	3	2,493
3	12.50	2,040	319	0.001	2	2,525
2	7.50	2,066	116	0.000	1	2,557
1	2.50	2,092	13	0.000	0	2,589
Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
4' Omni	180.00	10	324	0.001	2	12
Powerwave Allgon LGP	180.00	85	2,741	0.005	16	105
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	7	50
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	28	186
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	28	189
Ericsson RRUS-12 B2	180.00	174	5,638	0.011	32	215
2' x 4' Rectangular	180.00	40	1,296	0.002	7	50
Powerwave Allgon 777	180.00	105	3,402	0.006	19	130
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	27	180
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	28	189
Flat Low Profile Pla	180.00	1,500	48,600	0.092	275	1,857
Ericsson KRY 112 144	166.00	33	909	0.002	5	41
Fastback Networks In	166.00	9	242	0.000	1	11
Ericsson AIR 21, 1.3	166.00	249	6,861	0.013	39	308
Ericsson AIR 21, 1.3	166.00	244	6,737	0.013	38	303
Round T-Arm	166.00	750	20,667	0.039	117	928
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	10
Round Side Arm	150.00	150	3,375	0.006	19	186
Telewave ANT150D (5	140.00	5	98	0.000	1	6
Bird 432-83H-01-T	140.00	25	490	0.001	3	31
Sinclair SC479-HF1LD	140.00	34	666	0.001	4	42
Round Side Arm	140.00	450	8,820	0.017	50	557
Decibel DB809DK-XT	140.00	128	2,509	0.005	14	158
Sinclair SC442D-HF1L	140.00	79	1,548	0.003	9	98
Alcatel-Lucent 800 M	135.00	185	3,379	0.006	19	229
Alcatel-Lucent 1900M	135.00	132	2,406	0.005	14	163
Alcatel-Lucent TD-RR	135.00	210	3,827	0.007	22	260
RFS APXVTM14-C-I20	135.00	159	2,892	0.005	16	196
RFS APXVSPP18-C-A20	135.00	171	3,116	0.006	18	212
Flat Platform w/ Han	135.00	2,000	36,450	0.069	207	2,476
Nokia B5 RRH4x40-850	125.00	146	2,273	0.004	13	180
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	14	197
Alcatel-Lucent RRH2x	125.00	170	2,658	0.005	15	211
RFS DB-B1-6C-12AB-0Z	125.00	21	334	0.001	2	26
Alcatel-Lucent B66a	125.00	201	3,141	0.006	18	249
Antel LPA-80080/6CF	125.00	42	656	0.001	4	52
Commscope JAHH-65B-R	125.00	364	5,681	0.011	32	450
Antel LPA-80063/6CF	125.00	27	422	0.001	2	33
Round Low Profile Pl	125.00	1,500	23,438	0.044	133	1,857

Decibel DB844H90E-XY	112.00	168	2,107	0.004	12	208
Round Low Profile Pl	112.00	1,500	18,816	0.036	107	1,857
RFS APXV18-206517S-C	105.00	79	873	0.002	5	98
Andrew DB586	96.00	17	153	0.000	1	21
Bird 429-83H-01-T	96.00	20	184	0.000	1	25
Flat Side Arm	96.00	450	4,147	0.008	24	557
RFS PA6-65AC	80.00	278	1,779	0.003	10	344
PCTEL GPS-TMG-HR-26N	79.00	1	4	0.000	0	1
GPS	30.00	10	9	0.000	0	12
		59,226	528,780	1.000	2,997	73,308

Load Case (0.9 - 0.2Sds) * DL + E ELFM 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)
47	177.50	255	8,040	0.015	46	220
46	172.50	266	7,924	0.015	45	230
45	168.00	221	6,238	0.012	35	191
44	165.50	69	1,879	0.004	11	59
43	162.50	350	9,232	0.017	52	301
42	157.50	361	8,948	0.017	51	311
41	152.50	372	8,647	0.016	49	321
40	147.50	387	8,420	0.016	48	334
39	142.50	398	8,085	0.015	46	343
38	137.93	366	6,956	0.013	39	315
37	135.43	149	2,727	0.005	15	128
36	133.56	509	9,087	0.017	52	439
35	131.06	271	4,663	0.009	26	234
34	127.50	654	10,625	0.020	60	564
33	122.50	703	10,552	0.020	60	606
32	117.50	722	9,964	0.019	56	622
31	113.50	442	5,693	0.011	32	381
30	111.00	399	4,921	0.009	28	344
29	107.50	1,012	11,689	0.022	66	872
28	104.38	262	2,853	0.005	16	226
27	101.88	1,043	10,827	0.020	61	900
26	98.00	1,124	10,797	0.020	61	969
25	95.50	284	2,588	0.005	15	245
24	93.73	725	6,369	0.012	36	625
23	91.23	1,034	8,607	0.016	49	892
22	88.77	1,045	8,238	0.016	47	901
21	86.27	791	5,885	0.011	33	682
20	82.50	1,573	10,709	0.020	61	1,357
19	79.50	318	2,009	0.004	11	274
18	77.00	1,281	7,594	0.014	43	1,104
17	72.50	1,621	8,521	0.016	48	1,398
16	67.50	1,643	7,487	0.014	42	1,417
15	62.50	1,666	6,506	0.012	37	1,436
14	57.50	1,688	5,580	0.011	32	1,455
13	52.50	1,710	4,713	0.009	27	1,474
12	49.52	331	811	0.002	5	285
11	47.02	2,203	4,870	0.009	28	1,899
10	43.98	1,126	2,178	0.004	12	971
9	41.48	1,117	1,921	0.004	11	963
8	37.50	1,909	2,684	0.005	15	1,646
7	32.50	1,935	2,044	0.004	12	1,668
6	27.50	1,962	1,484	0.003	8	1,692
5	22.50	1,988	1,007	0.002	6	1,714
4	17.50	2,014	617	0.001	3	1,737
3	12.50	2,040	319	0.001	2	1,759

2	7.50	2,066	116	0.000	1	1,781
1	2.50	2,092	13	0.000	0	1,804
Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
4' Omni	180.00	10	324	0.001	2	9
Powerwave Allgon LGP	180.00	85	2,741	0.005	16	73
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	7	34
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	28	129
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	28	131
Ericsson RRUS-12 B2	180.00	174	5,638	0.011	32	150
2' x 4' Rectangular	180.00	40	1,296	0.002	7	34
Powerwave Allgon 777	180.00	105	3,402	0.006	19	91
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	27	125
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	28	132
Flat Low Profile Pla	180.00	1,500	48,600	0.092	275	1,293
Ericsson KRY 112 144	166.00	33	909	0.002	5	28
Fastback Networks In	166.00	9	242	0.000	1	8
Ericsson AIR 21, 1.3	166.00	249	6,861	0.013	39	215
Ericsson AIR 21, 1.3	166.00	244	6,737	0.013	38	211
Round T-Arm	166.00	750	20,667	0.039	117	647
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	7
Round Side Arm	150.00	150	3,375	0.006	19	129
Telewave ANT150D (5	140.00	5	98	0.000	1	4
Bird 432-83H-01-T	140.00	25	490	0.001	3	22
Sinclair SC479-HF1LD	140.00	34	666	0.001	4	29
Round Side Arm	140.00	450	8,820	0.017	50	388
Decibel DB809DK-XT	140.00	128	2,509	0.005	14	110
Sinclair SC442D-HF1L	140.00	79	1,548	0.003	9	68
Alcatel-Lucent 800 M	135.00	185	3,379	0.006	19	160
Alcatel-Lucent 1900M	135.00	132	2,406	0.005	14	114
Alcatel-Lucent TD-RR	135.00	210	3,827	0.007	22	181
RFS APXVTM14-C-I20	135.00	159	2,892	0.005	16	137
RFS APXVSPP18-C-A20	135.00	171	3,116	0.006	18	147
Flat Platform w/ Han	135.00	2,000	36,450	0.069	207	1,724
Nokia B5 RRH4x40-850	125.00	146	2,273	0.004	13	125
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	14	137
Alcatel-Lucent RRH2x	125.00	170	2,658	0.005	15	147
RFS DB-B1-6C-12AB-0Z	125.00	21	334	0.001	2	18
Alcatel-Lucent B66a	125.00	201	3,141	0.006	18	173
Antel LPA-80080/6CF	125.00	42	656	0.001	4	36
Commscope JAHH-65B-R	125.00	364	5,681	0.011	32	314
Antel LPA-80063/6CF	125.00	27	422	0.001	2	23
Round Low Profile Pl	125.00	1,500	23,438	0.044	133	1,293
Decibel DB844H90E-XY	112.00	168	2,107	0.004	12	145
Round Low Profile Pl	112.00	1,500	18,816	0.036	107	1,293
RFS APXV18-206517S-C	105.00	79	873	0.002	5	68
Andrew DB586	96.00	17	153	0.000	1	14
Bird 429-83H-01-T	96.00	20	184	0.000	1	17
Flat Side Arm	96.00	450	4,147	0.008	24	388
RFS PA6-65AC	80.00	278	1,779	0.003	10	240
PCTEL GPS-TMG-HR-26N	79.00	1	4	0.000	0	1
GPS	30.00	10	9	0.000	0	9
		59,226	528,780	1.000	2,997	51,067

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	-70.72	-3.01	0.00	-406.37	0.00	406.37	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.066
5.00	-68.16	-3.03	0.00	-391.34	0.00	391.34	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.02	0.065
10.00	-65.63	-3.04	0.00	-376.21	0.00	376.21	4,953.95	2,476.98	10,193.1	5,104.17	0.04	-0.03	0.064
15.00	-63.14	-3.06	0.00	-361.00	0.00	361.00	4,877.36	2,438.68	9,813.98	4,914.28	0.08	-0.05	0.063
20.00	-60.68	-3.07	0.00	-345.72	0.00	345.72	4,799.34	2,399.67	9,438.93	4,726.48	0.14	-0.07	0.062
25.00	-58.25	-3.07	0.00	-330.39	0.00	330.39	4,719.90	2,359.95	9,068.23	4,540.86	0.22	-0.09	0.061
30.00	-55.84	-3.08	0.00	-315.02	0.00	315.02	4,639.03	2,319.51	8,702.08	4,357.51	0.33	-0.10	0.060
35.00	-53.48	-3.07	0.00	-299.64	0.00	299.64	4,556.73	2,278.36	8,340.67	4,176.53	0.44	-0.12	0.059
40.00	-52.09	-3.07	0.00	-284.28	0.00	284.28	4,473.00	2,236.50	7,984.18	3,998.03	0.58	-0.14	0.058
42.96	-50.70	-3.06	0.00	-275.19	0.00	275.19	4,422.82	2,211.41	7,775.79	3,893.68	0.67	-0.15	0.057
45.00	-47.97	-3.04	0.00	-268.93	0.00	268.93	4,378.03	2,189.01	7,615.75	3,813.53	0.74	-0.16	0.056
49.04	-47.56	-3.04	0.00	-256.65	0.00	256.65	3,604.17	1,802.08	6,267.69	3,138.50	0.88	-0.18	0.063
50.00	-45.44	-3.02	0.00	-253.73	0.00	253.73	3,591.50	1,795.75	6,214.33	3,111.78	0.92	-0.18	0.062
55.00	-43.35	-2.99	0.00	-238.64	0.00	238.64	3,524.70	1,762.35	5,938.60	2,973.71	1.12	-0.20	0.060
60.00	-41.29	-2.96	0.00	-223.67	0.00	223.67	3,456.48	1,728.24	5,666.60	2,837.51	1.34	-0.22	0.058
65.00	-39.26	-2.93	0.00	-208.85	0.00	208.85	3,386.83	1,693.41	5,398.53	2,703.28	1.58	-0.24	0.057
70.00	-37.25	-2.88	0.00	-194.21	0.00	194.21	3,315.75	1,657.87	5,134.58	2,571.11	1.85	-0.26	0.054
75.00	-35.66	-2.85	0.00	-179.78	0.00	179.78	3,242.30	1,621.15	4,873.54	2,440.39	2.13	-0.28	0.052
79.00	-35.27	-2.84	0.00	-168.40	0.00	168.40	3,164.68	1,582.34	4,641.84	2,324.37	2.37	-0.30	0.051
80.00	-32.98	-2.76	0.00	-165.57	0.00	165.57	3,145.28	1,572.64	4,584.79	2,295.80	2.44	-0.30	0.050
85.00	-32.00	-2.73	0.00	-151.76	0.00	151.76	3,048.26	1,524.13	4,304.87	2,155.63	2.76	-0.32	0.049
87.54	-30.70	-2.68	0.00	-144.82	0.00	144.82	2,998.97	1,499.48	4,166.05	2,086.12	2.94	-0.33	0.047
90.00	-29.42	-2.63	0.00	-138.22	0.00	138.22	2,951.23	1,475.62	4,033.76	2,019.88	3.11	-0.34	0.046
92.46	-28.53	-2.60	0.00	-131.75	0.00	131.75	2,412.07	1,206.04	3,317.78	1,661.36	3.29	-0.35	0.050
95.00	-28.17	-2.58	0.00	-125.15	0.00	125.15	2,382.81	1,191.41	3,222.46	1,613.62	3.48	-0.36	0.048
96.00	-26.18	-2.49	0.00	-122.57	0.00	122.57	2,371.21	1,185.60	3,185.22	1,594.98	3.55	-0.37	0.047
100.00	-24.89	-2.42	0.00	-112.62	0.00	112.62	2,324.22	1,162.11	3,037.61	1,521.06	3.87	-0.38	0.045
103.75	-24.56	-2.41	0.00	-103.53	0.00	103.53	2,279.33	1,139.67	2,901.28	1,452.80	4.17	-0.40	0.043
103.75	-24.56	-2.41	0.00	-103.53	0.00	103.53	2,279.33	1,139.67	2,901.28	1,452.80	4.17	-0.40	0.082
105.00	-23.21	-2.34	0.00	-100.52	0.00	100.52	2,264.20	1,132.10	2,856.29	1,430.27	4.28	-0.40	0.081
110.00	-22.72	-2.32	0.00	-88.83	0.00	88.83	2,186.61	1,093.30	2,659.07	1,331.51	4.72	-0.44	0.077
112.00	-20.11	-2.15	0.00	-84.19	0.00	84.19	2,154.27	1,077.13	2,580.59	1,292.21	4.91	-0.45	0.074
115.00	-19.21	-2.10	0.00	-77.74	0.00	77.74	2,105.76	1,052.88	2,465.08	1,234.37	5.20	-0.48	0.072
120.00	-18.34	-2.04	0.00	-67.25	0.00	67.25	2,024.90	1,012.45	2,278.43	1,140.91	5.71	-0.51	0.068
125.00	-14.28	-1.72	0.00	-57.04	0.00	57.04	1,944.05	972.03	2,099.13	1,051.12	6.27	-0.54	0.062
130.00	-13.94	-1.70	0.00	-48.44	0.00	48.44	1,863.20	931.60	1,927.17	965.02	6.86	-0.58	0.058
132.12	-13.31	-1.64	0.00	-44.84	0.00	44.84	1,828.92	914.46	1,856.49	929.62	7.11	-0.59	0.056
135.00	-9.60	-1.29	0.00	-40.12	0.00	40.12	1,782.35	891.17	1,762.57	882.59	7.48	-0.61	0.051
135.87	-9.14	-1.25	0.00	-38.99	0.00	38.99	993.95	496.97	1,000.68	501.09	7.59	-0.61	0.087
140.00	-7.76	-1.12	0.00	-33.82	0.00	33.82	969.84	484.92	940.01	470.70	8.13	-0.64	0.080
145.00	-7.28	-1.07	0.00	-28.24	0.00	28.24	939.35	469.68	867.78	434.53	8.83	-0.68	0.073
150.00	-6.62	-1.00	0.00	-22.90	0.00	22.90	907.44	453.72	797.07	399.13	9.56	-0.73	0.065
155.00	-6.18	-0.94	0.00	-17.92	0.00	17.92	874.09	437.05	728.06	364.57	10.35	-0.77	0.056
160.00	-5.75	-0.89	0.00	-13.20	0.00	13.20	839.33	419.66	660.97	330.98	11.17	-0.80	0.047
165.00	-5.66	-0.88	0.00	-8.76	0.00	8.76	800.44	400.22	593.98	297.43	12.03	-0.83	0.037
166.00	-3.80	-0.62	0.00	-7.89	0.00	7.89	790.74	395.37	579.60	290.23	12.20	-0.84	0.032
170.00	-3.47	-0.57	0.00	-5.42	0.00	5.42	751.93	375.97	523.82	262.30	12.91	-0.85	0.025
175.00	-3.16	-0.52	0.00	-2.59	0.00	2.59	703.42	351.71	458.07	229.37	13.81	-0.87	0.016
180.00	0.00	-0.47	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	14.73	-0.87	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM 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	-49.26	-3.00	0.00	-399.40	0.00	399.40	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.061
5.00	-47.48	-3.02	0.00	-384.38	0.00	384.38	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.02	0.061
10.00	-45.72	-3.03	0.00	-369.30	0.00	369.30	4,953.95	2,476.98	10,193.1	5,104.17	0.03	-0.03	0.060
15.00	-43.98	-3.04	0.00	-354.17	0.00	354.17	4,877.36	2,438.68	9,813.98	4,914.28	0.08	-0.05	0.059
20.00	-42.27	-3.04	0.00	-338.99	0.00	338.99	4,799.34	2,399.67	9,438.93	4,726.48	0.14	-0.07	0.058
25.00	-40.57	-3.04	0.00	-323.79	0.00	323.79	4,719.90	2,359.95	9,068.23	4,540.86	0.22	-0.08	0.057
30.00	-38.90	-3.04	0.00	-308.57	0.00	308.57	4,639.03	2,319.51	8,702.08	4,357.51	0.32	-0.10	0.056
35.00	-37.25	-3.03	0.00	-293.37	0.00	293.37	4,556.73	2,278.36	8,340.67	4,176.53	0.44	-0.12	0.055
40.00	-36.29	-3.03	0.00	-278.20	0.00	278.20	4,473.00	2,236.50	7,984.18	3,998.03	0.57	-0.14	0.054
42.96	-35.31	-3.02	0.00	-269.25	0.00	269.25	4,422.82	2,211.41	7,775.79	3,893.68	0.66	-0.15	0.054
45.00	-33.41	-2.99	0.00	-263.07	0.00	263.07	4,378.03	2,189.01	7,615.75	3,813.53	0.73	-0.16	0.053
49.04	-33.13	-2.99	0.00	-250.97	0.00	250.97	3,604.17	1,802.08	6,267.69	3,138.50	0.87	-0.17	0.059
50.00	-31.65	-2.97	0.00	-248.10	0.00	248.10	3,591.50	1,795.75	6,214.33	3,111.78	0.90	-0.18	0.058
55.00	-30.20	-2.94	0.00	-233.25	0.00	233.25	3,524.70	1,762.35	5,938.60	2,973.71	1.10	-0.20	0.057
60.00	-28.76	-2.91	0.00	-218.53	0.00	218.53	3,456.48	1,728.24	5,666.60	2,837.51	1.31	-0.22	0.055
65.00	-27.34	-2.87	0.00	-203.97	0.00	203.97	3,386.83	1,693.41	5,398.53	2,703.28	1.55	-0.24	0.053
70.00	-25.94	-2.83	0.00	-189.60	0.00	189.60	3,315.75	1,657.87	5,134.58	2,571.11	1.81	-0.26	0.051
75.00	-24.84	-2.79	0.00	-175.46	0.00	175.46	3,242.30	1,621.15	4,873.54	2,440.39	2.09	-0.28	0.049
79.00	-24.56	-2.78	0.00	-164.31	0.00	164.31	3,164.68	1,582.34	4,641.84	2,324.37	2.33	-0.29	0.048
80.00	-22.97	-2.71	0.00	-161.53	0.00	161.53	3,145.28	1,572.64	4,584.79	2,295.80	2.39	-0.30	0.047
85.00	-22.29	-2.67	0.00	-148.00	0.00	148.00	3,048.26	1,524.13	4,304.87	2,155.63	2.71	-0.31	0.045
87.54	-21.38	-2.63	0.00	-141.21	0.00	141.21	2,998.97	1,499.48	4,166.05	2,086.12	2.88	-0.32	0.044
90.00	-20.49	-2.58	0.00	-134.75	0.00	134.75	2,951.23	1,475.62	4,033.76	2,019.88	3.05	-0.33	0.043
92.46	-19.87	-2.54	0.00	-128.43	0.00	128.43	2,412.07	1,206.04	3,317.78	1,661.36	3.22	-0.34	0.047
95.00	-19.62	-2.53	0.00	-121.97	0.00	121.97	2,382.81	1,191.41	3,222.46	1,613.62	3.41	-0.35	0.045
96.00	-18.23	-2.43	0.00	-119.44	0.00	119.44	2,371.21	1,185.60	3,185.22	1,594.98	3.48	-0.36	0.044
100.00	-17.33	-2.37	0.00	-109.71	0.00	109.71	2,324.22	1,162.11	3,037.61	1,521.06	3.79	-0.37	0.042
103.75	-17.11	-2.36	0.00	-100.82	0.00	100.82	2,279.33	1,139.67	2,901.28	1,452.80	4.09	-0.39	0.040
103.75	-17.11	-2.36	0.00	-100.82	0.00	100.82	2,279.33	1,139.67	2,901.28	1,452.80	4.09	-0.39	0.077
105.00	-16.17	-2.28	0.00	-97.88	0.00	97.88	2,264.20	1,132.10	2,856.29	1,430.27	4.19	-0.39	0.076
110.00	-15.82	-2.26	0.00	-86.46	0.00	86.46	2,186.61	1,093.30	2,659.07	1,331.51	4.62	-0.43	0.072
112.00	-14.00	-2.10	0.00	-81.94	0.00	81.94	2,154.27	1,077.13	2,580.59	1,292.21	4.80	-0.44	0.070
115.00	-13.38	-2.05	0.00	-75.64	0.00	75.64	2,105.76	1,052.88	2,465.08	1,234.37	5.09	-0.46	0.068
120.00	-12.77	-1.99	0.00	-65.41	0.00	65.41	2,024.90	1,012.45	2,278.43	1,140.91	5.59	-0.50	0.064
125.00	-9.94	-1.68	0.00	-55.47	0.00	55.47	1,944.05	972.03	2,099.13	1,051.12	6.13	-0.53	0.058
130.00	-9.71	-1.65	0.00	-47.10	0.00	47.10	1,863.20	931.60	1,927.17	965.02	6.71	-0.56	0.054
132.12	-9.27	-1.60	0.00	-43.60	0.00	43.60	1,828.92	914.46	1,856.49	929.62	6.96	-0.58	0.052
135.00	-6.68	-1.26	0.00	-39.00	0.00	39.00	1,782.35	891.17	1,762.57	882.59	7.31	-0.59	0.048
135.87	-6.37	-1.22	0.00	-37.90	0.00	37.90	993.95	496.97	1,000.68	501.09	7.42	-0.60	0.082
140.00	-5.40	-1.09	0.00	-32.87	0.00	32.87	969.84	484.92	940.01	470.70	7.95	-0.62	0.075
145.00	-5.07	-1.04	0.00	-27.43	0.00	27.43	939.35	469.68	867.78	434.53	8.63	-0.67	0.069
150.00	-4.61	-0.97	0.00	-22.23	0.00	22.23	907.44	453.72	797.07	399.13	9.35	-0.71	0.061
155.00	-4.30	-0.92	0.00	-17.39	0.00	17.39	874.09	437.05	728.06	364.57	10.11	-0.75	0.053
160.00	-4.00	-0.86	0.00	-12.81	0.00	12.81	839.33	419.66	660.97	330.98	10.92	-0.78	0.043
165.00	-3.94	-0.85	0.00	-8.50	0.00	8.50	800.44	400.22	593.98	297.43	11.75	-0.81	0.034
166.00	-2.64	-0.60	0.00	-7.65	0.00	7.65	790.74	395.37	579.60	290.23	11.92	-0.81	0.030
170.00	-2.42	-0.55	0.00	-5.26	0.00	5.26	751.93	375.97	523.82	262.30	12.61	-0.83	0.023
175.00	-2.20	-0.50	0.00	-2.51	0.00	2.51	703.42	351.71	458.07	229.37	13.49	-0.85	0.014
180.00	0.00	-0.47	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	14.38	-0.85	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):	1.50
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
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.67
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)
47	177.50	255	1.838	1.716	1.044	0.325	108	316
46	172.50	266	1.736	1.263	0.871	0.264	91	330
45	168.00	221	1.646	0.929	0.735	0.214	61	274
44	165.50	69	1.598	0.772	0.667	0.188	17	85
43	162.50	350	1.540	0.605	0.592	0.159	72	433
42	157.50	361	1.447	0.379	0.482	0.115	54	446
41	152.50	372	1.357	0.207	0.388	0.076	37	460
40	147.50	387	1.269	0.080	0.309	0.043	21	479
39	142.50	398	1.185	-0.009	0.243	0.014	7	493
38	137.93	366	1.110	-0.064	0.193	-0.007	-3	453
37	135.43	149	1.070	-0.085	0.169	-0.016	-3	184
36	133.56	509	1.041	-0.097	0.152	-0.023	-15	631
35	131.06	271	1.002	-0.109	0.132	-0.030	-11	336
34	127.50	654	0.948	-0.119	0.107	-0.038	-33	809
33	122.50	703	0.875	-0.121	0.078	-0.046	-42	870
32	117.50	722	0.805	-0.113	0.055	-0.047	-45	893
31	113.50	442	0.751	-0.101	0.041	-0.045	-26	547
30	111.00	399	0.719	-0.092	0.034	-0.042	-22	494
29	107.50	1,012	0.674	-0.079	0.025	-0.036	-48	1,252
28	104.38	262	0.635	-0.066	0.019	-0.029	-10	324
27	101.88	1,043	0.605	-0.055	0.015	-0.023	-31	1,291
26	98.00	1,124	0.560	-0.038	0.011	-0.012	-17	1,392
25	95.50	284	0.532	-0.028	0.009	-0.004	-2	351
24	93.73	725	0.512	-0.021	0.008	0.001	1	897
23	91.23	1,034	0.485	-0.011	0.007	0.008	11	1,280
22	88.77	1,045	0.460	-0.002	0.006	0.015	21	1,294
21	86.27	791	0.434	0.007	0.006	0.022	22	979
20	82.50	1,573	0.397	0.019	0.007	0.031	63	1,947
19	79.50	318	0.369	0.028	0.008	0.036	15	393
18	77.00	1,281	0.346	0.034	0.009	0.040	67	1,585
17	72.50	1,621	0.307	0.044	0.012	0.046	97	2,007
16	67.50	1,643	0.266	0.052	0.015	0.050	107	2,034
15	62.50	1,666	0.228	0.059	0.020	0.052	112	2,062
14	57.50	1,688	0.193	0.064	0.024	0.053	115	2,089

13	52.50	1,710	0.161	0.067	0.029	0.052	116	2,117
12	49.52	331	0.143	0.068	0.031	0.052	22	410
11	47.02	2,203	0.129	0.069	0.033	0.051	147	2,727
10	43.98	1,126	0.113	0.070	0.035	0.051	74	1,394
9	41.48	1,117	0.100	0.071	0.037	0.050	73	1,382
8	37.50	1,909	0.082	0.072	0.039	0.050	123	2,363
7	32.50	1,935	0.062	0.072	0.041	0.048	122	2,395
6	27.50	1,962	0.044	0.071	0.042	0.047	120	2,429
5	22.50	1,988	0.030	0.068	0.040	0.045	117	2,461
4	17.50	2,014	0.018	0.063	0.037	0.043	111	2,493
3	12.50	2,040	0.009	0.054	0.031	0.038	100	2,525
2	7.50	2,066	0.003	0.039	0.022	0.029	77	2,557
1	2.50	2,092	0.000	0.015	0.008	0.013	35	2,589
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.358	1	1
4' Omni	180.00	10	1.890	1.980	1.140	0.358	5	12
Powerwave Allgon LGP	180.00	85	1.890	1.980	1.140	0.358	39	105
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.358	19	50
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.358	70	186
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.358	71	189
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.358	81	215
2' x 4' Rectangular	180.00	40	1.890	1.980	1.140	0.358	19	50
Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.358	49	130
KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.358	68	180
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.358	71	189
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.358	698	1,857
Ericsson KRY 112 144	166.00	33	1.607	0.802	0.680	0.193	8	41
Fastback Networks In	166.00	9	1.607	0.802	0.680	0.193	2	11
Ericsson AIR 21, 1.3	166.00	249	1.607	0.802	0.680	0.193	63	308
Ericsson AIR 21, 1.3	166.00	244	1.607	0.802	0.680	0.193	61	303
Round T-Arm	166.00	750	1.607	0.802	0.680	0.193	188	928
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.059	1	10
Round Side Arm	150.00	150	1.312	0.138	0.347	0.059	11	186
Telewave ANT150D (5	140.00	5	1.143	-0.042	0.215	0.002	0	6
Bird 432-83H-01-T	140.00	25	1.143	-0.042	0.215	0.002	0	31
Sinclair SC479-HF1LD	140.00	34	1.143	-0.042	0.215	0.002	0	42
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.002	1	557
Decibel DB809DK-XT	140.00	128	1.143	-0.042	0.215	0.002	0	158
Sinclair SC442D-HF1L	140.00	79	1.143	-0.042	0.215	0.002	0	98
Alcatel-Lucent 800 M	135.00	185	1.063	-0.088	0.165	-0.018	-4	229
Alcatel-Lucent 1900M	135.00	132	1.063	-0.088	0.165	-0.018	-3	163
Alcatel-Lucent TD-RR	135.00	210	1.063	-0.088	0.165	-0.018	-5	260
RFS APXVTM14-C-I20	135.00	159	1.063	-0.088	0.165	-0.018	-4	196
RFS APXVSPP18-C-A20	135.00	171	1.063	-0.088	0.165	-0.018	-4	212
Flat Platform w/ Han	135.00	2,000	1.063	-0.088	0.165	-0.018	-47	2,476
Nokia B5 RRH4x40-850	125.00	146	0.911	-0.122	0.092	-0.043	-8	180
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.043	-9	197
Alcatel-Lucent RRH2x	125.00	170	0.911	-0.122	0.092	-0.043	-9	211
RFS DB-B1-6C-12AB-0Z	125.00	21	0.911	-0.122	0.092	-0.043	-1	26
Alcatel-Lucent B66a	125.00	201	0.911	-0.122	0.092	-0.043	-11	249
Antel LPA-80080/6CF	125.00	42	0.911	-0.122	0.092	-0.043	-2	52
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.043	-20	450
Antel LPA-80063/6CF	125.00	27	0.911	-0.122	0.092	-0.043	-1	33
Round Low Profile Pl	125.00	1,500	0.911	-0.122	0.092	-0.043	-83	1,857
Decibel DB844H90E-XY	112.00	168	0.732	-0.096	0.036	-0.044	-10	208
Round Low Profile Pl	112.00	1,500	0.732	-0.096	0.036	-0.044	-85	1,857
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.031	-3	98
Andrew DB586	96.00	17	0.538	-0.030	0.009	-0.006	0	21
Bird 429-83H-01-T	96.00	20	0.538	-0.030	0.009	-0.006	0	25
Flat Side Arm	96.00	450	0.538	-0.030	0.009	-0.006	-3	557
RFS PA6-65AC	80.00	278	0.373	0.026	0.007	0.036	13	344
PCTEL GPS-TMG-HR-	79.00	1	0.364	0.029	0.008	0.037	0	1
GPS	30.00	10	0.053	0.071	0.042	0.048	1	12
		59,226	89.128	31.787	27.976	6.805	3,259	73,308

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)
47	177.50	255	1.838	1.716	1.044	0.325	108	220
46	172.50	266	1.736	1.263	0.871	0.264	91	230
45	168.00	221	1.646	0.929	0.735	0.214	61	191
44	165.50	69	1.598	0.772	0.667	0.188	17	59
43	162.50	350	1.540	0.605	0.592	0.159	72	301
42	157.50	361	1.447	0.379	0.482	0.115	54	311
41	152.50	372	1.357	0.207	0.388	0.076	37	321
40	147.50	387	1.269	0.080	0.309	0.043	21	334
39	142.50	398	1.185	-0.009	0.243	0.014	7	343
38	137.93	366	1.110	-0.064	0.193	-0.007	-3	315
37	135.43	149	1.070	-0.085	0.169	-0.016	-3	128
36	133.56	509	1.041	-0.097	0.152	-0.023	-15	439
35	131.06	271	1.002	-0.109	0.132	-0.030	-11	234
34	127.50	654	0.948	-0.119	0.107	-0.038	-33	564
33	122.50	703	0.875	-0.121	0.078	-0.046	-42	606
32	117.50	722	0.805	-0.113	0.055	-0.047	-45	622
31	113.50	442	0.751	-0.101	0.041	-0.045	-26	381
30	111.00	399	0.719	-0.092	0.034	-0.042	-22	344
29	107.50	1,012	0.674	-0.079	0.025	-0.036	-48	872
28	104.38	262	0.635	-0.066	0.019	-0.029	-10	226
27	101.88	1,043	0.605	-0.055	0.015	-0.023	-31	900
26	98.00	1,124	0.560	-0.038	0.011	-0.012	-17	969
25	95.50	284	0.532	-0.028	0.009	-0.004	-2	245
24	93.73	725	0.512	-0.021	0.008	0.001	1	625
23	91.23	1,034	0.485	-0.011	0.007	0.008	11	892
22	88.77	1,045	0.460	-0.002	0.006	0.015	21	901
21	86.27	791	0.434	0.007	0.006	0.022	22	682
20	82.50	1,573	0.397	0.019	0.007	0.031	63	1,357
19	79.50	318	0.369	0.028	0.008	0.036	15	274
18	77.00	1,281	0.346	0.034	0.009	0.040	67	1,104
17	72.50	1,621	0.307	0.044	0.012	0.046	97	1,398
16	67.50	1,643	0.266	0.052	0.015	0.050	107	1,417
15	62.50	1,666	0.228	0.059	0.020	0.052	112	1,436
14	57.50	1,688	0.193	0.064	0.024	0.053	115	1,455
13	52.50	1,710	0.161	0.067	0.029	0.052	116	1,474
12	49.52	331	0.143	0.068	0.031	0.052	22	285
11	47.02	2,203	0.129	0.069	0.033	0.051	147	1,899
10	43.98	1,126	0.113	0.070	0.035	0.051	74	971
9	41.48	1,117	0.100	0.071	0.037	0.050	73	963
8	37.50	1,909	0.082	0.072	0.039	0.050	123	1,646
7	32.50	1,935	0.062	0.072	0.041	0.048	122	1,668
6	27.50	1,962	0.044	0.071	0.042	0.047	120	1,692
5	22.50	1,988	0.030	0.068	0.040	0.045	117	1,714
4	17.50	2,014	0.018	0.063	0.037	0.043	111	1,737
3	12.50	2,040	0.009	0.054	0.031	0.038	100	1,759
2	7.50	2,066	0.003	0.039	0.022	0.029	77	1,781
1	2.50	2,092	0.000	0.015	0.008	0.013	35	1,804
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.358	1	1
4' Omni	180.00	10	1.890	1.980	1.140	0.358	5	9
Powerwave Allgon LGP	180.00	85	1.890	1.980	1.140	0.358	39	73
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.358	19	34
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.358	70	129
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.358	71	131
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.358	81	150
2' x 4' Rectangular	180.00	40	1.890	1.980	1.140	0.358	19	34
Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.358	49	91

KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.358	68	125
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.358	71	132
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.358	698	1,293
Ericsson KRY 112 144	166.00	33	1.607	0.802	0.680	0.193	8	28
Fastback Networks In	166.00	9	1.607	0.802	0.680	0.193	2	8
Ericsson AIR 21, 1.3	166.00	249	1.607	0.802	0.680	0.193	63	215
Ericsson AIR 21, 1.3	166.00	244	1.607	0.802	0.680	0.193	61	211
Round T-Arm	166.00	750	1.607	0.802	0.680	0.193	188	647
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.059	1	7
Round Side Arm	150.00	150	1.312	0.138	0.347	0.059	11	129
Telewave ANT150D (5	140.00	5	1.143	-0.042	0.215	0.002	0	4
Bird 432-83H-01-T	140.00	25	1.143	-0.042	0.215	0.002	0	22
Sinclair SC479-HF1LD	140.00	34	1.143	-0.042	0.215	0.002	0	29
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.002	1	388
Decibel DB809DK-XT	140.00	128	1.143	-0.042	0.215	0.002	0	110
Sinclair SC442D-HF1L	140.00	79	1.143	-0.042	0.215	0.002	0	68
Alcatel-Lucent 800 M	135.00	185	1.063	-0.088	0.165	-0.018	-4	160
Alcatel-Lucent 1900M	135.00	132	1.063	-0.088	0.165	-0.018	-3	114
Alcatel-Lucent TD-RR	135.00	210	1.063	-0.088	0.165	-0.018	-5	181
RFS APXVTM14-C-I20	135.00	159	1.063	-0.088	0.165	-0.018	-4	137
RFS APXVSPP18-C-A20	135.00	171	1.063	-0.088	0.165	-0.018	-4	147
Flat Platform w/ Han	135.00	2,000	1.063	-0.088	0.165	-0.018	-47	1,724
Nokia B5 RRH4x40-850	125.00	146	0.911	-0.122	0.092	-0.043	-8	125
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.043	-9	137
Alcatel-Lucent RRH2x	125.00	170	0.911	-0.122	0.092	-0.043	-9	147
RFS DB-B1-6C-12AB-0Z	125.00	21	0.911	-0.122	0.092	-0.043	-1	18
Alcatel-Lucent B66a	125.00	201	0.911	-0.122	0.092	-0.043	-11	173
Antel LPA-80080/6CF	125.00	42	0.911	-0.122	0.092	-0.043	-2	36
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.043	-20	314
Antel LPA-80063/6CF	125.00	27	0.911	-0.122	0.092	-0.043	-1	23
Round Low Profile Pl	125.00	1,500	0.911	-0.122	0.092	-0.043	-83	1,293
Decibel DB844H90E-XY	112.00	168	0.732	-0.096	0.036	-0.044	-10	145
Round Low Profile Pl	112.00	1,500	0.732	-0.096	0.036	-0.044	-85	1,293
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.031	-3	68
Andrew DB586	96.00	17	0.538	-0.030	0.009	-0.006	0	14
Bird 429-83H-01-T	96.00	20	0.538	-0.030	0.009	-0.006	0	17
Flat Side Arm	96.00	450	0.538	-0.030	0.009	-0.006	-3	388
RFS PA6-65AC	80.00	278	0.373	0.026	0.007	0.036	13	240
PCTEL GPS-TMG-HR-	79.00	1	0.364	0.029	0.008	0.037	0	1
GPS	30.00	10	0.053	0.071	0.042	0.048	1	9
		59,226	89.128	31.787	27.976	6.805	3,259	51,067

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	-70.72	-3.23	0.00	-376.13	0.00	376.13	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.062
5.00	-68.16	-3.17	0.00	-359.97	0.00	359.97	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.02	0.061
10.00	-65.63	-3.09	0.00	-344.11	0.00	344.11	4,953.95	2,476.98	10,193.1	5,104.17	0.03	-0.03	0.059
15.00	-63.14	-2.99	0.00	-328.66	0.00	328.66	4,877.36	2,438.68	9,813.98	4,914.28	0.07	-0.05	0.058
20.00	-60.68	-2.89	0.00	-313.68	0.00	313.68	4,799.34	2,399.67	9,438.93	4,726.48	0.13	-0.06	0.057
25.00	-58.25	-2.79	0.00	-299.23	0.00	299.23	4,719.90	2,359.95	9,068.23	4,540.86	0.21	-0.08	0.056
30.00	-55.84	-2.68	0.00	-285.30	0.00	285.30	4,639.03	2,319.51	8,702.08	4,357.51	0.30	-0.10	0.055
35.00	-53.48	-2.56	0.00	-271.93	0.00	271.93	4,556.73	2,278.36	8,340.67	4,176.53	0.41	-0.11	0.054
40.00	-52.09	-2.50	0.00	-259.11	0.00	259.11	4,473.00	2,236.50	7,984.18	3,998.03	0.53	-0.13	0.054
42.96	-50.70	-2.43	0.00	-251.72	0.00	251.72	4,422.82	2,211.41	7,775.79	3,893.68	0.62	-0.14	0.053
45.00	-47.97	-2.28	0.00	-246.75	0.00	246.75	4,378.03	2,189.01	7,615.75	3,813.53	0.68	-0.15	0.052
49.04	-47.56	-2.27	0.00	-237.52	0.00	237.52	3,604.17	1,802.08	6,267.69	3,138.50	0.81	-0.16	0.059
50.00	-45.45	-2.16	0.00	-235.34	0.00	235.34	3,591.50	1,795.75	6,214.33	3,111.78	0.84	-0.16	0.058
55.00	-43.36	-2.05	0.00	-224.56	0.00	224.56	3,524.70	1,762.35	5,938.60	2,973.71	1.02	-0.18	0.057
60.00	-41.30	-1.94	0.00	-214.32	0.00	214.32	3,456.48	1,728.24	5,666.60	2,837.51	1.22	-0.20	0.056
65.00	-39.26	-1.84	0.00	-204.61	0.00	204.61	3,386.83	1,693.41	5,398.53	2,703.28	1.45	-0.22	0.056
70.00	-37.25	-1.75	0.00	-195.40	0.00	195.40	3,315.75	1,657.87	5,134.58	2,571.11	1.69	-0.24	0.055
75.00	-35.67	-1.69	0.00	-186.64	0.00	186.64	3,242.30	1,621.15	4,873.54	2,440.39	1.95	-0.26	0.054
79.00	-35.27	-1.68	0.00	-179.89	0.00	179.89	3,164.68	1,582.34	4,641.84	2,324.37	2.18	-0.28	0.054
80.00	-32.98	-1.60	0.00	-178.21	0.00	178.21	3,145.28	1,572.64	4,584.79	2,295.80	2.24	-0.28	0.054
85.00	-32.00	-1.58	0.00	-170.22	0.00	170.22	3,048.26	1,524.13	4,304.87	2,155.63	2.55	-0.31	0.054
87.54	-30.71	-1.56	0.00	-166.21	0.00	166.21	2,998.97	1,499.48	4,166.05	2,086.12	2.72	-0.32	0.053
90.00	-29.43	-1.55	0.00	-162.37	0.00	162.37	2,951.23	1,475.62	4,033.76	2,019.88	2.88	-0.33	0.053
92.46	-28.53	-1.55	0.00	-158.57	0.00	158.57	2,412.07	1,206.04	3,317.78	1,661.36	3.06	-0.34	0.059
95.00	-28.18	-1.55	0.00	-154.64	0.00	154.64	2,382.81	1,191.41	3,222.46	1,613.62	3.24	-0.35	0.058
96.00	-26.19	-1.56	0.00	-153.09	0.00	153.09	2,371.21	1,185.60	3,185.22	1,594.98	3.32	-0.36	0.058
100.00	-24.89	-1.60	0.00	-146.83	0.00	146.83	2,324.22	1,162.11	3,037.61	1,521.06	3.63	-0.38	0.057
103.75	-24.57	-1.61	0.00	-140.85	0.00	140.85	2,279.33	1,139.67	2,901.28	1,452.80	3.93	-0.40	0.056
103.75	-24.57	-1.61	0.00	-140.85	0.00	140.85	2,279.33	1,139.67	2,901.28	1,452.80	3.93	-0.40	0.108
105.00	-23.22	-1.66	0.00	-138.84	0.00	138.84	2,264.20	1,132.10	2,856.29	1,430.27	4.04	-0.40	0.107
110.00	-22.72	-1.70	0.00	-130.52	0.00	130.52	2,186.61	1,093.30	2,659.07	1,331.51	4.49	-0.46	0.108
112.00	-20.11	-1.81	0.00	-127.13	0.00	127.13	2,154.27	1,077.13	2,580.59	1,292.21	4.68	-0.48	0.108
115.00	-19.21	-1.86	0.00	-121.72	0.00	121.72	2,105.76	1,052.88	2,465.08	1,234.37	5.00	-0.51	0.108
120.00	-18.34	-1.91	0.00	-112.43	0.00	112.43	2,024.90	1,012.45	2,278.43	1,140.91	5.57	-0.57	0.108
125.00	-14.27	-2.06	0.00	-102.88	0.00	102.88	1,944.05	972.03	2,099.13	1,051.12	6.19	-0.63	0.105
130.00	-13.94	-2.08	0.00	-92.58	0.00	92.58	1,863.20	931.60	1,927.17	965.02	6.89	-0.69	0.103
132.12	-13.30	-2.09	0.00	-88.18	0.00	88.18	1,828.92	914.46	1,856.49	929.62	7.20	-0.72	0.102
135.00	-9.58	-2.12	0.00	-82.15	0.00	82.15	1,782.35	891.17	1,762.57	882.59	7.64	-0.75	0.098
135.87	-9.13	-2.12	0.00	-80.31	0.00	80.31	993.95	496.97	1,000.68	501.09	7.78	-0.76	0.169
140.00	-7.74	-2.10	0.00	-71.55	0.00	71.55	969.84	484.92	940.01	470.70	8.47	-0.82	0.160
145.00	-7.26	-2.09	0.00	-61.04	0.00	61.04	939.35	469.68	867.78	434.53	9.37	-0.91	0.148
150.00	-6.60	-2.04	0.00	-50.61	0.00	50.61	907.44	453.72	797.07	399.13	10.38	-1.00	0.134
155.00	-6.15	-1.98	0.00	-40.44	0.00	40.44	874.09	437.05	728.06	364.57	11.48	-1.09	0.118
160.00	-5.72	-1.91	0.00	-30.52	0.00	30.52	839.33	419.66	660.97	330.98	12.67	-1.17	0.099
165.00	-5.63	-1.89	0.00	-20.97	0.00	20.97	800.44	400.22	593.98	297.43	13.93	-1.24	0.078
166.00	-3.78	-1.47	0.00	-19.08	0.00	19.08	790.74	395.37	579.60	290.23	14.19	-1.25	0.071
170.00	-3.45	-1.38	0.00	-13.19	0.00	13.19	751.93	375.97	523.82	262.30	15.26	-1.30	0.055
175.00	-3.13	-1.26	0.00	-6.31	0.00	6.31	703.42	351.71	458.07	229.37	16.65	-1.33	0.032
180.00	0.00	-1.19	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	18.05	-1.35	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	-49.26	-3.23	0.00	-368.79	0.00	368.79	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.057
5.00	-47.48	-3.16	0.00	-352.64	0.00	352.64	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.02	0.056
10.00	-45.72	-3.08	0.00	-336.82	0.00	336.82	4,953.95	2,476.98	10,193.1	5,104.17	0.03	-0.03	0.055
15.00	-43.98	-2.98	0.00	-321.44	0.00	321.44	4,877.36	2,438.68	9,813.98	4,914.28	0.07	-0.05	0.054
20.00	-42.27	-2.87	0.00	-306.57	0.00	306.57	4,799.34	2,399.67	9,438.93	4,726.48	0.13	-0.06	0.053
25.00	-40.58	-2.76	0.00	-292.23	0.00	292.23	4,719.90	2,359.95	9,068.23	4,540.86	0.20	-0.08	0.052
30.00	-38.90	-2.64	0.00	-278.44	0.00	278.44	4,639.03	2,319.51	8,702.08	4,357.51	0.29	-0.09	0.052
35.00	-37.25	-2.53	0.00	-265.23	0.00	265.23	4,556.73	2,278.36	8,340.67	4,176.53	0.40	-0.11	0.051
40.00	-36.29	-2.46	0.00	-252.59	0.00	252.59	4,473.00	2,236.50	7,984.18	3,998.03	0.52	-0.13	0.050
42.96	-35.32	-2.39	0.00	-245.31	0.00	245.31	4,422.82	2,211.41	7,775.79	3,893.68	0.60	-0.14	0.049
45.00	-33.42	-2.24	0.00	-240.43	0.00	240.43	4,378.03	2,189.01	7,615.75	3,813.53	0.66	-0.14	0.049
49.04	-33.13	-2.23	0.00	-231.37	0.00	231.37	3,604.17	1,802.08	6,267.69	3,138.50	0.79	-0.16	0.055
50.00	-31.66	-2.11	0.00	-229.23	0.00	229.23	3,591.50	1,795.75	6,214.33	3,111.78	0.82	-0.16	0.054
55.00	-30.20	-2.00	0.00	-218.67	0.00	218.67	3,524.70	1,762.35	5,938.60	2,973.71	1.00	-0.18	0.053
60.00	-28.77	-1.89	0.00	-208.66	0.00	208.66	3,456.48	1,728.24	5,666.60	2,837.51	1.20	-0.20	0.053
65.00	-27.35	-1.79	0.00	-199.19	0.00	199.19	3,386.83	1,693.41	5,398.53	2,703.28	1.41	-0.22	0.052
70.00	-25.95	-1.70	0.00	-190.23	0.00	190.23	3,315.75	1,657.87	5,134.58	2,571.11	1.65	-0.24	0.051
75.00	-24.85	-1.63	0.00	-181.74	0.00	181.74	3,242.30	1,621.15	4,873.54	2,440.39	1.91	-0.26	0.051
79.00	-24.57	-1.62	0.00	-175.21	0.00	175.21	3,164.68	1,582.34	4,641.84	2,324.37	2.13	-0.27	0.051
80.00	-22.97	-1.54	0.00	-173.59	0.00	173.59	3,145.28	1,572.64	4,584.79	2,295.80	2.19	-0.28	0.050
85.00	-22.29	-1.52	0.00	-165.87	0.00	165.87	3,048.26	1,524.13	4,304.87	2,155.63	2.49	-0.30	0.050
87.54	-21.39	-1.50	0.00	-161.99	0.00	161.99	2,998.97	1,499.48	4,166.05	2,086.12	2.65	-0.31	0.050
90.00	-20.50	-1.49	0.00	-158.30	0.00	158.30	2,951.23	1,475.62	4,033.76	2,019.88	2.82	-0.32	0.049
92.46	-19.87	-1.49	0.00	-154.63	0.00	154.63	2,412.07	1,206.04	3,317.78	1,661.36	2.98	-0.33	0.055
95.00	-19.63	-1.49	0.00	-150.84	0.00	150.84	2,382.81	1,191.41	3,222.46	1,613.62	3.17	-0.34	0.055
96.00	-18.24	-1.51	0.00	-149.35	0.00	149.35	2,371.21	1,185.60	3,185.22	1,594.98	3.24	-0.35	0.054
100.00	-17.34	-1.54	0.00	-143.31	0.00	143.31	2,324.22	1,162.11	3,037.61	1,521.06	3.54	-0.37	0.053
103.75	-17.11	-1.55	0.00	-137.52	0.00	137.52	2,279.33	1,139.67	2,901.28	1,452.80	3.84	-0.39	0.053
103.75	-17.11	-1.55	0.00	-137.52	0.00	137.52	2,279.33	1,139.67	2,901.28	1,452.80	3.84	-0.39	0.102
105.00	-16.17	-1.61	0.00	-135.58	0.00	135.58	2,264.20	1,132.10	2,856.29	1,430.27	3.94	-0.40	0.102
110.00	-15.83	-1.64	0.00	-127.55	0.00	127.55	2,186.61	1,093.30	2,659.07	1,331.51	4.38	-0.45	0.103
112.00	-14.00	-1.75	0.00	-124.27	0.00	124.27	2,154.27	1,077.13	2,580.59	1,292.21	4.57	-0.47	0.103
115.00	-13.38	-1.80	0.00	-119.02	0.00	119.02	2,105.76	1,052.88	2,465.08	1,234.37	4.88	-0.50	0.103
120.00	-12.77	-1.85	0.00	-110.03	0.00	110.03	2,024.90	1,012.45	2,278.43	1,140.91	5.43	-0.56	0.103
125.00	-9.94	-2.01	0.00	-100.79	0.00	100.79	1,944.05	972.03	2,099.13	1,051.12	6.05	-0.61	0.101
130.00	-9.70	-2.02	0.00	-90.75	0.00	90.75	1,863.20	931.60	1,927.17	965.02	6.72	-0.67	0.099
132.12	-9.26	-2.04	0.00	-86.46	0.00	86.46	1,828.92	914.46	1,856.49	929.62	7.03	-0.70	0.098
135.00	-6.67	-2.08	0.00	-80.59	0.00	80.59	1,782.35	891.17	1,762.57	882.59	7.46	-0.74	0.095
135.87	-6.35	-2.08	0.00	-78.79	0.00	78.79	993.95	496.97	1,000.68	501.09	7.60	-0.75	0.164
140.00	-5.38	-2.06	0.00	-70.19	0.00	70.19	969.84	484.92	940.01	470.70	8.26	-0.80	0.155
145.00	-5.05	-2.05	0.00	-59.87	0.00	59.87	939.35	469.68	867.78	434.53	9.15	-0.89	0.143
150.00	-4.59	-2.00	0.00	-49.64	0.00	49.64	907.44	453.72	797.07	399.13	10.13	-0.98	0.129
155.00	-4.28	-1.94	0.00	-39.65	0.00	39.65	874.09	437.05	728.06	364.57	11.21	-1.07	0.114
160.00	-3.97	-1.87	0.00	-29.94	0.00	29.94	839.33	419.66	660.97	330.98	12.37	-1.15	0.095
165.00	-3.91	-1.86	0.00	-20.58	0.00	20.58	800.44	400.22	593.98	297.43	13.61	-1.21	0.074
166.00	-2.62	-1.45	0.00	-18.73	0.00	18.73	790.74	395.37	579.60	290.23	13.87	-1.23	0.068
170.00	-2.39	-1.35	0.00	-12.95	0.00	12.95	751.93	375.97	523.82	262.30	14.92	-1.27	0.053
175.00	-2.18	-1.24	0.00	-6.19	0.00	6.19	703.42	351.71	458.07	229.37	16.27	-1.31	0.030
180.00	0.00	-1.19	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	17.64	-1.32	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	36.97	0.00	71.01	0.00	0.00	4335.86	135.87	0.68
0.9D + 1.6W	35.50	0.00	53.25	0.00	0.00	4178.32	135.87	0.65
1.2D + 1.0Di + 1.0Wi	6.92	0.00	146.16	0.00	0.00	930.93	135.87	0.21
(1.2 + 0.2Sds) * DL + E ELFM	3.01	0.00	70.72	0.00	0.00	406.37	135.87	0.09
(1.2 + 0.2Sds) * DL + E EMAM	3.23	0.00	70.72	0.00	0.00	376.13	135.87	0.17
(0.9 - 0.2Sds) * DL + E ELFM	3.00	0.00	49.26	0.00	0.00	399.40	135.87	0.08
(0.9 - 0.2Sds) * DL + E EMAM	3.23	0.00	49.26	0.00	0.00	368.79	135.87	0.16
1.0D + 1.0W	9.89	0.00	59.22	0.00	0.00	1170.71	135.87	0.19

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	103.	(4) SOL-#20 All Thre	307.5	9.2	16.8	144.2	12.0	13	24	0.0	12.0	0	0	229.5	330.5	0.694

Base Plate & Anchor Rod Analysis

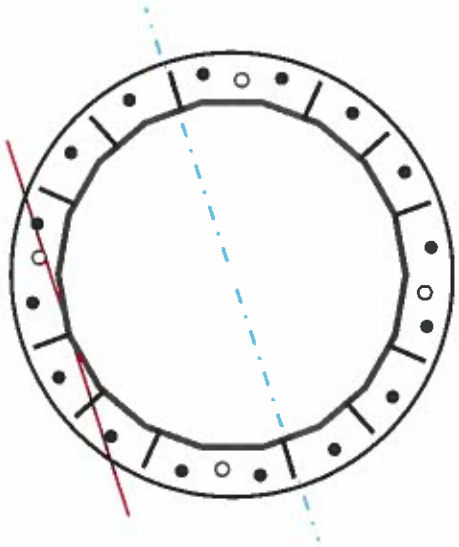
Pole Dimensions		
Number of Sides	18	-
Diameter	52.75	in
Thickness	0.438	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	4335.9	k-ft
Axial, Pu	71.0	k
Shear, Vu	37.0	k
Neutral Axis	108	°

Report Capacities		
Component	Capacity	Result
Base Plate	70%	Pass
Anchor Rods	60%	Pass
Dwyidag	55%	Pass

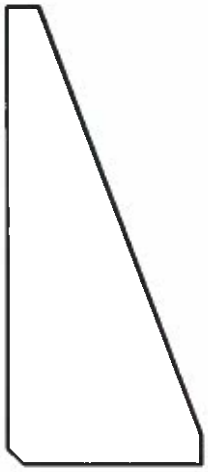
Base Plate		
Shape	Round	-
Diameter, ø	68	in
Thickness	2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1253.4	k
Bending Stress, ϕMn	1793.3	k

Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	59.63	in
Orientation Offset	0	°
Applied Force, Pu	217.0	k
Dywidag Bar, ϕPn	392.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	62	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.2	in
Orientation Offset	8	°
Applied Force, Pu	156.5	k
Anchor Rods, ϕPn	259.8	k

Stiffeners		
Arrangement	Radial	-
Quantity	12	-
Height	15	in
Width	6	in
Effective Width	6.000	in
Thickness	3/4	in
Effective Thickness	0.670	in
Notch	0.5	in
Flat Edge	1	in
Grade	A36	-
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	5/16	in
Bevel Depth		in
Vertical Weld	Fillet	
Vertical Fillet Size	5/16	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, ϕRn	209.3	k
Horz. Weld, ϕRn	88.7	k
Ten. Capacity, ϕTn	133.7	k
Comp. Capacity, ϕPn	430.4	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	37.0	3216.0	0.74
Anchor Rod Forces	37.0	3216.0	0.74
Additional Bolt (Grp1) Forces			
Additional Bolt (Grp2) Forces			
Dywidag Forces		1119.9	0.26
Stiffener Forces	15.3	1333.5	0.31

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	71.5363	3.9742	0.2546		24475.33
Bolt	3.9761	3.2477	0.8393	4.5	24981.67
Bolt1					
Bolt2					
Dywidag	4.9087	4.9087	1.9175		8523.19
Stiffener	3.6850	3.3165	48.2400		17337.81

Base Plate		
Shape	Round	-
Diameter, D	68	in
Thickness, t	2	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	42.912	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate		
Chord Length AA	37.117	in
Additional AA	9.983	in
Section Modulus, Z	47.101	in^3
Applied Moment, Mu	1253.4	k-ft
Bending Capacity, ϕMn	2119.5	k-ft
Capacity, Mu/ϕMn	0.591	OK
Chord Length AB	35.933	in
Additional AB	9.258	in
Section Modulus, Z	45.191	in^3
Applied Moment, Mu	1126.6	k-ft
Bending Capacity, ϕMn	2033.6	k-ft
Capacity, Mu/ϕMn	0.554	OK
Bend Line Length	28.491	in
Additional Bend Line	11.360	in
Section Modulus, Z	39.852	in^3
Applied Moment, Mu	1253.4	k-ft
Bending Capacity, ϕMn	1793.3	k-ft
Capacity, Mu/ϕMn	0.699	OK

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

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	62	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	156.5	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.602	OK
Interaction Capacity	0.602	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	59.63	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	217.0	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.553	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	91.7	k
Applied Horizontal Force, Vu	0.64	k

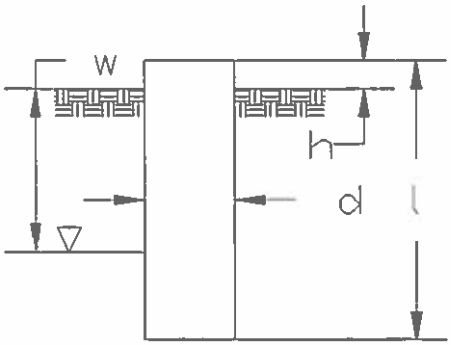
Vertical Weld		
Vert.-to-Stiffener a=e_x/l	0.133	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	3.720	-
Compressive Capacity, ϕPn	209.3	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	165.4	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.442	OK

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	3.940	-
Effective Fillet	0.313	in
Compressive Capacity, ϕPn	88.7	k
Horz.-to-Pole a=e_x/l	0.417	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	2.670	-
Shear Capacity, ϕVn	60.1	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	1.045	OK

Plate Tension		
Gross Cross Section	3.685	in^2
Net Cross Section	3.317	in^2
Tensile Capacity, ϕTn	133.7	k
Capacity, Tu/ϕTn	0.343	OK

Plate Compression		
Radius of Gyration	0.193	in^3
kl/r	46.53	-
4.71 $\sqrt{(E/Fy)}$	133.68	-
Buckling Stress(Fe)	132.2	-
Crit. Buckling Stress(Fcr)	115.9	ksi
Compressive Capacity, ϕPn	430.4	k
Capacity, Pu/ϕPn	0.107	OK

Site Name:	Winchester CT 3, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302506	*American Tower Corporation*	
Engineer:	Trevor.Ridilla		
Engineering Number:	OAA727483		
Date:	05/14/18		



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

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	4335.9	k-ft
Shear/Leg (V):	37.0	k
Axial Load (P):	71.0	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	7.0	ft
Caisson Embedment (L-h):	17.0	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	99.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

Soil Mechanical Properties

Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	3.5	165	0	0	0	0
3.5	7.5	165	6000	0	2700	0
7.5	18.0	165	6000	0	2700	11277

Required Embedment:	14.5	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	692.7	ft^3 = 25.7 yd^3
Weight of Concrete (Buoyancy Effect Considered):	103.9	k
Average Soil Unit Weight:	165.0	pcf
Skin Friction Resistance:	801.6	k
Compressive Bearing Resistance:	434.0	k
Pullout Weight (Minus Concrete Weight):	585.7	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	439.3	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	926.7	k
P_u:	59.2	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.06	Result: OK
Total Lateral Resistance:	4082.8	k
Inflection Point (Below Ground Surface):	10.8	ft
Design Overturning Moment At Inflection Point (M_D):	4771.0	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	9851.4	k-ft
$M_D/\phi_s M_n$:	0.48	Result: OK
ϕ_s:	0.75	

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	42	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	76.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	4383.0	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	10956.3	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.40	Result: OK
Design Shear (V_u):	644.6	k
Nominal Shear Capacity ($\phi_V V_n$):	685.3	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.94	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	3538.1	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	59.2	k
Nominal Compression Capacity ($\phi_P P_n$):	9682.0	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.012	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.40	Result: OK

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

T-Mobile Existing Facility

Site ID: CTNH403A

ATC Winchester CT3
15 Oakdale Avenue
Winsted, CT 06098

April 16, 2018

EBI Project Number: 6218003016

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	10.079%

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

EBI Consulting
environmental | engineering | due diligence

April 16, 2018

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

Emissions Analysis for Site: **CTNH403A – ATC Winchester CT3**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **15 Oakdale Avenue, Winsted, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 5 GHz Microwave bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **15 Oakdale Avenue, Winsted, 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 for directional panel antennas for broadcast and microwave backhaul, 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 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 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.

4) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 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

6) 1 microwave backhaul channel (5 GHz) was considered for the proposed facility. This channel has a transmit power of 1 Watt.

7) 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.

8) 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 for directional panel antennas for broadcast and microwave backhaul, 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.

9) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** & **Ericsson AIR21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Fastback IBR1300** for the proposed 5 GHz microwave backhaul. This is based on feedback from the carrier with regard to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Fastback IBR1300** has a maximum gain of **10 dBd** at its main lobe at 5 GHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas for broadcast and microwave backhaul, 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.

10) The antenna mounting height centerline of the proposed antennas (both panel antennas and microwave radio / antenna) is **166 feet** above ground level (AGL).

11) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson 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):	166	Height (AGL):	166	Height (AGL):	166
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	**1.311**	Antenna B1 MPE%	**1.311**	Antenna C1 MPE%	**1.311**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	166	Height (AGL):	166	Height (AGL):	166
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A2 MPE%	**0.983**	Antenna B2 MPE%	**0.983**	Antenna C2 MPE%	**0.983**

Microwave Backhaul Data

Make / Model:	Gain	Height (AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
Fastback IBR1300	10 dBd	166	5 GHz	1	1	10.00	**0.004**	A

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Sector A)	**2.299%**
AT&T	1.530%
MetroPCS	0.690%
CTPD	0.570%
Sprint	0.960%
Verizon Wireless	3.360%
Nextel	0.480%
Northeast Utilities	0.190%
Site Total MPE %:	**10.079%**

T-Mobile Sector A Total:	2.299 %
T-Mobile Sector B Total:	2.295 %
T-Mobile Sector C Total:	2.295 %
Site Total:	10.079 %

T-Mobile Max Power Values (Sector A)

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	166	6.56	AWS - 2100 MHz	1000	0.656%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	166	6.56	PCS - 1900 MHz	1000	0.656%
T-Mobile AWS - 2100 MHz UMTS	2	1,167.14	166	3.28	AWS - 2100 MHz	1000	0.328%
T-Mobile PCS - 1900 MHz UMTS	2	1,167.14	166	3.28	PCS - 1900 MHz	1000	0.328%
T-Mobile PCS - 1900 MHz GSM	2	1,167.14	166	3.28	PCS - 1900 MHz	1000	0.328%
T-Mobile 5 GHz Microwave	1	10.00	166	0.040	5 GHz	1000	0.004%
						Total:	**2.299%**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	2.299 %
Sector B:	2.295 %
Sector C:	2.295 %
T-Mobile Per Sector Maximum (Sector A):	2.299 %
Site Total:	10.079 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **10.079%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

108 OAKDALE AVE

Location	108 OAKDALE AVE	**Mblu**	028/ 151/ 002-1/ /
Acct#	103466	**Owner**	STOW WILLIAM P REVOCABLE TRUST
Assessment	$94,850	**Appraisal**	$135,500
PID	4991	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$25,900	$109,600	$135,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$18,130	$76,720	$94,850

Owner of Record

Owner	STOW WILLIAM P REVOCABLE TRUST	**Sale Price**	$0
Co-Owner	C/O AMERICAN TOWER #302506	**Certificate**	
		Book & Page	411/ 779
		Sale Date	03/12/2013
		Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
STOW WILLIAM P REVOCABLE TRUST	$0		411/ 779	29	03/12/2013
STOW WILLIAM P & RICHARD D	$0		00260/0171		11/16/1995

Building Information

Building 1 : Section 1

Year Built:	2004
Living Area:	360
Replacement Cost Less Depreciation:	$13,500

Building Attributes	
Field	**Description**

STYLE	Warehse Prefab
MODEL	Ind/Comm
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/Oil
Heating Type	Hot Air-no Duc
AC Type	None
Bldg Use	Tele Tower
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	12

Building Photo

(http://images.vgsi.com/photos/WinchesterCTPhotos//\01\00\49/

Building Layout

(http://images.vgsi.com/photos/WinchesterCTPhotos//Sketches/4

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	360	360
SLB	Slab	360	0
		720	360

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 4310
Description Tele Tower

Land Line Valuation

Size (Acres) 3.39
Depth

Zone	RR	**Assessed Value**	$76,720
Alt Land Appr	No	**Appraised Value**	$109,600
Category			

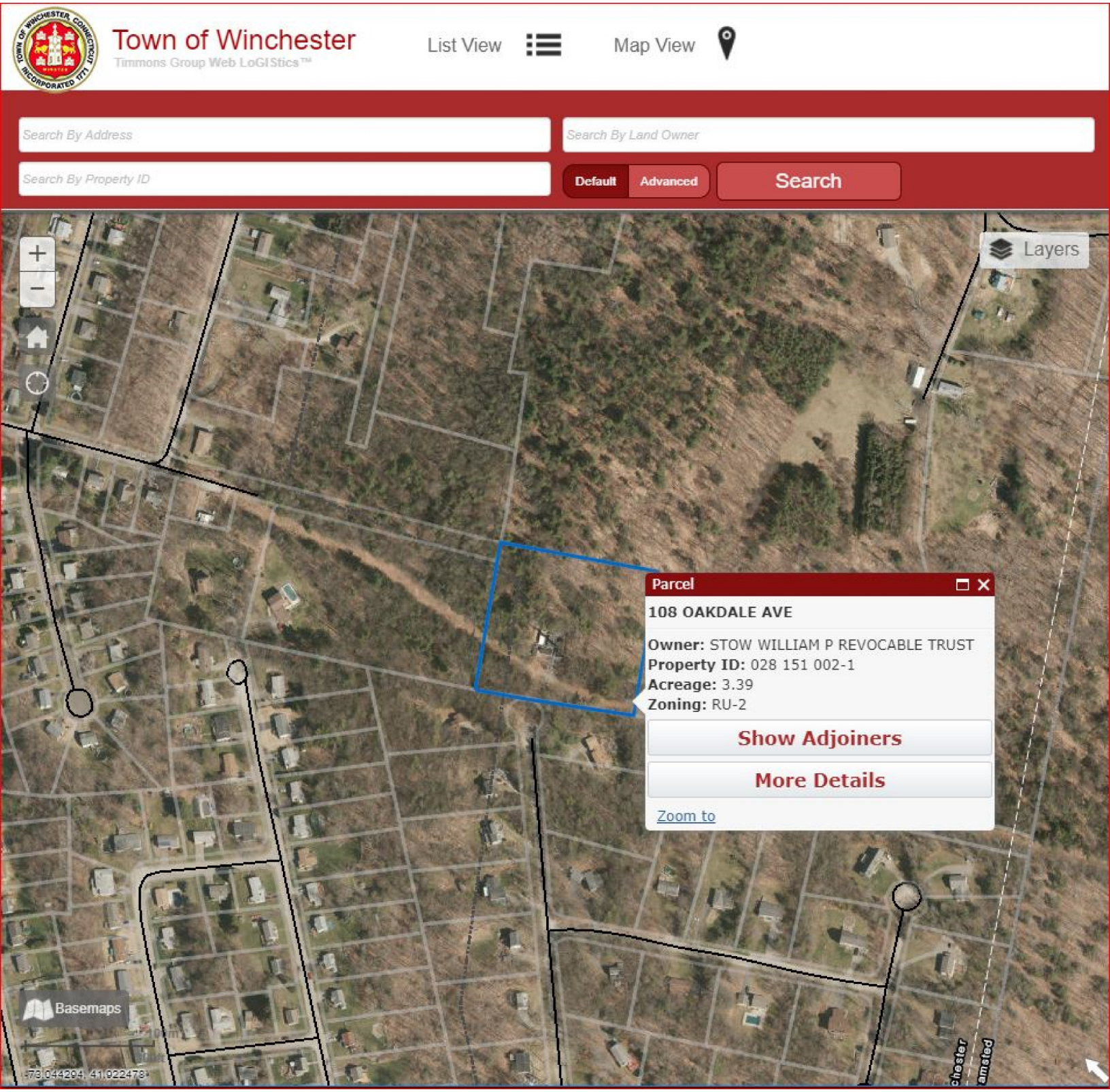
Outbuildings

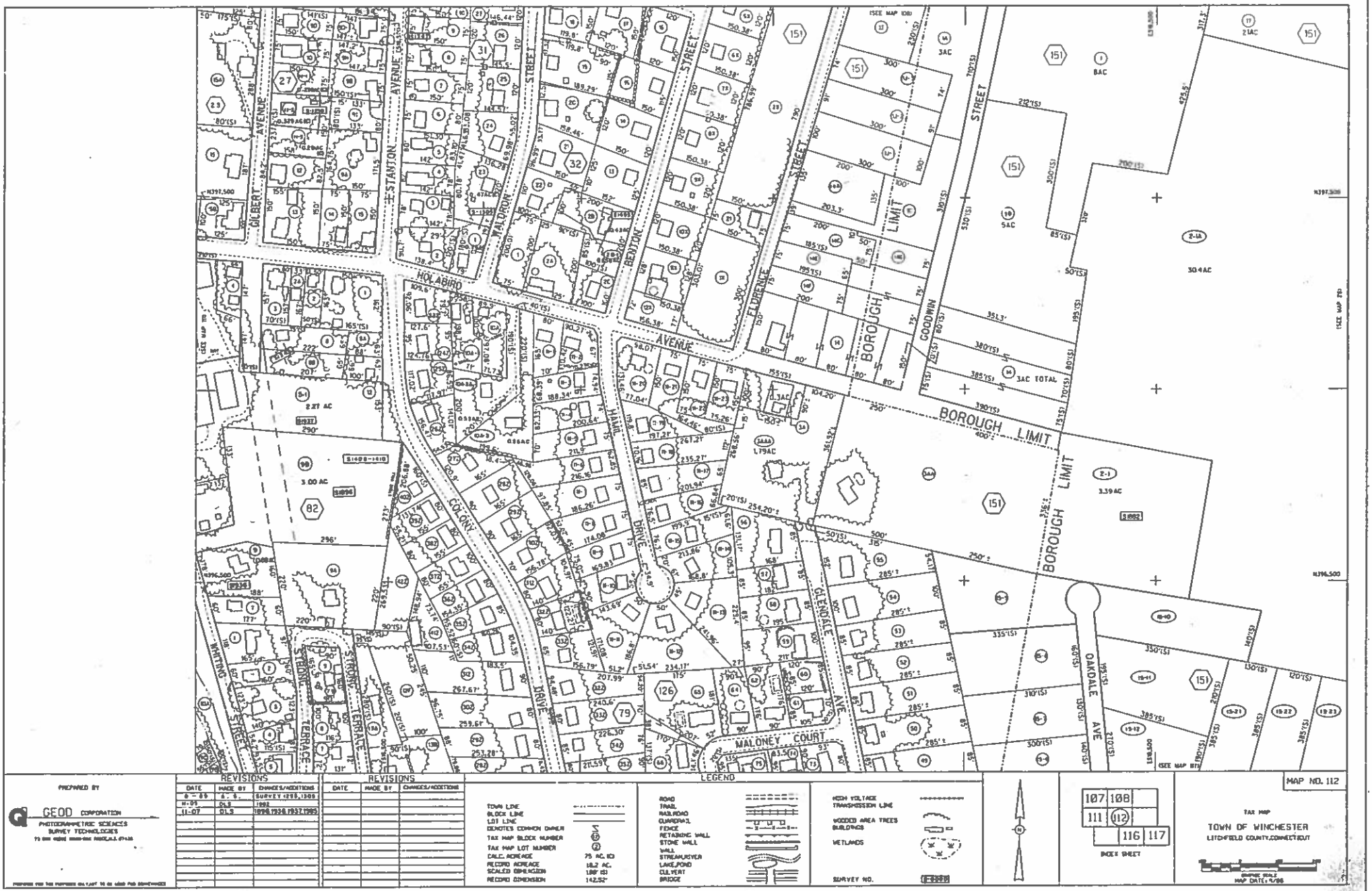
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD8	Shd Com Mas			252 S.F.	$6,200	1
SHD8	Shd Com Mas			252 S.F.	$6,200	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$25,900	$109,600	$135,500
2016	$19,900	$109,600	$129,500
2012	$13,700	$109,600	$123,300

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$18,130	$76,720	$94,850
2016	$13,930	$76,720	$90,650
2012	$9,590	$76,720	$86,310


Town of Winchester
Timmons Group Web LoGIStics™
List View
Map View
Search By Address
Search By Land Owner
Search By Property ID
Default
Advanced
Search
Layers
Parcel
108 OAKDALE AVE
Owner: STOW WILLIAM P REVOCABLE TRUST
Property ID: 028 151 002-1
Acreage: 3.39
Zoning: RU-2
Show Adjoiners
More Details
Zoom to
Basemaps



PREPARED BY

GEOD CORPORATION
PHOTOGRAMMETRIC SCIENCES
SURVEY TECHNOLOGIES

REVISIONS		
DATE	MADE BY	CHANGES/ADDITIONS
2-89	A. S.	SURVEY 4298,1369
6-94	DLS	1992
11-07	DLS	1998,1936,1937,1995

REVISIONS		
DATE	MADE BY	CHANGES/ADDITIONS

LEGEND

TOWN LINE
BLOCK LINE
LOT LINE
DENOTES COMMON OWNER
TAX MAP BLOCK NUMBER
TAX MAP LOT NUMBER
CALC. ACREAGE 75 AC. ±0
RECORD ACREAGE 18.2 AC.
SCALED DIMENSION 189' ±3
RECORD DIMENSION 142.52'

ROAD
TRAIL
RAILROAD
GUARDRAIL
FENCE
RETAINING WALL
STONE WALL
WALL
STREAM/RIVER
LAKE/POND
CULVERT
BRIDGE

HIGH VOLTAGE TRANSMISSION LINE
WOODED AREA TREES
BUILDINGS
WETLANDS
SURVEY NO.

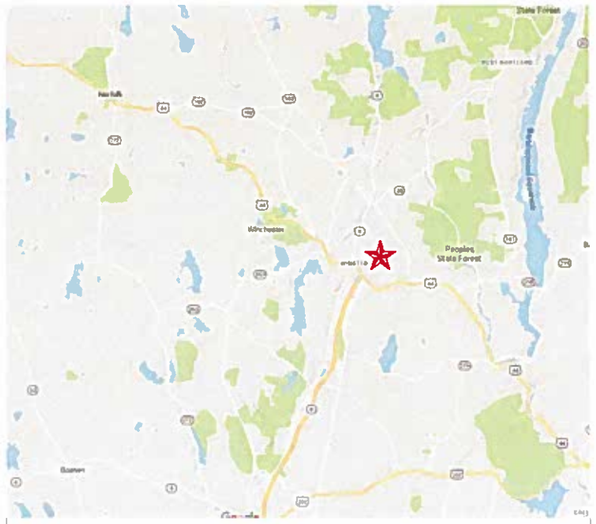
107	108	
111	112	
	116	117

INDEX SHEET

MAP NO. 112

TAX MAP
TOWN OF WINCHESTER
LITCHFIELD COUNTY, CONNECTICUT

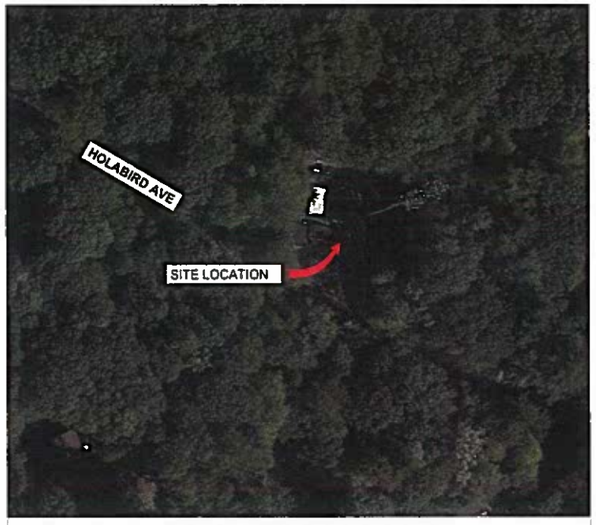
GRAPHIC SCALE
MAP DATE: 4/98



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: WINCHESTER CT 3
ATC SITE NUMBER: 302506
T-MOBILE SITE ID: CTNH403A
SITE ADDRESS: 15 OAKDALE AVENUE
WINSTED, CT 06098-1862



LOCATION MAP

T-MOBILE ANTENNA TEMPORARY ODU ADD

COMPLIANCE CODE

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

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

PROJECT SUMMARY

SITE ADDRESS:

15 OAKDALE AVENUE
WINSTED, CT 06098-1862
COUNTY: LITCHFIELD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.92169444
LONGITUDE: -73.0495
GROUND ELEVATION: 1073' AMSL

PROJECT DESCRIPTION

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

INSTALL (1) TEMPORARY RADIO/ODU, (1) 1.4" HYBRID CABLES, (2) .25" CAT 6 CABLES

EXISTING (6) PANELS, (3) TTAs, (12) 1-5/8" COAX CABLES, (1) 1-1/4" HYRBID CABLES TO REMAIN

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.

PROJECT LOCATION DIRECTIONS

FROM HARTFORD, CT:

TAKE RT 44 TO WINCHESTER. JUST BEFORE JUNCTION FOR RT 8 TURN RIGHT AT LIGHT. TAKE SECOND LEFT ONTO OAKDALE AVENUE. GO TO END OF STREET AND THROUGH ACCESS ROAD GATE TO SITE.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	06/04/18	KTL
G-002	GENERAL NOTES	0	06/04/18	KTL
C-101	DETAILED SITE PLAN & TOWER ELEVATION	0	06/04/18	KTL
C-501	ANTENNA INFORMATION & SCHEDULE	0	06/04/18	KTL
E-501	GROUNDING DETAILS	0	06/04/18	KTL

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (866) 554-6025

TELEPHONE COMPANY: FRONTIER
PHONE: (877) 870-4601

811
Know what's below.
Call before you dig.

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

CARRIER CONTACT:

RICH BANCROFT
(617) 586-6776

PROPERTY OWNER:

RICHARD D. STOW
52 MILLSTONE RD
WILTON, CT 06897

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	06/04/18

ATC SITE NUMBER:
302506
ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098-1862

SEAL:

Authorized by "EOR"
Jun 4 2018 3:30 PM cosign

T-Mobile

DRAWN BY:	KTL
APPROVED BY:	KRF
DATE DRAWN:	06/04/18
ATC JOB NO:	12482800

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

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 NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
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 ½" 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.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	06/04/18

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098-1862

SEAL:

Authorized by "EOR"
Jun 4 2018 3:30 PM cosign

T-Mobile

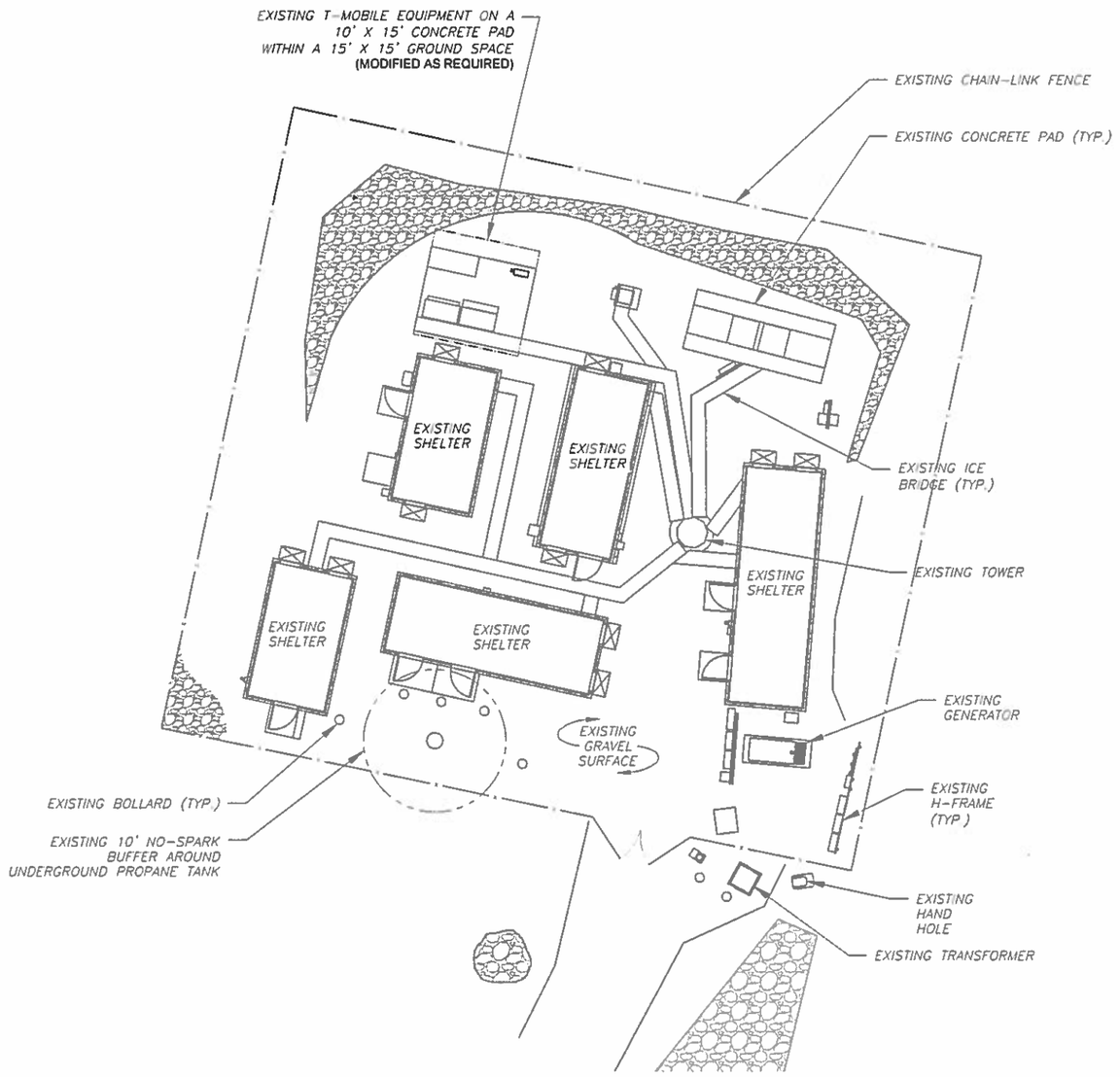
DRAWN BY:	KTL
APPROVED BY:	KRF
DATE DRAWN:	06/04/18
ATC JOB NO:	12482800

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

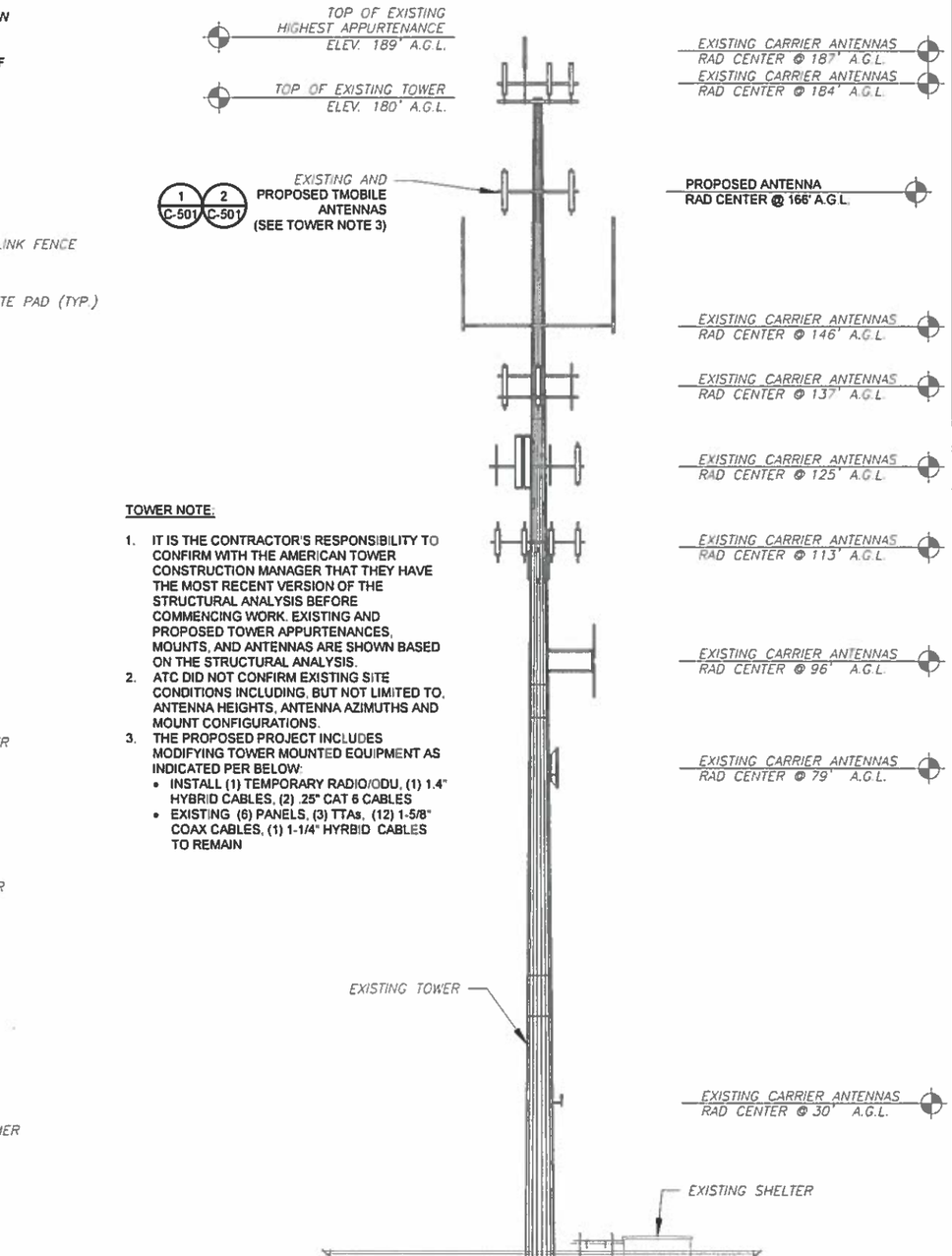
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE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

0 20' 40'

SCALE: 1"=20' (11X17)
1"=10' (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:
   - INSTALL (1) TEMPORARY RADIO/ODU, (1) 1.4" HYBRID CABLES, (2) .25" CAT 6 CABLES
   - EXISTING (6) PANELS, (3) TTAs, (12) 1-5/8" COAX CABLES, (1) 1-1/4" HYRBID CABLES TO REMAIN

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	06/04/18

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098-1862

SEAL:

STATE OF CONNECTICUT · PATRICK R. BARRY · 28958 · LICENSED PROFESSIONAL ENGINEER

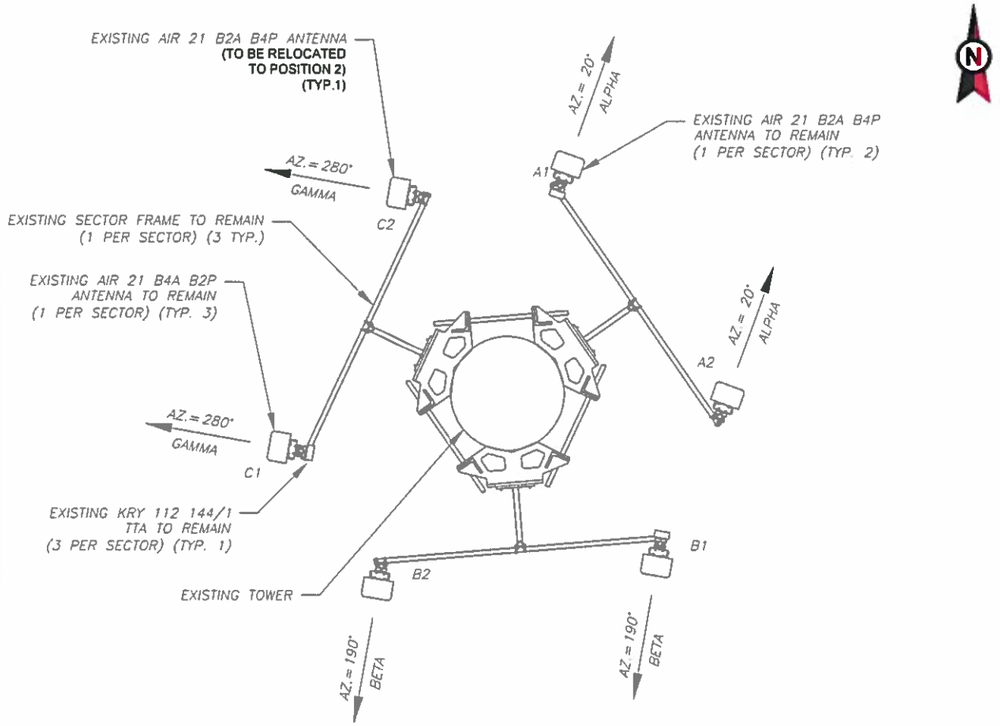
Authorized by "EOR"
Jun 4 2018 3:30 PM cosign

T-Mobile

DRAWN BY:	KTL
APPROVED BY:	KRF
DATE DRAWN:	06/04/18
ATC JOB NO:	12482800

DETAILED SITE PLAN & TOWER ELEVATION

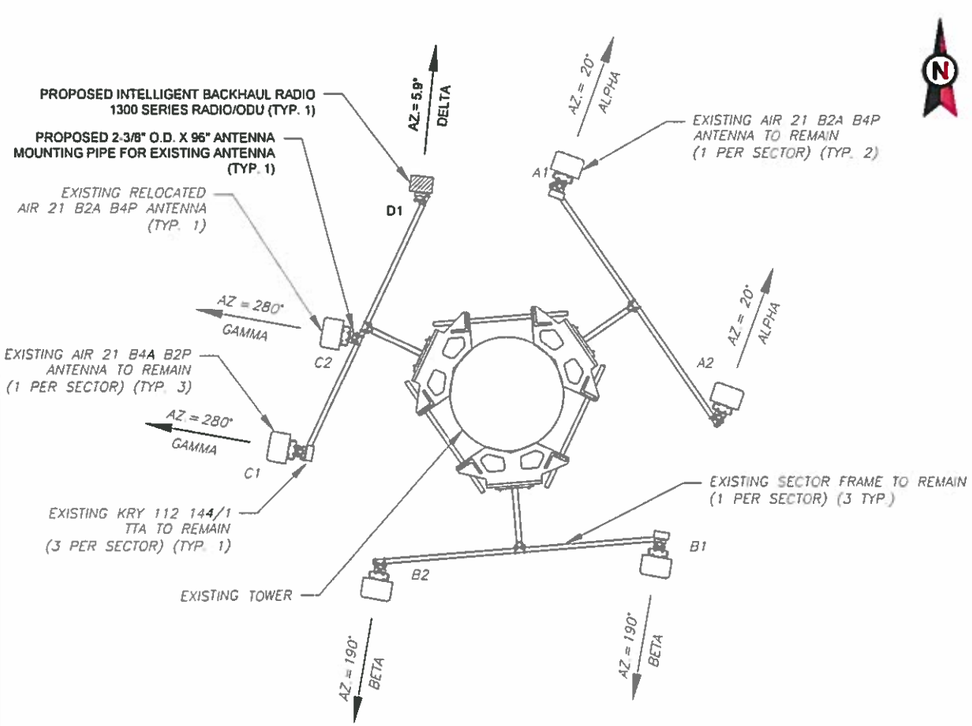
SHEET NUMBER:	REVISION:
C-101	0



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 FINAL 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	AIR 21 B2A B4P	166'-0"	20°	-	-	KRY 112 144/1	(4) 1-5/8"
ALPHA	A2	AIR 21 B4A B2P	166'-0"	20°	-	-	-	SEE NOTE 1
BETA	B1	AIR 21 B2A B4P	166'-0"	190°	-	-	KRY 112 144/1	(4) 1-5/8"
BETA	B2	AIR 21 B4A B2P	166'-0"	190°	-	-	-	SEE NOTE 1
GAMMA	C1	AIR 21 B2A B4P	166'-0"	280°	-	-	KRY 112 144/1	(4) 1-5/8"
GAMMA	C2	AIR 21 B4A B2P	166'-0"	280°	-	-	-	SEE NOTE 1

1. (1) 1-1/4" HYBRID CABLE (TO REMAIN).

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 B2A B4P	166'-0"	20°	-	-	KRY 112 144/1	(4) 1-5/8"
ALPHA	A2	AIR 21 B4A B2P	166'-0"	20°	-	-	-	SEE NOTE 2
BETA	B1	AIR 21 B2A B4P	166'-0"	190°	-	-	KRY 112 144/1	(4) 1-5/8"
BETA	B2	AIR 21 B4A B2P	166'-0"	190°	-	-	-	SEE NOTE 2
GAMMA	C1	AIR 21 B2A B4P	166'-0"	280°	-	-	KRY 112 144/1	(4) 1-5/8"
GAMMA	C2	AIR 21 B4A B2P	166'-0"	280°	-	-	-	SEE NOTE 2
DELTA	D1	-	166'-0"	5.9°	-	-	INTELLIGENT BACKHAUL RADIO 1300 SERIES	(2) .25 CAT 6 (1) 1.4" HYBRID

1. BASED ON APPROVED ATC APPLICATION OAA727483, DATED 03-26-2018. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
2. (1) 1-1/4" HYBRID CABLE (TO REMAIN).

3 ANTENNA SCHEDULE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	06/04/18

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098-1862

SEAL:

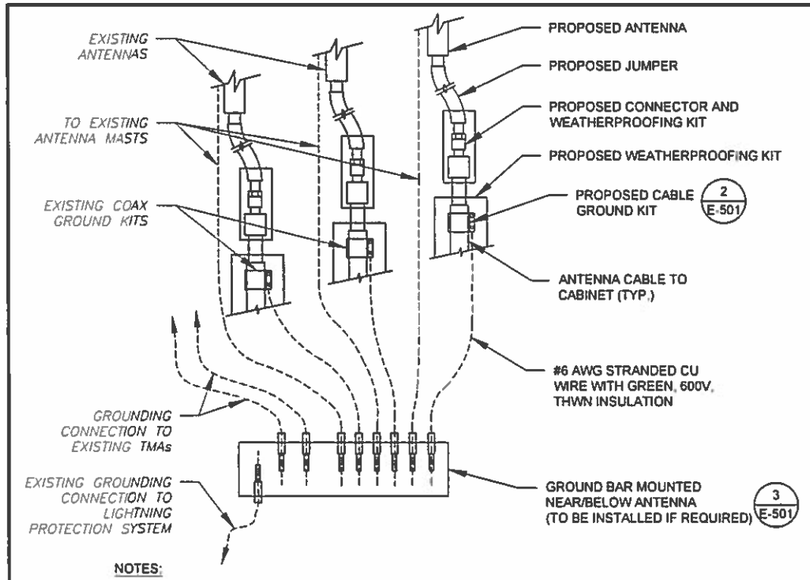
Authorized by "EOR"
Jun 4 2018 3:30 PM cosign

T-Mobile

DRAWN BY:	KTL
APPROVED BY:	KRF
DATE DRAWN:	06/04/18
ATC JOB NO:	12482800

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	0

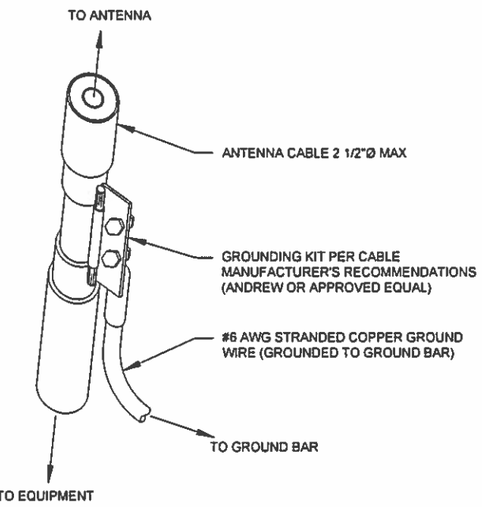


NOTES:

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

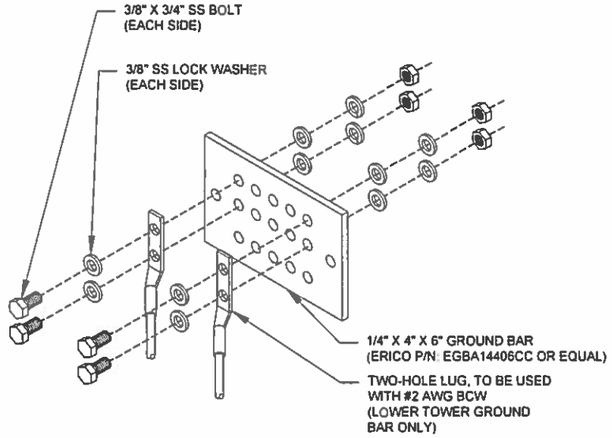


GROUND KIT NOTES:

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

AMERICAN TOWER®
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GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0