Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

January 14, 2018

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

Notice of Exempt Modification
14 Canton Springs Road, Canton, CT 06019
Latitude- 41.8227790000
Longitude- -72.8951910000

Dear Ms. Bachman,

T-Mobile currently maintains (4) existing antennas 100' level of the existing 140' monopole at 14 Canton Springs Road in Canton, Connecticut. The tower is owned by American Tower Corporation. The property is owned by the Canton Volunteer Fire Department. T-Mobile now intends to add (2) new 600/700/1900/2100 MHz antennas. These antennas would be installed at the same 100' level of the tower. T-Mobile also intends to remove (2) existing tower-mounted amplifiers and replace with (3) new tower-mounted amplifiers, as well as add (4) coax cables.

The tower was originally approved by the Town of Canton Zoning Commission on February 17, 1999. The approval did not include conditions that would be violated by this modification. T-Mobile, as Omnipoint Communications, was approved for tower sharing by the Connecticut Siting Council on October 21, 1999.

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 Beth Kandrysawtz, First Selectmen of the Town of Canton, Neil Pade, Director of Planning and Community Development for the Town of Canton, as well as the tower owner and property owner.

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

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

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

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Kyle Richers

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
908-447-4716
krichers@transcendwireless.com

cc: Beth Kandrysawtz - as elected official
Neil Pade- as zoning official
American Tower Corporation- as tower owner
Town of Canton Volunteer Fire Department- as property owner

U.S. Postal Service™

CERTIFIED MAIL™ RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

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CANTON, CT 06019

OFFICIAL USE

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Certified Fee	$0.00	
Return Receipt Fee (Endorsement Required)	~~$0.00~~ $0.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	~~$0.00~~	
Total Postage & Fees	$1.63 $7.83	01/14/2019

Sent To: Canton Volunteer Fire Department

Street, Apt. No.; or PO Box No.: PO Box 104

City, State, ZIP+4: Canton, CT 06019

PS Form 3800, August 2006 — See Reverse for Instructions

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, January 14, 2019 9:50 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11275C CSC ZO

You have a package coming.

Scheduled Delivery Date: Tuesday, 01/15/2019

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424294907541
Ship To:	Neil Pade Town of Canton 4 Market Street COLLINSVILLE, CT 060193184 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	01/15/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11275C CSC ZO

Download the UPS mobile app

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, January 14, 2019 9:48 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11275C CSC EO

You have a package coming.

Scheduled Delivery Date: Tuesday, 01/15/2019

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424294089533
Ship To:	Beth Kandrysawtz Town of Canton 4 Market Street COLLINSVILLE, CT 060193184 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	01/15/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11275C CSC EO

Download the UPS mobile app

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, January 14, 2019 9:47 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11275C TO

You have a package coming.

Scheduled Delivery Date: Tuesday, 01/15/2019

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424293875524
Ship To:	Contacts Management American Tower Corporation 10 Presidential Way WOBURN, MA 018011053 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	01/15/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11275C TO

Download the UPS mobile app

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

TOWN OF CANTON CT

Information on the Property Records for the Municipality of Canton was last updated on 3/9/2018.

Parcel Information

Location:	14 CANTON SPRINGS ROAD	Property Use:	Automotive	Primary Use:	Parking Structure
Unique ID:	1640014	Map Block Lot:	31/164/0014	Acres:	0.49
490 Acres:	0.00	Zone:	AR-1	Volume / Page:	059 /433
Developers Map / Lot:		Census:			

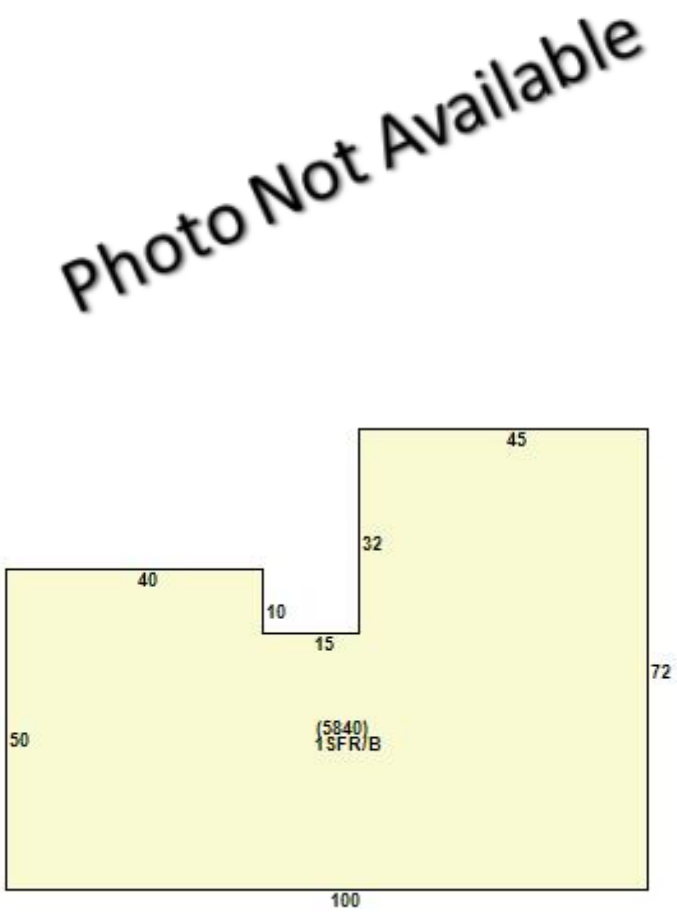
Value Information

	Appraised Value	Assessed Value
Land	36,750	25,730
Buildings	442,100	309,470
Detached Outbuildings	0	0
Total	478,850	335,200

Owner's Information

Owner's Data
CANTON VOLUNTEER FIRE DEPARTMENT P.O. BOX 104 CANTON CT 06019

Building 1



Category:	Automotive	Use:	Serv Sta w/Bays	GLA:	5,840
Stories:	1.00	Construction:	Wood Frame	Year Built:	1962
Heating:	FHA	Fuel:	UnKnown	Cooling Percent:	100
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

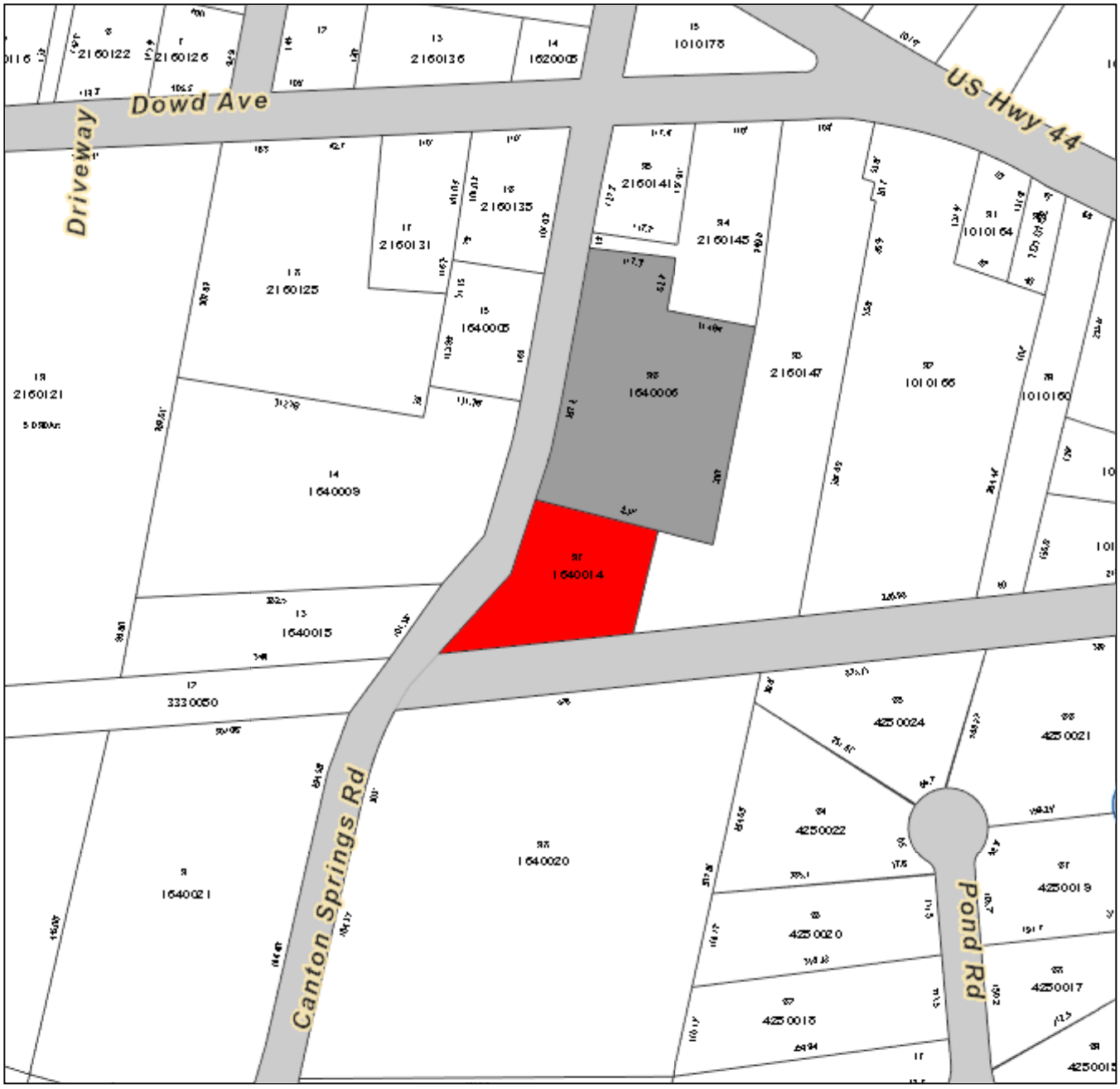
Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
CANTON VOLUNTEER FIRE	059	433			No	$0

Town of Canton

Geographic Information System (GIS)

Date Printed: 3/12/2018



MAP DISCLAIMER - NOTICE OF LIABILITY

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

Approximate Scale: 1 inch = 200 feet

0 200 Feet

N W E S

ZONING COMMISSION

Canton, Connecticut INC. 1806

4 Market Street, Collinsville, Connecticut 06022

February 26, 1999

Mr. Kenneth C. Baldwin
Robinson & Cole, LLP
One Commercial Plaza
280 Trumbull Street
Hartford, CT 06103-3597

1. RE: Special Exception and Site Plan Modification for Communications Tower and Facility, File #218, Apln 795; 14 Canton Springs Road; Canton Volunteer Fire Company, Inc., owner/applicant.

Dear Mr. Baldwin::

At a regular meeting held on Wednesday, February 17, 1999 at the Town Hall in Collinsville, the Canton Zoning Commission voted to approve the above-captioned request for a special exception and site plan modification in accordance with Canton Zoning Regulations §67.4.

This action of the Commission shall be effective 14 days after publication of the decision in the Hartford Courant on March 2, 1999.

RECORDING YOUR APPROVAL:

Enclosed you will find the Certificate of Action. In order to validate the certificate and make the action of the Commission effective, you must bring the original Certificate of Action to the Canton Town Clerk to be recorded on the Canton Land Records. Recording fees may be obtained by calling the Town Clerk's office at 693-7870.

Sincerely,

Eric M. Barz

Eric M. Barz, A.I.C.P.
Director of Planning and Community Development

Telephone (860) 693-7856

Fax (860) 693-7840

CERTIFICATE OF ACTION

CANTON ZONING COMMISSION

OWNER OF RECORD:	[	**ZONING FILE** *218*
Canton Volunteer Fire Company, Inc.	[	**APPLICATION** *795*
14 Canton Springs Road	[	**District** *B1*
Canton, CT 06019	[	**Map** *4-3* **Lot** *97*
APPLICANT: *Mr. Ralph Trumbull*	[	**Location** *14 Canton Springs Road*

APPROVAL OF SPECIAL EXCEPTION AND SITE PLAN MODIFICATION

As Secretary of the Canton Zoning Commission, I certify that at a regular meeting on February 17, 1999 the Zoning Commission approved your request for a special exception and site plan modification.

As approved, the Zoning Commission finds this application to be in conformance with Section 67.4 of the Canton Zoning Regulations.

Dated at Canton, Connecticut on February 26, 1999.

Douglas Kress, Secretary
CANTON ZONING COMMISSION

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11275C

Simsbury-1/Rt 10
14 Canton Springs Road
Canton, CT 06019

October 26, 2018

EBI Project Number: 6218006870

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	20.02 %

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

EBI Consulting
environmental | engineering | due diligence

October 26, 2018

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

Emissions Analysis for Site: **CT11275C – Simsbury-1/Rt 10**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **14 Canton Springs Road, Canton, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and 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 limits for the 700 MHz frequency band is approximately 467 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **14 Canton Springs Road, Canton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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) 1 GSM channels (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 15 Watts per Channel.

2) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 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.

4) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) Since all proposed radios will be located at ground level there are additional losses for coax cabling that were considered. These losses were 0.90 dB of cable loss for the 700 MHz LTE radios, 1.65 dB of cable loss for the 1900 MHz LTE and GSM radios and 1.70 dB of cable loss for the 2100 MHz LTE radios.

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 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 **RFS APXV18-209014-C-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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 is **100 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:	RFS APXV18-209014-C-A20	Make / Model:	RFS APXV18-209014-C-A20	Make / Model:	RFS APXV18-209014-C-A20
Gain:	14.4 dBd	Gain:	14.4 dBd	Gain:	14.4 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 feet
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	5	Channel Count	5	Channel Count	5
Total TX Power(W):	215	Total TX Power(W):	215	Total TX Power(W):	215
ERP (W):	4,023.97	ERP (W):	4,023.97	ERP (W):	4,023.97
Antenna A1 MPE%	**1.63**	Antenna B1 MPE%	**1.63**	Antenna C1 MPE%	**1.63**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 feet
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	40	Total TX Power(W):	40	Total TX Power(W):	40
ERP (W):	937.69	ERP (W):	937.69	ERP (W):	937.69
Antenna A2 MPE%	**0.82**	Antenna B2 MPE%	**0.82**	Antenna C2 MPE%	**0.82**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.45 %**
AT&T	**2.17** %
Verizon Wireless	**6.69** %
MetroPCS	**1.15** %
Sprint	**6.96** %
Canton FD	**0.07** %
Nextel	**0.53** %
Site Total MPE %:	**20.02 %**

T-Mobile Sector A Total:	2.45 %
T-Mobile Sector B Total:	2.45 %
T-Mobile Sector C Total:	2.45 %
Site Total:	20.02 %

T-Mobile Maximum MPE Power Values (Per Sector)

T-Mobile _Frequency Band / Technology (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 PCS - 1900 MHz LTE	2	753.46	100	6.13	PCS - 1900 MHz	1000.00	0.61%
T-Mobile AWS - 2100 MHz LTE	2	1,117.25	100	9.09	AWS - 2100 MHz	1000.00	0.91%
T-Mobile PCS - 1900 MHz GSM	1	282.55	100	1.15	PCS - 1900 MHz	1000.00	0.11%
T-Mobile 700 MHz LTE	2	468.85	100	3.82	700 MHz	467.00	0.82%
						Total:	**2.45%**

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:	2.45 %
Sector B:	2.45 %
Sector C:	2.45 %
T-Mobile Maximum MPE % (Per Sector):	2.45 %
Site Total:	20.02 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.02%** 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.

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**140 ft Monopole**
ATC Site Name	:	**Canton CT, CT**
ATC Site Number	:	**411256**
Engineering Number	:	**12605194_C3_03**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**Simsbury-1/Rt 10**
Carrier Site Number	:	**CT11275C**
Site Location	:	**14 Canton Springs Road** **Canton, CT 06019-2401** **41.822900,-72.895200**
County	:	**Hartford**
Date	:	**November 15, 2018**
Max Usage	:	**55%**
Result	:	**Pass**

Prepared By:
Kingsley C. Igboanugo
Structural Engineer III

Reviewed By:

STATE OF CONNECTICUT
BRYAN K LANIER
32586
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Nov 15 2018 5:28 PM cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 140 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Project #4960, dated May 20, 1999
Foundation Drawing	EEI Project #4960, dated May 21, 1999
Geotechnical Report	Clarence Welti Project #Banm Tower Site, dated November 23, 1998

Analysis

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

Basic Wind Speed:	93 mph (3-Second Gust, V_{ASD}) / 119 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
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					
140.0	148.0	1	18' Omni	Stand-Off	(2) 7/8" Coax	Other
130.0	130.0	6	CCI DTMABP7819VG12A	Platform w/ Handrails	(12) 7/8" Coax (3) 3" Conduit (2) 0.39" Fiber Trunk	AT&T Mobility
		2	Raycap DC6-48-60-0-8F			
		6	Ericsson RRUS-11 (50 lbs.)			
		3	Ericsson RRUS 32 (50.8 lbs)			
		1	KMW AM-X-CD-14-65-00T-RET			
		3	Kathrein 800-10121			
		3	CSS DUO1417-8686			
		1	Andrew SBNHH-1D65A (33.5 lbs)			
		1	KMW AM-X-CD-17-65-00T-RET (96" Height)			
		1	Andrew SBNH-1D6565C (60.8 lbs)			
		2	CCI HPA-65R-BUU-H8			
120.0	120.0	3	Samsung 700/850MHz Dual Band RRH	Platform w/ Handrails	(16) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Samsung PCS/AWS Dual Band RRH			
		2	RFS DB-T1-6Z-8AB-0Z			
		4	Antel LPA-80080/4CF ___			
		2	Antel LPA-80063/4CF ___			
		3	Antel BXA-70063-6CF-EDIN-2			
		6	Commscope SBNHH-1D65B			
		1	VZW Unused Reserve: 15,989 sq in			
100.0	-	-	-	Low Profile Platform	(8) 1 5/8" Coax	T-Mobile
90.0	94.0	1	PCTEL GPS-TMG-HR-26N	Low Profile Platform	(4) 1 1/4" Hybriflex (1) 1/2" Coax	Sprint Nextel
		3	Alcatel-Lucent RRH2x50-08			
		3	Alcatel-Lucent 800MHz RRH			
		3	Alcatel-Lucent 1900MHz 4X45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVSPP18-C-A20			
		3	Commscope DT465B-2XR			
83.0	83.0	3	Kathrein 742 213	Low Profile Platform	-	Metro PCS

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
100.0	100.0	2	RFS APXV18-209014-C	-	-	T-Mobile
		2	Commscope LNX-6515DS-VTM			
		2	Ericsson KRY 112 489/2			
		2	Kathrein Smart Bias Tee			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
100.0	100.0	3	Commscope ATSBT-TOP-MF-4G	Low Profile Platform	(4) 1 5/8" Coax	T-Mobile
		3	RFS ATMA4P4DBP-1A20			
		3	RFS APXV18-209014-C-A20			
		3	Andrew LNX-6515DS-A1M			

[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	43%	Pass
Shaft	47%	Pass
Base Plate	55%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,921.8	5,294.4	2,760.3	52%
Shear (Kips)	38.7	52.2	26.6	51%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
100.0	Commscope ATSBT-TOP-MF-4G	T-Mobile	0.774	0.944
	RFS ATMA4P4DBP-1A20			
	RFS APXV18-209014-C-A20			
	Andrew LNX-6515DS-A1M			

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

AMERICAN TOWER®
CORPORATION

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:

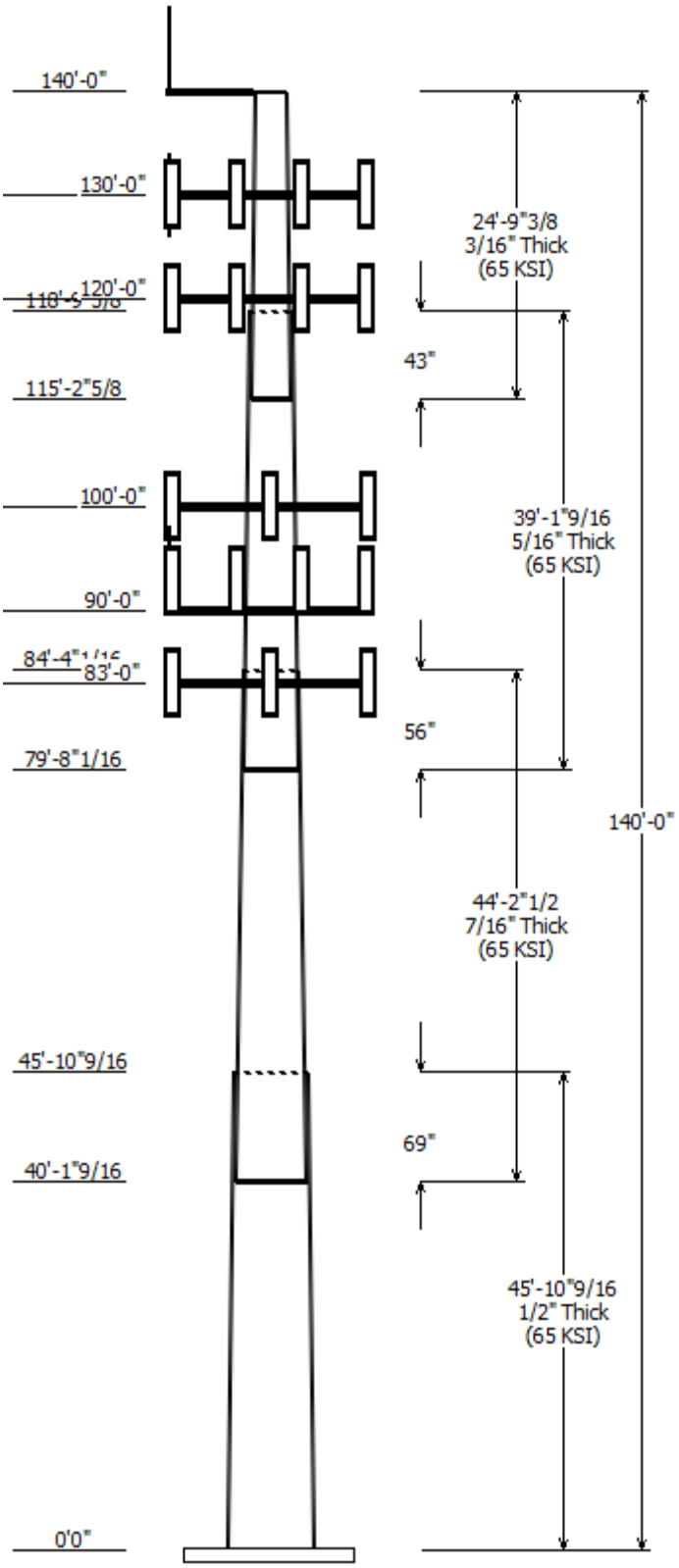
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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 :	411256	Code:	ANSI/TIA-222-G
Location :	CANTON CT, CT		
Description :	140 ft Monopole		
Client :	T-MOBILE	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	140.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.249089 (in/ft)		

Sections Properties

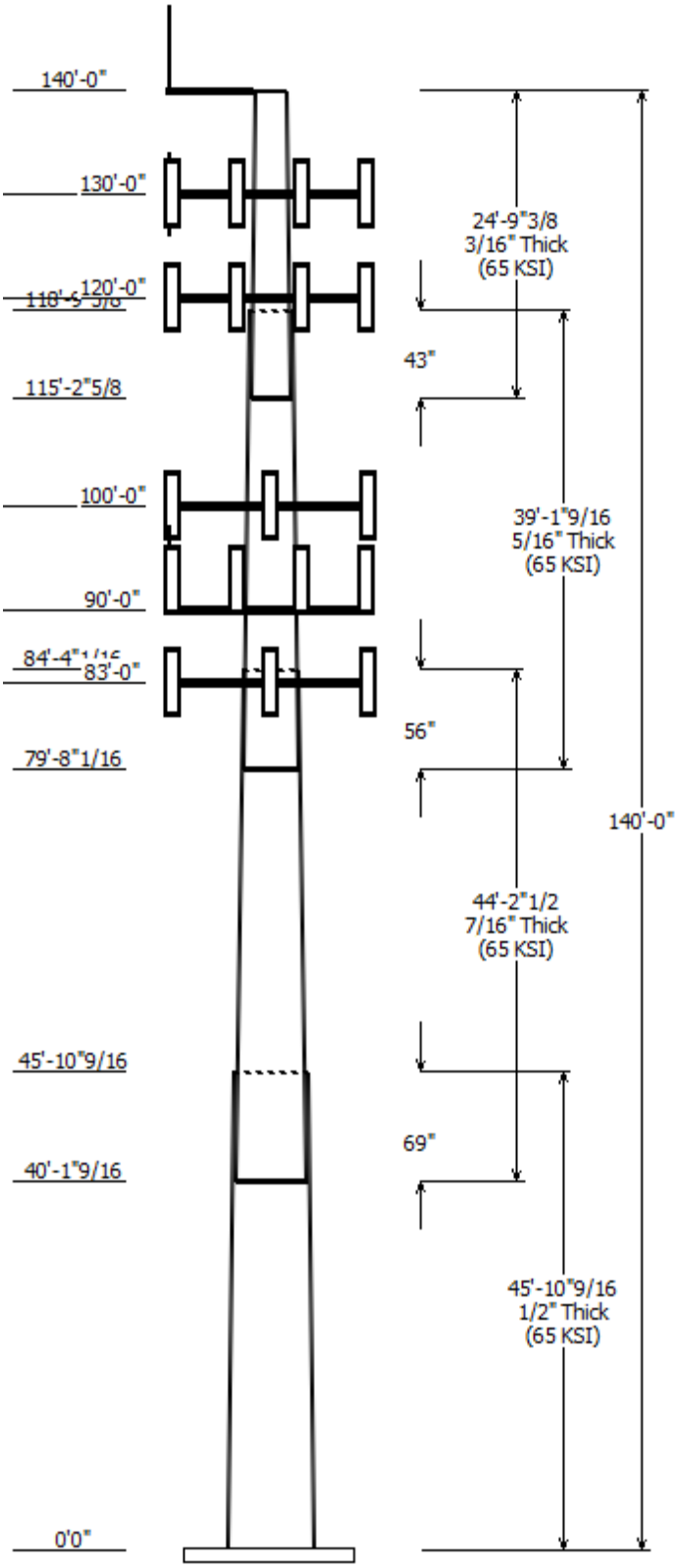
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	45.880	39.57	51.00	0.500		0.000	18 Sides	65
2	44.210	30.86	41.87	0.438	Slip Joint	69.000	18 Sides	65
3	39.130	22.90	32.65	0.313	Slip Joint	56.000	18 Sides	65
4	24.780	18.00	24.17	0.188	Slip Joint	43.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
140.000	148.000	1	18' Omni
140.000	140.000	1	Stand-Off
130.000	130.000	1	KMW AM-X-CD-14-65-00T-RET
130.000	130.000	2	CCI HPA-65R-BUU-H8
130.000	130.000	1	KMW AM-X-CD-17-65-00T-RET
130.000	130.000	1	Andrew SBNHH-1D65A (33.5
130.000	130.000	3	Ericsson RRUS 32 (50.8 lbs)
130.000	130.000	2	Raycap DC6-48-60-0-8F
130.000	130.000	1	Flat Platform w/ Handrails
130.000	130.000	3	Kathrein Scala 800-10121
130.000	130.000	1	Andrew SBNH-1D6565C (60.8
130.000	130.000	3	CSS DUO1417-8686
130.000	130.000	6	CCI DTMABP7819VG12A
130.000	130.000	6	Ericsson RRUS-11 (50 lbs.)
120.000	120.000	1	VZW Unused Reserve: 15,989
120.000	120.000	3	Samsung 700/850MHz Dual
120.000	120.000	3	Samsung PCS/AWS Dual Band
120.000	120.000	6	Commscope SBNHH-1D65B
120.000	120.000	2	RFS DB-T1-6Z-8AB-0Z
120.000	120.000	1	Flat Platform w/ Handrails
120.000	120.000	3	Amphenol Antel BXA-70063-
120.000	120.000	2	Antel LPA-80063/4CF ___
120.000	120.000	4	Antel LPA-80080/4CF ___
100.000	100.000	3	Commscope ATSBT-TOP-MF-
100.000	100.000	3	Andrew LNX-6515DS-A1M
100.000	100.000	3	RFS APXV18-209014-C-A20
100.000	100.000	3	RFS ATMA4P4DBP-1A20
100.000	100.000	1	Flat Low Profile Platform
90.000	94.000	1	Flat Low Profile Platform
90.000	94.000	3	Commscope DT465B-2XR
90.000	94.000	3	RFS APXVSPP18-C-A20
90.000	94.000	3	Alcatel-Lucent TD-RRH8x20-25
90.000	94.000	3	Alcatel-Lucent 1900 MHz 4X45
90.000	94.000	3	Alcatel-Lucent 800 MHz RRH
90.000	94.000	3	Alcatel-Lucent RRH2x50-08
90.000	94.000	1	PCTEL GPS-TMG-HR-26N
83.000	83.000	1	Flat Low Profile Platform
83.000	83.000	3	Kathrein Scala 742 213

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind



0.000	90.000	1 1/4" Hybriflex	No
0.000	90.000	1 1/4" Hybriflex	No
0.000	90.000	1/2" Coax	No
0.000	100.0	1 5/8" Coax	Yes
0.000	100.0	1 5/8" Coax	No
0.000	120.0	1 5/8" Coax	No
0.000	120.0	1 5/8" Fiber	No
0.000	130.0	0.39" Fiber Trunk	No
0.000	130.0	3" Conduit	No
0.000	130.0	7/8" Coax	No
0.000	140.0	7/8" Coax	No

Load Cases

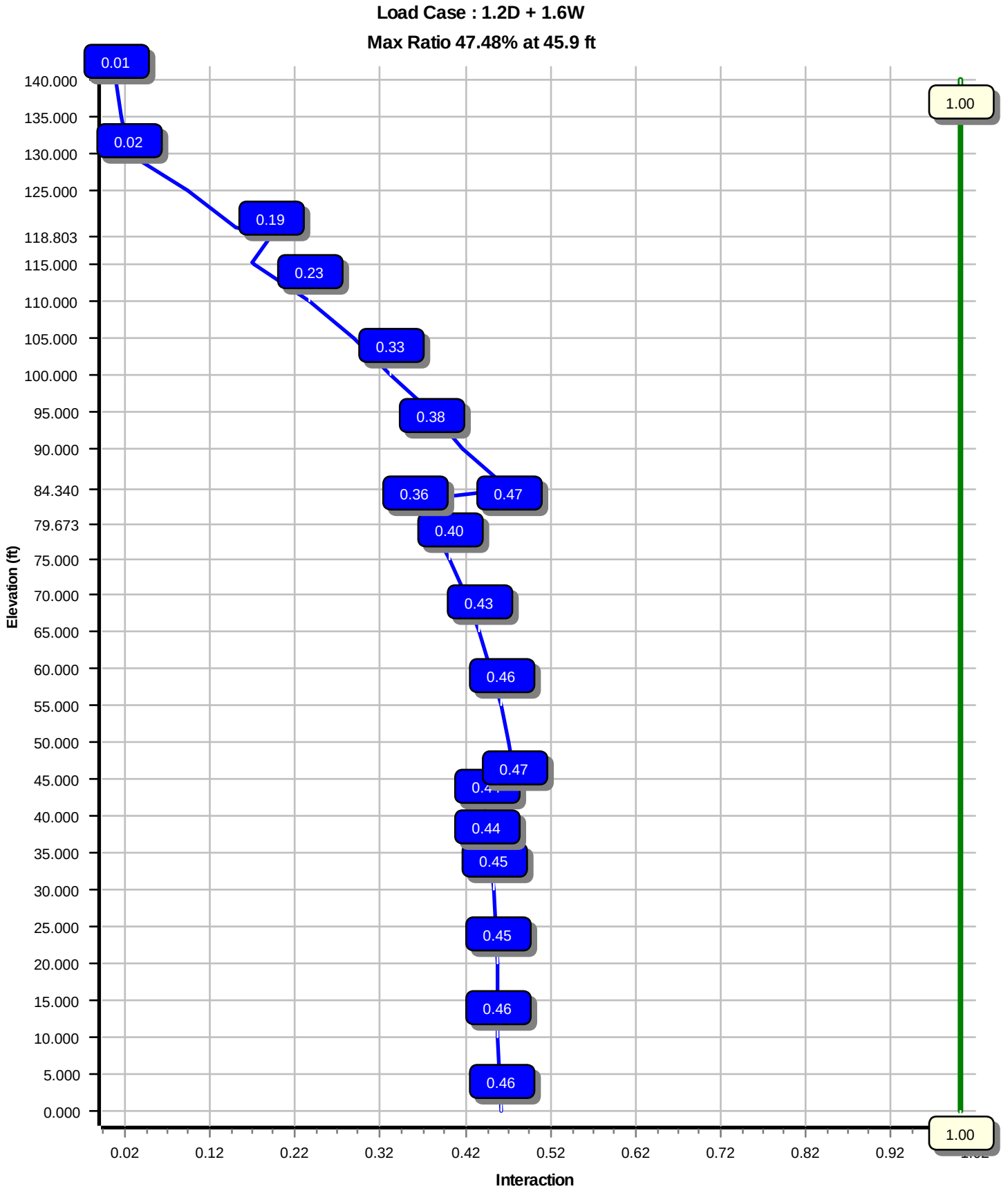
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL)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

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2760.34	26.64	52.59
0.9D + 1.6W	2732.47	26.62	39.43
1.2D + 1.0Di + 1.0Wi	896.53	8.52	87.08
(1.2 + 0.2Sds) * DL + E ELFM	202.83	1.92	52.28
(1.2 + 0.2Sds) * DL + E EMAM	172.24	1.75	52.28
(0.9 - 0.2Sds) * DL + E ELFM	200.43	1.92	36.37
(0.9 - 0.2Sds) * DL + E EMAM	170.05	1.75	36.37
1.0D + 1.0W	713.73	6.93	43.85

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 47.48% at 45.9 ft
0.01
0.02
0.19
0.23
0.33
0.38
0.36
0.47
0.40
0.43
0.46
0.47
0.44
0.45
0.45
0.46
0.46
1.00
1.00
140.000
135.000
130.000
125.000
118.803
115.000
110.000
105.000
100.000
95.000
90.000
84.340
79.673
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:	411256	Code: ANSI/TIA-222-G	
Site Name:	CANTON CT, CT	Engineering Number:12605194_C3_03	11/15/2018 3:23:48 PM
Customer:	T-MOBILE		

Analysis Parameters

Location :	HARTFORD County, CT	Height (ft) :	140
Code :	ANSI/TIA-222-G	Base Diameter (in) :	51.00
Shape :	18 Sides	Top Diameter (in) :	18.00
Pole Type :	Taper	Taper (in/ft) :	0.249
Pole Manfacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 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):	2.03				
T_L (sec):	6	p:	1.3	C_s:	0.034
S_s:	0.180	S_1:	0.064	C_s Max:	0.034
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.192	S_{d1}:	0.102		

Load Cases

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

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number:12605194_C3_03 11/15/2018 3:23:48 PM

Customer: T-MOBILE

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	45.880	0.5000	65		0.00	11,096	51.00	0.00	80.14	25821.9	16.57	102.00	39.57	45.88	62.00	11959.3	12.54	79.14	0.249089
2-18	44.210	0.4375	65	Slip	69.00	7,507	41.87	40.13	57.54	12486.2	15.47	95.72	30.86	84.34	42.25	4943.1	11.03	70.55	0.249089
3-18	39.130	0.3125	65	Slip	56.00	3,628	32.65	79.67	32.08	4239.2	17.01	104.49	22.90	118.80	22.41	1445.5	11.51	73.30	0.249089
4-18	24.780	0.1875	65	Slip	43.00	1,049	24.17	115.22	14.28	1037.8	21.32	128.93	18.00	140.00	10.60	425.1	15.52	96.01	0.249089
				Shaft Weight		23,279													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
140.00	18' Omni	1	0.000	8.000	55.00	5.400	1.00
140.00	Stand-Off	1	0.000	0.000	100.00	3.000	1.00
130.00	Andrew SBNH-1D6565C (60.8 lbs)	1	0.000	0.000	60.80	11.450	0.70
130.00	Andrew SBNHH-1D65A (33.5 lbs)	1	0.000	0.000	33.50	5.880	0.69
130.00	CCI DTMABP7819VG12A	6	0.000	0.000	19.20	0.970	0.50
130.00	CCI HPA-65R-BUU-H8	2	0.000	0.000	68.00	12.980	0.67
130.00	CSS DUO1417-8686	3	0.000	0.000	20.30	5.790	0.70
130.00	Ericsson RRUS 32 (50.8 lbs)	3	0.000	0.000	50.80	2.690	0.67
130.00	Ericsson RRUS-11 (50 lbs.)	6	0.000	0.000	50.00	2.570	0.67
130.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
130.00	Kathrein Scala 800-10121	3	0.000	0.000	44.10	5.160	0.68
130.00	KMW AM-X-CD-14-65-00T-RET	1	0.000	0.000	36.40	4.990	0.66
130.00	KMW AM-X-CD-17-65-00T-RET	1	0.000	0.000	59.50	11.310	0.68
130.00	Raycap DC6-48-60-0-8F	2	0.000	0.000	32.80	1.190	1.00
120.00	Amphenol Antel BXA-70063-6CF-	3	0.000	0.000	17.00	7.570	0.66
120.00	Antel LPA-80063/4CF ___	2	0.000	0.000	20.00	6.140	0.76
120.00	Antel LPA-80080/4CF ___	4	0.000	0.000	12.00	5.400	0.64
120.00	Commscope SBNHH-1D65B	6	0.000	0.000	50.70	8.170	0.69
120.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
120.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.67
120.00	Samsung 700/850MHz Dual Band	3	0.000	0.000	70.30	1.880	0.50
120.00	Samsung PCS/AWS Dual Band	3	0.000	0.000	84.40	1.880	0.50
120.00	VZW Unused Reserve: 15,989 sq	1	0.000	0.000	1494.70	110.37	1.00
100.00	Andrew LNX-6515DS-A1M	3	0.000	0.000	49.80	11.450	0.70
100.00	Commscope ATSBT-TOP-MF-4G	3	0.000	0.000	1.80	0.200	0.50
100.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
100.00	RFS APXV18-209014-C-A20	3	0.000	0.000	18.70	3.540	0.67
100.00	RFS ATMA4P4DBP-1A20	3	0.000	0.000	15.90	0.870	0.50
90.00	Alcatel-Lucent 1900 MHz 4X45 R	3	0.000	4.000	60.00	2.320	0.67
90.00	Alcatel-Lucent 800 MHz RRH	3	0.000	4.000	53.00	2.130	0.67
90.00	Alcatel-Lucent RRH2x50-08	3	0.000	4.000	52.90	1.700	0.50
90.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	4.000	70.00	4.050	0.67
90.00	Commscope DT465B-2XR	3	0.000	4.000	58.00	9.100	0.69
90.00	Flat Low Profile Platform	1	0.000	4.000	1500.00	26.100	1.00
90.00	PCTEL GPS-TMG-HR-26N	1	0.000	4.000	0.60	0.090	1.00
90.00	RFS APXVSPP18-C-A20	3	0.000	4.000	57.00	8.020	0.69
83.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
83.00	Kathrein Scala 742 213	3	0.000	0.000	22.00	5.140	0.67
Totals	Num Loadings:38	94			13675.50		

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	140.00	2	7/8" Coax	1.09	0.33	N	0.00	N	Other
0.00	130.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	130.00	3	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	130.00	12	7/8" Coax	1.09	0.33	N	0.00	N	AT&T Mobility
0.00	120.00	16	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	120.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon
0.00	100.00	8	1 5/8" Coax	1.98	0.82	N	1.98	Y	T-Mobile
0.00	100.00	4	1 5/8" Coax	1.98	0.82	N	1.98	N	T-Mobile
0.00	90.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	90.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	90.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel

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)
0.00		0.5000	51.000	80.141	25,821.9	16.57	102.00	81.9	997.2	0.0	0.0
5.00		0.5000	49.755	78.164	23,958.2	16.14	99.51	82.4	948.4	0.0	1,346.7
10.00		0.5000	48.509	76.188	22,186.3	15.70	97.02	82.6	900.8	0.0	1,313.1
15.00		0.5000	47.264	74.211	20,504.1	15.26	94.53	82.6	854.5	0.0	1,279.4
20.00		0.5000	46.018	72.235	18,909.1	14.82	92.04	82.6	809.3	0.0	1,245.8
25.00		0.5000	44.773	70.258	17,399.0	14.38	89.55	82.6	765.4	0.0	1,212.2
30.00		0.5000	43.527	68.282	15,971.6	13.94	87.05	82.6	722.7	0.0	1,178.6
35.00		0.5000	42.282	66.305	14,624.4	13.50	84.56	82.6	681.2	0.0	1,144.9
40.00		0.5000	41.036	64.329	13,355.2	13.06	82.07	82.6	641.0	0.0	1,111.3
40.13	Bot - Section 2	0.5000	41.004	64.278	13,323.2	13.05	82.01	82.6	640.0	0.0	28.4
45.00		0.5000	39.791	62.353	12,161.7	12.62	79.58	82.6	602.0	0.0	1,988.9
45.88	Top - Section 1	0.4375	40.447	55.556	11,235.8	14.89	92.45	82.6	547.1	0.0	353.0
50.00		0.4375	39.421	54.131	10,393.2	14.48	90.10	82.6	519.3	0.0	768.9
55.00		0.4375	38.175	52.401	9,428.6	13.98	87.26	82.6	486.5	0.0	906.3
60.00		0.4375	36.930	50.672	8,525.5	13.47	84.41	82.6	454.7	0.0	876.8
65.00		0.4375	35.684	48.943	7,682.1	12.97	81.56	82.6	424.0	0.0	847.4
70.00		0.4375	34.439	47.213	6,896.2	12.47	78.72	82.6	394.4	0.0	818.0
75.00		0.4375	33.193	45.484	6,165.8	11.97	75.87	82.6	365.9	0.0	788.6
79.67	Bot - Section 3	0.4375	32.029	43.867	5,531.5	11.50	73.21	82.6	340.2	0.0	710.4
80.00		0.4375	31.948	43.754	5,488.9	11.47	73.02	82.6	338.4	0.0	84.3
83.00		0.4375	31.201	42.717	5,107.5	11.16	71.32	82.6	322.4	0.0	764.2
84.34	Top - Section 2	0.3125	31.492	30.925	3,798.3	16.36	100.77	82.2	237.6	0.0	335.5
85.00		0.3125	31.327	30.762	3,738.6	16.27	100.25	82.3	235.1	0.0	69.3
90.00		0.3125	30.082	29.527	3,306.0	15.56	96.26	82.6	216.5	0.0	512.9
95.00		0.3125	28.837	28.291	2,908.2	14.86	92.28	82.6	198.6	0.0	491.9
100.0		0.3125	27.591	27.056	2,543.7	14.16	88.29	82.6	181.6	0.0	470.8
105.0		0.3125	26.346	25.821	2,210.9	13.45	84.31	82.6	165.3	0.0	449.8
110.0		0.3125	25.100	24.585	1,908.5	12.75	80.32	82.6	149.8	0.0	428.8
115.0		0.3125	23.855	23.350	1,635.1	12.05	76.34	82.6	135.0	0.0	407.8
115.2	Bot - Section 4	0.3125	23.800	23.296	1,623.7	12.02	76.16	82.6	134.4	0.0	17.5
118.8	Top - Section 3	0.1875	23.282	13.744	926.2	20.48	124.17	77.3	78.4	0.0	449.5
120.0		0.1875	22.984	13.566	890.8	20.20	122.58	77.6	76.3	0.0	55.6
125.0		0.1875	21.739	12.825	752.6	19.03	115.94	79.0	68.2	0.0	224.5
130.0		0.1875	20.493	12.084	629.5	17.86	109.30	80.4	60.5	0.0	211.9
135.0		0.1875	19.248	11.343	520.6	16.69	102.66	81.8	53.3	0.0	199.3
140.0		0.1875	18.003	10.602	425.1	15.52	96.01	82.6	46.5	0.0	186.7
											23,278.9

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number:12605194_C3_03 11/15/2018 3:23:48 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 93 mph with No Ice 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.19	335.79	0.650	0.000	0.00	0.000	0.00	179.5	0.0	0.0
5.00		1.00	0.70	14.724	16.19	331.69	0.650	0.000	5.00	21.314	13.85	354.6	0.0	1,616.0
10.00		1.00	0.70	14.724	16.19	323.49	0.650	0.000	5.00	20.787	13.51	345.7	0.0	1,575.7
15.00		1.00	0.70	14.724	16.19	315.29	0.650	0.000	5.00	20.260	13.17	336.8	0.0	1,535.3
20.00		1.00	0.70	14.724	16.19	307.09	0.650	0.000	5.00	19.734	12.83	328.0	0.0	1,495.0
25.00		1.00	0.70	14.724	16.19	298.89	0.650	0.000	5.00	19.207	12.48	319.1	0.0	1,454.6
30.00		1.00	0.70	14.724	16.19	290.69	0.650	0.000	5.00	18.680	12.14	313.9	0.0	1,414.3
35.00		1.00	0.72	15.077	16.58	285.85	0.650	0.000	5.00	18.153	11.80	314.9	0.0	1,373.9
40.00		1.00	0.75	15.707	17.27	283.29	0.650	0.000	5.00	17.626	11.46	162.5	0.0	1,333.6
40.13	Bot - Section 2	1.00	0.76	16.006	17.60	281.59	0.650	0.000	0.13	0.451	0.29	162.6	0.0	34.1
45.00		1.00	0.77	16.286	17.91	279.73	0.650	0.000	4.87	17.008	11.06	187.1	0.0	2,386.7
45.88	Top - Section 1	1.00	0.79	16.593	18.25	277.35	0.650	0.000	0.88	3.020	1.96	162.8	0.0	423.6
50.00		1.00	0.80	16.848	18.53	281.25	0.650	0.000	4.12	13.922	9.05	296.5	0.0	922.6
55.00		1.00	0.82	17.292	19.02	276.82	0.650	0.000	5.00	16.415	10.67	323.6	0.0	1,087.5
60.00		1.00	0.84	17.747	19.52	271.44	0.650	0.000	5.00	15.888	10.33	321.0	0.0	1,052.2
65.00		1.00	0.86	18.175	19.99	265.58	0.650	0.000	5.00	15.361	9.98	317.3	0.0	1,016.9
70.00		1.00	0.88	18.579	20.43	259.31	0.650	0.000	5.00	14.834	9.64	312.8	0.0	981.6
75.00		1.00	0.90	18.962	20.85	252.66	0.650	0.000	5.00	14.307	9.30	297.7	0.0	946.3
79.67	Bot - Section 3	1.00	0.92	19.315	21.24	245.92	0.650	0.000	4.67	12.896	8.38	152.5	0.0	852.5
80.00		1.00	0.93	19.492	21.44	242.32	0.650	0.000	0.33	0.902	0.59	101.7	0.0	101.2
83.00	Appurtenance(s)	1.00	0.93	19.607	21.56	239.89	0.650	0.000	3.00	8.174	5.31	132.2	0.0	917.1
84.34	Top - Section 2	1.00	0.94	19.754	21.73	236.67	0.650	0.000	1.34	3.590	2.33	60.5	0.0	402.6
85.00		1.00	0.94	19.822	21.80	239.94	0.650	0.000	0.66	1.754	1.14	168.6	0.0	83.1
90.00	Appurtenance(s)	1.00	0.95	20.009	22.01	235.66	0.650	0.000	5.00	12.991	8.44	293.6	0.0	615.4
95.00		1.00	0.97	20.329	22.36	227.91	0.650	0.000	5.00	12.464	8.10	285.8	0.0	590.2
100.0	Appurtenance(s)	1.00	0.98	20.637	22.70	219.92	0.650	0.000	5.00	11.937	7.76	277.5	0.0	565.0
105.0		1.00	1.00	20.934	23.02	211.72	0.650	0.000	5.00	11.410	7.42	268.7	0.0	539.8
110.0		1.00	1.01	21.221	23.34	203.32	0.650	0.000	5.00	10.883	7.07	259.5	0.0	514.6
115.0		1.00	1.02	21.498	23.64	194.73	0.650	0.000	5.00	10.356	6.73	132.8	0.0	489.3
115.2	Bot - Section 4	1.00	1.03	21.640	23.80	190.18	0.650	0.000	0.22	0.444	0.29	95.0	0.0	21.0
118.8	Top - Section 3	1.00	1.03	21.741	23.91	186.84	0.650	0.000	3.58	7.195	4.68	118.8	0.0	539.4
120.0	Appurtenance(s)	1.00	1.04	21.867	24.05	185.61	0.650	0.000	1.20	2.343	1.52	148.5	0.0	66.7
125.0		1.00	1.05	22.028	24.23	180.08	0.650	0.000	5.00	9.461	6.15	233.1	0.0	269.4
130.0	Appurtenance(s)	1.00	1.06	22.281	24.50	171.02	0.650	0.000	5.00	8.934	5.81	222.2	0.0	254.3
135.0		1.00	1.07	22.527	24.78	161.82	0.650	0.000	5.00	8.407	5.46	211.0	0.0	239.2
140.0	Appurtenance(s)	1.00	1.08	22.767	25.04	152.48	0.650	0.000	5.00	7.880	5.12	102.6	0.0	224.0
							Totals:		140.00			8,301.1	0.0	27,934.6

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number: 12605194_C3_03 11/15/2018 3:23:52 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 93 mph with No Ice 22 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

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	-52.59	-26.64	0.00	-2,760.34	0.00	2,760.34	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.460
5.00	-50.56	-26.42	0.00	-2,627.13	0.00	2,627.13	5,798.22	2,899.11	11,708.2	5,862.84	0.08	-0.15	0.457
10.00	-48.56	-26.19	0.00	-2,495.05	0.00	2,495.05	5,660.37	2,830.18	11,137.9	5,577.27	0.32	-0.30	0.456
15.00	-46.61	-25.97	0.00	-2,364.09	0.00	2,364.09	5,513.53	2,756.76	10,564.7	5,290.20	0.72	-0.46	0.455
20.00	-44.70	-25.75	0.00	-2,234.23	0.00	2,234.23	5,366.68	2,683.34	10,006.5	5,010.72	1.28	-0.62	0.454
25.00	-42.83	-25.54	0.00	-2,105.46	0.00	2,105.46	5,219.84	2,609.92	9,463.58	4,738.82	2.01	-0.78	0.453
30.00	-41.00	-25.32	0.00	-1,977.78	0.00	1,977.78	5,073.00	2,536.50	8,935.73	4,474.51	2.92	-0.95	0.450
35.00	-39.21	-25.09	0.00	-1,851.20	0.00	1,851.20	4,926.16	2,463.08	8,423.04	4,217.78	4.00	-1.12	0.447
40.00	-37.49	-24.95	0.00	-1,725.76	0.00	1,725.76	4,779.32	2,389.66	7,925.49	3,968.63	5.26	-1.29	0.443
40.13	-37.42	-24.84	0.00	-1,722.52	0.00	1,722.52	4,775.51	2,387.75	7,912.75	3,962.26	5.30	-1.30	0.443
45.00	-34.65	-24.65	0.00	-1,601.53	0.00	1,601.53	4,632.48	2,316.24	7,443.09	3,727.08	6.71	-1.47	0.437
45.88	-34.13	-24.53	0.00	-1,579.83	0.00	1,579.83	4,127.52	2,063.76	6,764.96	3,387.51	6.98	-1.50	0.475
50.00	-32.86	-24.30	0.00	-1,478.76	0.00	1,478.76	4,021.65	2,010.83	6,420.54	3,215.04	8.34	-1.65	0.468
55.00	-31.36	-24.04	0.00	-1,357.25	0.00	1,357.25	3,893.17	1,946.58	6,014.64	3,011.79	10.18	-1.84	0.459
60.00	-29.89	-23.78	0.00	-1,237.05	0.00	1,237.05	3,764.68	1,882.34	5,621.99	2,815.17	12.21	-2.04	0.448
65.00	-28.46	-23.51	0.00	-1,118.17	0.00	1,118.17	3,636.20	1,818.10	5,242.60	2,625.19	14.46	-2.24	0.434
70.00	-27.06	-23.23	0.00	-1,000.64	0.00	1,000.64	3,507.71	1,753.86	4,876.46	2,441.85	16.91	-2.43	0.418
75.00	-25.71	-22.96	0.00	-884.49	0.00	884.49	3,379.23	1,689.61	4,523.57	2,265.15	19.56	-2.63	0.398
79.67	-24.50	-22.79	0.00	-777.19	0.00	777.19	3,259.13	1,629.57	4,205.72	2,105.99	22.22	-2.81	0.377
80.00	-24.36	-22.71	0.00	-769.74	0.00	769.74	3,250.74	1,625.37	4,183.94	2,095.08	22.41	-2.82	0.375
83.00	-21.39	-21.27	0.00	-701.61	0.00	701.61	3,173.65	1,586.82	3,986.52	1,996.22	24.22	-2.93	0.358
84.34	-20.89	-21.20	0.00	-673.11	0.00	673.11	2,286.71	1,143.35	2,923.37	1,463.86	25.05	-2.99	0.469
85.00	-20.72	-21.07	0.00	-659.12	0.00	659.12	2,277.67	1,138.84	2,896.31	1,450.31	25.47	-3.01	0.464
90.00	-16.78	-18.10	0.00	-543.67	0.00	543.67	2,193.67	1,096.84	2,676.37	1,340.17	28.75	-3.24	0.414
95.00	-15.82	-17.82	0.00	-453.16	0.00	453.16	2,101.90	1,050.95	2,456.00	1,229.83	32.26	-3.46	0.376
100.00	-12.92	-15.49	0.00	-364.06	0.00	364.06	2,010.12	1,005.06	2,245.10	1,124.22	35.98	-3.66	0.330
105.00	-12.09	-15.21	0.00	-286.61	0.00	286.61	1,918.35	959.17	2,043.66	1,023.35	39.91	-3.84	0.287
110.00	-11.29	-14.92	0.00	-210.58	0.00	210.58	1,826.57	913.29	1,851.70	927.22	44.02	-4.00	0.234
115.00	-10.54	-14.75	0.00	-135.97	0.00	135.97	1,734.80	867.40	1,669.20	835.84	48.27	-4.13	0.169
115.22	-10.50	-14.66	0.00	-132.73	0.00	132.73	1,730.76	865.38	1,661.38	831.93	48.46	-4.13	0.166
118.80	-9.77	-14.49	0.00	-80.20	0.00	80.20	956.25	478.12	907.22	454.29	51.59	-4.20	0.188
120.00	-4.89	-5.65	0.00	-62.86	0.00	62.86	947.93	473.97	887.63	444.47	52.65	-4.22	0.147
125.00	-4.47	-5.39	0.00	-34.61	0.00	34.61	912.05	456.02	806.99	404.09	57.10	-4.29	0.091
130.00	-0.61	-0.70	0.00	-7.66	0.00	7.66	874.32	437.16	728.52	364.80	61.62	-4.33	0.022
135.00	-0.38	-0.47	0.00	-4.14	0.00	4.14	834.76	417.38	652.50	326.73	66.16	-4.35	0.013
140.00	0.00	-0.44	0.00	-1.77	0.00	1.77	787.66	393.83	575.06	287.96	70.72	-4.35	0.006

Site Number:	411256	Code: ANSI/TIA-222-G	
Site Name:	CANTON CT, CT	Engineering Number: 12605194_C3_03	11/15/2018 3:23:52 PM
Customer:	T-MOBILE		

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 22 Iterations

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

Wind Importance Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.19	335.79	0.650	0.000	0.00	0.000	0.00	179.5	0.0	0.0
5.00		1.00	0.70	14.724	16.19	331.69	0.650	0.000	5.00	21.314	13.85	354.6	0.0	1,212.0
10.00		1.00	0.70	14.724	16.19	323.49	0.650	0.000	5.00	20.787	13.51	345.7	0.0	1,181.8
15.00		1.00	0.70	14.724	16.19	315.29	0.650	0.000	5.00	20.260	13.17	336.8	0.0	1,151.5
20.00		1.00	0.70	14.724	16.19	307.09	0.650	0.000	5.00	19.734	12.83	328.0	0.0	1,121.2
25.00		1.00	0.70	14.724	16.19	298.89	0.650	0.000	5.00	19.207	12.48	319.1	0.0	1,091.0
30.00		1.00	0.70	14.724	16.19	290.69	0.650	0.000	5.00	18.680	12.14	313.9	0.0	1,060.7
35.00		1.00	0.72	15.077	16.58	285.85	0.650	0.000	5.00	18.153	11.80	314.9	0.0	1,030.4
40.00		1.00	0.75	15.707	17.27	283.29	0.650	0.000	5.00	17.626	11.46	162.5	0.0	1,000.2
40.13	Bot - Section 2	1.00	0.76	16.006	17.60	281.59	0.650	0.000	0.13	0.451	0.29	162.6	0.0	25.6
45.00		1.00	0.77	16.286	17.91	279.73	0.650	0.000	4.87	17.008	11.06	187.1	0.0	1,790.0
45.88	Top - Section 1	1.00	0.79	16.593	18.25	277.35	0.650	0.000	0.88	3.020	1.96	162.8	0.0	317.7
50.00		1.00	0.80	16.848	18.53	281.25	0.650	0.000	4.12	13.922	9.05	296.5	0.0	692.0
55.00		1.00	0.82	17.292	19.02	276.82	0.650	0.000	5.00	16.415	10.67	323.6	0.0	815.6
60.00		1.00	0.84	17.747	19.52	271.44	0.650	0.000	5.00	15.888	10.33	321.0	0.0	789.2
65.00		1.00	0.86	18.175	19.99	265.58	0.650	0.000	5.00	15.361	9.98	317.3	0.0	762.7
70.00		1.00	0.88	18.579	20.43	259.31	0.650	0.000	5.00	14.834	9.64	312.8	0.0	736.2
75.00		1.00	0.90	18.962	20.85	252.66	0.650	0.000	5.00	14.307	9.30	297.7	0.0	709.7
79.67	Bot - Section 3	1.00	0.92	19.315	21.24	245.92	0.650	0.000	4.67	12.896	8.38	152.5	0.0	639.4
80.00		1.00	0.93	19.492	21.44	242.32	0.650	0.000	0.33	0.902	0.59	101.7	0.0	75.9
83.00	Appurtenance(s)	1.00	0.93	19.607	21.56	239.89	0.650	0.000	3.00	8.174	5.31	132.2	0.0	687.8
84.34	Top - Section 2	1.00	0.94	19.754	21.73	236.67	0.650	0.000	1.34	3.590	2.33	60.5	0.0	301.9
85.00		1.00	0.94	19.822	21.80	239.94	0.650	0.000	0.66	1.754	1.14	168.6	0.0	62.3
90.00	Appurtenance(s)	1.00	0.95	20.009	22.01	235.66	0.650	0.000	5.00	12.991	8.44	293.6	0.0	461.6
95.00		1.00	0.97	20.329	22.36	227.91	0.650	0.000	5.00	12.464	8.10	285.8	0.0	442.7
100.0	Appurtenance(s)	1.00	0.98	20.637	22.70	219.92	0.650	0.000	5.00	11.937	7.76	277.5	0.0	423.8
105.0		1.00	1.00	20.934	23.02	211.72	0.650	0.000	5.00	11.410	7.42	268.7	0.0	404.8
110.0		1.00	1.01	21.221	23.34	203.32	0.650	0.000	5.00	10.883	7.07	259.5	0.0	385.9
115.0		1.00	1.02	21.498	23.64	194.73	0.650	0.000	5.00	10.356	6.73	132.8	0.0	367.0
115.2	Bot - Section 4	1.00	1.03	21.640	23.80	190.18	0.650	0.000	0.22	0.444	0.29	95.0	0.0	15.7
118.8	Top - Section 3	1.00	1.03	21.741	23.91	186.84	0.650	0.000	3.58	7.195	4.68	118.8	0.0	404.5
120.0	Appurtenance(s)	1.00	1.04	21.867	24.05	185.61	0.650	0.000	1.20	2.343	1.52	148.5	0.0	50.0
125.0		1.00	1.05	22.028	24.23	180.08	0.650	0.000	5.00	9.461	6.15	233.1	0.0	202.1
130.0	Appurtenance(s)	1.00	1.06	22.281	24.50	171.02	0.650	0.000	5.00	8.934	5.81	222.2	0.0	190.7
135.0		1.00	1.07	22.527	24.78	161.82	0.650	0.000	5.00	8.407	5.46	211.0	0.0	179.4
140.0	Appurtenance(s)	1.00	1.08	22.767	25.04	152.48	0.650	0.000	5.00	7.880	5.12	102.6	0.0	168.0
							Totals:		140.00			8,301.1	0.0	20,951.0

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number: 12605194_C3_03 11/15/2018 3:23:56 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 22 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

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	-39.43	-26.62	0.00	-2,732.47	0.00	2,732.47	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.453
5.00	-37.89	-26.36	0.00	-2,599.36	0.00	2,599.36	5,798.22	2,899.11	11,708.2	5,862.84	0.08	-0.15	0.450
10.00	-36.38	-26.11	0.00	-2,467.53	0.00	2,467.53	5,660.37	2,830.18	11,137.9	5,577.27	0.31	-0.30	0.449
15.00	-34.90	-25.86	0.00	-2,336.98	0.00	2,336.98	5,513.53	2,756.76	10,564.7	5,290.20	0.71	-0.45	0.448
20.00	-33.45	-25.61	0.00	-2,207.69	0.00	2,207.69	5,366.68	2,683.34	10,006.5	5,010.72	1.27	-0.61	0.447
25.00	-32.03	-25.37	0.00	-2,079.63	0.00	2,079.63	5,219.84	2,609.92	9,463.58	4,738.82	1.99	-0.77	0.445
30.00	-30.64	-25.12	0.00	-1,952.79	0.00	1,952.79	5,073.00	2,536.50	8,935.73	4,474.51	2.88	-0.94	0.443
35.00	-29.29	-24.87	0.00	-1,827.18	0.00	1,827.18	4,926.16	2,463.08	8,423.04	4,217.78	3.95	-1.10	0.439
40.00	-27.99	-24.73	0.00	-1,702.82	0.00	1,702.82	4,779.32	2,389.66	7,925.49	3,968.63	5.20	-1.28	0.435
40.13	-27.92	-24.61	0.00	-1,699.60	0.00	1,699.60	4,775.51	2,387.75	7,912.75	3,962.26	5.24	-1.28	0.435
45.00	-25.84	-24.42	0.00	-1,579.77	0.00	1,579.77	4,632.48	2,316.24	7,443.09	3,727.08	6.63	-1.45	0.430
45.88	-25.45	-24.28	0.00	-1,558.28	0.00	1,558.28	4,127.52	2,063.76	6,764.96	3,387.51	6.90	-1.48	0.466
50.00	-24.48	-24.04	0.00	-1,458.23	0.00	1,458.23	4,021.65	2,010.83	6,420.54	3,215.04	8.25	-1.63	0.460
55.00	-23.33	-23.76	0.00	-1,338.05	0.00	1,338.05	3,893.17	1,946.58	6,014.64	3,011.79	10.06	-1.82	0.450
60.00	-22.21	-23.48	0.00	-1,219.26	0.00	1,219.26	3,764.68	1,882.34	5,621.99	2,815.17	12.07	-2.01	0.439
65.00	-21.13	-23.19	0.00	-1,101.87	0.00	1,101.87	3,636.20	1,818.10	5,242.60	2,625.19	14.28	-2.21	0.426
70.00	-20.07	-22.91	0.00	-985.90	0.00	985.90	3,507.71	1,753.86	4,876.46	2,441.85	16.70	-2.40	0.410
75.00	-19.04	-22.63	0.00	-871.36	0.00	871.36	3,379.23	1,689.61	4,523.57	2,265.15	19.32	-2.59	0.390
79.67	-18.13	-22.47	0.00	-765.59	0.00	765.59	3,259.13	1,629.57	4,205.72	2,105.99	21.95	-2.77	0.369
80.00	-18.01	-22.38	0.00	-758.25	0.00	758.25	3,250.74	1,625.37	4,183.94	2,095.08	22.14	-2.78	0.368
83.00	-15.80	-20.97	0.00	-691.11	0.00	691.11	3,173.65	1,586.82	3,986.52	1,996.22	23.92	-2.90	0.351
84.34	-15.42	-20.90	0.00	-663.02	0.00	663.02	2,286.71	1,143.35	2,923.37	1,463.86	24.74	-2.95	0.460
85.00	-15.28	-20.76	0.00	-649.22	0.00	649.22	2,277.67	1,138.84	2,896.31	1,450.31	25.15	-2.97	0.455
90.00	-12.35	-17.83	0.00	-535.32	0.00	535.32	2,193.67	1,096.84	2,676.37	1,340.17	28.39	-3.20	0.405
95.00	-11.62	-17.55	0.00	-446.17	0.00	446.17	2,101.90	1,050.95	2,456.00	1,229.83	31.85	-3.41	0.369
100.00	-9.46	-15.25	0.00	-358.42	0.00	358.42	2,010.12	1,005.06	2,245.10	1,124.22	35.53	-3.61	0.324
105.00	-8.84	-14.97	0.00	-282.15	0.00	282.15	1,918.35	959.17	2,043.66	1,023.35	39.40	-3.78	0.281
110.00	-8.23	-14.70	0.00	-207.29	0.00	207.29	1,826.57	913.29	1,851.70	927.22	43.45	-3.94	0.228
115.00	-7.67	-14.53	0.00	-133.81	0.00	133.81	1,734.80	867.40	1,669.20	835.84	47.65	-4.07	0.165
115.22	-7.64	-14.44	0.00	-130.61	0.00	130.61	1,730.76	865.38	1,661.38	831.93	47.83	-4.07	0.162
118.80	-7.09	-14.29	0.00	-78.86	0.00	78.86	956.25	478.12	907.22	454.29	50.92	-4.14	0.182
120.00	-3.57	-5.55	0.00	-61.77	0.00	61.77	947.93	473.97	887.63	444.47	51.96	-4.16	0.143
125.00	-3.26	-5.30	0.00	-34.03	0.00	34.03	912.05	456.02	806.99	404.09	56.35	-4.23	0.088
130.00	-0.44	-0.69	0.00	-7.55	0.00	7.55	874.32	437.16	728.52	364.80	60.81	-4.27	0.021
135.00	-0.28	-0.47	0.00	-4.10	0.00	4.10	834.76	417.38	652.50	326.73	65.29	-4.29	0.013
140.00	0.00	-0.44	0.00	-1.77	0.00	1.77	787.66	393.83	575.06	287.96	69.78	-4.29	0.006

Site Number:	411256	Code: ANSI/TIA-222-G	
Site Name:	CANTON CT, CT	Engineering Number: 12605194_C3_03	11/15/2018 3:23:56 PM
Customer:	T-MOBILE		

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 22 Iterations

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

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	63.5	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.545	5.00	22.602	27.12	125.9	496.5	2,112.5
10.00		1.00	0.70	4.256	4.682	0.000	1.200	1.725	5.00	22.225	26.67	123.6	542.6	2,118.3
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.815	5.00	21.773	26.13	121.0	557.9	2,093.2
20.00		1.00	0.70	4.256	4.682	0.000	1.200	1.877	5.00	21.298	25.56	118.3	563.1	2,058.0
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.925	5.00	20.811	24.97	115.5	562.9	2,017.5
30.00		1.00	0.70	4.256	4.682	0.000	1.200	1.964	5.00	20.316	24.38	114.1	559.5	1,973.8
35.00		1.00	0.72	4.358	4.794	0.000	1.200	1.997	5.00	19.817	23.78	114.9	553.7	1,927.6
40.00		1.00	0.75	4.540	4.994	0.000	1.200	2.026	5.00	19.314	23.18	59.4	546.3	1,879.8
40.13	Bot - Section 2	1.00	0.76	4.627	5.089	0.000	1.200	2.039	0.13	0.495	0.59	59.5	14.3	48.4
45.00		1.00	0.77	4.707	5.178	0.000	1.200	2.052	4.87	18.673	22.41	68.5	534.5	2,921.2
45.88	Top - Section 1	1.00	0.79	4.796	5.276	0.000	1.200	2.065	0.88	3.323	3.99	59.8	96.8	520.4
50.00		1.00	0.80	4.870	5.357	0.000	1.200	2.076	4.12	15.348	18.42	109.2	444.5	1,367.2
55.00		1.00	0.82	4.998	5.498	0.000	1.200	2.095	5.00	18.161	21.79	119.7	528.3	1,615.8
60.00		1.00	0.84	5.130	5.643	0.000	1.200	2.114	5.00	17.650	21.18	119.2	516.9	1,569.1
65.00		1.00	0.86	5.253	5.779	0.000	1.200	2.132	5.00	17.138	20.57	118.3	504.8	1,521.7
70.00		1.00	0.88	5.370	5.907	0.000	1.200	2.148	5.00	16.625	19.95	117.2	492.1	1,473.7
75.00		1.00	0.90	5.481	6.029	0.000	1.200	2.164	5.00	16.111	19.33	112.0	479.0	1,425.3
79.67	Bot - Section 3	1.00	0.92	5.583	6.141	0.000	1.200	2.178	4.67	14.592	17.51	57.6	435.9	1,288.5
80.00		1.00	0.93	5.634	6.197	0.000	1.200	2.185	0.33	1.020	1.22	38.5	31.1	132.2
83.00	Appurtenance(s)	1.00	0.93	5.667	6.234	0.000	1.200	2.189	3.00	9.269	11.12	50.0	279.7	1,196.8
84.34	Top - Section 2	1.00	0.94	5.710	6.281	0.000	1.200	2.195	1.34	4.080	4.90	22.9	124.1	526.6
85.00		1.00	0.94	5.729	6.302	0.000	1.200	2.198	0.66	1.996	2.40	64.1	60.9	144.0
90.00	Appurtenance(s)	1.00	0.95	5.784	6.362	0.000	1.200	2.205	5.00	14.828	17.79	112.1	445.6	1,061.1
95.00		1.00	0.97	5.876	6.464	0.000	1.200	2.217	5.00	14.312	17.17	109.8	431.0	1,021.2
100.0	Appurtenance(s)	1.00	0.98	5.965	6.562	0.000	1.200	2.229	5.00	13.794	16.55	107.3	416.0	981.0
105.0		1.00	1.00	6.051	6.656	0.000	1.200	2.240	5.00	13.277	15.93	104.7	400.8	940.6
110.0		1.00	1.01	6.134	6.747	0.000	1.200	2.251	5.00	12.759	15.31	101.9	385.3	899.8
115.0		1.00	1.02	6.214	6.835	0.000	1.200	2.261	5.00	12.240	14.69	52.4	369.5	858.9
115.2	Bot - Section 4	1.00	1.03	6.255	6.880	0.000	1.200	2.266	0.22	0.527	0.63	37.6	16.3	37.2
118.8	Top - Section 3	1.00	1.03	6.284	6.913	0.000	1.200	2.270	3.58	8.551	10.26	47.1	260.1	799.5
120.0	Appurtenance(s)	1.00	1.04	6.321	6.953	0.000	1.200	2.274	1.20	2.796	3.36	59.4	86.0	152.8
125.0		1.00	1.05	6.367	7.004	0.000	1.200	2.280	5.00	11.361	13.63	93.8	342.7	612.2
130.0	Appurtenance(s)	1.00	1.06	6.440	7.084	0.000	1.200	2.289	5.00	10.842	13.01	90.4	326.4	580.7
135.0		1.00	1.07	6.511	7.163	0.000	1.200	2.298	5.00	10.322	12.39	86.9	309.8	549.0
140.0	Appurtenance(s)	1.00	1.08	6.581	7.239	0.000	1.200	2.307	5.00	9.803	11.76	42.6	293.1	517.1
							Totals:		140.00			3,119.0	13,008.0	40,942.6

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number: 12605194_C3_03 11/15/2018 3:24:00 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 22 Iterations

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

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg 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	-87.08	-8.52	0.00	-896.53	0.00	896.53	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.161
5.00	-84.49	-8.46	0.00	-853.94	0.00	853.94	5,798.22	2,899.11	11,708.2	5,862.84	0.03	-0.05	0.160
10.00	-81.88	-8.41	0.00	-811.63	0.00	811.63	5,660.37	2,830.18	11,137.9	5,577.27	0.10	-0.10	0.160
15.00	-79.29	-8.35	0.00	-769.59	0.00	769.59	5,513.53	2,756.76	10,564.7	5,290.20	0.23	-0.15	0.160
20.00	-76.73	-8.30	0.00	-727.83	0.00	727.83	5,366.68	2,683.34	10,006.5	5,010.72	0.42	-0.20	0.160
25.00	-74.20	-8.24	0.00	-686.35	0.00	686.35	5,219.84	2,609.92	9,463.58	4,738.82	0.65	-0.25	0.159
30.00	-71.72	-8.18	0.00	-645.15	0.00	645.15	5,073.00	2,536.50	8,935.73	4,474.51	0.95	-0.31	0.158
35.00	-69.27	-8.12	0.00	-604.24	0.00	604.24	4,926.16	2,463.08	8,423.04	4,217.78	1.30	-0.36	0.157
40.00	-66.88	-8.08	0.00	-563.63	0.00	563.63	4,779.32	2,389.66	7,925.49	3,968.63	1.71	-0.42	0.156
40.13	-66.81	-8.05	0.00	-562.58	0.00	562.58	4,775.51	2,387.75	7,912.75	3,962.26	1.72	-0.42	0.156
45.00	-63.39	-8.00	0.00	-523.35	0.00	523.35	4,632.48	2,316.24	7,443.09	3,727.08	2.18	-0.48	0.154
45.88	-62.78	-7.96	0.00	-516.32	0.00	516.32	4,127.52	2,063.76	6,764.96	3,387.51	2.27	-0.49	0.168
50.00	-60.98	-7.90	0.00	-483.51	0.00	483.51	4,021.65	2,010.83	6,420.54	3,215.04	2.72	-0.54	0.166
55.00	-58.84	-7.82	0.00	-444.02	0.00	444.02	3,893.17	1,946.58	6,014.64	3,011.79	3.31	-0.60	0.163
60.00	-56.75	-7.74	0.00	-404.91	0.00	404.91	3,764.68	1,882.34	5,621.99	2,815.17	3.98	-0.67	0.159
65.00	-54.70	-7.66	0.00	-366.19	0.00	366.19	3,636.20	1,818.10	5,242.60	2,625.19	4.71	-0.73	0.155
70.00	-52.70	-7.58	0.00	-327.87	0.00	327.87	3,507.71	1,753.86	4,876.46	2,441.85	5.51	-0.79	0.149
75.00	-50.74	-7.49	0.00	-289.99	0.00	289.99	3,379.23	1,689.61	4,523.57	2,265.15	6.38	-0.86	0.143
79.67	-48.96	-7.43	0.00	-254.98	0.00	254.98	3,259.13	1,629.57	4,205.72	2,105.99	7.25	-0.92	0.136
80.00	-48.80	-7.41	0.00	-252.55	0.00	252.55	3,250.74	1,625.37	4,183.94	2,095.08	7.31	-0.92	0.136
83.00	-44.33	-6.93	0.00	-230.32	0.00	230.32	3,173.65	1,586.82	3,986.52	1,996.22	7.90	-0.96	0.129
84.34	-43.67	-6.90	0.00	-221.04	0.00	221.04	2,286.71	1,143.35	2,923.37	1,463.86	8.17	-0.98	0.170
85.00	-43.45	-6.87	0.00	-216.48	0.00	216.48	2,277.67	1,138.84	2,896.31	1,450.31	8.31	-0.98	0.168
90.00	-35.74	-5.94	0.00	-179.27	0.00	179.27	2,193.67	1,096.84	2,676.37	1,340.17	9.38	-1.06	0.150
95.00	-34.21	-5.84	0.00	-149.57	0.00	149.57	2,101.90	1,050.95	2,456.00	1,229.83	10.53	-1.13	0.138
100.00	-28.31	-5.10	0.00	-120.36	0.00	120.36	2,010.12	1,005.06	2,245.10	1,124.22	11.75	-1.20	0.121
105.00	-27.10	-4.99	0.00	-94.87	0.00	94.87	1,918.35	959.17	2,043.66	1,023.35	13.03	-1.26	0.107
110.00	-25.94	-4.89	0.00	-69.90	0.00	69.90	1,826.57	913.29	1,851.70	927.22	14.38	-1.31	0.090
115.00	-24.81	-4.82	0.00	-45.46	0.00	45.46	1,734.80	867.40	1,669.20	835.84	15.77	-1.35	0.069
115.22	-24.76	-4.79	0.00	-44.40	0.00	44.40	1,730.76	865.38	1,661.38	831.93	15.84	-1.35	0.068
118.80	-23.78	-4.72	0.00	-27.26	0.00	27.26	956.25	478.12	907.22	454.29	16.86	-1.38	0.085
120.00	-12.35	-1.87	0.00	-21.61	0.00	21.61	947.93	473.97	887.63	444.47	17.21	-1.38	0.062
125.00	-11.58	-1.76	0.00	-12.25	0.00	12.25	912.05	456.02	806.99	404.09	18.67	-1.41	0.043
130.00	-1.62	-0.31	0.00	-3.43	0.00	3.43	874.32	437.16	728.52	364.80	20.16	-1.42	0.011
135.00	-1.07	-0.21	0.00	-1.88	0.00	1.88	834.76	417.38	652.50	326.73	21.65	-1.43	0.007
140.00	0.00	-0.18	0.00	-0.83	0.00	0.83	787.66	393.83	575.06	287.96	23.15	-1.43	0.003

Site Number:	411256	Code: ANSI/TIA-222-G	
Site Name:	CANTON CT, CT	Engineering Number: 12605194_C3_03	11/15/2018 3:24:00 PM
Customer:	T-MOBILE		

Load Case: 1.0D + 1.0W — Serviceability 60 mph — 21 Iterations

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

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	216.64	0.650	0.000	0.00	0.000	0.00	46.7	0.0	0.0
5.00		1.00	0.70	6.129	6.742	213.99	0.650	0.000	5.00	21.314	13.85	92.2	0.0	1,346.7
10.00		1.00	0.70	6.129	6.742	208.70	0.650	0.000	5.00	20.787	13.51	89.9	0.0	1,313.1
15.00		1.00	0.70	6.129	6.742	203.41	0.650	0.000	5.00	20.260	13.17	87.6	0.0	1,279.4
20.00		1.00	0.70	6.129	6.742	198.12	0.650	0.000	5.00	19.734	12.83	85.3	0.0	1,245.8
25.00		1.00	0.70	6.129	6.742	192.83	0.650	0.000	5.00	19.207	12.48	83.0	0.0	1,212.2
30.00		1.00	0.70	6.129	6.742	187.54	0.650	0.000	5.00	18.680	12.14	81.7	0.0	1,178.6
35.00		1.00	0.72	6.276	6.903	184.42	0.650	0.000	5.00	18.153	11.80	81.9	0.0	1,144.9
40.00		1.00	0.75	6.538	7.191	182.77	0.650	0.000	5.00	17.626	11.46	42.3	0.0	1,111.3
40.13	Bot - Section 2	1.00	0.76	6.662	7.329	181.67	0.650	0.000	0.13	0.451	0.29	42.3	0.0	28.4
45.00		1.00	0.77	6.779	7.456	180.47	0.650	0.000	4.87	17.008	11.06	48.7	0.0	1,988.9
45.88	Top - Section 1	1.00	0.79	6.906	7.597	178.93	0.650	0.000	0.88	3.020	1.96	42.4	0.0	353.0
50.00		1.00	0.80	7.013	7.714	181.45	0.650	0.000	4.12	13.922	9.05	77.1	0.0	768.9
55.00		1.00	0.82	7.197	7.917	178.59	0.650	0.000	5.00	16.415	10.67	84.2	0.0	906.3
60.00		1.00	0.84	7.387	8.126	175.12	0.650	0.000	5.00	15.888	10.33	83.5	0.0	876.8
65.00		1.00	0.86	7.565	8.321	171.34	0.650	0.000	5.00	15.361	9.98	82.6	0.0	847.4
70.00		1.00	0.88	7.733	8.506	167.29	0.650	0.000	5.00	14.834	9.64	81.4	0.0	818.0
75.00		1.00	0.90	7.893	8.682	163.01	0.650	0.000	5.00	14.307	9.30	77.4	0.0	788.6
79.67	Bot - Section 3	1.00	0.92	8.040	8.844	158.66	0.650	0.000	4.67	12.896	8.38	39.7	0.0	710.4
80.00		1.00	0.93	8.113	8.924	156.34	0.650	0.000	0.33	0.902	0.59	26.5	0.0	84.3
83.00	Appurtenance(s)	1.00	0.93	8.161	8.977	154.77	0.650	0.000	3.00	8.174	5.31	34.4	0.0	764.2
84.34	Top - Section 2	1.00	0.94	8.222	9.045	152.69	0.650	0.000	1.34	3.590	2.33	15.7	0.0	335.5
85.00		1.00	0.94	8.250	9.075	154.80	0.650	0.000	0.66	1.754	1.14	43.9	0.0	69.3
90.00	Appurtenance(s)	1.00	0.95	8.328	9.161	152.04	0.650	0.000	5.00	12.991	8.44	76.4	0.0	512.9
95.00		1.00	0.97	8.462	9.308	147.03	0.650	0.000	5.00	12.464	8.10	74.4	0.0	491.9
100.0	Appurtenance(s)	1.00	0.98	8.590	9.449	141.88	0.650	0.000	5.00	11.937	7.76	72.2	0.0	470.8
105.0		1.00	1.00	8.713	9.585	136.59	0.650	0.000	5.00	11.410	7.42	69.9	0.0	449.8
110.0		1.00	1.01	8.833	9.716	131.17	0.650	0.000	5.00	10.883	7.07	67.5	0.0	428.8
115.0		1.00	1.02	8.948	9.843	125.63	0.650	0.000	5.00	10.356	6.73	34.6	0.0	407.8
115.2	Bot - Section 4	1.00	1.03	9.007	9.908	122.70	0.650	0.000	0.22	0.444	0.29	24.7	0.0	17.5
118.8	Top - Section 3	1.00	1.03	9.049	9.954	120.54	0.650	0.000	3.58	7.195	4.68	30.9	0.0	449.5
120.0	Appurtenance(s)	1.00	1.04	9.102	10.01	119.75	0.650	0.000	1.20	2.343	1.52	38.6	0.0	55.6
125.0		1.00	1.05	9.169	10.08	116.18	0.650	0.000	5.00	9.461	6.15	60.6	0.0	224.5
130.0	Appurtenance(s)	1.00	1.06	9.274	10.20	110.34	0.650	0.000	5.00	8.934	5.81	57.8	0.0	211.9
135.0		1.00	1.07	9.377	10.31	104.40	0.650	0.000	5.00	8.407	5.46	54.9	0.0	199.3
140.0	Appurtenance(s)	1.00	1.08	9.476	10.42	98.380	0.650	0.000	5.00	7.880	5.12	26.7	0.0	186.7
							Totals:		140.00			2,159.5	0.0	23,278.9

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number: 12605194_C3_03 11/15/2018 3:24:04 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.85	-6.93	0.00	-713.73	0.00	713.73	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.124
5.00	-42.21	-6.86	0.00	-679.09	0.00	679.09	5,798.22	2,899.11	11,708.2	5,862.84	0.02	-0.04	0.123
10.00	-40.60	-6.80	0.00	-644.78	0.00	644.78	5,660.37	2,830.18	11,137.9	5,577.27	0.08	-0.08	0.123
15.00	-39.03	-6.74	0.00	-610.78	0.00	610.78	5,513.53	2,756.76	10,564.7	5,290.20	0.18	-0.12	0.123
20.00	-37.49	-6.68	0.00	-577.10	0.00	577.10	5,366.68	2,683.34	10,006.5	5,010.72	0.33	-0.16	0.122
25.00	-35.98	-6.61	0.00	-543.72	0.00	543.72	5,219.84	2,609.92	9,463.58	4,738.82	0.52	-0.20	0.122
30.00	-34.51	-6.55	0.00	-510.65	0.00	510.65	5,073.00	2,536.50	8,935.73	4,474.51	0.75	-0.24	0.121
35.00	-33.07	-6.49	0.00	-477.89	0.00	477.89	4,926.16	2,463.08	8,423.04	4,217.78	1.03	-0.29	0.120
40.00	-31.67	-6.45	0.00	-445.44	0.00	445.44	4,779.32	2,389.66	7,925.49	3,968.63	1.36	-0.33	0.119
40.13	-31.63	-6.42	0.00	-444.60	0.00	444.60	4,775.51	2,387.75	7,912.75	3,962.26	1.37	-0.33	0.119
45.00	-29.36	-6.37	0.00	-413.32	0.00	413.32	4,632.48	2,316.24	7,443.09	3,727.08	1.73	-0.38	0.117
45.88	-28.95	-6.34	0.00	-407.71	0.00	407.71	4,127.52	2,063.76	6,764.96	3,387.51	1.80	-0.39	0.127
50.00	-27.94	-6.28	0.00	-381.59	0.00	381.59	4,021.65	2,010.83	6,420.54	3,215.04	2.16	-0.43	0.126
55.00	-26.74	-6.21	0.00	-350.20	0.00	350.20	3,893.17	1,946.58	6,014.64	3,011.79	2.63	-0.48	0.123
60.00	-25.57	-6.14	0.00	-319.16	0.00	319.16	3,764.68	1,882.34	5,621.99	2,815.17	3.16	-0.53	0.120
65.00	-24.43	-6.07	0.00	-288.47	0.00	288.47	3,636.20	1,818.10	5,242.60	2,625.19	3.73	-0.58	0.117
70.00	-23.32	-5.99	0.00	-258.15	0.00	258.15	3,507.71	1,753.86	4,876.46	2,441.85	4.37	-0.63	0.112
75.00	-22.24	-5.92	0.00	-228.19	0.00	228.19	3,379.23	1,689.61	4,523.57	2,265.15	5.05	-0.68	0.107
79.67	-21.25	-5.88	0.00	-200.51	0.00	200.51	3,259.13	1,629.57	4,205.72	2,105.99	5.74	-0.72	0.102
80.00	-21.15	-5.86	0.00	-198.59	0.00	198.59	3,250.74	1,625.37	4,183.94	2,095.08	5.79	-0.73	0.101
83.00	-18.65	-5.49	0.00	-181.02	0.00	181.02	3,173.65	1,586.82	3,986.52	1,996.22	6.26	-0.76	0.097
84.34	-18.23	-5.47	0.00	-173.67	0.00	173.67	2,286.71	1,143.35	2,923.37	1,463.86	6.47	-0.77	0.127
85.00	-18.12	-5.43	0.00	-170.06	0.00	170.06	2,277.67	1,138.84	2,896.31	1,450.31	6.58	-0.78	0.125
90.00	-14.78	-4.67	0.00	-140.26	0.00	140.26	2,193.67	1,096.84	2,676.37	1,340.17	7.42	-0.84	0.111
95.00	-14.01	-4.60	0.00	-116.91	0.00	116.91	2,101.90	1,050.95	2,456.00	1,229.83	8.33	-0.89	0.102
100.00	-11.52	-4.00	0.00	-93.93	0.00	93.93	2,010.12	1,005.06	2,245.10	1,124.22	9.29	-0.94	0.089
105.00	-10.85	-3.92	0.00	-73.95	0.00	73.95	1,918.35	959.17	2,043.66	1,023.35	10.31	-0.99	0.078
110.00	-10.20	-3.85	0.00	-54.33	0.00	54.33	1,826.57	913.29	1,851.70	927.22	11.37	-1.03	0.064
115.00	-9.57	-3.81	0.00	-35.08	0.00	35.08	1,734.80	867.40	1,669.20	835.84	12.47	-1.07	0.048
115.22	-9.55	-3.78	0.00	-34.24	0.00	34.24	1,730.76	865.38	1,661.38	831.93	12.52	-1.07	0.047
118.80	-8.94	-3.74	0.00	-20.68	0.00	20.68	956.25	478.12	907.22	454.29	13.33	-1.08	0.055
120.00	-4.38	-1.46	0.00	-16.20	0.00	16.20	947.93	473.97	887.63	444.47	13.60	-1.09	0.041
125.00	-4.02	-1.39	0.00	-8.92	0.00	8.92	912.05	456.02	806.99	404.09	14.75	-1.11	0.027
130.00	-0.54	-0.18	0.00	-1.98	0.00	1.98	874.32	437.16	728.52	364.80	15.92	-1.12	0.006
135.00	-0.34	-0.12	0.00	-1.07	0.00	1.07	834.76	417.38	652.50	326.73	17.09	-1.12	0.004
140.00	0.00	-0.12	0.00	-0.46	0.00	0.46	787.66	393.83	575.06	287.96	18.27	-1.12	0.002

Site Number:	411256	Code: ANSI/TIA-222-G	
Site Name:	CANTON CT, CT	Engineering Number: 12605194_C3_03	11/15/2018 3:24:04 PM
Customer:	T-MOBILE		

Load Case: (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method 20 Iterations

Gust Response Factor :	1.10		Sds : 0.00		Ss : 0.00
Dead Load Factor :	1.20	Seismic Load Factor : 1.00	Sd1 : 0.00		S1 : 0.00
Wind Load Factor :	0.00	Structure Frequency : 0.0000	SA : 0.00	Seismic Importance Factor :	1.00

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	-52.28	-1.92	0.00	-202.83	0.00	202.83	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.042
5.00	-50.30	-1.93	0.00	-193.22	0.00	193.22	5,798.22	2,899.11	11,708.2	5,862.84	0.01	-0.01	0.042
10.00	-48.35	-1.94	0.00	-183.57	0.00	183.57	5,660.37	2,830.18	11,137.9	5,577.27	0.02	-0.02	0.041
15.00	-46.45	-1.94	0.00	-173.88	0.00	173.88	5,513.53	2,756.76	10,564.7	5,290.20	0.05	-0.03	0.041
20.00	-44.59	-1.94	0.00	-164.17	0.00	164.17	5,366.68	2,683.34	10,006.5	5,010.72	0.09	-0.05	0.041
25.00	-42.77	-1.94	0.00	-154.46	0.00	154.46	5,219.84	2,609.92	9,463.58	4,738.82	0.15	-0.06	0.041
30.00	-41.00	-1.93	0.00	-144.76	0.00	144.76	5,073.00	2,536.50	8,935.73	4,474.51	0.21	-0.07	0.040
35.00	-39.26	-1.92	0.00	-135.09	0.00	135.09	4,926.16	2,463.08	8,423.04	4,217.78	0.29	-0.08	0.040
40.00	-39.22	-1.93	0.00	-125.48	0.00	125.48	4,779.32	2,389.66	7,925.49	3,968.63	0.39	-0.09	0.040
40.13	-36.41	-1.89	0.00	-125.23	0.00	125.23	4,775.51	2,387.75	7,912.75	3,962.26	0.39	-0.09	0.039
45.00	-35.91	-1.89	0.00	-116.00	0.00	116.00	4,632.48	2,316.24	7,443.09	3,727.08	0.49	-0.11	0.039
45.88	-34.66	-1.88	0.00	-114.34	0.00	114.34	4,127.52	2,063.76	6,764.96	3,387.51	0.51	-0.11	0.042
50.00	-33.18	-1.85	0.00	-106.61	0.00	106.61	4,021.65	2,010.83	6,420.54	3,215.04	0.61	-0.12	0.041
55.00	-31.73	-1.83	0.00	-97.34	0.00	97.34	3,893.17	1,946.58	6,014.64	3,011.79	0.75	-0.13	0.040
60.00	-30.33	-1.80	0.00	-88.19	0.00	88.19	3,764.68	1,882.34	5,621.99	2,815.17	0.89	-0.15	0.039
65.00	-28.96	-1.77	0.00	-79.18	0.00	79.18	3,636.20	1,818.10	5,242.60	2,625.19	1.06	-0.16	0.038
70.00	-27.62	-1.73	0.00	-70.34	0.00	70.34	3,507.71	1,753.86	4,876.46	2,441.85	1.24	-0.18	0.037
75.00	-26.41	-1.69	0.00	-61.68	0.00	61.68	3,379.23	1,689.61	4,523.57	2,265.15	1.43	-0.19	0.035
79.67	-26.28	-1.69	0.00	-53.77	0.00	53.77	3,259.13	1,629.57	4,205.72	2,105.99	1.62	-0.20	0.034
80.00	-25.12	-1.65	0.00	-53.22	0.00	53.22	3,250.74	1,625.37	4,183.94	2,095.08	1.63	-0.20	0.033
83.00	-22.67	-1.55	0.00	-48.28	0.00	48.28	3,173.65	1,586.82	3,986.52	1,996.22	1.77	-0.21	0.031
84.34	-22.53	-1.54	0.00	-46.21	0.00	46.21	2,286.71	1,143.35	2,923.37	1,463.86	1.82	-0.21	0.041
85.00	-21.54	-1.50	0.00	-45.19	0.00	45.19	2,277.67	1,138.84	2,896.31	1,450.31	1.85	-0.22	0.041
90.00	-17.44	-1.31	0.00	-37.70	0.00	37.70	2,193.67	1,096.84	2,676.37	1,340.17	2.09	-0.23	0.036
95.00	-16.52	-1.26	0.00	-31.17	0.00	31.17	2,101.90	1,050.95	2,456.00	1,229.83	2.34	-0.25	0.033
100.00	-13.52	-1.09	0.00	-24.87	0.00	24.87	2,010.12	1,005.06	2,245.10	1,124.22	2.61	-0.26	0.029
105.00	-12.71	-1.04	0.00	-19.42	0.00	19.42	1,918.35	959.17	2,043.66	1,023.35	2.89	-0.27	0.026
110.00	-11.94	-0.99	0.00	-14.22	0.00	14.22	1,826.57	913.29	1,851.70	927.22	3.18	-0.28	0.022
115.00	-11.90	-0.99	0.00	-9.28	0.00	9.28	1,734.80	867.40	1,669.20	835.84	3.48	-0.29	0.018
115.22	-11.15	-0.93	0.00	-9.07	0.00	9.07	1,730.76	865.38	1,661.38	831.93	3.50	-0.29	0.017
118.80	-11.02	-0.92	0.00	-5.73	0.00	5.73	956.25	478.12	907.22	454.29	3.72	-0.30	0.024
120.00	-5.01	-0.45	0.00	-4.63	0.00	4.63	947.93	473.97	887.63	444.47	3.79	-0.30	0.016
125.00	-4.58	-0.41	0.00	-2.38	0.00	2.38	912.05	456.02	806.99	404.09	4.11	-0.30	0.011
130.00	-0.43	-0.04	0.00	-0.31	0.00	0.31	874.32	437.16	728.52	364.80	4.43	-0.31	0.001
135.00	-0.19	-0.02	0.00	-0.10	0.00	0.10	834.76	417.38	652.50	326.73	4.75	-0.31	0.001
140.00	0.00	-0.02	0.00	0.00	0.00	0.00	787.66	393.83	575.06	287.96	5.08	-0.31	0.000

Load Case: (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method 20 Iterations

Gust Response Factor : 1.10 Sds : 0.00 Ss : 0.00
Dead Load Factor : 0.90 Seismic Load Factor : 1.00 Sd1 : 0.00 S1 : 0.00
Wind Load Factor : 0.00 Structure Frequency : 0.0000 SA : 0.00 Seismic Importance Factor : 1.00

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	-36.37	-1.92	0.00	-200.43	0.00	200.43	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.039
5.00	-34.99	-1.93	0.00	-190.83	0.00	190.83	5,798.22	2,899.11	11,708.2	5,862.84	0.01	-0.01	0.039
10.00	-33.64	-1.93	0.00	-181.20	0.00	181.20	5,660.37	2,830.18	11,137.9	5,577.27	0.02	-0.02	0.038
15.00	-32.32	-1.93	0.00	-171.55	0.00	171.55	5,513.53	2,756.76	10,564.7	5,290.20	0.05	-0.03	0.038
20.00	-31.02	-1.93	0.00	-161.89	0.00	161.89	5,366.68	2,683.34	10,006.5	5,010.72	0.09	-0.04	0.038
25.00	-29.76	-1.92	0.00	-152.24	0.00	152.24	5,219.84	2,609.92	9,463.58	4,738.82	0.15	-0.06	0.038
30.00	-28.52	-1.92	0.00	-142.62	0.00	142.62	5,073.00	2,536.50	8,935.73	4,474.51	0.21	-0.07	0.037
35.00	-27.32	-1.90	0.00	-133.03	0.00	133.03	4,926.16	2,463.08	8,423.04	4,217.78	0.29	-0.08	0.037
40.00	-27.28	-1.91	0.00	-123.51	0.00	123.51	4,779.32	2,389.66	7,925.49	3,968.63	0.38	-0.09	0.037
40.13	-25.33	-1.87	0.00	-123.26	0.00	123.26	4,775.51	2,387.75	7,912.75	3,962.26	0.38	-0.09	0.036
45.00	-24.98	-1.87	0.00	-114.13	0.00	114.13	4,632.48	2,316.24	7,443.09	3,727.08	0.49	-0.11	0.036
45.88	-24.11	-1.85	0.00	-112.49	0.00	112.49	4,127.52	2,063.76	6,764.96	3,387.51	0.51	-0.11	0.039
50.00	-23.08	-1.83	0.00	-104.85	0.00	104.85	4,021.65	2,010.83	6,420.54	3,215.04	0.60	-0.12	0.038
55.00	-22.08	-1.81	0.00	-95.70	0.00	95.70	3,893.17	1,946.58	6,014.64	3,011.79	0.74	-0.13	0.037
60.00	-21.10	-1.78	0.00	-86.67	0.00	86.67	3,764.68	1,882.34	5,621.99	2,815.17	0.88	-0.15	0.036
65.00	-20.14	-1.74	0.00	-77.79	0.00	77.79	3,636.20	1,818.10	5,242.60	2,625.19	1.04	-0.16	0.035
70.00	-19.22	-1.70	0.00	-69.09	0.00	69.09	3,507.71	1,753.86	4,876.46	2,441.85	1.22	-0.17	0.034
75.00	-18.37	-1.66	0.00	-60.57	0.00	60.57	3,379.23	1,689.61	4,523.57	2,265.15	1.41	-0.19	0.032
79.67	-18.28	-1.66	0.00	-52.79	0.00	52.79	3,259.13	1,629.57	4,205.72	2,105.99	1.60	-0.20	0.031
80.00	-17.47	-1.62	0.00	-52.25	0.00	52.25	3,250.74	1,625.37	4,183.94	2,095.08	1.61	-0.20	0.030
83.00	-15.77	-1.52	0.00	-47.40	0.00	47.40	3,173.65	1,586.82	3,986.52	1,996.22	1.74	-0.21	0.029
84.34	-15.68	-1.51	0.00	-45.36	0.00	45.36	2,286.71	1,143.35	2,923.37	1,463.86	1.80	-0.21	0.038
85.00	-14.98	-1.47	0.00	-44.36	0.00	44.36	2,277.67	1,138.84	2,896.31	1,450.31	1.83	-0.21	0.037
90.00	-12.13	-1.28	0.00	-37.00	0.00	37.00	2,193.67	1,096.84	2,676.37	1,340.17	2.06	-0.23	0.033
95.00	-11.49	-1.24	0.00	-30.58	0.00	30.58	2,101.90	1,050.95	2,456.00	1,229.83	2.31	-0.24	0.030
100.00	-9.40	-1.07	0.00	-24.40	0.00	24.40	2,010.12	1,005.06	2,245.10	1,124.22	2.57	-0.26	0.026
105.00	-8.84	-1.02	0.00	-19.05	0.00	19.05	1,918.35	959.17	2,043.66	1,023.35	2.84	-0.27	0.023
110.00	-8.30	-0.97	0.00	-13.95	0.00	13.95	1,826.57	913.29	1,851.70	927.22	3.13	-0.28	0.020
115.00	-8.28	-0.97	0.00	-9.11	0.00	9.11	1,734.80	867.40	1,669.20	835.84	3.43	-0.29	0.016
115.22	-7.76	-0.91	0.00	-8.89	0.00	8.89	1,730.76	865.38	1,661.38	831.93	3.44	-0.29	0.015
118.80	-7.66	-0.90	0.00	-5.63	0.00	5.63	956.25	478.12	907.22	454.29	3.66	-0.29	0.020
120.00	-3.49	-0.44	0.00	-4.55	0.00	4.55	947.93	473.97	887.63	444.47	3.73	-0.29	0.014
125.00	-3.19	-0.41	0.00	-2.33	0.00	2.33	912.05	456.02	806.99	404.09	4.05	-0.30	0.009
130.00	-0.30	-0.04	0.00	-0.30	0.00	0.30	874.32	437.16	728.52	364.80	4.36	-0.30	0.001
135.00	-0.13	-0.02	0.00	-0.10	0.00	0.10	834.76	417.38	652.50	326.73	4.68	-0.30	0.000
140.00	0.00	-0.02	0.00	0.00	0.00	0.00	787.66	393.83	575.06	287.96	5.00	-0.30	0.000

Load Case: (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method 20 Iterations

Gust Response Factor : 1.10 Sds : 0.00 Ss : 0.00
Dead Load Factor : 1.20 Seismic Load Factor : 1.00 Sd1 : 0.00 S1 : 0.00
Wind Load Factor : 0.00 Structure Frequency : 0.0000 SA : 0.00 Seismic Importance Factor : 1.00

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	-52.28	-1.75	0.00	-172.24	0.00	172.24	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.037
5.00	-50.30	-1.72	0.00	-163.48	0.00	163.48	5,798.22	2,899.11	11,708.2	5,862.84	0.00	-0.01	0.037
10.00	-48.35	-1.68	0.00	-154.88	0.00	154.88	5,660.37	2,830.18	11,137.9	5,577.27	0.02	-0.02	0.036
15.00	-46.45	-1.63	0.00	-146.48	0.00	146.48	5,513.53	2,756.76	10,564.7	5,290.20	0.04	-0.03	0.036
20.00	-44.59	-1.58	0.00	-138.33	0.00	138.33	5,366.68	2,683.34	10,006.5	5,010.72	0.08	-0.04	0.036
25.00	-42.77	-1.53	0.00	-130.42	0.00	130.42	5,219.84	2,609.92	9,463.58	4,738.82	0.13	-0.05	0.036
30.00	-41.00	-1.48	0.00	-122.76	0.00	122.76	5,073.00	2,536.50	8,935.73	4,474.51	0.18	-0.06	0.036
35.00	-39.26	-1.43	0.00	-115.35	0.00	115.35	4,926.16	2,463.08	8,423.04	4,217.78	0.25	-0.07	0.035
40.00	-39.22	-1.43	0.00	-108.21	0.00	108.21	4,779.32	2,389.66	7,925.49	3,968.63	0.33	-0.08	0.035
40.13	-36.41	-1.34	0.00	-108.02	0.00	108.02	4,775.51	2,387.75	7,912.75	3,962.26	0.33	-0.08	0.035
45.00	-35.91	-1.32	0.00	-101.52	0.00	101.52	4,632.48	2,316.24	7,443.09	3,727.08	0.42	-0.09	0.035
45.88	-34.66	-1.28	0.00	-100.36	0.00	100.36	4,127.52	2,063.76	6,764.96	3,387.51	0.43	-0.09	0.038
50.00	-33.18	-1.24	0.00	-95.08	0.00	95.08	4,021.65	2,010.83	6,420.54	3,215.04	0.52	-0.10	0.038
55.00	-31.74	-1.20	0.00	-88.89	0.00	88.89	3,893.17	1,946.58	6,014.64	3,011.79	0.63	-0.12	0.038
60.00	-30.33	-1.17	0.00	-82.90	0.00	82.90	3,764.68	1,882.34	5,621.99	2,815.17	0.76	-0.13	0.038
65.00	-28.96	-1.15	0.00	-77.07	0.00	77.07	3,636.20	1,818.10	5,242.60	2,625.19	0.90	-0.14	0.037
70.00	-27.62	-1.14	0.00	-71.33	0.00	71.33	3,507.71	1,753.86	4,876.46	2,441.85	1.06	-0.16	0.037
75.00	-26.41	-1.14	0.00	-65.64	0.00	65.64	3,379.23	1,689.61	4,523.57	2,265.15	1.23	-0.17	0.037
79.67	-26.28	-1.15	0.00	-60.29	0.00	60.29	3,259.13	1,629.57	4,205.72	2,105.99	1.40	-0.18	0.037
80.00	-25.12	-1.16	0.00	-59.91	0.00	59.91	3,250.74	1,625.37	4,183.94	2,095.08	1.42	-0.18	0.036
83.00	-22.67	-1.19	0.00	-56.43	0.00	56.43	3,173.65	1,586.82	3,986.52	1,996.22	1.53	-0.19	0.035
84.34	-22.53	-1.19	0.00	-54.84	0.00	54.84	2,286.71	1,143.35	2,923.37	1,463.86	1.59	-0.20	0.047
85.00	-21.54	-1.21	0.00	-54.06	0.00	54.06	2,277.67	1,138.84	2,896.31	1,450.31	1.62	-0.20	0.047
90.00	-17.44	-1.29	0.00	-48.01	0.00	48.01	2,193.67	1,096.84	2,676.37	1,340.17	1.84	-0.22	0.044
95.00	-16.52	-1.31	0.00	-41.57	0.00	41.57	2,101.90	1,050.95	2,456.00	1,229.83	2.08	-0.24	0.042
100.00	-13.51	-1.34	0.00	-35.04	0.00	35.04	2,010.12	1,005.06	2,245.10	1,124.22	2.34	-0.26	0.038
105.00	-12.71	-1.34	0.00	-28.33	0.00	28.33	1,918.35	959.17	2,043.66	1,023.35	2.61	-0.27	0.034
110.00	-11.94	-1.32	0.00	-21.63	0.00	21.63	1,826.57	913.29	1,851.70	927.22	2.91	-0.29	0.030
115.00	-11.90	-1.32	0.00	-15.04	0.00	15.04	1,734.80	867.40	1,669.20	835.84	3.22	-0.30	0.025
115.22	-11.15	-1.28	0.00	-14.75	0.00	14.75	1,730.76	865.38	1,661.38	831.93	3.24	-0.31	0.024
118.80	-11.02	-1.27	0.00	-10.17	0.00	10.17	956.25	478.12	907.22	454.29	3.47	-0.31	0.034
120.00	-5.01	-0.82	0.00	-8.65	0.00	8.65	947.93	473.97	887.63	444.47	3.55	-0.32	0.025
125.00	-4.58	-0.76	0.00	-4.57	0.00	4.57	912.05	456.02	806.99	404.09	3.89	-0.33	0.016
130.00	-0.43	-0.11	0.00	-0.78	0.00	0.78	874.32	437.16	728.52	364.80	4.23	-0.33	0.003
135.00	-0.19	-0.05	0.00	-0.25	0.00	0.25	834.76	417.38	652.50	326.73	4.58	-0.33	0.001
140.00	0.00	-0.05	0.00	0.00	0.00	0.00	787.66	393.83	575.06	287.96	4.92	-0.33	0.000

Site Number: 411256 Code: ANSI/TIA-222-G

Site Name: CANTON CT, CT Engineering Number: 12605194_C3_03 11/15/2018 3:24:04 PM

Customer: T-MOBILE

Load Case: (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method 20 Iterations

Gust Response Factor : 1.10 Sds : 0.00 Ss : 0.00

Dead Load Factor : 0.90 Seismic Load Factor : 1.00 Sd1 : 0.00 S1 : 0.00

Wind Load Factor : 0.00 Structure Frequency : 0.0000 SA : 0.00 Seismic Importance Factor : 1.00

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	-36.37	-1.75	0.00	-170.05	0.00	170.05	5,907.57	2,953.79	12,233.7	6,125.97	0.00	0.00	0.034
5.00	-34.99	-1.72	0.00	-161.29	0.00	161.29	5,798.22	2,899.11	11,708.2	5,862.84	0.00	-0.01	0.034
10.00	-33.64	-1.67	0.00	-152.71	0.00	152.71	5,660.37	2,830.18	11,137.9	5,577.27	0.02	-0.02	0.033
15.00	-32.32	-1.62	0.00	-144.35	0.00	144.35	5,513.53	2,756.76	10,564.7	5,290.20	0.04	-0.03	0.033
20.00	-31.02	-1.57	0.00	-136.24	0.00	136.24	5,366.68	2,683.34	10,006.5	5,010.72	0.08	-0.04	0.033
25.00	-29.76	-1.52	0.00	-128.38	0.00	128.38	5,219.84	2,609.92	9,463.58	4,738.82	0.12	-0.05	0.033
30.00	-28.52	-1.47	0.00	-120.78	0.00	120.78	5,073.00	2,536.50	8,935.73	4,474.51	0.18	-0.06	0.033
35.00	-27.32	-1.41	0.00	-113.45	0.00	113.45	4,926.16	2,463.08	8,423.04	4,217.78	0.24	-0.07	0.032
40.00	-27.29	-1.41	0.00	-106.39	0.00	106.39	4,779.32	2,389.66	7,925.49	3,968.63	0.32	-0.08	0.033
40.13	-25.33	-1.32	0.00	-106.20	0.00	106.20	4,775.51	2,387.75	7,912.75	3,962.26	0.32	-0.08	0.032
45.00	-24.98	-1.30	0.00	-99.78	0.00	99.78	4,632.48	2,316.24	7,443.09	3,727.08	0.41	-0.09	0.032
45.88	-24.11	-1.26	0.00	-98.63	0.00	98.63	4,127.52	2,063.76	6,764.96	3,387.51	0.43	-0.09	0.035
50.00	-23.08	-1.22	0.00	-93.43	0.00	93.43	4,021.65	2,010.83	6,420.54	3,215.04	0.51	-0.10	0.035
55.00	-22.08	-1.18	0.00	-87.35	0.00	87.35	3,893.17	1,946.58	6,014.64	3,011.79	0.62	-0.11	0.035
60.00	-21.10	-1.14	0.00	-81.46	0.00	81.46	3,764.68	1,882.34	5,621.99	2,815.17	0.75	-0.13	0.035
65.00	-20.15	-1.12	0.00	-75.74	0.00	75.74	3,636.20	1,818.10	5,242.60	2,625.19	0.89	-0.14	0.034
70.00	-19.22	-1.11	0.00	-70.12	0.00	70.12	3,507.71	1,753.86	4,876.46	2,441.85	1.04	-0.15	0.034
75.00	-18.37	-1.12	0.00	-64.55	0.00	64.55	3,379.23	1,689.61	4,523.57	2,265.15	1.21	-0.17	0.034
79.67	-18.28	-1.12	0.00	-59.32	0.00	59.32	3,259.13	1,629.57	4,205.72	2,105.99	1.38	-0.18	0.034
80.00	-17.48	-1.13	0.00	-58.95	0.00	58.95	3,250.74	1,625.37	4,183.94	2,095.08	1.39	-0.18	0.034
83.00	-15.77	-1.16	0.00	-55.55	0.00	55.55	3,173.65	1,586.82	3,986.52	1,996.22	1.51	-0.19	0.033
84.34	-15.68	-1.16	0.00	-54.00	0.00	54.00	2,286.71	1,143.35	2,923.37	1,463.86	1.56	-0.19	0.044
85.00	-14.99	-1.18	0.00	-53.23	0.00	53.23	2,277.67	1,138.84	2,896.31	1,450.31	1.59	-0.20	0.043
90.00	-12.13	-1.27	0.00	-47.31	0.00	47.31	2,193.67	1,096.84	2,676.37	1,340.17	1.81	-0.22	0.041
95.00	-11.49	-1.28	0.00	-40.98	0.00	40.98	2,101.90	1,050.95	2,456.00	1,229.83	2.04	-0.23	0.039
100.00	-9.40	-1.32	0.00	-34.55	0.00	34.55	2,010.12	1,005.06	2,245.10	1,124.22	2.30	-0.25	0.035
105.00	-8.84	-1.32	0.00	-27.94	0.00	27.94	1,918.35	959.17	2,043.66	1,023.35	2.57	-0.27	0.032
110.00	-8.30	-1.30	0.00	-21.35	0.00	21.35	1,826.57	913.29	1,851.70	927.22	2.87	-0.29	0.028
115.00	-8.28	-1.30	0.00	-14.85	0.00	14.85	1,734.80	867.40	1,669.20	835.84	3.17	-0.30	0.023
115.22	-7.76	-1.26	0.00	-14.57	0.00	14.57	1,730.76	865.38	1,661.38	831.93	3.19	-0.30	0.022
118.80	-7.66	-1.25	0.00	-10.06	0.00	10.06	956.25	478.12	907.22	454.29	3.42	-0.31	0.030
120.00	-3.48	-0.81	0.00	-8.56	0.00	8.56	947.93	473.97	887.63	444.47	3.49	-0.31	0.023
125.00	-3.18	-0.75	0.00	-4.53	0.00	4.53	912.05	456.02	806.99	404.09	3.82	-0.32	0.015
130.00	-0.30	-0.10	0.00	-0.78	0.00	0.78	874.32	437.16	728.52	364.80	4.16	-0.33	0.002
135.00	-0.13	-0.05	0.00	-0.25	0.00	0.25	834.76	417.38	652.50	326.73	4.51	-0.33	0.001
140.00	0.00	-0.05	0.00	0.00	0.00	0.00	787.66	393.83	575.06	287.96	4.85	-0.33	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	26.64	0.00	52.59	0.00	0.00	2760.34	45.88	0.47
0.9D + 1.6W	26.62	0.00	39.43	0.00	0.00	2732.47	45.88	0.47
1.2D + 1.0Di + 1.0Wi	8.52	0.00	87.08	0.00	0.00	896.53	84.34	0.17
(1.2 + 0.2Sds) * DL + E ELFM	1.92	0.00	52.28	0.00	0.00	202.83	45.88	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.75	0.00	52.28	0.00	0.00	172.24	84.34	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.92	0.00	36.37	0.00	0.00	200.43	45.88	0.04
(0.9 - 0.2Sds) * DL + E EMAM	1.75	0.00	36.37	0.00	0.00	170.05	84.34	0.04
1.0D + 1.0W	6.93	0.00	43.85	0.00	0.00	713.73	45.88	0.13

Base Plate & Anchor Rod Analysis

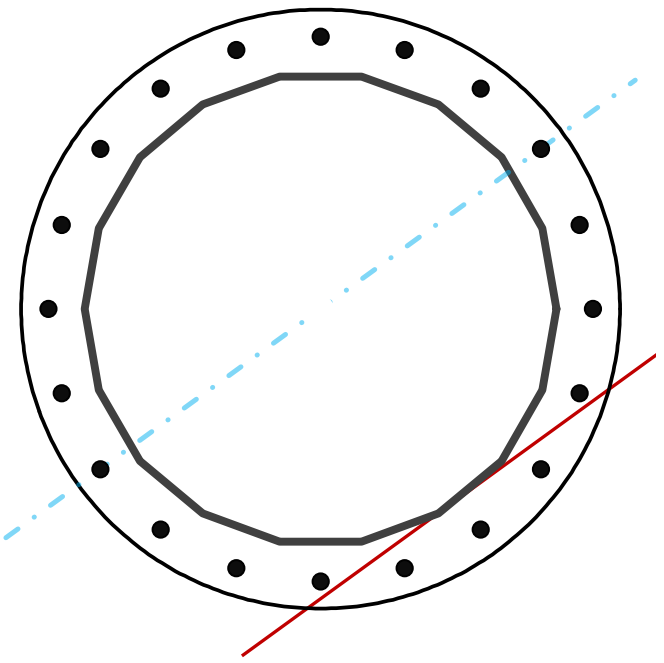
Pole Dimensions		
Number of Sides	18	-
Diameter	51	in
Thickness	0.5	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2760.3	k-ft
Axial, Pu	52.6	k
Shear, Vu	26.6	k
Neutral Axis	216	°

Report Capacities		
Component	Capacity	Result
Base Plate	55%	Pass
Anchor Rods	43%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	66	in
Thickness	2 1/4	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1119.7	k
Bending Stress, ϕMn	2027.4	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	60	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	9.4	in
Orientation Offset	0	°
Applied Force, Pu	113.0	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	26.6	2760.3	1.00
Anchor Rod Forces	26.6	2760.3	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	78.9231	4.3846	0.3672		25165.81
Bolt	3.9761	3.2477	0.8393	4.5	29245.99
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	66	in
Thickness, t	2.25	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	41.893	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	60	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	113.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.435	OK
Interaction Capacity	0.435	OK

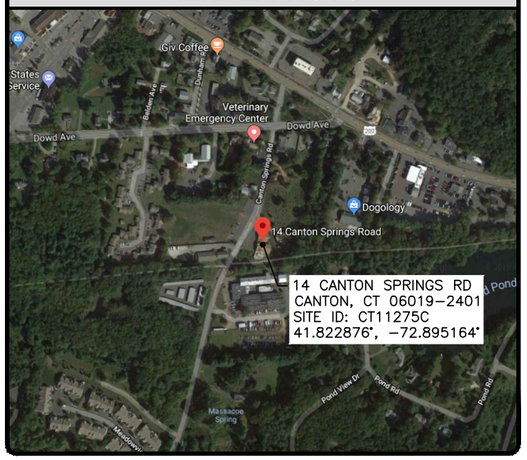
External Base Plate		
Chord Length AA	35.773	in
Additional AA	4.500	in
Section Modulus, Z	50.970	in^3
Applied Moment, Mu	1119.7	k-ft
Bending Capacity, ϕMn	2752.4	k-ft
Capacity, Mu/ϕMn	0.407	OK
Chord Length AB	34.612	in
Additional AB	4.500	in
Section Modulus, Z	49.502	in^3
Applied Moment, Mu	990.0	k-ft
Bending Capacity, ϕMn	2673.1	k-ft
Capacity, Mu/ϕMn	0.370	OK
Bend Line Length	29.664	in
Additional Bend Line	0.000	in
Section Modulus, Z	37.544	in^3
Applied Moment, Mu	1119.7	k-ft
Bending Capacity, ϕMn	2027.4	k-ft
Capacity, Mu/ϕMn	0.552	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		

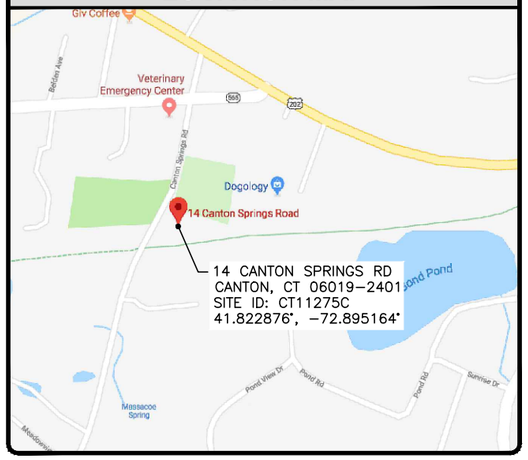
AMERICAN TOWER®

ATC SITE NAME:	**CANTON CT**
ATC SITE NUMBER:	**411256**
T-MOBILE SITE ID:	**CT11275C**
SITE ADDRESS:	**14 CANTON SPRINGS RD, CANTON, CT 06019-2401**
PROJECT:	**T-MOBILE AMENDMENT PLAN**
STRUCTURE TYPE:	**140'-0" MONOPOLE**

AERIAL PHOTO



LOCATION MAP



TOWER ELEVATION

DRIVING DIRECTIONS

FROM BRADLEY INTERNATIONAL AIRPORT, HARTFORD, CT:

- TAKE BRADLEY INTERNATIONAL AIRPORT CON TO SCHOEPHOESTER RD.
- TAKE THE CT-20 W EXIT TOWARD E GRANBY/GRANBY.
- CONTINUE ONTO CT-20 W, 2.7 MI.
- TURN LEFT ONTO HOLCOMB ST, 2.0 MI.
- SLIGHT RIGHT ONTO FLOYDVILLE RD, 0.2 MI.
- TURN LEFT ONTO WOLCOTT RD, 1.5 MI.
- TURN LEFT ONTO US-202 S/HOPMEADOW ST, 3.0 MI.
- TURN RIGHT ONTO WEST ST, 0.7 MI.
- TURN LEFT ONTO CT-167 S/BUSHY HILL RD, 2.8 MI.
- TURN RIGHT ONTO CANTON RD, 0.1 MI.
- CONTINUE ONTO WILDWOOD RD, 0.8 MI.
- TURN LEFT ONTO NOTCH RD, 0.3 MI.
- SLIGHT RIGHT ONTO DRY BRIDGE RD, 0.3 MI.
- CONTINUE ONTO LAWTON RD, 0.9 MI.
- TURN RIGHT ONTO ALBANY TURNPIKE, 0.5 MI.
- TURN LEFT ONTO CANTON SPRINGS RD, 0.1 MI.
- SITE WILL BE ON LEFT.

ONE CALL

CALL CONNECTICUT ONE-CALL
3 DAYS BEFORE YOU DIG
811 OR 1-800-922-4455

PROJECT INFORMATION

LATITUDE: (NAD 83)	41.822876°
LONGITUDE: (NAD 83)	-72.895164°
SITE ADDRESS:	14 CANTON SPRINGS RD CANTON, CT 06019-2401
GROUND ELEVATION:	334' AMSL
JURISDICTION:	CITY OF CANTON
COUNTY:	HARTFORD
OCCUPANCY TYPE:	UNMANNED
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

PROJECT TEAM

ENGINEER/ARCHITECT:
CLS GROUP
319 CHAPANOKE ROAD, SUITE 118
RALEIGH, NC 27603
PM: CAITLIN RATHJEN
OFFICE: 405-348-5460 X485

CUSTOMER:
T-MOBILE
185 FAIRCHILD STREET
CHARLESTON, SC 29492

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801
CONTACT NAME: DANA WIDSTRAND

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING APPLICABLE CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING/DWELLING CODE:	IBC 2012, CSBC 2016-N
STRUCTURAL CODE:	IBC 2012, CSBC 2016-N
PLUMBING CODE:	IPC 2015
MECHANICAL CODE:	IMC 2015
ELECTRICAL CODE:	NEC 2014
FIRE & LIFE SAFETY CODE:	IFC 2015

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

DRAWING INDEX

SCOPE OF WORK

1. REMOVE (2) TMAS, AT THE 100' RAD CENTER.
2. INSTALL (2) NEW ANTENNAS, (1) SMART BIAS-T AND (3) NEW TMAS AT THE 100' RAD CENTER.
3. INSTALL ALL NECESSARY GROUNDING AND MOUNTING HARDWARE TO CREATE 3RD SECTOR AT 100' RAD CENTER.

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CLS ENGINEERING PLLC
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PH: (405) 348-5460 FAX:(405) 341-4625
COA# PEC.001833 EXP. 8/14/2019

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	09/04/18	PRELIMINARY ISSUE	KGRL
B	10/10/18	CLIENT COMMENTS	JM
0	11/08/18	FOR CONSTRUCTION	JM
1	01/11/2019	FOR CONSTRUCTION	BNM

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2019
COA # PEC.001833 Exp. 8/14/2019

1/11/2019

Digitally signed by Tyler M. Barker
Date: 2019.01.11 17:16:59 -05'00'

PE# 32402 EXP: 1/31/2019

ATC SITE NAME:
CANTON CT
ATC SITE NUMBER:
411256
T-MOBILE SITE ID:
CT11275C
SITE ADDRESS:
14 CANTON SPRINGS RD
CANTON, CT 06019-2401

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T1

T:\AMERICAN TOWER\41123 - ATC AZP A+E\411256-1260519A\00 - A&E (PHASE 1)\411256_CT11275C_CDS.DWG

GENERAL NOTES

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.
30. ITEMS REFERENCED ARE OWNER/CLIENT DICTATED ITEMS, OR SUPPLIED ITEMS WHICH ARE REPRODUCED WITHOUT ALTERATION AS DIRECTED BY OWNER/CLIENT, AND OWNER/CLIENT ASSUMES ANY AND ALL LIABILITY FOR USE OF, CONSEQUENCES OF, OR INTERPRETATION OF SAID ITEM, SPECIFICATION, OR DIRECTIVE; AND AGREES TO INDEMNIFY AND HOLD ENGINEER COMPLETELY HARMLESS.

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®
ATC TOWER SERVICES, LLC
3500 REGENCY PARKWAY
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319 CHAPANOKE RD, SUITE 118 RALEIGH, NC 27603
PH: (405) 348-5460 FAX:(405) 341-4625
COA# PEC.001833 EXP. 8/14/2019

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
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NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

STATE OF CONNECTICUT · TYLER M BARKER · No. 32402 · LICENSED PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2019
COA # PEC.001833 Exp. 8/14/2019

1/11/2019

PE# 32402 EXP: 1/31/2019

ATC SITE NAME:
CANTON CT
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411256
T-MOBILE SITE ID:
CT11275C
SITE ADDRESS:
14 CANTON SPRINGS RD
CANTON, CT 06019-2401

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN1

NOTES:

MONOPOLE IS SHOWN FOR ILLUSTRATION ONLY AND FOR LOCATION OF APPURTENANCE(S).

REFER TO MONOPOLE SURVEY FOR ALL EXISTING MONOPOLE COMPONENTS TO INCLUDE ANTENNAS, LIGHTS, LIGHTNING ROD AND MONOPOLE HEIGHT.

CONTRACTOR(S) TO COMPLY WITH ALL FCC AND FAA REGULATIONS ON THIS PROJECT. COAX ROUTING MUST BE PER STRUCTURAL ANALYSIS.

PRIOR TO CONSTRUCTION:
CONTRACTOR SHALL VERIFY THAT A MONOPOLE AND MOUNT STRUCTURAL ANALYSIS, DEPICTING THE LOADING SHOWN, HAS BEEN PERFORMED AND SHOWS A "PASS" OR AN "ACCEPTABLE" RATING. UNDER NO CIRCUMSTANCE WHAT SO EVER SHALL THE PROPOSED EQUIPMENT BE INSTALLED WITHOUT SAID STRUCTURAL ANALYSIS. IF SAID STRUCTURAL ANALYSIS REQUIRES THAT THE MONOPOLE AND/OR MOUNT BE MODIFIED, SUCH MODIFICATIONS SHALL BE COMPLETED PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT.

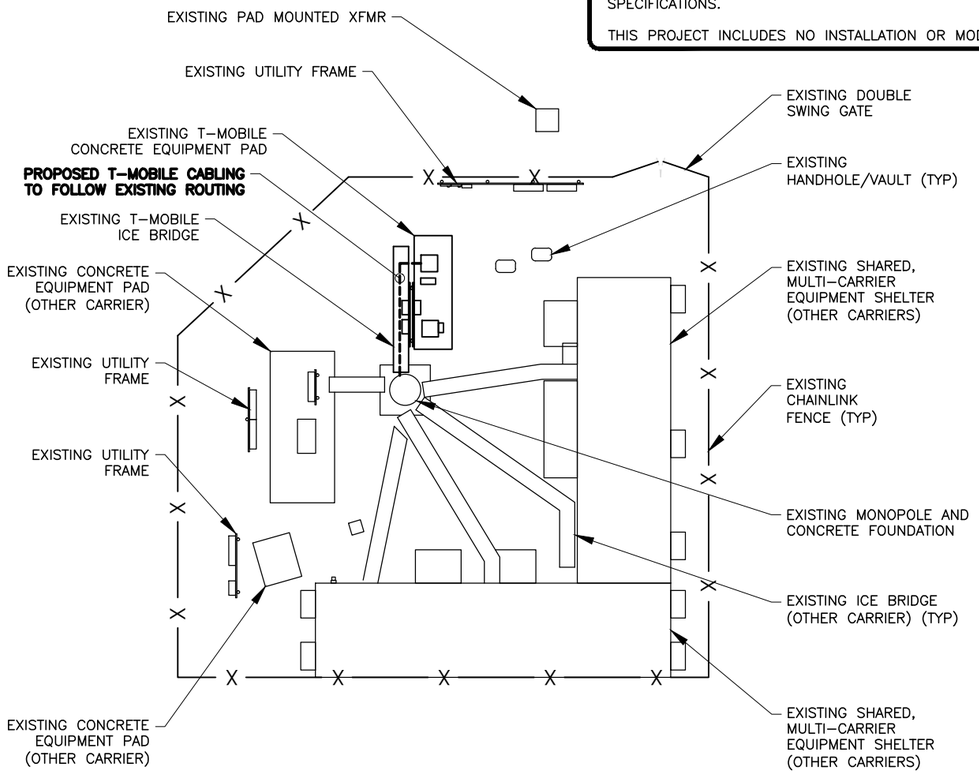
MOUNT ANALYSIS COMPLETED BY OTHERS.

STRUCTURAL ANALYSIS DONE BY ATC, ENG# 12605194_C3_03, DATED NOVEMBER 15, 2018.

THE SITE PLAN REPRESENTS THE BEST 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.

ICE BRIDGE, CABLE LADDER, COAX PORT AND CABLING ARE SHOWN FOR REFERENCE ONLY. OTHER CARRIER EQUIPMENT MAY BE OMITTED FOR CLARITY PURPOSES. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES 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.

THIS PROJECT INCLUDES NO INSTALLATION OR MODIFICATION AT-GRADE.

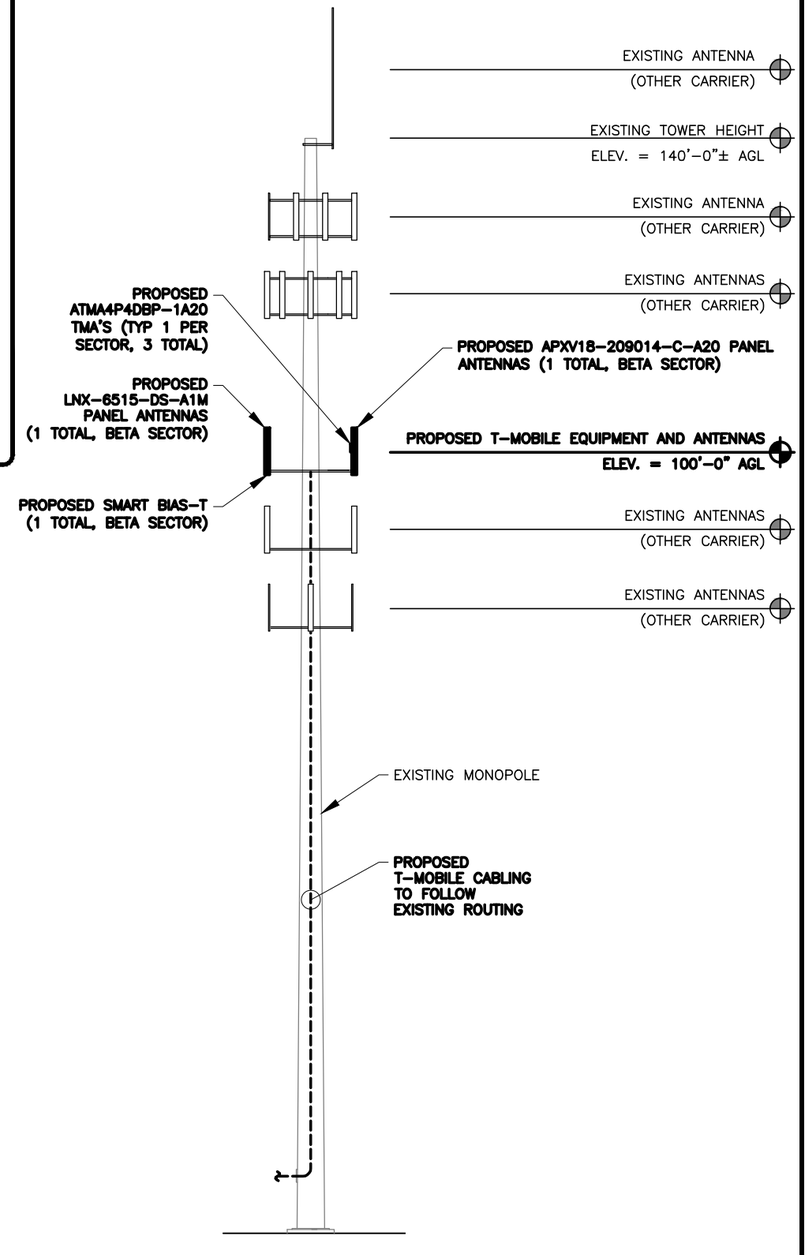


1 COMPOUND PLAN
SCALE: 0' 10' 20' 40' 1"=20'-0" 11" X 17" RE: 30/GN1

TRUE NORTH

LOADING NOTE:

OTHER CARRIER EQUIPMENT MAY BE OMITTED FOR CLARITY.



2 PROPOSED ELEVATION
SCALE: N.T.S. RE: 30/GN1

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

T-Mobile

CLS ENGINEERING PLLC
319 CHAPANOKE RD, SUITE 118 RALEIGH, NC 27603
PH: (405) 348-5460 FAX:(405) 341-4625
COA# PEC.001833 EXP. 8/14/2019

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	09/04/18	PRELIMINARY ISSUE	KGRL
B	10/10/18	CLIENT COMMENTS	JM
0	11/08/18	FOR CONSTRUCTION	JM
1	01/11/2019	FOR CONSTRUCTION	BNM

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2019
COA # PEC.001833 Exp. 8/14/2019

1/11/2019

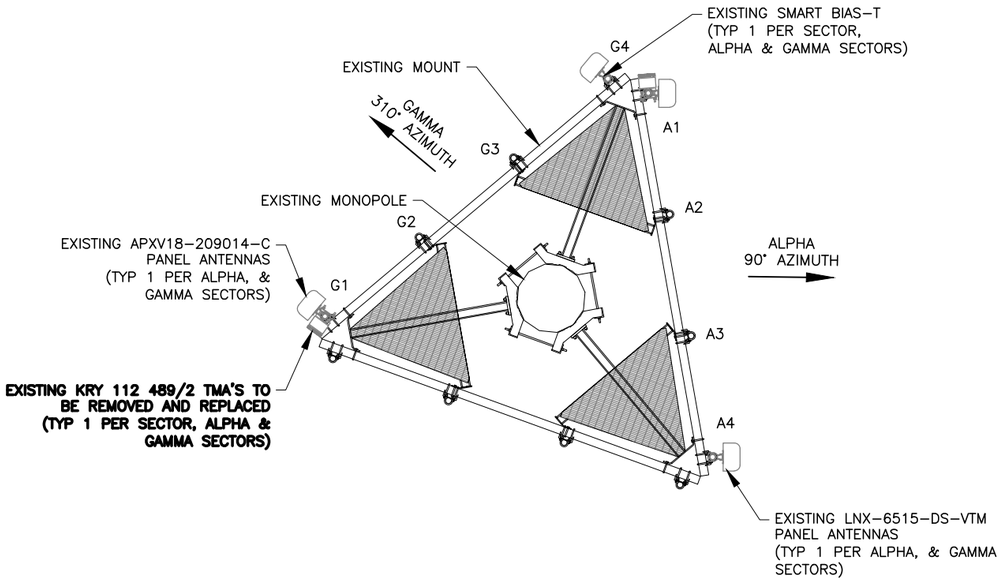
PE# 32402 EXP: 1/31/2019

ATC SITE NAME:
CANTON CT
ATC SITE NUMBER:
411256
T-MOBILE SITE ID:
CT11275C
SITE ADDRESS:
14 CANTON SPRINGS RD
CANTON, CT 06019-2401

SHEET TITLE
COMPOUND PLAN AND ELEVATION

SHEET NUMBER
A1

T:\AMERICAN TOWER\41123 - ATC AZP A+E\411256-1260519A\00 - A&E (PHASE 1)\411256_CT11275C_CDS.DWG

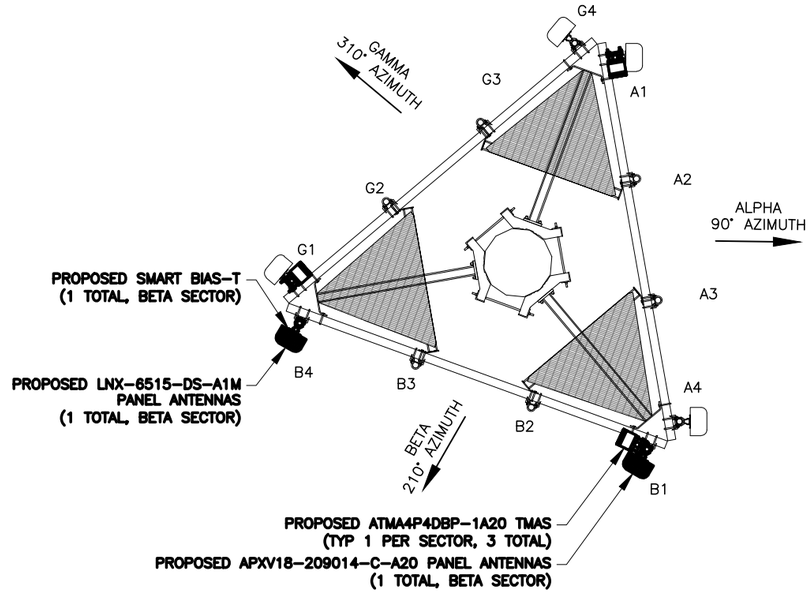


TRUE NORTH

1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

RE: 30/GN1



TRUE NORTH

2 PROPOSED ANTENNA PLAN

SCALE: N.T.S.

RE: 30/GN1

ANTENNA AND COAXIAL CABLE SCHEDULE
(**BOLD** DENOTES PROPOSED OR RECONFIGURED EQUIPMENT)
(E) = EXISTING **(R) = RELOCATED (P) = PROPOSED**

ANTENNA MARK	SECTOR	RAD CENTER	AZIMUTH	ANTENNAS	TMAS	DIPLEXER	SURGE PROTECTION	RRUS	COAX/CABLE	CABLE LENGTH
A1	ALPHA	100'–0"	90°	(E) RFS APXV18–209014–C–A20	(E) RFS ATMA4P4DBP–1A20	--	--	--	(E) (2) 1–5/8" COAX	135'
A2	ALPHA	--	--	--	--	--	--	--	--	--
A3	ALPHA	--	--	--	--	--	--	--	--	--
A4	ALPHA	100'–0"	90°	(E) ANDREW LNX–6515–DS–A1M	--	(E) (1) SMART BIAS–T	--	--	(E) (2) 1–5/8" COAX	135'
B1	**BETA**	**100'–0"**	**210°**	**(P) RFS APXV18–209014–C–A20**	**(P) RFS ATMA4P4DBP–1A20**	**--**	**--**	**--**	**(P) (2) 1–5/8" COAX**	**135'**
B2	BETA	--	--	--	--	--	--	--	--	--
B3	BETA	--	--	--	--	--	--	--	--	--
B4	**BETA**	**100'–0"**	**210°**	**(P) ANDREW LNX–6515–DS–A1M**	**--**	**(P) (1) SMART BIAS–T**	**--**	**--**	**(P) (2) 1–5/8" COAX**	**135'**
G1	GAMMA	100'–0"	310°	(E) RFS APXV18–209014–C–A20	(E) RFS ATMA4P4DBP–1A20	--	--	--	(E) (2) 1–5/8" COAX	135'
G2	GAMMA	--	--	--	--	--	--	--	--	--
G3	GAMMA	--	--	--	--	--	--	--	--	--
G4	GAMMA	100'–0"	310°	(E) ANDREW LNX–6515–DS–A1M	--	(E) (1) SMART BIAS–T	--	--	(E) (2) 1–5/8" COAX	135'

3 FINAL EQUIPMENT TABLE

SCALE: N.T.S.

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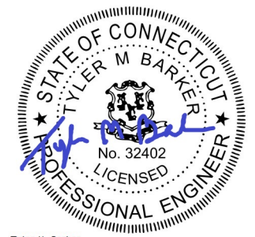

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CANTON, CT 06019-2401

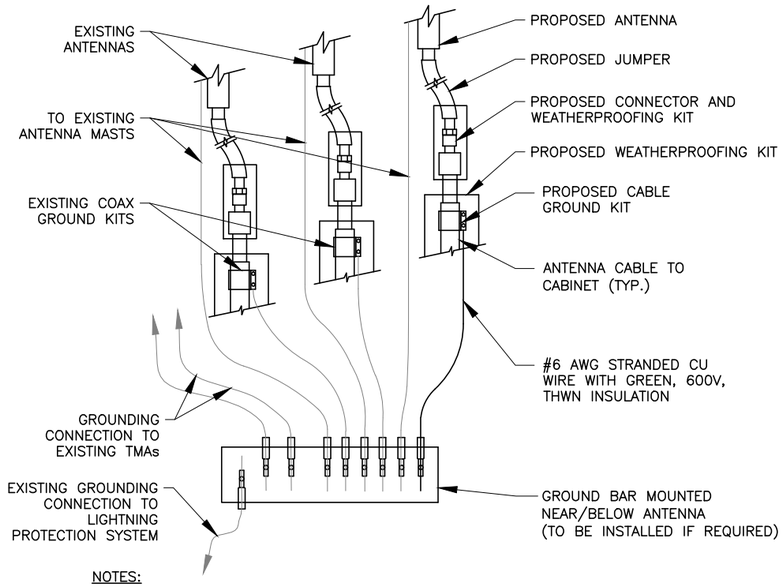
SHEET TITLE

ANTENNA PLANS AND EQUIPMENT TABLE

SHEET NUMBER

A2

T:\AMERICAN TOWER\41123 - ATC AZP A+E\411256-126D519A\D0 - A&E (PHASE 1)\411256_CT11275C_CDS.DWG

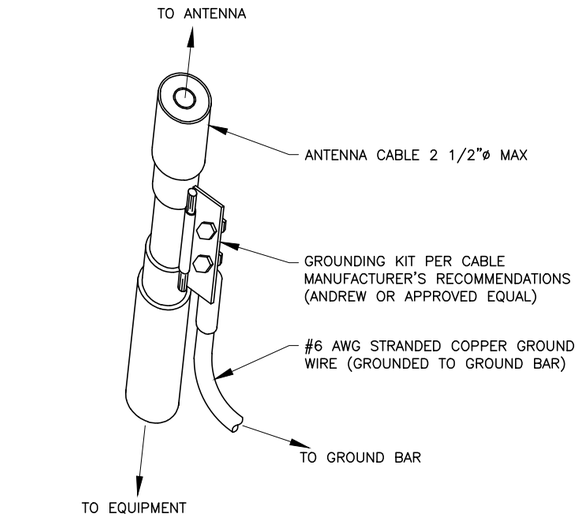


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S. RE: 30/GN1

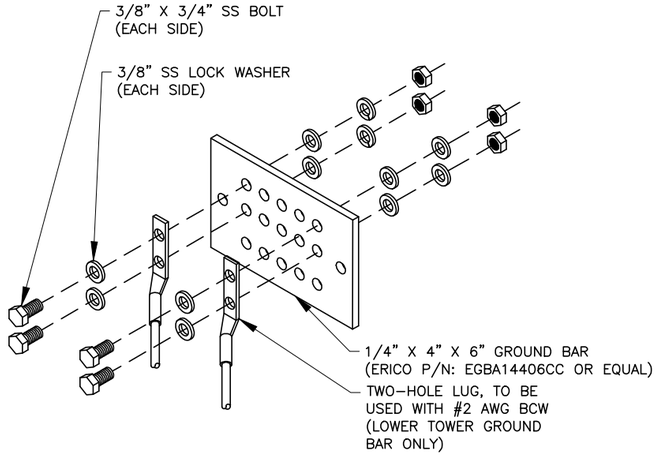


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S. RE: 30/GN1



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 GROUND BAR DETAIL

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EQUIPMENT DETAILS

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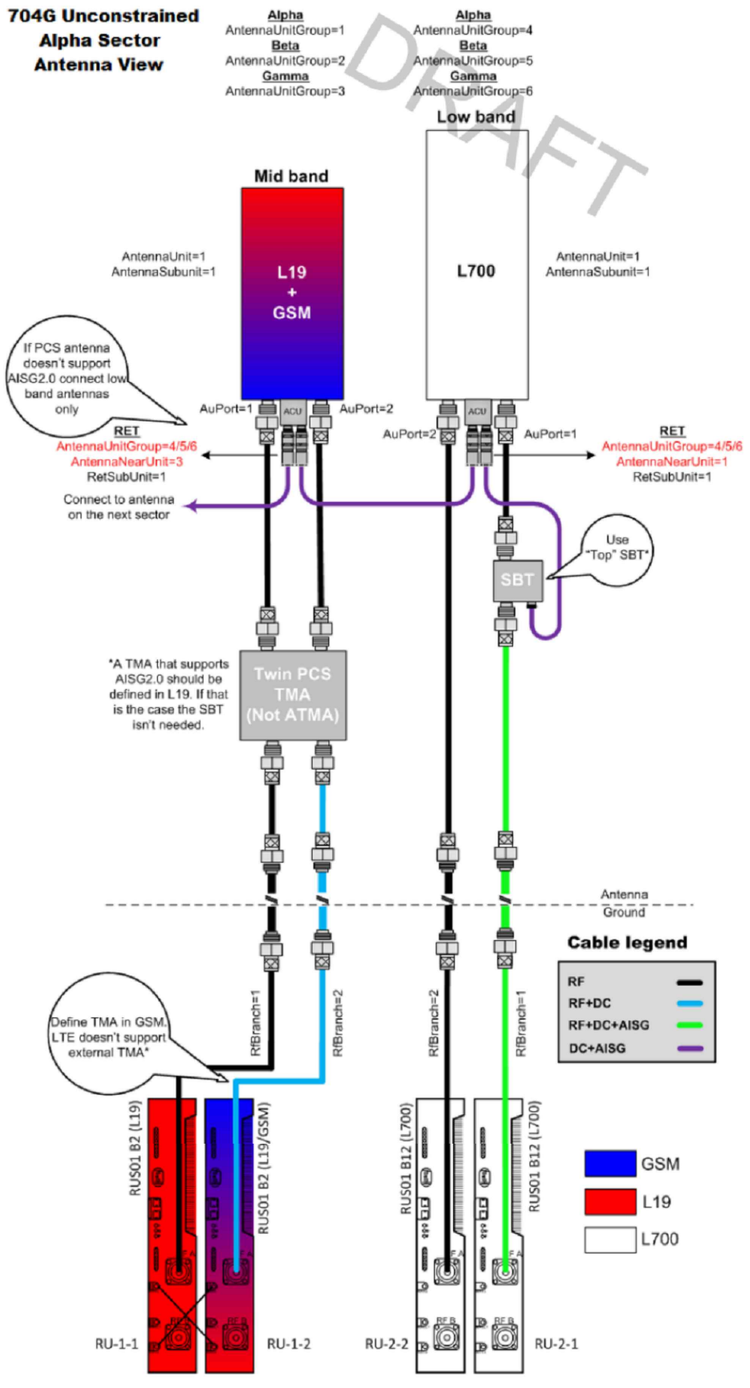
A3



1 TYPICAL PLUMBING DIAGRAM

SCALE: N.T.S.

RE: 30/GN1

T:\AMERICAN TOWER\41123 - ATC AZP A+E\411256-1260519A\00 - A&E (PHASE 1)\411256_CT11275C_CDS.DWG

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SHEET TITLE

TYPICAL PLUMBING DIAGRAM

SHEET NUMBER

A4