Transcend Wireless

10 Industrial Avenue,
Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

April 1, 2019

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

Notice of Exempt Modification
605 Willard Avenue, Newington, CT 06111
Latitude: 41.6983722222
Longitude: -72.7371472222

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 170' level of the existing 180'Monople at 605 Willard Avenue, in Newington, Connecticut. The tower is owned by American Tower and the property is owned by the Town of Newington. T-Mobile now intends to replace (6) of its existing antennas with (6) new antennas, and swap (3) RRUs. The antennas and RRUs would be installed at the same 170' level of the tower. There will be one (1) 1-58/" hybrid cable and one (1) 1-1/4" hybrid cable installed.

The facility was approved by the Town of Newington. Please see enclosed correspondence with the Town Planner of Newington, Craig Minor.

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 Luke Bronin, Mayor of the City of Hartford, as well as the tower 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,

Elizabeth Jamieson

Elizabeth Jamieson
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
860-605-7808
EJamieson@TranscendWireless.com

cc:
Roy Zartarian, as Mayor and Land Owner
Craig Minor, Town Planner
American Tower, Tower Owner

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 2015.

Information on the Property Records for the Municipality of Newington was last updated on 11/10/2018.

Parcel Information

Location:	605 WILLARD AVE	Property Use:	School	Primary Use:	Elementary School
Unique ID:	N0046500	Map Block Lot:	09/300/000	Acres:	80.59
490 Acres:	0.00	Zone:	R-12/	Volume / Page:	189/67
Developers Map / Lot:	N/W 1860 & 1969	Census:			

Value Information

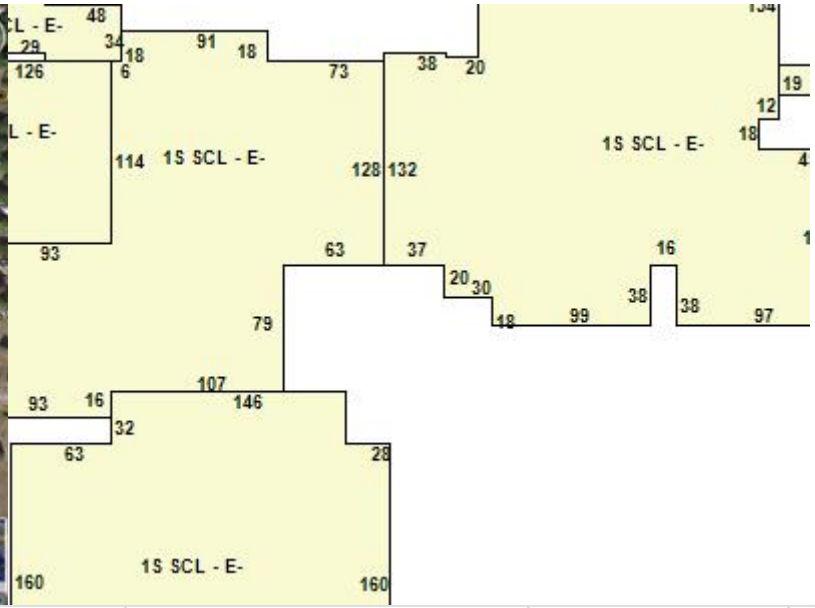
	Appraised Value	Assessed Value

	Appraised Value	Assessed Value
Land	8,147,790	5,703,450
Buildings	22,823,428	15,976,410
Detached Outbuildings	534,775	374,340
Total	31,505,993	22,054,200

Owner's Information

Owner's Data
NEWINGTON TOWN OF NEWINGTON HIGH SCHOOL 131 CEDAR ST

Building 1



Category:	School	Use:	High School	GLA:	171,729
Stories:	1.00	Construction:	Masonry	Year Built:	1971
Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	100
Siding:	Brick	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Tennis Courts	1971	0.00	0.00	10,000
4 Ft Chain Fence	1978	1.00	25,000.00	25,000
Paving	1978	1.00	175,000.00	175,000
Gunite Pool	1971	1.00	3,344.00	3,344
Frame Shed	1978	1.00	288.00	288

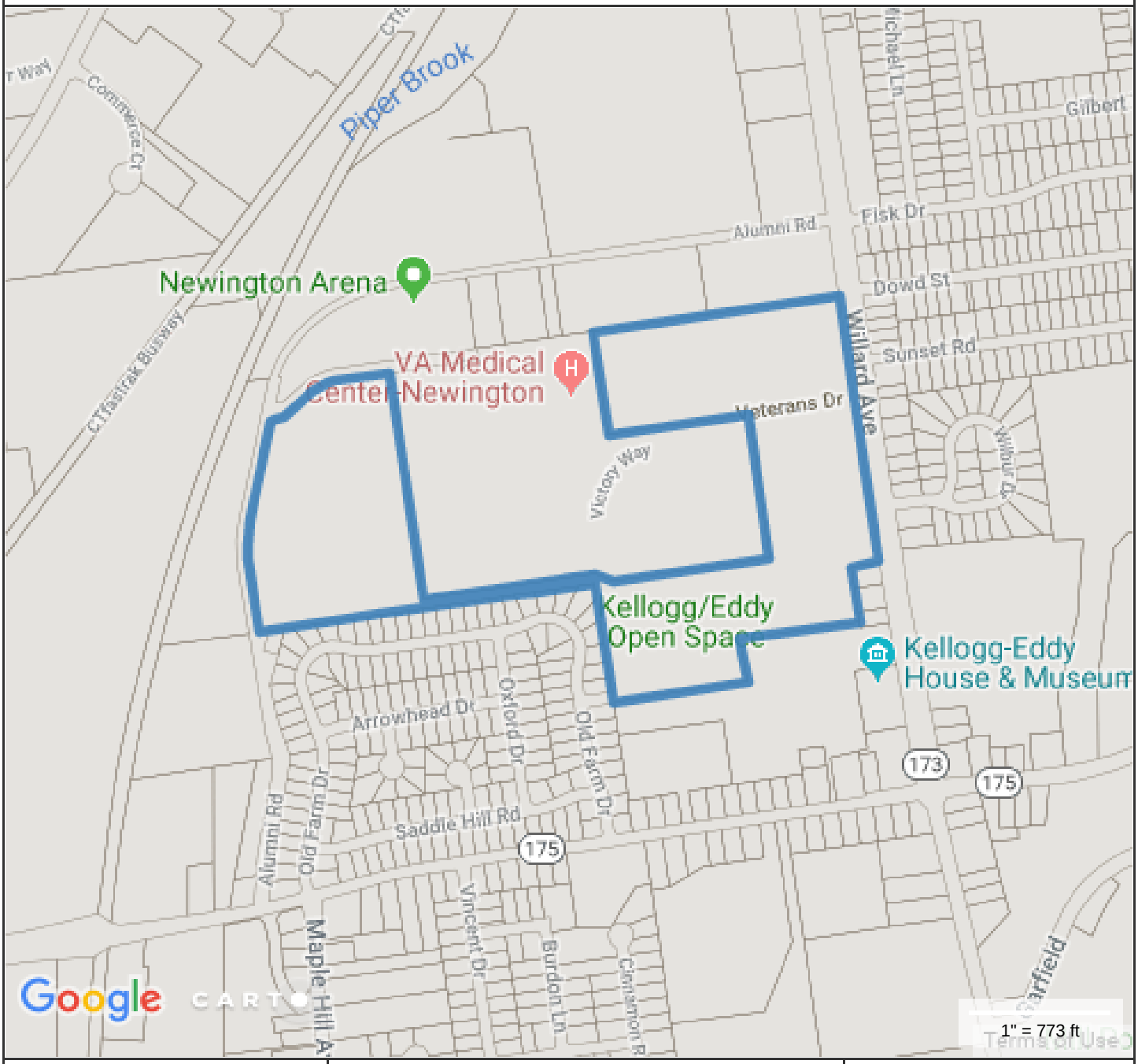
Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
NEWINGTON TOWN OF	189	67	09/20/1968		No	$0
NEWINGTON TOWN OF	182	151	10/03/1967		No	$0
NEWINGTON TOWN OF	180	281	07/27/1967		No	$0
U S GOVT	27	488	01/11/1930		No	$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
M-18-209	Mechanical	08/08/2018		Closed	Install HVAC per plans and specifications. Includes ductless heat-pump system with air to air heat
M-18-192	Mechanical	07/30/2018		Closed	INSTALL NEW GAS LINE & REPLACE BURNER
P-18-149	Fire Sprinkler	07/27/2018		Closed	INSTALL SPRINKLER HEADS IN NEW CEILINGS OF ART ROOMS 415, 415A, 416, 417, 418.

605 Willard Ave Newington CT



Property Information

Property ID	09003094-09/300/000
Location	605 WILLARD AVE
Owner	Current Owner

CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Jennifer Ardis

Subject: RE: 605 Willard Ave. - Sprint Monopole - CT60XC018

-----Original Message-----
From: Minor, Craig [mailto:CMinor@NewingtonCT.Gov]
Sent: Wednesday, September 14, 2016 11:01 AM
To: Jennifer Ardis <jardis@transcendwireless.com>
Subject: RE: 605 Willard Ave. - Sprint Monopole - CT60XC018

Jennifer:

I do not have a copy of the original approval, which apparently took place prior to 2004.

Craig Minor, AICP
Town Planner

-----Original Message-----
From: Jennifer Ardis [mailto:jardis@transcendwireless.com]
Sent: Wednesday, September 14, 2016 10:18 AM
To: Minor, Craig <CMinor@NewingtonCT.Gov>
Subject: 605 Willard Ave. - Sprint Monopole - CT60XC018
Importance: High

Good Morning Craig,

A newer requirement of the Connecticut Siting Council (CSC) is to provide them with the original conditions of approval for the site. Can you kindly send this over to me, as we'll need it in order to proceed with Connecticut Siting Council (CSC). Site address is in the subject line of the e-mail.

Please let me know and thank you in advance for the assistance.

Thanks,

Jennifer Ardis

Transcend Wireless

10 Industrial Ave., Suite 3

Mahwah, NJ 07430

Cell: 201-704-8157

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

T-Mobile Existing Facility

Site ID: CTHA342A

ATC Newington CT
605 Willard Avenue
Newington, CT 06111

September 10, 2018

EBI Project Number: 6218006068

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	15.06 %

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

EBI Consulting
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September 10, 2018

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

Emissions Analysis for Site: **CTHA342A – ATC Newington CT**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **605 Willard Avenue, Newington, 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 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 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 **605 Willard Avenue, Newington, 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) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 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.

4) 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.

5) 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.

6) 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.

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 **Ericsson AIR32 B2A/B66Aa** & **Ericsson AIR21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **RFS APXVAARR24_43-U-NA20** for 600 MHz and 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 **170 feet** above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B2A/B66Aa	Make / Model:	Ericsson AIR32 B2A/B66Aa	Make / Model:	Ericsson AIR32 B2A/B66Aa
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 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	4	Channel Count	4	Channel Count	4
Total TX Power(W):	200	Total TX Power(W):	200	Total TX Power(W):	200
ERP (W):	7,780.90	ERP (W):	7,780.90	ERP (W):	7,780.90
Antenna A1 MPE%	**1.04**	Antenna B1 MPE%	**1.04**	Antenna C1 MPE%	**1.04**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 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	2	Channel Count	2	Channel Count	2
Total TX Power(W):	55	Total TX Power(W):	55	Total TX Power(W):	55
ERP (W):	2,139.75	ERP (W):	2,139.75	ERP (W):	2,139.75
Antenna A2 MPE%	**0.29**	Antenna B2 MPE%	**0.29**	Antenna C2 MPE%	**0.29**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A3 MPE%	**0.77**	Antenna B3 MPE%	**0.77**	Antenna C3 MPE%	**0.77**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.10 %**
Nextel	**0.44** %
Town of Newington	**0.03** %
Verizon Wireless	**5.09** %
Clearwire	**0.08** %
AT&T	**4.52** %
Sprint	**2.80** %
Site Total MPE %:	**15.06 %**

T-Mobile Sector A Total:	2.10 %
T-Mobile Sector B Total:	2.10 %
T-Mobile Sector C Total:	2.10 %
Site Total:	15.06 %

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	1,556.18	170	4.16	PCS - 1900 MHz	1000.00	0.42%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	170	6.24	AWS - 2100 MHz	1000.00	0.62%
T-Mobile PCS - 1900 MHz GSM	1	583.57	170	0.78	PCS - 1900 MHz	1000.00	0.08%
T-Mobile PCS - 1900 MHz UMTS	1	1,556.18	170	2.08	PCS - 1900 MHz	1000.00	0.21%
T-Mobile 600 MHz LTE	2	788.97	170	2.11	600 MHz	400.00	0.53%
T-Mobile 700 MHz LTE	2	432.54	170	1.16	700 MHz	467.00	0.24%
						Total:	**2.10%**

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:	2.10 %
Sector B:	2.10 %
Sector C:	2.10 %
T-Mobile Maximum MPE % (Per Sector):	2.10 %
Site Total:	15.06 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.06%** 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.

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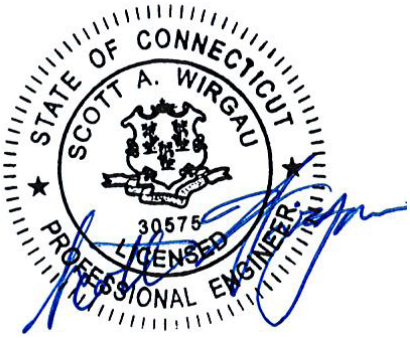
Structural Analysis Report

Structure	:	**179 ft Monopole**
ATC Site Name	:	**Newington CT, CT**
ATC Site Number	:	**370627**
Engineering Number	:	**12605188_C3_04**
Proposed Carrier	:	**Metro PCS**
Carrier Site Name	:	**CTHA342A**
Carrier Site Number	:	**CTHA342A**
Site Location	:	**605 Willard Ave.** **Newington, CT 06111-0000** **41.698400,-72.737100**
County	:	**Hartford**
Date	:	**December 14, 2018**
Max Usage	:	**66%**
Result	:	**Pass**

Prepared By:
Timothy Kassakatis
Structural Engineer I

Reviewed By:



Authorized by "EOR"
Mar 26 2019 5:11 PM cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by Metro PCS.

Supporting Documents

Tower Drawings	PiRod Engineering File #A-118092, dated August 10, 2001
Foundation Drawing	PiRod Engineering File #A-118092, dated August 10, 2001
Geotechnical Report	Clarence Welti, dated August 1, 2001
Mount Modification	CLS Engineering PLLC Project #41124-12306188-01-MA, dated January 22, 2019

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:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 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					
179.0	188.0	1	18' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington, CT
	179.0	1	5' Dipole			
		1	10' Omni			
		1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(6) 1 5/8" Coax	Metro PCS
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		3	Samsung U-RAS Premium-F FRH			
		3	Argus LLPX310R			
		3	DragonWave A-ANT-18G-2-C			
154.0	154.0	6	Powerwave LGP21401	Low Profile Platform	(6) 1 5/8" Coax (6) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 2" Conduit (1) 3" Conduit (1) 3/8" RET Control Cable	AT&T Mobility
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 12			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 32 B66			
		1	Raycap DC6-48-60-0-8F			
		3	Kathrein 800 10121			
		1	Quintel QS66512-2			
		3	CCI OPA-65R-LCUU-H8			
		2	CCI TPA-65R-LCUUUU-H8			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXVTM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
110.0	110.0	3	Samsung 700/850MHz Dual Band RRH	Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		3	Samsung PCS/AWS Dual Band RRH			
		6	Antel BXA-80063/4CF ___ 5°			
		2	RFS DB-T1-6Z-8AB-0Z			
		6	Commscope SBNHH-1D65B			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
170.0	170.0	3	Andrew LNX-6515DS-VTM	-	(6) 1 5/8" Coax (1) 1 1/4" Hybriflex	Metro PCS
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Ericsson RRUS 11 B12			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
170.0	170.0	3	Ericsson Radio 4449 B12,B71	Low Profile Platform with New Pipe attached using Site Pro SCX45-K	(2) 1 1/4" Fiber (1) 1 5/8" Fiber	Metro PCS
		3	Ericsson AIR-32 B2A/B66Aa			
		3	RFS APXVAARR24_43-U-NA20			

[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	64%	Pass
Shaft	66%	Pass
Base Plate	46%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,601.2	6,211.6	3,833.5	62%
Shear (Kips)	37.2	50.2	30.1	60%

*** 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) (°)
170.0	Ericsson Radio 4449 B12,B71	Metro PCS	2.417	1.754
	Ericsson AIR-32 B2A/B66Aa			
	RFS APXVAARR24_43-U-NA20			
160.0	DragonWave A-ANT-18G-2-C	Clearwire	2.117	1.681

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

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Standard Conditions

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

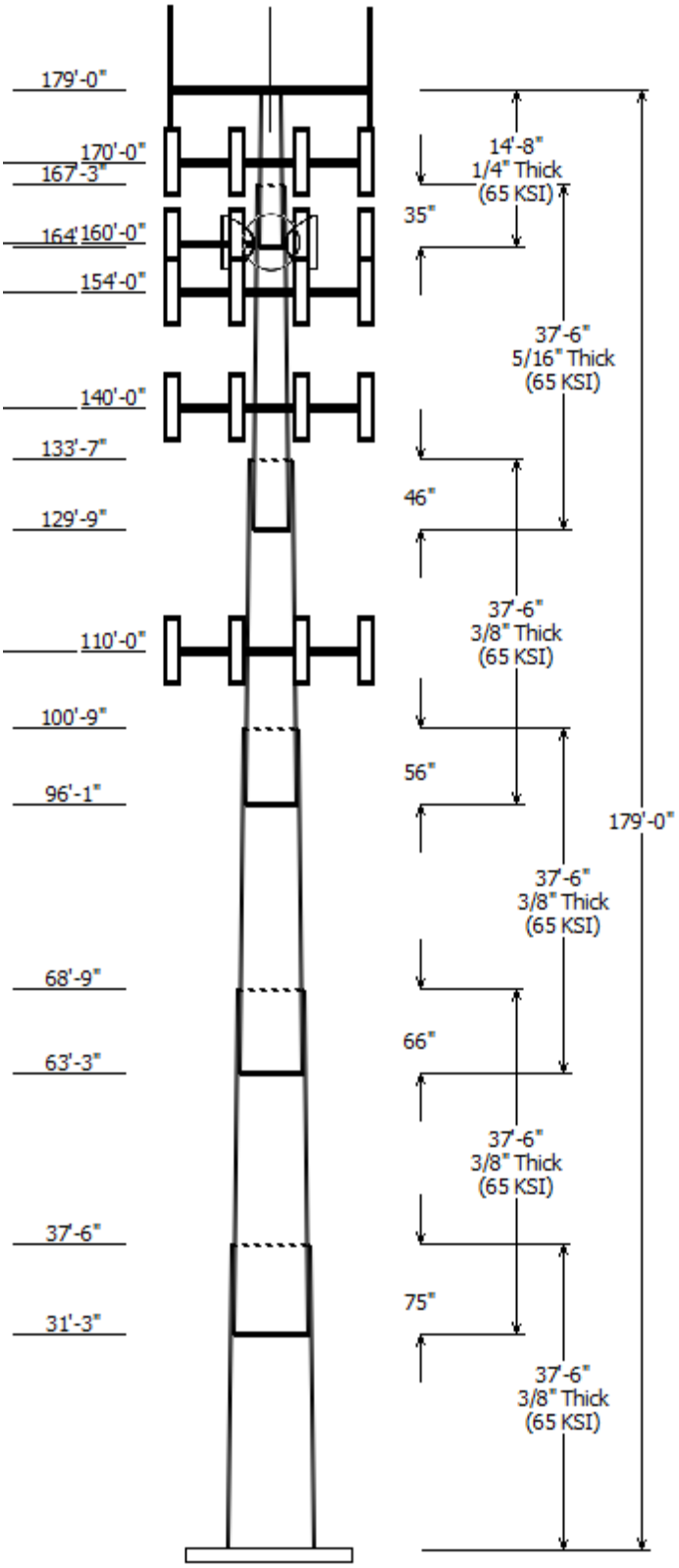
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

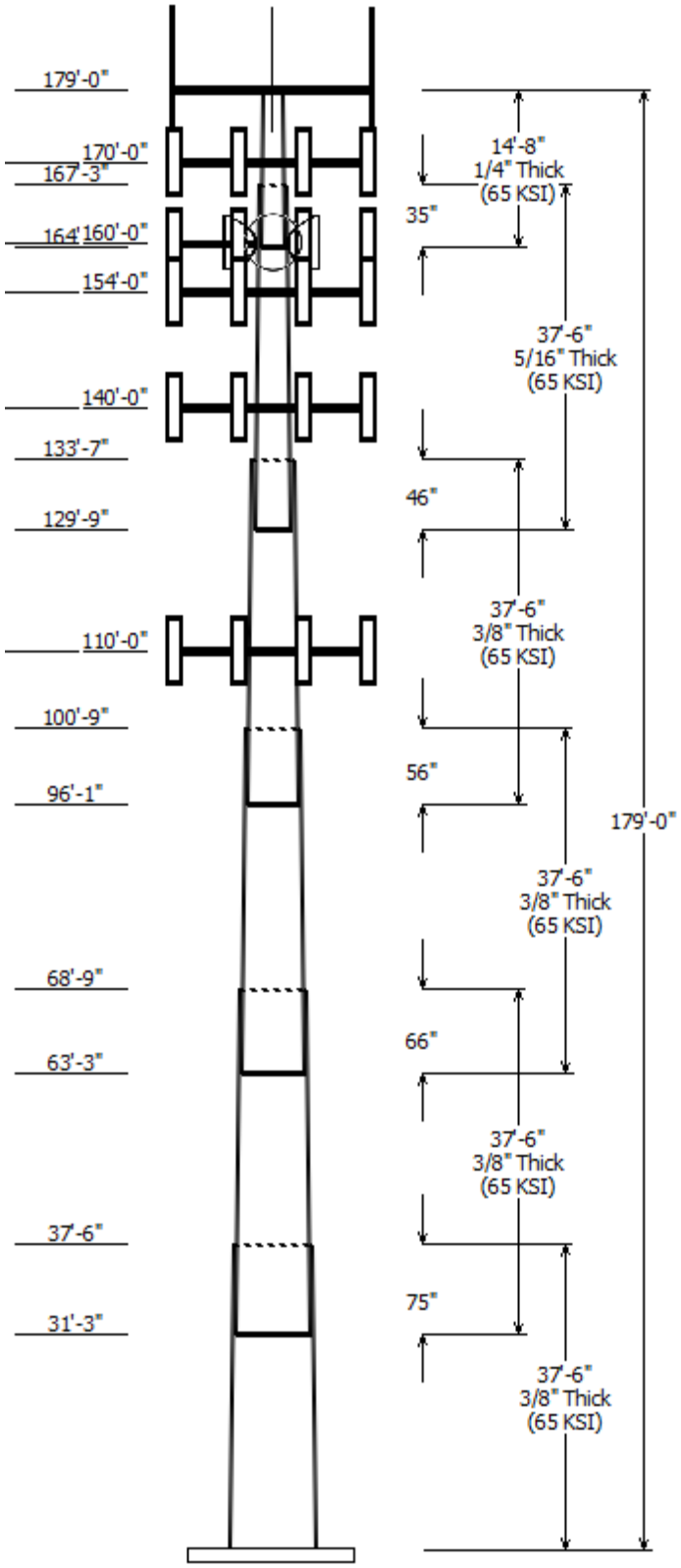
Pole :	370627	Code:	ANSI/TIA-222-G
Location :	Newington CT, CT		
Description :	179' Pirod Monopole		
Client :	METRO PCS INC	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	179.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.303771 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	37.500	51.60	63.00	0.375		0.000	18 Sides	65
2	37.500	42.86	54.25	0.375	Slip Joint	75.000	18 Sides	65
3	37.500	33.89	45.28	0.375	Slip Joint	66.000	18 Sides	65
4	37.500	24.67	36.06	0.375	Slip Joint	56.000	18 Sides	65
5	37.500	15.06	26.46	0.313	Slip Joint	46.000	18 Sides	65
6	14.667	12.00	16.45	0.250	Slip Joint	35.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
179.000	179.000	1	5' Dipole
179.000	179.000	1	10' Omni
179.000	179.000	1	Round Low Profile Platform
179.000	179.000	1	8' Yagi
179.000	188.000	1	18' Dipole
170.000	170.000	3	Ericsson KRY 112 144/1
170.000	170.000	3	RFS APXVAARR24_43-U-NA20
170.000	170.000	3	Ericsson AIR-32 B2A/B66Aa
170.000	170.000	3	Ericsson AIR 21, 1.3 M, B2A B4
170.000	170.000	3	Ericsson Radio 4449 B12,B71
170.000	170.000	1	Round Low Profile Platform
160.000	160.000	3	Argus LLPX310R
160.000	160.000	3	Samsung U-RAS Premium-F
160.000	160.000	3	DragonWave A-ANT-18G-2-C
160.000	160.000	3	DragonWave Horizon Compact
160.000	160.000	3	RCU
160.000	160.000	1	Side Arms
154.000	154.000	2	CCI TPA-65R-LCUUUU-H8
154.000	154.000	1	Quintel QS66512-2
154.000	154.000	1	Raycap DC6-48-60-0-8F
154.000	154.000	3	Kathrein Scala 800 10121
154.000	154.000	3	Ericsson RRUS 12
154.000	154.000	3	Ericsson RRUS 32
154.000	154.000	3	Ericsson RRUS 32 B66
154.000	154.000	3	CCI OPA-65R-LCUU-H8
154.000	154.000	3	Ericsson RRUS 4478 B14
154.000	154.000	3	Ericsson RRUS 32 B2
154.000	154.000	3	Ericsson RRUS 11 (Band 12) (55
154.000	154.000	2	Raycap DC6-48-60-18-8F
154.000	154.000	6	Powerwave LGP21401
154.000	154.000	1	Round Low Profile Platform
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20
140.000	140.000	2	RFS APXVSPP18-C-A20
140.000	140.000	1	RFS APXV9ERR18-C-A20
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
140.000	140.000	1	Round Low Profile Platform
110.000	110.000	6	Commscope SBNHH-1D65B
110.000	110.000	1	Flat Low Profile Platform
110.000	110.000	3	Samsung 700/850MHz Dual



110.000	110.000	2	RFS DB-T1-6Z-8AB-0Z
110.000	110.000	6	Antel BXA-80063/4CF ___ 5°
110.000	110.000	3	Samsung PCS/AWS Dual Band

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	110.0	1 5/8" Coax	No
0.000	110.0	1 5/8" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	2" Conduit	No
0.000	154.0	3" Conduit	No
0.000	154.0	3/8" RET Control	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 1/4" Fiber	No
0.000	170.0	1 5/8" Coax	No
0.000	170.0	1 5/8" Fiber	No
0.000	179.0	7/8" Coax	No

Load Cases

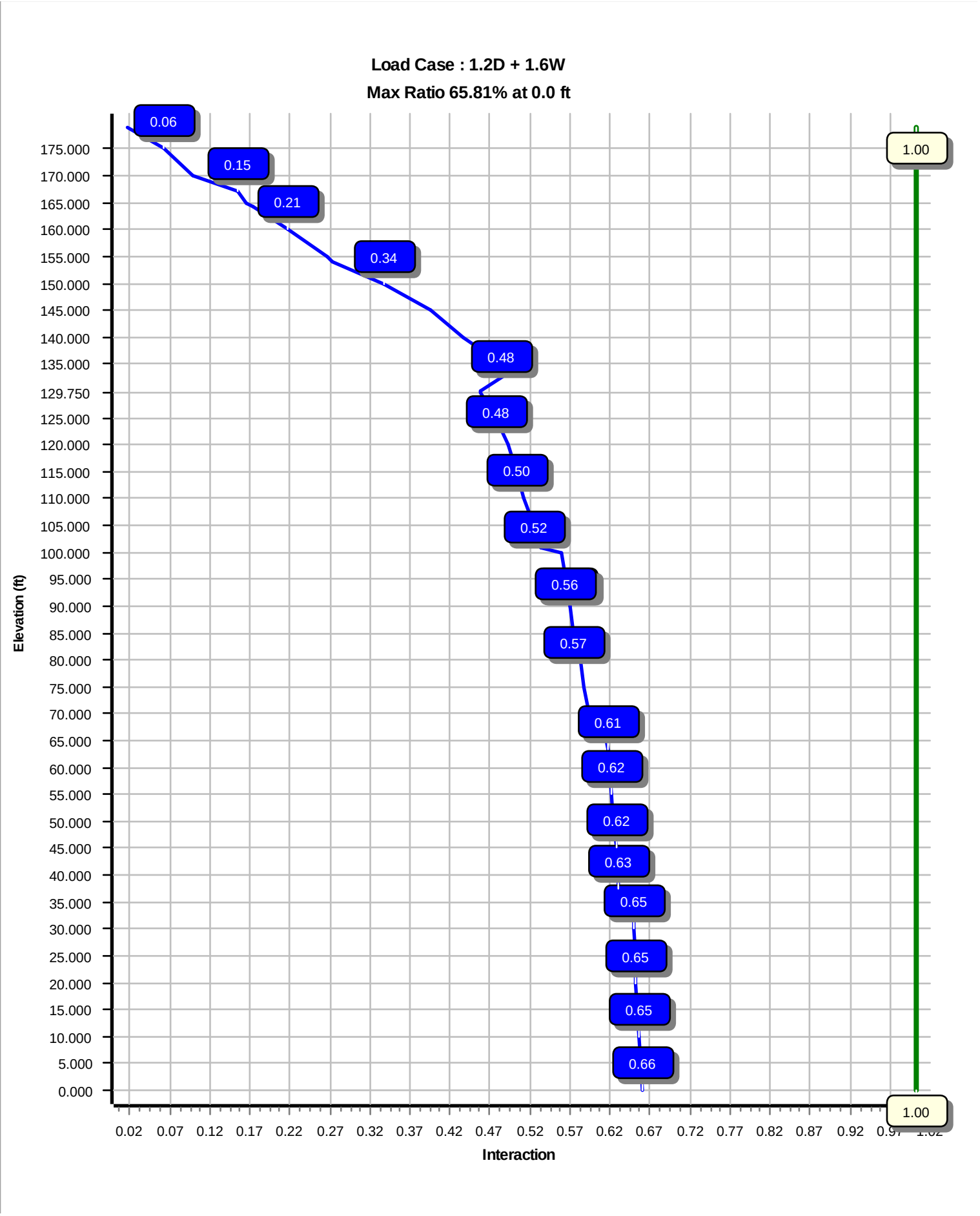
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	3833.46	30.14	59.70
0.9D + 1.6W	3773.10	30.12	44.77
1.2D + 1.0Di + 1.0Wi	1242.26	9.22	99.84
(1.2 + 0.2Sds) * DL + E ELFM	284.27	1.95	59.84
(1.2 + 0.2Sds) * DL + E EMAM	324.72	2.40	59.84
(0.9 - 0.2Sds) * DL + E ELFM	278.65	1.94	41.59
(0.9 - 0.2Sds) * DL + E EMAM	317.47	2.40	41.59
1.0D + 1.0W	908.42	7.20	49.78

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	160.00	25.398	1.681


Load Case : 1.2D + 1.6W
Max Ratio 65.81% at 0.0 ft
0.06
0.15
0.21
0.34
0.48
0.48
0.50
0.52
0.56
0.57
0.61
0.62
0.62
0.63
0.65
0.65
0.65
0.66
1.00
1.00
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
129.750
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
Interaction

Site Number:	370627	Code: ANSI/TIA-222-G	
Site Name:	Newington CT, CT	Engineering Number:12605188_C3_04	12/14/2018 4:30:59 PM
Customer:	METRO PCS INC		

Analysis Parameters

Location :	HARTFORD County, CT	Height (ft) :	179
Code :	ANSI/TIA-222-G	Base Diameter (in) :	63.00
Shape :	18 Sides	Top Diameter (in) :	12.00
Pole Type :	Taper	Taper (in/ft) :	0.304
Pole Manfacturer :	Pirod	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 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):	2.94				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.182	S_1:	0.064	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.194	S_{d1}:	0.102		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 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

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	37.500	0.3750	65		0.00	8,646	63.00	0.00	74.54	36933.4	27.86	168.00	51.60	37.50	60.98	20222.7	22.50	137.62	0.303771
2-18	37.500	0.3750	65	Slip	75.00	7,318	54.25	31.25	64.13	23524.0	23.75	144.69	42.86	68.75	50.57	11536.1	18.39	114.31	0.303771
3-18	37.500	0.3750	65	Slip	66.00	5,956	45.28	63.25	53.45	13622.2	19.53	120.76	33.89	100.75	39.90	5663.6	14.17	90.39	0.303771
4-18	37.500	0.3750	65	Slip	56.00	4,555	36.06	96.08	42.48	6834.9	15.19	96.17	24.67	133.58	28.92	2156.7	9.84	65.79	0.303771
5-18	37.500	0.3125	65	Slip	46.00	2,589	26.46	129.75	25.93	2240.4	13.17	84.67	15.06	167.25	14.64	402.7	6.74	48.22	0.303771
6-18	14.667	0.2500	65	Slip	35.00	554	16.45	164.33	12.86	426.6	9.84	65.82	12.00	179.00	9.32	162.6	6.70	48.00	0.303771
				Shaft Weight		29,617													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
179.00	10' Omni	1	0.000	0.000	25.00	3.000	1.00
179.00	18' Dipole	1	0.000	9.000	55.00	6.770	1.00
179.00	5' Dipole	1	0.000	0.000	15.00	1.740	1.00
179.00	8' Yagi	1	0.000	0.000	30.00	12.000	1.00
179.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
170.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
170.00	Ericsson AIR-32 B2A/B66Aa	3	0.000	0.000	132.20	6.510	0.71
170.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
170.00	Ericsson Radio 4449 B12,B71	3	0.000	0.000	74.00	1.640	0.50
170.00	RFS APXVAARR24_43-U-NA20	3	0.000	0.000	127.90	20.240	0.63
170.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
160.00	Argus LLPX310R	3	0.000	0.000	28.60	4.290	0.63
160.00	DragonWave A-ANT-18G-2-C	3	0.000	0.000	27.10	4.690	0.67
160.00	DragonWave Horizon Compact	3	0.000	0.000	11.50	0.840	0.50
160.00	RCU	3	0.000	0.000	1.00	0.160	0.50
160.00	Samsung U-RAS Premium-F FRH	3	0.000	0.000	33.00	1.560	0.50
160.00	Side Arms	1	0.000	0.000	560.00	8.500	1.00
154.00	CCI OPA-65R-LCUU-H8	3	0.000	0.000	88.00	12.980	0.79
154.00	CCI TPA-65R-LCUUUU-H8	2	0.000	0.000	81.60	13.300	0.69
154.00	Ericsson RRUS 11 (Band 12) (55	3	0.000	0.000	55.00	2.520	0.50
154.00	Ericsson RRUS 12	3	0.000	0.000	50.00	3.150	0.67
154.00	Ericsson RRUS 32	3	0.000	0.000	55.10	2.850	0.67
154.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	3.200	0.77
154.00	Ericsson RRUS 32 B66	3	0.000	0.000	53.00	3.200	1.00
154.00	Ericsson RRUS 4478 B14	3	0.000	0.000	59.90	1.840	0.50
154.00	Kathrein Scala 800 10121	3	0.000	0.000	46.30	5.160	0.68
154.00	Powerwave LGP21401	6	0.000	0.000	14.10	1.100	0.50
154.00	Quintel QS66512-2	1	0.000	0.000	111.00	8.130	0.74
154.00	Raycap DC6-48-60-0-8F	1	0.000	0.000	16.00	4.790	0.67
154.00	Raycap DC6-48-60-18-8F	2	0.000	0.000	31.80	1.280	1.00
154.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
140.00	Alcatel-Lucent 1900MHz RRH	3	0.000	0.000	44.00	3.260	0.67
140.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.000	0.000	64.00	2.060	0.67
140.00	Alcatel-Lucent TD-RRH8x20	3	0.000	0.000	66.10	3.690	0.67
140.00	RFS APXV9ERR18-C-A20	1	0.000	0.000	62.00	8.020	0.71
140.00	RFS APXVSPP18-C-A20	2	0.000	0.000	57.00	8.020	0.69
140.00	RFS APXVTM14-C-I20	3	0.000	0.000	56.20	6.340	0.66
140.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
110.00	Antel BXA-80063/4CF ___ 5°	6	0.000	0.000	9.90	4.710	0.64
110.00	Commscope SBNHH-1D65B	6	0.000	0.000	40.60	8.080	0.69
110.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
110.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.67
110.00	Samsung 700/850MHz Dual Band	3	0.000	0.000	70.30	1.880	0.50
110.00	Samsung PCS/AWS Dual Band	3	0.000	0.000	84.40	1.880	0.50

Totals Num Loadings:44 111 13314.20

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	179.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Town of Newington, CT
0.00	170.00	2	1 1/4" Fiber	1.25	1.05	N	0.00	N	Metro PCS
0.00	170.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
0.00	170.00	1	1 5/8" Fiber	1.63	1.61	N	0.00	N	Metro PCS
0.00	160.00	3	0.28" Fiber	0.28	0.03	N	0.00	N	Clearwire
0.00	160.00	1	0.32" Cable	0.32	0.06	N	0.00	N	Clearwire
0.00	160.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
0.00	160.00	3	5/8" Coax	0.87	0.15	N	0.00	N	Clearwire
0.00	154.00	2	0.39" Fiber Trunk	0.39	0.07	N	0.00	N	AT&T Mobility
0.00	154.00	6	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	154.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	154.00	2	2" Conduit	2.38	3.65	N	0.00	N	AT&T Mobility
0.00	154.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	154.00	1	3/8" RET Control Cable	0.38	0.23	N	0.00	N	AT&T Mobility
0.00	140.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	110.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	110.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon

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		0.3750	63.000	74.537	36,933.4	27.86	168.00	68.6	1154.	0.0	0.0
5.00		0.3750	61.481	72.729	34,310.8	27.15	163.95	69.5	1099.	0.0	1,252.8
10.00		0.3750	59.962	70.921	31,815.3	26.43	159.90	70.3	1045.	0.0	1,222.0
15.00		0.3750	58.443	69.113	29,443.9	25.72	155.85	71.2	992.3	0.0	1,191.3
20.00		0.3750	56.925	67.306	27,193.4	25.00	151.80	72.0	940.9	0.0	1,160.5
25.00		0.3750	55.406	65.498	25,060.6	24.29	147.75	72.8	890.9	0.0	1,129.8
30.00		0.3750	53.887	63.690	23,042.3	23.57	143.70	73.7	842.2	0.0	1,099.0
31.25	Bot - Section 2	0.3750	53.507	63.238	22,555.3	23.40	142.69	73.9	830.3	0.0	269.9
35.00		0.3750	52.368	61.882	21,135.4	22.86	139.65	74.5	794.9	0.0	1,608.0
37.50	Top - Section 1	0.3750	52.359	61.871	21,123.9	22.86	139.62	74.5	794.6	0.0	1,052.8
40.00		0.3750	51.599	60.967	20,211.6	22.50	137.60	74.9	771.5	0.0	522.5
45.00		0.3750	50.080	59.160	18,466.5	21.78	133.55	75.8	726.3	0.0	1,021.9
50.00		0.3750	48.561	57.352	16,824.8	21.07	129.50	76.6	682.4	0.0	991.2
55.00		0.3750	47.043	55.544	15,283.5	20.36	125.45	77.5	639.9	0.0	960.4
60.00		0.3750	45.524	53.736	13,839.3	19.64	121.40	78.3	598.8	0.0	929.6
63.25	Bot - Section 3	0.3750	44.536	52.561	12,951.1	19.18	118.76	78.8	572.8	0.0	587.8
65.00		0.3750	44.005	51.929	12,489.0	18.93	117.35	79.1	559.0	0.0	627.5
68.75	Top - Section 2	0.3750	43.616	51.465	12,157.8	18.75	116.31	79.4	549.0	0.0	1,319.4
70.00		0.3750	43.236	51.014	11,840.3	18.57	115.30	79.6	539.4	0.0	217.9
75.00		0.3750	41.717	49.206	10,625.7	17.85	111.25	80.4	501.7	0.0	852.6
80.00		0.3750	40.198	47.398	9,497.0	17.14	107.20	81.2	465.3	0.0	821.8
85.00		0.3750	38.679	45.590	8,451.3	16.42	103.15	82.1	430.4	0.0	791.0
90.00		0.3750	37.161	43.783	7,485.3	15.71	99.09	82.6	396.7	0.0	760.3
95.00		0.3750	35.642	41.975	6,595.9	15.00	95.04	82.6	364.5	0.0	729.5
96.08	Bot - Section 4	0.3750	35.313	41.583	6,412.9	14.84	94.17	82.6	357.7	0.0	154.0
100.0		0.3750	34.123	40.167	5,779.8	14.28	90.99	82.6	333.6	0.0	1,101.4
100.7	Top - Section 3	0.3750	34.645	40.788	6,052.3	14.53	92.39	82.6	344.1	0.0	206.6
105.0		0.3750	33.354	39.252	5,393.7	13.92	88.94	82.6	318.5	0.0	578.8
110.0		0.3750	31.835	37.444	4,682.3	13.21	84.89	82.6	289.7	0.0	652.4
115.0		0.3750	30.316	35.636	4,036.4	12.49	80.84	82.6	262.2	0.0	621.7
120.0		0.3750	28.797	33.829	3,452.7	11.78	76.79	82.6	236.2	0.0	590.9
125.0		0.3750	27.279	32.021	2,928.3	11.06	72.74	82.6	211.4	0.0	560.2
129.7	Bot - Section 5	0.3750	25.836	30.304	2,481.9	10.38	68.90	82.6	189.2	0.0	503.7
130.0		0.3750	25.760	30.213	2,459.8	10.35	68.69	82.6	188.1	0.0	47.8
133.5	Top - Section 4	0.3125	25.296	24.780	1,954.2	12.51	80.95	82.6	152.2	0.0	669.2
135.0		0.3125	24.866	24.353	1,854.9	12.27	79.57	82.6	146.9	0.0	118.4
140.0		0.3125	23.347	22.847	1,531.6	11.41	74.71	82.6	129.2	0.0	401.5
145.0		0.3125	21.828	21.340	1,248.1	10.55	69.85	82.6	112.6	0.0	375.9
150.0		0.3125	20.309	19.834	1,002.0	9.70	64.99	82.6	97.2	0.0	350.3
154.0		0.3125	19.094	18.629	830.2	9.01	61.10	82.6	85.6	0.0	261.8
155.0		0.3125	18.791	18.327	790.6	8.84	60.13	82.6	82.9	0.0	62.9
160.0		0.3125	17.272	16.821	611.2	7.98	55.27	82.6	69.7	0.0	299.0
164.3	Bot - Section 6	0.3125	15.955	15.515	479.7	7.24	51.06	82.6	59.2	0.0	238.4
165.0		0.3125	15.753	15.314	461.3	7.13	50.41	82.6	57.7	0.0	64.0
167.2	Top - Section 5	0.2500	15.569	12.155	360.4	9.22	62.28	82.6	45.6	0.0	209.8
170.0		0.2500	14.734	11.493	304.6	8.63	58.94	82.6	40.7	0.0	110.6
175.0		0.2500	13.215	10.287	218.5	7.56	52.86	82.6	32.6	0.0	185.3
179.0		0.2500	12.000	9.323	162.6	6.70	48.00	82.6	26.7	0.0	133.5
											29,617.5

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12605188_C3_04 12/14/2018 4:30:59 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,503.3					0.0	275.4	476.7	1,778.7	0.0	0.0
10.00		464.9	1,466.4					0.0	275.4	464.9	1,741.8	0.0	0.0
15.00		453.1	1,429.5					0.0	275.4	453.1	1,704.9	0.0	0.0
20.00		441.3	1,392.6					0.0	275.4	441.3	1,668.0	0.0	0.0
25.00		429.6	1,355.7					0.0	275.4	429.6	1,631.1	0.0	0.0
30.00		264.2	1,318.8					0.0	275.4	264.2	1,594.2	0.0	0.0
31.25	Bot - Section 2	213.1	323.9					0.0	68.9	213.1	392.8	0.0	0.0
35.00		268.7	1,929.6					0.0	206.6	268.7	2,136.1	0.0	0.0
37.50	Top - Section 1	216.5	1,263.3					0.0	137.7	216.5	1,401.0	0.0	0.0
40.00		326.4	627.0					0.0	137.7	326.4	764.7	0.0	0.0
45.00		436.1	1,226.3					0.0	275.4	436.1	1,501.7	0.0	0.0
50.00		435.8	1,189.4					0.0	275.4	435.8	1,464.8	0.0	0.0
55.00		433.9	1,152.5					0.0	275.4	433.9	1,427.9	0.0	0.0
60.00		355.7	1,115.6					0.0	275.4	355.7	1,391.0	0.0	0.0
63.25	Bot - Section 3	215.4	705.3					0.0	179.0	215.4	884.3	0.0	0.0
65.00		237.6	753.0					0.0	96.4	237.6	849.4	0.0	0.0
68.75	Top - Section 2	215.2	1,583.2					0.0	206.6	215.2	1,789.8	0.0	0.0
70.00		265.6	261.5					0.0	68.9	265.6	330.4	0.0	0.0
75.00		420.5	1,023.1					0.0	275.4	420.5	1,298.5	0.0	0.0
80.00		412.7	986.2					0.0	275.4	412.7	1,261.6	0.0	0.0
85.00		404.0	949.3					0.0	275.4	404.0	1,224.7	0.0	0.0
90.00		394.6	912.3					0.0	275.4	394.6	1,187.7	0.0	0.0
95.00		236.3	875.4					0.0	275.4	236.3	1,150.8	0.0	0.0
96.08	Bot - Section 4	192.7	184.8					0.0	59.7	192.7	244.5	0.0	0.0
100.00		179.8	1,321.7					0.0	215.7	179.8	1,537.4	0.0	0.0
100.75	Top - Section 3	188.0	247.9					0.0	41.3	188.0	289.2	0.0	0.0
105.00		341.5	694.5					0.0	234.1	341.5	928.6	0.0	0.0
110.00	Appurtenance(s)	358.0	782.9	3,148.7	0.0	0.0	2,826.1	0.0	275.4	3,506.7	3,884.5	0.0	0.0
115.00		345.3	746.0					0.0	230.3	345.3	976.3	0.0	0.0
120.00		332.0	709.1					0.0	230.3	332.0	939.4	0.0	0.0
125.00		310.6	672.2					0.0	230.3	310.6	902.5	0.0	0.0
129.75	Bot - Section 5	155.7	604.4					0.0	218.8	155.7	823.2	0.0	0.0
130.00		117.5	57.3					0.0	11.5	117.5	68.8	0.0	0.0
133.58	Top - Section 4	152.0	803.1					0.0	165.0	152.0	968.1	0.0	0.0
135.00		186.8	142.1					0.0	65.2	186.8	207.4	0.0	0.0
140.00	Appurtenance(s)	281.3	481.8	2,613.2	0.0	0.0	2,840.3	0.0	230.3	2,894.4	3,552.4	0.0	0.0
145.00		265.6	451.1					0.0	206.3	265.6	657.4	0.0	0.0
150.00		226.1	420.3					0.0	206.3	226.1	626.6	0.0	0.0
154.00	Appurtenance(s)	120.7	314.1	4,950.8	0.0	0.0	3,983.2	0.0	165.0	5,071.5	4,462.3	0.0	0.0
155.00		135.8	75.5					0.0	12.8	135.8	88.3	0.0	0.0
160.00	Appurtenance(s)	202.8	358.8	1,165.3	0.0	0.0	1,036.3	0.0	64.0	1,368.1	1,459.1	0.0	0.0
164.33	Bot - Section 6	104.2	286.1					0.0	50.0	104.2	336.1	0.0	0.0
165.00		59.1	76.7					0.0	7.7	59.1	84.4	0.0	0.0
167.25	Top - Section 5	98.2	251.8					0.0	26.0	98.2	277.7	0.0	0.0
170.00	Appurtenance(s)	142.3	132.8	3,527.6	0.0	0.0	3,341.2	0.0	31.7	3,669.9	3,505.7	0.0	0.0
175.00		154.3	222.3					0.0	5.9	154.3	228.3	0.0	0.0
179.00	Appurtenance(s)	65.0	160.2	1,923.9	0.0	2,323.4	1,950.0	0.0	4.8	1,988.9	2,114.9	0.0	0.0

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Totals:	30,303.8	59,739.0	0.00	0.00

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12605188_C3_04 12/14/2018 4:31:07 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 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	-59.70	-30.14	0.00	-3,833.46	0.00	3,833.46	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.658
5.00	-57.85	-29.81	0.00	-3,682.77	0.00	3,682.77	4,547.42	2,273.71	11,437.5	5,727.25	0.08	-0.14	0.656
10.00	-56.03	-29.49	0.00	-3,533.72	0.00	3,533.72	4,488.01	2,244.00	11,005.7	5,511.07	0.31	-0.29	0.654
15.00	-54.25	-29.17	0.00	-3,386.30	0.00	3,386.30	4,425.86	2,212.93	10,575.0	5,295.36	0.70	-0.45	0.652
20.00	-52.50	-28.86	0.00	-3,240.44	0.00	3,240.44	4,360.98	2,180.49	10,145.6	5,080.38	1.26	-0.61	0.650
25.00	-50.79	-28.56	0.00	-3,096.13	0.00	3,096.13	4,293.36	2,146.68	9,718.32	4,866.38	1.99	-0.77	0.648
30.00	-49.15	-28.37	0.00	-2,953.31	0.00	2,953.31	4,223.01	2,111.51	9,293.47	4,653.64	2.89	-0.95	0.646
31.25	-48.71	-28.23	0.00	-2,917.84	0.00	2,917.84	4,205.00	2,102.50	9,187.70	4,600.68	3.14	-0.99	0.646
35.00	-46.53	-28.01	0.00	-2,812.00	0.00	2,812.00	4,149.93	2,074.96	8,871.62	4,442.40	3.98	-1.13	0.644
37.50	-45.08	-27.84	0.00	-2,741.97	0.00	2,741.97	4,149.47	2,074.73	8,869.01	4,441.10	4.59	-1.22	0.628
40.00	-44.26	-27.61	0.00	-2,672.37	0.00	2,672.37	4,111.89	2,055.95	8,659.38	4,336.13	5.26	-1.32	0.627
45.00	-42.68	-27.27	0.00	-2,534.35	0.00	2,534.35	4,034.69	2,017.35	8,243.04	4,127.64	6.73	-1.50	0.625
50.00	-41.14	-26.93	0.00	-2,398.00	0.00	2,398.00	3,954.76	1,977.38	7,830.99	3,921.32	8.41	-1.69	0.622
55.00	-39.63	-26.60	0.00	-2,263.33	0.00	2,263.33	3,872.09	1,936.05	7,423.76	3,717.40	10.28	-1.89	0.619
60.00	-38.17	-26.31	0.00	-2,130.36	0.00	2,130.36	3,786.70	1,893.35	7,021.86	3,516.15	12.37	-2.09	0.616
63.25	-37.25	-26.13	0.00	-2,044.87	0.00	2,044.87	3,729.72	1,864.86	6,763.73	3,386.89	13.84	-2.23	0.614
65.00	-36.35	-25.93	0.00	-1,999.15	0.00	1,999.15	3,698.56	1,849.28	6,625.81	3,317.83	14.67	-2.31	0.613
68.75	-34.53	-25.71	0.00	-1,901.90	0.00	1,901.90	3,675.54	1,837.77	6,525.34	3,267.52	16.55	-2.47	0.592
70.00	-34.15	-25.51	0.00	-1,869.76	0.00	1,869.76	3,652.91	1,826.45	6,427.71	3,218.63	17.21	-2.53	0.590
75.00	-32.77	-25.16	0.00	-1,742.19	0.00	1,742.19	3,560.66	1,780.33	6,041.44	3,025.21	19.97	-2.75	0.585
80.00	-31.43	-24.81	0.00	-1,616.38	0.00	1,616.38	3,465.68	1,732.84	5,662.31	2,835.36	22.97	-2.97	0.579
85.00	-30.13	-24.47	0.00	-1,492.32	0.00	1,492.32	3,367.96	1,683.98	5,290.83	2,649.35	26.21	-3.21	0.572
90.00	-28.86	-24.13	0.00	-1,369.99	0.00	1,369.99	3,252.82	1,626.41	4,905.37	2,456.33	29.70	-3.45	0.567
95.00	-27.67	-23.89	0.00	-1,249.35	0.00	1,249.35	3,118.51	1,559.26	4,506.69	2,256.70	33.44	-3.70	0.563
96.08	-27.38	-23.75	0.00	-1,223.47	0.00	1,223.47	3,089.41	1,544.71	4,422.54	2,214.56	34.29	-3.75	0.562
100.00	-25.81	-23.52	0.00	-1,130.45	0.00	1,130.45	2,984.21	1,492.10	4,124.91	2,065.52	37.45	-3.96	0.556
100.75	-25.48	-23.37	0.00	-1,112.81	0.00	1,112.81	3,030.38	1,515.19	4,254.26	2,130.29	38.08	-4.00	0.531
105.00	-24.48	-23.07	0.00	-1,013.47	0.00	1,013.47	2,916.22	1,458.11	3,938.09	1,971.97	41.74	-4.23	0.523
110.00	-20.79	-19.37	0.00	-898.13	0.00	898.13	2,781.91	1,390.96	3,581.76	1,793.54	46.30	-4.48	0.508
115.00	-19.76	-19.04	0.00	-801.28	0.00	801.28	2,647.61	1,323.80	3,242.33	1,623.57	51.13	-4.74	0.501
120.00	-18.76	-18.72	0.00	-706.09	0.00	706.09	2,513.30	1,256.65	2,919.79	1,462.07	56.23	-5.00	0.491
125.00	-17.80	-18.41	0.00	-612.51	0.00	612.51	2,378.99	1,189.50	2,614.15	1,309.02	61.61	-5.28	0.476
129.75	-16.96	-18.22	0.00	-525.07	0.00	525.07	2,251.40	1,125.70	2,339.44	1,171.46	66.98	-5.54	0.456
130.00	-16.86	-18.13	0.00	-520.52	0.00	520.52	2,244.69	1,122.34	2,325.40	1,164.43	67.27	-5.55	0.455
133.58	-15.87	-17.92	0.00	-455.57	0.00	455.57	1,841.02	920.51	1,881.29	942.04	71.51	-5.76	0.493
135.00	-15.62	-17.76	0.00	-430.19	0.00	430.19	1,809.31	904.65	1,816.65	909.67	73.23	-5.84	0.482
140.00	-12.32	-14.58	0.00	-341.36	0.00	341.36	1,697.39	848.69	1,597.52	799.95	79.49	-6.13	0.434
145.00	-11.63	-14.30	0.00	-268.48	0.00	268.48	1,585.46	792.73	1,392.48	697.27	86.06	-6.42	0.393
150.00	-10.97	-14.04	0.00	-196.99	0.00	196.99	1,473.54	736.77	1,201.51	601.65	92.91	-6.68	0.335
154.00	-7.13	-8.50	0.00	-140.82	0.00	140.82	1,384.00	692.00	1,058.88	530.23	98.59	-6.87	0.271
155.00	-7.04	-8.37	0.00	-132.32	0.00	132.32	1,361.62	680.81	1,024.63	513.08	100.03	-6.92	0.263
160.00	-5.73	-6.85	0.00	-90.49	0.00	90.49	1,249.70	624.85	861.82	431.55	107.37	-7.12	0.214
164.33	-5.40	-6.71	0.00	-60.82	0.00	60.82	1,152.70	576.35	732.11	366.60	113.89	-7.27	0.171
165.00	-5.32	-6.64	0.00	-56.34	0.00	56.34	1,137.78	568.89	713.10	357.08	114.91	-7.30	0.163
167.25	-5.05	-6.52	0.00	-41.39	0.00	41.39	903.09	451.54	563.74	282.29	118.35	-7.36	0.152
170.00	-2.04	-2.43	0.00	-23.47	0.00	23.47	853.84	426.92	503.47	252.11	122.60	-7.43	0.096
175.00	-1.84	-2.25	0.00	-11.32	0.00	11.32	764.30	382.15	402.61	201.60	130.41	-7.51	0.059
179.00	0.00	-1.99	0.00	-2.32	0.00	2.32	692.67	346.34	330.04	165.26	136.70	-7.54	0.014

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

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

Wind Importance Factor 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,127.5					0.0	206.5	476.7	1,334.1	0.0	0.0
10.00		464.9	1,099.8					0.0	206.5	464.9	1,306.4	0.0	0.0
15.00		453.1	1,072.1					0.0	206.5	453.1	1,278.7	0.0	0.0
20.00		441.3	1,044.5					0.0	206.5	441.3	1,251.0	0.0	0.0
25.00		429.6	1,016.8					0.0	206.5	429.6	1,223.3	0.0	0.0
30.00		264.2	989.1					0.0	206.5	264.2	1,195.6	0.0	0.0
31.25	Bot - Section 2	213.1	242.9					0.0	51.6	213.1	294.6	0.0	0.0
35.00		268.7	1,447.2					0.0	154.9	268.7	1,602.1	0.0	0.0
37.50	Top - Section 1	216.5	947.5					0.0	103.3	216.5	1,050.8	0.0	0.0
40.00		326.4	470.2					0.0	103.3	326.4	573.5	0.0	0.0
45.00		436.1	919.7					0.0	206.5	436.1	1,126.3	0.0	0.0
50.00		435.8	892.0					0.0	206.5	435.8	1,098.6	0.0	0.0
55.00		433.9	864.4					0.0	206.5	433.9	1,070.9	0.0	0.0
60.00		355.7	836.7					0.0	206.5	355.7	1,043.2	0.0	0.0
63.25	Bot - Section 3	215.4	529.0					0.0	134.3	215.4	663.3	0.0	0.0
65.00		237.6	564.8					0.0	72.3	237.6	637.1	0.0	0.0
68.75	Top - Section 2	215.2	1,187.4					0.0	154.9	215.2	1,342.3	0.0	0.0
70.00		265.6	196.2					0.0	51.6	265.6	247.8	0.0	0.0
75.00		420.5	767.3					0.0	206.5	420.5	973.9	0.0	0.0
80.00		412.7	739.6					0.0	206.5	412.7	946.2	0.0	0.0
85.00		404.0	711.9					0.0	206.5	404.0	918.5	0.0	0.0
90.00		394.6	684.3					0.0	206.5	394.6	890.8	0.0	0.0
95.00		236.3	656.6					0.0	206.5	236.3	863.1	0.0	0.0
96.08	Bot - Section 4	192.7	138.6					0.0	44.8	192.7	183.4	0.0	0.0
100.00		179.8	991.3					0.0	161.8	179.8	1,153.1	0.0	0.0
100.75	Top - Section 3	188.0	185.9					0.0	31.0	188.0	216.9	0.0	0.0
105.00		341.5	520.9					0.0	175.6	341.5	696.5	0.0	0.0
110.00	Appurtenance(s)	358.0	587.2	3,148.7	0.0	0.0	2,119.6	0.0	206.5	3,506.7	2,913.3	0.0	0.0
115.00		345.3	559.5					0.0	172.7	345.3	732.2	0.0	0.0
120.00		332.0	531.8					0.0	172.7	332.0	704.6	0.0	0.0
125.00		310.6	504.2					0.0	172.7	310.6	676.9	0.0	0.0
129.75	Bot - Section 5	155.7	453.3					0.0	164.1	155.7	617.4	0.0	0.0
130.00		117.5	43.0					0.0	8.6	117.5	51.6	0.0	0.0
133.58	Top - Section 4	152.0	602.3					0.0	123.8	152.0	726.1	0.0	0.0
135.00		186.8	106.6					0.0	48.9	186.8	155.5	0.0	0.0
140.00	Appurtenance(s)	281.3	361.4	2,613.2	0.0	0.0	2,130.2	0.0	172.7	2,894.4	2,664.3	0.0	0.0
145.00		265.6	338.3					0.0	154.7	265.6	493.0	0.0	0.0
150.00		226.1	315.2					0.0	154.7	226.1	469.9	0.0	0.0
154.00	Appurtenance(s)	120.7	235.6	4,950.8	0.0	0.0	2,987.4	0.0	123.8	5,071.5	3,346.7	0.0	0.0
155.00		135.8	56.6					0.0	9.6	135.8	66.2	0.0	0.0
160.00	Appurtenance(s)	202.8	269.1	1,165.3	0.0	0.0	777.2	0.0	48.0	1,368.1	1,094.4	0.0	0.0
164.33	Bot - Section 6	104.2	214.6					0.0	37.5	104.2	252.1	0.0	0.0
165.00		59.1	57.6					0.0	5.8	59.1	63.3	0.0	0.0
167.25	Top - Section 5	98.2	188.8					0.0	19.5	98.2	208.3	0.0	0.0
170.00	Appurtenance(s)	142.3	99.6	3,527.6	0.0	0.0	2,505.9	0.0	23.8	3,669.9	2,629.3	0.0	0.0
175.00		154.3	166.8					0.0	4.5	154.3	171.2	0.0	0.0
179.00	Appurtenance(s)	65.0	120.1	1,923.9	0.0	2,323.4	1,462.5	0.0	3.6	1,988.9	1,586.2	0.0	0.0

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

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

Wind Importance Factor 1.00

Totals:	30,303.8	44,804.2	0.00	0.00

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12605188_C3_04 12/14/2018 4:31:15 PM

Customer: METRO PCS INC

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 27 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	-44.77	-30.12	0.00	-3,773.10	0.00	3,773.10	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.645
5.00	-43.36	-29.75	0.00	-3,622.50	0.00	3,622.50	4,547.42	2,273.71	11,437.5	5,727.25	0.08	-0.14	0.642
10.00	-41.98	-29.39	0.00	-3,473.75	0.00	3,473.75	4,488.01	2,244.00	11,005.7	5,511.07	0.31	-0.29	0.640
15.00	-40.62	-29.04	0.00	-3,326.80	0.00	3,326.80	4,425.86	2,212.93	10,575.0	5,295.36	0.69	-0.44	0.638
20.00	-39.30	-28.70	0.00	-3,181.61	0.00	3,181.61	4,360.98	2,180.49	10,145.6	5,080.38	1.24	-0.60	0.635
25.00	-38.00	-28.36	0.00	-3,038.13	0.00	3,038.13	4,293.36	2,146.68	9,718.32	4,866.38	1.95	-0.76	0.633
30.00	-36.75	-28.15	0.00	-2,896.33	0.00	2,896.33	4,223.01	2,111.51	9,293.47	4,653.64	2.84	-0.93	0.631
31.25	-36.42	-27.99	0.00	-2,861.14	0.00	2,861.14	4,205.00	2,102.50	9,187.70	4,600.68	3.09	-0.97	0.631
35.00	-34.77	-27.76	0.00	-2,756.19	0.00	2,756.19	4,149.93	2,074.96	8,871.62	4,442.40	3.91	-1.11	0.629
37.50	-33.68	-27.57	0.00	-2,686.80	0.00	2,686.80	4,149.47	2,074.73	8,869.01	4,441.10	4.51	-1.20	0.613
40.00	-33.04	-27.31	0.00	-2,617.87	0.00	2,617.87	4,111.89	2,055.95	8,659.38	4,336.13	5.17	-1.29	0.612
45.00	-31.84	-26.95	0.00	-2,481.30	0.00	2,481.30	4,034.69	2,017.35	8,243.04	4,127.64	6.62	-1.47	0.609
50.00	-30.67	-26.59	0.00	-2,346.54	0.00	2,346.54	3,954.76	1,977.38	7,830.99	3,921.32	8.26	-1.66	0.606
55.00	-29.52	-26.22	0.00	-2,213.61	0.00	2,213.61	3,872.09	1,936.05	7,423.76	3,717.40	10.10	-1.85	0.603
60.00	-28.42	-25.92	0.00	-2,082.49	0.00	2,082.49	3,786.70	1,893.35	7,021.86	3,516.15	12.14	-2.05	0.600
63.25	-27.71	-25.73	0.00	-1,998.27	0.00	1,998.27	3,729.72	1,864.86	6,763.73	3,386.89	13.58	-2.19	0.598
65.00	-27.03	-25.52	0.00	-1,953.25	0.00	1,953.25	3,698.56	1,849.28	6,625.81	3,317.83	14.40	-2.26	0.596
68.75	-25.65	-25.30	0.00	-1,857.54	0.00	1,857.54	3,675.54	1,837.77	6,525.34	3,267.52	16.24	-2.43	0.576
70.00	-25.36	-25.08	0.00	-1,825.92	0.00	1,825.92	3,652.91	1,826.45	6,427.71	3,218.63	16.88	-2.48	0.574
75.00	-24.31	-24.71	0.00	-1,700.50	0.00	1,700.50	3,560.66	1,780.33	6,041.44	3,025.21	19.60	-2.69	0.569
80.00	-23.29	-24.34	0.00	-1,576.94	0.00	1,576.94	3,465.68	1,732.84	5,662.31	2,835.36	22.54	-2.91	0.563
85.00	-22.30	-23.98	0.00	-1,455.22	0.00	1,455.22	3,367.96	1,683.98	5,290.83	2,649.35	25.71	-3.14	0.556
90.00	-21.33	-23.63	0.00	-1,335.31	0.00	1,335.31	3,252.82	1,626.41	4,905.37	2,456.33	29.12	-3.38	0.550
95.00	-20.43	-23.39	0.00	-1,217.18	0.00	1,217.18	3,118.51	1,559.26	4,506.69	2,256.70	32.78	-3.62	0.546
96.08	-20.20	-23.23	0.00	-1,191.84	0.00	1,191.84	3,089.41	1,544.71	4,422.54	2,214.56	33.61	-3.67	0.545
100.00	-19.02	-23.02	0.00	-1,100.85	0.00	1,100.85	2,984.21	1,492.10	4,124.91	2,065.52	36.71	-3.87	0.540
100.75	-18.76	-22.86	0.00	-1,083.58	0.00	1,083.58	3,030.38	1,515.19	4,254.26	2,130.29	37.32	-3.91	0.515
105.00	-18.00	-22.54	0.00	-986.44	0.00	986.44	2,916.22	1,458.11	3,938.09	1,971.97	40.90	-4.13	0.507
110.00	-15.27	-18.89	0.00	-873.73	0.00	873.73	2,781.91	1,390.96	3,581.76	1,793.54	45.36	-4.38	0.493
115.00	-14.49	-18.56	0.00	-779.26	0.00	779.26	2,647.61	1,323.80	3,242.33	1,623.57	50.08	-4.63	0.486
120.00	-13.73	-18.23	0.00	-686.47	0.00	686.47	2,513.30	1,256.65	2,919.79	1,462.07	55.06	-4.89	0.475
125.00	-13.00	-17.92	0.00	-595.32	0.00	595.32	2,378.99	1,189.50	2,614.15	1,309.02	60.32	-5.15	0.460
129.75	-12.36	-17.74	0.00	-510.19	0.00	510.19	2,251.40	1,125.70	2,339.44	1,171.46	65.57	-5.41	0.441
130.00	-12.29	-17.64	0.00	-505.75	0.00	505.75	2,244.69	1,122.34	2,325.40	1,164.43	65.85	-5.42	0.440
133.58	-11.54	-17.45	0.00	-442.55	0.00	442.55	1,841.02	920.51	1,881.29	942.04	69.99	-5.62	0.476
135.00	-11.34	-17.28	0.00	-417.83	0.00	417.83	1,809.31	904.65	1,816.65	909.67	71.67	-5.70	0.466
140.00	-8.92	-14.18	0.00	-331.42	0.00	331.42	1,697.39	848.69	1,597.52	799.95	77.79	-5.99	0.420
145.00	-8.39	-13.90	0.00	-260.55	0.00	260.55	1,585.46	792.73	1,392.48	697.27	84.20	-6.26	0.379
150.00	-7.90	-13.65	0.00	-191.06	0.00	191.06	1,473.54	736.77	1,201.51	601.65	90.88	-6.52	0.323
154.00	-5.14	-8.24	0.00	-136.46	0.00	136.46	1,384.00	692.00	1,058.88	530.23	96.42	-6.71	0.261
155.00	-5.07	-8.11	0.00	-128.22	0.00	128.22	1,361.62	680.81	1,024.63	513.08	97.82	-6.75	0.254
160.00	-4.13	-6.63	0.00	-87.69	0.00	87.69	1,249.70	624.85	861.82	431.55	104.99	-6.94	0.207
164.33	-3.88	-6.50	0.00	-58.96	0.00	58.96	1,152.70	576.35	732.11	366.60	111.35	-7.09	0.164
165.00	-3.82	-6.44	0.00	-54.63	0.00	54.63	1,137.78	568.89	713.10	357.08	112.34	-7.12	0.156
167.25	-3.62	-6.32	0.00	-40.14	0.00	40.14	903.09	451.54	563.74	282.29	115.70	-7.18	0.146
170.00	-1.47	-2.35	0.00	-22.77	0.00	22.77	853.84	426.92	503.47	252.11	119.84	-7.24	0.092
175.00	-1.32	-2.18	0.00	-11.02	0.00	11.02	764.30	382.15	402.61	201.60	127.45	-7.32	0.056
179.00	0.00	-1.99	0.00	-2.32	0.00	2.32	692.67	346.34	330.04	165.26	133.59	-7.36	0.014

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		77.6	0.0					0.0	0.0	77.6	0.0	0.0	0.0
5.00		153.8	2,113.4					0.0	275.4	153.8	2,388.8	0.0	0.0
10.00		150.8	2,132.8					0.0	275.4	150.8	2,408.2	0.0	0.0
15.00		147.6	2,114.6					0.0	275.4	147.6	2,390.0	0.0	0.0
20.00		144.2	2,084.0					0.0	275.4	144.2	2,359.4	0.0	0.0
25.00		140.8	2,046.9					0.0	275.4	140.8	2,322.3	0.0	0.0
30.00		86.8	2,005.8					0.0	275.4	86.8	2,281.2	0.0	0.0
31.25	Bot - Section 2	70.1	496.4					0.0	68.9	70.1	565.3	0.0	0.0
35.00		88.5	2,447.6					0.0	206.6	88.5	2,654.2	0.0	0.0
37.50	Top - Section 1	71.4	1,607.1					0.0	137.7	71.4	1,744.8	0.0	0.0
40.00		107.9	968.3					0.0	137.7	107.9	1,106.0	0.0	0.0
45.00		144.5	1,896.0					0.0	275.4	144.5	2,171.4	0.0	0.0
50.00		144.9	1,847.2					0.0	275.4	144.9	2,122.6	0.0	0.0
55.00		144.7	1,797.2					0.0	275.4	144.7	2,072.6	0.0	0.0
60.00		119.0	1,746.3					0.0	275.4	119.0	2,021.7	0.0	0.0
63.25	Bot - Section 3	72.2	1,109.7					0.0	179.0	72.2	1,288.7	0.0	0.0
65.00		79.8	972.7					0.0	96.4	79.8	1,069.1	0.0	0.0
68.75	Top - Section 2	72.3	2,044.5					0.0	206.6	72.3	2,251.1	0.0	0.0
70.00		89.5	414.6					0.0	68.9	89.5	483.5	0.0	0.0
75.00		142.1	1,617.6					0.0	275.4	142.1	1,893.0	0.0	0.0
80.00		140.1	1,564.2					0.0	275.4	140.1	1,839.6	0.0	0.0
85.00		137.7	1,510.2					0.0	275.4	137.7	1,785.6	0.0	0.0
90.00		135.1	1,455.8					0.0	275.4	135.1	1,731.2	0.0	0.0
95.00		81.2	1,401.0					0.0	275.4	81.2	1,676.4	0.0	0.0
96.08	Bot - Section 4	66.4	298.1					0.0	59.7	66.4	357.7	0.0	0.0
100.00		62.0	1,727.5					0.0	215.7	62.0	1,943.2	0.0	0.0
100.75	Top - Section 3	65.1	325.3					0.0	41.3	65.1	366.7	0.0	0.0
105.00		118.7	1,119.0					0.0	234.1	118.7	1,353.1	0.0	0.0
110.00	Appurtenance(s)	125.1	1,263.2	775.6	0.0	0.0	7,053.8	0.0	275.4	900.7	8,592.5	0.0	0.0
115.00		121.4	1,207.1					0.0	230.3	121.4	1,437.4	0.0	0.0
120.00		117.6	1,150.7					0.0	230.3	117.6	1,381.0	0.0	0.0
125.00		110.9	1,094.1					0.0	230.3	110.9	1,324.4	0.0	0.0
129.75	Bot - Section 5	55.9	987.2					0.0	218.8	55.9	1,206.0	0.0	0.0
130.00		42.3	77.9					0.0	11.5	42.3	89.4	0.0	0.0
133.58	Top - Section 4	54.8	1,087.4					0.0	165.0	54.8	1,252.4	0.0	0.0
135.00		68.0	253.0					0.0	65.2	68.0	318.2	0.0	0.0
140.00	Appurtenance(s)	103.0	852.2	707.2	0.0	0.0	6,157.0	0.0	230.3	810.2	7,239.4	0.0	0.0
145.00		98.5	800.8					0.0	206.3	98.5	1,007.1	0.0	0.0
150.00		84.8	749.3					0.0	206.3	84.8	955.6	0.0	0.0
154.00	Appurtenance(s)	45.7	564.0	1,183.6	0.0	0.0	10,666.6	0.0	165.0	1,229.3	11,395.6	0.0	0.0
155.00		52.2	137.1					0.0	12.8	52.2	149.9	0.0	0.0
160.00	Appurtenance(s)	78.7	645.6	313.9	0.0	0.0	2,746.7	0.0	64.0	392.6	3,456.3	0.0	0.0
164.33	Bot - Section 6	40.9	518.7					0.0	50.0	40.9	568.7	0.0	0.0
165.00		23.3	113.2					0.0	7.7	23.3	120.9	0.0	0.0
167.25	Top - Section 5	39.1	370.3					0.0	26.0	39.1	396.3	0.0	0.0
170.00	Appurtenance(s)	57.7	271.1	865.9	0.0	0.0	7,736.4	0.0	31.7	923.6	8,039.3	0.0	0.0
175.00		63.8	452.1					0.0	5.9	63.8	458.1	0.0	0.0
179.00	Appurtenance(s)	27.3	330.1	945.4	0.0	1,213.2	3,473.5	0.0	4.8	972.7	3,808.4	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 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

Totals:	9,257.49	99,844.2	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 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	-99.84	-9.22	0.00	-1,242.26	0.00	1,242.26	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.231
5.00	-97.44	-9.15	0.00	-1,196.15	0.00	1,196.15	4,547.42	2,273.71	11,437.5	5,727.25	0.03	-0.05	0.230
10.00	-95.03	-9.08	0.00	-1,150.41	0.00	1,150.41	4,488.01	2,244.00	11,005.7	5,511.07	0.10	-0.10	0.230
15.00	-92.63	-9.01	0.00	-1,105.03	0.00	1,105.03	4,425.86	2,212.93	10,575.0	5,295.36	0.23	-0.15	0.230
20.00	-90.26	-8.94	0.00	-1,060.00	0.00	1,060.00	4,360.98	2,180.49	10,145.6	5,080.38	0.41	-0.20	0.229
25.00	-87.93	-8.87	0.00	-1,015.30	0.00	1,015.30	4,293.36	2,146.68	9,718.32	4,866.38	0.65	-0.25	0.229
30.00	-85.65	-8.83	0.00	-970.93	0.00	970.93	4,223.01	2,111.51	9,293.47	4,653.64	0.94	-0.31	0.229
31.25	-85.08	-8.80	0.00	-959.90	0.00	959.90	4,205.00	2,102.50	9,187.70	4,600.68	1.02	-0.32	0.229
35.00	-82.42	-8.75	0.00	-926.90	0.00	926.90	4,149.93	2,074.96	8,871.62	4,442.40	1.30	-0.37	0.229
37.50	-80.67	-8.71	0.00	-905.02	0.00	905.02	4,149.47	2,074.73	8,869.01	4,441.10	1.50	-0.40	0.223
40.00	-79.56	-8.66	0.00	-883.25	0.00	883.25	4,111.89	2,055.95	8,659.38	4,336.13	1.71	-0.43	0.223
45.00	-77.38	-8.58	0.00	-839.95	0.00	839.95	4,034.69	2,017.35	8,243.04	4,127.64	2.20	-0.49	0.223
50.00	-75.25	-8.50	0.00	-797.05	0.00	797.05	3,954.76	1,977.38	7,830.99	3,921.32	2.75	-0.55	0.222
55.00	-73.17	-8.42	0.00	-754.55	0.00	754.55	3,872.09	1,936.05	7,423.76	3,717.40	3.36	-0.62	0.222
60.00	-71.14	-8.35	0.00	-712.45	0.00	712.45	3,786.70	1,893.35	7,021.86	3,516.15	4.05	-0.69	0.221
63.25	-69.84	-8.31	0.00	-685.31	0.00	685.31	3,729.72	1,864.86	6,763.73	3,386.89	4.53	-0.74	0.221
65.00	-68.77	-8.26	0.00	-670.78	0.00	670.78	3,698.56	1,849.28	6,625.81	3,317.83	4.81	-0.76	0.221
68.75	-66.52	-8.20	0.00	-639.80	0.00	639.80	3,675.54	1,837.77	6,525.34	3,267.52	5.43	-0.82	0.214
70.00	-66.03	-8.16	0.00	-629.55	0.00	629.55	3,652.91	1,826.45	6,427.71	3,218.63	5.65	-0.84	0.214
75.00	-64.13	-8.07	0.00	-588.75	0.00	588.75	3,560.66	1,780.33	6,041.44	3,025.21	6.56	-0.91	0.213
80.00	-62.28	-7.99	0.00	-548.40	0.00	548.40	3,465.68	1,732.84	5,662.31	2,835.36	7.55	-0.99	0.211
85.00	-60.48	-7.90	0.00	-508.47	0.00	508.47	3,367.96	1,683.98	5,290.83	2,649.35	8.63	-1.07	0.210
90.00	-58.74	-7.82	0.00	-468.97	0.00	468.97	3,252.82	1,626.41	4,905.37	2,456.33	9.79	-1.15	0.209
95.00	-57.06	-7.75	0.00	-429.88	0.00	429.88	3,118.51	1,559.26	4,506.69	2,256.70	11.04	-1.23	0.209
96.08	-56.70	-7.73	0.00	-421.48	0.00	421.48	3,089.41	1,544.71	4,422.54	2,214.56	11.32	-1.25	0.209
100.00	-54.75	-7.66	0.00	-391.22	0.00	391.22	2,984.21	1,492.10	4,124.91	2,065.52	12.38	-1.32	0.208
100.75	-54.38	-7.63	0.00	-385.47	0.00	385.47	3,030.38	1,515.19	4,254.26	2,130.29	12.58	-1.34	0.199
105.00	-53.02	-7.56	0.00	-353.04	0.00	353.04	2,916.22	1,458.11	3,938.09	1,971.97	13.81	-1.42	0.197
110.00	-44.44	-6.51	0.00	-315.26	0.00	315.26	2,781.91	1,390.96	3,581.76	1,793.54	15.34	-1.50	0.192
115.00	-43.00	-6.42	0.00	-282.72	0.00	282.72	2,647.61	1,323.80	3,242.33	1,623.57	16.97	-1.60	0.190
120.00	-41.61	-6.33	0.00	-250.64	0.00	250.64	2,513.30	1,256.65	2,919.79	1,462.07	18.69	-1.69	0.188
125.00	-40.28	-6.24	0.00	-219.00	0.00	219.00	2,378.99	1,189.50	2,614.15	1,309.02	20.51	-1.79	0.184
129.75	-39.07	-6.18	0.00	-189.34	0.00	189.34	2,251.40	1,125.70	2,339.44	1,171.46	22.33	-1.88	0.179
130.00	-38.98	-6.17	0.00	-187.79	0.00	187.79	2,244.69	1,122.34	2,325.40	1,164.43	22.43	-1.89	0.179
133.58	-37.73	-6.10	0.00	-165.70	0.00	165.70	1,841.02	920.51	1,881.29	942.04	23.88	-1.96	0.196
135.00	-37.40	-6.07	0.00	-157.05	0.00	157.05	1,809.31	904.65	1,816.65	909.67	24.46	-1.99	0.193
140.00	-30.19	-5.06	0.00	-126.70	0.00	126.70	1,697.39	848.69	1,597.52	799.95	26.61	-2.10	0.176
145.00	-29.18	-4.98	0.00	-101.41	0.00	101.41	1,585.46	792.73	1,392.48	697.27	28.86	-2.20	0.164
150.00	-28.22	-4.90	0.00	-76.54	0.00	76.54	1,473.54	736.77	1,201.51	601.65	31.22	-2.31	0.146
154.00	-16.88	-3.22	0.00	-56.95	0.00	56.95	1,384.00	692.00	1,058.88	530.23	33.19	-2.38	0.120
155.00	-16.73	-3.17	0.00	-53.74	0.00	53.74	1,361.62	680.81	1,024.63	513.08	33.69	-2.40	0.117
160.00	-13.29	-2.65	0.00	-37.88	0.00	37.88	1,249.70	624.85	861.82	431.55	36.25	-2.48	0.098
164.33	-12.72	-2.59	0.00	-26.40	0.00	26.40	1,152.70	576.35	732.11	366.60	38.53	-2.55	0.083
165.00	-12.60	-2.57	0.00	-24.67	0.00	24.67	1,137.78	568.89	713.10	357.08	38.89	-2.56	0.080
167.25	-12.20	-2.52	0.00	-18.89	0.00	18.89	903.09	451.54	563.74	282.29	40.10	-2.59	0.080
170.00	-4.21	-1.23	0.00	-11.97	0.00	11.97	853.84	426.92	503.47	252.11	41.60	-2.62	0.052
175.00	-3.76	-1.15	0.00	-5.81	0.00	5.81	764.30	382.15	402.61	201.60	44.37	-2.66	0.034
179.00	0.00	-0.97	0.00	-1.21	0.00	1.21	692.67	346.34	330.04	165.26	46.60	-2.68	0.007

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

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		57.7	0.0					0.0	0.0	57.7	0.0	0.0	0.0
5.00		114.0	1,252.8					0.0	229.5	114.0	1,482.3	0.0	0.0
10.00		111.2	1,222.0					0.0	229.5	111.2	1,451.5	0.0	0.0
15.00		108.4	1,191.3					0.0	229.5	108.4	1,420.8	0.0	0.0
20.00		105.5	1,160.5					0.0	229.5	105.5	1,390.0	0.0	0.0
25.00		102.7	1,129.8					0.0	229.5	102.7	1,359.3	0.0	0.0
30.00		63.2	1,099.0					0.0	229.5	63.2	1,328.5	0.0	0.0
31.25	Bot - Section 2	51.0	269.9					0.0	57.4	51.0	327.3	0.0	0.0
35.00		64.3	1,608.0					0.0	172.1	64.3	1,780.1	0.0	0.0
37.50	Top - Section 1	51.8	1,052.8					0.0	114.8	51.8	1,167.5	0.0	0.0
40.00		78.0	522.5					0.0	114.8	78.0	637.2	0.0	0.0
45.00		104.3	1,021.9					0.0	229.5	104.3	1,251.4	0.0	0.0
50.00		104.2	991.2					0.0	229.5	104.2	1,220.7	0.0	0.0
55.00		103.8	960.4					0.0	229.5	103.8	1,189.9	0.0	0.0
60.00		85.1	929.6					0.0	229.5	85.1	1,159.1	0.0	0.0
63.25	Bot - Section 3	51.5	587.8					0.0	149.2	51.5	736.9	0.0	0.0
65.00		56.8	627.5					0.0	80.3	56.8	707.9	0.0	0.0
68.75	Top - Section 2	51.5	1,319.4					0.0	172.1	51.5	1,491.5	0.0	0.0
70.00		63.5	217.9					0.0	57.4	63.5	275.3	0.0	0.0
75.00		100.5	852.6					0.0	229.5	100.5	1,082.1	0.0	0.0
80.00		98.7	821.8					0.0	229.5	98.7	1,051.3	0.0	0.0
85.00		96.6	791.0					0.0	229.5	96.6	1,020.5	0.0	0.0
90.00		94.4	760.3					0.0	229.5	94.4	989.8	0.0	0.0
95.00		56.5	729.5					0.0	229.5	56.5	959.0	0.0	0.0
96.08	Bot - Section 4	46.1	154.0					0.0	49.7	46.1	203.7	0.0	0.0
100.00		43.0	1,101.4					0.0	179.8	43.0	1,281.2	0.0	0.0
100.75	Top - Section 3	45.0	206.6					0.0	34.4	45.0	241.0	0.0	0.0
105.00		81.7	578.8					0.0	195.1	81.7	773.8	0.0	0.0
110.00	Appurtenance(s)	85.6	652.4	752.9	0.0	0.0	2,355.1	0.0	229.5	838.6	3,237.0	0.0	0.0
115.00		82.6	621.7					0.0	191.9	82.6	813.6	0.0	0.0
120.00		79.4	590.9					0.0	191.9	79.4	782.8	0.0	0.0
125.00		74.3	560.2					0.0	191.9	74.3	752.1	0.0	0.0
129.75	Bot - Section 5	37.2	503.7					0.0	182.3	37.2	686.0	0.0	0.0
130.00		28.1	47.8					0.0	9.6	28.1	57.4	0.0	0.0
133.58	Top - Section 4	36.3	669.2					0.0	137.5	36.3	806.8	0.0	0.0
135.00		44.7	118.4					0.0	54.4	44.7	172.8	0.0	0.0
140.00	Appurtenance(s)	67.3	401.5	624.9	0.0	0.0	2,366.9	0.0	191.9	692.2	2,960.3	0.0	0.0
145.00		63.5	375.9					0.0	171.9	63.5	547.8	0.0	0.0
150.00		54.1	350.3					0.0	171.9	54.1	522.2	0.0	0.0
154.00	Appurtenance(s)	28.9	261.8	1,183.9	0.0	0.0	3,319.3	0.0	137.5	1,212.8	3,718.6	0.0	0.0
155.00		32.5	62.9					0.0	10.7	32.5	73.5	0.0	0.0
160.00	Appurtenance(s)	48.5	299.0	278.7	0.0	0.0	863.6	0.0	53.4	327.2	1,216.0	0.0	0.0
164.33	Bot - Section 6	24.9	238.4					0.0	41.7	24.9	280.1	0.0	0.0
165.00		14.1	64.0					0.0	6.4	14.1	70.4	0.0	0.0
167.25	Top - Section 5	23.5	209.8					0.0	21.6	23.5	231.4	0.0	0.0
170.00	Appurtenance(s)	34.0	110.6	843.6	0.0	0.0	2,784.3	0.0	26.5	877.6	2,921.4	0.0	0.0
175.00		36.9	185.3					0.0	5.0	36.9	190.2	0.0	0.0
179.00	Appurtenance(s)	15.5	133.5	460.1	0.0	555.6	1,625.0	0.0	4.0	475.6	1,762.4	0.0	0.0

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

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

Totals:	7,246.65	49,782.5	0.00	0.00

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

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.78	-7.20	0.00	-908.42	0.00	908.42	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.164
5.00	-48.29	-7.12	0.00	-872.41	0.00	872.41	4,547.42	2,273.71	11,437.5	5,727.25	0.02	-0.03	0.163
10.00	-46.84	-7.03	0.00	-836.82	0.00	836.82	4,488.01	2,244.00	11,005.7	5,511.07	0.07	-0.07	0.162
15.00	-45.41	-6.95	0.00	-801.64	0.00	801.64	4,425.86	2,212.93	10,575.0	5,295.36	0.17	-0.11	0.162
20.00	-44.02	-6.87	0.00	-766.88	0.00	766.88	4,360.98	2,180.49	10,145.6	5,080.38	0.30	-0.14	0.161
25.00	-42.65	-6.80	0.00	-732.50	0.00	732.50	4,293.36	2,146.68	9,718.32	4,866.38	0.47	-0.18	0.160
30.00	-41.32	-6.75	0.00	-698.51	0.00	698.51	4,223.01	2,111.51	9,293.47	4,653.64	0.68	-0.22	0.160
31.25	-40.99	-6.71	0.00	-690.08	0.00	690.08	4,205.00	2,102.50	9,187.70	4,600.68	0.74	-0.23	0.160
35.00	-39.21	-6.66	0.00	-664.91	0.00	664.91	4,149.93	2,074.96	8,871.62	4,442.40	0.94	-0.27	0.159
37.50	-38.04	-6.62	0.00	-648.27	0.00	648.27	4,149.47	2,074.73	8,869.01	4,441.10	1.09	-0.29	0.155
40.00	-37.40	-6.56	0.00	-631.73	0.00	631.73	4,111.89	2,055.95	8,659.38	4,336.13	1.24	-0.31	0.155
45.00	-36.14	-6.47	0.00	-598.95	0.00	598.95	4,034.69	2,017.35	8,243.04	4,127.64	1.59	-0.35	0.154
50.00	-34.92	-6.39	0.00	-566.59	0.00	566.59	3,954.76	1,977.38	7,830.99	3,921.32	1.99	-0.40	0.153
55.00	-33.73	-6.30	0.00	-534.66	0.00	534.66	3,872.09	1,936.05	7,423.76	3,717.40	2.43	-0.45	0.153
60.00	-32.56	-6.23	0.00	-503.14	0.00	503.14	3,786.70	1,893.35	7,021.86	3,516.15	2.93	-0.49	0.152
63.25	-31.82	-6.19	0.00	-482.89	0.00	482.89	3,729.72	1,864.86	6,763.73	3,386.89	3.27	-0.53	0.151
65.00	-31.11	-6.14	0.00	-472.06	0.00	472.06	3,698.56	1,849.28	6,625.81	3,317.83	3.47	-0.55	0.151
68.75	-29.62	-6.09	0.00	-449.04	0.00	449.04	3,675.54	1,837.77	6,525.34	3,267.52	3.92	-0.59	0.145
70.00	-29.34	-6.04	0.00	-441.43	0.00	441.43	3,652.91	1,826.45	6,427.71	3,218.63	4.07	-0.60	0.145
75.00	-28.25	-5.95	0.00	-411.25	0.00	411.25	3,560.66	1,780.33	6,041.44	3,025.21	4.73	-0.65	0.144
80.00	-27.20	-5.87	0.00	-381.49	0.00	381.49	3,465.68	1,732.84	5,662.31	2,835.36	5.44	-0.70	0.142
85.00	-26.17	-5.78	0.00	-352.16	0.00	352.16	3,367.96	1,683.98	5,290.83	2,649.35	6.20	-0.76	0.141
90.00	-25.18	-5.70	0.00	-323.26	0.00	323.26	3,252.82	1,626.41	4,905.37	2,456.33	7.03	-0.81	0.139
95.00	-24.22	-5.64	0.00	-294.76	0.00	294.76	3,118.51	1,559.26	4,506.69	2,256.70	7.91	-0.87	0.138
96.08	-24.01	-5.61	0.00	-288.65	0.00	288.65	3,089.41	1,544.71	4,422.54	2,214.56	8.11	-0.89	0.138
100.00	-22.73	-5.56	0.00	-266.69	0.00	266.69	2,984.21	1,492.10	4,124.91	2,065.52	8.86	-0.94	0.137
100.75	-22.49	-5.52	0.00	-262.52	0.00	262.52	3,030.38	1,515.19	4,254.26	2,130.29	9.01	-0.95	0.131
105.00	-21.71	-5.45	0.00	-239.07	0.00	239.07	2,916.22	1,458.11	3,938.09	1,971.97	9.87	-1.00	0.129
110.00	-18.48	-4.57	0.00	-211.84	0.00	211.84	2,781.91	1,390.96	3,581.76	1,793.54	10.95	-1.06	0.125
115.00	-17.67	-4.49	0.00	-189.00	0.00	189.00	2,647.61	1,323.80	3,242.33	1,623.57	12.09	-1.12	0.123
120.00	-16.88	-4.41	0.00	-166.55	0.00	166.55	2,513.30	1,256.65	2,919.79	1,462.07	13.30	-1.18	0.121
125.00	-16.12	-4.34	0.00	-144.48	0.00	144.48	2,378.99	1,189.50	2,614.15	1,309.02	14.57	-1.25	0.117
129.75	-15.44	-4.30	0.00	-123.86	0.00	123.86	2,251.40	1,125.70	2,339.44	1,171.46	15.84	-1.31	0.113
130.00	-15.38	-4.27	0.00	-122.79	0.00	122.79	2,244.69	1,122.34	2,325.40	1,164.43	15.91	-1.31	0.112
133.58	-14.57	-4.23	0.00	-107.47	0.00	107.47	1,841.02	920.51	1,881.29	942.04	16.91	-1.36	0.122
135.00	-14.40	-4.19	0.00	-101.48	0.00	101.48	1,809.31	904.65	1,816.65	909.67	17.32	-1.38	0.120
140.00	-11.45	-3.44	0.00	-80.53	0.00	80.53	1,697.39	848.69	1,597.52	799.95	18.80	-1.45	0.107
145.00	-10.90	-3.37	0.00	-63.33	0.00	63.33	1,585.46	792.73	1,392.48	697.27	20.36	-1.52	0.098
150.00	-10.38	-3.32	0.00	-46.46	0.00	46.46	1,473.54	736.77	1,201.51	601.65	21.98	-1.58	0.084
154.00	-6.69	-2.00	0.00	-33.20	0.00	33.20	1,384.00	692.00	1,058.88	530.23	23.32	-1.62	0.067
155.00	-6.62	-1.97	0.00	-31.20	0.00	31.20	1,361.62	680.81	1,024.63	513.08	23.66	-1.63	0.066
160.00	-5.41	-1.61	0.00	-21.34	0.00	21.34	1,249.70	624.85	861.82	431.55	25.40	-1.68	0.054
164.33	-5.13	-1.58	0.00	-14.35	0.00	14.35	1,152.70	576.35	732.11	366.60	26.94	-1.72	0.044
165.00	-5.06	-1.57	0.00	-13.29	0.00	13.29	1,137.78	568.89	713.10	357.08	27.18	-1.72	0.042
167.25	-4.83	-1.54	0.00	-9.77	0.00	9.77	903.09	451.54	563.74	282.29	28.00	-1.74	0.040
170.00	-1.94	-0.57	0.00	-5.54	0.00	5.54	853.84	426.92	503.47	252.11	29.00	-1.75	0.024
175.00	-1.75	-0.53	0.00	-2.68	0.00	2.68	764.30	382.15	402.61	201.60	30.85	-1.77	0.016
179.00	0.00	-0.48	0.00	-0.56	0.00	0.56	692.67	346.34	330.04	165.26	32.34	-1.78	0.003

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.94	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	49.78	k
Seismic Base Shear (E):	1.94	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	15	170
46	172.50	190	5,661	0.010	20	236
45	168.63	137	3,898	0.007	14	170
44	166.13	231	6,387	0.011	22	287
43	164.67	70	1,908	0.003	7	87
42	162.17	280	7,366	0.013	26	347
41	157.50	352	8,741	0.016	31	437
40	154.50	74	1,756	0.003	6	91
39	152.00	399	9,225	0.017	32	495
38	147.50	522	11,360	0.020	40	647
37	142.50	548	11,124	0.020	39	679
36	137.50	593	11,219	0.020	39	735
35	134.29	173	3,116	0.006	11	214
34	131.79	807	14,013	0.025	49	999
33	129.88	57	968	0.002	3	71
32	127.38	686	11,130	0.020	39	850
31	122.50	752	11,286	0.020	39	932
30	117.50	783	10,808	0.019	38	970
29	112.50	814	10,297	0.019	36	1,008
28	107.50	882	10,192	0.018	36	1,093
27	102.88	774	8,190	0.015	29	959
26	100.38	241	2,428	0.004	8	299
25	98.04	1,281	12,315	0.022	43	1,587

24	95.54	204	1,860	0.003	6	252
23	92.50	959	8,206	0.015	29	1,188
22	87.50	990	7,578	0.014	26	1,226
21	82.50	1,021	6,946	0.013	24	1,264
20	77.50	1,051	6,314	0.011	22	1,302
19	72.50	1,082	5,688	0.010	20	1,340
18	69.38	275	1,325	0.002	5	341
17	66.88	1,491	6,670	0.012	23	1,848
16	64.13	708	2,911	0.005	10	877
15	61.63	737	2,799	0.005	10	913
14	57.50	1,159	3,832	0.007	13	1,436
13	52.50	1,190	3,280	0.006	11	1,474
12	47.50	1,221	2,754	0.005	10	1,512
11	42.50	1,251	2,260	0.004	8	1,550
10	38.75	637	957	0.002	3	789
9	36.25	1,168	1,534	0.003	5	1,446
8	33.13	1,780	1,953	0.004	7	2,205
7	30.63	327	307	0.001	1	405
6	27.50	1,328	1,005	0.002	4	1,646
5	22.50	1,359	688	0.001	2	1,684
4	17.50	1,390	426	0.001	1	1,722
3	12.50	1,421	222	0.000	1	1,760
2	7.50	1,452	82	0.000	0	1,798
1	2.50	1,482	9	0.000	0	1,836
5' Dipole	179.00	15	481	0.001	2	19
10' Omni	179.00	25	801	0.001	3	31
18' Dipole	179.00	55	1,762	0.003	6	68
8' Yagi	179.00	30	961	0.002	3	37
Round Low Profile Pl	179.00	1,500	48,062	0.087	168	1,858
Ericsson KRY 112 144	170.00	33	954	0.002	3	41
Ericsson Radio 4449	170.00	222	6,416	0.012	22	275
Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	25	308
Ericsson AIR-32 B2A/	170.00	397	11,462	0.021	40	491
RFS APXVAARR24_43-U-	170.00	384	11,089	0.020	39	475
Round Low Profile Pl	170.00	1,500	43,350	0.078	151	1,858
RCU	160.00	3	77	0.000	0	4
DragonWave Horizon C	160.00	34	883	0.002	3	43
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	123
Argus LLPX310R	160.00	86	2,196	0.004	8	106
DragonWave A-ANT-18G	160.00	81	2,081	0.004	7	101
Side Arms	160.00	560	14,336	0.026	50	694
Powerwave LGP21401	154.00	85	2,006	0.004	7	105
Raycap DC6-48-60-18-	154.00	64	1,508	0.003	5	79
Ericsson RRUS 4478 B	154.00	180	4,262	0.008	15	223
Ericsson RRUS 11 (Ba	154.00	165	3,913	0.007	14	204
Ericsson RRUS 32	154.00	165	3,920	0.007	14	205
Ericsson RRUS 12	154.00	150	3,557	0.006	12	186
Ericsson RRUS 32 B66	154.00	159	3,771	0.007	13	197
Ericsson RRUS 32 B2	154.00	159	3,771	0.007	13	197
Raycap DC6-48-60-0-8	154.00	16	379	0.001	1	20
Kathrein Scala 800 1	154.00	139	3,294	0.006	12	172
Quintel QS66512-2	154.00	111	2,632	0.005	9	138
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.011	22	327
CCI TPA-65R-LCUUUU-H	154.00	163	3,870	0.007	14	202
Round Low Profile Pl	154.00	1,500	35,574	0.064	124	1,858
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	13	238
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	164
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	246
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	209
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	77
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	141
Round Low Profile Pl	140.00	1,500	29,400	0.053	103	1,858
Samsung PCS/AWS Dual	110.00	253	3,064	0.006	11	314
Samsung 700/850MHz D	110.00	211	2,552	0.005	9	261

Antel BXA-80063/4CF	110.00	59	719	0.001	3	74
RFS DB-T1-6Z-8AB-0Z	110.00	88	1,065	0.002	4	109
Commscope SBNHH-1D65	110.00	244	2,948	0.005	10	302
Flat Low Profile Pla	110.00	1,500	18,150	0.033	63	1,858
		49,783	555,547	1.000	1,942	61,672

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	15	118
46	172.50	190	5,661	0.010	20	164
45	168.63	137	3,898	0.007	14	118
44	166.13	231	6,387	0.011	22	199
43	164.67	70	1,908	0.003	7	61
42	162.17	280	7,366	0.013	26	241
41	157.50	352	8,741	0.016	31	303
40	154.50	74	1,756	0.003	6	63
39	152.00	399	9,225	0.017	32	344
38	147.50	522	11,360	0.020	40	450
37	142.50	548	11,124	0.020	39	472
36	137.50	593	11,219	0.020	39	511
35	134.29	173	3,116	0.006	11	149
34	131.79	807	14,013	0.025	49	695
33	129.88	57	968	0.002	3	49
32	127.38	686	11,130	0.020	39	591
31	122.50	752	11,286	0.020	39	648
30	117.50	783	10,808	0.019	38	674
29	112.50	814	10,297	0.019	36	701
28	107.50	882	10,192	0.018	36	760
27	102.88	774	8,190	0.015	29	666
26	100.38	241	2,428	0.004	8	208
25	98.04	1,281	12,315	0.022	43	1,103
24	95.54	204	1,860	0.003	6	175
23	92.50	959	8,206	0.015	29	826
22	87.50	990	7,578	0.014	26	852
21	82.50	1,021	6,946	0.013	24	879
20	77.50	1,051	6,314	0.011	22	905
19	72.50	1,082	5,688	0.010	20	932
18	69.38	275	1,325	0.002	5	237
17	66.88	1,491	6,670	0.012	23	1,284
16	64.13	708	2,911	0.005	10	610
15	61.63	737	2,799	0.005	10	635
14	57.50	1,159	3,832	0.007	13	998
13	52.50	1,190	3,280	0.006	11	1,025
12	47.50	1,221	2,754	0.005	10	1,051
11	42.50	1,251	2,260	0.004	8	1,078
10	38.75	637	957	0.002	3	549
9	36.25	1,168	1,534	0.003	5	1,005
8	33.13	1,780	1,953	0.004	7	1,533
7	30.63	327	307	0.001	1	282
6	27.50	1,328	1,005	0.002	4	1,144
5	22.50	1,359	688	0.001	2	1,171
4	17.50	1,390	426	0.001	1	1,197
3	12.50	1,421	222	0.000	1	1,224
2	7.50	1,452	82	0.000	0	1,250
1	2.50	1,482	9	0.000	0	1,277
5' Dipole	179.00	15	481	0.001	2	13
10' Omni	179.00	25	801	0.001	3	22
18' Dipole	179.00	55	1,762	0.003	6	47

8' Yagi	179.00	30	961	0.002	3	26
Round Low Profile Pl	179.00	1,500	48,062	0.087	168	1,292
Ericsson KRY 112 144	170.00	33	954	0.002	3	28
Ericsson Radio 4449	170.00	222	6,416	0.012	22	191
Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	25	214
Ericsson AIR-32 B2A/	170.00	397	11,462	0.021	40	342
RFS APXVAARR24_43-U-	170.00	384	11,089	0.020	39	330
Round Low Profile Pl	170.00	1,500	43,350	0.078	151	1,292
RCU	160.00	3	77	0.000	0	3
DragonWave Horizon C	160.00	34	883	0.002	3	30
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	85
Argus LLPX310R	160.00	86	2,196	0.004	8	74
DragonWave A-ANT-18G	160.00	81	2,081	0.004	7	70
Side Arms	160.00	560	14,336	0.026	50	482
Powerwave LGP21401	154.00	85	2,006	0.004	7	73
Raycap DC6-48-60-18-	154.00	64	1,508	0.003	5	55
Ericsson RRUS 4478 B	154.00	180	4,262	0.008	15	155
Ericsson RRUS 11 (Ba	154.00	165	3,913	0.007	14	142
Ericsson RRUS 32	154.00	165	3,920	0.007	14	142
Ericsson RRUS 12	154.00	150	3,557	0.006	12	129
Ericsson RRUS 32 B66	154.00	159	3,771	0.007	13	137
Ericsson RRUS 32 B2	154.00	159	3,771	0.007	13	137
Raycap DC6-48-60-0-8	154.00	16	379	0.001	1	14
Kathrein Scala 800 1	154.00	139	3,294	0.006	12	120
Quintel QS66512-2	154.00	111	2,632	0.005	9	96
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.011	22	227
CCI TPA-65R-LCUUUU-H	154.00	163	3,870	0.007	14	141
Round Low Profile Pl	154.00	1,500	35,574	0.064	124	1,292
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	13	165
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	114
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	171
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	145
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	53
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	98
Round Low Profile Pl	140.00	1,500	29,400	0.053	103	1,292
Samsung PCS/AWS Dual	110.00	253	3,064	0.006	11	218
Samsung 700/850MHz D	110.00	211	2,552	0.005	9	182
Antel BXA-80063/4CF	110.00	59	719	0.001	3	51
RFS DB-T1-6Z-8AB-0Z	110.00	88	1,065	0.002	4	76
Commscope SBNHH-1D65	110.00	244	2,948	0.005	10	210
Flat Low Profile Pla	110.00	1,500	18,150	0.033	63	1,292
		49,783	555,547	1.000	1,942	42,871

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	-59.84	-1.95	0.00	-284.27	0.00	284.27	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.061
5.00	-58.04	-1.96	0.00	-274.54	0.00	274.54	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.061
10.00	-56.28	-1.97	0.00	-264.76	0.00	264.76	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.061
15.00	-54.55	-1.98	0.00	-254.93	0.00	254.93	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.060
20.00	-52.87	-1.98	0.00	-245.05	0.00	245.05	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.05	0.060
25.00	-51.22	-1.99	0.00	-235.14	0.00	235.14	4,293.36	2,146.68	9,718.32	4,866.38	0.15	-0.06	0.060
30.00	-50.82	-2.00	0.00	-225.19	0.00	225.19	4,223.01	2,111.51	9,293.47	4,653.64	0.22	-0.07	0.060
31.25	-48.61	-1.99	0.00	-222.69	0.00	222.69	4,205.00	2,102.50	9,187.70	4,600.68	0.24	-0.07	0.060
35.00	-47.17	-1.99	0.00	-215.23	0.00	215.23	4,149.93	2,074.96	8,871.62	4,442.40	0.30	-0.09	0.060
37.50	-46.38	-1.99	0.00	-210.25	0.00	210.25	4,149.47	2,074.73	8,869.01	4,441.10	0.34	-0.09	0.059
40.00	-44.83	-1.99	0.00	-205.26	0.00	205.26	4,111.89	2,055.95	8,659.38	4,336.13	0.40	-0.10	0.058
45.00	-43.31	-1.99	0.00	-195.31	0.00	195.31	4,034.69	2,017.35	8,243.04	4,127.64	0.51	-0.11	0.058
50.00	-41.84	-1.99	0.00	-185.37	0.00	185.37	3,954.76	1,977.38	7,830.99	3,921.32	0.63	-0.13	0.058
55.00	-40.40	-1.98	0.00	-175.44	0.00	175.44	3,872.09	1,936.05	7,423.76	3,717.40	0.78	-0.14	0.058
60.00	-39.49	-1.98	0.00	-165.54	0.00	165.54	3,786.70	1,893.35	7,021.86	3,516.15	0.94	-0.16	0.058
63.25	-38.61	-1.97	0.00	-159.12	0.00	159.12	3,729.72	1,864.86	6,763.73	3,386.89	1.05	-0.17	0.057
65.00	-36.76	-1.95	0.00	-155.67	0.00	155.67	3,698.56	1,849.28	6,625.81	3,317.83	1.11	-0.18	0.057
68.75	-36.42	-1.95	0.00	-148.37	0.00	148.37	3,675.54	1,837.77	6,525.34	3,267.52	1.25	-0.19	0.055
70.00	-35.08	-1.93	0.00	-145.94	0.00	145.94	3,652.91	1,826.45	6,427.71	3,218.63	1.31	-0.19	0.055
75.00	-33.78	-1.91	0.00	-136.29	0.00	136.29	3,560.66	1,780.33	6,041.44	3,025.21	1.52	-0.21	0.055
80.00	-32.51	-1.89	0.00	-126.73	0.00	126.73	3,465.68	1,732.84	5,662.31	2,835.36	1.75	-0.23	0.054
85.00	-31.29	-1.87	0.00	-117.26	0.00	117.26	3,367.96	1,683.98	5,290.83	2,649.35	2.00	-0.25	0.054
90.00	-30.10	-1.85	0.00	-107.90	0.00	107.90	3,252.82	1,626.41	4,905.37	2,456.33	2.26	-0.27	0.053
95.00	-29.85	-1.85	0.00	-98.66	0.00	98.66	3,118.51	1,559.26	4,506.69	2,256.70	2.55	-0.29	0.053
96.08	-28.26	-1.80	0.00	-96.66	0.00	96.66	3,089.41	1,544.71	4,422.54	2,214.56	2.62	-0.29	0.053
100.00	-27.96	-1.80	0.00	-89.60	0.00	89.60	2,984.21	1,492.10	4,124.91	2,065.52	2.86	-0.31	0.053
100.75	-27.00	-1.77	0.00	-88.26	0.00	88.26	3,030.38	1,515.19	4,254.26	2,130.29	2.91	-0.31	0.050
105.00	-25.91	-1.73	0.00	-80.75	0.00	80.75	2,916.22	1,458.11	3,938.09	1,971.97	3.20	-0.33	0.050
110.00	-21.98	-1.58	0.00	-72.08	0.00	72.08	2,781.91	1,390.96	3,581.76	1,793.54	3.55	-0.35	0.048
115.00	-21.01	-1.55	0.00	-64.16	0.00	64.16	2,647.61	1,323.80	3,242.33	1,623.57	3.92	-0.37	0.047
120.00	-20.08	-1.51	0.00	-56.42	0.00	56.42	2,513.30	1,256.65	2,919.79	1,462.07	4.32	-0.39	0.047
125.00	-19.23	-1.47	0.00	-48.88	0.00	48.88	2,378.99	1,189.50	2,614.15	1,309.02	4.74	-0.41	0.045
129.75	-19.16	-1.47	0.00	-41.89	0.00	41.89	2,251.40	1,125.70	2,339.44	1,171.46	5.16	-0.43	0.044
130.00	-18.16	-1.42	0.00	-41.52	0.00	41.52	2,244.69	1,122.34	2,325.40	1,164.43	5.18	-0.43	0.044
133.58	-17.95	-1.41	0.00	-36.44	0.00	36.44	1,841.02	920.51	1,881.29	942.04	5.51	-0.45	0.048
135.00	-17.21	-1.37	0.00	-34.45	0.00	34.45	1,809.31	904.65	1,816.65	909.67	5.65	-0.46	0.047
140.00	-13.60	-1.14	0.00	-27.61	0.00	27.61	1,697.39	848.69	1,597.52	799.95	6.14	-0.48	0.043
145.00	-12.95	-1.10	0.00	-21.89	0.00	21.89	1,585.46	792.73	1,392.48	697.27	6.66	-0.50	0.040
150.00	-12.46	-1.07	0.00	-16.37	0.00	16.37	1,473.54	736.77	1,201.51	601.65	7.19	-0.52	0.036
154.00	-8.26	-0.75	0.00	-12.09	0.00	12.09	1,384.00	692.00	1,058.88	530.23	7.64	-0.54	0.029
155.00	-7.82	-0.72	0.00	-11.34	0.00	11.34	1,361.62	680.81	1,024.63	513.08	7.75	-0.54	0.028
160.00	-6.41	-0.60	0.00	-7.74	0.00	7.74	1,249.70	624.85	861.82	431.55	8.33	-0.56	0.023
164.33	-6.32	-0.60	0.00	-5.13	0.00	5.13	1,152.70	576.35	732.11	366.60	8.85	-0.57	0.019
165.00	-6.03	-0.57	0.00	-4.73	0.00	4.73	1,137.78	568.89	713.10	357.08	8.93	-0.58	0.019
167.25	-5.86	-0.56	0.00	-3.44	0.00	3.44	903.09	451.54	563.74	282.29	9.20	-0.58	0.019
170.00	-2.18	-0.22	0.00	-1.91	0.00	1.91	853.84	426.92	503.47	252.11	9.54	-0.59	0.010
175.00	-2.01	-0.20	0.00	-0.81	0.00	0.81	764.30	382.15	402.61	201.60	10.16	-0.59	0.007
179.00	0.00	-0.18	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.66	-0.60	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.59	-1.94	0.00	-278.65	0.00	278.65	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.056
5.00	-40.34	-1.95	0.00	-268.93	0.00	268.93	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.056
10.00	-39.12	-1.96	0.00	-259.18	0.00	259.18	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.056
15.00	-37.92	-1.96	0.00	-249.39	0.00	249.39	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.056
20.00	-36.75	-1.97	0.00	-239.57	0.00	239.57	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.04	0.056
25.00	-35.61	-1.97	0.00	-229.73	0.00	229.73	4,293.36	2,146.68	9,718.32	4,866.38	0.15	-0.06	0.056
30.00	-35.33	-1.97	0.00	-219.87	0.00	219.87	4,223.01	2,111.51	9,293.47	4,653.64	0.21	-0.07	0.056
31.25	-33.79	-1.97	0.00	-217.40	0.00	217.40	4,205.00	2,102.50	9,187.70	4,600.68	0.23	-0.07	0.055
35.00	-32.79	-1.97	0.00	-210.02	0.00	210.02	4,149.93	2,074.96	8,871.62	4,442.40	0.29	-0.08	0.055
37.50	-32.24	-1.97	0.00	-205.10	0.00	205.10	4,149.47	2,074.73	8,869.01	4,441.10	0.34	-0.09	0.054
40.00	-31.16	-1.96	0.00	-200.18	0.00	200.18	4,111.89	2,055.95	8,659.38	4,336.13	0.39	-0.10	0.054
45.00	-30.11	-1.96	0.00	-190.36	0.00	190.36	4,034.69	2,017.35	8,243.04	4,127.64	0.50	-0.11	0.054
50.00	-29.08	-1.95	0.00	-180.56	0.00	180.56	3,954.76	1,977.38	7,830.99	3,921.32	0.62	-0.13	0.053
55.00	-28.08	-1.95	0.00	-170.79	0.00	170.79	3,872.09	1,936.05	7,423.76	3,717.40	0.76	-0.14	0.053
60.00	-27.45	-1.94	0.00	-161.06	0.00	161.06	3,786.70	1,893.35	7,021.86	3,516.15	0.91	-0.16	0.053
63.25	-26.84	-1.93	0.00	-154.76	0.00	154.76	3,729.72	1,864.86	6,763.73	3,386.89	1.02	-0.17	0.053
65.00	-25.55	-1.91	0.00	-151.37	0.00	151.37	3,698.56	1,849.28	6,625.81	3,317.83	1.09	-0.17	0.053
68.75	-25.32	-1.91	0.00	-144.21	0.00	144.21	3,675.54	1,837.77	6,525.34	3,267.52	1.23	-0.18	0.051
70.00	-24.38	-1.89	0.00	-141.83	0.00	141.83	3,652.91	1,826.45	6,427.71	3,218.63	1.28	-0.19	0.051
75.00	-23.48	-1.87	0.00	-132.38	0.00	132.38	3,560.66	1,780.33	6,041.44	3,025.21	1.48	-0.21	0.050
80.00	-22.60	-1.85	0.00	-123.03	0.00	123.03	3,465.68	1,732.84	5,662.31	2,835.36	1.71	-0.22	0.050
85.00	-21.75	-1.83	0.00	-113.78	0.00	113.78	3,367.96	1,683.98	5,290.83	2,649.35	1.95	-0.24	0.049
90.00	-20.92	-1.80	0.00	-104.64	0.00	104.64	3,252.82	1,626.41	4,905.37	2,456.33	2.21	-0.26	0.049
95.00	-20.74	-1.80	0.00	-95.63	0.00	95.63	3,118.51	1,559.26	4,506.69	2,256.70	2.49	-0.28	0.049
96.08	-19.64	-1.75	0.00	-93.68	0.00	93.68	3,089.41	1,544.71	4,422.54	2,214.56	2.56	-0.28	0.049
100.00	-19.43	-1.75	0.00	-86.82	0.00	86.82	2,984.21	1,492.10	4,124.91	2,065.52	2.79	-0.30	0.049
100.75	-18.77	-1.72	0.00	-85.51	0.00	85.51	3,030.38	1,515.19	4,254.26	2,130.29	2.84	-0.30	0.046
105.00	-18.01	-1.68	0.00	-78.20	0.00	78.20	2,916.22	1,458.11	3,938.09	1,971.97	3.12	-0.32	0.046
110.00	-15.28	-1.54	0.00	-69.78	0.00	69.78	2,781.91	1,390.96	3,581.76	1,793.54	3.46	-0.34	0.044
115.00	-14.60	-1.50	0.00	-62.08	0.00	62.08	2,647.61	1,323.80	3,242.33	1,623.57	3.83	-0.36	0.044
120.00	-13.96	-1.46	0.00	-54.57	0.00	54.57	2,513.30	1,256.65	2,919.79	1,462.07	4.21	-0.38	0.043
125.00	-13.37	-1.43	0.00	-47.25	0.00	47.25	2,378.99	1,189.50	2,614.15	1,309.02	4.62	-0.40	0.042
129.75	-13.32	-1.42	0.00	-40.48	0.00	40.48	2,251.40	1,125.70	2,339.44	1,171.46	5.03	-0.42	0.040
130.00	-12.62	-1.37	0.00	-40.12	0.00	40.12	2,244.69	1,122.34	2,325.40	1,164.43	5.05	-0.42	0.040
133.58	-12.47	-1.36	0.00	-35.21	0.00	35.21	1,841.02	920.51	1,881.29	942.04	5.37	-0.44	0.044
135.00	-11.96	-1.32	0.00	-33.28	0.00	33.28	1,809.31	904.65	1,816.65	909.67	5.50	-0.44	0.043
140.00	-9.45	-1.11	0.00	-26.66	0.00	26.66	1,697.39	848.69	1,597.52	799.95	5.98	-0.47	0.039
145.00	-9.00	-1.07	0.00	-21.14	0.00	21.14	1,585.46	792.73	1,392.48	697.27	6.48	-0.49	0.036
150.00	-8.66	-1.03	0.00	-15.81	0.00	15.81	1,473.54	736.77	1,201.51	601.65	7.00	-0.51	0.032
154.00	-5.74	-0.73	0.00	-11.68	0.00	11.68	1,384.00	692.00	1,058.88	530.23	7.44	-0.52	0.026
155.00	-5.44	-0.69	0.00	-10.95	0.00	10.95	1,361.62	680.81	1,024.63	513.08	7.55	-0.53	0.025
160.00	-4.45	-0.58	0.00	-7.48	0.00	7.48	1,249.70	624.85	861.82	431.55	8.11	-0.55	0.021
164.33	-4.39	-0.58	0.00	-4.95	0.00	4.95	1,152.70	576.35	732.11	366.60	8.61	-0.56	0.017
165.00	-4.19	-0.55	0.00	-4.57	0.00	4.57	1,137.78	568.89	713.10	357.08	8.69	-0.56	0.016
167.25	-4.07	-0.54	0.00	-3.32	0.00	3.32	903.09	451.54	563.74	282.29	8.95	-0.57	0.016
170.00	-1.52	-0.21	0.00	-1.84	0.00	1.84	853.84	426.92	503.47	252.11	9.28	-0.57	0.009
175.00	-1.40	-0.20	0.00	-0.78	0.00	0.78	764.30	382.15	402.61	201.60	9.88	-0.58	0.006
179.00	0.00	-0.18	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.37	-0.58	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.94
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	170
46	172.50	190	1.755	1.343	0.902	0.281	46	236
45	168.63	137	1.677	1.038	0.780	0.235	28	170
44	166.13	231	1.628	0.867	0.709	0.207	42	287
43	164.67	70	1.599	0.777	0.669	0.192	12	87
42	162.17	280	1.551	0.635	0.606	0.167	40	347
41	157.50	352	1.463	0.415	0.500	0.123	38	437
40	154.50	74	1.408	0.299	0.440	0.097	6	91
39	152.00	399	1.363	0.217	0.394	0.078	27	495
38	147.50	522	1.283	0.098	0.322	0.045	21	647
37	142.50	548	1.198	0.003	0.253	0.015	7	679
36	137.50	593	1.115	-0.061	0.196	-0.010	-5	735
35	134.29	173	1.064	-0.088	0.165	-0.024	-4	214
34	131.79	807	1.025	-0.103	0.144	-0.032	-23	999
33	129.88	57	0.995	-0.111	0.129	-0.038	-2	71
32	127.38	686	0.957	-0.118	0.111	-0.045	-27	850
31	122.50	752	0.885	-0.121	0.082	-0.054	-35	932
30	117.50	783	0.814	-0.114	0.058	-0.057	-39	970
29	112.50	814	0.747	-0.100	0.040	-0.055	-39	1,008
28	107.50	882	0.682	-0.081	0.026	-0.048	-36	1,093
27	102.88	774	0.624	-0.062	0.018	-0.036	-24	959
26	100.38	241	0.594	-0.051	0.014	-0.029	-6	299
25	98.04	1,281	0.567	-0.041	0.011	-0.021	-23	1,587
24	95.54	204	0.538	-0.030	0.009	-0.012	-2	252
23	92.50	959	0.505	-0.018	0.007	-0.002	-1	1,188
22	87.50	990	0.452	0.001	0.006	0.015	13	1,226
21	82.50	1,021	0.401	0.018	0.006	0.030	27	1,264
20	77.50	1,051	0.354	0.032	0.008	0.041	38	1,302
19	72.50	1,082	0.310	0.043	0.011	0.049	46	1,340
18	69.38	275	0.284	0.049	0.014	0.053	13	341
17	66.88	1,491	0.264	0.053	0.016	0.054	70	1,848
16	64.13	708	0.243	0.057	0.018	0.056	34	877
15	61.63	737	0.224	0.059	0.020	0.057	36	913
14	57.50	1,159	0.195	0.063	0.024	0.057	57	1,436

13	52.50	1,190	0.163	0.067	0.028	0.057	59	1,474
12	47.50	1,221	0.133	0.069	0.033	0.056	59	1,512
11	42.50	1,251	0.107	0.071	0.036	0.055	60	1,550
10	38.75	637	0.089	0.071	0.039	0.054	30	789
9	36.25	1,168	0.078	0.072	0.040	0.054	54	1,446
8	33.13	1,780	0.065	0.072	0.041	0.053	82	2,205
7	30.63	327	0.055	0.071	0.042	0.052	15	405
6	27.50	1,328	0.045	0.071	0.042	0.052	59	1,646
5	22.50	1,359	0.030	0.068	0.040	0.050	59	1,684
4	17.50	1,390	0.018	0.063	0.037	0.047	56	1,722
3	12.50	1,421	0.009	0.054	0.031	0.042	51	1,760
2	7.50	1,452	0.003	0.039	0.022	0.032	41	1,798
1	2.50	1,482	0.000	0.016	0.008	0.015	19	1,836
5' Dipole	179.00	15	1.890	1.980	1.140	0.366	5	19
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	31
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	68
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	37
Round Low Profile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,858
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	41
Ericsson Radio 4449	170.00	222	1.705	1.140	0.822	0.251	48	275
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	308
Ericsson AIR-32 B2A/	170.00	397	1.705	1.140	0.822	0.251	86	491
RFS APXVAARR24_43-U-	170.00	384	1.705	1.140	0.822	0.251	83	475
Round Low Profile Pl	170.00	1,500	1.705	1.140	0.822	0.251	326	1,858
RCU	160.00	3	1.510	0.526	0.555	0.146	0	4
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	43
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	12	123
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	106
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	101
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	694
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.093	7	105
Raycap DC6-48-60-18-	154.00	64	1.399	0.282	0.431	0.093	5	79
Ericsson RRUS 4478 B	154.00	180	1.399	0.282	0.431	0.093	15	223
Ericsson RRUS 11 (Ba	154.00	165	1.399	0.282	0.431	0.093	13	204
Ericsson RRUS 32	154.00	165	1.399	0.282	0.431	0.093	13	205
Ericsson RRUS 12	154.00	150	1.399	0.282	0.431	0.093	12	186
Ericsson RRUS 32 B66	154.00	159	1.399	0.282	0.431	0.093	13	197
Ericsson RRUS 32 B2	154.00	159	1.399	0.282	0.431	0.093	13	197
Raycap DC6-48-60-0-8	154.00	16	1.399	0.282	0.431	0.093	1	20
Kathrein Scala 800 1	154.00	139	1.399	0.282	0.431	0.093	11	172
Quintel QS66512-2	154.00	111	1.399	0.282	0.431	0.093	9	138
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.093	21	327
CCI TPA-65R-LCUUUU-H	154.00	163	1.399	0.282	0.431	0.093	13	202
Round Low Profile Pl	154.00	1,500	1.399	0.282	0.431	0.093	121	1,858
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.002	0	238
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.002	0	164
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.002	0	246
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.002	0	209
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.002	0	77
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.002	0	141
Round Low Profile Pl	140.00	1,500	1.156	-0.033	0.223	0.002	2	1,858
Samsung PCS/AWS	110.00	253	0.714	-0.091	0.033	-0.052	-11	314
Samsung 700/850MHz D	110.00	211	0.714	-0.091	0.033	-0.052	-9	261
Antel BXA-80063/4CF	110.00	59	0.714	-0.091	0.033	-0.052	-3	74
RFS DB-T1-6Z-8AB-0Z	110.00	88	0.714	-0.091	0.033	-0.052	-4	109
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.052	-11	302
Flat Low Profile Pla	110.00	1,500	0.714	-0.091	0.033	-0.052	-68	1,858
		49,783	92.106	30.604	29.959	7.562	2,415	61,672

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	118
46	172.50	190	1.755	1.343	0.902	0.281	46	164
45	168.63	137	1.677	1.038	0.780	0.235	28	118
44	166.13	231	1.628	0.867	0.709	0.207	42	199
43	164.67	70	1.599	0.777	0.669	0.192	12	61
42	162.17	280	1.551	0.635	0.606	0.167	40	241
41	157.50	352	1.463	0.415	0.500	0.123	38	303
40	154.50	74	1.408	0.299	0.440	0.097	6	63
39	152.00	399	1.363	0.217	0.394	0.078	27	344
38	147.50	522	1.283	0.098	0.322	0.045	21	450
37	142.50	548	1.198	0.003	0.253	0.015	7	472
36	137.50	593	1.115	-0.061	0.196	-0.010	-5	511
35	134.29	173	1.064	-0.088	0.165	-0.024	-4	149
34	131.79	807	1.025	-0.103	0.144	-0.032	-23	695
33	129.88	57	0.995	-0.111	0.129	-0.038	-2	49
32	127.38	686	0.957	-0.118	0.111	-0.045	-27	591
31	122.50	752	0.885	-0.121	0.082	-0.054	-35	648
30	117.50	783	0.814	-0.114	0.058	-0.057	-39	674
29	112.50	814	0.747	-0.100	0.040	-0.055	-39	701
28	107.50	882	0.682	-0.081	0.026	-0.048	-36	760
27	102.88	774	0.624	-0.062	0.018	-0.036	-24	666
26	100.38	241	0.594	-0.051	0.014	-0.029	-6	208
25	98.04	1,281	0.567	-0.041	0.011	-0.021	-23	1,103
24	95.54	204	0.538	-0.030	0.009	-0.012	-2	175
23	92.50	959	0.505	-0.018	0.007	-0.002	-1	826
22	87.50	990	0.452	0.001	0.006	0.015	13	852
21	82.50	1,021	0.401	0.018	0.006	0.030	27	879
20	77.50	1,051	0.354	0.032	0.008	0.041	38	905
19	72.50	1,082	0.310	0.043	0.011	0.049	46	932
18	69.38	275	0.284	0.049	0.014	0.053	13	237
17	66.88	1,491	0.264	0.053	0.016	0.054	70	1,284
16	64.13	708	0.243	0.057	0.018	0.056	34	610
15	61.63	737	0.224	0.059	0.020	0.057	36	635
14	57.50	1,159	0.195	0.063	0.024	0.057	57	998
13	52.50	1,190	0.163	0.067	0.028	0.057	59	1,025
12	47.50	1,221	0.133	0.069	0.033	0.056	59	1,051
11	42.50	1,251	0.107	0.071	0.036	0.055	60	1,078
10	38.75	637	0.089	0.071	0.039	0.054	30	549
9	36.25	1,168	0.078	0.072	0.040	0.054	54	1,005
8	33.13	1,780	0.065	0.072	0.041	0.053	82	1,533
7	30.63	327	0.055	0.071	0.042	0.052	15	282
6	27.50	1,328	0.045	0.071	0.042	0.052	59	1,144
5	22.50	1,359	0.030	0.068	0.040	0.050	59	1,171
4	17.50	1,390	0.018	0.063	0.037	0.047	56	1,197
3	12.50	1,421	0.009	0.054	0.031	0.042	51	1,224
2	7.50	1,452	0.003	0.039	0.022	0.032	41	1,250
1	2.50	1,482	0.000	0.016	0.008	0.015	19	1,277
5' Dipole	179.00	15	1.890	1.980	1.140	0.366	5	13
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	22
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	47
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	26
Round Low Profile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,292
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	28
Ericsson Radio 4449	170.00	222	1.705	1.140	0.822	0.251	48	191
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	214
Ericsson AIR-32 B2A/	170.00	397	1.705	1.140	0.822	0.251	86	342

RFS APXVAARR24_43-U-	170.00	384	1.705	1.140	0.822	0.251	83	330
Round Low Profile Pl	170.00	1,500	1.705	1.140	0.822	0.251	326	1,292
RCU	160.00	3	1.510	0.526	0.555	0.146	0	3
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	30
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	12	85
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	74
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	70
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	482
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.093	7	73
Raycap DC6-48-60-18-	154.00	64	1.399	0.282	0.431	0.093	5	55
Ericsson RRUS 4478 B	154.00	180	1.399	0.282	0.431	0.093	15	155
Ericsson RRUS 11 (Ba	154.00	165	1.399	0.282	0.431	0.093	13	142
Ericsson RRUS 32	154.00	165	1.399	0.282	0.431	0.093	13	142
Ericsson RRUS 12	154.00	150	1.399	0.282	0.431	0.093	12	129
Ericsson RRUS 32 B66	154.00	159	1.399	0.282	0.431	0.093	13	137
Ericsson RRUS 32 B2	154.00	159	1.399	0.282	0.431	0.093	13	137
Raycap DC6-48-60-0-8	154.00	16	1.399	0.282	0.431	0.093	1	14
Kathrein Scala 800 1	154.00	139	1.399	0.282	0.431	0.093	11	120
Quintel QS66512-2	154.00	111	1.399	0.282	0.431	0.093	9	96
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.093	21	227
CCI TPA-65R-LCUUUU-H	154.00	163	1.399	0.282	0.431	0.093	13	141
Round Low Profile Pl	154.00	1,500	1.399	0.282	0.431	0.093	121	1,292
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.002	0	165
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.002	0	114
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.002	0	171
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.002	0	145
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.002	0	53
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.002	0	98
Round Low Profile Pl	140.00	1,500	1.156	-0.033	0.223	0.002	2	1,292
Samsung PCS/AWS	110.00	253	0.714	-0.091	0.033	-0.052	-11	218
Samsung 700/850MHz D	110.00	211	0.714	-0.091	0.033	-0.052	-9	182
Antel BXA-80063/4CF	110.00	59	0.714	-0.091	0.033	-0.052	-3	51
RFS DB-T1-6Z-8AB-0Z	110.00	88	0.714	-0.091	0.033	-0.052	-4	76
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.052	-11	210
Flat Low Profile Pla	110.00	1,500	0.714	-0.091	0.033	-0.052	-68	1,292
		49,783	92.106	30.604	29.959	7.562	2,415	42,871

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	-59.84	-2.40	0.00	-324.72	0.00	324.72	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.068
5.00	-58.04	-2.37	0.00	-312.71	0.00	312.71	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.067
10.00	-56.28	-2.33	0.00	-300.84	0.00	300.84	4,488.01	2,244.00	11,005.7	5,511.07	0.03	-0.02	0.067
15.00	-54.55	-2.29	0.00	-289.17	0.00	289.17	4,425.86	2,212.93	10,575.0	5,295.36	0.06	-0.04	0.067
20.00	-52.87	-2.24	0.00	-277.73	0.00	277.73	4,360.98	2,180.49	10,145.6	5,080.38	0.11	-0.05	0.067
25.00	-51.22	-2.19	0.00	-266.51	0.00	266.51	4,293.36	2,146.68	9,718.32	4,866.38	0.17	-0.07	0.067
30.00	-50.82	-2.19	0.00	-255.54	0.00	255.54	4,223.01	2,111.51	9,293.47	4,653.64	0.25	-0.08	0.067
31.25	-48.61	-2.11	0.00	-252.81	0.00	252.81	4,205.00	2,102.50	9,187.70	4,600.68	0.27	-0.08	0.067
35.00	-47.17	-2.06	0.00	-244.90	0.00	244.90	4,149.93	2,074.96	8,871.62	4,442.40	0.34	-0.10	0.066
37.50	-46.38	-2.04	0.00	-239.75	0.00	239.75	4,149.47	2,074.73	8,869.01	4,441.10	0.39	-0.10	0.065
40.00	-44.82	-1.98	0.00	-234.66	0.00	234.66	4,111.89	2,055.95	8,659.38	4,336.13	0.45	-0.11	0.065
45.00	-43.31	-1.93	0.00	-224.74	0.00	224.74	4,034.69	2,017.35	8,243.04	4,127.64	0.58	-0.13	0.065
50.00	-41.84	-1.88	0.00	-215.08	0.00	215.08	3,954.76	1,977.38	7,830.99	3,921.32	0.72	-0.15	0.065
55.00	-40.40	-1.84	0.00	-205.66	0.00	205.66	3,872.09	1,936.05	7,423.76	3,717.40	0.88	-0.16	0.066
60.00	-39.49	-1.81	0.00	-196.48	0.00	196.48	3,786.70	1,893.35	7,021.86	3,516.15	1.07	-0.18	0.066
63.25	-38.61	-1.78	0.00	-190.61	0.00	190.61	3,729.72	1,864.86	6,763.73	3,386.89	1.19	-0.20	0.067
65.00	-36.76	-1.71	0.00	-187.50	0.00	187.50	3,698.56	1,849.28	6,625.81	3,317.83	1.27	-0.20	0.066
68.75	-36.42	-1.70	0.00	-181.10	0.00	181.10	3,675.54	1,837.77	6,525.34	3,267.52	1.43	-0.22	0.065
70.00	-35.08	-1.66	0.00	-178.98	0.00	178.98	3,652.91	1,826.45	6,427.71	3,218.63	1.49	-0.22	0.065
75.00	-33.78	-1.63	0.00	-170.69	0.00	170.69	3,560.66	1,780.33	6,041.44	3,025.21	1.74	-0.25	0.066
80.00	-32.51	-1.61	0.00	-162.56	0.00	162.56	3,465.68	1,732.84	5,662.31	2,835.36	2.01	-0.27	0.067
85.00	-31.29	-1.60	0.00	-154.52	0.00	154.52	3,367.96	1,683.98	5,290.83	2,649.35	2.30	-0.29	0.068
90.00	-30.10	-1.61	0.00	-146.51	0.00	146.51	3,252.82	1,626.41	4,905.37	2,456.33	2.62	-0.32	0.069
95.00	-29.84	-1.62	0.00	-138.46	0.00	138.46	3,118.51	1,559.26	4,506.69	2,256.70	2.96	-0.34	0.071
96.08	-28.26	-1.64	0.00	-136.71	0.00	136.71	3,089.41	1,544.71	4,422.54	2,214.56	3.04	-0.35	0.071
100.00	-27.96	-1.65	0.00	-130.28	0.00	130.28	2,984.21	1,492.10	4,124.91	2,065.52	3.34	-0.37	0.072
100.75	-27.00	-1.68	0.00	-129.04	0.00	129.04	3,030.38	1,515.19	4,254.26	2,130.29	3.40	-0.38	0.069
105.00	-25.91	-1.72	0.00	-121.91	0.00	121.91	2,916.22	1,458.11	3,938.09	1,971.97	3.75	-0.40	0.071
110.00	-21.98	-1.85	0.00	-113.31	0.00	113.31	2,781.91	1,390.96	3,581.76	1,793.54	4.19	-0.44	0.071
115.00	-21.01	-1.89	0.00	-104.07	0.00	104.07	2,647.61	1,323.80	3,242.33	1,623.57	4.66	-0.47	0.072
120.00	-20.07	-1.93	0.00	-94.62	0.00	94.62	2,513.30	1,256.65	2,919.79	1,462.07	5.17	-0.50	0.073
125.00	-19.22	-1.96	0.00	-84.96	0.00	84.96	2,378.99	1,189.50	2,614.15	1,309.02	5.72	-0.54	0.073
129.75	-19.15	-1.97	0.00	-75.64	0.00	75.64	2,251.40	1,125.70	2,339.44	1,171.46	6.28	-0.58	0.073
130.00	-18.15	-1.99	0.00	-75.15	0.00	75.15	2,244.69	1,122.34	2,325.40	1,164.43	6.31	-0.58	0.073
133.58	-17.94	-2.00	0.00	-68.02	0.00	68.02	1,841.02	920.51	1,881.29	942.04	6.75	-0.61	0.082
135.00	-17.20	-2.00	0.00	-65.20	0.00	65.20	1,809.31	904.65	1,816.65	909.67	6.94	-0.62	0.081
140.00	-13.59	-1.96	0.00	-55.19	0.00	55.19	1,697.39	848.69	1,597.52	799.95	7.61	-0.67	0.077
145.00	-12.94	-1.94	0.00	-45.38	0.00	45.38	1,585.46	792.73	1,392.48	697.27	8.34	-0.72	0.073
150.00	-12.44	-1.92	0.00	-35.66	0.00	35.66	1,473.54	736.77	1,201.51	601.65	9.11	-0.76	0.068
154.00	-8.24	-1.59	0.00	-27.98	0.00	27.98	1,384.00	692.00	1,058.88	530.23	9.77	-0.80	0.059
155.00	-7.81	-1.55	0.00	-26.39	0.00	26.39	1,361.62	680.81	1,024.63	513.08	9.93	-0.81	0.057
160.00	-6.39	-1.39	0.00	-18.63	0.00	18.63	1,249.70	624.85	861.82	431.55	10.80	-0.85	0.048
164.33	-6.30	-1.37	0.00	-12.63	0.00	12.63	1,152.70	576.35	732.11	366.60	11.59	-0.88	0.040
165.00	-6.02	-1.33	0.00	-11.71	0.00	11.71	1,137.78	568.89	713.10	357.08	11.71	-0.88	0.038
167.25	-5.85	-1.30	0.00	-8.72	0.00	8.72	903.09	451.54	563.74	282.29	12.13	-0.90	0.037
170.00	-2.17	-0.59	0.00	-5.15	0.00	5.15	853.84	426.92	503.47	252.11	12.65	-0.91	0.023
175.00	-2.00	-0.55	0.00	-2.19	0.00	2.19	764.30	382.15	402.61	201.60	13.62	-0.93	0.013
179.00	0.00	-0.52	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	14.40	-0.93	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.59	-2.40	0.00	-317.47	0.00	317.47	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.062
5.00	-40.34	-2.37	0.00	-305.48	0.00	305.48	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.062
10.00	-39.12	-2.32	0.00	-293.64	0.00	293.64	4,488.01	2,244.00	11,005.7	5,511.07	0.03	-0.02	0.062
15.00	-37.92	-2.27	0.00	-282.03	0.00	282.03	4,425.86	2,212.93	10,575.0	5,295.36	0.06	-0.04	0.062
20.00	-36.75	-2.22	0.00	-270.66	0.00	270.66	4,360.98	2,180.49	10,145.6	5,080.38	0.10	-0.05	0.062
25.00	-35.61	-2.17	0.00	-259.54	0.00	259.54	4,293.36	2,146.68	9,718.32	4,866.38	0.16	-0.06	0.062
30.00	-35.32	-2.16	0.00	-248.67	0.00	248.67	4,223.01	2,111.51	9,293.47	4,653.64	0.24	-0.08	0.062
31.25	-33.79	-2.08	0.00	-245.97	0.00	245.97	4,205.00	2,102.50	9,187.70	4,600.68	0.26	-0.08	0.062
35.00	-32.79	-2.03	0.00	-238.16	0.00	238.16	4,149.93	2,074.96	8,871.62	4,442.40	0.33	-0.09	0.062
37.50	-32.24	-2.01	0.00	-233.08	0.00	233.08	4,149.47	2,074.73	8,869.01	4,441.10	0.38	-0.10	0.060
40.00	-31.16	-1.95	0.00	-228.06	0.00	228.06	4,111.89	2,055.95	8,659.38	4,336.13	0.44	-0.11	0.060
45.00	-30.11	-1.90	0.00	-218.30	0.00	218.30	4,034.69	2,017.35	8,243.04	4,127.64	0.56	-0.13	0.060
50.00	-29.08	-1.85	0.00	-208.81	0.00	208.81	3,954.76	1,977.38	7,830.99	3,921.32	0.70	-0.14	0.061
55.00	-28.08	-1.79	0.00	-199.58	0.00	199.58	3,872.09	1,936.05	7,423.76	3,717.40	0.86	-0.16	0.061
60.00	-27.45	-1.76	0.00	-190.61	0.00	190.61	3,786.70	1,893.35	7,021.86	3,516.15	1.04	-0.18	0.061
63.25	-26.84	-1.73	0.00	-184.88	0.00	184.88	3,729.72	1,864.86	6,763.73	3,386.89	1.16	-0.19	0.062
65.00	-25.55	-1.66	0.00	-181.84	0.00	181.84	3,698.56	1,849.28	6,625.81	3,317.83	1.23	-0.20	0.062
68.75	-25.32	-1.65	0.00	-175.61	0.00	175.61	3,675.54	1,837.77	6,525.34	3,267.52	1.40	-0.21	0.061
70.00	-24.38	-1.61	0.00	-173.54	0.00	173.54	3,652.91	1,826.45	6,427.71	3,218.63	1.45	-0.22	0.061
75.00	-23.48	-1.58	0.00	-165.49	0.00	165.49	3,560.66	1,780.33	6,041.44	3,025.21	1.69	-0.24	0.061
80.00	-22.60	-1.56	0.00	-157.61	0.00	157.61	3,465.68	1,732.84	5,662.31	2,835.36	1.95	-0.26	0.062
85.00	-21.75	-1.55	0.00	-149.84	0.00	149.84	3,367.96	1,683.98	5,290.83	2,649.35	2.24	-0.28	0.063
90.00	-20.92	-1.55	0.00	-142.10	0.00	142.10	3,252.82	1,626.41	4,905.37	2,456.33	2.55	-0.31	0.064
95.00	-20.74	-1.56	0.00	-134.33	0.00	134.33	3,118.51	1,559.26	4,506.69	2,256.70	2.88	-0.33	0.066
96.08	-19.64	-1.58	0.00	-132.64	0.00	132.64	3,089.41	1,544.71	4,422.54	2,214.56	2.96	-0.34	0.066
100.00	-19.43	-1.59	0.00	-126.45	0.00	126.45	2,984.21	1,492.10	4,124.91	2,065.52	3.25	-0.36	0.068
100.75	-18.77	-1.62	0.00	-125.25	0.00	125.25	3,030.38	1,515.19	4,254.26	2,130.29	3.31	-0.37	0.065
105.00	-18.01	-1.66	0.00	-118.38	0.00	118.38	2,916.22	1,458.11	3,938.09	1,971.97	3.64	-0.39	0.066
110.00	-15.27	-1.79	0.00	-110.10	0.00	110.10	2,781.91	1,390.96	3,581.76	1,793.54	4.07	-0.42	0.067
115.00	-14.60	-1.83	0.00	-101.14	0.00	101.14	2,647.61	1,323.80	3,242.33	1,623.57	4.53	-0.46	0.068
120.00	-13.95	-1.87	0.00	-91.98	0.00	91.98	2,513.30	1,256.65	2,919.79	1,462.07	5.03	-0.49	0.068
125.00	-13.36	-1.90	0.00	-82.63	0.00	82.63	2,378.99	1,189.50	2,614.15	1,309.02	5.56	-0.53	0.069
129.75	-13.31	-1.91	0.00	-73.60	0.00	73.60	2,251.40	1,125.70	2,339.44	1,171.46	6.10	-0.56	0.069
130.00	-12.61	-1.93	0.00	-73.12	0.00	73.12	2,244.69	1,122.34	2,325.40	1,164.43	6.13	-0.56	0.068
133.58	-12.46	-1.93	0.00	-66.22	0.00	66.22	1,841.02	920.51	1,881.29	942.04	6.56	-0.59	0.077
135.00	-11.95	-1.94	0.00	-63.48	0.00	63.48	1,809.31	904.65	1,816.65	909.67	6.74	-0.60	0.076
140.00	-9.44	-1.91	0.00	-53.79	0.00	53.79	1,697.39	848.69	1,597.52	799.95	7.40	-0.65	0.073
145.00	-8.99	-1.89	0.00	-44.25	0.00	44.25	1,585.46	792.73	1,392.48	697.27	8.11	-0.70	0.069
150.00	-8.64	-1.86	0.00	-34.80	0.00	34.80	1,473.54	736.77	1,201.51	601.65	8.86	-0.74	0.064
154.00	-5.73	-1.55	0.00	-27.35	0.00	27.35	1,384.00	692.00	1,058.88	530.23	9.49	-0.78	0.056
155.00	-5.42	-1.51	0.00	-25.79	0.00	25.79	1,361.62	680.81	1,024.63	513.08	9.66	-0.78	0.054
160.00	-4.44	-1.35	0.00	-18.22	0.00	18.22	1,249.70	624.85	861.82	431.55	10.50	-0.82	0.046
164.33	-4.38	-1.34	0.00	-12.36	0.00	12.36	1,152.70	576.35	732.11	366.60	11.26	-0.86	0.038
165.00	-4.18	-1.30	0.00	-11.46	0.00	11.46	1,137.78	568.89	713.10	357.08	11.38	-0.86	0.036
167.25	-4.06	-1.27	0.00	-8.54	0.00	8.54	903.09	451.54	563.74	282.29	11.79	-0.87	0.035
170.00	-1.51	-0.58	0.00	-5.05	0.00	5.05	853.84	426.92	503.47	252.11	12.30	-0.89	0.022
175.00	-1.39	-0.54	0.00	-2.15	0.00	2.15	764.30	382.15	402.61	201.60	13.24	-0.90	0.012
179.00	0.00	-0.52	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	14.00	-0.91	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	30.14	0.00	59.70	0.00	0.00	3833.46	0.00	0.66
0.9D + 1.6W	30.12	0.00	44.77	0.00	0.00	3773.10	0.00	0.64
1.2D + 1.0Di + 1.0Wi	9.22	0.00	99.84	0.00	0.00	1242.26	0.00	0.23
(1.2 + 0.2Sds) * DL + E ELFM	1.95	0.00	59.84	0.00	0.00	284.27	0.00	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.40	0.00	59.84	0.00	0.00	324.72	133.58	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.94	0.00	41.59	0.00	0.00	278.65	0.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.40	0.00	41.59	0.00	0.00	317.47	133.58	0.08
1.0D + 1.0W	7.20	0.00	49.78	0.00	0.00	908.42	0.00	0.16

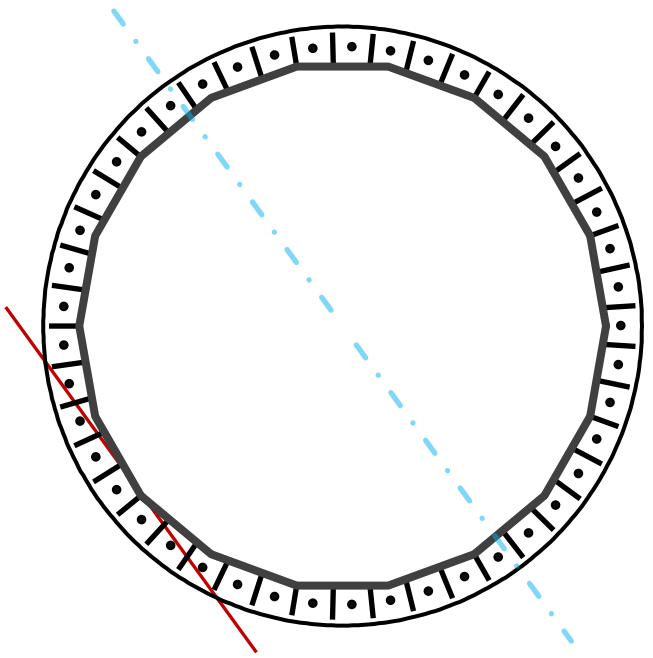
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	63	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3833.5	k-ft
Axial, Pu	59.7	k
Shear, Vu	30.1	k
Neutral Axis	0	°

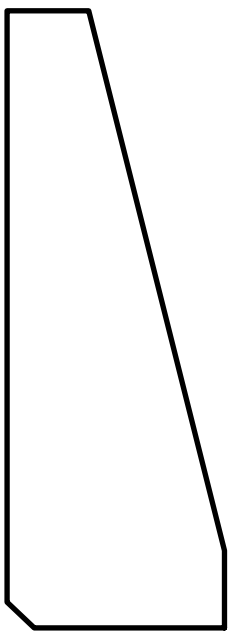
Report Capacities		
Component	Capacity	Result
Base Plate	46%	Pass
Anchor Rods	64%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	73	in
Thickness	1 1/2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	524.9	k
Bending Stress, ϕMn	1134.9	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	45	-
Diameter, ø	1 1/4	in
Bolt Circle	68	in
Grade	A687	
Yield Strength, Fy	105	ksi
Tensile Strength, Fu	125	ksi
Spacing	4.7	in
Orientation Offset	0	°
Applied Force, Pu	62.0	k
Anchor Rods, ϕPn	96.9	k

Stiffeners		
Arrangement	Radial	-
Quantity	45	-
Height	12	in
Width	4	in
Effective Width	4.000	in
Thickness	1	in
Effective Thickness	1.000	in
Notch	0.5	in
Flat Edge	1.5	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	5/8	in
Bevel Depth	5/8	in
Vertical Weld	Fillet	
Vertical Fillet Size	5/8	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, ϕRn	334.8	k
Horz. Weld, ϕRn	69.6	k
Ten. Capacity, ϕTn	153.6	k
Comp. Capacity, ϕPn	1271.0	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	30.3	3869.3	1.00
Anchor Rod Forces	30.3	3869.3	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	20.9	2665.3	0.69

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	73.4043	4.0780	0.1917		35988.93
Bolt	1.2272	0.9691	0.0747	7	25209.96
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	3.5000	3.1500	21.3333		79666.97

Base Plate		
Shape	Round	-
Diameter, D	73	in
Thickness, t	1.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	36.878	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate		
Chord Length AA	28.804	in
Additional AA	18.462	in
Section Modulus, Z	26.587	in^3
Applied Moment, Mu	524.9	k-ft
Bending Capacity, ϕMn	1196.4	k-ft
Capacity, Mu/ϕMn	0.439	OK
Chord Length AB	26.558	in
Additional AB	14.653	in
Section Modulus, Z	23.181	in^3
Applied Moment, Mu	376.4	k-ft
Bending Capacity, ϕMn	1043.2	k-ft
Capacity, Mu/ϕMn	0.361	OK
Bend Line Length	25.220	in
Additional Bend Line	19.614	in
Section Modulus, Z	25.220	in^3
Applied Moment, Mu	524.9	k-ft
Bending Capacity, ϕMn	1134.9	k-ft
Capacity, Mu/ϕMn	0.462	OK

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

Anchor Rods		
Anchor Rod Quantity, N	45	-
Rod Diameter, d	1.25	in
Bolt Circle, BC	68	in
Yield Strength, Fy	105	ksi
Tensile Strength, Fu	125	ksi
Applied Axial, Pu	62.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	96.9	k
Tensile Capacity, ϕRnt	0.640	OK
Interaction Capacity	0.410	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	43.2	k
Applied Horizontal Force, Vu	0.23	k

Vertical Weld		
Vert.-to-Stiffener a=e_x/l	0.111	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	3.720	-
Compressive Capacity, ϕPn	334.8	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	264.6	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.130	OK

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.250	-
Weld Coefficient, C	2.240	-
Effective Fillet	0.625	in
Compressive Capacity, ϕPn	67.2	k
Horz.-to-Pole a=e_x/l	0.500	-
Spacing Ratio, k	0.250	-
Weld Coefficient, C	2.320	-
Shear Capacity, ϕVn	69.6	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.646	OK

Plate Tension		
Gross Cross Section	3.500	in^2
Net Cross Section	3.150	in^2
Tensile Capacity, ϕTn	153.6	k
Capacity, Tu/ϕTn	0.141	OK

Plate Compression		
Radius of Gyration	0.289	in^3
kl/r	24.94	-
4.71 √(E/Fy)	113.43	-
Buckling Stress(Fe)	460.1	-
Crit. Buckling Stress(Fcr)	403.5	ksi
Compressive Capacity, ϕPn	1271.0	k
Capacity, Pu/ϕPn	0.017	OK

Mount Analysis of Existing Low Profile Platform for American Tower on behalf of T-Mobile

370627 - Newington CT

Project #: 12605188

T-Mobile Site ID: CTHA342A

Program: L700

CLS Engineering PLLC Project #41124-12605188-01-MA

January 22, 2019

MOUNT DESCRIPTION	Existing Low Profile Platform at 170 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 170 ft AGL
SITE DESCRIPTION	179 ft Monopole
SITE ADDRESS	605 Willard Ave., Newington, CT 06111, Hartford County
GPS COORDINATES	41.69837222, -72.73714722
ANALYSIS STANDARD	2018 IBC / TIA-222-H
LOADING CRITERIA	118 mph, V_{ult} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1.5" Ice

■ **ANALYSIS RESULT:** **Pass (Conditional)**

MEMBER USAGE	**84%**	**Pass**
COLLAR USAGE	**86%**	**Pass**

Modifications are proposed to bring mounts into compliance; see conclusion for details.

Prepared by:
Zachary Blackford

Reviewed and Approved by:
Tyler M. Barker, P.E.

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

Digitally signed by Tyler M. Barker
Date: 2019.01.22 21:12:59 -05'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the existing Low Profile Platform. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

■ STRUCTURAL DOCUMENTS PROVIDED

STRUCTURAL DATA	Photos dated October 30, 2018 Site Pro 1 Assembly Drawing, #SCX45-K, dated February 19, 2015
PREVIOUS ANALYSES	Structural Analysis by American Tower, Engineering #OAA720717_C3_03, dated January 18, 2018
LOADING DATA	American Tower Application, Project #12605188, dated December 5, 2018

■ ANALYSIS CRITERIA

STANDARD	2018 IBC / TIA-222-H
BASIC WIND SPEED	118 mph, V_{ult} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1.5" Radial Ice (Escalating)
EXPOSURE CATEGORY	B
MAX. TOPOGRAPHIC FACTOR, K_{zt}	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M: 500 lb

■ FINAL EQUIPMENT

ELEVATION (ft)		ANTENNAS	
MOUNT	**RAD.**	**#**	**NAME**
170.0	170.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 32 B2A/B66AA
		3	Ericsson AIR 21, 1.3 M, B2A B4P
		3	Ericsson RADIO 4449 B12/B71
		3	Ericsson KRY 112 144/1

■ RESULTS SUMMARY

Pre-Modification Usage:

COMPONENT	PEAK USAGE	RESULT
Mount Pipe	111%	**Fail**
Offset Side Plate	84%	Pass
Offset End Plate	66%	Pass
Offset Tube	56%	Pass

Post-Modification Usage:

COMPONENT	PEAK USAGE	RESULT
Collar Reactions	86%	Pass
Offset Side Plates	84%	Pass
Offset End Plates	66%	Pass
Mount Pipes	57%	Pass
Offset Tube	56%	Pass

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **CONDITIONALLY PASS**. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

- **Replace existing mount pipe at Position 2 with (1) 10ft. long proposed Pipe 2 1/2 STD, A53 Gr. B, at each sector (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.**

See following sketch and Site Pro 1 assembly drawing for additional details.

■ ASSUMPTIONS AND CONDITIONS

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering PLLC should be notified immediately to revise results.

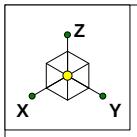
This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

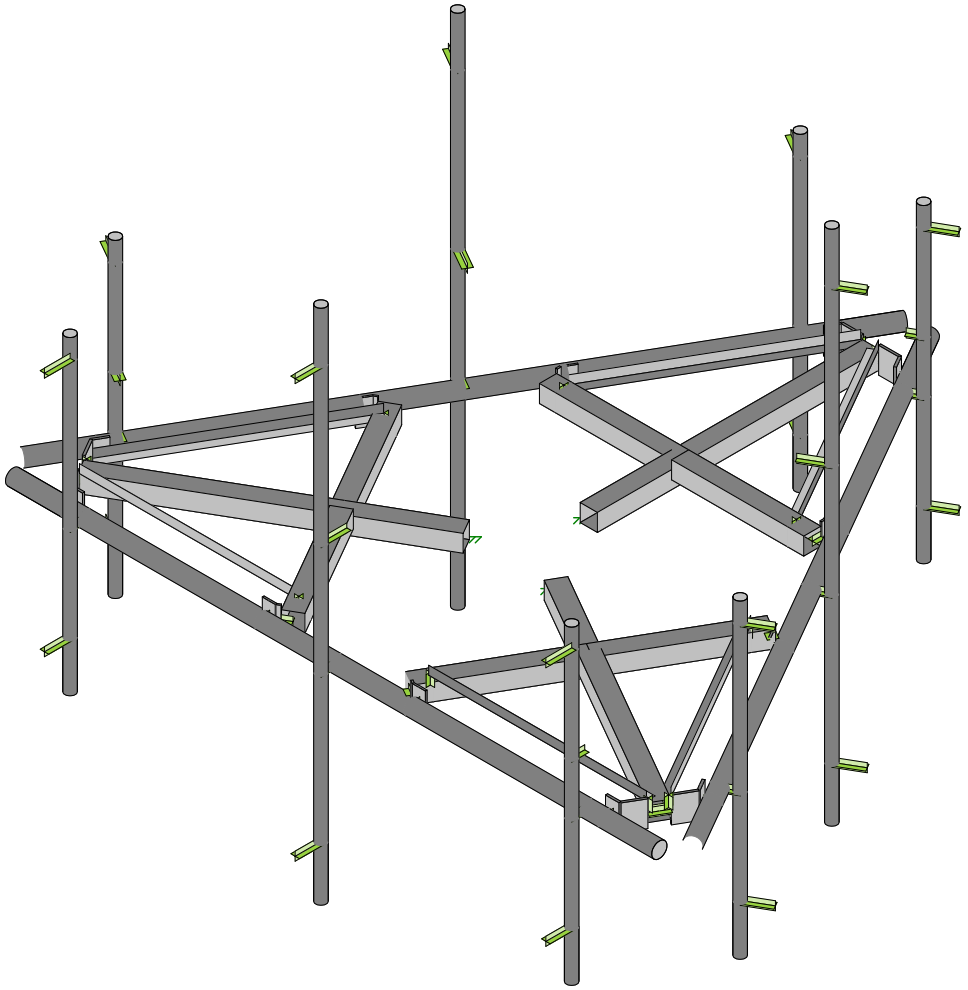
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.



Existing Mount - To Be Modified



Envelope Only Solution

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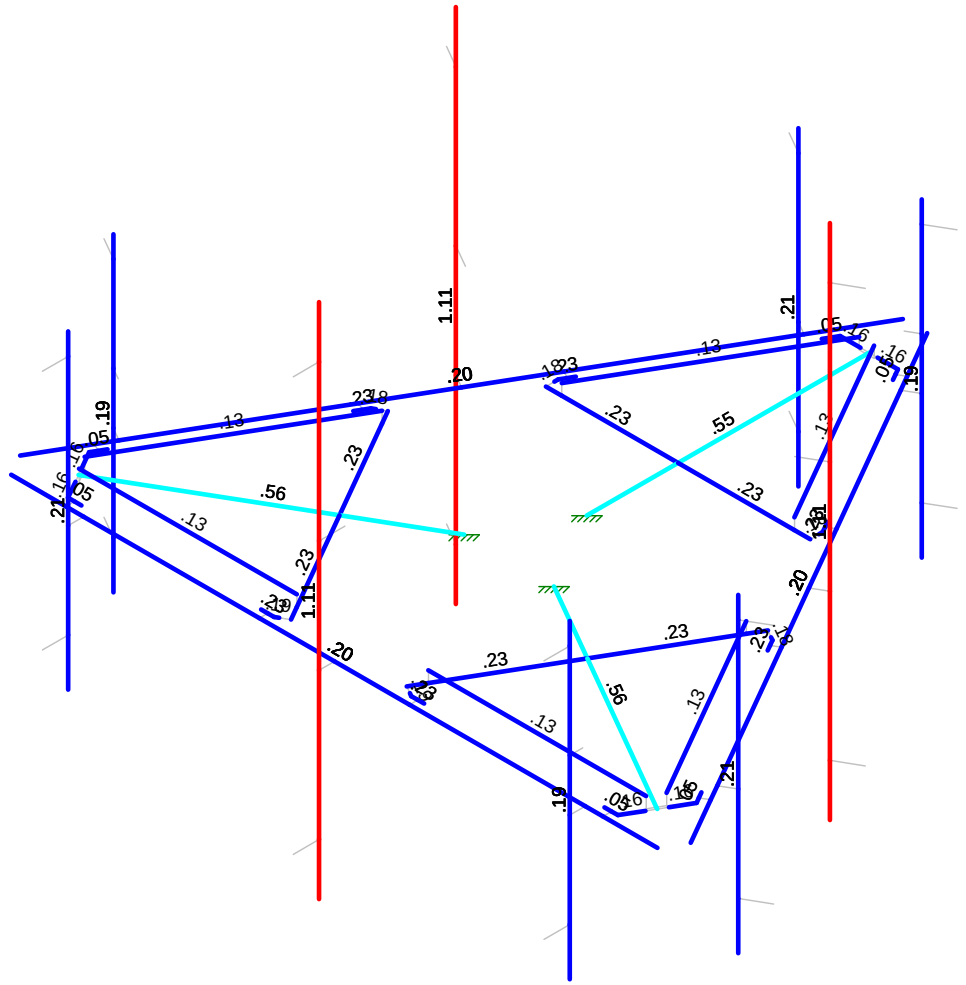
ZB		Jan 22, 2019 at 10:45 AM
41124-12605188-01-MA	Pre-Modification - Rendered	41124-12622803-01-MA.r3d

Existing Mount - To Be Modified



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 2
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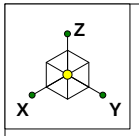
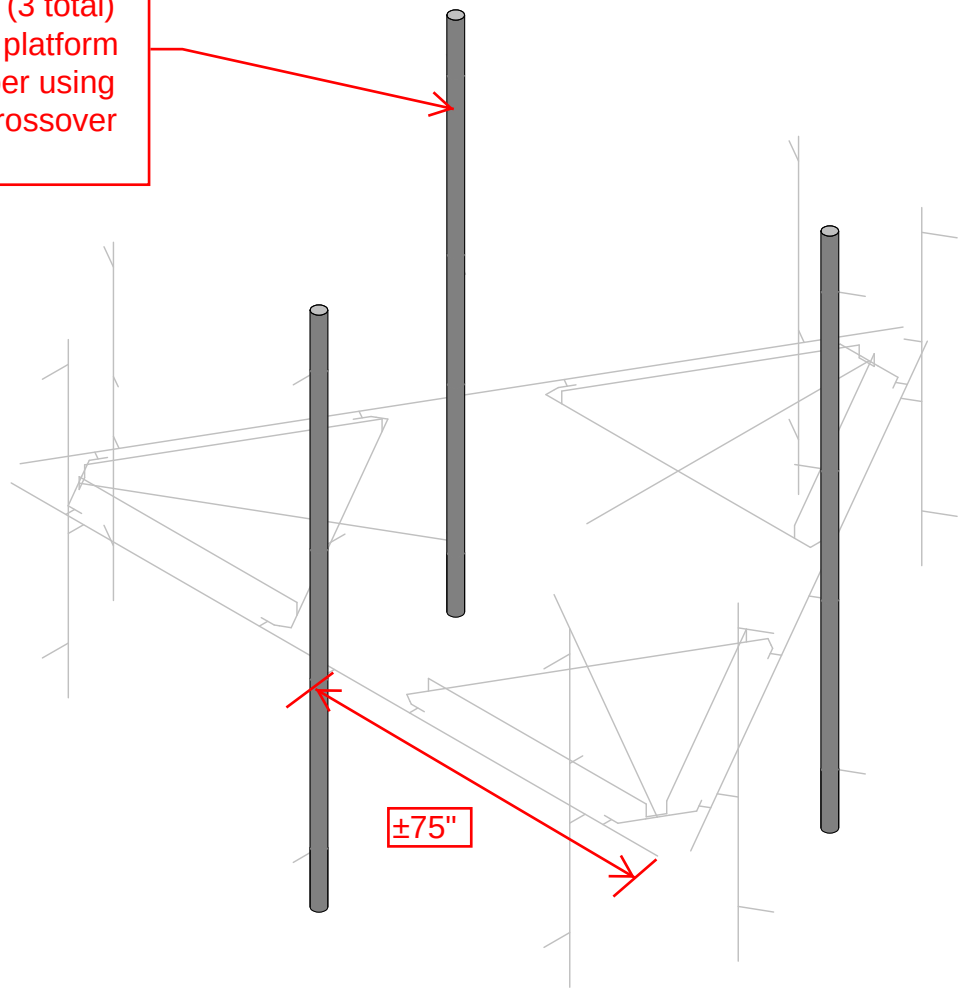


Replace existing mount pipe at Position 2 with (1) 10ft. long proposed Pipe 2 1/2 STD, A53 Gr. B, at each sector (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.



Envelope Only Solution

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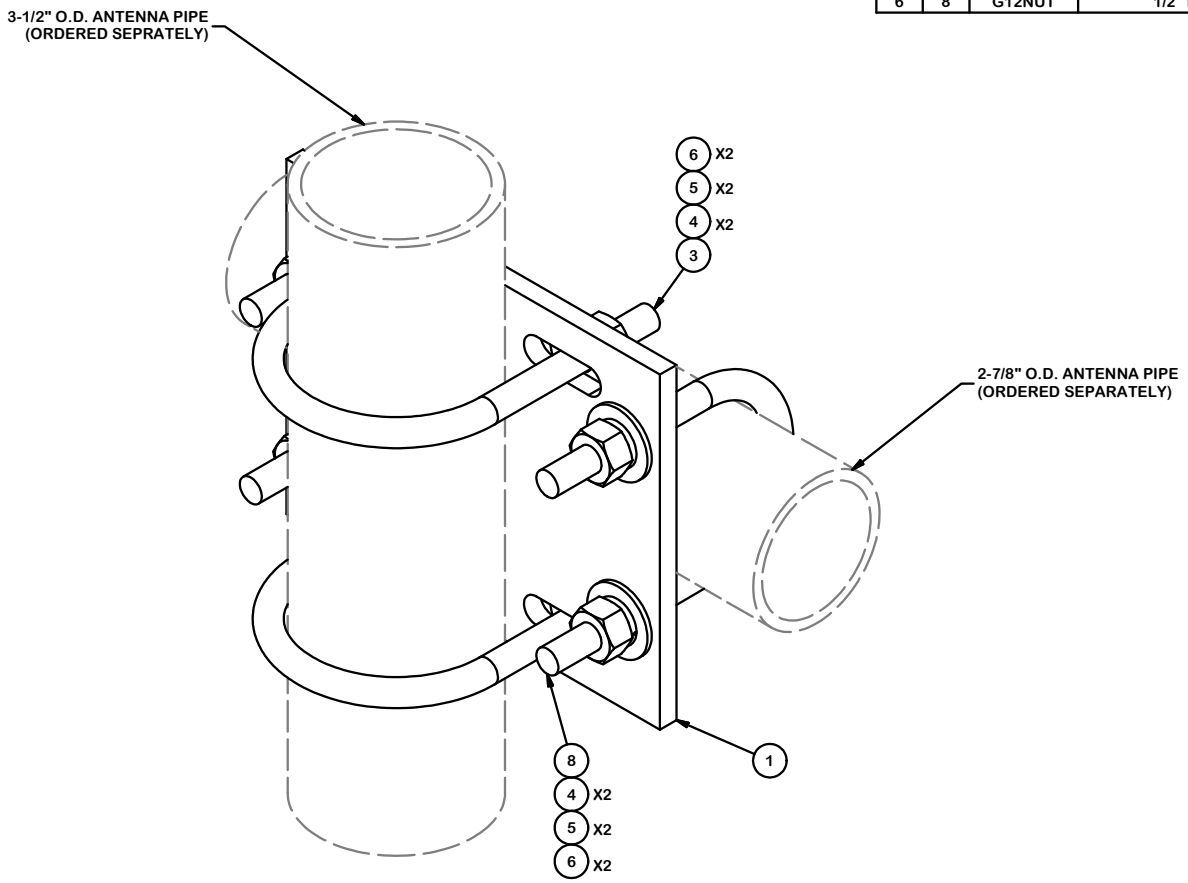
41124-12605188-01-MA	Proposed Modifications - Rendered	41124-12622803-01-MA.r3d

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	6.02
3	2	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	1.46
8	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	1.46
4	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	9.92



TOLERANCE NOTES

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

DESCRIPTION: CROSSOVER PLATE KIT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 2/19/2015		SCX45-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 2/19/2015	SCX45-K

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	170 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	170 ft	**K_d**	0.95
Elevation AMSL (ft)	101 ft	**K_e**	1.00
Basic Wind Speed, V_{ult} (bare)	H	**K_z**	1.15
Basic Wind Speed, V_{ult} (bare)	118 mph	**K_{zt}**	1.00
Basic Wind Speed, V (ice)	50 mph	**K_s**	1.00
Design Ice Thickness, t_i	1 1/2 in	**t_{iz}**	1.77 in
Exposure Category	B	**G_h**	1.00
Risk Category	II	**q_z (bare)**	38.8 psf
Seismic Response Coeff., C_s	-	**q_z (ice)**	7.0 psf

Live Loading

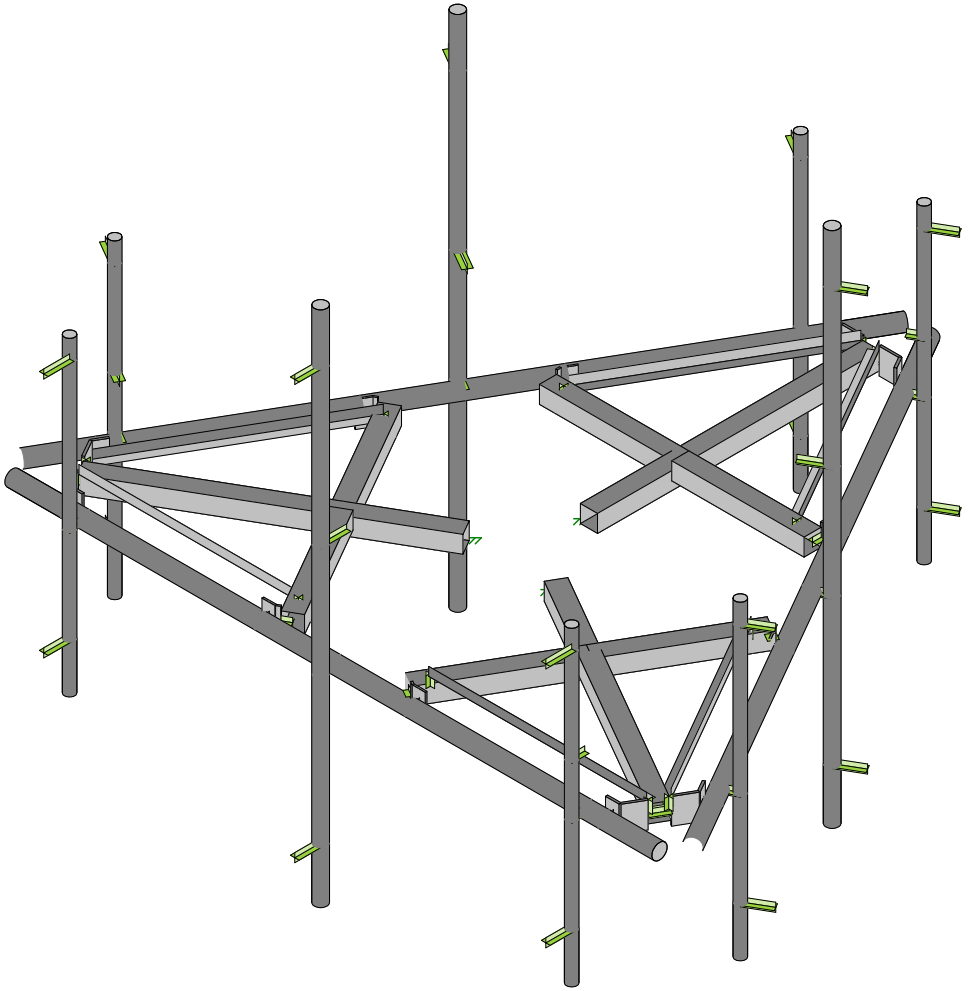
At Mount Pipes, L_M	500 lb
Joint Labels Considered	N165A
	N41
	N118

Member Distributed Loading

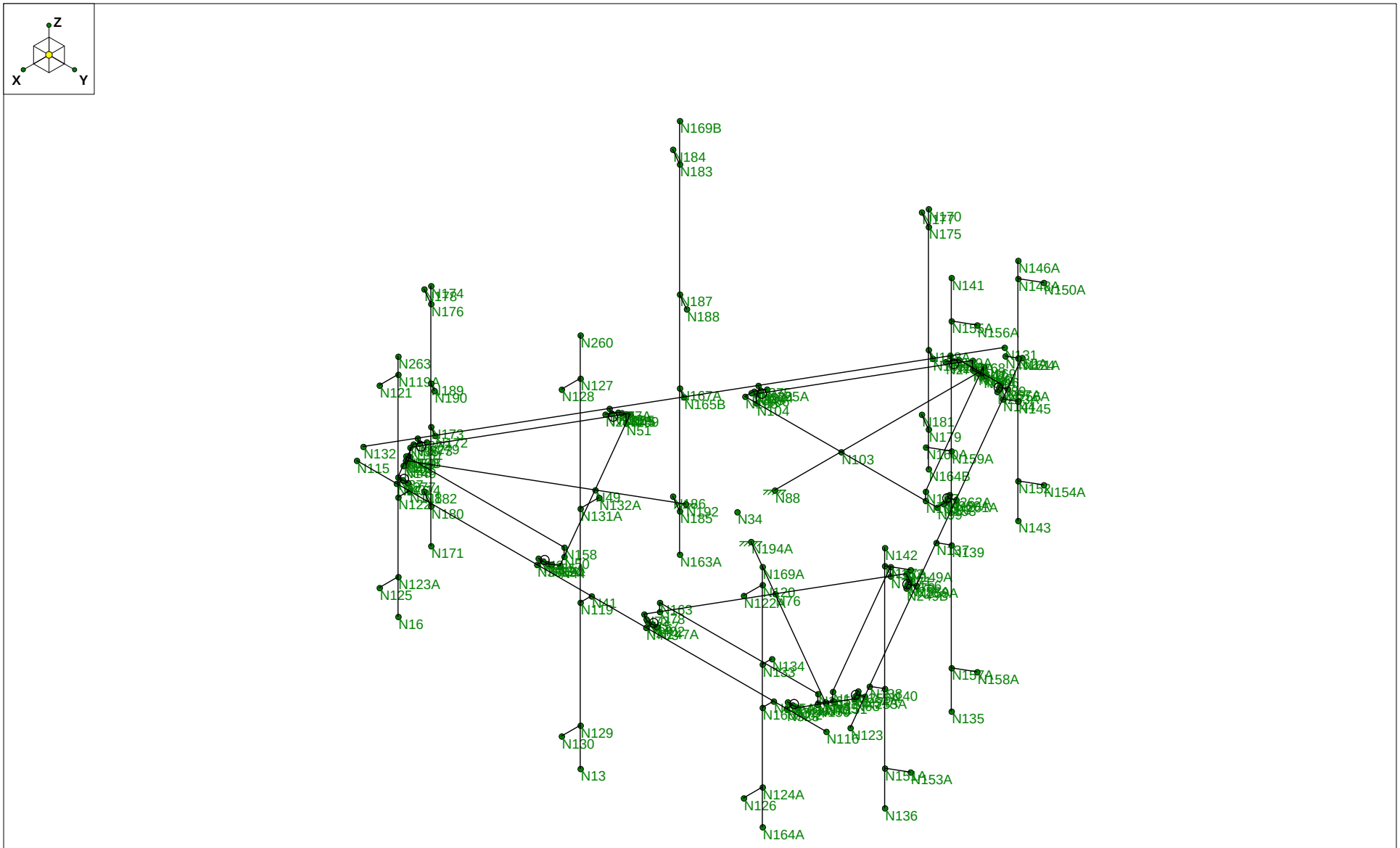
Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset End Plate	0.5 x 6 Plate	34.92	5.99	12.75
Offset Side Plate	0.38 X 6 Plate	34.92	5.99	12.58
Offset Tube	HSS4X4X4	23.28	2.53	14.81
Platform Horzontal Pipe	PIPE_3.0	12.22	4.41	11.37
Grating Angle	L2x2x3	11.64	2.37	9.05
MOD Mount Pipe	PIPE_2.5	10.04	4.02	10.02
Mount Pipe	PIPE_2.0	8.29	3.71	8.94

Appurtenances

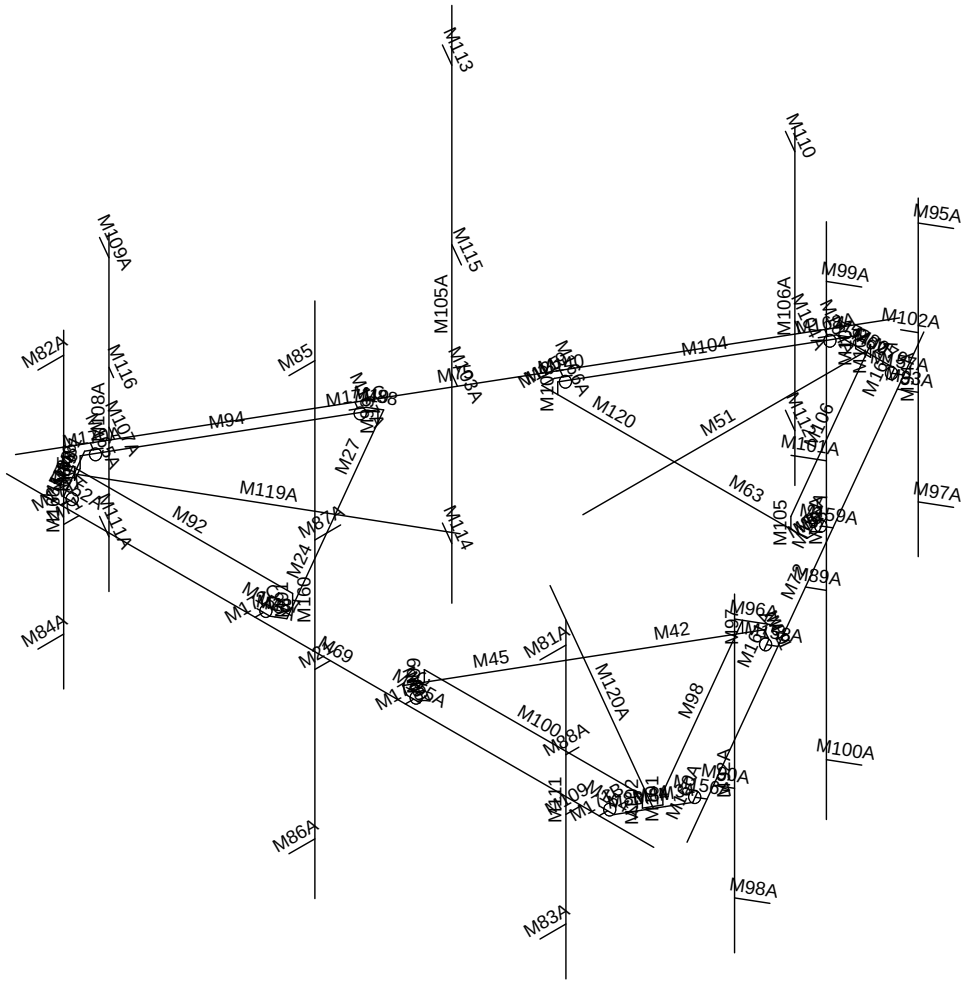
Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft²)		EPA_A (Ice) (ft²)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
AIR 21, 1.3 M, B2A B4P				☐			1	1	1	**3**	N122A	N126	N178	N182	N150A	N154A	56	12	8	83	Flat	171.48	6.05	4.36	8.09	6.29	211.25	152.10	50.71	39.42
APXVAARR24_43-U-NA20				☐			1	1	1	**3**	N128	N130	N184	N186	N156A	N158A	95.9	24	8.7	128	Flat	397.95	20.24	8.89	23.75	12.14	706.87	310.39	148.94	76.14
AIR 32 B2A/B66AA				☐			1	1	1	**3**	N121	N125	N177	N181	N149A	N153A	56.6	12.9	8.7	132.2	Flat	161.96	6.51	4.71	8.59	6.68	227.33	164.55	53.85	41.88
KRY 112 144/1				☐	0		1	1	1	**3**	N134		N190		N162A		7	6	3	11	Flat	11.22	0.00	0.18	0.00	0.57	0.00	6.11	0.00	3.60
RADIO 4449 B12/B71				☐	0.35		1	1	1	**3**	N132A		N188		N160A		15	13.2	10.4	75	Flat	60.81	0.58	1.30	0.90	2.15	20.17	45.40	5.67	13.49



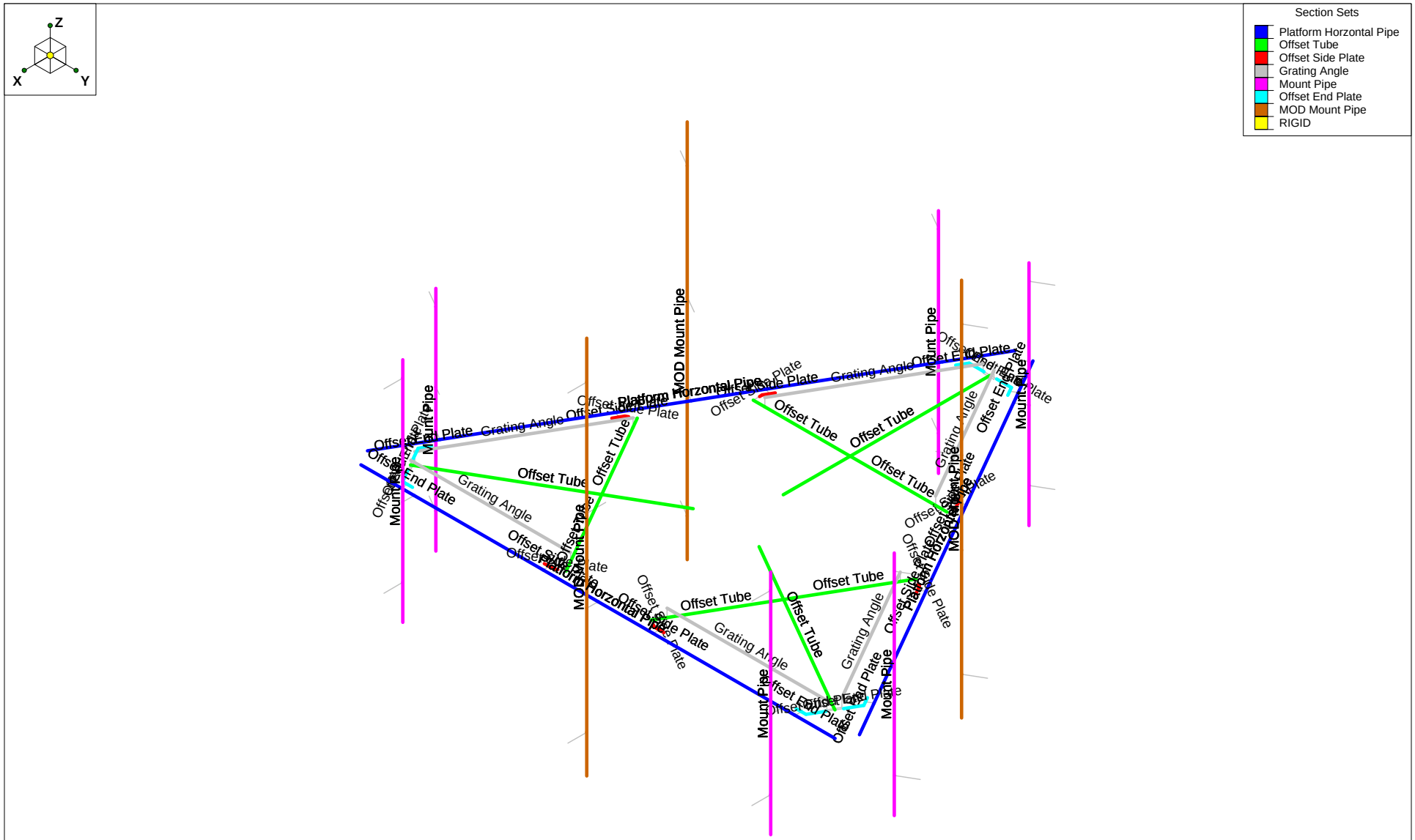
CLS		SK - 1
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:47 AM
41124-12605188-01-MA	Rendered	41124-12622803-01-MA.r3d



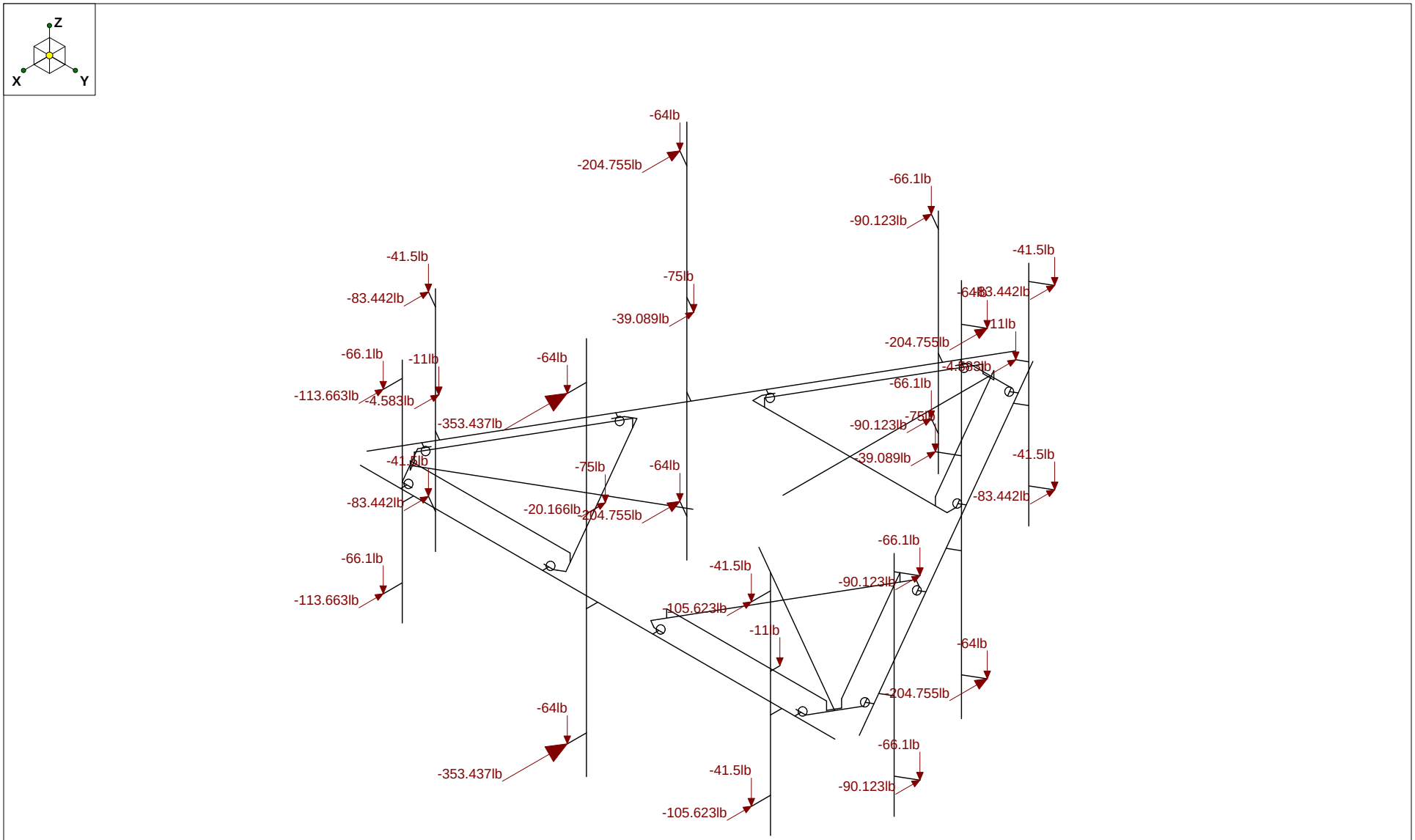
CLS	41124-12622803-Newington CT	SK - 2
ZB		Jan 22, 2019 at 10:47 AM
41124-12605188-01-MA	Joint Labels	41124-12622803-01-MA.r3d



CLS		SK - 3
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:47 AM
41124-12605188-01-MA	Member Labels	41124-12622803-01-MA.r3d

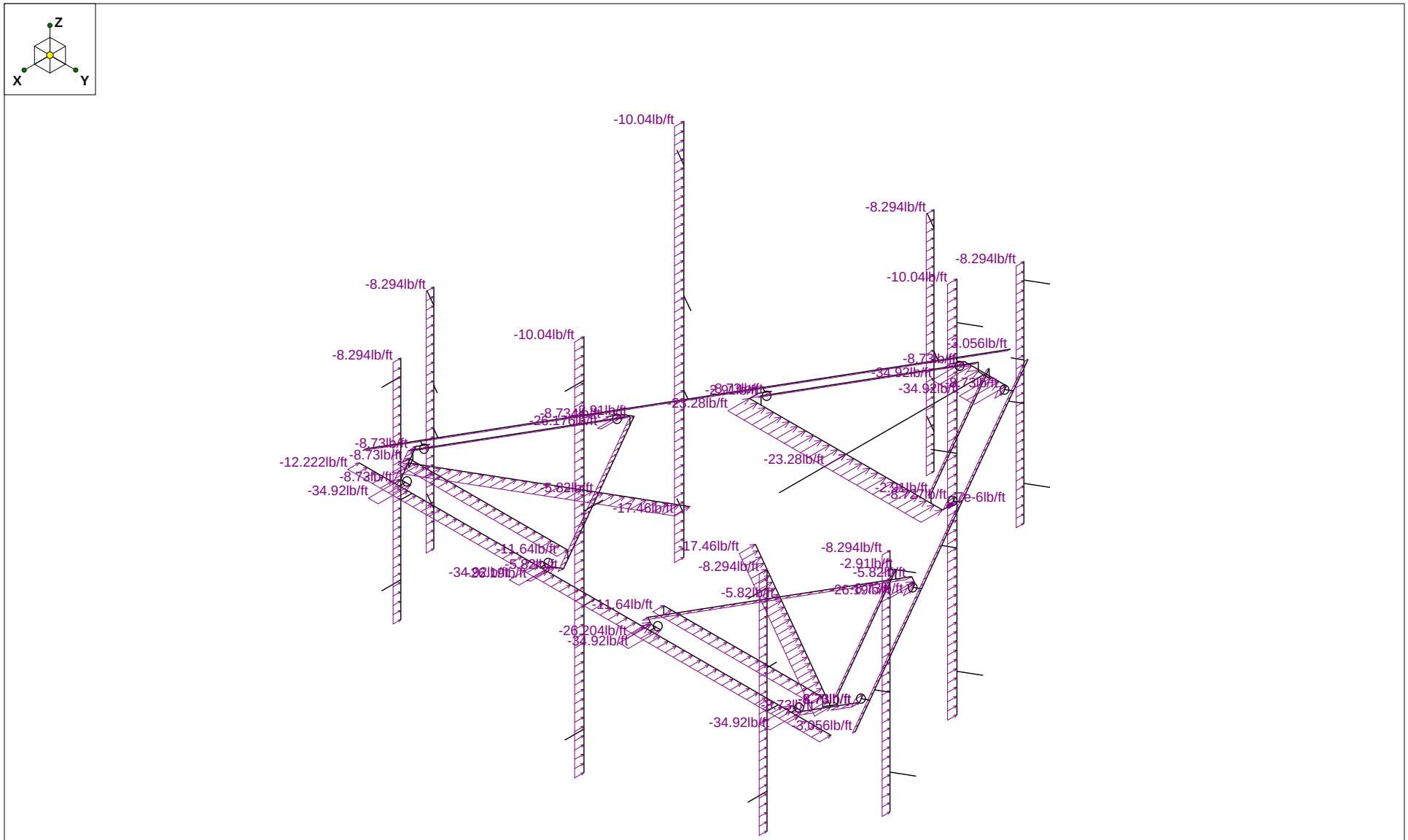


CLS		SK - 4
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:48 AM
41124-12605188-01-MA	Section Sets	41124-12622803-01-MA.r3d



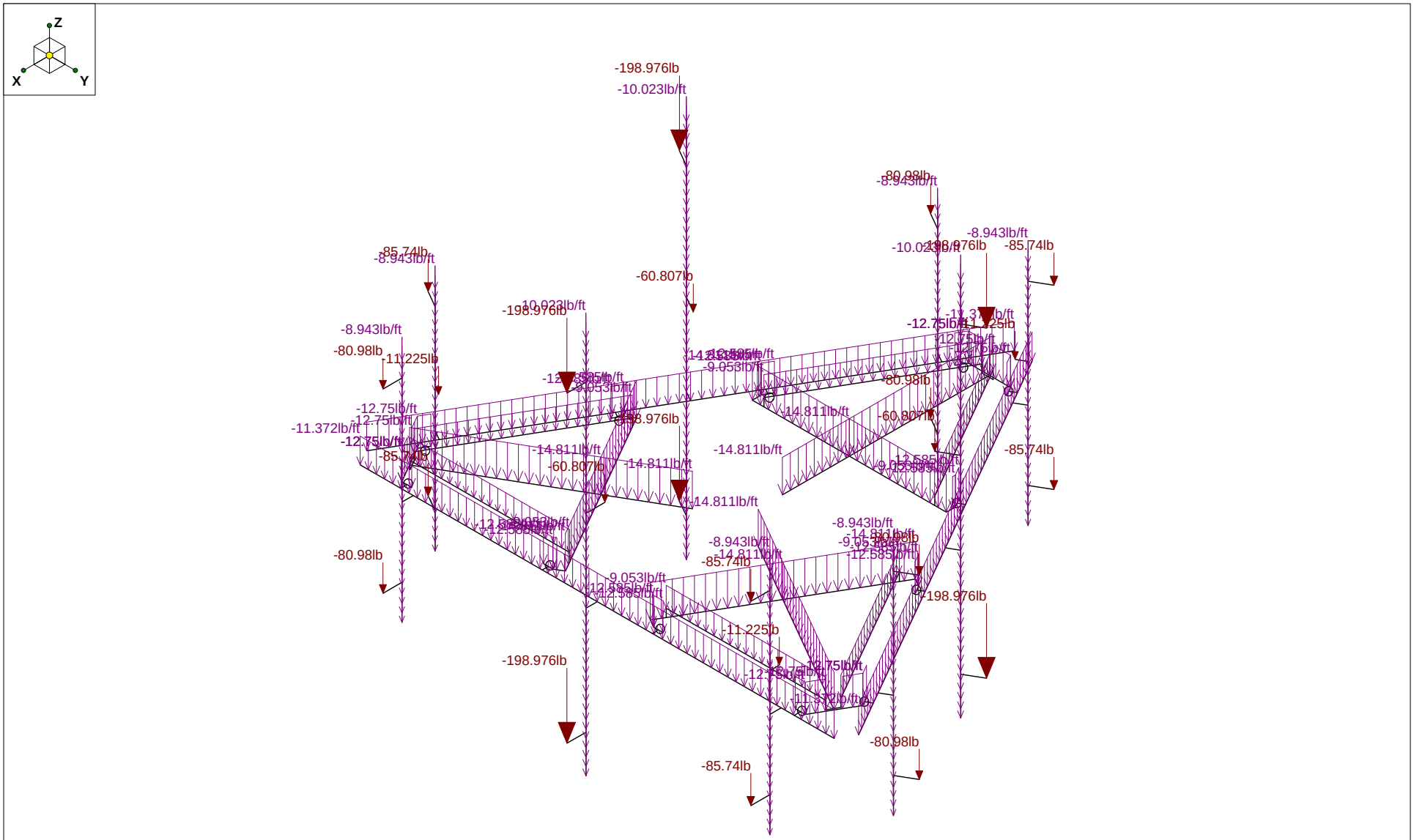
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)

CLS		SK - 5
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:48 AM
41124-12605188-01-MA	Joint Loads - Dead and Normal Wind	41124-12622803-01-MA.r3d



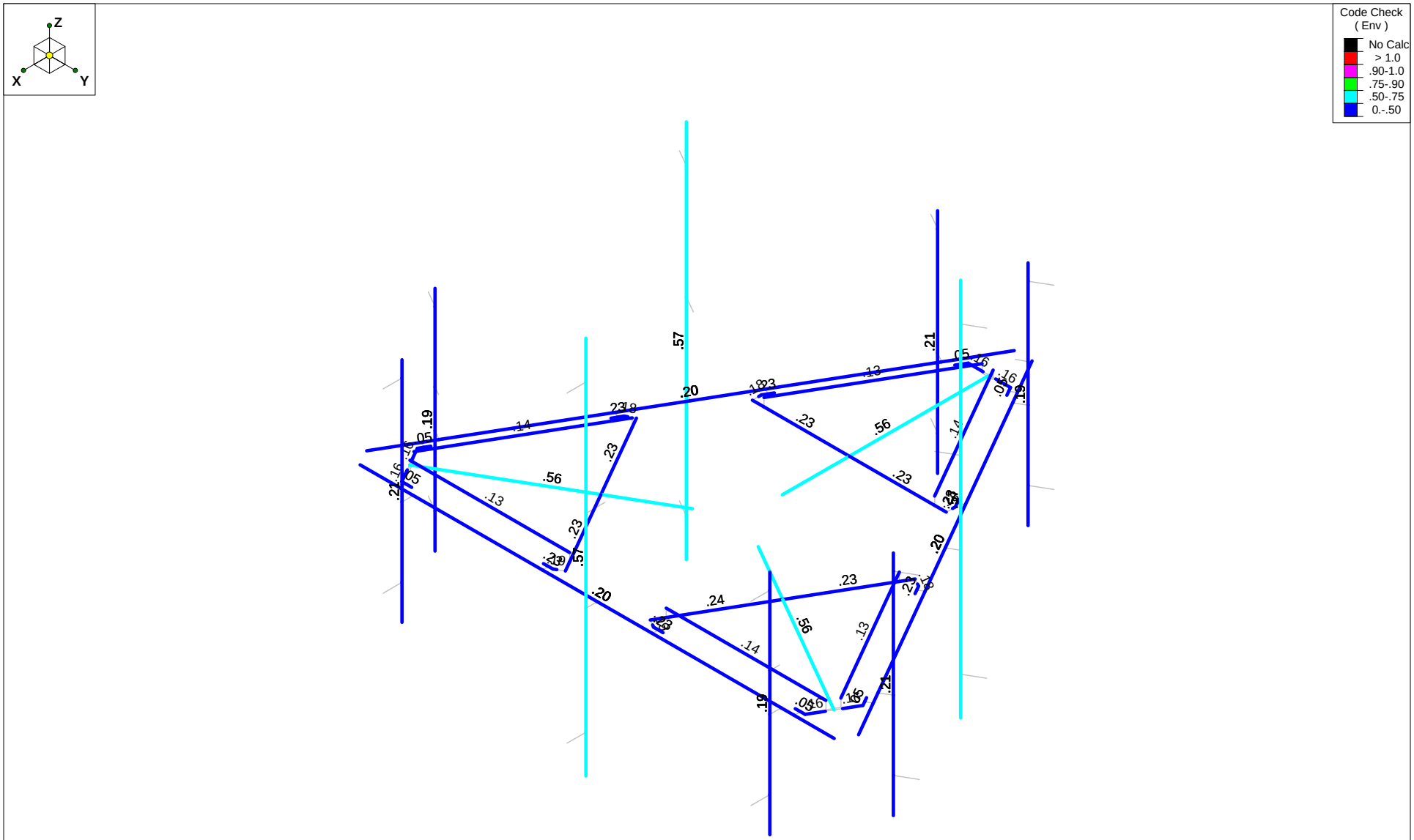
Loads: BLC 4, Structure Wind 0°

CLS		SK - 6
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:49 AM
41124-12605188-01-MA	Distributed Load - Normal Wind	41124-12622803-01-MA.r3d



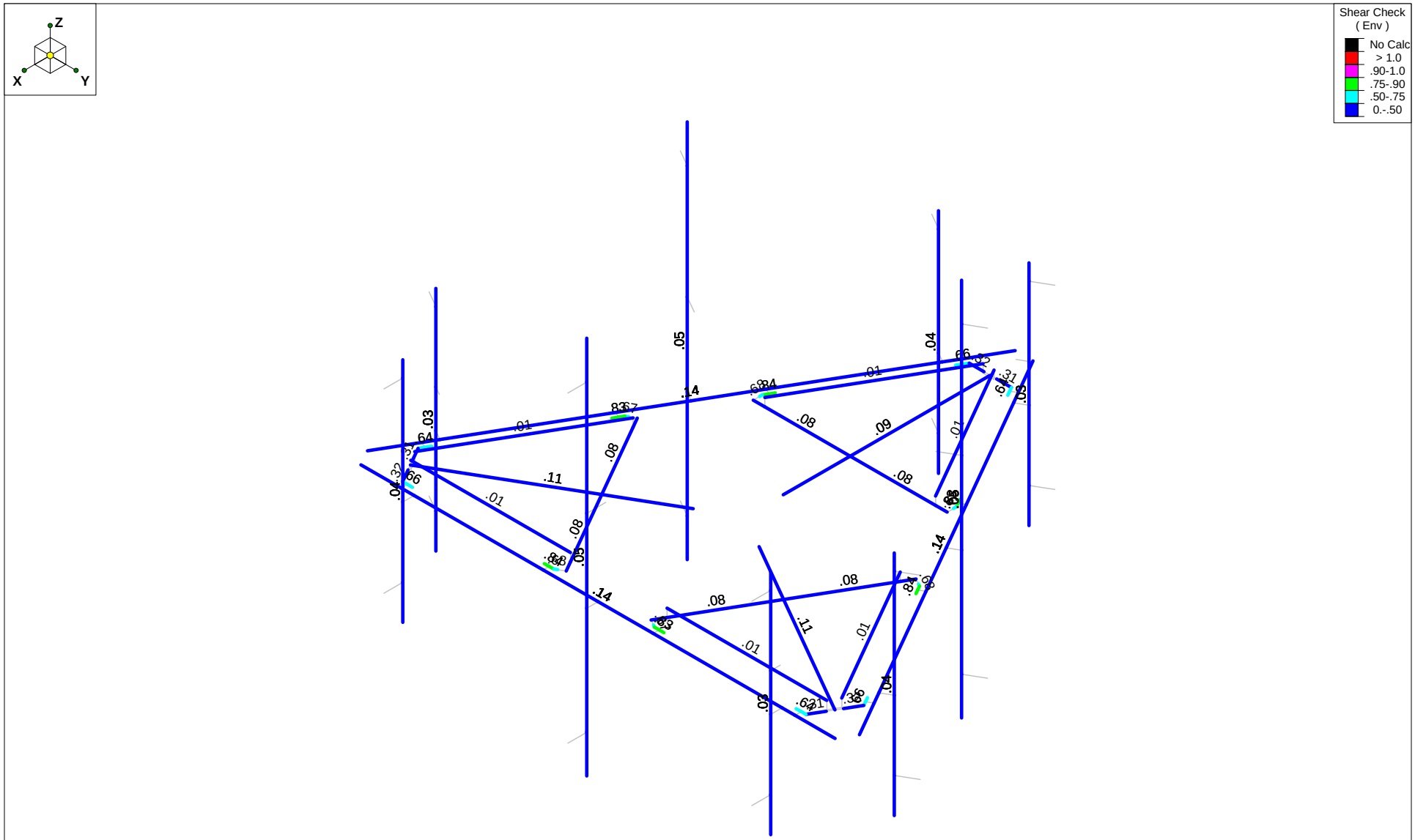
Loads: BLC 2, Ice Dead

CLS		SK - 7
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:49 AM
41124-12605188-01-MA	Ice Dead Loads	41124-12622803-01-MA.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 8
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:51 AM
41124-12605188-01-MA	Envelope Member Unty Cheity Check Results - Bending	41124-12622803-01-MA.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 9
ZB	41124-12622803-Newington CT	Jan 22, 2019 at 10:51 AM
41124-12605188-01-MA	Envelope Member Check Results - Shear	41124-12622803-01-MA.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(M...	Surface...
1	Dead	DL			-1	24				
2	Ice Dead	RL				24		51		
4	Structure Wind 0Á	None						49		
5	Structure Wind 30Á	None						80		
6	Structure Wind 45Á	None						102		
7	Structure Wind 60Á	None						98		
8	Structure Wind 90Á	None						40		
9	Structure Wind 12...	None						98		
10	Structure Wind 13...	None						102		
11	Structure Wind 15...	None						80		
12	Structure Wind w/...	None						49		
13	Structure Wind w/...	None						84		
14	Structure Wind w/...	None						102		
15	Structure Wind w/...	None						98		
16	Structure Wind w/...	None						42		
17	Structure Wind w/...	None						98		
18	Structure Wind w/...	None						102		
19	Structure Wind w/...	None						84		
20	Antenna Wind 0Á	None				23				
21	Antenna Wind 30Á	None				48				
22	Antenna Wind 45Á	None				48				
23	Antenna Wind 60Á	None				46				
24	Antenna Wind 90Á	None				24				
25	Antenna Wind 120Á	None				46				
26	Antenna Wind 135Á	None				48				
27	Antenna Wind 150Á	None				48				
28	Antenna Wind w/ I...	None				23				
29	Antenna Wind w/ I...	None				48				
30	Antenna Wind w/ I...	None				48				
31	Antenna Wind w/ I...	None				46				
32	Antenna Wind w/ I...	None				24				
33	Antenna Wind w/ I...	None				46				
34	Antenna Wind w/ I...	None				48				
35	Antenna Wind w/ I...	None				48				
39	Maintenance Live ...	OL1				1				
40	Maintenance Live ...	OL2				1				
41	Maintenance Live ...	OL3				1				

Load Combinations

	Description	Solve	P...	S...	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
1	DISPLAY ...	Yes	Y		DL	1	20	1																	
2	1.4D	Yes	Y		DL	1.4																			
3	1.2D + 1....	Yes	Y		DL	1.2	4	1	20	1															
4	1.2D + 1....	Yes	Y		DL	1.2	5	1	21	1															
5	1.2D + 1....	Yes	Y		DL	1.2	6	1	22	1															
6	1.2D + 1....	Yes	Y		DL	1.2	7	1	23	1															
7	1.2D + 1....	Yes	Y		DL	1.2	8	1	24	1															
8	1.2D + 1....	Yes	Y		DL	1.2	9	1	25	1															
9	1.2D + 1....	Yes	Y		DL	1.2	10	1	26	1															

Load Combinations (Continued)

	Description	Solve	P...	S...	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
10	1.2D + 1....	Yes	Y		DL	1.2	11	1	27	1																
11	1.2D + 1....	Yes	Y		DL	1.2	4	-1	20	-1																
12	1.2D + 1....	Yes	Y		DL	1.2	5	-1	21	-1																
13	1.2D + 1....	Yes	Y		DL	1.2	6	-1	22	-1																
14	1.2D + 1....	Yes	Y		DL	1.2	7	-1	23	-1																
15	1.2D + 1....	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1....	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1....	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1....	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1....	Yes	Y		DL	1.2	12	1	28	1	RL	1														
20	1.2D + 1....	Yes	Y		DL	1.2	13	1	29	1	RL	1														
21	1.2D + 1....	Yes	Y		DL	1.2	14	1	30	1	RL	1														
22	1.2D + 1....	Yes	Y		DL	1.2	15	1	31	1	RL	1														
23	1.2D + 1....	Yes	Y		DL	1.2	16	1	32	1	RL	1														
24	1.2D + 1....	Yes	Y		DL	1.2	17	1	33	1	RL	1														
25	1.2D + 1....	Yes	Y		DL	1.2	18	1	34	1	RL	1														
26	1.2D + 1....	Yes	Y		DL	1.2	19	1	35	1	RL	1														
27	1.2D + 1....	Yes	Y		DL	1.2	12	-1	28	-1	RL	1														
28	1.2D + 1....	Yes	Y		DL	1.2	13	-1	29	-1	RL	1														
29	1.2D + 1....	Yes	Y		DL	1.2	14	-1	30	-1	RL	1														
30	1.2D + 1....	Yes	Y		DL	1.2	15	-1	31	-1	RL	1														
31	1.2D + 1....	Yes	Y		DL	1.2	16	-1	32	-1	RL	1														
32	1.2D + 1....	Yes	Y		DL	1.2	17	-1	33	-1	RL	1														
33	1.2D + 1....	Yes	Y		DL	1.2	18	-1	34	-1	RL	1														
34	1.2D + 1....	Yes	Y		DL	1.2	19	-1	35	-1	RL	1														
35	1.2D + 1....	Yes	Y		DL	1.2	4	.068	20	.068	OL1	1.5														
36	1.2D + 1....	Yes	Y		DL	1.2	5	.068	21	.068	OL1	1.5														
37	1.2D + 1....	Yes	Y		DL	1.2	6	.068	22	.068	OL1	1.5														
38	1.2D + 1....	Yes	Y		DL	1.2	7	.068	23	.068	OL1	1.5														
39	1.2D + 1....	Yes	Y		DL	1.2	8	.068	24	.068	OL1	1.5														
40	1.2D + 1....	Yes	Y		DL	1.2	9	.068	25	.068	OL1	1.5														
41	1.2D + 1....	Yes	Y		DL	1.2	10	.068	26	.068	OL1	1.5														
42	1.2D + 1....	Yes	Y		DL	1.2	11	.068	27	.068	OL1	1.5														
43	1.2D + 1....	Yes	Y		DL	1.2	4	-.068	20	-.068	OL1	1.5														
44	1.2D + 1....	Yes	Y		DL	1.2	5	-.068	21	-.068	OL1	1.5														
45	1.2D + 1....	Yes	Y		DL	1.2	6	-.068	22	-.068	OL1	1.5														
46	1.2D + 1....	Yes	Y		DL	1.2	7	-.068	23	-.068	OL1	1.5														
47	1.2D + 1....	Yes	Y		DL	1.2	8	-.068	24	-.068	OL1	1.5														
48	1.2D + 1....	Yes	Y		DL	1.2	9	-.068	25	-.068	OL1	1.5														
49	1.2D + 1....	Yes	Y		DL	1.2	10	-.068	26	-.068	OL1	1.5														
50	1.2D + 1....	Yes	Y		DL	1.2	11	-.068	27	-.068	OL1	1.5														
51	1.2D + 1....	Yes	Y		DL	1.2	4	.068	20	.068	OL2	1.5														
52	1.2D + 1....	Yes	Y		DL	1.2	5	.068	21	.068	OL2	1.5														
53	1.2D + 1....	Yes	Y		DL	1.2	6	.068	22	.068	OL2	1.5														
54	1.2D + 1....	Yes	Y		DL	1.2	7	.068	23	.068	OL2	1.5														
55	1.2D + 1....	Yes	Y		DL	1.2	8	.068	24	.068	OL2	1.5														
56	1.2D + 1....	Yes	Y		DL	1.2	9	.068	25	.068	OL2	1.5														
57	1.2D + 1....	Yes	Y		DL	1.2	10	.068	26	.068	OL2	1.5														
58	1.2D + 1....	Yes	Y		DL	1.2	11	.068	27	.068	OL2	1.5														
59	1.2D + 1....	Yes	Y		DL	1.2	4	-.068	20	-.068	OL2	1.5														
60	1.2D + 1....	Yes	Y		DL	1.2	5	-.068	21	-.068	OL2	1.5														
61	1.2D + 1....	Yes	Y		DL	1.2	6	-.068	22	-.068	OL2	1.5														

Load Combinations (Continued)

	Description	Solve	P...	S...	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
62	1.2D + 1....	Yes	Y		DL	1.2	7	-.068	23	-.068	OL2	1.5														
63	1.2D + 1....	Yes	Y		DL	1.2	8	-.068	24	-.068	OL2	1.5														
64	1.2D + 1....	Yes	Y		DL	1.2	9	-.068	25	-.068	OL2	1.5														
65	1.2D + 1....	Yes	Y		DL	1.2	10	-.068	26	-.068	OL2	1.5														
66	1.2D + 1....	Yes	Y		DL	1.2	11	-.068	27	-.068	OL2	1.5														
67	1.2D + 1....	Yes	Y		DL	1.2	4	.068	20	.068	OL3	1.5														
68	1.2D + 1....	Yes	Y		DL	1.2	5	.068	21	.068	OL3	1.5														
69	1.2D + 1....	Yes	Y		DL	1.2	6	.068	22	.068	OL3	1.5														
70	1.2D + 1....	Yes	Y		DL	1.2	7	.068	23	.068	OL3	1.5														
71	1.2D + 1....	Yes	Y		DL	1.2	8	.068	24	.068	OL3	1.5														
72	1.2D + 1....	Yes	Y		DL	1.2	9	.068	25	.068	OL3	1.5														
73	1.2D + 1....	Yes	Y		DL	1.2	10	.068	26	.068	OL3	1.5														
74	1.2D + 1....	Yes	Y		DL	1.2	11	.068	27	.068	OL3	1.5														
75	1.2D + 1....	Yes	Y		DL	1.2	4	-.068	20	-.068	OL3	1.5														
76	1.2D + 1....	Yes	Y		DL	1.2	5	-.068	21	-.068	OL3	1.5														
77	1.2D + 1....	Yes	Y		DL	1.2	6	-.068	22	-.068	OL3	1.5														
78	1.2D + 1....	Yes	Y		DL	1.2	7	-.068	23	-.068	OL3	1.5														
79	1.2D + 1....	Yes	Y		DL	1.2	8	-.068	24	-.068	OL3	1.5														
80	1.2D + 1....	Yes	Y		DL	1.2	9	-.068	25	-.068	OL3	1.5														
81	1.2D + 1....	Yes	Y		DL	1.2	10	-.068	26	-.068	OL3	1.5														
82	1.2D + 1....	Yes	Y		DL	1.2	11	-.068	27	-.068	OL3	1.5														

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Platform Horzontal Pipe	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offset Tube	HSS4X4X4	Beam	SquareTube	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
3	Offset Side Plate	0.38 X 6 Pla...	Beam	RECT	A36 Gr.36	Typical	2.28	.027	6.84	.105
4	Grating Angle	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
5	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Offset End Plate	0.5 x 6 Plate	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
7	HRK12-HD	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	HRK12-3HD Plate	0.38 X 6 Pla...	Beam	RECT	A36 Gr.36	Typical	2.28	.027	6.84	.105
9	MOD Mount Pipe	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M17	Offset End ...	4.688			Lbyy						Lateral
2	M19	Offset Side ...	.875			Lbyy						Lateral
3	M23	Offset Side ...	.875			Lbyy						Lateral
4	M24	Offset Tube	30.688			Lbyy						Lateral
5	M27	Offset Tube	30.687			Lbyy						Lateral
6	M34	Offset End ...	4.688			Lbyy						Lateral
7	M37	Offset Side ...	.875			Lbyy						Lateral
8	M41	Offset Side ...	.875			Lbyy						Lateral
9	M42	Offset Tube	30.688			Lbyy						Lateral
10	M45	Offset Tube	30.687			Lbyy						Lateral
11	M51	Offset Tube	65.507									Lateral
12	M52	Offset End ...	4.688			Lbyy						Lateral
13	M55	Offset Side ...	.875			Lbyy						Lateral
14	M63	Offset Tube	30.687			Lbyy						Lateral
15	M69	Platform Ho...	150	44.89		Lbyy						Lateral
16	M72	Platform Ho...	150	44.89		Lbyy						Lateral
17	M75	Platform Ho...	150	44.89		Lbyy						Lateral
18	M79	Offset End ...	4.688			Lbyy						Lateral
19	M81	Offset End ...	4.688			Lbyy						Lateral
20	M83	Offset End ...	4.688			Lbyy						Lateral
21	M92	Grating Angle	50.542			Lbyy						Lateral
22	M94	Grating Angle	50.542			Lbyy						Lateral
23	M98	Grating Angle	50.542			Lbyy						Lateral
24	M100	Grating Angle	50.542			Lbyy						Lateral
25	M104	Grating Angle	50.542			Lbyy						Lateral
26	M106	Grating Angle	50.542			Lbyy						Lateral
27	M160	MOD Mount...	120			Lbyy						Lateral
28	M163	Mount Pipe	72			Lbyy						Lateral
29	M152A	Offset End ...	3.122			Lbyy						Lateral
30	M153A	Offset Side ...	3			Lbyy						Lateral
31	M154A	Offset End ...	3.122			Lbyy						Lateral
32	M155A	Offset Side ...	3			Lbyy						Lateral
33	M160A	Offset End ...	3.122			Lbyy						Lateral
34	M161A	Offset Side ...	3			Lbyy						Lateral
35	M162A	Offset End ...	3.122			Lbyy						Lateral
36	M163A	Offset Side ...	3			Lbyy						Lateral
37	M168A	Offset End ...	3.122			Lbyy						Lateral
38	M170A	Offset End ...	3.122			Lbyy						Lateral
39	M171C	Offset Side ...	3			Lbyy						Lateral
40	M111	Mount Pipe	72			Lbyy						Lateral
41	M91A	MOD Mount...	120			Lbyy						Lateral
42	M92A	Mount Pipe	72			Lbyy						Lateral
43	M94A	Mount Pipe	72			Lbyy						Lateral
44	M105A	MOD Mount...	120			Lbyy						Lateral
45	M106A	Mount Pipe	72			Lbyy						Lateral
46	M108A	Mount Pipe	72			Lbyy						Lateral
47	M119	Offset Side ...	.875			Lbyy						Lateral
48	M120	Offset Tube	30.688			Lbyy						Lateral
49	M140	Offset Side ...	3			Lbyy						Lateral
50	M119A	Offset Tube	65.507									Lateral
51	M120A	Offset Tube	65.507									Lateral

Envelope Joint Reactions

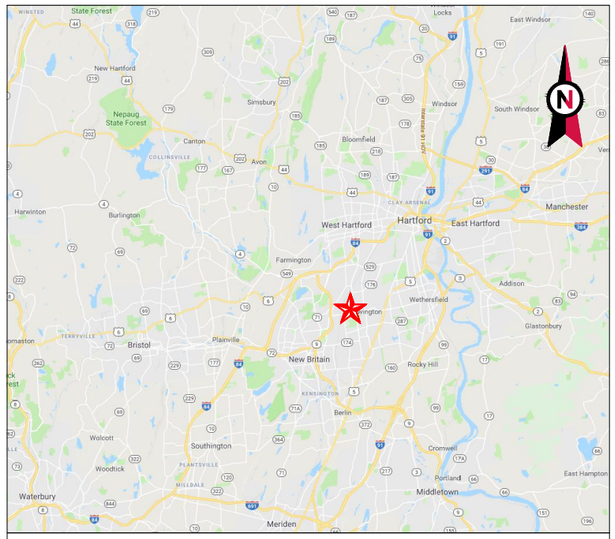
	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N88	max	1492.236	3	1308.006	15	2453.7	19	300.41	7	6899.41	19	1791.8	7
2		min	-1852.96	11	-1308.785	7	502.213	11	-338.698	15	1420.588	11	-1792.623	15
3	N194A	max	1352.699	3	1613.521	15	2453.616	24	5980.982	24	-555.814	1	1791.767	12
4		min	-1173.028	11	-1299.851	7	502.181	16	1238.803	15	-3460.186	26	-1792.583	4
5	N192	max	1368.529	3	1292.147	14	2453.626	30	-1220.462	6	-582.906	1	1791.741	18
6		min	-1187.486	11	-1604.854	7	502.166	6	-5968.603	30	-3482.68	28	-1792.564	10
7	Totals:	max	4213.464	3	4213.495	15	7018.171	19						
8		min	-4213.474	11	-4213.49	7	2321.765	1						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code C...	Loc[in]	LC	Shear Ch...	Loc[i...	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M140	0.38 X 6...	.226	1.5	10	.840	3	y	16	71019.885	73872	584.82	9234	3.1...	H1-1b
2	M161A	0.38 X 6...	.226	1.5	15	.839	3	y	6	71019.885	73872	584.82	9234	3.1...	H1-1b
3	M153A	0.38 X 6...	.226	1.5	4	.839	3	y	11	71019.885	73872	584.82	9234	3.1...	H1-1b
4	M171C	0.38 X 6...	.226	1.5	7	.832	3	y	16	71020.258	73872	584.82	9234	3.1...	H1-1b
5	M163A	0.38 X 6...	.226	1.5	12	.832	3	y	6	71020.258	73872	584.82	9234	3.1...	H1-1b
6	M155A	0.38 X 6...	.226	1.5	18	.832	3	y	11	71020.258	73872	584.82	9234	3.1...	H1-1b
7	M119	0.38 X 6...	.181	.875	10	.682	.875	y	16	73624.978	73872	584.82	9234	1.1...	H1-1b
8	M41	0.38 X 6...	.181	.875	15	.682	.875	y	6	73624.978	73872	584.82	9234	1.1...	H1-1b
9	M23	0.38 X 6...	.187	.875	5	.682	.875	y	11	73624.978	73872	584.82	9234	1.2...	H1-1b
10	M19	0.38 X 6...	.183	.875	7	.674	.875	y	16	73624.978	73872	584.82	9234	1.1...	H1-1b
11	M55	0.38 X 6...	.183	.875	12	.674	.875	y	6	73624.978	73872	584.82	9234	1.1...	H1-1b
12	M37	0.38 X 6...	.188	.875	17	.674	.875	y	11	73624.978	73872	584.82	9234	1.2...	H1-1b
13	M160A	0.5 x 6 ...	.047	0	7	.662	0	y	22	94834.571	97200	1012.5	12150	3.0...	H1-1b
14	M168A	0.5 x 6 ...	.047	0	18	.662	0	y	32	94834.571	97200	1012.5	12150	3.0...	H1-1b
15	M152A	0.5 x 6 ...	.048	0	13	.662	0	y	27	94834.571	97200	1012.5	12150	3.0...	H1-1b
16	M170A	0.5 x 6 ...	.048	0	15	.645	0	y	32	94834.571	97200	1012.5	12150	3.0...	H1-1b
17	M162A	0.5 x 6 ...	.048	0	4	.645	0	y	22	94834.571	97200	1012.5	12150	3.0...	H1-1b
18	M154A	0.5 x 6 ...	.048	0	9	.645	0	y	27	94834.571	97200	1012.5	12150	3.0...	H1-1b
19	M52	0.5 x 6 ...	.165	4.688	18	.316	4.688	y	32	91950.093	97200	1012.5	12150	1.0...	H1-1b
20	M34	0.5 x 6 ...	.165	4.688	7	.316	4.688	y	22	91950.093	97200	1012.5	12150	1.0...	H1-1b
21	M17	0.5 x 6 ...	.165	4.688	12	.316	4.688	y	27	91950.093	97200	1012.5	12150	1.0...	H1-1b
22	M81	0.5 x 6 ...	.164	0	15	.311	0	y	32	91950.093	97200	1012.5	12150	1.0...	H1-1b
23	M79	0.5 x 6 ...	.164	0	4	.311	0	y	22	91950.093	97200	1012.5	12150	1.0...	H1-1b
24	M83	0.5 x 6 ...	.164	0	10	.311	0	y	27	91950.093	97200	1012.5	12150	1.0...	H1-1b
25	M75	PIPE_3.0	.196	90.789	34	.136	90.7...		16	28250.554	65205	5748.75	5748.75	1.6...	H1-1b
26	M69	PIPE_3.0	.196	90.789	28	.136	90.7...		11	28250.554	65205	5748.75	5748.75	1.6...	H1-1b
27	M72	PIPE_3.0	.196	90.789	23	.136	90.7...		6	28250.554	65205	5748.75	5748.75	1.6...	H1-1b
28	M119A	HSS4X4...	.559	0	33	.112	0	y	59	99034.581	109188	12663	12663	2.4...	H1-1b
29	M120A	HSS4X4...	.559	0	21	.109	0	y	59	99034.581	109188	12663	12663	2.4...	H1-1b
30	M51	HSS4X4...	.556	0	31	.088	0	y	32	99034.581	109188	12663	12663	2.4...	H1-1b
31	M63	HSS4X4...	.235	0	20	.082	0	y	33	106874.1...	109188	12663	12663	1.6...	H1-1b
32	M27	HSS4X4...	.235	0	31	.081	0	y	28	106874.1...	109188	12663	12663	1.6...	H1-1b
33	M45	HSS4X4...	.235	0	25	.081	0	y	23	106874.1...	109188	12663	12663	1.6...	H1-1b
34	M120	HSS4X4...	.234	30.688	34	.081	30.6...	y	21	106874.1...	109188	12663	12663	1.6...	H1-1b
35	M24	HSS4X4...	.234	30.688	29	.081	30.6...	y	31	106874.1...	109188	12663	12663	1.6...	H1-1b
36	M42	HSS4X4...	.234	30.688	23	.081	30.6...	y	26	106874.1...	109188	12663	12663	1.6...	H1-1b
37	M160	PIPE_2.5	.571	72.632	3	.048	47.3...		17	22373.407	50715	3596.25	3596.25	1.9...	H1-1b
38	M105A	PIPE_2.5	.571	72.632	8	.048	72.6...		7	22373.407	50715	3596.25	3596.25	1.9...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code C...	Loc[in]	LC	Shear Ch...	Loc[i...	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
39	M91A	PIPE_2.5	.571	72.632	14	.048	72.6...		12	22373.407	50715	3596.25	3596.25	1.9...	H1-1b
40	M92A	PIPE_2.0	.213	37.895	6	.036	37.8...		10	20866.733	32130	1871.625	1871.625	1.5...	H1-1b
41	M106A	PIPE_2.0	.213	37.895	16	.036	37.8...		4	20866.733	32130	1871.625	1871.625	1.5...	H1-1b
42	M163	PIPE_2.0	.213	37.895	11	.036	37.8...		15	20866.733	32130	1871.625	1871.625	1.54	H1-1b
43	M108A	PIPE_2.0	.191	37.895	16	.033	37.8...		13	20866.733	32130	1871.625	1871.625	1.59	H1-1b
44	M94A	PIPE_2.0	.191	37.895	6	.033	37.8...		17	20866.733	32130	1871.625	1871.625	1.5...	H1-1b
45	M111	PIPE_2.0	.191	37.895	11	.033	37.8...		7	20866.733	32130	1871.625	1871.625	1.5...	H1-1b
46	M100	L2x2x3	.135	50.542	21	.009	50.5...	z	21	9618.956	23392.8	557.717	1238.414	2.2...	H2-1
47	M106	L2x2x3	.135	50.542	31	.009	50.5...	z	32	9618.956	23392.8	557.717	1239.29	2.3...	H2-1
48	M94	L2x2x3	.135	50.542	26	.009	50.5...	z	27	9618.956	23392.8	557.717	1239.29	2.3...	H2-1
49	M92	L2x2x3	.129	50.542	33	.008	50.5...	y	33	9618.888	23392.8	557.717	1237.051	2.2...	H2-1
50	M104	L2x2x3	.129	50.542	23	.008	50.5...	y	22	9618.888	23392.8	557.717	1239.29	2.3...	H2-1
51	M98	L2x2x3	.129	50.542	28	.008	50.5...	y	27	9618.888	23392.8	557.717	1239.29	2.3...	H2-1



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: NEWINGTON CT
ATC SITE NUMBER: 370627
T-MOBILE SITE ID: CTHA342A
SITE ADDRESS: 605 WILLARD AVE
NEWINGTON, CT 06111

T-MOBILE ANTENNA AMENDMENT
67D92DB OUTDOOR CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: CONNECTICUT LIGHT AND POWER
PHONE: (888) 783-6617

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 921-8102

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

PROJECT SUMMARY

SITE ADDRESS:

605 WILLARD AVE
NEWINGTON, CT 06111
COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.69837222

LONGITUDE: -72.73714722

GROUND ELEVATION: 103' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

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

PROPERTY OWNER:

TOWN OF NEWINGTON
131 CEDAR ST
NEWINGTON, CT 06111

APPLICANT:

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705

PROJECT DESCRIPTION

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

REMOVE (6) PANELS AND (3) RRUs

INSTALL (6) NEW PANELS, (3) RRUs, (1) 1-1/4" HYBRID CABLE, AND (1) 1-5/8" HYBRID CABLE

EXISTING (3) PANELS, (3) TTAs, (6) 1-5/8" COAX CABLES, AND (1) 1-1/4" HYBRID CABLE TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM HARTFORD, CT:

HEAD SOUTH ON MAIN ST TOWARD TOWER SQUARE/TURN RIGHT ONTO GOLD ST/TURN LEFT ONTO TRUMBULL ST/AT THE TRAFFIC CIRCLE, TAKE THE 3RD EXIT ONTO WHITEHEAD HWY HEADING TO I-91/KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-91 AND MERGE ONTO I-91 S/TAKE EXIT 28 TO MERGE ONTO CT-15 S TOWARD NEWINGTON/CONTINUE ONTO CT-15 S/TAKE THE EXIT TOWARD CT-175 W/CONTINUE ONTO RUSSEL RD/TURN RIGHT ONTO E CEDAR ST/TURN RIGHT ONTO WILLARD AVE

DESTINATION WILL BE ON THE LEFT

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	02/01/19	MG
G-002	GENERAL NOTES	0	02/01/19	MG
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	02/01/19	MG
C-501	ANTENNA INFORMATION & SCHEDULE	1	02/01/19	MG
E-501	GROUNDING DETAILS	0	02/01/19	MG
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	02/01/19
1	MOUNT MODS	MG	02/01/19

ATC SITE NUMBER:
370627

ATC SITE NAME:
NEWINGTON CT

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SEAL:

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
~~Feb 1 2019 4:43 PM~~
T-Mobile cosign

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	02/01/19
ATC JOB NO:	12607181

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

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

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	02/01/19

ATC SITE NUMBER:
370627

ATC SITE NAME:
NEWINGTON CT

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SEAL:

Authorized by "EOR"
~~Feb 1 2019 4:43 PM~~

T··Mobile· cosign

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	02/01/19
ATC JOB NO:	12607181

GENERAL NOTES

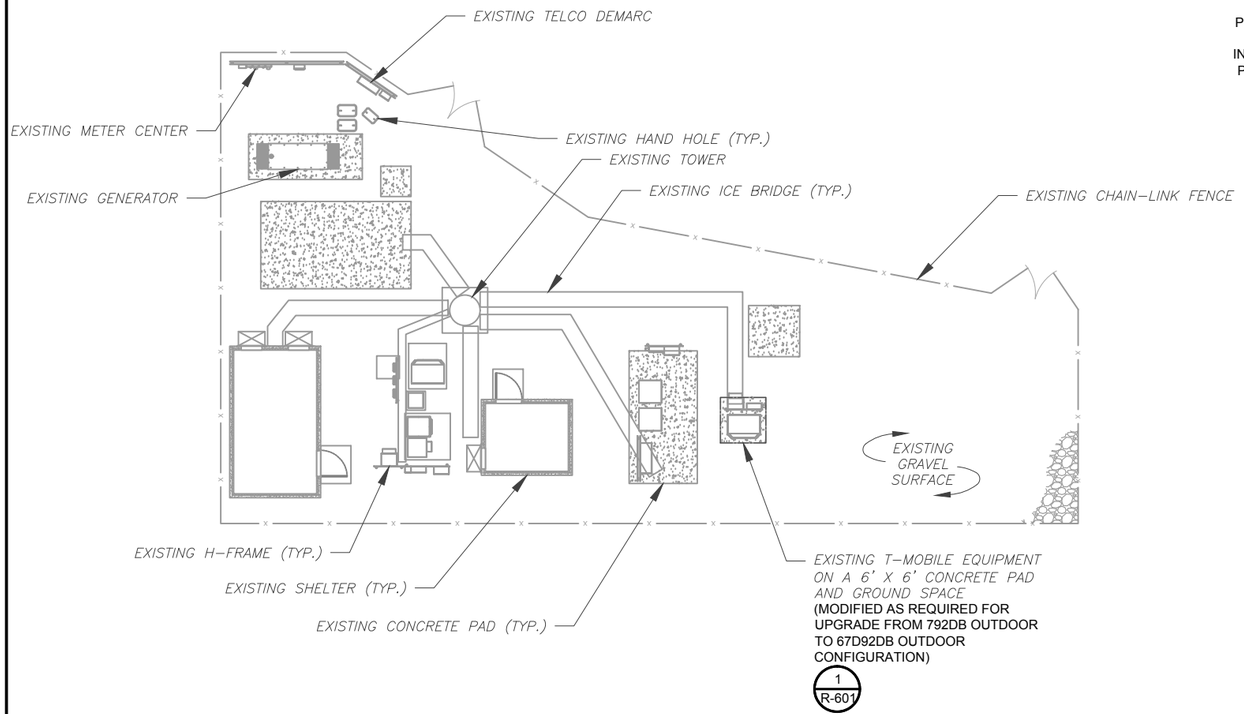
SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

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

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

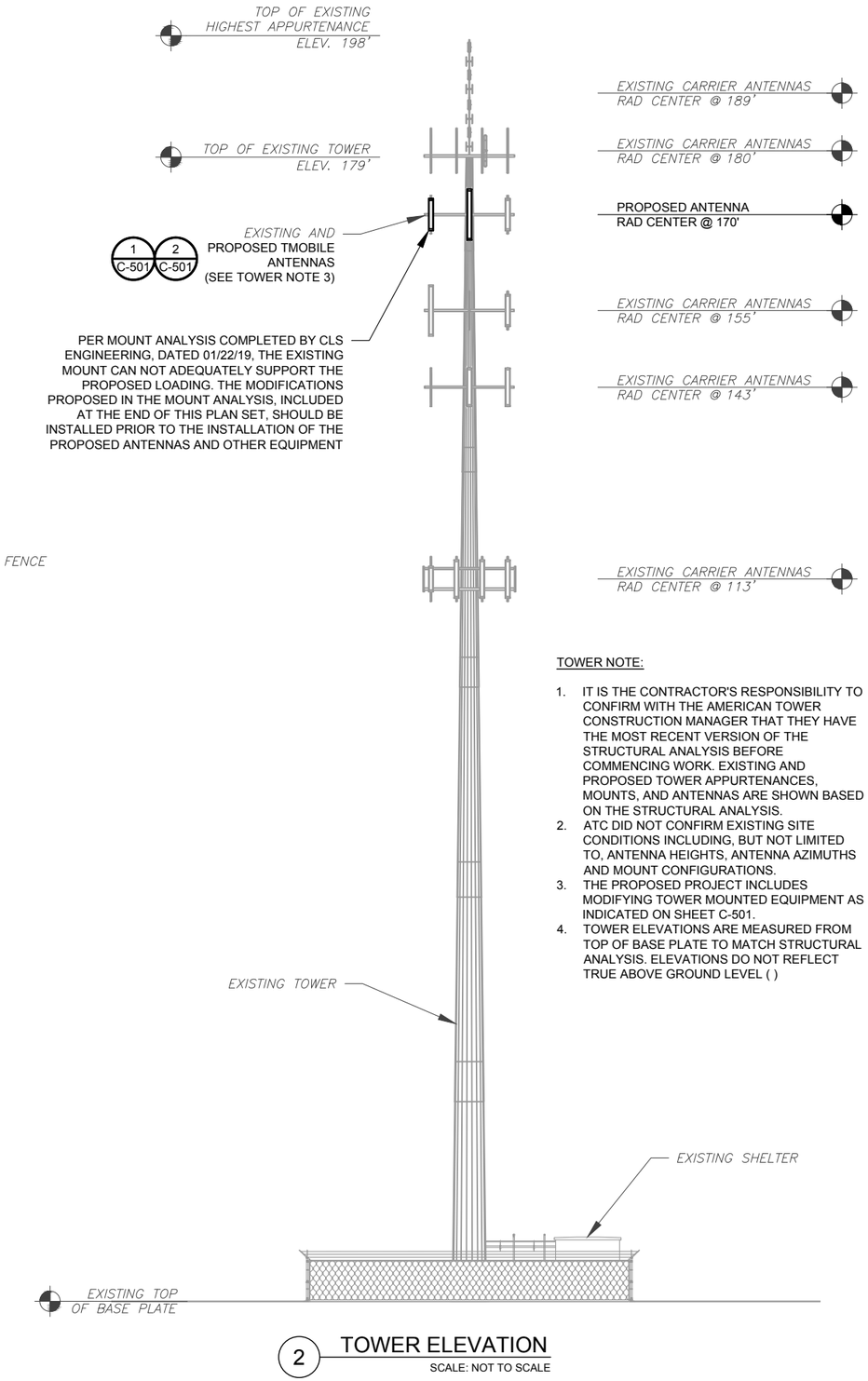
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



1 DETAILED SITE PLAN

0 20' 40'

SCALE: 1"=20' (11X17)
1"=10' (22X34)



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
3. THE PROPOSED PROJECT INCLUDES MODIFYING TOWER MOUNTED EQUIPMENT AS INDICATED ON SHEET C-501.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL ( )

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	02/01/19
1	MOUNT MODS	MG	02/01/19

ATC SITE NUMBER:
370627

ATC SITE NAME:
NEWINGTON CT

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SEAL:

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

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Feb 1 2019 4:43 PM

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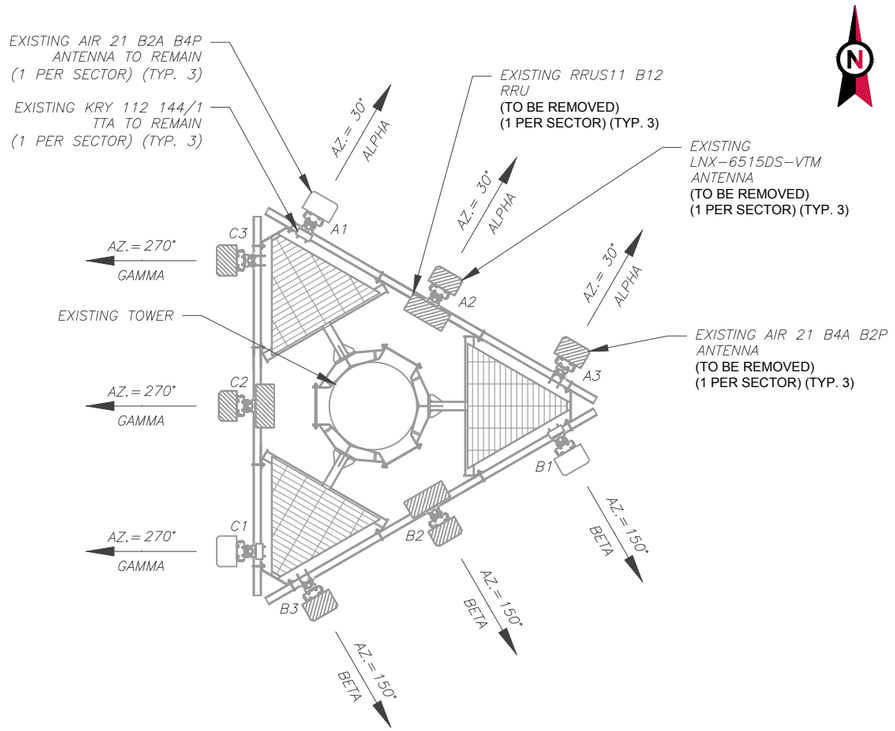
DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	02/01/19
ATC JOB NO:	12607181

DETAILED SITE PLAN & TOWER ELEVATION

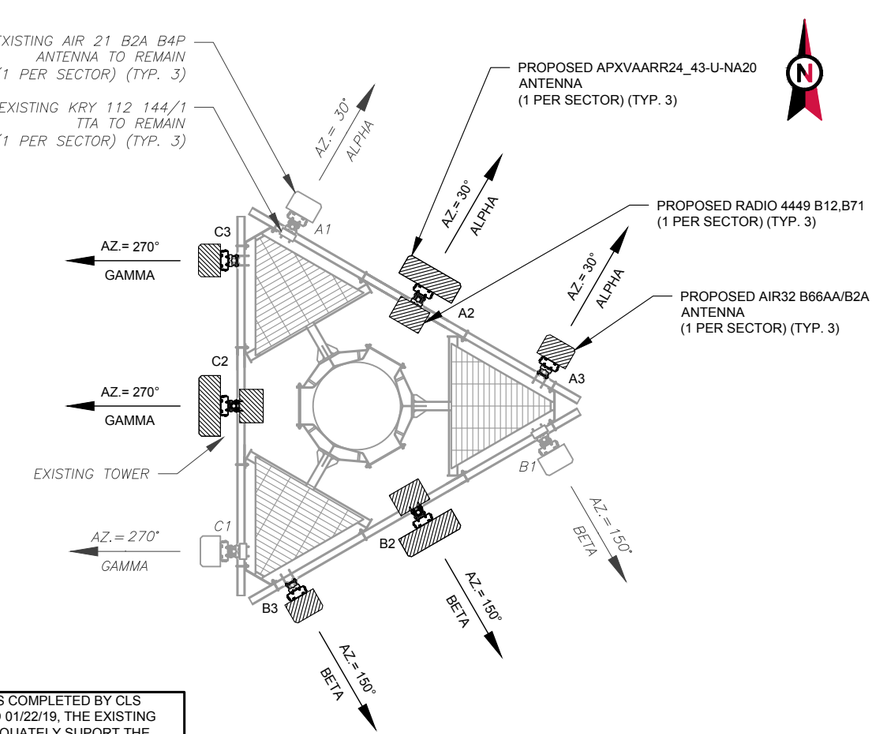
SHEET NUMBER:	REVISION:
C-101	1



1 EXISTING ANTENNA PLAN

NOTES:

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



PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 01/22/19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPORT THE PROPOSED LOADING. THE MODIFICATIONS PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, SHOULD BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT

2 FINAL ANTENNA PLAN

NOTES:

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

EXISTING ANTENNA/ COAX SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	AIR 21 B2A B4P	170'-0"	30°	0°	3°	KRY 112 144/1	(2) 1-5/8"
ALPHA	A2	LNX-6515DS-VTM	170'-0"	30°	0°	2°	RRUS11 B12	-
ALPHA	A3	AIR 21 B4A B2P	170'-0"	30°	0°	3°	-	-
BETA	B1	AIR 21 B2A B4P	170'-0"	150°	0°	3°	KRY 112 144/1	(2) 1-5/8"
BETA	B2	LNX-6515DS-VTM	170'-0"	150°	0°	2°	RRUS11 B12	-
BETA	B3	AIR 21 B4A B2P	170'-0"	150°	0°	3°	-	-
GAMMA	C1	AIR 21 B2A B4P	170'-0"	270°	0°	3°	KRY 112 144/1	(2) 1-5/8"
GAMMA	C2	LNX-6515DS-VTM	170'-0"	270°	0°	2°	RRUS11 B12	-
GAMMA	C3	AIR 21 B4A B2P	170'-0"	270°	0°	3°	-	-

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

FINAL ANTENNA/ COAX SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	AIR 21 B2A B4P	170'-0"	30°	0°	2°	KRY 112 144/1	(2) 1-5/8"
ALPHA	A2	APXVAARR24_43-U-NA20	170'-0"	30°	0°	2°	RADIO 4449 B12,B71	-
ALPHA	A3	AIR32 B66AA/B2A	170'-0"	30°	0°	2°	-	-
BETA	B1	AIR 21 B2A B4P	170'-0"	150°	0°	2°	KRY 112 144/1	(2) 1-5/8"
BETA	B2	APXVAARR24_43-U-NA20	170'-0"	150°	0°	2°	RADIO 4449 B12,B71	-
BETA	B3	AIR32 B66AA/B2A	170'-0"	150°	0°	2°	-	-
GAMMA	C1	AIR 21 B2A B4P	170'-0"	270°	0°	2°	KRY 112 144/1	(2) 1-5/8"
GAMMA	C2	APXVAARR24_43-U-NA20	170'-0"	270°	0°	2°	RADIO 4449 B12,B71	-
GAMMA	C3	AIR32 B66AA/B2A	170'-0"	270°	0°	2°	-	-

1. BASED ON APPROVED ATC APPLICATION 12605188, DATED 08-13-2018. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
2. (1) EXISTING 1-1/4" HYBRID CABLE (TO REMAIN)
3. (1) PROPOSED 1-1/4" HYBRID CABLE (250'±)
4. (1) PROPOSED 1-5/8" HYBRID CABLE (250'±)

3 ANTENNA SCHEDULE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	02/01/19
1	MOUNT MODS	MG	02/01/19

ATC SITE NUMBER:
370627

ATC SITE NAME:
NEWINGTON CT

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SEAL:

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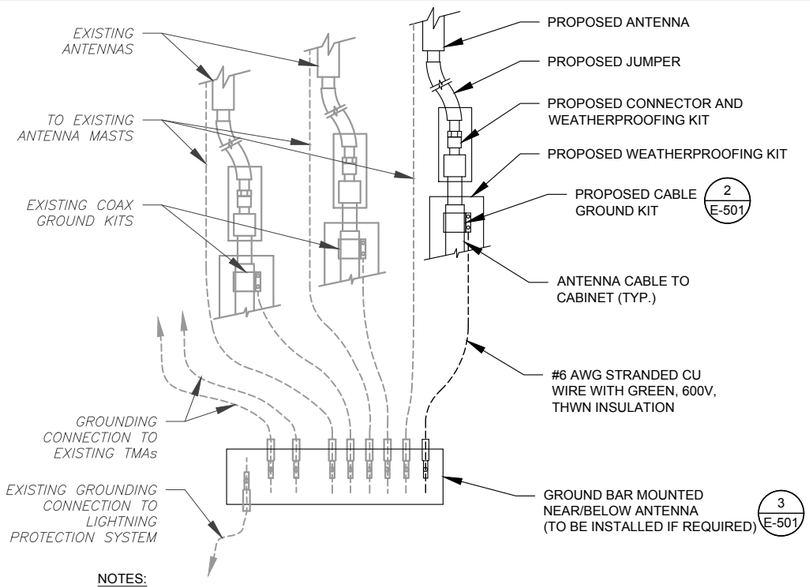
T-Mobile cosign

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	02/01/19
ATC JOB NO:	12607181

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	1

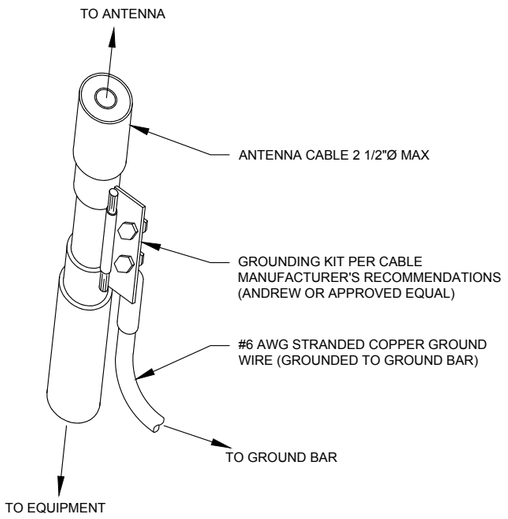


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

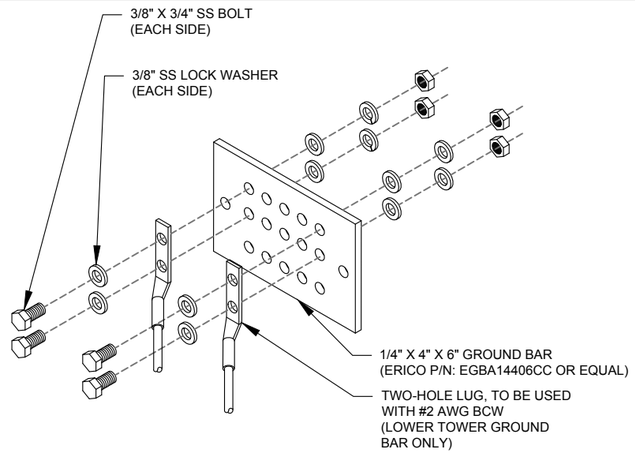


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

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3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	02/01/19

ATC SITE NUMBER:
370627

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SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SEAL:

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DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	02/01/19
ATC JOB NO:	12607181

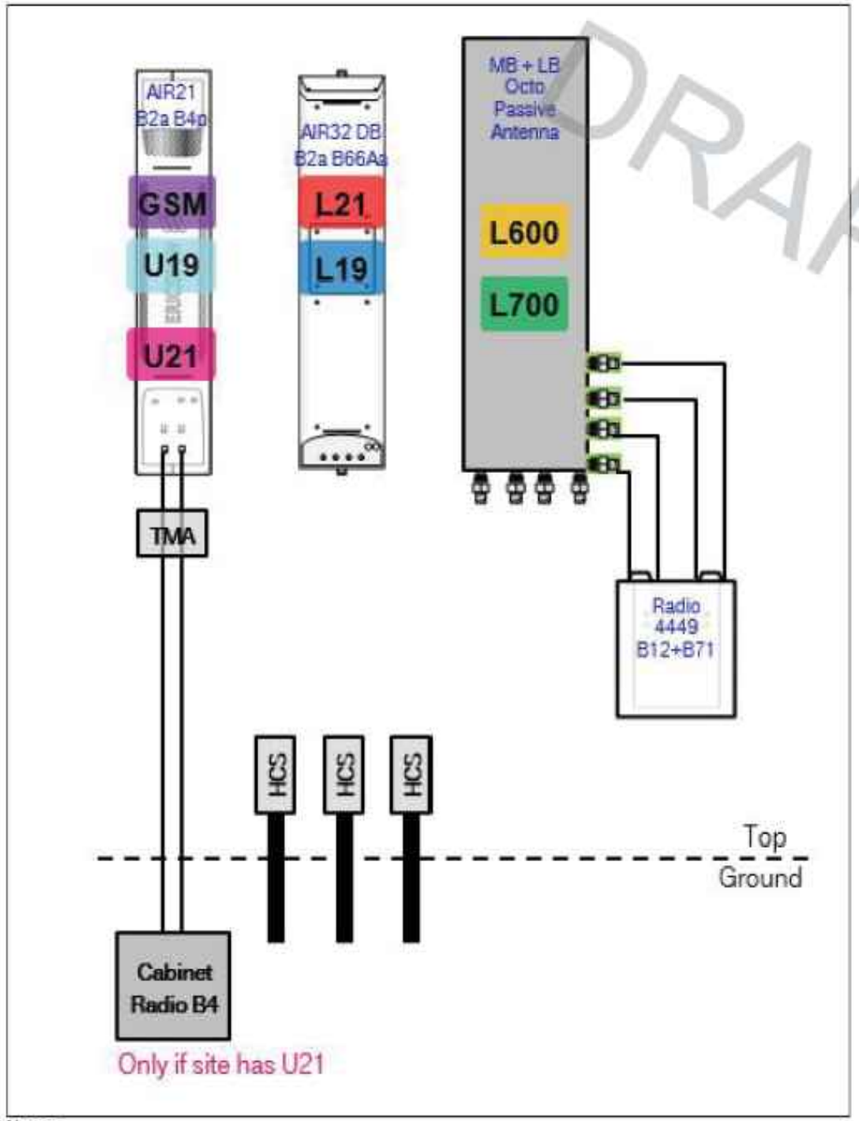
GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Existing RAN Equipment	
Template:	792DB Outdoor
Enclosure	1
Enclosure Type	RBS 3106
Baseband	DUS41 (L2100, L1900, L700) · DUW30 (U2100) · DUG20 (G1900)
Radio	RU22 (x6)

Proposed RAN Equipment		
Template:	67D92DB Outdoor	
Enclosure	1	2
Enclosure Type	RBS 6131	Ancillary Equipment
Baseband	DUW30 (U2100) · DUG20 (G1900) · BB 5216 (L2100, L1900, L700, L600)	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* · Ericsson 6x12 HCS *Select Length & AWG* · Ericsson 6x12 HCS *Select AWG & Length*
Multiplexer	XMU	
Radio	RU22 (x6) (U2100)	
RAN Scope of Work:		

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

Mount Analysis of Existing Low Profile Platform for American Tower on behalf of T-Mobile
370627 - Newington CT
Project #: 12605188

T-Mobile Site ID: CTHA342A
Program: L700

CLS Engineering PLLC Project #41124-12605188-01-MA
January 22, 2019

MOUNT DESCRIPTION	Existing Low Profile Platform at 170 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 170 ft AGL
SITE DESCRIPTION	179 ft Monopole
SITE ADDRESS	605 Willard Ave., Newington, CT 06111, Hartford County
GPS COORDINATES	41.69837222, -72.73714722
ANALYSIS STANDARD	2018 IBC / TIA-222-H
LOADING CRITERIA	118 mph, V_{ult} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1.5" Ice

■ ANALYSIS RESULT: **Pass (Conditional)**

MEMBER USAGE	84%	Pass
COLLAR USAGE	86%	Pass

Modifications are proposed to bring mounts into compliance; see conclusion for details.

Prepared by:
Zachary Blackford

Reviewed and Approved by:
Tyler M. Barker, P.E.

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
CDA # PEC.0001833 Exp. 8/14/2019

Digitally signed by Tyler M. Barker
Date: 2019.01.22 21:12:59 -05'00'

■ RESULTS SUMMARY

Pre-Modification Usage:

COMPONENT	PEAK USAGE	RESULT
Mount Pipe	111%	Fail
Offset Side Plate	84%	Pass
Offset End Plate	66%	Pass
Offset Tube	56%	Pass

Post-Modification Usage:

COMPONENT	PEAK USAGE	RESULT
Collar Reactions	86%	Pass
Offset Side Plates	84%	Pass
Offset End Plates	66%	Pass
Mount Pipes	57%	Pass
Offset Tube	56%	Pass

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **CONDITIONALLY PASS.** The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

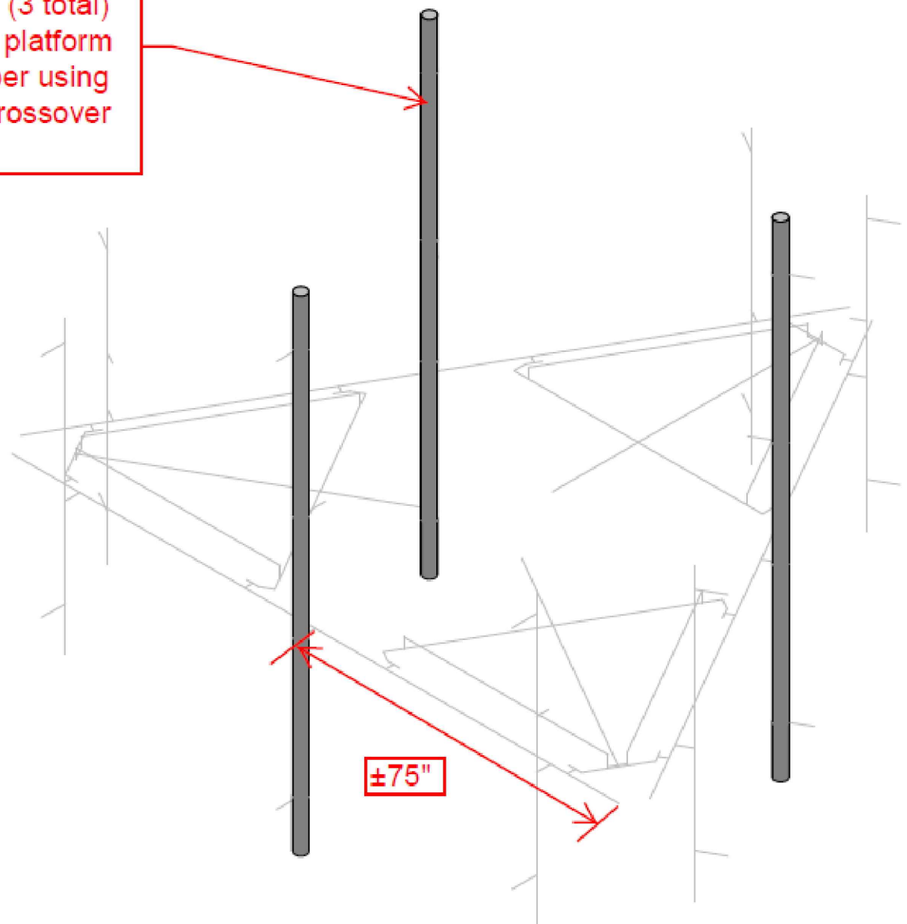
- Replace existing mount pipe at Position 2 with (1) 10ft. long proposed Pipe 2 1/2 STD, A53 Gr. B, at each sector (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.

See following sketch and Site Pro 1 assembly drawing for additional details.

SUPPLEMENTAL

SHEET NUMBER: R-602
REVISION: 1

Replace existing mount pipe at Position 2 with (1) 10ft. long proposed Pipe 2 1/2 STD, A53 Gr. B, at each sector (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.



Envelope Only Solution

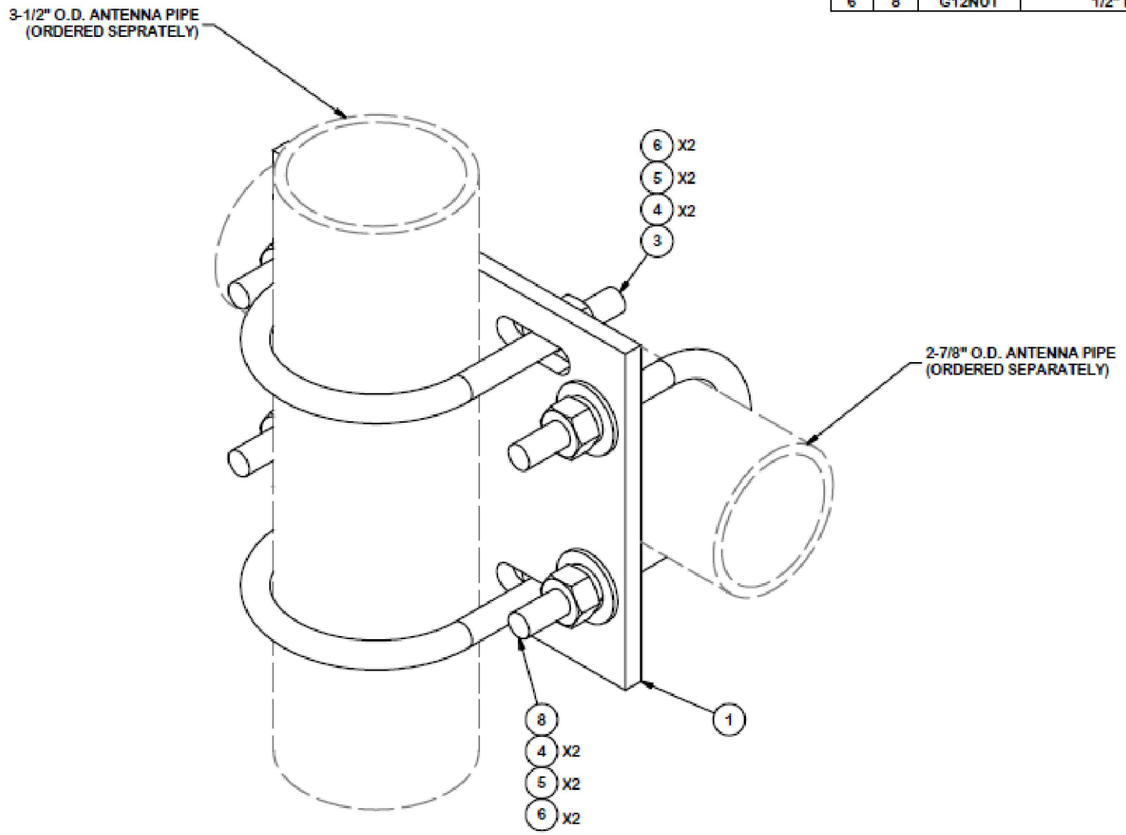
CLS	41124-12622803-Newington CT	SK - 1
ZB	Proposed Modifications - Rendered	Jan 22, 2019 at 10:42 AM
41124-12605188-01-MA		41124-12622803-01-MA.r3d

SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: 1

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	6.02
3	2	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	1.46
8	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	1.46
4	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	9.92



TOLERANCE NOTES

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

DESCRIPTION: CROSSOVER PLATE KIT

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 2/19/2015		SCX45-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 2/19/2015	SCX45-K

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	1

UPS Internet Shipping: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

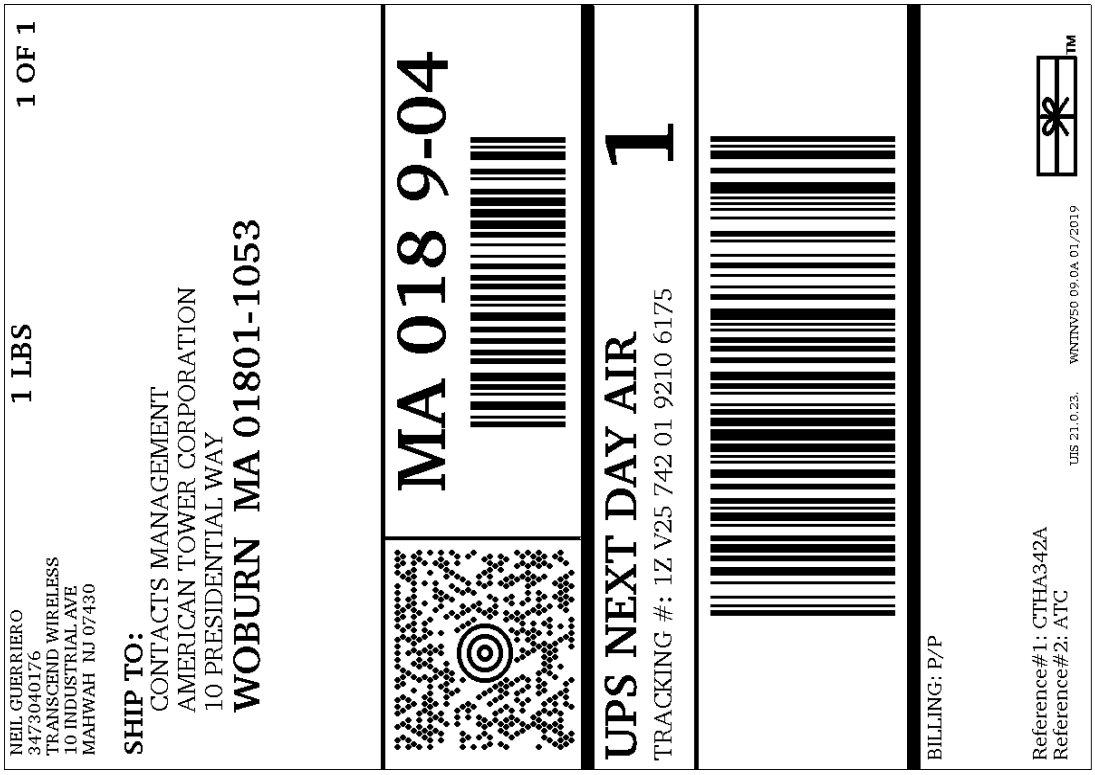
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.
   Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
THE UPS STORE
115 FRANKLIN TPKE
MAHWAH ,NJ 07430

UPS Access Point™
THE UPS STORE
120 E MAIN ST
RAMSEY ,NJ 07446

UPS Access Point™
POSTNET 74
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE



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POSTNET 74
74 LAFAYETTE AVE
SUFFERN ,NY 10901

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NEIL GUERRIERO
3473040176
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1.0 LBS LTR **1 OF 1**

SHIP TO:
ROY ZARTARIAN, MAYOR
TOWN OF NEWINGTON
131 CEDAR STREET
NEWINGTON CT 06111-2657

CT 061 9-02

UPS NEXT DAY AIR **1**

TRACKING #: 1Z V25 742 01 9127 4969

BILLING: P/P

Reference#1: CTHA342A
Reference#2: Mayor

UIS 20.6.13. WNTNV50 06.0A 10/2018

UPS Internet Shipping: View/Print Label

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POSTNET 74
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

NEIL GUERRIERO
3473040176
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1.0 LBS LTR **1 OF 1**

SHIP TO:
CRAIG MINOR, TOWN PLANNER
TOWN OF NEWINGTON
131 CEDAR STREET
NEWINGTON CT 06111-2657

CT 061 9-02

UPS NEXT DAY AIR **1**

TRACKING #: 1Z V25 742 01 9126 4970

BILLING: P/P

Reference#1: CTHA342A
Reference#2: Planner

UIS 20.6.13. WNTNV50 06.0A 10/2018