



10 INDUSTRIAL AVENUE,
SUITE 3
MAHWAH, NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

November 27, 2018

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

Notice of Exempt Modification
305 W. Service Road, Hartford, CT
Latitude: 41.79952222
Longitude: -72.65670000

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 125' level of the existing 147.9' Monopole at 305 W. Service Road in Hartford, Connecticut. The tower is owned by American Tower and the property is owned by 305 W. Service Road Assoc., LLC. T-Mobile now intends to replace (3) of its existing antennas with (3) new antennas, and swap (3) RRUs. These antennas and RRUs would be installed at the same 125' level of the tower. There will be one (1) 1-5/8" hybrid removed and two (2) 1-1/4" hybrid cables installed.

This facility was approved by the City of Hartford Planning and Zoning, of which no records are available, however the Council approved T-Mobile for Tower Share September 6, 2006, as well as subsequent modifications with no record of conditions that would restrict exempt modifications. Therefore, this modification complies with the aforementioned approval.

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:

Luke Bronin, Mayor
Erik C. Johnson, Director of Development Services
305 W SERVICE RD ASSOC LLC, Underlying Landlord
American Tower, Tower Owner

Unofficial Property Record Card - City of Hartford, CT

General Property Data

Parcel ID **304-074-014**
 Prior Parcel ID
 Property Owner **305 W SERVICE RD ASSOC LLC**
 Mailing Address **79 RYE ST**
 City **BROAD BROOK**
 Mailing State **CT** Zip **06016-9555**
 ParcelZoning **ID-1**

Account Number
 Property Location **305 WEST SERVICE RD HARTFORD**
 Property Use **AUTO REPAIR**
 Most Recent Sale Date **5/29/1998**
 Legal Reference **03960 0282**
 Grantor
 Sale Price **280,000**
 Land Area **85,813.000 square feet**

Current Property Assessment

Card 1 Value Building Value **23,520** Xtra Features Value **6,300** Land Value **490,140** Total Value **519,960**

Building Description

Building Style **AUTO SERVICE**
 # of Living Units **0**
 Year Built **1960**
 Building Grade **Average**
 Building Condition **N/A**
 Finished Area (SF) **6480**
 Number Rooms **0**
 # of 3/4 Baths **0**

Foundation Type **Concrete**
 Frame Type **Steel**
 Roof Structure **FLAT**
 Roof Cover **Membrane**
 Siding **Conc Block**
 Interior Walls **DRYWALL**
 # of Bedrooms **0**
 # of 1/2 Baths **0**

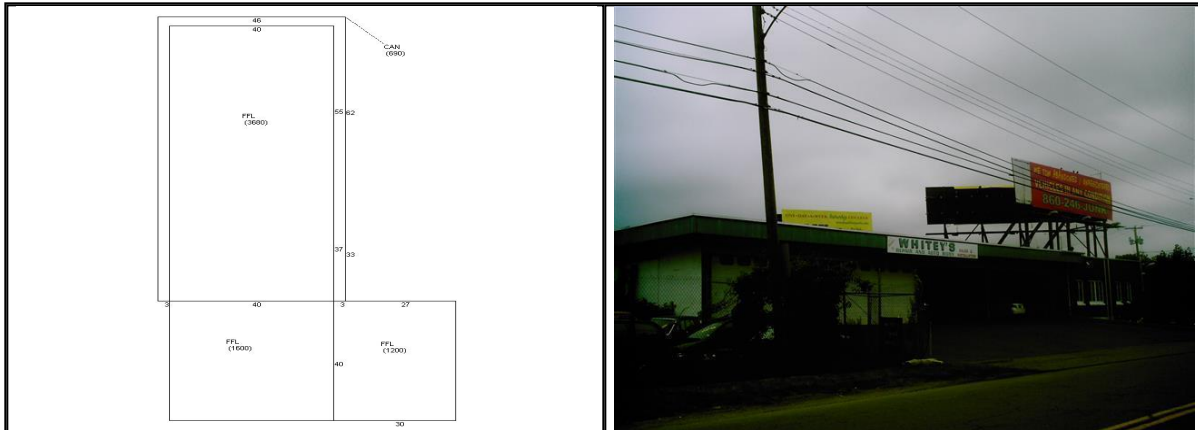
Flooring Type **CONCRETE**
 Basement Floor **FFL**
 Heating Type **Warm Air**
 Heating Fuel **Gas**
 Air Conditioning **0%**
 # of Bsmt Garages **0**
 # of Full Baths **0**
 # of Other Fixtures **0**

Legal Description

Narrative Description of Property

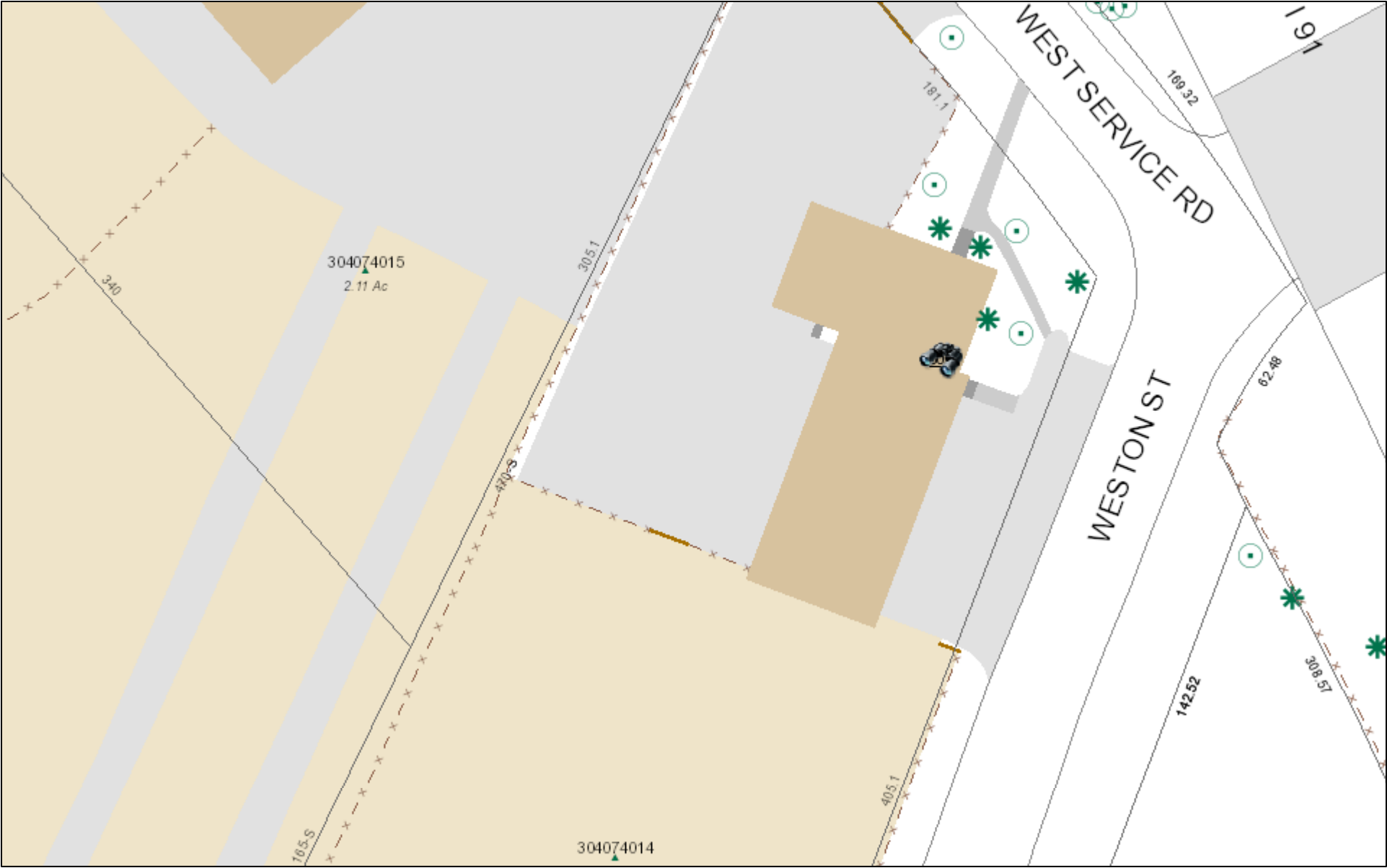
This property contains 85,813.000 square feet of land mainly classified as AUTO REPAIR with a(n) AUTO SERVICE style building, built about 1960 , having Conc Block exterior and Membrane roof cover, with 0 commercial unit(s) and 0 residential unit(s), 0 room(s), 0 bedroom(s), 0 bath(s), 0 half bath(s).

Property Images



Disclaimer: This information is believed to be correct but is subject to change and is not warranted.

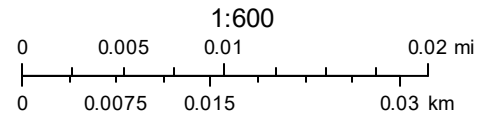
City of Hartford GIS Map



October 22, 2018

Address Points

Parcels





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

T-Mobile Existing Facility

Site ID: CT11491B

CT491/SSite Hartford_MP1
305 W. Service Road
Hartford, CT 06120

September 2, 2018

EBI Project Number: 6218005999

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	10.59 %



September 2, 2018

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

Emissions Analysis for Site: **CT11491B – CT491/SSite Hartford_MP1**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **305 W. Service Road, Hartford, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **305 W. Service Road, Hartford, 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 **125 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):	125 feet	Height (AGL):	125 feet	Height (AGL):	125 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%	1.98	Antenna B1 MPE%	1.98	Antenna C1 MPE%	1.98
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):	125 feet	Height (AGL):	125 feet	Height (AGL):	125 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%	0.54	Antenna B2 MPE%	0.54	Antenna C2 MPE%	0.54
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):	125 feet	Height (AGL):	125 feet	Height (AGL):	125 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%	1.47	Antenna B3 MPE%	1.47	Antenna C3 MPE%	1.47

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	3.99 %
Northcoast	0.20 %
Nextel	0.28 %
Clearwire	0.26 %
Sensus (CL&P)	0.14 %
Verizon Wireless	5.72 %
Site Total MPE %:	10.59 %

T-Mobile Sector A Total:	3.99 %
T-Mobile Sector B Total:	3.99 %
T-Mobile Sector C Total:	3.99 %
Site Total:	10.59 %



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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	125	7.90	PCS - 1900 MHz	1000.00	0.79%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	125	11.85	AWS - 2100 MHz	1000.00	1.19%
T-Mobile PCS - 1900 MHz GSM	1	583.57	125	1.48	PCS - 1900 MHz	1000.00	0.15%
T-Mobile AWS - 2100 MHz UMTS	1	1,556.18	125	3.93	AWS - 2100 MHz	1000.00	0.39%
T-Mobile 600 MHz LTE	2	788.97	125	4.01	600 MHz	400.00	1.00%
T-Mobile 700 MHz LTE	2	432.54	125	2.20	700 MHz	467.00	0.47%
						Total:	3.99%



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:	3.99 %
Sector B:	3.99 %
Sector C:	3.99 %
T-Mobile Maximum MPE % (Per Sector):	3.99 %
Site Total:	10.59 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **10.59%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 147.9 ft Monopole
ATC Site Name : West Service Road, CT
ATC Site Number : 302466
Engineering Number : OAA736325_C3_01
Proposed Carrier : T-Mobile
Carrier Site Name : CT11491B
Carrier Site Number : CT11491B
Site Location : 305 W. Service Rd.
Hartford, CT 06120-0001
41.799500,-72.656700
County : Hartford
Date : July 6, 2018
Max Usage : 68%
Result : Pass

Prepared By:
Tyler Ferguson, E.I.
Structural Engineer I

Reviewed By:



Authorized by "EOR"
Jul 6 2018 3:52 PM

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 147.9 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	FWT Job #18053, dated September 10, 1998
Foundation Drawing	FWT Job #18054, dated September 10, 1998
Geotechnical Report	Gibble Norden Champion Project #98134.09, dated September 8, 1998

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.18$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	8	Andrew DB844H90E-XY	Platform w/ Handrails	(12) 1 1/4" Coax	Sprint Nextel
		4	Andrew 844G65VTZASX			
135.0	138.0	9	48" x 4" Panel	Low Profile Platform	(9) 1 5/8" Coax	AT&T Mobility
125.0	125.0	3	Ericsson KRY 112 144/1	T-Arms	(12) 1 5/8" Coax (1) 1 5/8" Fiber	T-Mobile
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR-32 B2A/B66Aa			
115.0	115.0	3	Samsung PCS/AWS Dual Band RRH	Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Samsung 700/850MHz Dual Band RRH			
		1	Raycap RVZDC-6627-PF-48			
		1	RFS DB-T1-6Z-8AB-OZ			
		6	Antel BXA-70063-6CF-EDIN-X			
		6	Commscope SBNHH-1D65B			
101.0	107.0	1	Antel BCD-87010__25	Stand-Off	(1) 7/8" Coax	Sensus USA
90.0	90.0	2	DragonWave Horizon Compact	T-Arms	(6) 5/16" Coax (3) 1 1/4" Hybriflex (2) 1/2" Coax (2) 2" conduit (1) 1.7" Hybrid	Clearwire
		6	Alcatel-Lucent RRH2x50-08			
		3	Alcatel-Lucent 1900MHz RRH w/ solar shield			
		1	18" x 18" x 4" Junction Box			
		3	Nokia 2.5G MAA - AAHC			
		2	Andrew VHLP2-18			
		3	Commscope NNVV-65B-R4			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
125.0	125.0	3	Andrew LNX-6515DS-VTM	-	(1) 1 5/8" Hybriflex	T-Mobile
		3	Ericsson RRUS 11 B12			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
125.0	125.0	3	Ericsson Radio 4449 B12,B71	T-Arms	(2) 1 1/4" Fiber	T-Mobile
		3	RFS APXVAARR24_43-U-NA20			

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

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	64%	Pass
Shaft	68%	Pass
Base Plate	23%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,375.3	68%
Axial (Kips)	49.6	4%
Shear (Kips)	32.9	49%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
125.0	Ericsson Radio 4449 B12,B71	T-Mobile	1.076	0.880
	RFS APXVAARR24_43-U-NA20			
90.0	Andrew VHLP2-18	Clearwire	0.583	0.712

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



Standard Conditions

All engineering services 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

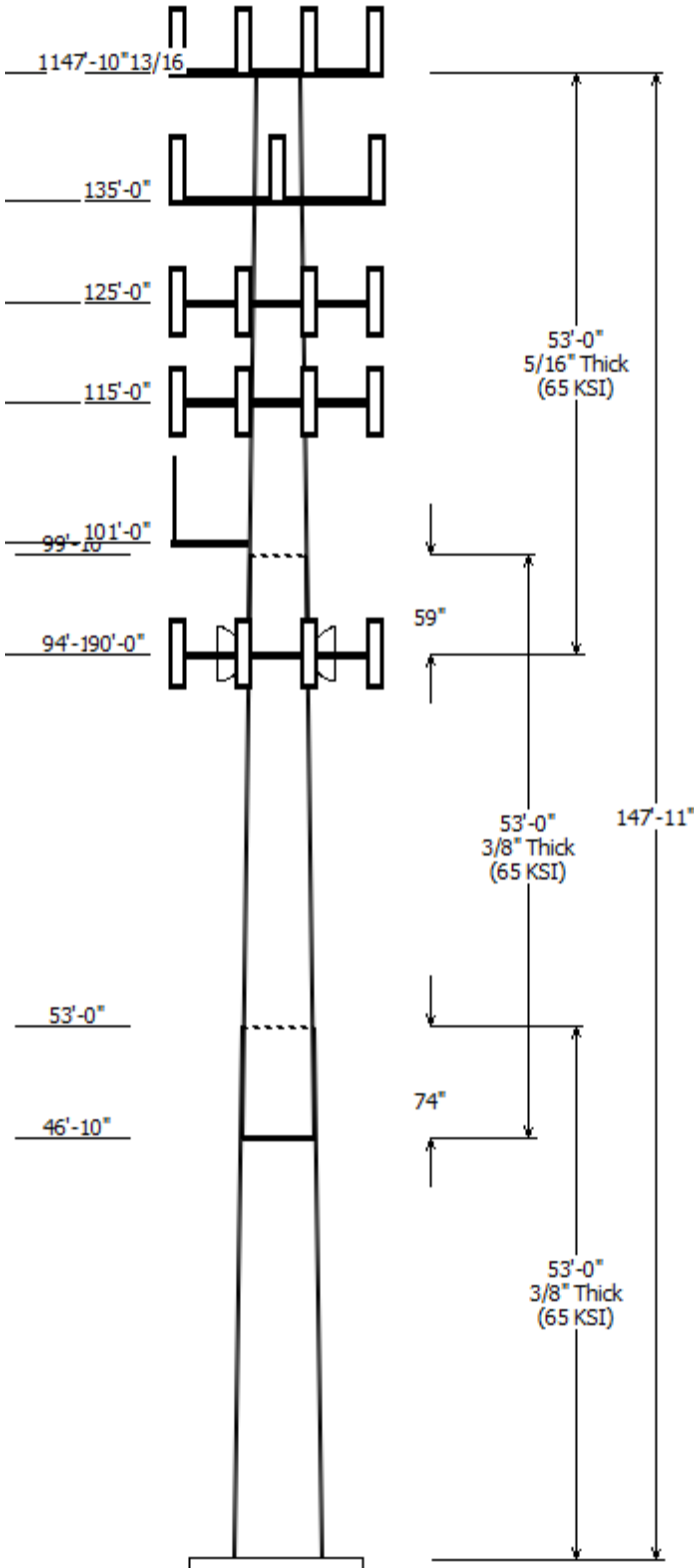
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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.

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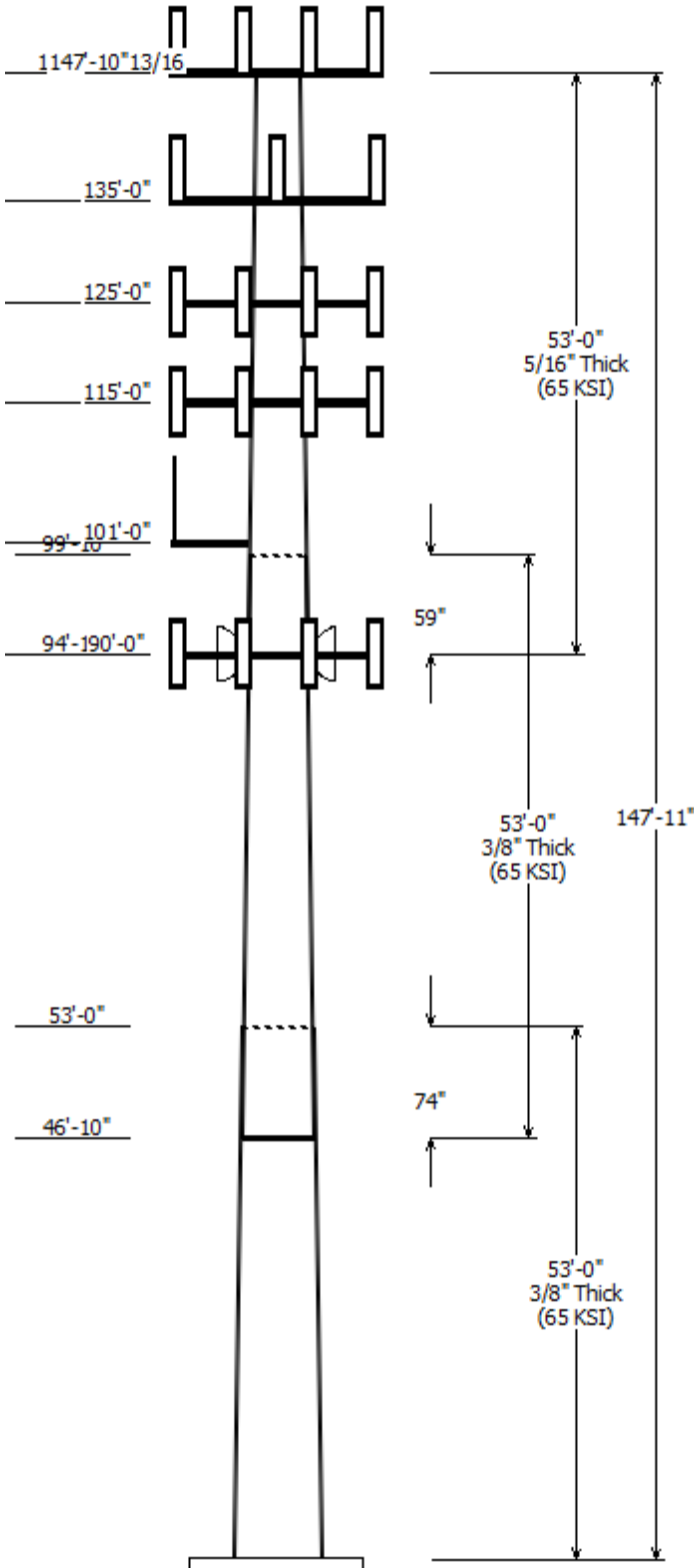


Job Information	
Pole : 302466	Code: ANSI/TIA-222-G
Location : West Service Road, CT	
Description :	
Client : T-MOBILE	Struct Class : II
Shape : 18 Sides	Exposure : C
Height : 147.92 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.214564(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Top	Bottom				
1	53.000	45.20	56.58	0.375		0.000	18 Sides 65
2	53.000	35.90	47.28	0.375	Slip Joint	74.000	18 Sides 65
3	53.000	26.21	37.58	0.313	Slip Joint	59.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
147.900	150.000	1	Flat Platform w/ Handrails
147.900	150.000	4	Andrew 844G65VTZASX
147.900	150.000	8	Andrew DB844H90E-XY
135.000	135.000	1	Flat Low Profile Platform
135.000	138.000	9	48" x 4" Panel
125.000	125.000	3	RFS APXVAARR24_43-U-NA20
125.000	125.000	3	Ericsson Radio 4449 B12,B71
125.000	125.000	3	Round T-Arm
125.000	125.000	3	Ericsson AIR-32 B2A/B66Aa
125.000	125.000	3	Ericsson AIR 21, 1.3 M, B2A B4
125.000	125.000	3	Ericsson KRY 112 144/1
115.000	115.000	1	Raycap RVZDC-6627-PF-48
115.000	115.000	3	Samsung 700/850MHz Dual
115.000	115.000	3	Samsung PCS/AWS Dual Band
115.000	115.000	6	Commscope SBNHH-1D65B
115.000	115.000	1	RFS DB-T1-6Z-8AB-0Z
115.000	115.000	6	Amphenol Antel BXA-70063-
115.000	115.000	1	Flat Low Profile Platform
101.000	107.000	1	Antel BCD-87010 ___ 25
101.000	101.000	1	Stand-Off
90.000	90.000	3	Commscope NNVV-65B-R4
90.000	90.000	3	Nokia 2.5G MAA -
90.000	90.000	1	18" x 18" x 4" Junction Box
90.000	90.000	2	Andrew VHLP2-18
90.000	90.000	3	Alcatel-Lucent 1900MHz RRH
90.000	90.000	6	Alcatel-Lucent RRH2x50-08
90.000	90.000	3	Flat T-Arm
90.000	90.000	2	DragonWave Horizon Compact

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
5.000	90.000	1 1/4" Hybriflex	No
5.000	90.000	1.7" (43.2mm)	No
5.000	90.000	1/2" Coax	Yes
5.000	90.000	2" conduit	Yes
5.000	90.000	5/16" (0.31"-	No
5.000	101.0	7/8" Coax	Yes
5.000	115.0	1 5/8" (1.63"-	Yes
5.000	115.0	1 5/8" Coax	No
5.000	125.0	1 1/4" (1.25"-	No



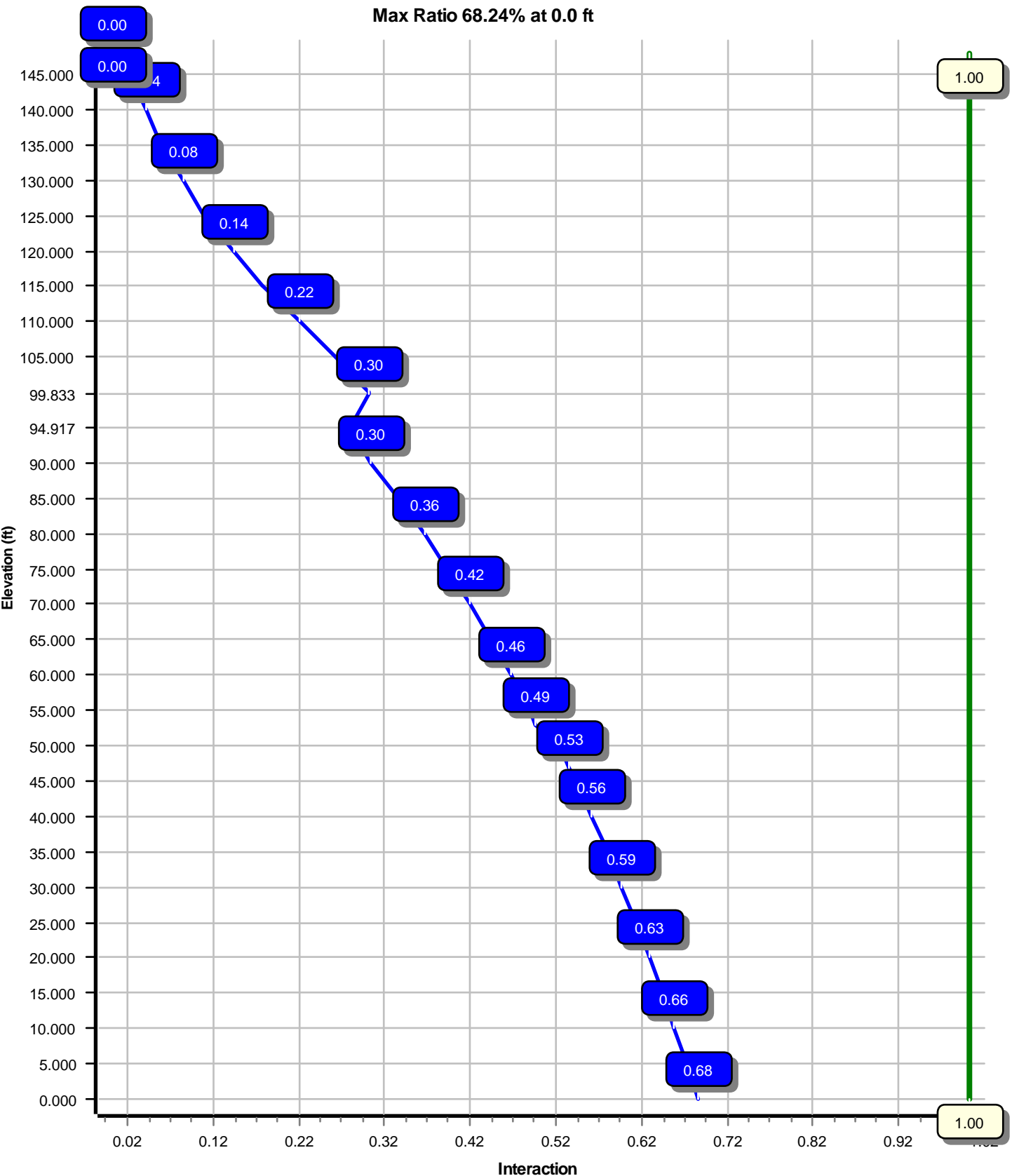
5.000	125.0	1 5/8" (1.63"-	No
5.000	125.0	1 5/8" Coax	Yes
5.000	125.0	1 5/8" Coax	No
5.000	135.0	1 5/8" Coax	No
5.000	147.9	1 1/4" Coax	No

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	3375.27	32.88	49.55
0.9D + 1.6W	3301.01	32.37	37.15
1.2D + 1.0Di + 1.0Wi	976.74	9.44	90.72
(1.2 + 0.2Sds) * DL + E ELFM	205.24	1.79	49.80
(1.2 + 0.2Sds) * DL + E EMAM	244.53	2.12	49.80
(0.9 - 0.2Sds) * DL + E ELFM	202.95	1.79	34.64
(0.9 - 0.2Sds) * DL + E EMAM	241.60	2.12	34.64
1.0D + 1.0W	792.28	7.74	41.33

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	90.00	6.996	0.712

Load Case : 1.2D + 1.6W
Max Ratio 68.24% at 0.0 ft



Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:44 PM

Customer: T-MOBILE

Analysis Parameters

Location :	HARTFORD County, CT	Height (ft) :	147.9167
Code :	ANSI/TIA-222-G	Base Diameter (in) :	56.58
Shape :	18 Sides	Top Diameter (in) :	26.22
Pole Type :	Taper	Taper (in/ft) :	0.215
Pole Manufacturer :	FWT	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	C	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):	2.05		
T _L (sec):	6	p:	1.3
S _s :	0.181	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.193	S _{d1} :	0.102
		C _s :	0.033
		C _s Max:	0.033
		C _s Min:	0.030

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 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom				Top				Taper (in/ft)				
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)		Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio
1-18	53.000	0.3750	65		0.00	10,844	56.58	0.00	66.90	26698.9	24.84	150.88	45.20	53.00	53.36	13550.7	19.49	120.55	0.214564
2-18	53.000	0.3750	65	Slip	74.00	8,848	47.28	46.83	55.83	15518.8	20.47	126.08	35.90	99.83	42.29	6747.0	15.12	95.76	0.214564
3-18	53.000	0.3125	65	Slip	59.00	5,651	37.58	94.92	36.97	6490.8	19.45	120.28	26.21	147.92	25.69	2178.3	13.03	83.89	0.214564
Shaft Weight						25,343													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
147.90	Andrew 844G65VTZASX	4	0.000	2.100	16.00	5.310	0.71
147.90	Andrew DB844H90E-XY	8	0.000	2.100	14.00	3.610	0.74
147.90	Flat Platform w/ Handrails	1	0.000	2.100	2000.00	42.400	1.00
135.00	48" x 4" Panel	9	0.000	3.000	20.00	2.090	0.69
135.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
125.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
125.00	Ericsson AIR-32 B2A/B66Aa	3	0.000	0.000	132.20	6.510	0.71
125.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
125.00	Ericsson Radio 4449 B12,B71	3	0.000	0.000	74.00	1.640	0.50
125.00	RFS APXVAARR24_43-U-NA20	3	0.000	0.000	127.90	20.240	0.63
125.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
115.00	Amphenol Antel BXA-70063-6CF-	6	0.000	0.000	17.00	7.570	0.66
115.00	Commscope SBNHH-1D65B	6	0.000	0.000	50.70	8.170	0.69
115.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
115.00	Raycap RVZDC-6627-PF-48	1	0.000	0.000	32.00	3.780	0.50
115.00	RFS DB-T1-6Z-8AB-0Z	1	0.000	0.000	44.00	4.800	0.50
115.00	Samsung 700/850MHz Dual Band	3	0.000	0.000	70.30	1.880	0.50
115.00	Samsung PCS/AWS Dual Band	3	0.000	0.000	84.40	1.880	0.50
101.00	Antel BCD-87010 ___ 25	1	0.000	6.000	26.50	2.900	1.00
101.00	Stand-Off	1	0.000	0.000	75.00	2.500	1.00
90.00	18" x 18" x 4" Junction Box	1	0.000	0.000	21.00	2.700	0.50
90.00	Alcatel-Lucent 1900MHz RRH (65	3	0.000	0.000	60.00	2.580	0.50
90.00	Alcatel-Lucent RRH2x50-08	6	0.000	0.000	52.90	1.700	0.50
90.00	Andrew VHLP2-18	2	0.000	0.000	27.00	4.680	1.00
90.00	Commscope NNVV-65B-R4	3	0.000	0.000	77.40	12.270	0.64
90.00	DragonWave Horizon Compact	2	0.000	0.000	10.60	0.430	0.50
90.00	Flat T-Arm	3	0.000	0.000	250.00	12.900	0.67
90.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.000	0.000	103.60	4.200	0.64
Totals	Num Loadings:28	87			10324.70		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat Width (in)	Exposed To Wind	Carrier
5.00	147.90	12	1 1/4" Coax	1.55	0.63	N 0.00	N	Sprint Nextel
5.00	135.00	9	1 5/8" Coax	1.98	0.82	N 0.00	N	AT&T Mobility
5.00	125.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N 0.00	N	T-Mobile
5.00	125.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0.00	N	T-Mobile
5.00	125.00	6	1 5/8" Coax	1.98	0.82	N 3.96	Y	T-Mobile
5.00	125.00	6	1 5/8" Coax	1.98	0.82	N 0.00	N	T-Mobile
5.00	115.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0.00	Y	Verizon
5.00	115.00	6	1 5/8" Coax	1.98	0.82	N 0.00	N	Verizon

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

5.00	101.00	1	7/8" Coax	1.09	0.33	N	1.09	Y	Sensus USA
5.00	90.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Clearwire
5.00	90.00	1	1.7" (43.2mm) Hybrid	1.70	1.78	N	0.00	N	Clearwire
5.00	90.00	2	1/2" Coax	0.63	0.15	N	0.00	Y	Clearwire
5.00	90.00	2	2" conduit	2.38	3.65	N	0.00	Y	Clearwire
5.00	90.00	6	5/16" (0.31"-7.9mm)	0.31	0.05	N	0.00	N	Clearwire

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Site Name: West Service Road, CT

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Customer: T-MOBILE

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	56.580	66.895	26,698.9	24.84	150.88	72.2	929.4	0.0	0.0
5.00		0.3750	55.507	65.618	25,199.0	24.34	148.02	72.8	894.2	0.0	1,127.3
10.00		0.3750	54.434	64.341	23,756.4	23.83	145.16	73.4	859.6	0.0	1,105.6
15.00		0.3750	53.361	63.065	22,369.9	23.33	142.30	74.0	825.7	0.0	1,083.8
20.00		0.3750	52.288	61.788	21,038.5	22.82	139.44	74.6	792.5	0.0	1,062.1
25.00		0.3750	51.216	60.511	19,760.9	22.32	136.57	75.2	760.0	0.0	1,040.4
30.00		0.3750	50.143	59.234	18,536.2	21.81	133.71	75.7	728.1	0.0	1,018.7
35.00		0.3750	49.070	57.957	17,363.1	21.31	130.85	76.3	696.9	0.0	996.9
40.00		0.3750	47.997	56.680	16,240.6	20.81	127.99	76.9	666.5	0.0	975.2
45.00		0.3750	46.924	55.403	15,167.5	20.30	125.13	77.5	636.6	0.0	953.5
46.83	Bot - Section 2	0.3750	46.531	54.935	14,786.3	20.12	124.08	77.7	625.9	0.0	344.2
50.00		0.3750	45.851	54.126	14,142.8	19.80	122.27	78.1	607.5	0.0	1,184.8
53.00	Top - Section 1	0.3750	45.958	54.253	14,242.2	19.85	122.55	78.1	610.4	0.0	1,106.4
55.00		0.3750	45.529	53.742	13,843.8	19.64	121.41	78.3	598.9	0.0	367.5
60.00		0.3750	44.456	52.465	12,880.3	19.14	118.55	78.9	570.7	0.0	903.5
65.00		0.3750	43.383	51.188	11,962.6	18.64	115.69	79.5	543.1	0.0	881.8
70.00		0.3750	42.310	49.912	11,089.5	18.13	112.83	80.1	516.2	0.0	860.1
75.00		0.3750	41.237	48.635	10,260.0	17.63	109.97	80.7	490.0	0.0	838.3
80.00		0.3750	40.165	47.358	9,472.9	17.12	107.11	81.3	464.5	0.0	816.6
85.00		0.3750	39.092	46.081	8,727.1	16.62	104.24	81.9	439.7	0.0	794.9
90.00		0.3750	38.019	44.804	8,021.6	16.11	101.38	82.4	415.6	0.0	773.2
94.92	Bot - Section 3	0.3750	36.964	43.548	7,365.9	15.62	98.57	82.6	392.5	0.0	739.1
95.00		0.3750	36.946	43.527	7,355.1	15.61	98.52	82.6	392.1	0.0	22.8
99.83	Top - Section 2	0.3125	36.534	35.926	5,955.2	18.85	116.91	79.2	321.1	0.0	1,305.1
100.0		0.3125	36.498	35.890	5,937.6	18.83	116.79	79.3	320.4	0.0	20.4
101.0		0.3125	36.284	35.678	5,832.6	18.71	116.11	79.4	316.6	0.0	121.8
105.0		0.3125	35.425	34.826	5,425.0	18.23	113.36	80.0	301.6	0.0	479.8
110.0		0.3125	34.353	33.762	4,942.7	17.62	109.93	80.7	283.4	0.0	583.5
115.0		0.3125	33.280	32.698	4,490.0	17.01	106.50	81.4	265.7	0.0	565.4
120.0		0.3125	32.207	31.634	4,065.8	16.41	103.06	82.1	248.6	0.0	547.3
125.0		0.3125	31.134	30.570	3,669.1	15.80	99.63	82.6	232.1	0.0	529.2
130.0		0.3125	30.061	29.506	3,299.2	15.20	96.20	82.6	216.2	0.0	511.1
135.0		0.3125	28.989	28.442	2,955.0	14.59	92.76	82.6	200.8	0.0	493.0
140.0		0.3125	27.916	27.378	2,635.6	13.99	89.33	82.6	186.0	0.0	474.9
145.0		0.3125	26.843	26.314	2,340.0	13.38	85.90	82.6	171.7	0.0	456.8
147.9		0.3125	26.221	25.697	2,179.2	13.03	83.91	82.6	163.7	0.0	256.6
147.9		0.3125	26.217	25.693	2,178.3	13.03	83.89	82.6	163.7	0.0	1.5
											25,342.5

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

Load Case: 1.2D + 1.6W	97 mph with No Ice	22 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		263.8	0.0					0.0	0.0	263.8	0.0	0.0	0.0
5.00		522.6	1,352.7					0.0	0.0	522.6	1,352.7	0.0	0.0
10.00		512.5	1,326.7					0.0	297.8	512.5	1,624.5	0.0	0.0
15.00		510.2	1,300.6					0.0	297.8	510.2	1,598.4	0.0	0.0
20.00		521.5	1,274.5					0.0	297.8	521.5	1,572.4	0.0	0.0
25.00		535.6	1,248.5					0.0	297.8	535.6	1,546.3	0.0	0.0
30.00		545.3	1,222.4					0.0	297.8	545.3	1,520.2	0.0	0.0
35.00		553.4	1,196.3					0.0	297.8	553.4	1,494.1	0.0	0.0
40.00		560.5	1,170.3					0.0	297.8	560.5	1,468.1	0.0	0.0
45.00		385.7	1,144.2					0.0	297.8	385.7	1,442.0	0.0	0.0
46.83	Bot - Section 2	286.9	413.0					0.0	109.2	286.9	522.2	0.0	0.0
50.00		356.9	1,421.8					0.0	188.6	356.9	1,610.4	0.0	0.0
53.00	Top - Section 1	289.5	1,327.6					0.0	178.7	289.5	1,506.3	0.0	0.0
55.00		405.1	441.0					0.0	119.1	405.1	560.1	0.0	0.0
60.00		579.4	1,084.2					0.0	297.8	579.4	1,382.0	0.0	0.0
65.00		579.7	1,058.1					0.0	297.8	579.7	1,356.0	0.0	0.0
70.00		579.0	1,032.1					0.0	297.8	579.0	1,329.9	0.0	0.0
75.00		577.6	1,006.0					0.0	297.8	577.6	1,303.8	0.0	0.0
80.00		575.5	979.9					0.0	297.8	575.5	1,277.7	0.0	0.0
85.00		572.7	953.9					0.0	297.8	572.7	1,251.7	0.0	0.0
90.00	Appurtenance(s)	564.6	927.8	3,126.0	0.0	0.0	2,263.9	0.0	297.8	3,690.6	3,489.5	0.0	0.0
94.92	Bot - Section 3	283.8	886.9					0.0	218.0	283.8	1,104.9	0.0	0.0
95.00		281.8	27.4					0.0	3.7	281.8	31.1	0.0	0.0
99.83	Top - Section 2	286.5	1,566.1					0.0	214.4	286.5	1,780.4	0.0	0.0
100.00		66.1	24.4					0.0	7.4	66.1	31.8	0.0	0.0
101.00	Appurtenance(s)	264.3	146.1	277.6	0.0	899.6	121.8	0.0	44.3	541.9	312.3	0.0	0.0
105.00		464.7	575.8					0.0	175.8	464.7	751.6	0.0	0.0
110.00		511.2	700.2					0.0	219.8	511.2	919.9	0.0	0.0
115.00	Appurtenance(s)	505.2	678.5	4,466.4	0.0	0.0	2,935.6	0.0	219.8	4,971.5	3,833.8	0.0	0.0
120.00		498.8	656.7					0.0	170.9	498.8	827.7	0.0	0.0
125.00	Appurtenance(s)	473.4	635.0	3,690.8	0.0	0.0	2,441.2	0.0	170.9	4,164.3	3,247.1	0.0	0.0
130.00		445.3	613.3					0.0	89.6	445.3	702.9	0.0	0.0
135.00	Appurtenance(s)	432.8	591.6	1,983.5	0.0	1,699.1	2,016.0	0.0	89.6	2,416.3	2,697.2	0.0	0.0
140.00		420.0	569.8					0.0	45.4	420.0	615.2	0.0	0.0
145.00		323.6	548.1					0.0	45.4	323.6	593.5	0.0	0.0
147.90		117.5	307.9					0.0	26.3	117.5	334.3	0.0	0.0
147.92		0.7	1.8					0.0	0.0	0.7	1.8	0.0	0.0
Totals:										29,198.1	46,993.8	0.00	0.00

Site Number: 302466

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

Load Case: 1.2D + 1.6W

97 mph with No Ice

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.55	-32.88	0.00	-3,375.27	0.00	3,375.27	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.682
5.00	-48.10	-32.51	0.00	-3,210.86	0.00	3,210.86	4,297.95	2,148.97	9,746.71	4,880.60	0.09	-0.18	0.669
10.00	-46.38	-32.13	0.00	-3,048.34	0.00	3,048.34	4,248.67	2,124.33	9,446.21	4,730.12	0.37	-0.35	0.656
15.00	-44.69	-31.75	0.00	-2,887.69	0.00	2,887.69	4,198.03	2,099.01	9,147.11	4,580.35	0.84	-0.53	0.641
20.00	-43.02	-31.34	0.00	-2,728.96	0.00	2,728.96	4,146.02	2,073.01	8,849.60	4,431.38	1.49	-0.71	0.626
25.00	-41.39	-30.91	0.00	-2,572.26	0.00	2,572.26	4,092.65	2,046.33	8,553.86	4,283.29	2.33	-0.89	0.611
30.00	-39.78	-30.47	0.00	-2,417.68	0.00	2,417.68	4,037.92	2,018.96	8,260.08	4,136.18	3.36	-1.07	0.595
35.00	-38.21	-30.01	0.00	-2,265.34	0.00	2,265.34	3,981.83	1,990.91	7,968.43	3,990.14	4.57	-1.25	0.578
40.00	-36.66	-29.53	0.00	-2,115.32	0.00	2,115.32	3,924.37	1,962.18	7,679.09	3,845.25	5.97	-1.43	0.560
45.00	-35.17	-29.18	0.00	-1,967.70	0.00	1,967.70	3,865.54	1,932.77	7,392.26	3,701.62	7.56	-1.61	0.541
46.83	-34.61	-28.93	0.00	-1,914.21	0.00	1,914.21	3,843.63	1,921.82	7,287.75	3,649.29	8.19	-1.67	0.534
50.00	-32.95	-28.59	0.00	-1,822.60	0.00	1,822.60	3,805.35	1,902.68	7,108.10	3,559.34	9.34	-1.79	0.521
53.00	-31.41	-28.30	0.00	-1,736.84	0.00	1,736.84	3,811.38	1,905.69	7,136.14	3,573.37	10.50	-1.89	0.495
55.00	-30.81	-27.94	0.00	-1,680.25	0.00	1,680.25	3,786.98	1,893.49	7,023.15	3,516.80	11.31	-1.96	0.486
60.00	-29.37	-27.40	0.00	-1,540.55	0.00	1,540.55	3,725.02	1,862.51	6,742.75	3,376.39	13.45	-2.13	0.464
65.00	-27.96	-26.84	0.00	-1,403.58	0.00	1,403.58	3,661.69	1,830.85	6,465.46	3,237.53	15.77	-2.29	0.441
70.00	-26.58	-26.28	0.00	-1,269.37	0.00	1,269.37	3,597.00	1,798.50	6,191.44	3,100.32	18.26	-2.45	0.417
75.00	-25.24	-25.71	0.00	-1,137.97	0.00	1,137.97	3,530.95	1,765.48	5,920.88	2,964.84	20.91	-2.61	0.391
80.00	-23.93	-25.14	0.00	-1,009.40	0.00	1,009.40	3,463.54	1,731.77	5,653.97	2,831.19	23.72	-2.76	0.364
85.00	-22.64	-24.56	0.00	-883.71	0.00	883.71	3,394.76	1,697.38	5,390.88	2,699.44	26.68	-2.90	0.334
90.00	-19.30	-20.74	0.00	-760.91	0.00	760.91	3,324.61	1,662.31	5,131.80	2,569.71	29.79	-3.03	0.302
94.92	-18.19	-20.41	0.00	-658.95	0.00	658.95	3,235.43	1,617.72	4,852.80	2,430.01	32.98	-3.16	0.277
95.00	-18.16	-20.15	0.00	-657.25	0.00	657.25	3,233.85	1,616.93	4,848.03	2,427.62	33.03	-3.16	0.277
99.83	-16.38	-19.78	0.00	-559.86	0.00	559.86	2,561.72	1,280.86	3,809.84	1,907.75	36.29	-3.27	0.300
100.00	-16.34	-19.72	0.00	-556.56	0.00	556.56	2,559.96	1,279.98	3,803.43	1,904.54	36.40	-3.27	0.299
101.00	-16.04	-19.18	0.00	-535.94	0.00	535.94	2,549.35	1,274.68	3,765.02	1,885.31	37.09	-3.30	0.291
105.00	-15.29	-18.70	0.00	-459.24	0.00	459.24	2,506.38	1,253.19	3,612.47	1,808.92	39.90	-3.40	0.260
110.00	-14.37	-18.15	0.00	-365.77	0.00	365.77	2,451.44	1,225.72	3,424.37	1,714.73	43.52	-3.51	0.219
115.00	-10.83	-12.97	0.00	-274.99	0.00	274.99	2,395.13	1,197.56	3,239.31	1,622.06	47.24	-3.60	0.174
120.00	-10.02	-12.43	0.00	-210.14	0.00	210.14	2,337.45	1,168.73	3,057.47	1,531.01	51.05	-3.68	0.142
125.00	-7.04	-8.07	0.00	-147.97	0.00	147.97	2,271.21	1,135.60	2,869.92	1,437.09	54.93	-3.74	0.106
130.00	-6.36	-7.59	0.00	-107.60	0.00	107.60	2,192.15	1,096.08	2,672.64	1,338.31	58.87	-3.79	0.083
135.00	-3.83	-5.00	0.00	-67.96	0.00	67.96	2,113.10	1,056.55	2,482.39	1,243.04	62.86	-3.83	0.057
140.00	-3.24	-4.54	0.00	-42.96	0.00	42.96	2,034.04	1,017.02	2,299.16	1,151.29	66.88	-3.85	0.039
145.00	-2.67	-4.18	0.00	-20.25	0.00	20.25	1,954.99	977.49	2,122.95	1,063.05	70.92	-3.87	0.020
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	73.27	-3.87	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	73.28	-3.87	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:48 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		263.8	0.0					0.0	0.0	263.8	0.0	0.0	0.0
5.00		522.6	1,014.6					0.0	0.0	522.6	1,014.6	0.0	0.0
10.00		512.5	995.0					0.0	223.4	512.5	1,218.4	0.0	0.0
15.00		510.2	975.5					0.0	223.4	510.2	1,198.8	0.0	0.0
20.00		521.5	955.9					0.0	223.4	521.5	1,179.3	0.0	0.0
25.00		535.6	936.3					0.0	223.4	535.6	1,159.7	0.0	0.0
30.00		545.1	916.8					0.0	223.4	545.1	1,140.2	0.0	0.0
35.00		551.1	897.2					0.0	223.4	551.1	1,120.6	0.0	0.0
40.00		554.5	877.7					0.0	223.4	554.5	1,101.1	0.0	0.0
45.00		379.7	858.1					0.0	223.4	379.7	1,081.5	0.0	0.0
46.83	Bot - Section 2	280.8	309.8					0.0	81.9	280.8	391.7	0.0	0.0
50.00		348.1	1,066.3					0.0	141.5	348.1	1,207.8	0.0	0.0
53.00	Top - Section 1	281.9	995.7					0.0	134.0	281.9	1,129.8	0.0	0.0
55.00		393.3	330.7					0.0	89.3	393.3	420.1	0.0	0.0
60.00		559.5	813.2					0.0	223.4	559.5	1,036.5	0.0	0.0
65.00		555.3	793.6					0.0	223.4	555.3	1,017.0	0.0	0.0
70.00		550.1	774.0					0.0	223.4	550.1	997.4	0.0	0.0
75.00		544.0	754.5					0.0	223.4	544.0	977.9	0.0	0.0
80.00		537.1	734.9					0.0	223.4	537.1	958.3	0.0	0.0
85.00		529.5	715.4					0.0	223.4	529.5	938.8	0.0	0.0
90.00	Appurtenance(s)	516.9	695.8	3,126.0	0.0	0.0	1,697.9	0.0	223.4	3,642.9	2,617.1	0.0	0.0
94.92	Bot - Section 3	258.5	665.2					0.0	163.5	258.5	828.7	0.0	0.0
95.00		254.0	20.5					0.0	2.8	254.0	23.3	0.0	0.0
99.83	Top - Section 2	258.2	1,174.5					0.0	160.8	258.2	1,335.3	0.0	0.0
100.00		59.6	18.3					0.0	5.5	59.6	23.9	0.0	0.0
101.00	Appurtenance(s)	253.4	109.6	277.6	0.0	899.6	91.3	0.0	33.3	531.0	234.2	0.0	0.0
105.00		450.6	431.8					0.0	131.9	450.6	563.7	0.0	0.0
110.00		491.2	525.1					0.0	164.8	491.2	690.0	0.0	0.0
115.00	Appurtenance(s)	480.4	508.8	4,466.4	0.0	0.0	2,201.7	0.0	164.8	4,946.7	2,875.3	0.0	0.0
120.00		469.1	492.5					0.0	128.2	469.1	620.7	0.0	0.0
125.00	Appurtenance(s)	457.4	476.3	3,690.8	0.0	0.0	1,830.9	0.0	128.2	4,148.2	2,435.3	0.0	0.0
130.00		445.3	460.0					0.0	67.2	445.3	527.2	0.0	0.0
135.00	Appurtenance(s)	432.8	443.7	1,983.5	0.0	1,699.1	1,512.0	0.0	67.2	2,416.3	2,022.9	0.0	0.0
140.00		420.0	427.4					0.0	34.0	420.0	461.4	0.0	0.0
145.00		323.6	411.1					0.0	34.0	323.6	445.1	0.0	0.0
147.90		117.5	231.0					0.0	19.7	117.5	250.7	0.0	0.0
147.92		0.7	1.3					0.0	0.0	0.7	1.3	0.0	0.0
Totals:										28,709.4	35,245.3	0.00	0.00

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:52 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.15	-32.37	0.00	-3,301.01	0.00	3,301.01	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.665
5.00	-36.04	-31.96	0.00	-3,139.14	0.00	3,139.14	4,297.95	2,148.97	9,746.71	4,880.60	0.09	-0.17	0.652
10.00	-34.73	-31.54	0.00	-2,979.36	0.00	2,979.36	4,248.67	2,124.33	9,446.21	4,730.12	0.37	-0.34	0.638
15.00	-33.44	-31.13	0.00	-2,821.64	0.00	2,821.64	4,198.03	2,099.01	9,147.11	4,580.35	0.82	-0.52	0.624
20.00	-32.18	-30.69	0.00	-2,666.00	0.00	2,666.00	4,146.02	2,073.01	8,849.60	4,431.38	1.46	-0.69	0.610
25.00	-30.93	-30.24	0.00	-2,512.55	0.00	2,512.55	4,092.65	2,046.33	8,553.86	4,283.29	2.28	-0.87	0.594
30.00	-29.71	-29.76	0.00	-2,361.37	0.00	2,361.37	4,037.92	2,018.96	8,260.08	4,136.18	3.28	-1.04	0.578
35.00	-28.51	-29.28	0.00	-2,212.57	0.00	2,212.57	3,981.83	1,990.91	7,968.43	3,990.14	4.47	-1.22	0.562
40.00	-27.33	-28.78	0.00	-2,066.19	0.00	2,066.19	3,924.37	1,962.18	7,679.09	3,845.25	5.84	-1.39	0.545
45.00	-26.20	-28.43	0.00	-1,922.29	0.00	1,922.29	3,865.54	1,932.77	7,392.26	3,701.62	7.39	-1.57	0.526
46.83	-25.78	-28.18	0.00	-1,870.17	0.00	1,870.17	3,843.63	1,921.82	7,287.75	3,649.29	8.01	-1.63	0.519
50.00	-24.53	-27.84	0.00	-1,780.95	0.00	1,780.95	3,805.35	1,902.68	7,108.10	3,559.34	9.13	-1.74	0.507
53.00	-23.37	-27.56	0.00	-1,697.43	0.00	1,697.43	3,811.38	1,905.69	7,136.14	3,573.37	10.26	-1.85	0.481
55.00	-22.90	-27.20	0.00	-1,642.32	0.00	1,642.32	3,786.98	1,893.49	7,023.15	3,516.80	11.05	-1.92	0.473
60.00	-21.81	-26.66	0.00	-1,506.34	0.00	1,506.34	3,725.02	1,862.51	6,742.75	3,376.39	13.15	-2.08	0.452
65.00	-20.75	-26.13	0.00	-1,373.03	0.00	1,373.03	3,661.69	1,830.85	6,465.46	3,237.53	15.41	-2.24	0.430
70.00	-19.70	-25.59	0.00	-1,242.40	0.00	1,242.40	3,597.00	1,798.50	6,191.44	3,100.32	17.84	-2.40	0.406
75.00	-18.68	-25.05	0.00	-1,114.46	0.00	1,114.46	3,530.95	1,765.48	5,920.88	2,964.84	20.44	-2.55	0.381
80.00	-17.69	-24.52	0.00	-989.20	0.00	989.20	3,463.54	1,731.77	5,653.97	2,831.19	23.18	-2.69	0.355
85.00	-16.72	-23.98	0.00	-866.62	0.00	866.62	3,394.76	1,697.38	5,390.88	2,699.44	26.08	-2.83	0.326
90.00	-14.25	-20.24	0.00	-746.71	0.00	746.71	3,324.61	1,662.31	5,131.80	2,569.71	29.11	-2.96	0.295
94.92	-13.41	-19.95	0.00	-647.19	0.00	647.19	3,235.43	1,617.72	4,852.80	2,430.01	32.23	-3.09	0.271
95.00	-13.38	-19.71	0.00	-645.53	0.00	645.53	3,233.85	1,616.93	4,848.03	2,427.62	32.29	-3.09	0.270
99.83	-12.05	-19.39	0.00	-550.25	0.00	550.25	2,561.72	1,280.86	3,809.84	1,907.75	35.47	-3.20	0.293
100.00	-12.02	-19.34	0.00	-547.02	0.00	547.02	2,559.96	1,279.98	3,803.43	1,904.54	35.58	-3.20	0.292
101.00	-11.80	-18.81	0.00	-526.78	0.00	526.78	2,549.35	1,274.68	3,765.02	1,885.31	36.25	-3.23	0.284
105.00	-11.23	-18.34	0.00	-451.56	0.00	451.56	2,506.38	1,253.19	3,612.47	1,808.92	39.00	-3.32	0.254
110.00	-10.54	-17.83	0.00	-359.84	0.00	359.84	2,451.44	1,225.72	3,424.37	1,714.73	42.54	-3.43	0.214
115.00	-7.95	-12.73	0.00	-270.69	0.00	270.69	2,395.13	1,197.56	3,239.31	1,622.06	46.18	-3.52	0.170
120.00	-7.34	-12.23	0.00	-207.04	0.00	207.04	2,337.45	1,168.73	3,057.47	1,531.01	49.91	-3.60	0.138
125.00	-5.17	-7.94	0.00	-145.88	0.00	145.88	2,271.21	1,135.60	2,869.92	1,437.09	53.71	-3.66	0.104
130.00	-4.66	-7.47	0.00	-106.17	0.00	106.17	2,192.15	1,096.08	2,672.64	1,338.31	57.57	-3.71	0.082
135.00	-2.80	-4.93	0.00	-67.13	0.00	67.13	2,113.10	1,056.55	2,482.39	1,243.04	61.47	-3.75	0.055
140.00	-2.37	-4.48	0.00	-42.49	0.00	42.49	2,034.04	1,017.02	2,299.16	1,151.29	65.41	-3.77	0.038
145.00	-1.94	-4.13	0.00	-20.10	0.00	20.10	1,954.99	977.49	2,122.95	1,063.05	69.36	-3.79	0.020
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	71.66	-3.79	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	71.68	-3.79	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:53 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	22 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		85.3	0.0					0.0	0.0	85.3	0.0	0.0	0.0
5.00		169.5	1,904.9					0.0	0.0	169.5	1,904.9	0.0	0.0
10.00		167.2	1,933.3					0.0	555.5	167.2	2,488.8	0.0	0.0
15.00		167.1	1,927.9					0.0	573.1	167.1	2,500.9	0.0	0.0
20.00		171.3	1,911.3					0.0	585.4	171.3	2,496.8	0.0	0.0
25.00		176.5	1,889.1					0.0	595.1	176.5	2,484.2	0.0	0.0
30.00		180.1	1,863.3					0.0	603.1	180.1	2,466.4	0.0	0.0
35.00		182.6	1,835.0					0.0	610.0	182.6	2,445.0	0.0	0.0
40.00		184.2	1,804.9					0.0	616.0	184.2	2,420.9	0.0	0.0
45.00		126.4	1,773.3					0.0	621.4	126.4	2,394.8	0.0	0.0
46.83	Bot - Section 2	93.6	643.7					0.0	229.1	93.6	872.8	0.0	0.0
50.00		116.1	1,823.0					0.0	397.2	116.1	2,220.2	0.0	0.0
53.00	Top - Section 1	94.2	1,705.2					0.0	377.9	94.2	2,083.1	0.0	0.0
55.00		131.7	691.6					0.0	252.8	131.7	944.5	0.0	0.0
60.00		187.7	1,700.8					0.0	634.9	187.7	2,335.6	0.0	0.0
65.00		186.8	1,665.8					0.0	638.7	186.8	2,304.5	0.0	0.0
70.00		185.6	1,630.2					0.0	642.3	185.6	2,272.4	0.0	0.0
75.00		184.1	1,594.1					0.0	645.6	184.1	2,239.7	0.0	0.0
80.00		182.3	1,557.5					0.0	648.8	182.3	2,206.3	0.0	0.0
85.00		180.3	1,520.5					0.0	651.8	180.3	2,172.3	0.0	0.0
90.00	Appurtenance(s)	176.6	1,483.1	740.6	0.0	0.0	5,867.0	0.0	654.7	917.2	8,004.8	0.0	0.0
94.92	Bot - Section 3	88.5	1,421.7					0.0	456.5	88.5	1,878.3	0.0	0.0
95.00		87.1	36.6					0.0	7.8	87.1	44.4	0.0	0.0
99.83	Top - Section 2	88.5	2,088.9					0.0	450.4	88.5	2,539.4	0.0	0.0
100.00		20.5	42.5					0.0	15.6	20.5	58.1	0.0	0.0
101.00	Appurtenance(s)	87.2	254.0	94.9	0.0	378.2	208.8	0.0	93.4	182.1	556.1	0.0	0.0
105.00		155.4	998.6					0.0	340.1	155.4	1,338.7	0.0	0.0
110.00		170.1	1,216.0					0.0	426.2	170.1	1,642.2	0.0	0.0
115.00	Appurtenance(s)	167.0	1,181.5	1,077.4	0.0	0.0	7,668.9	0.0	427.4	1,244.4	9,277.8	0.0	0.0
120.00		163.8	1,146.9					0.0	317.2	163.8	1,464.0	0.0	0.0
125.00	Appurtenance(s)	160.5	1,112.0	846.9	0.0	0.0	6,647.4	0.0	317.9	1,007.4	8,077.3	0.0	0.0
130.00		157.0	1,076.9					0.0	89.6	157.0	1,166.6	0.0	0.0
135.00	Appurtenance(s)	153.5	1,041.7	607.6	0.0	435.3	3,428.9	0.0	89.6	761.0	4,560.2	0.0	0.0
140.00		149.8	1,006.2					0.0	45.4	149.8	1,051.6	0.0	0.0
145.00		115.9	970.6					0.0	45.4	115.9	1,016.0	0.0	0.0
147.90		42.2	548.5					0.0	26.3	42.2	574.8	0.0	0.0
147.92		0.2	3.1					0.0	0.0	0.2	3.1	0.0	0.0
Totals:										8,503.75	84,507.2	0.00	0.00

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:56 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

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	-90.72	-9.44	0.00	-976.74	0.00	976.74	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.215
5.00	-88.80	-9.35	0.00	-929.56	0.00	929.56	4,297.95	2,148.97	9,746.71	4,880.60	0.03	-0.05	0.211
10.00	-86.31	-9.25	0.00	-882.83	0.00	882.83	4,248.67	2,124.33	9,446.21	4,730.12	0.11	-0.10	0.207
15.00	-83.80	-9.16	0.00	-836.57	0.00	836.57	4,198.03	2,099.01	9,147.11	4,580.35	0.24	-0.15	0.203
20.00	-81.29	-9.05	0.00	-790.80	0.00	790.80	4,146.02	2,073.01	8,849.60	4,431.38	0.43	-0.21	0.198
25.00	-78.80	-8.93	0.00	-745.55	0.00	745.55	4,092.65	2,046.33	8,553.86	4,283.29	0.67	-0.26	0.193
30.00	-76.33	-8.81	0.00	-700.88	0.00	700.88	4,037.92	2,018.96	8,260.08	4,136.18	0.97	-0.31	0.188
35.00	-73.88	-8.68	0.00	-656.82	0.00	656.82	3,981.83	1,990.91	7,968.43	3,990.14	1.32	-0.36	0.183
40.00	-71.45	-8.55	0.00	-613.41	0.00	613.41	3,924.37	1,962.18	7,679.09	3,845.25	1.73	-0.41	0.178
45.00	-69.05	-8.44	0.00	-570.69	0.00	570.69	3,865.54	1,932.77	7,392.26	3,701.62	2.19	-0.47	0.172
46.83	-68.18	-8.37	0.00	-555.21	0.00	555.21	3,843.63	1,921.82	7,287.75	3,649.29	2.37	-0.48	0.170
50.00	-65.95	-8.28	0.00	-528.69	0.00	528.69	3,805.35	1,902.68	7,108.10	3,559.34	2.71	-0.52	0.166
53.00	-63.87	-8.19	0.00	-503.86	0.00	503.86	3,811.38	1,905.69	7,136.14	3,573.37	3.04	-0.55	0.158
55.00	-62.92	-8.09	0.00	-487.48	0.00	487.48	3,786.98	1,893.49	7,023.15	3,516.80	3.28	-0.57	0.155
60.00	-60.58	-7.93	0.00	-447.04	0.00	447.04	3,725.02	1,862.51	6,742.75	3,376.39	3.90	-0.62	0.149
65.00	-58.27	-7.76	0.00	-407.41	0.00	407.41	3,661.69	1,830.85	6,465.46	3,237.53	4.57	-0.66	0.142
70.00	-55.99	-7.59	0.00	-368.60	0.00	368.60	3,597.00	1,798.50	6,191.44	3,100.32	5.29	-0.71	0.134
75.00	-53.75	-7.42	0.00	-330.63	0.00	330.63	3,530.95	1,765.48	5,920.88	2,964.84	6.06	-0.76	0.127
80.00	-51.54	-7.25	0.00	-293.52	0.00	293.52	3,463.54	1,731.77	5,653.97	2,831.19	6.88	-0.80	0.119
85.00	-49.37	-7.07	0.00	-257.29	0.00	257.29	3,394.76	1,697.38	5,390.88	2,699.44	7.74	-0.84	0.110
90.00	-41.37	-6.06	0.00	-221.93	0.00	221.93	3,324.61	1,662.31	5,131.80	2,569.71	8.64	-0.88	0.099
94.92	-39.49	-5.96	0.00	-192.13	0.00	192.13	3,235.43	1,617.72	4,852.80	2,430.01	9.56	-0.92	0.091
95.00	-39.45	-5.88	0.00	-191.64	0.00	191.64	3,233.85	1,616.93	4,848.03	2,427.62	9.58	-0.92	0.091
99.83	-36.91	-5.76	0.00	-163.22	0.00	163.22	2,561.72	1,280.86	3,809.84	1,907.75	10.52	-0.95	0.100
100.00	-36.85	-5.74	0.00	-162.26	0.00	162.26	2,559.96	1,279.98	3,803.43	1,904.54	10.56	-0.95	0.100
101.00	-36.30	-5.56	0.00	-156.14	0.00	156.14	2,549.35	1,274.68	3,765.02	1,885.31	10.76	-0.96	0.097
105.00	-34.96	-5.40	0.00	-133.89	0.00	133.89	2,506.38	1,253.19	3,612.47	1,808.92	11.57	-0.99	0.088
110.00	-33.32	-5.22	0.00	-106.88	0.00	106.88	2,451.44	1,225.72	3,424.37	1,714.73	12.62	-1.02	0.076
115.00	-24.06	-3.82	0.00	-80.78	0.00	80.78	2,395.13	1,197.56	3,239.31	1,622.06	13.70	-1.04	0.060
120.00	-22.60	-3.64	0.00	-61.68	0.00	61.68	2,337.45	1,168.73	3,057.47	1,531.01	14.81	-1.07	0.050
125.00	-14.54	-2.48	0.00	-43.50	0.00	43.50	2,271.21	1,135.60	2,869.92	1,437.09	15.94	-1.09	0.037
130.00	-13.38	-2.31	0.00	-31.09	0.00	31.09	2,192.15	1,096.08	2,672.64	1,338.31	17.08	-1.10	0.029
135.00	-8.83	-1.46	0.00	-19.13	0.00	19.13	2,113.10	1,056.55	2,482.39	1,243.04	18.24	-1.11	0.020
140.00	-7.78	-1.29	0.00	-11.84	0.00	11.84	2,034.04	1,017.02	2,299.16	1,151.29	19.41	-1.12	0.014
145.00	-6.77	-1.15	0.00	-5.40	0.00	5.40	1,954.99	977.49	2,122.95	1,063.05	20.58	-1.12	0.009
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	21.27	-1.12	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	21.27	-1.12	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:55:56 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W	Serviceability 60 mph	21 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		63.1	0.0					0.0	0.0	63.1	0.0	0.0	0.0
5.00		125.0	1,127.3					0.0	0.0	125.0	1,127.3	0.0	0.0
10.00		122.5	1,105.6					0.0	248.2	122.5	1,353.7	0.0	0.0
15.00		122.0	1,083.8					0.0	248.2	122.0	1,332.0	0.0	0.0
20.00		124.7	1,062.1					0.0	248.2	124.7	1,310.3	0.0	0.0
25.00		128.1	1,040.4					0.0	248.2	128.1	1,288.6	0.0	0.0
30.00		130.3	1,018.7					0.0	248.2	130.3	1,266.8	0.0	0.0
35.00		131.8	996.9					0.0	248.2	131.8	1,245.1	0.0	0.0
40.00		132.6	975.2					0.0	248.2	132.6	1,223.4	0.0	0.0
45.00		90.8	953.5					0.0	248.2	90.8	1,201.7	0.0	0.0
46.83	Bot - Section 2	67.1	344.2					0.0	91.0	67.1	435.2	0.0	0.0
50.00		83.2	1,184.8					0.0	157.2	83.2	1,342.0	0.0	0.0
53.00	Top - Section 1	67.4	1,106.4					0.0	148.9	67.4	1,255.3	0.0	0.0
55.00		94.1	367.5					0.0	99.3	94.1	466.8	0.0	0.0
60.00		133.8	903.5					0.0	248.2	133.8	1,151.7	0.0	0.0
65.00		132.8	881.8					0.0	248.2	132.8	1,130.0	0.0	0.0
70.00		131.5	860.1					0.0	248.2	131.5	1,108.2	0.0	0.0
75.00		130.1	838.3					0.0	248.2	130.1	1,086.5	0.0	0.0
80.00		128.4	816.6					0.0	248.2	128.4	1,064.8	0.0	0.0
85.00		126.6	794.9					0.0	248.2	126.6	1,043.1	0.0	0.0
90.00	Appurtenance(s)	123.6	773.2	747.5	0.0	0.0	1,886.6	0.0	248.2	871.1	2,907.9	0.0	0.0
94.92	Bot - Section 3	61.8	739.1					0.0	181.7	61.8	920.8	0.0	0.0
95.00		60.7	22.8					0.0	3.1	60.7	25.9	0.0	0.0
99.83	Top - Section 2	61.7	1,305.1					0.0	178.6	61.7	1,483.7	0.0	0.0
100.00		14.3	20.4					0.0	6.2	14.3	26.5	0.0	0.0
101.00	Appurtenance(s)	60.6	121.8	66.4	0.0	215.1	101.5	0.0	37.0	127.0	260.2	0.0	0.0
105.00		107.7	479.8					0.0	146.5	107.7	626.3	0.0	0.0
110.00		117.5	583.5					0.0	183.1	117.5	766.6	0.0	0.0
115.00	Appurtenance(s)	114.9	565.4	1,068.1	0.0	0.0	2,446.3	0.0	183.1	1,182.9	3,194.8	0.0	0.0
120.00		112.2	547.3					0.0	142.4	112.2	689.7	0.0	0.0
125.00	Appurtenance(s)	109.4	529.2	882.6	0.0	0.0	2,034.3	0.0	142.4	992.0	2,705.9	0.0	0.0
130.00		106.5	511.1					0.0	74.7	106.5	585.8	0.0	0.0
135.00	Appurtenance(s)	103.5	493.0	474.3	0.0	406.3	1,680.0	0.0	74.7	577.8	2,247.7	0.0	0.0
140.00		100.4	474.9					0.0	37.8	100.4	512.7	0.0	0.0
145.00		77.4	456.8					0.0	37.8	77.4	494.6	0.0	0.0
147.90		28.1	256.6					0.0	21.9	28.1	278.5	0.0	0.0
147.92		0.2	1.5					0.0	0.0	0.2	1.5	0.0	0.0
				Totals:						6,865.37	39,161.5	0.00	0.00

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:56:00 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.33	-7.74	0.00	-792.28	0.00	792.28	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.167
5.00	-40.20	-7.65	0.00	-753.57	0.00	753.57	4,297.95	2,148.97	9,746.71	4,880.60	0.02	-0.04	0.164
10.00	-38.84	-7.55	0.00	-715.34	0.00	715.34	4,248.67	2,124.33	9,446.21	4,730.12	0.09	-0.08	0.160
15.00	-37.51	-7.45	0.00	-677.59	0.00	677.59	4,198.03	2,099.01	9,147.11	4,580.35	0.20	-0.12	0.157
20.00	-36.19	-7.35	0.00	-640.32	0.00	640.32	4,146.02	2,073.01	8,849.60	4,431.38	0.35	-0.17	0.153
25.00	-34.90	-7.25	0.00	-603.57	0.00	603.57	4,092.65	2,046.33	8,553.86	4,283.29	0.55	-0.21	0.149
30.00	-33.63	-7.13	0.00	-567.34	0.00	567.34	4,037.92	2,018.96	8,260.08	4,136.18	0.79	-0.25	0.146
35.00	-32.38	-7.02	0.00	-531.67	0.00	531.67	3,981.83	1,990.91	7,968.43	3,990.14	1.07	-0.29	0.141
40.00	-31.15	-6.90	0.00	-496.57	0.00	496.57	3,924.37	1,962.18	7,679.09	3,845.25	1.40	-0.33	0.137
45.00	-29.94	-6.82	0.00	-462.05	0.00	462.05	3,865.54	1,932.77	7,392.26	3,701.62	1.77	-0.38	0.133
46.83	-29.51	-6.76	0.00	-449.55	0.00	449.55	3,843.63	1,921.82	7,287.75	3,649.29	1.92	-0.39	0.131
50.00	-28.16	-6.68	0.00	-428.13	0.00	428.13	3,805.35	1,902.68	7,108.10	3,559.34	2.19	-0.42	0.128
53.00	-26.90	-6.61	0.00	-408.09	0.00	408.09	3,811.38	1,905.69	7,136.14	3,573.37	2.46	-0.44	0.121
55.00	-26.44	-6.53	0.00	-394.86	0.00	394.86	3,786.98	1,893.49	7,023.15	3,516.80	2.65	-0.46	0.119
60.00	-25.28	-6.40	0.00	-362.21	0.00	362.21	3,725.02	1,862.51	6,742.75	3,376.39	3.16	-0.50	0.114
65.00	-24.15	-6.28	0.00	-330.20	0.00	330.20	3,661.69	1,830.85	6,465.46	3,237.53	3.70	-0.54	0.109
70.00	-23.04	-6.15	0.00	-298.81	0.00	298.81	3,597.00	1,798.50	6,191.44	3,100.32	4.29	-0.58	0.103
75.00	-21.95	-6.02	0.00	-268.07	0.00	268.07	3,530.95	1,765.48	5,920.88	2,964.84	4.91	-0.61	0.097
80.00	-20.88	-5.89	0.00	-237.97	0.00	237.97	3,463.54	1,731.77	5,653.97	2,831.19	5.57	-0.65	0.090
85.00	-19.84	-5.77	0.00	-208.50	0.00	208.50	3,394.76	1,697.38	5,390.88	2,699.44	6.27	-0.68	0.083
90.00	-16.94	-4.87	0.00	-179.67	0.00	179.67	3,324.61	1,662.31	5,131.80	2,569.71	7.00	-0.71	0.075
94.92	-16.02	-4.80	0.00	-155.73	0.00	155.73	3,235.43	1,617.72	4,852.80	2,430.01	7.75	-0.74	0.069
95.00	-15.99	-4.74	0.00	-155.33	0.00	155.33	3,233.85	1,616.93	4,848.03	2,427.62	7.76	-0.74	0.069
99.83	-14.51	-4.66	0.00	-132.41	0.00	132.41	2,561.72	1,280.86	3,809.84	1,907.75	8.52	-0.77	0.075
100.00	-14.48	-4.65	0.00	-131.63	0.00	131.63	2,559.96	1,279.98	3,803.43	1,904.54	8.55	-0.77	0.075
101.00	-14.22	-4.52	0.00	-126.77	0.00	126.77	2,549.35	1,274.68	3,765.02	1,885.31	8.71	-0.78	0.073
105.00	-13.59	-4.41	0.00	-108.67	0.00	108.67	2,506.38	1,253.19	3,612.47	1,808.92	9.37	-0.80	0.066
110.00	-12.83	-4.29	0.00	-86.60	0.00	86.60	2,451.44	1,225.72	3,424.37	1,714.73	10.22	-0.82	0.056
115.00	-9.65	-3.06	0.00	-65.15	0.00	65.15	2,395.13	1,197.56	3,239.31	1,622.06	11.10	-0.85	0.044
120.00	-8.96	-2.94	0.00	-49.83	0.00	49.83	2,337.45	1,168.73	3,057.47	1,531.01	12.00	-0.86	0.036
125.00	-6.27	-1.91	0.00	-35.11	0.00	35.11	2,271.21	1,135.60	2,869.92	1,437.09	12.91	-0.88	0.027
130.00	-5.68	-1.80	0.00	-25.54	0.00	25.54	2,192.15	1,096.08	2,672.64	1,338.31	13.84	-0.89	0.022
135.00	-3.44	-1.19	0.00	-16.14	0.00	16.14	2,113.10	1,056.55	2,482.39	1,243.04	14.78	-0.90	0.015
140.00	-2.93	-1.08	0.00	-10.21	0.00	10.21	2,034.04	1,017.02	2,299.16	1,151.29	15.72	-0.91	0.010
145.00	-2.44	-0.99	0.00	-4.82	0.00	4.82	1,954.99	977.49	2,122.95	1,063.05	16.68	-0.91	0.006
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	17.23	-0.91	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	17.23	-0.91	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

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_{d1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.05
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.78
Total Unfactored Dead Load:	41.34 k
Seismic Base Shear (E):	1.79 k

Load Case (1.2 + 0.2Sds) * DL + E ELM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
36	147.91	1	10	0.000	0	2
35	146.45	279	1,966	0.017	30	345
34	142.50	495	3,325	0.029	51	613
33	137.50	513	3,235	0.028	50	635
32	132.50	568	3,353	0.029	52	703
31	127.50	586	3,232	0.028	50	726
30	122.50	672	3,451	0.030	53	832
29	117.50	690	3,291	0.028	51	854
28	112.50	749	3,306	0.029	51	927
27	107.50	767	3,123	0.027	48	950
26	103.00	626	2,365	0.020	36	776
25	100.50	159	574	0.005	9	197
24	99.92	27	95	0.001	1	33
23	97.42	1,484	5,074	0.044	78	1,838
22	94.96	26	85	0.001	1	32
21	92.46	921	2,870	0.025	44	1,141
20	87.50	1,021	2,886	0.025	44	1,265
19	82.50	1,043	2,655	0.023	41	1,292
18	77.50	1,065	2,425	0.021	37	1,319
17	72.50	1,087	2,198	0.019	34	1,346
16	67.50	1,108	1,975	0.017	30	1,373
15	62.50	1,130	1,756	0.015	27	1,400
14	57.50	1,152	1,543	0.013	24	1,426

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

13	54.00	467	559	0.005	9	578
12	51.50	1,255	1,383	0.012	21	1,555
11	48.42	1,342	1,325	0.011	20	1,662
10	45.92	435	391	0.003	6	539
9	42.50	1,202	941	0.008	15	1,488
8	37.50	1,223	767	0.007	12	1,515
7	32.50	1,245	605	0.005	9	1,542
6	27.50	1,267	458	0.004	7	1,569
5	22.50	1,289	326	0.003	5	1,596
4	17.50	1,310	212	0.002	3	1,623
3	12.50	1,332	119	0.001	2	1,650
2	7.50	1,354	49	0.000	1	1,677
1	2.50	1,127	6	0.000	0	1,396
Andrew DB844H90E-XY	147.90	112	804	0.007	12	139
Andrew 844G65VTZASX	147.90	64	460	0.004	7	79
Flat Platform w/ Han	147.90	2,000	14,364	0.124	221	2,477
48" x 4" Panel	135.00	180	1,099	0.009	17	223
Flat Low Profile Pla	135.00	1,500	9,160	0.079	141	1,858
Ericsson KRY 112 144	125.00	33	176	0.002	3	41
Ericsson Radio 4449	125.00	222	1,182	0.010	18	275
Ericsson AIR 21, 1.3	125.00	249	1,326	0.011	20	308
Ericsson AIR-32 B2A/	125.00	397	2,112	0.018	33	491
Round T-Arm	125.00	750	3,995	0.034	62	929
RFS APXVAARR24_43-U-	125.00	384	2,044	0.018	32	475
Samsung PCS/AWS Dual	115.00	253	1,163	0.010	18	314
Samsung 700/850MHz D	115.00	211	969	0.008	15	261
Raycap RVZDC-6627-PF	115.00	32	147	0.001	2	40
RFS DB-T1-6Z-8AB-0Z	115.00	44	202	0.002	3	54
Amphenol Antel BXA-7	115.00	102	468	0.004	7	126
Commscope SBNHH-1D65	115.00	304	1,397	0.012	22	377
Flat Low Profile Pla	115.00	1,500	6,889	0.059	106	1,858
Stand-Off	101.00	75	273	0.002	4	93
Antel BCD-87010 ____	101.00	26	97	0.001	1	33
DragonWave Horizon C	90.00	21	63	0.001	1	26
Alcatel-Lucent RRH2x	90.00	317	943	0.008	15	393
Alcatel-Lucent 1900M	90.00	180	535	0.005	8	223
18" x 18" x 4" Junct	90.00	21	62	0.001	1	26
Nokia 2.5G MAA - AAH	90.00	311	923	0.008	14	385
Andrew VHLP2-18	90.00	54	160	0.001	2	67
Commscope NNVV-65B-R	90.00	232	690	0.006	11	288
Flat T-Arm	90.00	750	2,228	0.019	34	929
		41,338	115,865	1.000	1,786	51,201

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)
36	147.91	1	10	0.000	0	1
35	146.45	279	1,966	0.017	30	240
34	142.50	495	3,325	0.029	51	426
33	137.50	513	3,235	0.028	50	442
32	132.50	568	3,353	0.029	52	489
31	127.50	586	3,232	0.028	50	505
30	122.50	672	3,451	0.030	53	579
29	117.50	690	3,291	0.028	51	594
28	112.50	749	3,306	0.029	51	645
27	107.50	767	3,123	0.027	48	660
26	103.00	626	2,365	0.020	36	540
25	100.50	159	574	0.005	9	137
24	99.92	27	95	0.001	1	23

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

23	97.42	1,484	5,074	0.044	78	1,278
22	94.96	26	85	0.001	1	22
21	92.46	921	2,870	0.025	44	793
20	87.50	1,021	2,886	0.025	44	880
19	82.50	1,043	2,655	0.023	41	898
18	77.50	1,065	2,425	0.021	37	917
17	72.50	1,087	2,198	0.019	34	936
16	67.50	1,108	1,975	0.017	30	955
15	62.50	1,130	1,756	0.015	27	973
14	57.50	1,152	1,543	0.013	24	992
13	54.00	467	559	0.005	9	402
12	51.50	1,255	1,383	0.012	21	1,081
11	48.42	1,342	1,325	0.011	20	1,156
10	45.92	435	391	0.003	6	375
9	42.50	1,202	941	0.008	15	1,035
8	37.50	1,223	767	0.007	12	1,054
7	32.50	1,245	605	0.005	9	1,073
6	27.50	1,267	458	0.004	7	1,091
5	22.50	1,289	326	0.003	5	1,110
4	17.50	1,310	212	0.002	3	1,129
3	12.50	1,332	119	0.001	2	1,147
2	7.50	1,354	49	0.000	1	1,166
1	2.50	1,127	6	0.000	0	971
Andrew DB844H90E-XY	147.90	112	804	0.007	12	96
Andrew 844G65VTZASX	147.90	64	460	0.004	7	55
Flat Platform w/ Han	147.90	2,000	14,364	0.124	221	1,723
48" x 4" Panel	135.00	180	1,099	0.009	17	155
Flat Low Profile Pla	135.00	1,500	9,160	0.079	141	1,292
Ericsson KRY 112 144	125.00	33	176	0.002	3	28
Ericsson Radio 4449	125.00	222	1,182	0.010	18	191
Ericsson AIR 21, 1.3	125.00	249	1,326	0.011	20	214
Ericsson AIR-32 B2A/	125.00	397	2,112	0.018	33	342
Round T-Arm	125.00	750	3,995	0.034	62	646
RFS APXVAARR24_43-U-	125.00	384	2,044	0.018	32	331
Samsung PCS/AWS Dual	115.00	253	1,163	0.010	18	218
Samsung 700/850MHz D	115.00	211	969	0.008	15	182
Raycap RVZDC-6627-PF	115.00	32	147	0.001	2	28
RFS DB-T1-6Z-8AB-0Z	115.00	44	202	0.002	3	38
Amphenol Antel BXA-7	115.00	102	468	0.004	7	88
Commscope SBNHH-1D65	115.00	304	1,397	0.012	22	262
Flat Low Profile Pla	115.00	1,500	6,889	0.059	106	1,292
Stand-Off	101.00	75	273	0.002	4	65
Antel BCD-87010____	101.00	26	97	0.001	1	23
DragonWave Horizon C	90.00	21	63	0.001	1	18
Alcatel-Lucent RRH2x	90.00	317	943	0.008	15	273
Alcatel-Lucent 1900M	90.00	180	535	0.005	8	155
18" x 18" x 4" Junct	90.00	21	62	0.001	1	18
Nokia 2.5G MAA - AAH	90.00	311	923	0.008	14	268
Andrew VHLP2-18	90.00	54	160	0.001	2	47
Commscope NNVV-65B-R	90.00	232	690	0.006	11	200
Flat T-Arm	90.00	750	2,228	0.019	34	646
		41,338	115,865	1.000	1,786	35,608

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

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	-49.80	-1.79	0.00	-205.24	0.00	205.24	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.052
5.00	-48.13	-1.80	0.00	-196.30	0.00	196.30	4,297.95	2,148.97	9,746.71	4,880.60	0.01	-0.01	0.051
10.00	-46.48	-1.80	0.00	-187.31	0.00	187.31	4,248.67	2,124.33	9,446.21	4,730.12	0.02	-0.02	0.051
15.00	-44.85	-1.81	0.00	-178.29	0.00	178.29	4,198.03	2,099.01	9,147.11	4,580.35	0.05	-0.03	0.050
20.00	-43.26	-1.81	0.00	-169.24	0.00	169.24	4,146.02	2,073.01	8,849.60	4,431.38	0.09	-0.04	0.049
25.00	-41.69	-1.81	0.00	-160.18	0.00	160.18	4,092.65	2,046.33	8,553.86	4,283.29	0.14	-0.05	0.048
30.00	-40.15	-1.81	0.00	-151.13	0.00	151.13	4,037.92	2,018.96	8,260.08	4,136.18	0.21	-0.07	0.046
35.00	-38.63	-1.80	0.00	-142.09	0.00	142.09	3,981.83	1,990.91	7,968.43	3,990.14	0.28	-0.08	0.045
40.00	-37.14	-1.79	0.00	-133.08	0.00	133.08	3,924.37	1,962.18	7,679.09	3,845.25	0.37	-0.09	0.044
45.00	-36.60	-1.79	0.00	-124.12	0.00	124.12	3,865.54	1,932.77	7,392.26	3,701.62	0.47	-0.10	0.043
46.83	-34.94	-1.77	0.00	-120.84	0.00	120.84	3,843.63	1,921.82	7,287.75	3,649.29	0.51	-0.10	0.042
50.00	-33.38	-1.75	0.00	-115.23	0.00	115.23	3,805.35	1,902.68	7,108.10	3,559.34	0.58	-0.11	0.041
53.00	-32.81	-1.74	0.00	-109.98	0.00	109.98	3,811.38	1,905.69	7,136.14	3,573.37	0.65	-0.12	0.039
55.00	-31.38	-1.72	0.00	-106.49	0.00	106.49	3,786.98	1,893.49	7,023.15	3,516.80	0.70	-0.12	0.039
60.00	-29.98	-1.70	0.00	-97.89	0.00	97.89	3,725.02	1,862.51	6,742.75	3,376.39	0.83	-0.13	0.037
65.00	-28.61	-1.67	0.00	-89.40	0.00	89.40	3,661.69	1,830.85	6,465.46	3,237.53	0.98	-0.14	0.035
70.00	-27.26	-1.64	0.00	-81.07	0.00	81.07	3,597.00	1,798.50	6,191.44	3,100.32	1.13	-0.15	0.034
75.00	-25.94	-1.60	0.00	-72.89	0.00	72.89	3,530.95	1,765.48	5,920.88	2,964.84	1.30	-0.16	0.032
80.00	-24.65	-1.56	0.00	-64.90	0.00	64.90	3,463.54	1,731.77	5,653.97	2,831.19	1.48	-0.17	0.030
85.00	-23.38	-1.51	0.00	-57.11	0.00	57.11	3,394.76	1,697.38	5,390.88	2,699.44	1.66	-0.18	0.028
90.00	-19.91	-1.37	0.00	-49.54	0.00	49.54	3,324.61	1,662.31	5,131.80	2,569.71	1.86	-0.19	0.025
94.92	-19.88	-1.37	0.00	-42.78	0.00	42.78	3,235.43	1,617.72	4,852.80	2,430.01	2.06	-0.20	0.024
95.00	-18.04	-1.29	0.00	-42.67	0.00	42.67	3,233.85	1,616.93	4,848.03	2,427.62	2.06	-0.20	0.023
99.83	-18.01	-1.29	0.00	-36.43	0.00	36.43	2,561.72	1,280.86	3,809.84	1,907.75	2.27	-0.21	0.026
100.00	-17.81	-1.28	0.00	-36.21	0.00	36.21	2,559.96	1,279.98	3,803.43	1,904.54	2.27	-0.21	0.026
101.00	-16.91	-1.24	0.00	-34.93	0.00	34.93	2,549.35	1,274.68	3,765.02	1,885.31	2.32	-0.21	0.025
105.00	-15.96	-1.19	0.00	-29.98	0.00	29.98	2,506.38	1,253.19	3,612.47	1,808.92	2.49	-0.21	0.023
110.00	-15.03	-1.13	0.00	-24.05	0.00	24.05	2,451.44	1,225.72	3,424.37	1,714.73	2.72	-0.22	0.020
115.00	-11.15	-0.90	0.00	-18.37	0.00	18.37	2,395.13	1,197.56	3,239.31	1,622.06	2.96	-0.23	0.016
120.00	-10.32	-0.84	0.00	-13.89	0.00	13.89	2,337.45	1,168.73	3,057.47	1,531.01	3.20	-0.23	0.013
125.00	-7.07	-0.61	0.00	-9.68	0.00	9.68	2,271.21	1,135.60	2,869.92	1,437.09	3.45	-0.24	0.010
130.00	-6.37	-0.56	0.00	-6.63	0.00	6.63	2,192.15	1,096.08	2,672.64	1,338.31	3.70	-0.24	0.008
135.00	-3.65	-0.34	0.00	-3.84	0.00	3.84	2,113.10	1,056.55	2,482.39	1,243.04	3.95	-0.24	0.005
140.00	-3.04	-0.28	0.00	-2.15	0.00	2.15	2,034.04	1,017.02	2,299.16	1,151.29	4.20	-0.24	0.003
145.00	-2.70	-0.25	0.00	-0.73	0.00	0.73	1,954.99	977.49	2,122.95	1,063.05	4.46	-0.24	0.002
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	4.61	-0.24	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	4.61	-0.24	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

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

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	-34.64	-1.79	0.00	-202.95	0.00	202.95	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.048
5.00	-33.47	-1.79	0.00	-194.01	0.00	194.01	4,297.95	2,148.97	9,746.71	4,880.60	0.01	-0.01	0.048
10.00	-32.32	-1.80	0.00	-185.04	0.00	185.04	4,248.67	2,124.33	9,446.21	4,730.12	0.02	-0.02	0.047
15.00	-31.19	-1.80	0.00	-176.05	0.00	176.05	4,198.03	2,099.01	9,147.11	4,580.35	0.05	-0.03	0.046
20.00	-30.08	-1.80	0.00	-167.06	0.00	167.06	4,146.02	2,073.01	8,849.60	4,431.38	0.09	-0.04	0.045
25.00	-28.99	-1.80	0.00	-158.06	0.00	158.06	4,092.65	2,046.33	8,553.86	4,283.29	0.14	-0.05	0.044
30.00	-27.92	-1.79	0.00	-149.07	0.00	149.07	4,037.92	2,018.96	8,260.08	4,136.18	0.20	-0.07	0.043
35.00	-26.86	-1.78	0.00	-140.11	0.00	140.11	3,981.83	1,990.91	7,968.43	3,990.14	0.28	-0.08	0.042
40.00	-25.83	-1.77	0.00	-131.19	0.00	131.19	3,924.37	1,962.18	7,679.09	3,845.25	0.36	-0.09	0.041
45.00	-25.45	-1.77	0.00	-122.32	0.00	122.32	3,865.54	1,932.77	7,392.26	3,701.62	0.46	-0.10	0.040
46.83	-24.30	-1.75	0.00	-119.08	0.00	119.08	3,843.63	1,921.82	7,287.75	3,649.29	0.50	-0.10	0.039
50.00	-23.22	-1.73	0.00	-113.54	0.00	113.54	3,805.35	1,902.68	7,108.10	3,559.34	0.57	-0.11	0.038
53.00	-22.81	-1.72	0.00	-108.35	0.00	108.35	3,811.38	1,905.69	7,136.14	3,573.37	0.64	-0.12	0.036
55.00	-21.82	-1.70	0.00	-104.90	0.00	104.90	3,786.98	1,893.49	7,023.15	3,516.80	0.69	-0.12	0.036
60.00	-20.85	-1.67	0.00	-96.41	0.00	96.41	3,725.02	1,862.51	6,742.75	3,376.39	0.82	-0.13	0.034
65.00	-19.89	-1.64	0.00	-88.04	0.00	88.04	3,661.69	1,830.85	6,465.46	3,237.53	0.97	-0.14	0.033
70.00	-18.96	-1.61	0.00	-79.82	0.00	79.82	3,597.00	1,798.50	6,191.44	3,100.32	1.12	-0.15	0.031
75.00	-18.04	-1.57	0.00	-71.76	0.00	71.76	3,530.95	1,765.48	5,920.88	2,964.84	1.28	-0.16	0.029
80.00	-17.14	-1.53	0.00	-63.88	0.00	63.88	3,463.54	1,731.77	5,653.97	2,831.19	1.46	-0.17	0.028
85.00	-16.26	-1.49	0.00	-56.21	0.00	56.21	3,394.76	1,697.38	5,390.88	2,699.44	1.64	-0.18	0.026
90.00	-13.84	-1.35	0.00	-48.77	0.00	48.77	3,324.61	1,662.31	5,131.80	2,569.71	1.83	-0.19	0.023
94.92	-13.82	-1.35	0.00	-42.11	0.00	42.11	3,235.43	1,617.72	4,852.80	2,430.01	2.03	-0.20	0.022
95.00	-12.54	-1.27	0.00	-42.00	0.00	42.00	3,233.85	1,616.93	4,848.03	2,427.62	2.03	-0.20	0.021
99.83	-12.52	-1.27	0.00	-35.86	0.00	35.86	2,561.72	1,280.86	3,809.84	1,907.75	2.24	-0.20	0.024
100.00	-12.38	-1.26	0.00	-35.65	0.00	35.65	2,559.96	1,279.98	3,803.43	1,904.54	2.24	-0.20	0.024
101.00	-11.76	-1.22	0.00	-34.39	0.00	34.39	2,549.35	1,274.68	3,765.02	1,885.31	2.29	-0.21	0.023
105.00	-11.10	-1.17	0.00	-29.52	0.00	29.52	2,506.38	1,253.19	3,612.47	1,808.92	2.46	-0.21	0.021
110.00	-10.45	-1.12	0.00	-23.67	0.00	23.67	2,451.44	1,225.72	3,424.37	1,714.73	2.69	-0.22	0.018
115.00	-7.75	-0.88	0.00	-18.09	0.00	18.09	2,395.13	1,197.56	3,239.31	1,622.06	2.92	-0.22	0.014
120.00	-7.17	-0.83	0.00	-13.68	0.00	13.68	2,337.45	1,168.73	3,057.47	1,531.01	3.16	-0.23	0.012
125.00	-4.92	-0.60	0.00	-9.54	0.00	9.54	2,271.21	1,135.60	2,869.92	1,437.09	3.40	-0.23	0.009
130.00	-4.43	-0.55	0.00	-6.53	0.00	6.53	2,192.15	1,096.08	2,672.64	1,338.31	3.65	-0.24	0.007
135.00	-2.54	-0.33	0.00	-3.79	0.00	3.79	2,113.10	1,056.55	2,482.39	1,243.04	3.89	-0.24	0.004
140.00	-2.11	-0.28	0.00	-2.12	0.00	2.12	2,034.04	1,017.02	2,299.16	1,151.29	4.15	-0.24	0.003
145.00	-1.87	-0.25	0.00	-0.72	0.00	0.72	1,954.99	977.49	2,122.95	1,063.05	4.40	-0.24	0.002
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	4.54	-0.24	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	4.54	-0.24	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.05
Redundancy Factor (ρ):	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)
36	147.91	1	1.890	1.979	1.140	0.370	0	2
35	146.45	279	1.853	1.789	1.071	0.346	84	345
34	142.50	495	1.754	1.338	0.900	0.286	122	613
33	137.50	513	1.633	0.885	0.716	0.217	96	635
32	132.50	568	1.517	0.543	0.563	0.157	77	703
31	127.50	586	1.404	0.292	0.436	0.105	53	726
30	122.50	672	1.296	0.115	0.333	0.062	36	832
29	117.50	690	1.193	-0.002	0.249	0.027	16	854
28	112.50	749	1.093	-0.074	0.183	0.000	0	927
27	107.50	767	0.998	-0.110	0.131	-0.019	-13	950
26	103.00	626	0.916	-0.121	0.094	-0.029	-16	776
25	100.50	159	0.872	-0.121	0.077	-0.032	-4	197
24	99.92	27	0.862	-0.120	0.074	-0.032	-1	33
23	97.42	1,484	0.820	-0.115	0.060	-0.033	-42	1,838
22	94.96	26	0.779	-0.108	0.048	-0.032	-1	32
21	92.46	921	0.738	-0.098	0.038	-0.029	-23	1,141
20	87.50	1,021	0.661	-0.074	0.023	-0.020	-17	1,265
19	82.50	1,043	0.588	-0.049	0.013	-0.006	-6	1,292
18	77.50	1,065	0.519	-0.023	0.008	0.008	8	1,319
17	72.50	1,087	0.454	0.000	0.006	0.022	21	1,346
16	67.50	1,108	0.394	0.020	0.007	0.033	32	1,373
15	62.50	1,130	0.337	0.036	0.009	0.041	40	1,400
14	57.50	1,152	0.286	0.048	0.014	0.046	46	1,426
13	54.00	467	0.252	0.055	0.017	0.048	19	578
12	51.50	1,255	0.229	0.059	0.020	0.049	53	1,555
11	48.42	1,342	0.202	0.062	0.023	0.049	57	1,662
10	45.92	435	0.182	0.065	0.026	0.049	18	539
9	42.50	1,202	0.156	0.067	0.029	0.048	51	1,488
8	37.50	1,223	0.121	0.070	0.034	0.047	50	1,515
7	32.50	1,245	0.091	0.071	0.038	0.046	50	1,542
6	27.50	1,267	0.065	0.072	0.041	0.045	49	1,569
5	22.50	1,289	0.044	0.071	0.042	0.043	48	1,596
4	17.50	1,310	0.026	0.067	0.040	0.041	46	1,623
3	12.50	1,332	0.013	0.059	0.035	0.036	42	1,650

Site Number: 302466

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Customer: T-MOBILE

2	7.50	1,354	0.005	0.044	0.025	0.028	33	1,677
1	2.50	1,127	0.001	0.018	0.010	0.013	13	1,396
Andrew DB844H90E-XY	147.90	112	1.890	1.978	1.139	0.370	36	139
Andrew 844G65VTZASX	147.90	64	1.890	1.978	1.139	0.370	21	79
Flat Platform w/ Han	147.90	2,000	1.890	1.978	1.139	0.370	641	2,477
48" x 4" Panel	135.00	180	1.574	0.701	0.636	0.186	29	223
Flat Low Profile Pla	135.00	1,500	1.574	0.701	0.636	0.186	241	1,858
Ericsson KRY 112 144	125.00	33	1.350	0.195	0.382	0.082	2	41
Ericsson Radio 4449	125.00	222	1.350	0.195	0.382	0.082	16	275
Ericsson AIR 21, 1.3	125.00	249	1.350	0.195	0.382	0.082	18	308
Ericsson AIR-32 B2A/	125.00	397	1.350	0.195	0.382	0.082	28	491
Round T-Arm	125.00	750	1.350	0.195	0.382	0.082	53	929
RFS APXVAARR24_43-U-	125.00	384	1.350	0.195	0.382	0.082	27	475
Samsung PCS/AWS	115.00	253	1.142	-0.043	0.214	0.012	3	314
Samsung 700/850MHz D	115.00	211	1.142	-0.043	0.214	0.012	2	261
Raycap RVZDC-6627-PF	115.00	32	1.142	-0.043	0.214	0.012	0	40
RFS DB-T1-6Z-8AB-0Z	115.00	44	1.142	-0.043	0.214	0.012	0	54
Amphenol Antel BXA-7	115.00	102	1.142	-0.043	0.214	0.012	1	126
Commscope SBNHH-	115.00	304	1.142	-0.043	0.214	0.012	3	377
Flat Low Profile Pla	115.00	1,500	1.142	-0.043	0.214	0.012	16	1,858
Stand-Off	101.00	75	0.881	-0.121	0.080	-0.032	-2	93
Antel BCD-87010 ____	101.00	26	0.881	-0.121	0.080	-0.032	-1	33
DragonWave Horizon C	90.00	21	0.700	-0.087	0.030	-0.025	0	26
Alcatel-Lucent RRH2x	90.00	317	0.700	-0.087	0.030	-0.025	-7	393
Alcatel-Lucent 1900M	90.00	180	0.700	-0.087	0.030	-0.025	-4	223
18" x 18" x 4" Junct	90.00	21	0.700	-0.087	0.030	-0.025	0	26
Nokia 2.5G MAA - AAH	90.00	311	0.700	-0.087	0.030	-0.025	-7	385
Andrew VHLP2-18	90.00	54	0.700	-0.087	0.030	-0.025	-1	67
Commscope NNVV-	90.00	232	0.700	-0.087	0.030	-0.025	-5	288
Flat T-Arm	90.00	750	0.700	-0.087	0.030	-0.025	-16	929
		41,338	56.520	14.082	15.447	3.826	2,133	51,201

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)
36	147.91	1	1.890	1.979	1.140	0.370	0	1
35	146.45	279	1.853	1.789	1.071	0.346	84	240
34	142.50	495	1.754	1.338	0.900	0.286	122	426
33	137.50	513	1.633	0.885	0.716	0.217	96	442
32	132.50	568	1.517	0.543	0.563	0.157	77	489
31	127.50	586	1.404	0.292	0.436	0.105	53	505
30	122.50	672	1.296	0.115	0.333	0.062	36	579
29	117.50	690	1.193	-0.002	0.249	0.027	16	594
28	112.50	749	1.093	-0.074	0.183	0.000	0	645
27	107.50	767	0.998	-0.110	0.131	-0.019	-13	660
26	103.00	626	0.916	-0.121	0.094	-0.029	-16	540
25	100.50	159	0.872	-0.121	0.077	-0.032	-4	137
24	99.92	27	0.862	-0.120	0.074	-0.032	-1	23
23	97.42	1,484	0.820	-0.115	0.060	-0.033	-42	1,278
22	94.96	26	0.779	-0.108	0.048	-0.032	-1	22
21	92.46	921	0.738	-0.098	0.038	-0.029	-23	793
20	87.50	1,021	0.661	-0.074	0.023	-0.020	-17	880
19	82.50	1,043	0.588	-0.049	0.013	-0.006	-6	898
18	77.50	1,065	0.519	-0.023	0.008	0.008	8	917
17	72.50	1,087	0.454	0.000	0.006	0.022	21	936
16	67.50	1,108	0.394	0.020	0.007	0.033	32	955
15	62.50	1,130	0.337	0.036	0.009	0.041	40	973
14	57.50	1,152	0.286	0.048	0.014	0.046	46	992

Site Number: 302466

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Customer: T-MOBILE

13	54.00	467	0.252	0.055	0.017	0.048	19	402
12	51.50	1,255	0.229	0.059	0.020	0.049	53	1,081
11	48.42	1,342	0.202	0.062	0.023	0.049	57	1,156
10	45.92	435	0.182	0.065	0.026	0.049	18	375
9	42.50	1,202	0.156	0.067	0.029	0.048	51	1,035
8	37.50	1,223	0.121	0.070	0.034	0.047	50	1,054
7	32.50	1,245	0.091	0.071	0.038	0.046	50	1,073
6	27.50	1,267	0.065	0.072	0.041	0.045	49	1,091
5	22.50	1,289	0.044	0.071	0.042	0.043	48	1,110
4	17.50	1,310	0.026	0.067	0.040	0.041	46	1,129
3	12.50	1,332	0.013	0.059	0.035	0.036	42	1,147
2	7.50	1,354	0.005	0.044	0.025	0.028	33	1,166
1	2.50	1,127	0.001	0.018	0.010	0.013	13	971
Andrew DB844H90E-XY	147.90	112	1.890	1.978	1.139	0.370	36	96
Andrew 844G65VTZASX	147.90	64	1.890	1.978	1.139	0.370	21	55
Flat Platform w/ Han	147.90	2,000	1.890	1.978	1.139	0.370	641	1,723
48" x 4" Panel	135.00	180	1.574	0.701	0.636	0.186	29	155
Flat Low Profile Pla	135.00	1,500	1.574	0.701	0.636	0.186	241	1,292
Ericsson KRY 112 144	125.00	33	1.350	0.195	0.382	0.082	2	28
Ericsson Radio 4449	125.00	222	1.350	0.195	0.382	0.082	16	191
Ericsson AIR 21, 1.3	125.00	249	1.350	0.195	0.382	0.082	18	214
Ericsson AIR-32 B2A/	125.00	397	1.350	0.195	0.382	0.082	28	342
Round T-Arm	125.00	750	1.350	0.195	0.382	0.082	53	646
RFS APXVAARR24_43-U-	125.00	384	1.350	0.195	0.382	0.082	27	331
Samsung PCS/AWS	115.00	253	1.142	-0.043	0.214	0.012	3	218
Samsung 700/850MHz D	115.00	211	1.142	-0.043	0.214	0.012	2	182
Raycap RVZDC-6627-PF	115.00	32	1.142	-0.043	0.214	0.012	0	28
RFS DB-T1-6Z-8AB-0Z	115.00	44	1.142	-0.043	0.214	0.012	0	38
Amphenol Antel BXA-7	115.00	102	1.142	-0.043	0.214	0.012	1	88
Commscope SBNHH-	115.00	304	1.142	-0.043	0.214	0.012	3	262
Flat Low Profile Pla	115.00	1,500	1.142	-0.043	0.214	0.012	16	1,292
Stand-Off	101.00	75	0.881	-0.121	0.080	-0.032	-2	65
Antel BCD-87010 ____	101.00	26	0.881	-0.121	0.080	-0.032	-1	23
DragonWave Horizon C	90.00	21	0.700	-0.087	0.030	-0.025	0	18
Alcatel-Lucent RRH2x	90.00	317	0.700	-0.087	0.030	-0.025	-7	273
Alcatel-Lucent 1900M	90.00	180	0.700	-0.087	0.030	-0.025	-4	155
18" x 18" x 4" Junct	90.00	21	0.700	-0.087	0.030	-0.025	0	18
Nokia 2.5G MAA - AAH	90.00	311	0.700	-0.087	0.030	-0.025	-7	268
Andrew VHLP2-18	90.00	54	0.700	-0.087	0.030	-0.025	-1	47
Commscope NNVV-	90.00	232	0.700	-0.087	0.030	-0.025	-5	200
Flat T-Arm	90.00	750	0.700	-0.087	0.030	-0.025	-16	646
		41,338	56.520	14.082	15.447	3.826	2,133	35,608

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Customer: T-MOBILE

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	-49.80	-2.12	0.00	-244.53	0.00	244.53	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.060
5.00	-48.13	-2.10	0.00	-233.91	0.00	233.91	4,297.95	2,148.97	9,746.71	4,880.60	0.01	-0.01	0.059
10.00	-46.48	-2.07	0.00	-223.40	0.00	223.40	4,248.67	2,124.33	9,446.21	4,730.12	0.03	-0.03	0.058
15.00	-44.85	-2.03	0.00	-213.05	0.00	213.05	4,198.03	2,099.01	9,147.11	4,580.35	0.06	-0.04	0.057
20.00	-43.26	-1.99	0.00	-202.89	0.00	202.89	4,146.02	2,073.01	8,849.60	4,431.38	0.11	-0.05	0.056
25.00	-41.69	-1.95	0.00	-192.92	0.00	192.92	4,092.65	2,046.33	8,553.86	4,283.29	0.17	-0.07	0.055
30.00	-40.15	-1.91	0.00	-183.16	0.00	183.16	4,037.92	2,018.96	8,260.08	4,136.18	0.25	-0.08	0.054
35.00	-38.63	-1.87	0.00	-173.61	0.00	173.61	3,981.83	1,990.91	7,968.43	3,990.14	0.34	-0.09	0.053
40.00	-37.14	-1.82	0.00	-164.27	0.00	164.27	3,924.37	1,962.18	7,679.09	3,845.25	0.44	-0.11	0.052
45.00	-36.60	-1.81	0.00	-155.15	0.00	155.15	3,865.54	1,932.77	7,392.26	3,701.62	0.56	-0.12	0.051
46.83	-34.94	-1.75	0.00	-151.84	0.00	151.84	3,843.63	1,921.82	7,287.75	3,649.29	0.61	-0.13	0.051
50.00	-33.38	-1.70	0.00	-146.28	0.00	146.28	3,805.35	1,902.68	7,108.10	3,559.34	0.69	-0.13	0.050
53.00	-32.81	-1.69	0.00	-141.18	0.00	141.18	3,811.38	1,905.69	7,136.14	3,573.37	0.78	-0.14	0.048
55.00	-31.38	-1.64	0.00	-137.81	0.00	137.81	3,786.98	1,893.49	7,023.15	3,516.80	0.84	-0.15	0.047
60.00	-29.98	-1.60	0.00	-129.60	0.00	129.60	3,725.02	1,862.51	6,742.75	3,376.39	1.01	-0.16	0.046
65.00	-28.61	-1.58	0.00	-121.57	0.00	121.57	3,661.69	1,830.85	6,465.46	3,237.53	1.18	-0.18	0.045
70.00	-27.26	-1.56	0.00	-113.69	0.00	113.69	3,597.00	1,798.50	6,191.44	3,100.32	1.38	-0.19	0.044
75.00	-25.94	-1.55	0.00	-105.91	0.00	105.91	3,530.95	1,765.48	5,920.88	2,964.84	1.58	-0.20	0.043
80.00	-24.65	-1.56	0.00	-98.15	0.00	98.15	3,463.54	1,731.77	5,653.97	2,831.19	1.81	-0.22	0.042
85.00	-23.38	-1.58	0.00	-90.35	0.00	90.35	3,394.76	1,697.38	5,390.88	2,699.44	2.04	-0.23	0.040
90.00	-19.91	-1.63	0.00	-82.46	0.00	82.46	3,324.61	1,662.31	5,131.80	2,569.71	2.30	-0.25	0.038
94.92	-19.87	-1.63	0.00	-74.44	0.00	74.44	3,235.43	1,617.72	4,852.80	2,430.01	2.56	-0.26	0.037
95.00	-18.03	-1.67	0.00	-74.31	0.00	74.31	3,233.85	1,616.93	4,848.03	2,427.62	2.56	-0.26	0.036
99.83	-18.00	-1.67	0.00	-66.23	0.00	66.23	2,561.72	1,280.86	3,809.84	1,907.75	2.83	-0.27	0.042
100.00	-17.81	-1.68	0.00	-65.95	0.00	65.95	2,559.96	1,279.98	3,803.43	1,904.54	2.84	-0.27	0.042
101.00	-16.90	-1.69	0.00	-64.28	0.00	64.28	2,549.35	1,274.68	3,765.02	1,885.31	2.90	-0.28	0.041
105.00	-15.95	-1.71	0.00	-57.50	0.00	57.50	2,506.38	1,253.19	3,612.47	1,808.92	3.14	-0.29	0.038
110.00	-15.03	-1.70	0.00	-48.97	0.00	48.97	2,451.44	1,225.72	3,424.37	1,714.73	3.45	-0.30	0.035
115.00	-11.14	-1.64	0.00	-40.45	0.00	40.45	2,395.13	1,197.56	3,239.31	1,622.06	3.78	-0.32	0.030
120.00	-10.31	-1.61	0.00	-32.23	0.00	32.23	2,337.45	1,168.73	3,057.47	1,531.01	4.11	-0.33	0.025
125.00	-7.07	-1.39	0.00	-24.20	0.00	24.20	2,271.21	1,135.60	2,869.92	1,437.09	4.46	-0.34	0.020
130.00	-6.36	-1.31	0.00	-17.25	0.00	17.25	2,192.15	1,096.08	2,672.64	1,338.31	4.82	-0.35	0.016
135.00	-3.65	-0.93	0.00	-10.71	0.00	10.71	2,113.10	1,056.55	2,482.39	1,243.04	5.19	-0.35	0.010
140.00	-3.04	-0.80	0.00	-6.07	0.00	6.07	2,034.04	1,017.02	2,299.16	1,151.29	5.56	-0.36	0.007
145.00	-2.69	-0.71	0.00	-2.07	0.00	2.07	1,954.99	977.49	2,122.95	1,063.05	5.93	-0.36	0.003
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	6.15	-0.36	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	6.15	-0.36	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

7/6/2018 12:56:00 PM

Customer: T-MOBILE

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	-34.64	-2.12	0.00	-241.60	0.00	241.60	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.056
5.00	-33.47	-2.10	0.00	-230.99	0.00	230.99	4,297.95	2,148.97	9,746.71	4,880.60	0.01	-0.01	0.055
10.00	-32.32	-2.06	0.00	-220.50	0.00	220.50	4,248.67	2,124.33	9,446.21	4,730.12	0.03	-0.03	0.054
15.00	-31.19	-2.02	0.00	-210.20	0.00	210.20	4,198.03	2,099.01	9,147.11	4,580.35	0.06	-0.04	0.053
20.00	-30.08	-1.98	0.00	-200.09	0.00	200.09	4,146.02	2,073.01	8,849.60	4,431.38	0.11	-0.05	0.052
25.00	-28.99	-1.94	0.00	-190.19	0.00	190.19	4,092.65	2,046.33	8,553.86	4,283.29	0.17	-0.06	0.051
30.00	-27.92	-1.89	0.00	-180.51	0.00	180.51	4,037.92	2,018.96	8,260.08	4,136.18	0.24	-0.08	0.051
35.00	-26.86	-1.85	0.00	-171.05	0.00	171.05	3,981.83	1,990.91	7,968.43	3,990.14	0.33	-0.09	0.050
40.00	-25.83	-1.80	0.00	-161.82	0.00	161.82	3,924.37	1,962.18	7,679.09	3,845.25	0.43	-0.10	0.049
45.00	-25.45	-1.79	0.00	-152.82	0.00	152.82	3,865.54	1,932.77	7,392.26	3,701.62	0.55	-0.12	0.048
46.83	-24.30	-1.73	0.00	-149.54	0.00	149.54	3,843.63	1,921.82	7,287.75	3,649.29	0.60	-0.12	0.047
50.00	-23.22	-1.68	0.00	-144.07	0.00	144.07	3,805.35	1,902.68	7,108.10	3,559.34	0.68	-0.13	0.047
53.00	-22.81	-1.66	0.00	-139.04	0.00	139.04	3,811.38	1,905.69	7,136.14	3,573.37	0.77	-0.14	0.045
55.00	-21.82	-1.61	0.00	-135.72	0.00	135.72	3,786.98	1,893.49	7,023.15	3,516.80	0.83	-0.15	0.044
60.00	-20.85	-1.58	0.00	-127.65	0.00	127.65	3,725.02	1,862.51	6,742.75	3,376.39	0.99	-0.16	0.043
65.00	-19.89	-1.55	0.00	-119.76	0.00	119.76	3,661.69	1,830.85	6,465.46	3,237.53	1.17	-0.17	0.042
70.00	-18.96	-1.53	0.00	-112.03	0.00	112.03	3,597.00	1,798.50	6,191.44	3,100.32	1.36	-0.19	0.041
75.00	-18.04	-1.52	0.00	-104.39	0.00	104.39	3,530.95	1,765.48	5,920.88	2,964.84	1.56	-0.20	0.040
80.00	-17.14	-1.53	0.00	-96.78	0.00	96.78	3,463.54	1,731.77	5,653.97	2,831.19	1.78	-0.22	0.039
85.00	-16.26	-1.55	0.00	-89.14	0.00	89.14	3,394.76	1,697.38	5,390.88	2,699.44	2.01	-0.23	0.038
90.00	-13.84	-1.60	0.00	-81.40	0.00	81.40	3,324.61	1,662.31	5,131.80	2,569.71	2.26	-0.24	0.036
94.92	-13.82	-1.61	0.00	-73.52	0.00	73.52	3,235.43	1,617.72	4,852.80	2,430.01	2.52	-0.26	0.035
95.00	-12.54	-1.64	0.00	-73.38	0.00	73.38	3,233.85	1,616.93	4,848.03	2,427.62	2.53	-0.26	0.034
99.83	-12.52	-1.65	0.00	-65.44	0.00	65.44	2,561.72	1,280.86	3,809.84	1,907.75	2.79	-0.27	0.039
100.00	-12.38	-1.65	0.00	-65.16	0.00	65.16	2,559.96	1,279.98	3,803.43	1,904.54	2.80	-0.27	0.039
101.00	-11.75	-1.67	0.00	-63.51	0.00	63.51	2,549.35	1,274.68	3,765.02	1,885.31	2.86	-0.27	0.038
105.00	-11.09	-1.68	0.00	-56.84	0.00	56.84	2,506.38	1,253.19	3,612.47	1,808.92	3.09	-0.29	0.036
110.00	-10.45	-1.68	0.00	-48.44	0.00	48.44	2,451.44	1,225.72	3,424.37	1,714.73	3.40	-0.30	0.033
115.00	-7.75	-1.62	0.00	-40.05	0.00	40.05	2,395.13	1,197.56	3,239.31	1,622.06	3.72	-0.31	0.028
120.00	-7.17	-1.59	0.00	-31.93	0.00	31.93	2,337.45	1,168.73	3,057.47	1,531.01	4.06	-0.32	0.024
125.00	-4.91	-1.38	0.00	-23.99	0.00	23.99	2,271.21	1,135.60	2,869.92	1,437.09	4.40	-0.33	0.019
130.00	-4.42	-1.30	0.00	-17.11	0.00	17.11	2,192.15	1,096.08	2,672.64	1,338.31	4.75	-0.34	0.015
135.00	-2.54	-0.92	0.00	-10.63	0.00	10.63	2,113.10	1,056.55	2,482.39	1,243.04	5.12	-0.35	0.010
140.00	-2.11	-0.79	0.00	-6.03	0.00	6.03	2,034.04	1,017.02	2,299.16	1,151.29	5.48	-0.35	0.006
145.00	-1.87	-0.71	0.00	-2.06	0.00	2.06	1,954.99	977.49	2,122.95	1,063.05	5.85	-0.35	0.003
147.90	0.00	0.00	0.00	0.00	0.00	0.00	1,909.14	954.57	2,023.97	1,013.49	6.07	-0.35	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.87	954.44	2,023.41	1,013.21	6.07	-0.35	0.000

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: OAA736325_C3_01

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Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	32.88	0.00	49.55	0.00	0.00	3375.27	0.00	0.68
0.9D + 1.6W	32.37	0.00	37.15	0.00	0.00	3301.01	0.00	0.66
1.2D + 1.0Di + 1.0Wi	9.44	0.00	90.72	0.00	0.00	976.74	0.00	0.22
(1.2 + 0.2Sds) * DL + E ELFM	1.79	0.00	49.80	0.00	0.00	205.24	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.12	0.00	49.80	0.00	0.00	244.53	0.00	0.06
(0.9 - 0.2Sds) * DL + E ELFM	1.79	0.00	34.64	0.00	0.00	202.95	0.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	2.12	0.00	34.64	0.00	0.00	241.60	0.00	0.06
1.0D + 1.0W	7.74	0.00	41.33	0.00	0.00	792.28	0.00	0.17



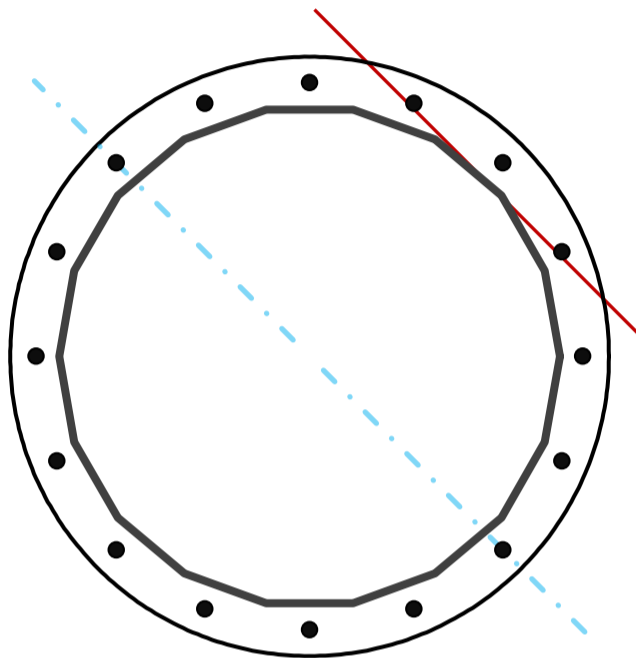
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	56.58	in
Thickness	0.375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3375.3	k-ft
Axial, Pu	49.6	k
Shear, Vu	32.9	k
Neutral Axis	315	°

Report Capacities		
Component	Capacity	Result
Base Plate	23%	Pass
Anchor Rods	64%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ϕ	69	in
Thickness	2 1/2	in
Grade	Other	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3.5	in
Applied Moment, Mu	713.4	k
Bending Stress, ϕMn	3169.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ϕ	2 1/4	in
Bolt Circle	63	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.4	in
Orientation Offset		°
Applied Force, Pu	163.7	k
Anchor Rods, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	32.9	3375.3	1.00
Anchor Rod Forces	32.9	3375.3	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	65.8793	3.6600	0.1721		26017.20
Bolt	3.9761	3.2477	0.8393	4.5	25793.59
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	69	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	39.493	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3.5	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	63	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	163.7	k
Applied Shear, Vu	1.3	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.630	OK
Interaction Capacity	0.640	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

External Base Plate		
Chord Length AA	32.567	in
Additional AA	5.000	in
Section Modulus, Z	58.698	in ³
Applied Moment, Mu	713.4	k-ft
Bending Capacity, φMn	3169.7	k-ft
Capacity, Mu/φMn	0.225	OK

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

Vertical Weld		
Vert.-to-Stiffener a=e _x /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, φPn	#DIV/0!	k
Vert.-to-Plate a=e _x /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
P _u /φ _p P _n + V _u /φ _v V _n	-	

Chord Length AB	30.987	in
Additional AB	5.000	in
Section Modulus, Z	56.230	in ³
Applied Moment, Mu	508.8	k-ft
Bending Capacity, φMn	3036.4	k-ft
Capacity, Mu/φMn	0.168	OK

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

Horizontal Weld		
Horz.-to-Stiffener a=e _x /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, φPn	#DIV/0!	k
Horz.-to-Pole a=e _x /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
P _u /φ _p P _n + V _u /φ _v V _n	-	

Bend Line Length	43.091	in
Additional Bend Line	0.000	in
Section Modulus, Z	67.329	in ³
Applied Moment, Mu	713.4	k-ft
Bending Capacity, φMn	3635.8	k-ft
Capacity, Mu/φMn	0.196	OK

Plate Tension		
Gross Cross Section	0.000	in ²
Net Cross Section	0.000	in ²
Tensile Capacity, φTn	0.0	k
Capacity, Tu/φTn	-	

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		

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	63.46	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn		

Plate Compression		
Radius of Gyration	#DIV/0!	in ³
kl/r	#DIV/0!	-
4.71 √(E/Fy)	0.00	-
Buckling Stress(F _e)	0.0	-
Crit. Buckling Stress(F _{cr})	0.0	ksi
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn	-	

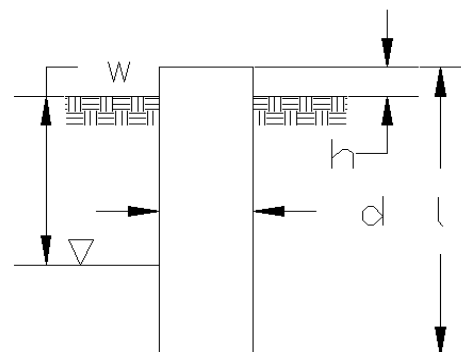
Site Name: West Service Road,CT
 Site Number: 302466
 Engineer: Tyler.Ferguson
 Engineering Number: OAA736325
 Date: 07/06/18

Program Last Updated: 5/13/2014
 American Tower Corporation

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

Analyze or Design a Foundation? Analyze
 Foundation Mapped: N
 Moment (M): 3375.3 k-ft
 Shear/Leg (V): 32.9 k
 Axial Load (P): 49.6 k
 Uplift/Leg (U): 0 k
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d): 7 ft
 Caisson Embedment (L-h): 33.5 ft
 Caisson Height Above Ground (h): 0.5 ft
 Depth Below Ground Surface to Water Table (w): 7.5 ft
 Unit Weight of Concrete: 150 pcf
 Unit Weight of Water: 62.4 pcf
 Tension Skin Friction/Compression Skin Friction: 1
 Pullout Angle: 30 degrees



Engineer Notes

Soil Mechanical Properties

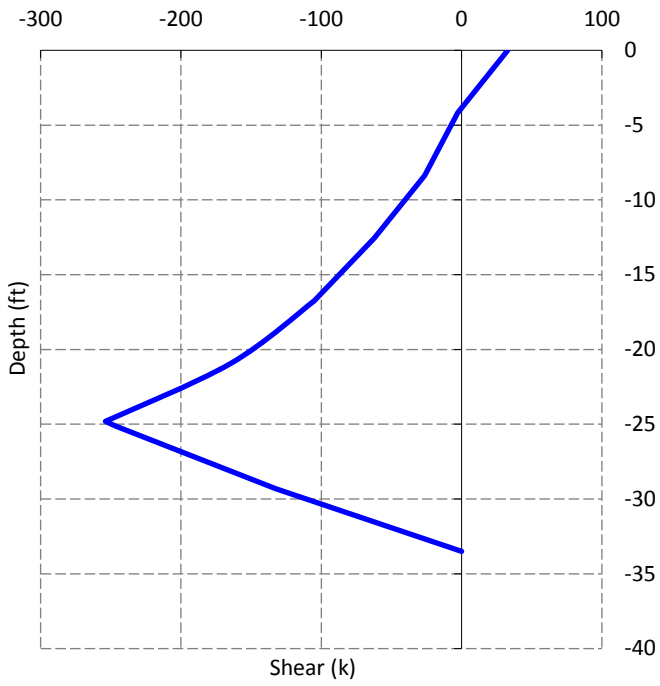
Depth (ft)		γ_{Soil}	Cohesion	ϕ	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0	4	105	0	0	0	0
4	7.5	105	0	28	151	0
7.5	14	106	0	29	412	0
14	17	120	0	33	1180	0
17	19.5	134	0	40	1276	0
19.5	27	133	0	40	1534	0
27	34.5	140	0	40	1738	58590

Required Embedment: 23.4 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 1308.5 ft³ = 48.5 yd³
 Weight of Concrete (Buoyancy Effect Considered): 133.8 k
 Average Soil Unit Weight: 73.3 pcf
 Skin Friction Resistance: 720.0 k
 Compressive Bearing Resistance: 2254.8 k
 Pullout Weight (Minus Concrete Weight): 1484.8 k
 Nominal Uplift Capacity per Leg ($\phi_s T_n$): 640.3 k
 Nominal Compressive Capacity per Leg ($\phi_s P_n$): 2231.1 k
 P_u : 93.2 k
 $T_u / \phi_s T_n$: 0.00 Result: OK
 $P_u / \phi_s P_n$: 0.04 Result: OK
 Total Lateral Resistance: 2962.6 k
 Inflection Point (Below Ground Surface): 24.8 ft
 Design Overturning Moment At Inflection Point (M_D): 4207.4 k-ft
 Nominal Moment Capacity ($\phi_s M_n$): 13686.4 k-ft
 $M_D / \phi_s M_n$: 0.31 Result: OK
 ϕ_s : 0.75

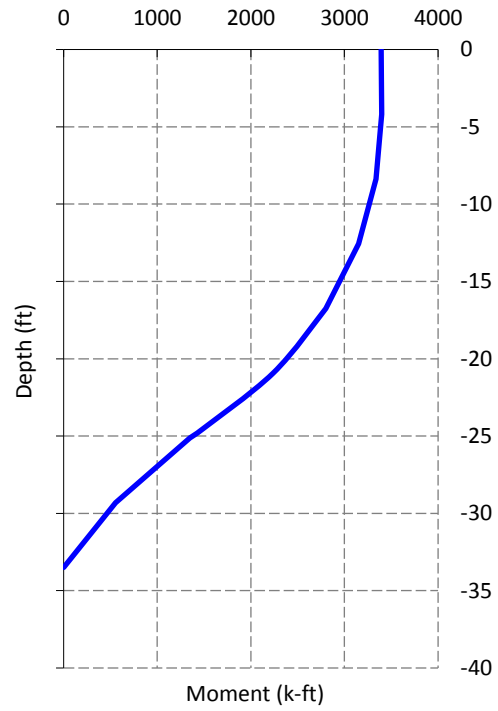
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
# of Vertical Steel Rebars:	21
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in ²
Design Horizontal Tie / Stirrup Spacing:	18 in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	40 ksi
Rebar Cage Diameter:	76.0 in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.85 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_C):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	3397.6 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	4963.4 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$:	0.68 Result: OK
Design Shear (V_u):	253.8 k
Nominal Shear Capacity ($\phi_V V_n$):	518.3 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$:	0.49 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	1769.0 k - ACI318-05 - 10.2
$T_u / \phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	93.2 k
Nominal Compression Capacity ($\phi_P P_n$):	7304.9 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$:	0.01 Result: OK
Bending Reinforcement Ratio:	0.006 ACI318-05 - 10.8.4 & 10.9.1
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.68 Result: OK

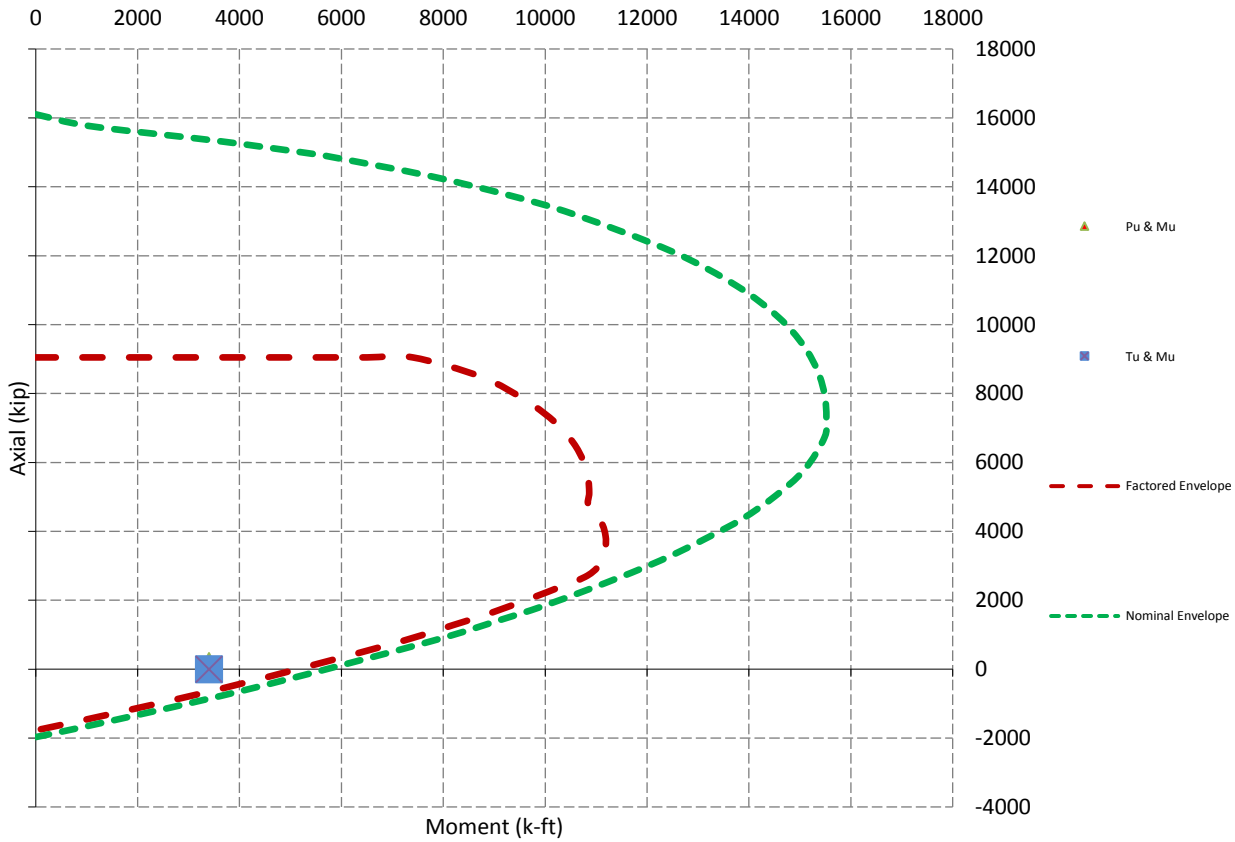
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads





AMERICAN TOWER®
CORPORATION

Structural Evaluation	
ATC Site Number & Name	302466, West Service Road, CT
Carrier Site Number & Name	CT11491B, CT11491B
Site Location	305 W. Service Rd. Hartford, CT 06120-0001, Hartford County 41.79953889 N / 72.65669722 W
Tower Description	147.9 ft Monopole
Basic Wind Speed	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" ice
Code	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	8	Andrew DB844H90E-XY	Platform w/ Handrails	(12) 1 1/4" Coax	Sprint Nextel
		4	Andrew 844G65VTZASX			
138.0	138.0	9	48" x 4" Panel	Low Profile Platform	(9) 1 5/8" Coax	AT&T Mobility
125.0	125.0	3	Ericsson KRY 112 144/1	T-Arm	(12) 1 5/8" Coax (2) 1 1/4" Fiber (1) 1 5/8" Fiber	T-Mobile
		3	Ericsson Radio 4449 B12,B71			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR-32 B2A/B66Aa			
116.0	116.0	3	RFS APXVAARR24_43-U-NA20	Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Samsung PCS/AWS Dual Band RRH			
		3	Samsung 700/850MHz Dual Band RRH			
		1	Raycap RVZDC-6627-PF-48			
		1	RFS DB-T1-6Z-8AB-OZ			
6	Antel BXA-70063-6CF-EDIN-X					
6	Commscope SBNHH-1D65B					
107.0	107.0	1	Antel BCD-87010__25	Stand-Off	(1) 7/8" Coax	Sensus USA
90.0	90.0	2	DragonWave Horizon Compact	T-Arm	(6) 5/16" Coax (3) 1 1/4" Hybriflex (2) 1/2" Coax (2) 2" conduit (1) 1.7" Hybrid	Clearwire
		2	Andrew VHLP2-18			
		3	Nokia 2.5G MAA - AAHC			
		3	Commscope NNVV-65B-R4			
		6	Alcatel-Lucent RRH2x50-08			
		3	Alcatel-Lucent 1900MHz RRH w/ solar shield			
		1	18" x 18" x 4" Junction Box			



Equipment to be Removed

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

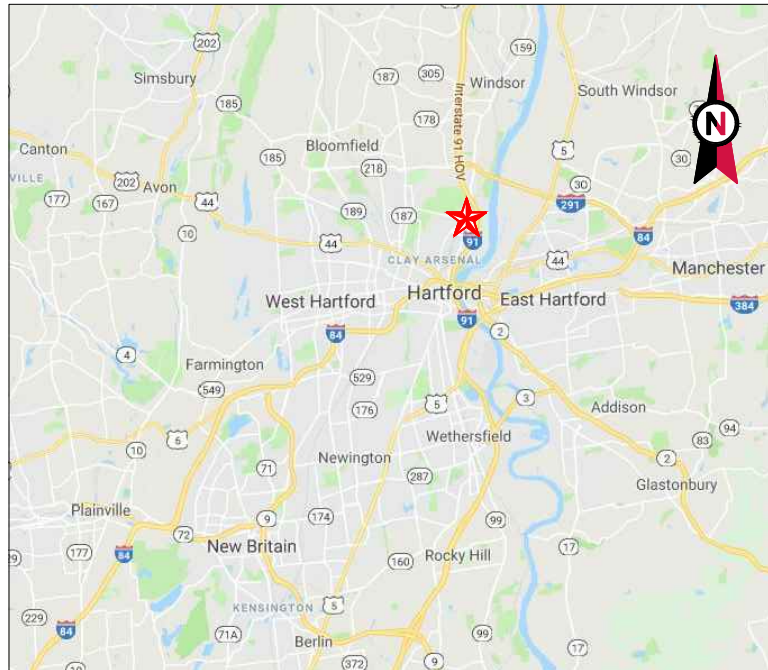
Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as proposed						

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

The existing and proposed loads listed in the tables above are compared to the tower’s current design capacity or previous structural analysis. The tower should be re-evaluated as future loads are added or if actual loads are found different from those listed in the tables. The subject tower and foundation ***are adequate*** to support the above stated loads in conformance with specified requirements.

AC/ANG



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: WEST SERVICE ROAD
 ATC SITE NUMBER: 302466
 T-MOBILE SITE ID: CT11491B
 SITE ADDRESS: 305 W. SERVICE RD.
 HARTFORD, CT 06120



LOCATION MAP

**T-MOBILE ANTENNA AMENDMENT
 67D92DB CONFIGURATION**



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

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	08/29/18
1	REV PER MA	AMM	10/17/18
2	REV CABLE QTY	AMM	11/20/18

ATC SITE NUMBER:
302466
 ATC SITE NAME:
WEST SERVICE ROAD
 SITE ADDRESS:
 305 W. SERVICE RD.
 HARTFORD, CT 06120



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DRAWN BY:	AMM
APPROVED BY:	KRF
DATE DRAWN:	08/29/18
ATC JOB NO:	12607177

TITLE SHEET

SHEET NUMBER: **G-001** REVISION: **2**

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 305 W. SERVICE RD. HARTFORD, CT 06120 COUNTY: HARTFORD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.79953889 LONGITUDE: -72.65669722 GROUND ELEVATION: 20' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (3) PANELS, (3) RRUs, (1) 1-5/8" HYBRID CABLE INSTALL (3) NEW PANELS, (3) RRUs, (2) 1-1/4" HYBRID CABLE EXISTING (6) PANELS, (3) TTAs, (12) 1-5/8" COAX CABLE, (1) 1-5/8" HYBRID CABLE TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
		<u>PROJECT NOTES</u> 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.	R-601	SUPPLEMENTAL			
<u>UTILITY COMPANIES</u> POWER COMPANY: C. L. & P. PHONE: (800) 286-2000 TELEPHONE COMPANY: AT&T PHONE: (800) 288-2020	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> 305 WEST SERVICES RD ASSOC LLC 79 RYE STREET BROAD BROOK, CT 06016	<u>PROJECT LOCATION DIRECTIONS</u> FROM HARTFORD, CT: HEAD EAST ON CENTRAL ROW. AFTER 325 FEET CONTINUE ONTO AMERICAN ROW. AFTER 177 FEET TURN LEFT ONTO MARKET ST. AFTER 0.6 MILES CONTINUE ONTO REVEREND MOODY OVERPASS. AFTER 0.7 MILES CONTINUE ONTO WESTON ST. YOU WILL ARRIVE AT YOUR DESTINATION AFTER 1.2 MILES	G-001	TITLE SHEET	2	11/20/18	AMM
			G-002	GENERAL NOTES	0	08/29/18	AMM
			C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	10/17/18	AMM
			C-501	ANTENNA INFORMATION & SCHEDULE	2	11/20/18	AMM
			E-501	GROUNDING DETAILS	0	08/29/18	AMM
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			



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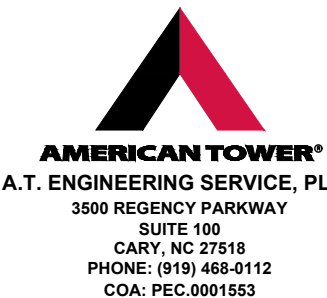
GENERAL CONSTRUCTION NOTES:

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

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

STRUCTURAL STEEL NOTES:

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



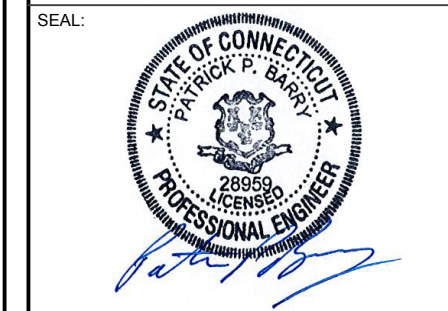
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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	08/29/18

ATC SITE NUMBER:
302466

ATC SITE NAME:
WEST SERVICE ROAD

SITE ADDRESS:
305 W. SERVICE RD.
HARTFORD, CT 06120



Authorized by "EOR"
Nov 20 2018 4:19 PM **cosign**



DRAWN BY:	AMM
APPROVED BY:	KRF
DATE DRAWN:	08/29/18
ATC JOB NO:	12607177

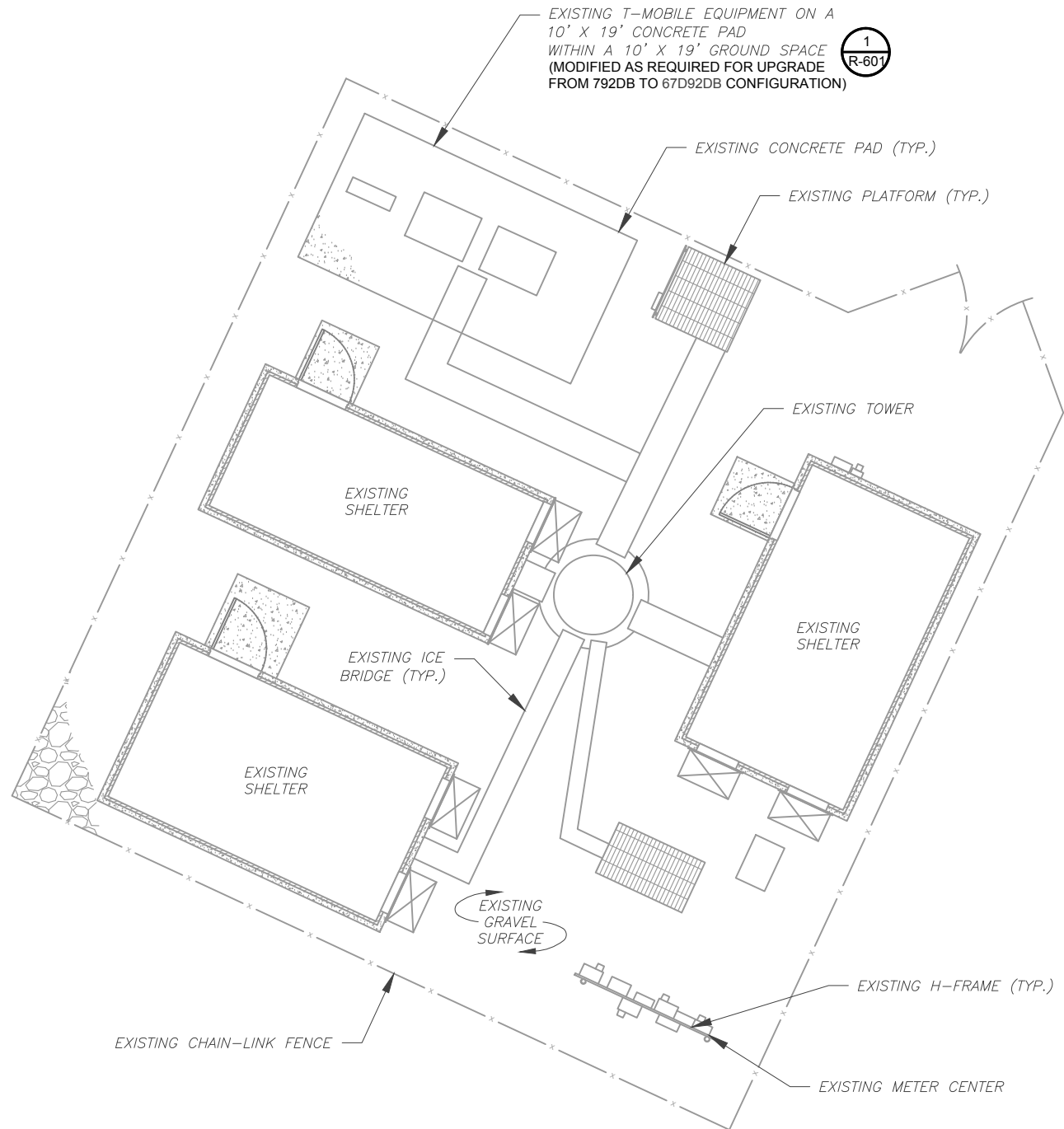
GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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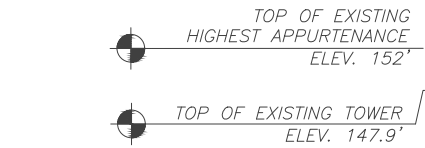
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SITE PLAN NOTES:

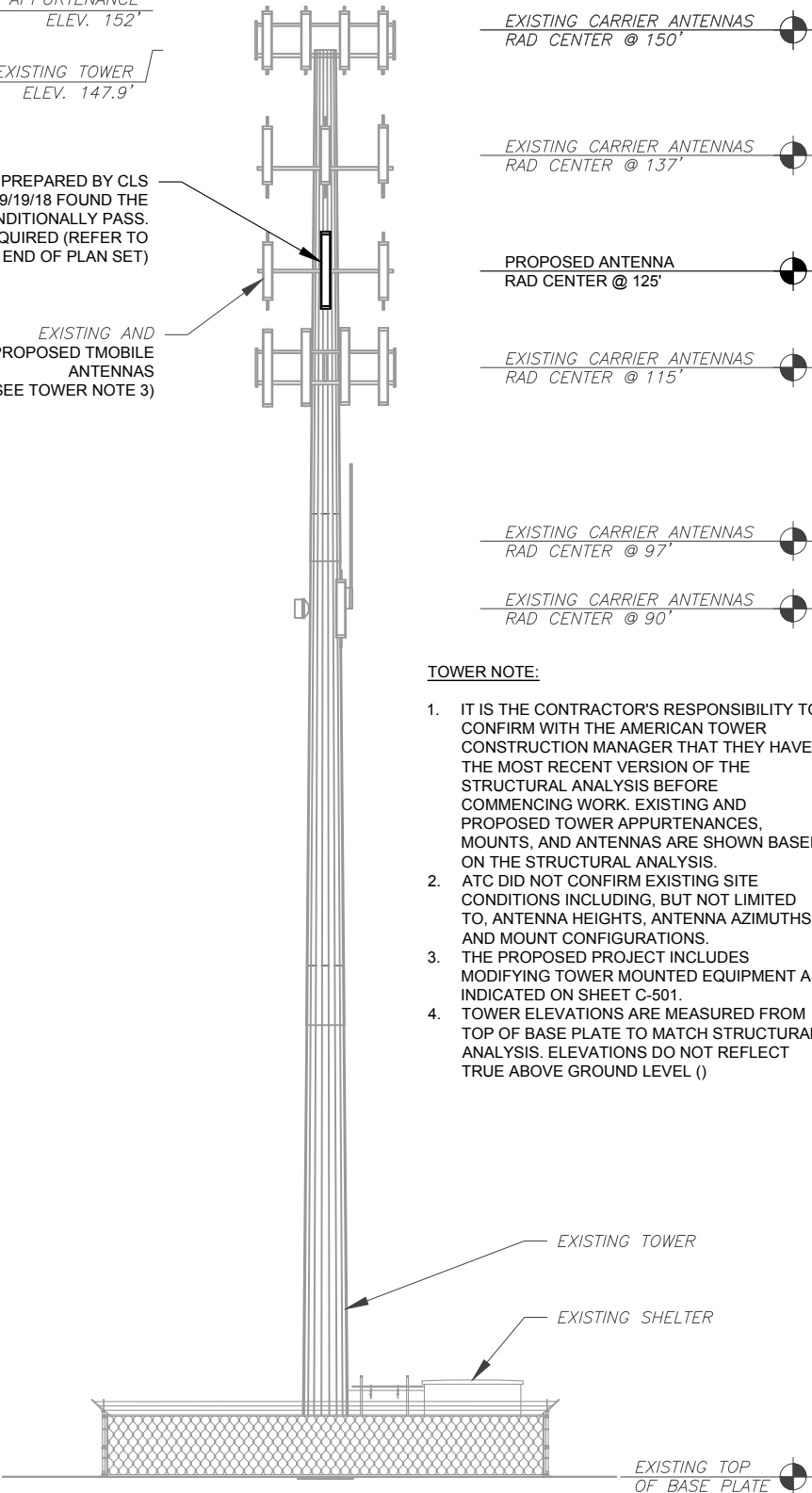
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE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



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



A MOUNT ANALYSIS PREPARED BY CLS ENGINEERING DATED 09/19/18 FOUND THE EXISTING MOUNT TO CONDITIONALLY PASS. MOUNT MODIFICATIONS REQUIRED (REFER TO MODIFICATION DRAWINGS AT END OF PLAN SET)



2 TOWER ELEVATION
 SCALE: NOT TO SCALE

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 ()

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

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	08/29/18
1	REV PER MA	AMM	10/17/18

ATC SITE NUMBER:
302466
 ATC SITE NAME:
WEST SERVICE ROAD
 SITE ADDRESS:
 305 W. SERVICE RD.
 HARTFORD, CT 06120



Authorized by "EOR"
 Nov 20 2018 4:19 PM cosign

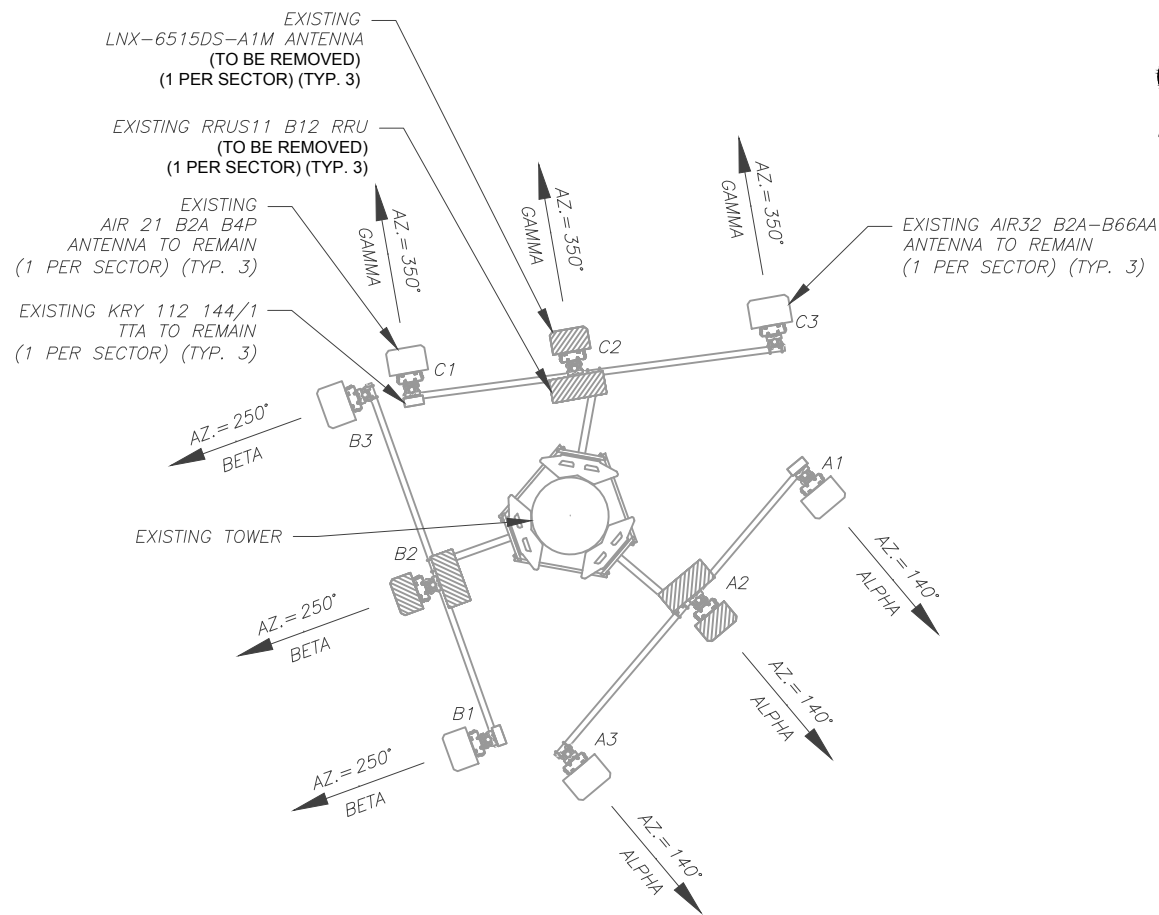


DRAWN BY:	AMM
APPROVED BY:	KRF
DATE DRAWN:	08/29/18
ATC JOB NO:	12607177

DETAILED SITE PLAN & TOWER ELEVATION

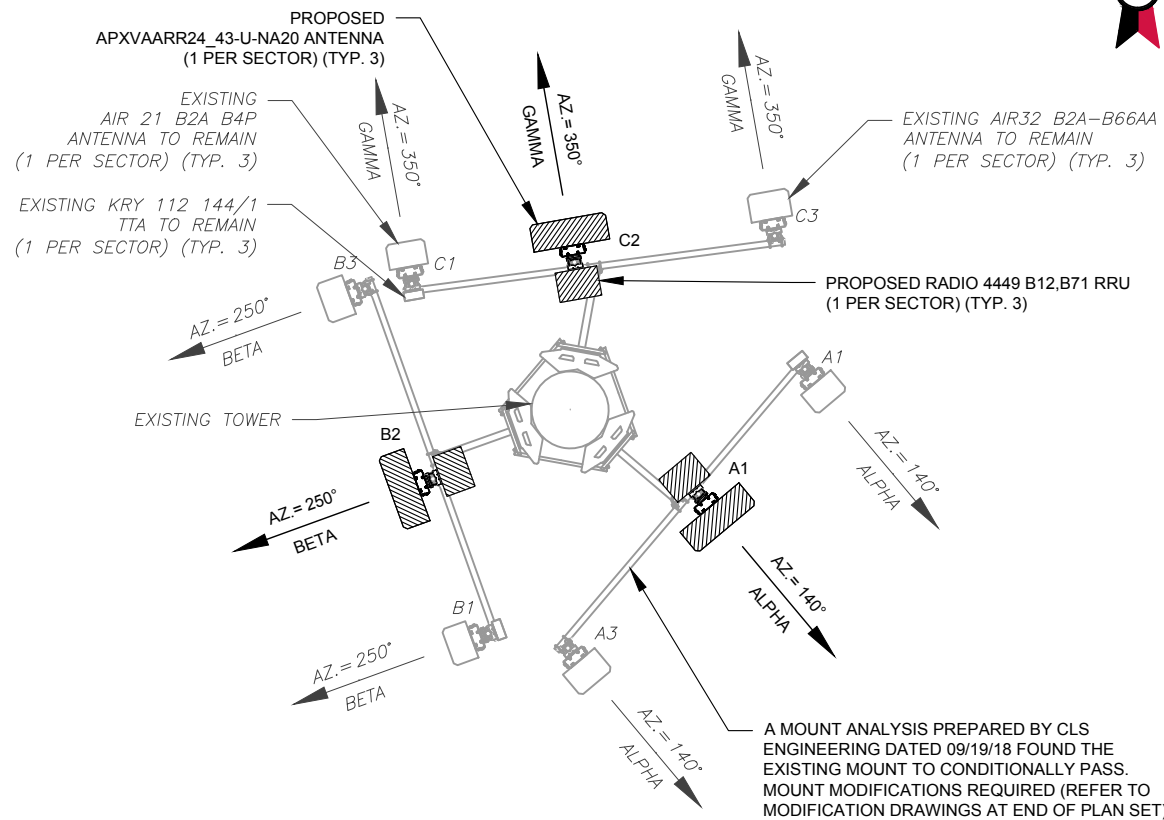
SHEET NUMBER:	REVISION:
C-101	1

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1 EXISTING ANTENNA PLAN

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



2 FINAL ANTENNA PLAN

- NOTES:
- ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
 - 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	125'-0"	140°	-	4'	KRY 112 144/1	(2) 1-5/8"
ALPHA	A2	LNX-6515DS-A1M	125'-0"	140°	0°	2'	RRUS11 B12	-
ALPHA	A3	AIR32 B66AAB2A	125'-0"	140°	0°	4'	-	-
BETA	B1	AIR 21 B2A B4P	125'-0"	250°	-	2'	KRY 112 144/1	(2) 1-5/8"
BETA	B2	LNX-6515DS-A1M	125'-0"	250°	0°	2'	RRUS11 B12	-
BETA	B3	AIR32 B66AAB2A	125'-0"	250°	-	2'	-	-
GAMMA	C1	AIR 21 B2A B4P	125'-0"	350°	-	2'	KRY 112 144/1	(2) 1-5/8"
GAMMA	C2	LNX-6515DS-A1M	125'-0"	350°	0°	2'	RRUS11 B12	-
GAMMA	C3	AIR32 B66AAB2A	125'-0"	350°	0°	2'	-	-

- (1) EXISTING 1-5/8" HYBRID CABLE TO REMAIN
- (1) EXISTING 1-5/8" HYBRID CABLE TO BE REMOVED

3 ANTENNA SCHEDULE

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	125'-0"	140°	0°	-	KRY 112 144/1	(2) 1-5/8"
ALPHA	A2	APXVAARR24_43-U-NA20	125'-0"	140°	0°	-	RADIO 4449 B12,B71	-
ALPHA	A3	AIR32 B66AAB2A	125'-0"	140°	0°	-	-	-
BETA	B1	AIR 21 B2A B4P	125'-0"	250°	0°	-	KRY 112 144/1	(2) 1-5/8"
BETA	B2	APXVAARR24_43-U-NA20	125'-0"	250°	0°	-	RADIO 4449 B12,B71	-
BETA	B3	AIR32 B66AAB2A	125'-0"	250°	0°	-	-	-
GAMMA	C1	AIR 21 B2A B4P	125'-0"	350°	0°	-	KRY 112 144/1	(2) 1-5/8"
GAMMA	C2	APXVAARR24_43-U-NA20	125'-0"	350°	0°	-	RADIO 4449 B12,B71	-
GAMMA	C3	AIR32 B66AAB2A	125'-0"	350°	0°	-	-	-

- BASED ON APPROVED ATC APPLICATION OAA12605178, DATED 08-13-2018. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
- (2) PROPOSED 1-1/4" HYBRID CABLE (161'±)
- (1) EXISTING 1-5/8" HYBRID CABLE TO REMAIN.

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	08/29/18
1	REV PER MA	AMM	10/17/18
2	REV CABLE QTY	AMM	11/20/18

ATC SITE NUMBER:
302466

ATC SITE NAME:
WEST SERVICE ROAD

SITE ADDRESS:
 305 W. SERVICE RD.
 HARTFORD, CT 06120

SEAL:



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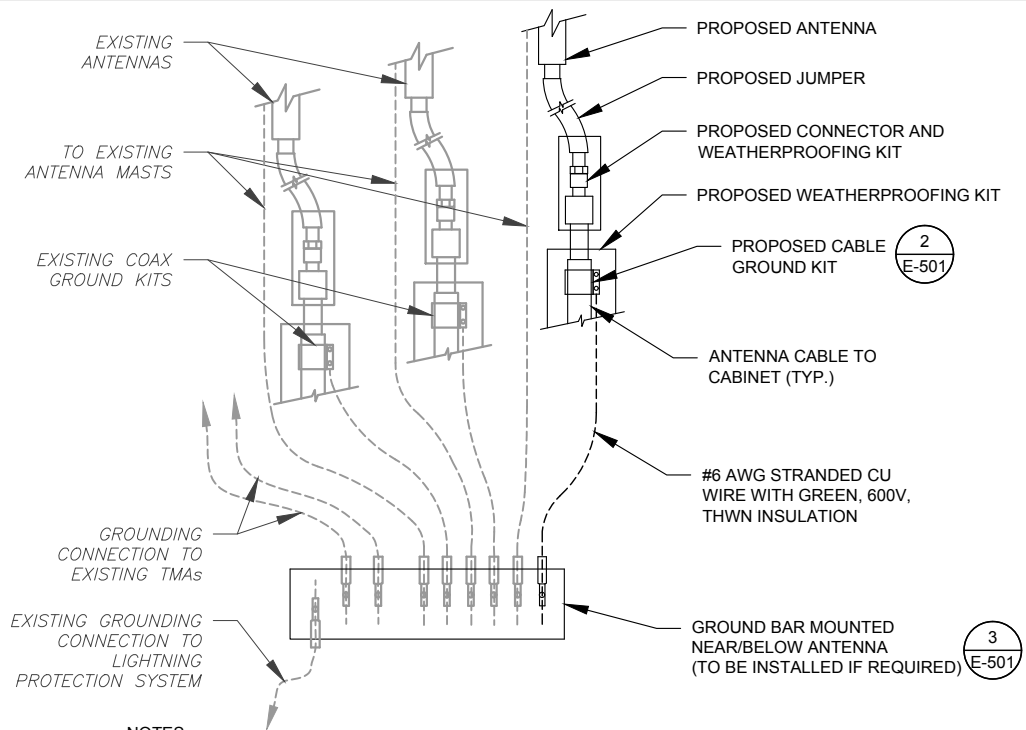


DRAWN BY:	AMM
APPROVED BY:	KRF
DATE DRAWN:	08/29/18
ATC JOB NO:	12607177

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:
C-501

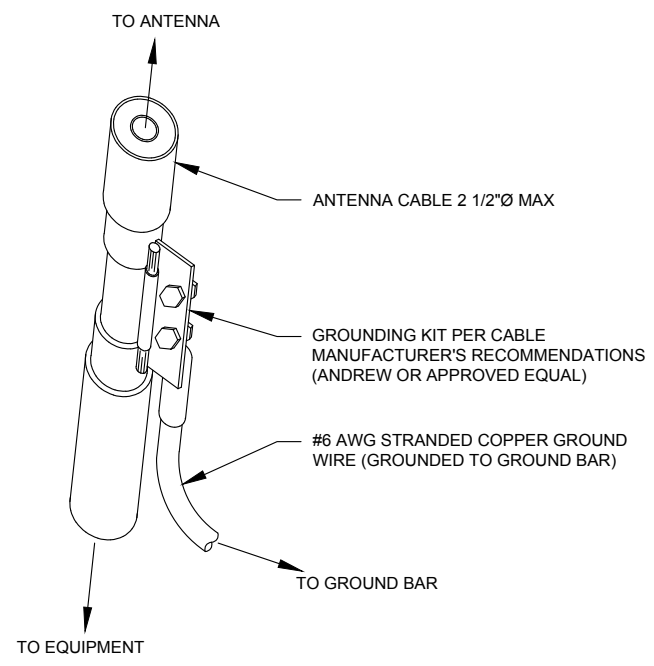
REVISION:
2



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.

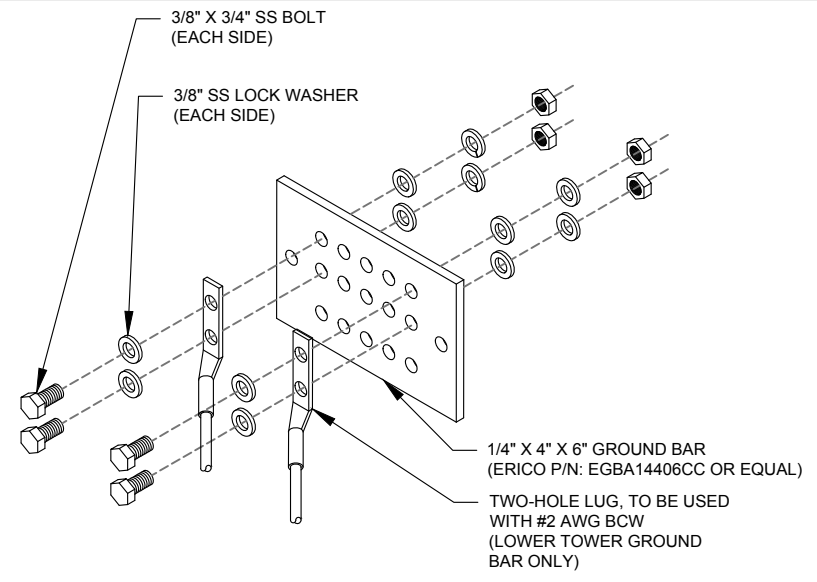
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



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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A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	08/29/18

ATC SITE NUMBER:
302466

ATC SITE NAME:
WEST SERVICE ROAD

SITE ADDRESS:
305 W. SERVICE RD.
HARTFORD, CT 06120

SEAL:

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cosign

T-Mobile

DRAWN BY:	AMM
APPROVED BY:	KRF
DATE DRAWN:	08/29/18
ATC JOB NO:	12607177

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

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RAN Template: 67D92DB Outdoor	ASL Template: 67D92DB_2xAIR+1OP	Power System Template: Custom
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CT11491B_L600_3.2_draft

Section 5 - RAN Equipment

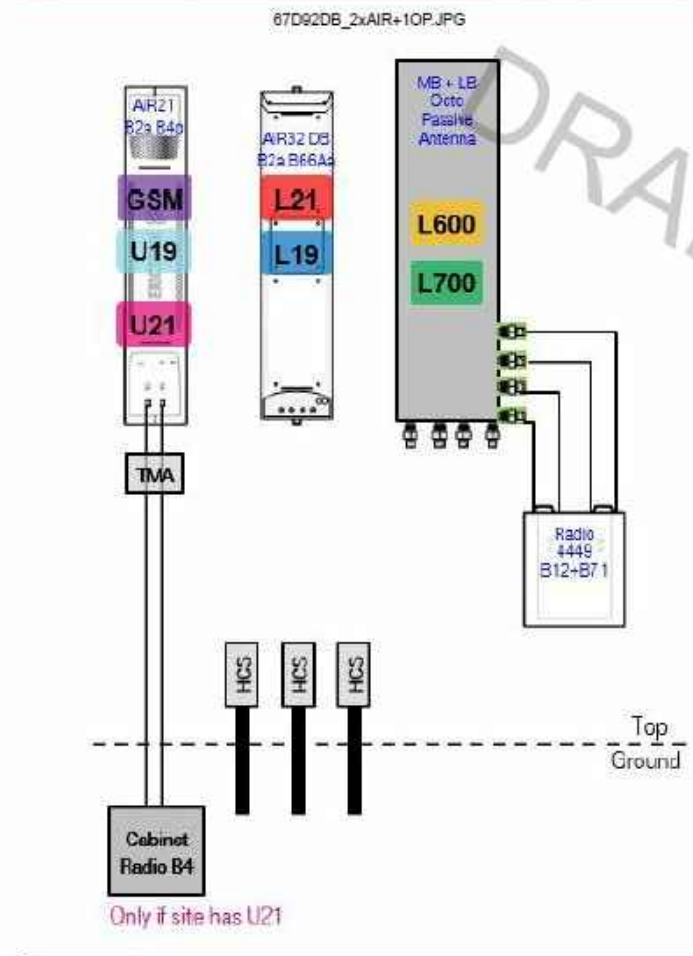
Existing RAN Equipment	
Template: 792DB Outdoor	
Enclosure	2
Enclosure Type	RBS 6131
Baseband	DUS41 (x2) DUW30 (x2) DUG20
Hybrid Cable System	Ericsson 9x18 HCS "Select Length" Ericsson 6x12 HCS "Select Length & AWG"
Multiplexer	XMU
Radio	RU22 (x8)

Proposed RAN Equipment	
Template: 67D92DB Outdoor	
Enclosure	2
Enclosure Type	RBS 6131
Baseband	DUW30 (U1900 (DECOMMISSIONED)) 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 (x8) (U2100)

RAN Scope of Work:

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

Section 3 - Proposed Template Images



2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER:
R-601

REVISION:
0

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



Mount Analysis of Existing T-Arms for American Tower on behalf of T-Mobile
302466 - West Service Road, CT
Project #: 12605178
T-Mobile Site ID: CT11491B
Program: L700

CLS Engineering PLLC Project #41124-12605178-01-MA
 September 19, 2018

MOUNT DESCRIPTION	Existing T-Arms at 125 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 125 ft AGL
SITE DESCRIPTION	147.9 ft Monopole
SITE ADDRESS	305 W. Service Rd., Hartford, CT 06120-0001, Hartford County
GPS COORDINATES	41.79953889, -72.65669722
ANALYSIS STANDARD	2012 IBC / 2016 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	125 mph, V_{ult} / 97 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

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

MEMBER USAGE	97%	Pass
--------------	-----	------

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

Prepared by:
 Bhishan Poudel, E.I.

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



Digitally signed
 by Tyler M.
 Barker
 Date: 2018.09.20
 08:31:20 -04'00'

Mount Analysis for American Tower on behalf of T-Mobile
 302466 - West Service Road, CT

September 19, 2018
 CLS Engineering PLLC Project #41124-12605178-01-MA

■ RESULTS SUMMARY

Existing Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Collar Reactions	141%	Fail
Mount Pipes	118%	Fail
Stand-Off Horizontals	106%	Fail
Face Horizontals	74%	Pass

Mount Usage after Modifications:

COMPONENT	PEAK USAGE	RESULT
Mount Pipes	97%	Pass
Collar Reactions	70%	Pass
Face Horizontals	51%	Pass
Stand-Off Horizontals	41%	Pass
Bracing Members	20%	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:

- Remove existing pipe and kicker angles assembly connected to outermost mount pipes at each sector.
- Install (1) Site Pro 1 PRK-SFS-L, Handrail Reinforcement Kit (Long), at existing face horizontal member as shown in the following sketches. Collar to be installed flush with existing monopole at a height of ±3 ft. below the centerline of existing T-Arm mount collar.
- Install (3) 5 ft. long Pipe 2 STD, A53 Gr. B, bracing pipes at existing T-Arm mount. Connect to outermost mount pipe at Position 1 and existing face horizontal pipe of adjacent sector with Site Pro 1 PUCK or equal, as shown in the following sketches.

See following sketches and Site Pro 1 assembly drawings for additional details.

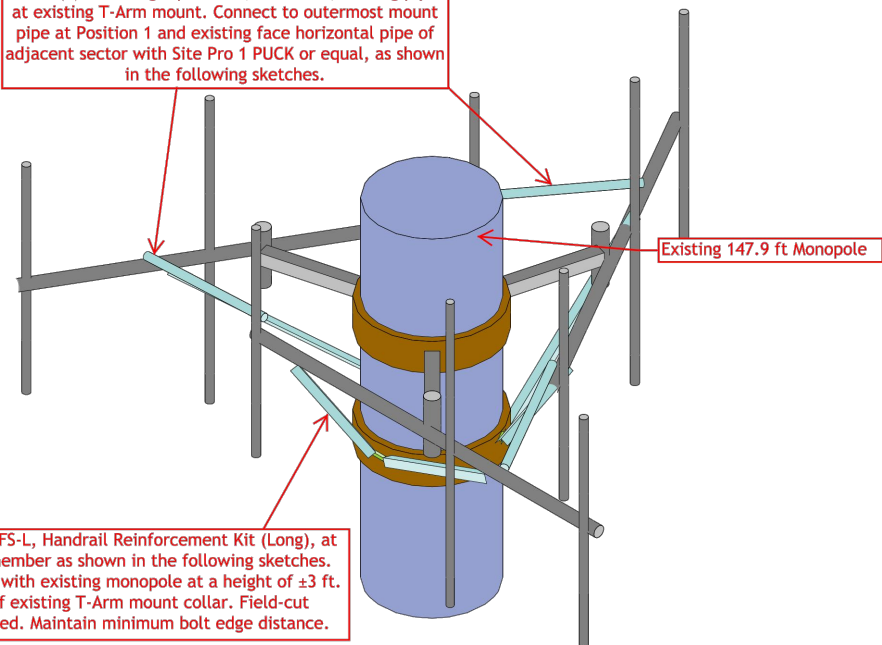
SUPPLEMENTAL

SHEET NUMBER: R-602	REVISION: 1
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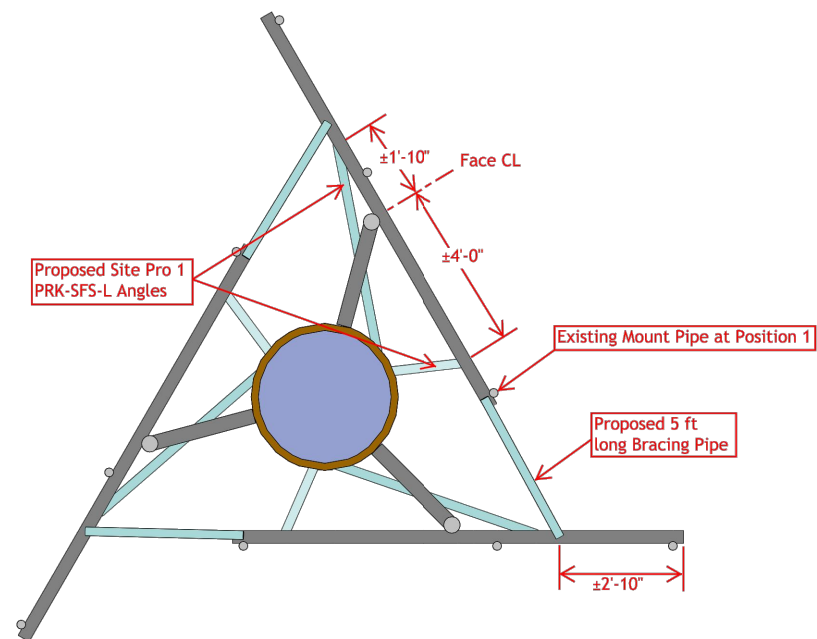
Install (3) 5 ft. long Pipe 2 STD, A53 Gr. B, bracing pipes at existing T-Arm mount. Connect to outermost mount pipe at Position 1 and existing face horizontal pipe of adjacent sector with Site Pro 1 PUCK or equal, as shown in the following sketches.



Existing 147.9 ft Monopole

Install (1) Site Pro 1 PRK-SFS-L, Handrail Reinforcement Kit (Long), at existing face horizontal member as shown in the following sketches. Collar to be installed flush with existing monopole at a height of ± 3 ft. below the centerline of existing T-Arm mount collar. Field-cut proposed angles as required. Maintain minimum bolt edge distance.

CLS	41124-12605178-West Service Road, CT Proposed Modification - Rendered	IN - 1
BP		Sept 19, 2018 at 6:26 PM
41124-12605178-01-MA		41124-12605178-01-MA.r3d



Proposed Site Pro 1 PRK-SFS-L Angles

Face CL

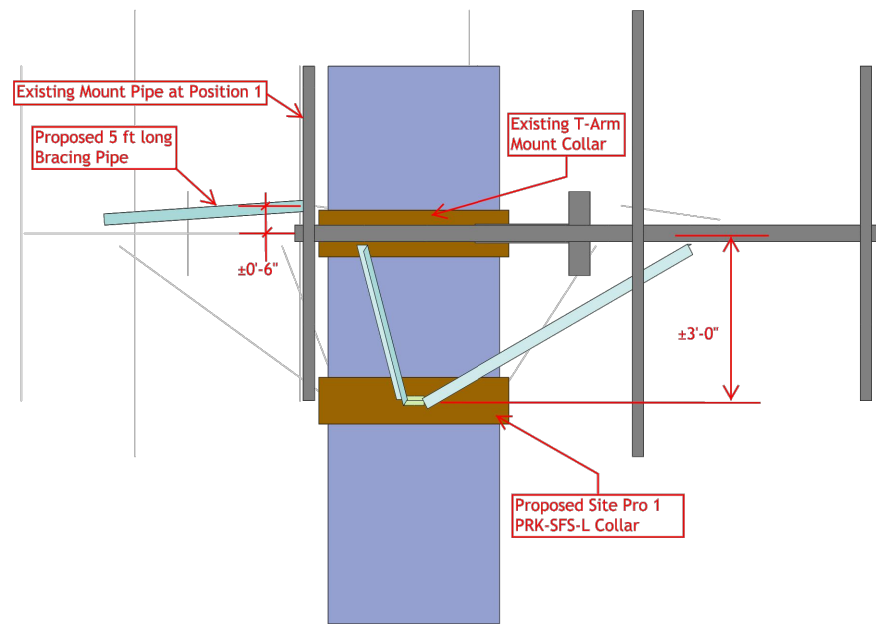
Existing Mount Pipe at Position 1

Proposed 5 ft long Bracing Pipe

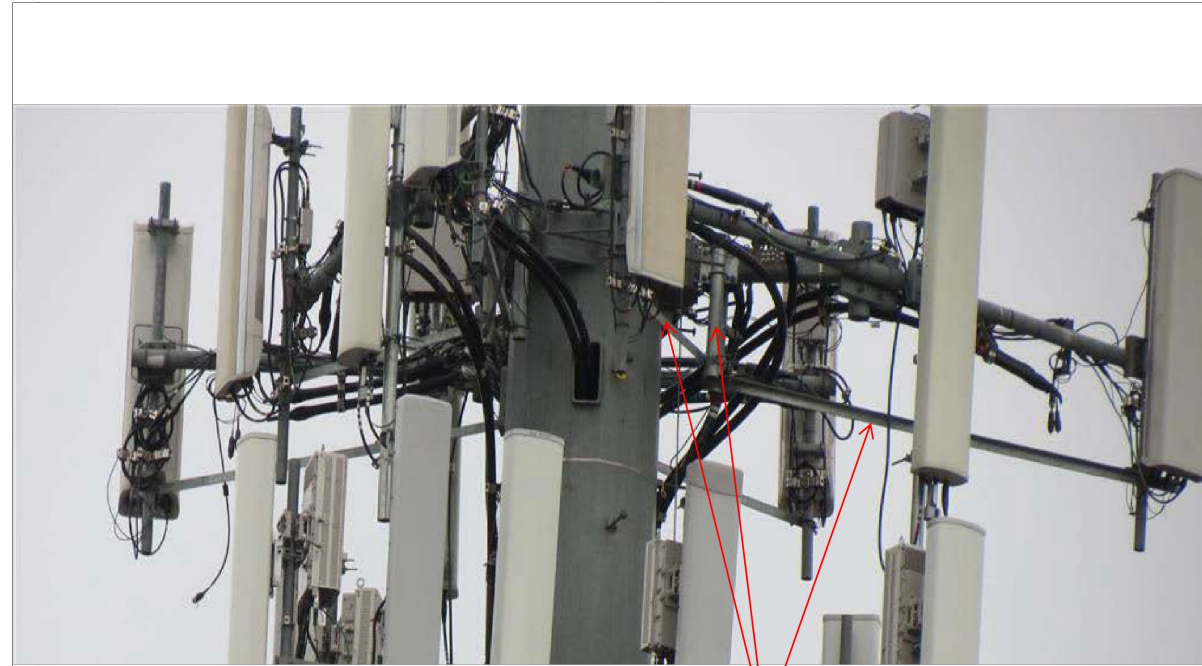
CLS	41124-12605178-West Service Road, CT Proposed Modification - Plan	IN - 2
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SUPPLEMENTAL

SHEET NUMBER: R-603	REVISION: 1
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CLS	41124-12605178-West Service Road, CT Proposed Modification - Front Elevation	IN - 3
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41124-12605178-01-MA		41124-12605178-01-MA.r3d



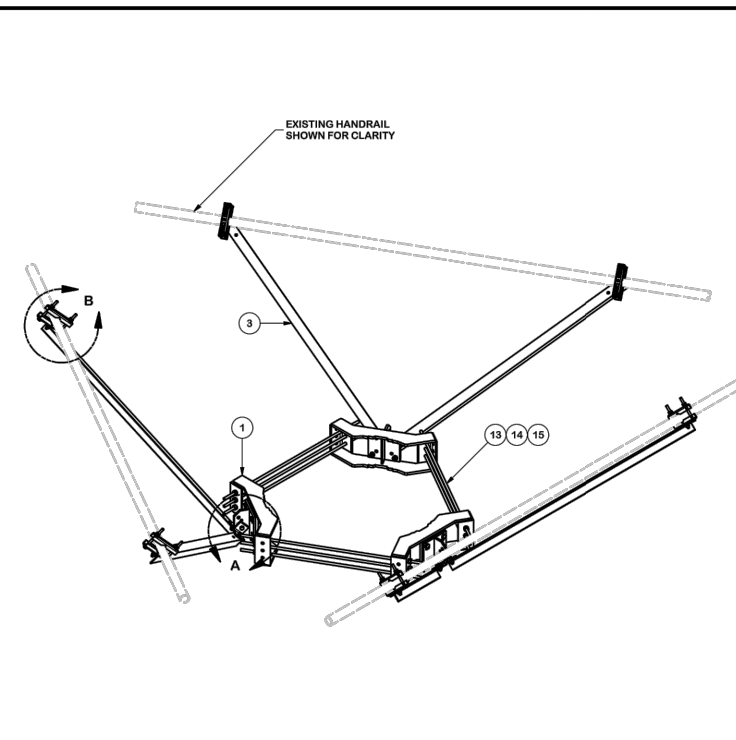
Remove existing pipe and kicker angles assembly connected to outermost mount pipes at each sector.

CLS	41124-12605178-West Service Road, CT Existing Kickers Removal Photo	IN - 4
BP		Sept 19, 2018 at 6:27 PM
41124-12605178-01-MA		

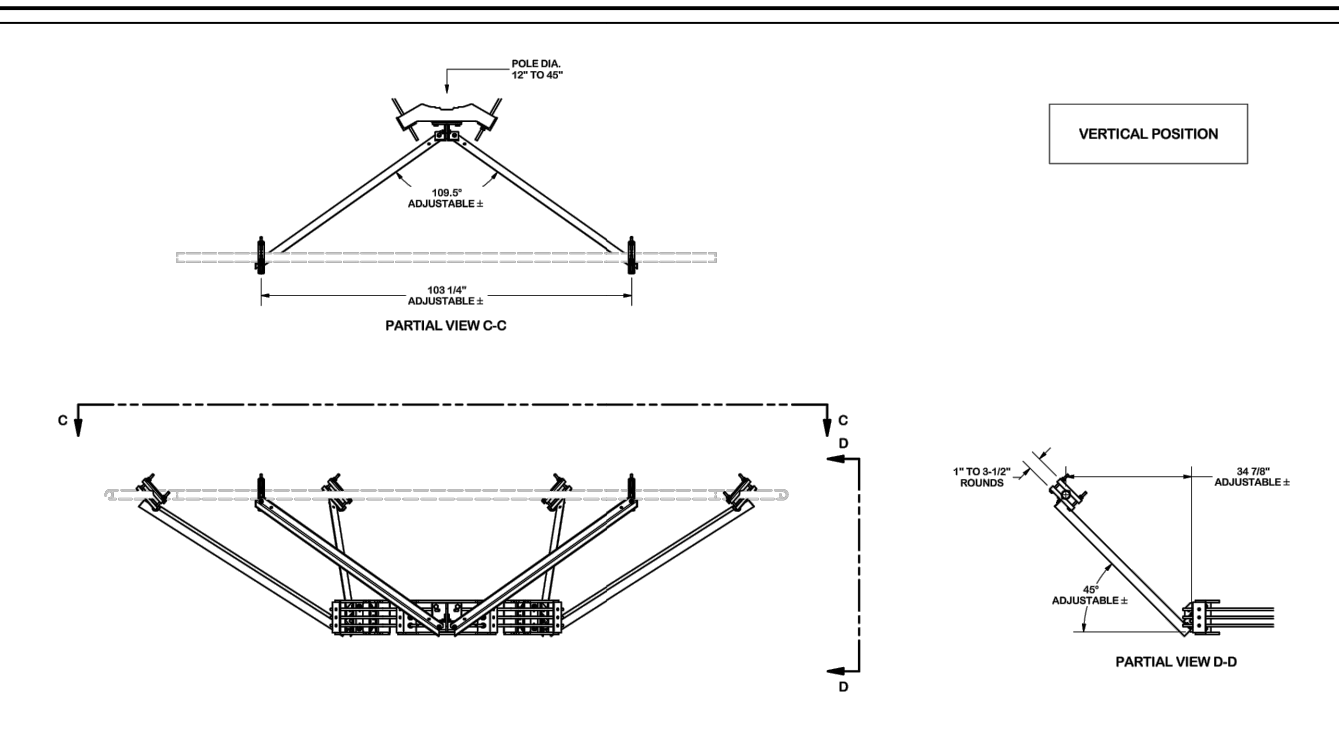
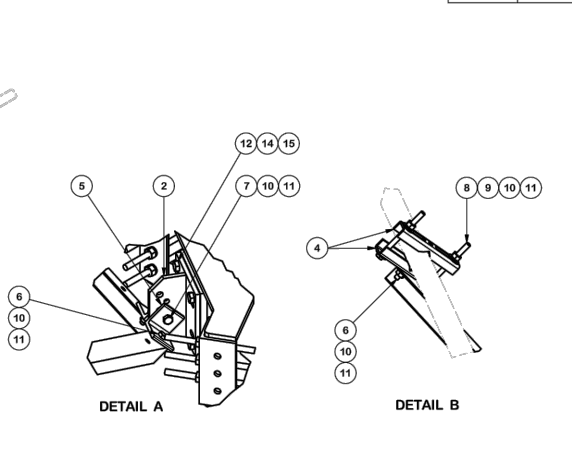
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-604	REVISION: 1
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ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-TBW	T-BRACKET WELDMENT		13.60	40.80
3	6	X-254924	DIAGONAL ANGLE - SITE PRO 1	72 in	19.71	118.24
4	12	X-STU	STIFF ARM CHANNEL BRACKET	8 1/2 in	1.37	16.46
5	6	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	11.15
6	12	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	1.77
7	3	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.61
8	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
9	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
10	27	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.38
11	27	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.93
12	12	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	3.76
13	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
14	30	G58LW	5/8" HDG LOCKWASHER	48 in	0.40	3.59
15	30	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	3.90
				TOTAL WT. #		642.04



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

DESCRIPTION
HANDRAIL REINFORCEMENT KIT (LONG)

Engineering Support Team
1-888-753-7446
Plymouth, IN
Salem, OH
Dallas, TX

PRK-SFS-L

CPD NO. SP1
DRAWN BY CSLS
2/23/2017
3RD PARTY
CHECKED BY BMC
9/8/2017

REVISION HISTORY
A CHANGED MAX. DIA. FOR HANDRAIL CONNECTION
DESCRIPTION OF REVISIONS
CPD BY DATE

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

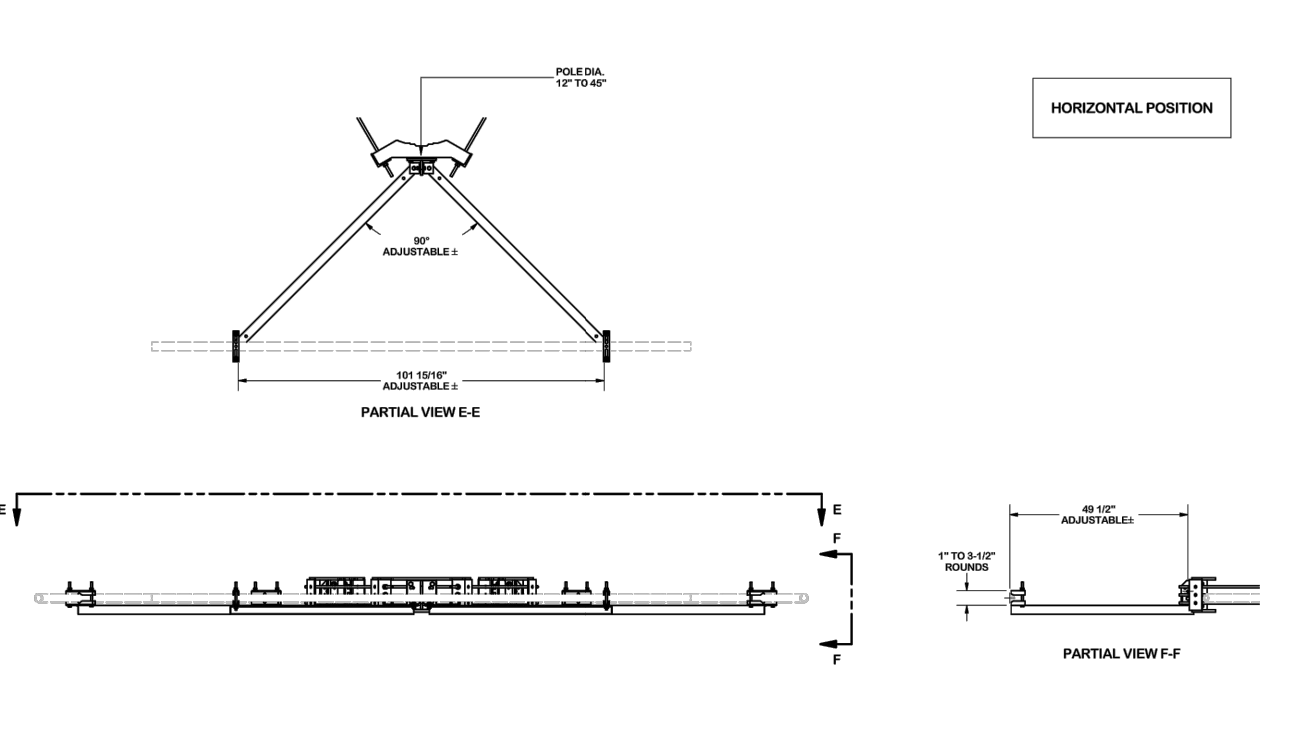
DESCRIPTION
HANDRAIL REINFORCEMENT KIT (LONG)

Engineering Support Team
1-888-753-7446
Plymouth, IN
Salem, OH
Dallas, TX

PRK-SFS-L

CPD NO. SP1
DRAWN BY CSLS
2/23/2017
3RD PARTY
CHECKED BY BMC
9/8/2017

REVISION HISTORY
A CHANGED MAX. DIA. FOR HANDRAIL CONNECTION
DESCRIPTION OF REVISIONS
CPD BY DATE



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

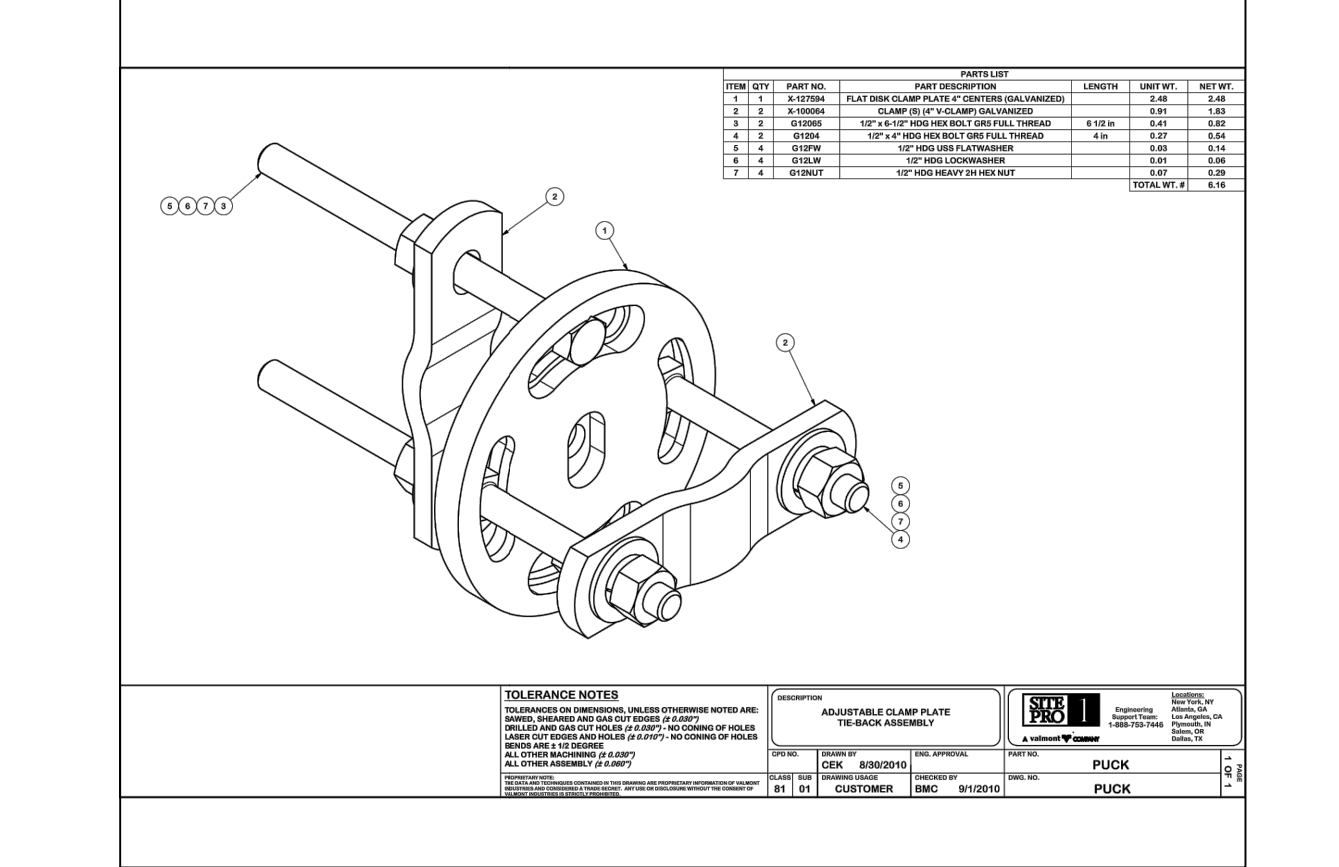
DESCRIPTION
HANDRAIL REINFORCEMENT KIT (LONG)

Engineering Support Team
1-888-753-7446
Plymouth, IN
Salem, OH
Dallas, TX

PRK-SFS-L

CPD NO. SP1
DRAWN BY CSLS
2/23/2017
3RD PARTY
CHECKED BY BMC
9/8/2017

REVISION HISTORY
A CHANGED MAX. DIA. FOR HANDRAIL CONNECTION
DESCRIPTION OF REVISIONS
CPD BY DATE



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ALL OTHER MACHINING ($\pm 0.030"$)
ALL OTHER ASSEMBLY ($\pm 0.060"$)

DESCRIPTION
ADJUSTABLE CLAMP PLATE TIE-BACK ASSEMBLY

Engineering Support Team
1-888-753-7446
Plymouth, IN
Salem, OH
Dallas, TX

PUCK

CPD NO. CEK
DRAWN BY 8/30/2010
3RD PARTY
CHECKED BY CUSTOMER
9/1/2010

REVISION HISTORY
A CHANGED MAX. DIA. FOR HANDRAIL CONNECTION
DESCRIPTION OF REVISIONS
CPD BY DATE

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.

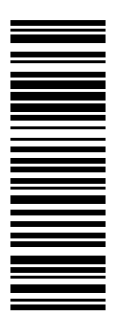
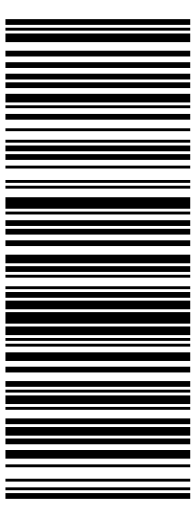

Hand the package to any UPS driver in your area.

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

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: CONTACTS MANAGEMENT AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053</p>	<p>0.0 LBS LTR 1 OF 1</p> <p>MA 018 9-04</p> 	<p>UPS NEXT DAY AIR</p> <p>1</p> <p>TRACKING #: 1Z V25 742 01 9668 3919</p>		<p>BILLING: P/P</p> <p>Reference#1: CT11491B Reference#2: ATC</p>  <p>UPS 20.6.13. WNTNVS0 06.0A 10/2018</p>
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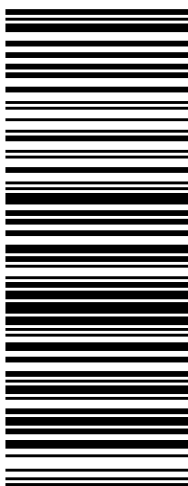

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UPS Access Point™
POSTNET 74
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: MELANIE BACHMAN CONNECTICUT SITING COUNCIL 10 FRANKLIN SQUARE NEW BRITAIN CT 06051-2655</p>	<p>0.0 LBS LTR</p> <p style="text-align: right;">1 OF 1</p>	<p>CT 067 9-06</p> 	<p>UPS NEXT DAY AIR</p> <p>1</p> <p>TRACKING #: 1Z V25 742 01 9740 3933</p> 	<p>BILLING: P/P</p>	 <p>Reference#1: CT11491B Reference#2: CSC</p> <p style="font-size: small;">UPS 20.6.13. WINTNVS0 06.0A 10/2018</p>
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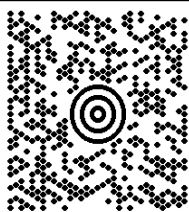

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MAHWAH ,NJ 07430

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120 E MAIN ST
RAMSEY ,NJ 07446

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

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: 305 W SERVICE RD ASSOC LLC 79 RYE STREET BROAD BROOK CT 06016-9555</p>	<p>0.0 LBS LTR 1 OF 1</p> <p>CT 060 9-01</p>  	<p>UPS NEXT DAY AIR</p> <p>1</p> <p>TRACKING #: 1Z V25 742 01 9953 3923</p>		<p>BILLING: P/P</p> <p>Reference#1: CT11491B Reference#2: LL</p>  <p>US 20.6.13. WNTNVS0 06.0A 10/2018</p>
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RAMSEY ,NJ 07446

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POSTNET 74
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: LUKE BRONIN, MAYOR CITY OF HARTFORD RM 200 550 MAIN STREET HARTFORD CT 06103</p>	<p>1.0 LBS LTR 1 OF 1</p> <p>CT 061 9-03</p>  	<p>UPS NEXT DAY AIR 1</p> <p>TRACKING #: 1Z V25 742 01 9885 3900</p>		<p>BILLING: P/P</p> <p>Reference#1: CT11491B Reference#2: Mayor</p>  <p>UPS 20.6.13. WNTNVS0 06.0A 10/2018</p>
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SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: ERIK JOHNSON, DIR. DEVELOPMENT SVCS CITY OF HARTFORD 4TH FL HARTFORD CT 06103-1800</p>	<p>CT 061 9-03</p> 	<p>UPS NEXT DAY AIR</p> <p>1</p> <p>TRACKING #: 1Z V25 742 01 9604 3897</p>		<p>BILLING: P/P</p> <p>Reference#1: CT11491B Reference#2: Planner</p>  <p>US 20.6.13. WNTNVS0 06.0A 10/2018</p>
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