



10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

August 1, 2016

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

Notice of Exempt Modification
1069 Connecticut Avenue, Bridgeport, CT 06607
Latitude- 41.18362900
Longitude- -73.15806000

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 119' level of the existing 128' monopole at 1069 Connecticut Avenue in Bridgeport, CT. The tower is owned by American Tower. The property is owned by WR CT Avenue LLC. T-Mobile now intends to replace (3) of its existing antennas with (3) new 1900 MHz antennas. These antennas would be installed at the same 119' level of the existing tower. T-Mobile also intends on installing (1) new fiber cable.

This facility was approved by the Council in Petition No. 552 on April 3, 2002. This approval did not come with conditions that would be violated by this modification. This modification complies with the 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 the Honorable Joseph P. Ganim, Mayor of the City of Bridgeport, as well as the property owner and tower owner.

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

1. The proposed modification will not result in an increase in the height of the existing structure
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Kyle Richers

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

Attachments:

CC Joseph P. Ganim- as elected official
 American Tower- as tower owner
 WR CT Avenue LLC- as property owner

1069 CONNECTICUT AV

Location

1069 CONNECTICUT AV

Mblu

44/ 723/ 3/A /

Acct#

R--0004050

Owner

WR CT AVENUE LLC

Assessment

\$1,902,240

Appraisal

\$2,717,490

PID

4911

Building Count

3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$1,808,490	\$909,000	\$2,717,490
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$1,265,940	\$636,300	\$1,902,240

Owner of Record

Owner

WR CT AVENUE LLC

Co-Owner

C/O WESTROCK DEVELOPMENT LLC

Address

440 MAMARONECK AVENUE
SUITE N-503
HARRISON, NY 10528

Sale Price

\$0

Certificate

Book & Page

7844/ 40

Sale Date

06/27/2008

Instrument

14

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
WR CT AVENUE LLC	\$0		7844/ 40	14	06/27/2008
WR CT AVENUE LLC	\$0		7844/ 34	14	06/27/2008
BRIDGEPORT CITY OF	\$0		7370/ 268	14	02/09/2007
AMERICAN FABRICS CO	\$0		2195/ 149		11/25/1986

Building Information

Building 1 : Section 1

Year Built:

1939

Living Area:

106,726

Replacement Cost:

\$5,015,157

Building Percent

20

Good:

Replacement Cost
Less Depreciation: \$1,003,030

Building Attributes	
Field	Description
STYLE	Mill Building
MODEL	Ind/Comm
Grade:	Average
Stories:	4
Occupancy:	1
Exterior Wall 1:	Brick
Exterior Wall 2:	
Roof Struct:	Irregular
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Hardwood
Interior Floor 2:	Carpet
Heating Fuel:	Oil
Heating Type:	Hot Water
AC Type:	None
Bldg Use:	Mill Building
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	0
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	Ceiling Only
Rooms/Prtns:	Average
Wall Height:	16
% Corn Wall:	

Building 2 : Section 1

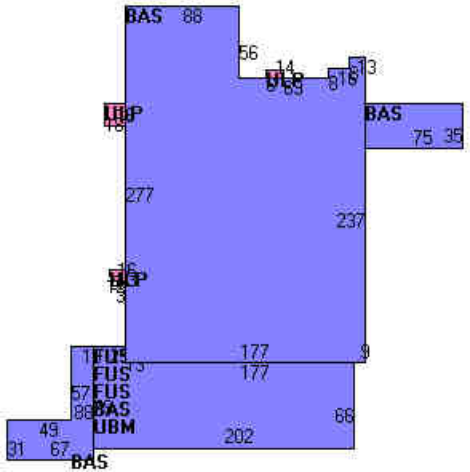
Year Built: 1967
Living Area: 28,945
Replacement Cost: \$1,058,496
Building Percent Good: 23
Replacement Cost Less Depreciation: \$243,450

Building Photo



(http://images.vgsi.com/photos/BridgeportCTPhotos//\00\00\50

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	65,755	65,755
FUS	Finished Upper Story	40,971	40,971
UBM	Unfin Basement	13,657	0
ULP	Uncovered Loading Platform	502	0
		120,885	106,726

Building Attributes : Bldg 2 of 3

Field	Description
STYLE	Industrial
MODEL	Ind/Comm
Grade:	Average
Stories:	1
Occupancy:	1
Exterior Wall 1:	Concr/CinderBl
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	Oil
Heating Type:	Hot Air-No Duc
AC Type:	None
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	10
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	None
Rooms/Prtns:	Average
Wall Height:	14
% Comn Wall:	

Building 3 : Section 1

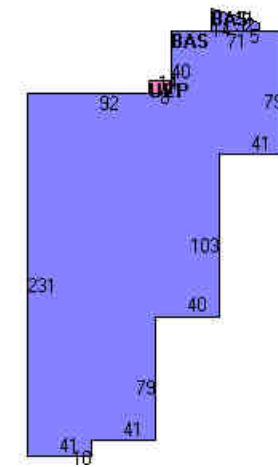
Year Built: 1955
Living Area: 16,539
Replacement Cost: \$713,174
Building Percent Good: 20
Replacement Cost Less Depreciation: \$142,630

Building Attributes : Bldg 3 of 3

Field	Description

Building Photo

(<http://images.vgsi.com/photos/BridgeportCTPhotos//default.jp>)

Building Layout

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	28,945	28,945
UEP	Utility Enclosed Porch	112	0
		29,057	28,945

STYLE	Mill Building
MODEL	Ind/Comm
Grade:	D+
Stories:	4
Occupancy:	1
Exterior Wall 1:	Brick
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	Tar + Gravel
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	None
Heating Type:	None
AC Type:	None
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	10
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	None
Rooms/Prtns:	Average
Wall Height:	15
% Comn Wall:	

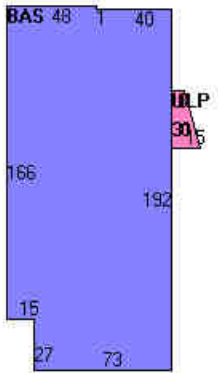
Building Photo



(<http://images.vgsi.com/photos/BridgeportCTPhotos//\00\09\91>

Building Layout

UBM[7600]



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	16,539	16,539
UBM	Unfin Basement	7,600	0
ULP	Uncovered Loading Platform	315	0
		24,454	16,539

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPR1	Sprinklers-Wet	106726 SF	\$57,630	1
SPR1	Sprinklers-Wet	28651 SF	\$17,790	2
SPR1	Sprinklers-Wet	81037 SF	\$43,760	3
LDL1	Load Levler	2 UNITS	\$1,610	2
ELV1	Freight	5 STOPS	\$16,500	1
ELV1	Freight	5 STOPS	\$16,500	1

Land

Land Use		Land Line Valuation	
Use Code	342	Size (Acres)	6.06
Description	Mill Building	Frontage	0
Zone	LI	Depth	0
Neighborhood	CTA	Assessed Value	\$636,300
Alt Land Appr Category	No	Appraised Value	\$909,000

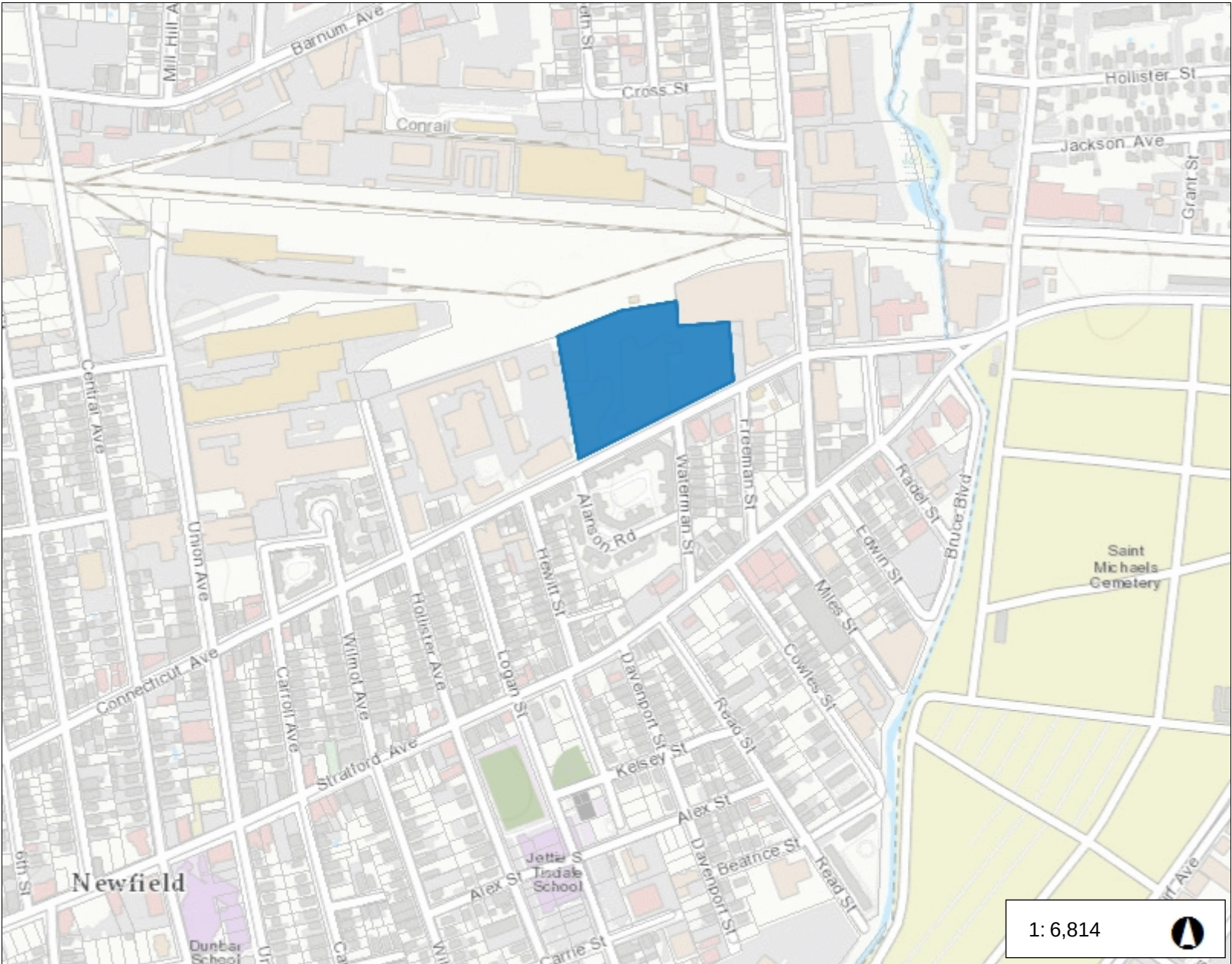
Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD1	Shed	MT	Metal	336 SF	\$1,210	1
PAV1	Paving Asph			110000 SF	\$231,000	1
FN1	Fence, Chain	4	4 ft	668 LF	\$2,200	1
SHD3	Shed w/ Lt	CM	Comm	240 SF	\$4,320	1
TWR	Tower			130 LF	\$26,000	1
PAV2	Paving Conc			240 SF	\$860	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2014	\$1,953,750	\$1,060,500	\$3,014,250
2013	\$1,953,750	\$1,060,500	\$3,014,250
2012	\$1,953,750	\$1,060,500	\$3,014,250

Assessment			
Valuation Year	Improvements	Land	Total
2014	\$1,367,630	\$742,350	\$2,109,980
2013	\$1,367,630	\$742,350	\$2,109,980
2012	\$1,367,630	\$742,350	\$2,109,980



Legend

- Parcel Label
- Parcels

1,135.6 0 567.79 1,135.6 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION



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

T-Mobile Existing Facility

Site ID: CT11452A

Bridgeport/Connecticut Av
1069 Connecticut Avenue
Bridgeport, CT 06607

May 19, 2016

EBI Project Number: 6216002457

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	13.86 %

May 19, 2016

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

Emissions Analysis for Site: **CT11452A – Bridgeport/Connecticut Av**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1069 Connecticut Avenue, Bridgeport, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1069 Connecticut Avenue, Bridgeport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 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) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.



- 6) Since some radios are ground mounted there are additional cabling losses accounted for these radio paths. For each passive RF path the following losses were calculated. 1.04 dB of additional cable loss for all ground mounted passive 700 MHz Channels and 1.92 dB of additional cable loss for all ground mounted passive 1900 MHz channels. This is based on manufacturers Specifications for 186 feet of 1-5/8" coax cable on each passive ground mounted path.
- 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 six-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Ericsson AIR32 B2A/B66A & RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B2A/B66A** has a maximum gain of **15.9 dBd** at their main lobe at 1900 MHz and 2100 MHz. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerline of the proposed antennas is **116 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.

All calculations were done with respect to uncontrolled / general public threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR32 B2A/B66A	Make / Model:	Ericsson AIR32 B2A/B66A	Make / Model:	Ericsson AIR32 B2A/B66A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	116	Height (AGL):	116	Height (AGL):	116
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	2.77	Antenna B1 MPE%	2.77	Antenna C1 MPE%	2.77
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):	116	Height (AGL):	116	Height (AGL):	116
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):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	3,289.89	ERP (W):	3,289.89	ERP (W):	3,289.89
Antenna A2 MPE%	0.98	Antenna B2 MPE%	0.98	Antenna C2 MPE%	0.98
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	116	Height (AGL):	116	Height (AGL):	116
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	680.96	ERP (W):	680.96	ERP (W):	680.96
Antenna A3 MPE%	0.43	Antenna B3 MPE%	0.43	Antenna C3 MPE%	0.43

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	4.19 %
Clearwire	0.08 %
Clearwire MW	0.11 %
Sprint	0.96 %
AT&T	6.34 %
MetroPCS	2.18 %
Site Total MPE %:	13.86 %

T-Mobile Sector 1 Total:	4.19 %
T-Mobile Sector 2 Total:	4.19 %
T-Mobile Sector 3 Total:	4.19 %
Site Total:	13.86 %

T-Mobile _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 1900 MHz (PCS) LTE	2	2334.27	116	13.87	1900	1000	1.39 %
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	116	13.87	2100	1000	1.39 %
T-Mobile 1900 MHz (PCS) GSM	2	822.47	116	4.89	1900	1000	0.49 %
T-Mobile 1900 MHz (PCS) UMTS	2	822.47	116	4.89	1900	1000	0.49 %
T-Mobile 700 MHz LTE	1	680.96	116	2.02	700	467	0.43 %
						Total:	4.19 %

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	4.18 %
Sector 2:	4.18 %
Sector 3:	4.18 %
T-Mobile Per Sector Maximum:	4.18 %
Site Total:	13.85 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **13.85%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 126 ft Monopole
ATC Site Name : Bridgeport CT 2, CT
ATC Site Number : 302469
Engineering Number : OAA663340_C3_09
Proposed Carrier : T-Mobile
Carrier Site Name : N/A
Carrier Site Number : CT11452A
Site Location : 1069 Connecticut Avenue
Bridgeport, CT 06607-1226
41.183617,-73.158383
County : Fairfield
Date : July 21, 2016
Max Usage : 81%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Chris MacKay
Structural Engineer IV

Jul 22 2016 10:01 AM

cosign

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 126 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EI Project #5543, dated October 14, 1999
Foundation Drawing	EI Project #5543, dated October 14, 1999
Geotechnical Report	Applied Earth Technologies Project #9903A, dated November 23, 1999
Modifications	ATC Project #41045932, dated November 2, 2007

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:	110 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.20$, $S_1 = 0.06$
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					
126.0	129.0	12	Decibel DB844H90E-XY	Platform w/ Handrails	(12) 1 1/4" Coax	Sprint Nextel
123.0	123.0	2	DragonWave Horizon Compact	Side Arms	(6) 5/16" Coax (3) 1/2" Coax (2) 2" Conduit	Clearwire
		1	Dragonwave A-ANT-23G-1-C			
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		1	Dragonwave A-ANT-18G-2-C			
116.0	116.0	3	Kathrein Smart Bias Tee	Low Profile Platform	(18) 1 5/8" Coax	T-Mobile
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Andrew LNX-6515DS-VTM			
106.0	106.0	6	Powerwave LGP21901	Platform w/ Handrails	(4) 1.24" 4 AWG 6 (12) 1 5/8" Coax (3) 0.51" Hybrid	AT&T Mobility
		12	Powerwave LGP2140X			
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS A2 B2			
		3	Ericsson RRUS-11			
		3	Ericsson RRUS 12			
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS-32			
		3	Powerwave 7770.00			
		6	CCI OPA-65R-LCUU-H4			
98.0	98.0	3	RCU	Flush	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
		3	Kathrein 800 10504			
85.5	85.5	1	Antel BCD-87010 ____	Side Arm	(1) 7/8" Coax	Spok Holdings

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	116.0	3	RFS APX16PV-16PVL-A	-	-	T-Mobile
		3	Andrew ETW200VS12UB			
		6	Ericsson KRY 112 71			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	116.0	6	Ericsson KRY 112 489/1	Low Profile Platform	(1) 7/8" Fiber	T-Mobile
		3	Ericsson AIR-32 B2A/B66Aa			

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	74%	Pass
Shaft	78%	Pass
Base Plate	41%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,572.7	79%
Axial (Kips)	59.4	5%
Shear (Kips)	27.0	81%

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) (°)
123.0	Dragonwave A-ANT-23G-1-C	Clearwire Corporatio	1.460	1.300
	Dragonwave A-ANT-18G-2-C			
116.0	Ericsson KRY 112 489/1	T-Mobile	1.302	1.278
	Ericsson AIR-32 B2A/B66Aa			

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



Standard Conditions

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

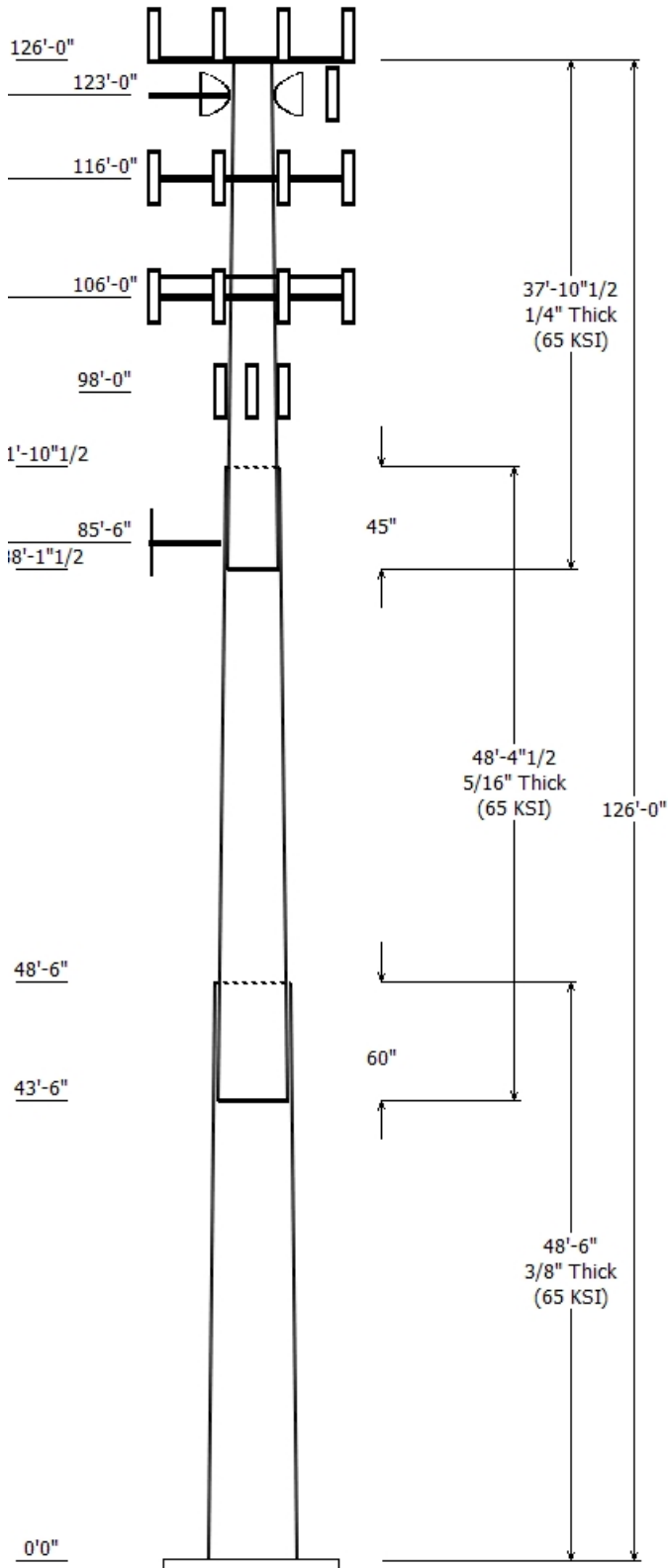
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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

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

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

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

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Job Information

Pole : 302469 Code: ANSI/TIA-222-G
 Description : Monopole
 Client : T-MOBILE Struct Class : II
 Location : Bridgeport CT 2, CT
 Shape : 18 Sides Exposure : B
 Height : 126.00 (ft) Topo : 1
 Base Elev (ft): 0.00
 Taper: 0.235121(in/ft)

Sections Properties

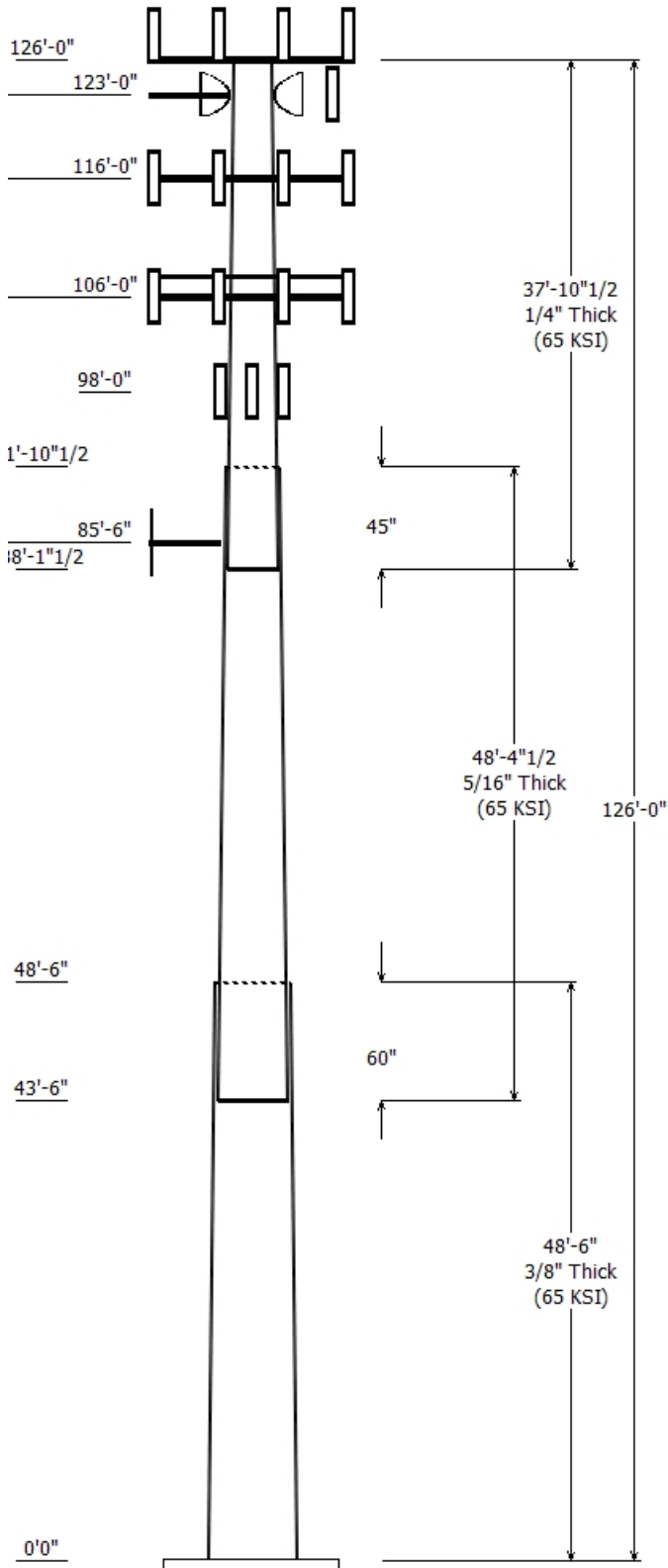
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Accross Flats Top	Bottom					
1	48.500	34.097	45.500	0.375		0.000	0.235100	65
2	48.375	24.523	35.897	0.313	Slip Joint	60.000	0.235100	65
3	37.875	17.000	25.905	0.250	Slip Joint	45.000	0.235100	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
126.000	129.000	12	Decibel DB844H90E-XY
126.000	126.000	1	Flat Platform w/ Handrails
123.000	123.000	1	Dragonwave A-ANT-23G-1-C
123.000	123.000	1	Side Arms
123.000	123.000	2	DragonWave Horizon Compact
123.000	123.000	3	Argus LLPX310R
123.000	123.000	1	Dragonwave A-ANT-18G-2-C
123.000	123.000	3	NextNet BTS-2500
116.000	116.000	3	Ericsson AIR-32 B2A/B66Aa
116.000	116.000	6	Ericsson KRY 112 489/1
116.000	116.000	3	Andrew LNX-6515DS-VTM
116.000	116.000	3	Kathrein Smart Bias Tee
116.000	116.000	3	RFS APX16DWV-16DWVS-E-A20
116.000	116.000	1	Round Low Profile Platform
106.000	106.000	1	Round Platform w/ Handrails
106.000	106.000	6	CCI OPA-65R-LCUU-H4
106.000	106.000	3	Powerwave 7770.00
106.000	106.000	3	Ericsson RRUS-32
106.000	106.000	3	Ericsson RRUS E2 B29
106.000	106.000	3	Ericsson RRUS 12
106.000	106.000	3	Ericsson RRUS-11
106.000	106.000	3	Ericsson RRUS A2 B2
106.000	106.000	2	Raycap DC6-48-60-18-8F
106.000	106.000	12	Powerwave LGP2140X
106.000	106.000	6	Powerwave LGP21901
98.000	98.000	3	RCU
98.000	98.000	3	Kathrein 800 10504
85.500	85.500	1	Antel BCD-87010
85.500	85.500	1	Flat Side Arm

Linear Appurtenance

Elev (ft)		Description	Exposed To Wind
From	To		
0.000	85.500	7/8" Coax	No
0.000	98.000	1 5/8" Coax	Yes
0.000	98.000	3/8" Coax	Yes
0.000	106.00	0.51" Hybrid	Yes
0.000	106.00	1 5/8" Coax	Yes
0.000	106.00	1.24" (31.6mm) 4	No
0.000	116.00	1 5/8" Coax	No
0.000	116.00	7/8" Fiber	No

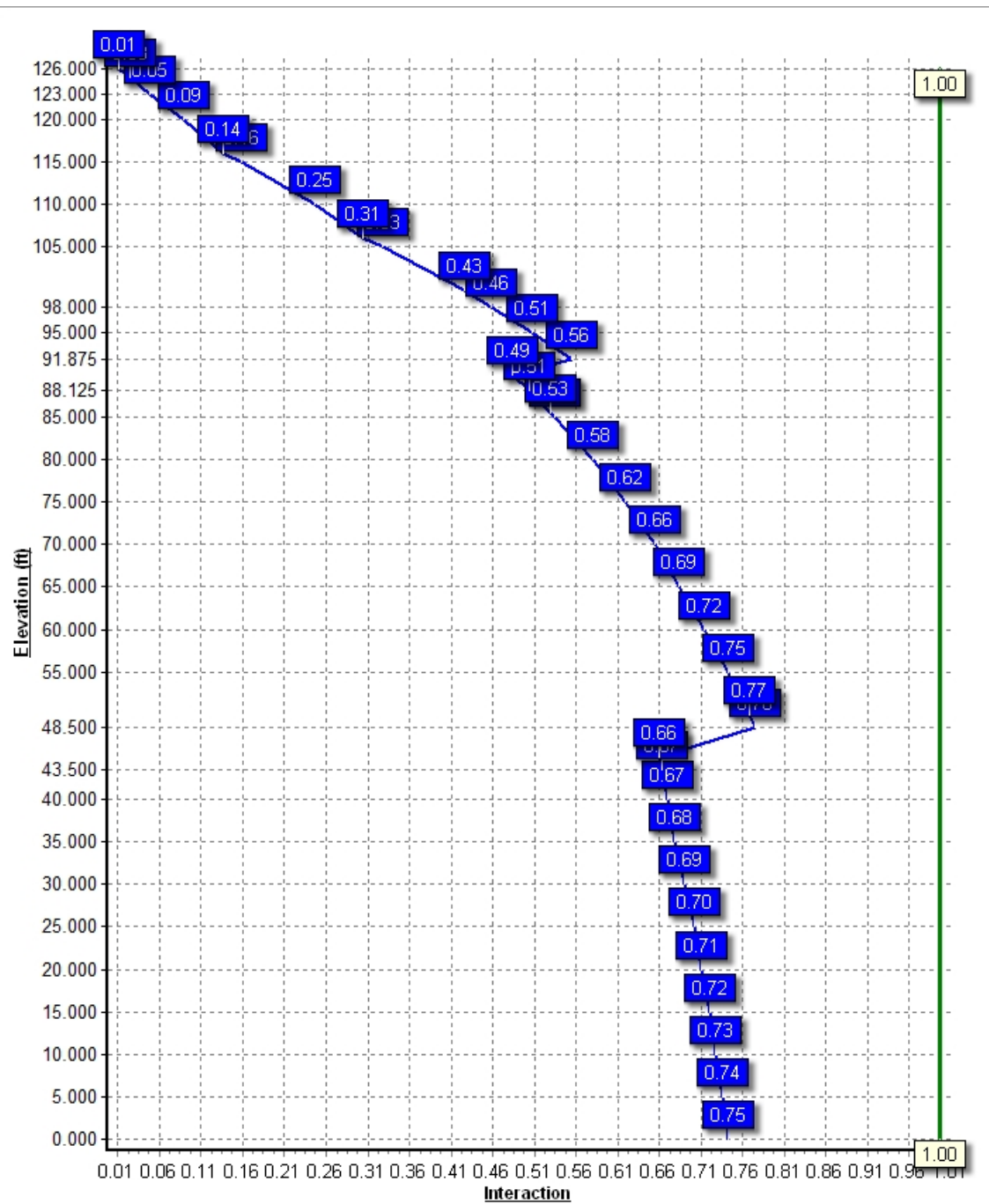


0.000	123.00	1/2" Coax	No
0.000	123.00	2" Conduit	No
0.000	123.00	5/16" Coax	No
0.000	129.00	1 1/4" Coax	No

Load Cases	
1.2D + 1.6W	110 mph with No Ice
0.9D + 1.6W	110 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 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 ELFM	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	2572.73	26.97	35.54
0.9D + 1.6W	2487.49	25.88	26.64
1.2D + 1.0Di + 1.0Wi	512.14	5.26	59.43
(1.2 + 0.2Sds) * DL + E ELFM	124.65	1.16	35.45
(1.2 + 0.2Sds) * DL + E EMAM	255.03	2.39	35.45
(0.9 - 0.2Sds) * DL + E ELFM	122.61	1.16	24.42
(0.9 - 0.2Sds) * DL + E EMAM	250.57	2.38	24.42
1.0D + 1.0W	466.26	4.82	29.67

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	123.00	17.518	1.300
1.0D + 1.0W	123.00	17.518	1.300



Site Number: 302469	Code: ANSI/TIA-222-G	©2007 - 2016 by ATC IP LLC. All rights reserved.
Site Name: Bridgeport CT 2, CT	Engineering Number: OAA663340_C3_09	7/21/2016 5:15:49 PM
Customer: T-MOBILE		

Analysis Parameters

Location:	Fairfield County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	126
Shape:	18 Sides	Base Diameter (in):	45.50
Pole Type:	Taper	Top Diameter (in):	17.00
Pole Manufacturer:	EEL	Taper (in/ft) :	0.235

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	110 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.31		
T_L (sec):	6	p :	1.3
S_s :	0.204	S_1 :	0.064
F_a :	1.600	F_v :	2.400
S_{ds} :	0.218	S_{d1} :	0.102
		C_s :	0.030
		C_s Max:	0.030
		C_s Min:	0.030

Load Cases

1.2D + 1.6W	110 mph with No Ice
0.9D + 1.6W	110 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 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: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

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Customer: T-MOBILE

Shaft Section Properties

Slip							Bottom						Top						
Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	48.500	0.3750	65		0.00	7,744	45.50	0.00	53.71	13817.4	19.98	121.33	34.097	48.50	40.14	5766.3	14.62	90.92	0.235121
2-18	48.375	0.3125	65	Slip	60.00	4,881	35.89	43.50	35.29	5646.6	18.84	114.87	24.523	91.88	24.01	1778.4	12.43	78.47	0.235121
3-18	37.875	0.2500	65	Slip	45.00	2,168	25.90	88.13	20.36	1692.8	16.86	103.62	17.000	126.00	13.29	471.1	10.58	68.00	0.235121
Shaft Weight						14,793													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
126.00	Decibel DB844H90E-XY	12	14.00	3.610	0.92	122.23	4.490	0.92	0.000	3.000
126.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,398.91	63.044	1.00	0.000	0.000
123.00	Argus LLPX310R	3	28.60	4.290	0.73	133.67	5.169	0.73	0.000	0.000
123.00	Dragonwave A-ANT-18G-2-C	1	27.10	4.690	1.00	110.86	5.940	1.00	0.000	0.000
123.00	Dragonwave A-ANT-23G-1-C	1	15.00	1.610	1.00	52.15	2.353	1.00	0.000	0.000
123.00	DragonWave Horizon	2	10.60	0.430	0.50	39.98	0.654	0.50	0.000	0.000
123.00	NextNet BTS-2500	3	35.00	1.820	0.50	90.59	2.349	0.50	0.000	0.000
123.00	Side Arms	1	560.00	8.500	1.00	1,019.33	15.472	1.00	0.000	0.000
116.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.84	306.72	13.050	0.84	0.000	0.000
116.00	Ericsson AIR-32 B2A/B66Aa	3	132.20	6.510	0.86	310.31	7.624	0.86	0.000	0.000
116.00	Ericsson KRY 112 489/1	6	15.40	0.650	0.67	39.29	0.898	0.67	0.000	0.000
116.00	Kathrein Smart Bias Tee	3	3.31	0.090	0.50	9.79	0.240	0.50	0.000	0.000
116.00	RFS APX16DWV-16DWVS-E-	3	40.70	6.590	0.66	174.68	7.680	0.66	0.000	0.000
116.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,132.47	40.442	1.00	0.000	0.000
106.00	CCI OPA-65R-LCUU-H4	6	57.00	6.080	0.78	212.40	7.087	0.78	0.000	0.000
106.00	Ericsson RRUS 12	3	50.00	3.150	0.67	117.46	4.273	0.67	0.000	0.000
106.00	Ericsson RRUS A2 B2	3	22.00	2.060	0.67	74.92	2.641	0.67	0.000	0.000
106.00	Ericsson RRUS E2 B29	3	60.00	3.150	0.67	151.39	3.837	0.67	0.000	0.000
106.00	Ericsson RRUS-11	3	51.00	2.790	0.67	137.26	3.444	0.67	0.000	0.000
106.00	Ericsson RRUS-32	3	77.00	3.310	0.67	171.08	4.550	0.67	0.000	0.000
106.00	Powerwave 7770.00	3	35.00	5.510	0.77	164.47	6.526	0.77	0.000	0.000
106.00	Powerwave LGP2140X	12	19.00	1.080	0.50	50.90	1.518	0.50	0.000	0.000
106.00	Powerwave LGP21901	6	5.50	0.230	0.50	17.42	0.419	0.50	0.000	0.000
106.00	Raycap DC6-48-60-18-8F	2	31.80	1.280	1.00	120.84	2.829	1.00	0.000	0.000
106.00	Round Platform w/ Handrails	1	2000.00	27.200	1.00	3,253.54	50.847	1.00	0.000	0.000
98.00	Kathrein 800 10504	3	17.60	3.340	0.78	94.72	4.255	0.78	0.000	0.000
98.00	RCU	3	1.00	0.160	0.50	10.44	0.350	0.50	0.000	0.000
85.50	Antel BCD-87010	1	26.50	2.900	1.00	151.96	6.534	1.00	0.000	0.000
85.50	Flat Side Arm	1	150.00	6.300	1.00	219.27	8.627	1.00	0.000	0.000
Totals		96	9040.93			20,194.86			Number of Loadings :	29

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	129.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	Sprint Nextel
0.00	123.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire Corporation
0.00	123.00	2	2" Conduit	2.38	3.65	N	0.00	N	Clearwire Corporation
0.00	123.00	6	5/16" Coax	0.31	0.05	N	0.00	N	Clearwire Corporation
0.00	116.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	116.00	1	7/8" Fiber	0.88	0.70	N	0.00	N	T-Mobile
0.00	106.00	3	0.51" Hybrid	0.51	0.14	N	0.00	Y	AT&T Mobility
0.00	106.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	AT&T Mobility

Site Number: 302469**Code: ANSI/TIA-222-G**

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Site Name: Bridgeport CT 2, CT**Engineering Number: OAA663340_C3_09****7/21/2016 5:15:50 PM****Customer: T-MOBILE**

0.00	106.00	4 1.24" (31.6mm) 4 AWG 6	1.24	1.17	N	0.00	N	AT&T Mobility
0.00	98.00	6 1 5/8" Coax	1.98	0.82	N	1.98	Y	Metro PCS
0.00	98.00	1 3/8" Coax	0.44	0.08	N	0.00	Y	Metro PCS
0.00	85.50	1 7/8" Coax	1.09	0.33	N	0.00	N	Spok Holdings, Inc.

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

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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	45.500	53.708	13,817.4	19.98	121.33	77.9	598.1	0.0	0.0
5.00		0.3750	44.324	52.309	12,765.4	19.43	118.20	78.5	567.2	0.0	901.9
10.00		0.3750	43.149	50.910	11,768.2	18.88	115.06	79.2	537.2	0.0	878.1
15.00		0.3750	41.973	49.510	10,824.3	18.33	111.93	79.8	507.9	0.0	854.3
20.00		0.3750	40.798	48.111	9,932.2	17.77	108.79	80.5	479.5	0.0	830.5
25.00		0.3750	39.622	46.712	9,090.6	17.22	105.66	81.1	451.9	0.0	806.7
30.00		0.3750	38.446	45.313	8,297.9	16.67	102.52	81.8	425.1	0.0	782.9
35.00		0.3750	37.271	43.914	7,552.7	16.11	99.39	82.4	399.1	0.0	759.0
40.00		0.3750	36.095	42.514	6,853.5	15.56	96.25	82.6	374.0	0.0	735.2
43.50	Bot - Section 2	0.3750	35.272	41.535	6,390.7	15.17	94.06	82.6	356.9	0.0	500.5
45.00		0.3750	34.920	41.115	6,198.9	15.01	93.12	82.6	349.6	0.0	390.2
48.50	Top - Section 1	0.3125	34.722	34.128	5,105.2	18.18	111.11	80.0	289.6	0.0	895.2
50.00		0.3125	34.369	33.779	4,949.8	17.98	109.98	80.3	283.7	0.0	173.3
55.00		0.3125	33.193	32.612	4,454.7	17.32	106.22	81.0	264.3	0.0	564.8
60.00		0.3125	32.018	31.446	3,993.8	16.66	102.46	81.8	245.7	0.0	544.9
65.00		0.3125	30.842	30.280	3,565.8	15.99	98.69	82.6	227.7	0.0	525.1
70.00		0.3125	29.667	29.114	3,169.5	15.33	94.93	82.6	210.4	0.0	505.3
75.00		0.3125	28.491	27.948	2,803.8	14.67	91.17	82.6	193.8	0.0	485.4
80.00		0.3125	27.315	26.782	2,467.3	14.00	87.41	82.6	177.9	0.0	465.6
85.00		0.3125	26.140	25.616	2,158.9	13.34	83.65	82.6	162.7	0.0	445.8
85.50		0.3125	26.022	25.500	2,129.5	13.27	83.27	82.6	161.2	0.0	43.5
88.13	Bot - Section 3	0.3125	25.405	24.888	1,979.8	12.92	81.30	82.6	153.5	0.0	225.0
90.00		0.3125	24.964	24.450	1,877.3	12.68	79.89	82.6	148.1	0.0	286.2
91.88	Top - Section 2	0.2500	25.023	19.657	1,524.2	16.24	100.09	82.3	120.0	0.0	281.1
95.00		0.2500	24.288	19.074	1,392.5	15.72	97.15	82.6	112.9	0.0	205.9
98.00		0.2500	23.583	18.514	1,273.5	15.22	94.33	82.6	106.4	0.0	191.9
100.00		0.2500	23.113	18.141	1,198.1	14.89	92.45	82.6	102.1	0.0	124.7
105.00		0.2500	21.937	17.208	1,022.6	14.06	87.75	82.6	91.8	0.0	300.7
106.00		0.2500	21.702	17.022	989.7	13.90	86.81	82.6	89.8	0.0	58.2
110.00		0.2500	20.762	16.275	865.1	13.23	83.05	82.6	82.1	0.0	226.6
115.00		0.2500	19.586	15.343	724.7	12.40	78.34	82.6	72.9	0.0	269.0
116.00		0.2500	19.351	15.156	698.6	12.24	77.40	82.6	71.1	0.0	51.9
120.00		0.2500	18.410	14.410	600.4	11.57	73.64	82.6	64.2	0.0	201.2
123.00		0.2500	17.705	13.850	533.1	11.08	70.82	82.6	59.3	0.0	144.2
125.00		0.2500	17.235	13.477	491.2	10.75	68.94	82.6	56.1	0.0	93.0
126.00		0.2500	17.000	13.290	471.1	10.58	68.00	82.6	54.6	0.0	45.5
											14,793.2

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:50 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W

110 mph with No Ice

25 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	Dead Load	Wind FX	Torsion MY	Moment MZ	Dead Load	Wind FX	Dead Load	Wind FX	Dead Load	Torsion MY	Moment MZ
0.00		244.2	0.0					0.0	0.0	244.2	0.0	0.0	0.0
5.00		484.3	1,082.3					0.0	307.9	484.3	1,390.1	0.0	0.0
10.00		476.1	1,053.7					0.0	307.9	476.1	1,361.5	0.0	0.0
15.00		467.9	1,025.1					0.0	307.9	467.9	1,333.0	0.0	0.0
20.00		459.7	996.6					0.0	307.9	459.7	1,304.4	0.0	0.0
25.00		451.5	968.0					0.0	307.9	451.5	1,275.8	0.0	0.0
30.00		448.6	939.4					0.0	307.9	448.6	1,247.3	0.0	0.0
35.00		454.7	910.9					0.0	307.9	454.7	1,218.7	0.0	0.0
40.00		393.1	882.3					0.0	307.9	393.1	1,190.1	0.0	0.0
43.50	Bot - Section 2	234.9	600.6					0.0	215.5	234.9	816.1	0.0	0.0
45.00		240.0	468.2					0.0	92.4	240.0	560.6	0.0	0.0
48.50	Top - Section 1	240.3	1,074.2					0.0	215.5	240.3	1,289.7	0.0	0.0
50.00		313.1	208.0					0.0	92.4	313.1	300.3	0.0	0.0
55.00		483.8	677.7					0.0	307.9	483.8	985.6	0.0	0.0
60.00		486.0	653.9					0.0	307.9	486.0	961.8	0.0	0.0
65.00		487.0	630.1					0.0	307.9	487.0	938.0	0.0	0.0
70.00		588.3	606.3					0.0	307.9	588.3	914.2	0.0	0.0
75.00		681.7	582.5					132.1	307.9	813.8	890.4	0.0	0.0
80.00		665.8	558.7					133.8	307.9	799.5	866.6	0.0	0.0
85.00		361.1	534.9					135.4	307.9	496.5	842.8	0.0	0.0
85.50	Appertunance(s)	200.8	52.2	450.3	0.0	0.0	211.8	13.6	30.8	664.7	294.8	0.0	0.0
88.13	Bot - Section 3	289.5	270.0					71.8	160.6	361.3	430.6	0.0	0.0
90.00		240.8	343.4					51.5	114.7	292.3	458.1	0.0	0.0
91.88	Top - Section 2	316.1	337.4					51.7	114.7	367.8	452.1	0.0	0.0
95.00		381.1	247.1					86.7	191.2	467.8	438.3	0.0	0.0
98.00	Appertunance(s)	263.4	230.2	327.9	0.0	0.0	67.0	83.7	183.5	675.1	480.7	0.0	0.0
100.00		273.4	149.7					0.0	110.4	273.4	260.0	0.0	0.0
105.00		233.2	360.9					0.0	275.9	233.2	636.7	0.0	0.0
106.00	Appertunance(s)	160.8	69.9	4,537.1	0.0	0.0	4,261.9	0.0	55.2	4,697.9	4,387.0	0.0	0.0
110.00		269.0	271.9					0.0	149.0	269.0	420.9	0.0	0.0
115.00		175.4	322.8					0.0	186.2	175.4	509.0	0.0	0.0
116.00	Appertunance(s)	140.0	62.3	3,781.6	0.0	0.0	2,729.9	0.0	37.2	3,921.6	2,829.4	0.0	0.0
120.00		192.1	241.5					0.0	74.8	192.1	316.2	0.0	0.0
123.00	Appertunance(s)	132.9	173.1	1,280.6	0.0	0.0	976.9	0.0	56.1	1,413.6	1,206.1	0.0	0.0
125.00		78.0	111.6					0.0	18.1	78.0	129.7	0.0	0.0
126.00	Appertunance(s)	25.7	54.7	3,963.6	0.0	4,936.0	2,601.6	0.0	9.1	3,989.3	2,665.3	0.0	0.0
Totals:										27,135.85	35,602.08	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:51 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W

110 mph with No Ice

25 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	-35.54	-26.97	0.00	-2,572.73	0.00	2,572.73	3,765.29	1,882.65	6,978.46	3,494.42	0.00	0.00	0.746
5.00	-34.03	-26.64	0.00	-2,437.87	0.00	2,437.87	3,697.80	1,848.90	6,673.37	3,341.64	0.14	-0.26	0.739
10.00	-32.55	-26.31	0.00	-2,304.66	0.00	2,304.66	3,628.68	1,814.34	6,371.97	3,190.72	0.55	-0.52	0.731
15.00	-31.10	-25.97	0.00	-2,173.13	0.00	2,173.13	3,557.92	1,778.96	6,074.51	3,041.77	1.24	-0.79	0.723
20.00	-29.68	-25.64	0.00	-2,043.26	0.00	2,043.26	3,485.52	1,742.76	5,781.22	2,894.91	2.22	-1.07	0.715
25.00	-28.28	-25.30	0.00	-1,915.07	0.00	1,915.07	3,411.48	1,705.74	5,492.34	2,750.25	3.49	-1.35	0.705
30.00	-26.92	-24.96	0.00	-1,788.57	0.00	1,788.57	3,335.81	1,667.90	5,208.12	2,607.93	5.07	-1.64	0.694
35.00	-25.59	-24.60	0.00	-1,663.78	0.00	1,663.78	3,258.50	1,629.25	4,928.79	2,468.06	6.95	-1.94	0.682
40.00	-24.30	-24.27	0.00	-1,540.78	0.00	1,540.78	3,158.60	1,579.30	4,623.93	2,315.40	9.14	-2.24	0.673
43.50	-23.43	-24.07	0.00	-1,455.83	0.00	1,455.83	3,085.84	1,542.92	4,412.25	2,209.40	10.86	-2.46	0.667
45.00	-22.82	-23.87	0.00	-1,419.72	0.00	1,419.72	3,054.65	1,527.33	4,323.05	2,164.74	11.65	-2.55	0.664
48.50	-21.48	-23.63	0.00	-1,336.18	0.00	1,336.18	2,457.75	1,228.87	3,470.74	1,737.95	13.61	-2.78	0.778
50.00	-21.10	-23.39	0.00	-1,300.74	0.00	1,300.74	2,439.67	1,219.84	3,409.59	1,707.33	14.49	-2.87	0.771
55.00	-20.00	-22.98	0.00	-1,183.82	0.00	1,183.82	2,378.35	1,189.18	3,208.11	1,606.44	17.69	-3.23	0.746
60.00	-18.92	-22.55	0.00	-1,068.94	0.00	1,068.94	2,315.40	1,157.70	3,010.48	1,507.48	21.27	-3.59	0.718
65.00	-17.88	-22.12	0.00	-956.18	0.00	956.18	2,249.69	1,124.84	2,815.52	1,409.85	25.22	-3.95	0.687
70.00	-16.88	-21.57	0.00	-845.60	0.00	845.60	2,163.06	1,081.53	2,601.80	1,302.84	29.55	-4.31	0.657
75.00	-15.92	-20.79	0.00	-737.75	0.00	737.75	2,076.43	1,038.21	2,396.52	1,200.04	34.25	-4.67	0.623
80.00	-15.01	-20.01	0.00	-633.81	0.00	633.81	1,989.80	994.90	2,199.68	1,101.47	39.32	-5.01	0.583
85.00	-14.15	-19.48	0.00	-533.77	0.00	533.77	1,903.17	951.59	2,011.27	1,007.13	44.75	-5.35	0.538
85.50	-13.89	-18.82	0.00	-524.03	0.00	524.03	1,894.51	947.25	1,992.89	997.93	45.31	-5.38	0.533
88.13	-13.45	-18.45	0.00	-474.63	0.00	474.63	1,849.03	924.51	1,897.79	950.31	48.32	-5.56	0.507
90.00	-12.98	-18.14	0.00	-440.03	0.00	440.03	1,816.54	908.27	1,831.29	917.01	50.52	-5.68	0.487
91.88	-12.52	-17.77	0.00	-406.01	0.00	406.01	1,456.00	728.00	1,478.84	740.52	52.77	-5.80	0.557
95.00	-12.07	-17.30	0.00	-350.49	0.00	350.49	1,417.09	708.55	1,396.21	699.14	56.63	-5.99	0.510
98.00	-11.62	-16.61	0.00	-298.59	0.00	298.59	1,375.51	687.75	1,315.06	658.51	60.45	-6.19	0.462
100.00	-11.33	-16.35	0.00	-265.38	0.00	265.38	1,347.79	673.89	1,262.31	632.09	63.07	-6.32	0.429
105.00	-10.68	-16.07	0.00	-183.63	0.00	183.63	1,278.48	639.24	1,135.17	568.43	69.82	-6.58	0.332
106.00	-6.85	-10.92	0.00	-167.56	0.00	167.56	1,264.62	632.31	1,110.55	556.10	71.21	-6.63	0.307
110.00	-6.43	-10.62	0.00	-123.90	0.00	123.90	1,209.18	604.59	1,014.77	508.14	76.83	-6.80	0.249
115.00	-5.93	-10.39	0.00	-70.81	0.00	70.81	1,139.88	569.94	901.12	451.23	84.02	-6.96	0.162
116.00	-3.59	-6.16	0.00	-60.42	0.00	60.42	1,126.02	563.01	879.21	440.26	85.48	-6.99	0.141
120.00	-3.29	-5.93	0.00	-35.79	0.00	35.79	1,070.57	535.29	794.22	397.70	91.36	-7.06	0.093
123.00	-2.27	-4.38	0.00	-17.99	0.00	17.99	1,028.99	514.50	733.32	367.21	95.80	-7.10	0.051
125.00	-2.15	-4.29	0.00	-9.22	0.00	9.22	1,001.27	500.64	694.07	347.55	98.77	-7.12	0.029
126.00	0.00	-3.99	0.00	-4.94	0.00	4.94	987.41	493.71	674.85	337.93	100.26	-7.12	0.015

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:52 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

110 mph with No Ice (Reduced DL)

25 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	Dead Load	Wind FX	Torsion MY	Moment MZ	Dead Load	Wind FX	Dead Load	Wind FX	Dead Load	Torsion MY	Moment MZ
0.00		223.9	0.0					0.0	0.0	223.9	0.0	0.0	0.0
5.00		441.9	811.7					0.0	230.9	441.9	1,042.6	0.0	0.0
10.00		430.2	790.3					0.0	230.9	430.2	1,021.2	0.0	0.0
15.00		418.5	768.8					0.0	230.9	418.5	999.7	0.0	0.0
20.00		406.8	747.4					0.0	230.9	406.8	978.3	0.0	0.0
25.00		395.0	726.0					0.0	230.9	395.0	956.9	0.0	0.0
30.00		387.9	704.6					0.0	230.9	387.9	935.5	0.0	0.0
35.00		388.3	683.1					0.0	230.9	388.3	914.0	0.0	0.0
40.00		332.0	661.7					0.0	230.9	332.0	892.6	0.0	0.0
43.50	Bot - Section 2	196.7	450.5					0.0	161.6	196.7	612.1	0.0	0.0
45.00		199.0	351.2					0.0	69.3	199.0	420.4	0.0	0.0
48.50	Top - Section 1	198.9	805.6					0.0	161.6	198.9	967.3	0.0	0.0
50.00		257.3	156.0					0.0	69.3	257.3	225.2	0.0	0.0
55.00		393.7	508.3					0.0	230.9	393.7	739.2	0.0	0.0
60.00		389.3	490.5					0.0	230.9	389.3	721.3	0.0	0.0
65.00		383.7	472.6					0.0	230.9	383.7	703.5	0.0	0.0
70.00		535.0	454.7					0.0	230.9	535.0	685.6	0.0	0.0
75.00		681.7	436.9					132.1	230.9	813.8	667.8	0.0	0.0
80.00		665.8	419.0					133.8	230.9	799.5	649.9	0.0	0.0
85.00		361.1	401.2					135.4	230.9	496.5	632.1	0.0	0.0
85.50	Appertunance(s)	200.8	39.1	450.3	0.0	0.0	158.8	13.6	23.1	664.7	221.1	0.0	0.0
88.13	Bot - Section 3	289.5	202.5					71.8	120.4	361.3	323.0	0.0	0.0
90.00		240.8	257.5					51.5	86.0	292.3	343.6	0.0	0.0
91.88	Top - Section 2	316.1	253.0					51.7	86.0	367.8	339.0	0.0	0.0
95.00		381.1	185.3					86.7	143.4	467.8	328.7	0.0	0.0
98.00	Appertunance(s)	250.2	172.7	327.9	0.0	0.0	50.2	83.7	137.6	661.9	360.5	0.0	0.0
100.00		225.2	112.3					0.0	82.8	225.2	195.0	0.0	0.0
105.00		190.8	270.6					0.0	206.9	190.8	477.6	0.0	0.0
106.00	Appertunance(s)	153.4	52.4	4,537.1	0.0	0.0	3,196.4	0.0	41.4	4,690.5	3,290.2	0.0	0.0
110.00		269.0	203.9					0.0	111.7	269.0	315.7	0.0	0.0
115.00		175.4	242.1					0.0	139.7	175.4	381.8	0.0	0.0
116.00	Appertunance(s)	140.0	46.7	3,781.6	0.0	0.0	2,047.4	0.0	27.9	3,921.6	2,122.1	0.0	0.0
120.00		192.1	181.1					0.0	56.1	192.1	237.2	0.0	0.0
123.00	Appertunance(s)	132.9	129.8	1,280.6	0.0	0.0	732.7	0.0	42.1	1,413.6	904.6	0.0	0.0
125.00		78.0	83.7					0.0	13.6	78.0	97.3	0.0	0.0
126.00	Appertunance(s)	25.7	41.0	3,963.6	0.0	4,936.0	1,951.2	0.0	6.8	3,989.3	1,999.0	0.0	0.0
Totals:										26,049.31	26,701.56	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:53 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

110 mph with No Ice (Reduced DL)

25 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	-26.64	-25.88	0.00	-2,487.49	0.00	2,487.49	3,765.29	1,882.65	6,978.46	3,494.42	0.00	0.00	0.719
5.00	-25.49	-25.55	0.00	-2,358.07	0.00	2,358.07	3,697.80	1,848.90	6,673.37	3,341.64	0.13	-0.25	0.713
10.00	-24.36	-25.23	0.00	-2,230.30	0.00	2,230.30	3,628.68	1,814.34	6,371.97	3,190.72	0.53	-0.51	0.706
15.00	-23.25	-24.90	0.00	-2,104.18	0.00	2,104.18	3,557.92	1,778.96	6,074.51	3,041.77	1.20	-0.77	0.698
20.00	-22.16	-24.59	0.00	-1,979.66	0.00	1,979.66	3,485.52	1,742.76	5,781.22	2,894.91	2.15	-1.04	0.690
25.00	-21.09	-24.28	0.00	-1,856.72	0.00	1,856.72	3,411.48	1,705.74	5,492.34	2,750.25	3.38	-1.31	0.681
30.00	-20.05	-23.96	0.00	-1,735.34	0.00	1,735.34	3,335.81	1,667.90	5,208.12	2,607.93	4.90	-1.59	0.672
35.00	-19.03	-23.64	0.00	-1,615.52	0.00	1,615.52	3,258.50	1,629.25	4,928.79	2,468.06	6.72	-1.88	0.661
40.00	-18.05	-23.36	0.00	-1,497.30	0.00	1,497.30	3,158.60	1,579.30	4,623.93	2,315.40	8.85	-2.17	0.653
43.50	-17.38	-23.19	0.00	-1,415.54	0.00	1,415.54	3,085.84	1,542.92	4,412.25	2,209.40	10.52	-2.38	0.647
45.00	-16.91	-23.02	0.00	-1,380.76	0.00	1,380.76	3,054.65	1,527.33	4,323.05	2,164.74	11.28	-2.48	0.644
48.50	-15.89	-22.82	0.00	-1,300.21	0.00	1,300.21	2,457.75	1,228.87	3,470.74	1,737.95	13.18	-2.69	0.755
50.00	-15.59	-22.61	0.00	-1,265.98	0.00	1,265.98	2,439.67	1,219.84	3,409.59	1,707.33	14.04	-2.79	0.748
55.00	-14.73	-22.27	0.00	-1,152.94	0.00	1,152.94	2,378.35	1,189.18	3,208.11	1,606.44	17.14	-3.13	0.724
60.00	-13.90	-21.92	0.00	-1,041.60	0.00	1,041.60	2,315.40	1,157.70	3,010.48	1,507.48	20.61	-3.48	0.697
65.00	-13.09	-21.58	0.00	-931.99	0.00	931.99	2,249.69	1,124.84	2,815.52	1,409.85	24.45	-3.84	0.667
70.00	-12.32	-21.07	0.00	-824.11	0.00	824.11	2,163.06	1,081.53	2,601.80	1,302.84	28.65	-4.19	0.639
75.00	-11.59	-20.28	0.00	-718.76	0.00	718.76	2,076.43	1,038.21	2,396.52	1,200.04	33.22	-4.53	0.605
80.00	-10.90	-19.49	0.00	-617.38	0.00	617.38	1,989.80	994.90	2,199.68	1,101.47	38.15	-4.87	0.566
85.00	-10.25	-18.97	0.00	-519.92	0.00	519.92	1,903.17	951.59	2,011.27	1,007.13	43.42	-5.20	0.522
85.50	-10.06	-18.31	0.00	-510.44	0.00	510.44	1,894.51	947.25	1,992.89	997.93	43.97	-5.23	0.517
88.13	-9.73	-17.94	0.00	-462.38	0.00	462.38	1,849.03	924.51	1,897.79	950.31	46.89	-5.40	0.492
90.00	-9.38	-17.64	0.00	-428.73	0.00	428.73	1,816.54	908.27	1,831.29	917.01	49.04	-5.52	0.473
91.88	-9.03	-17.26	0.00	-395.66	0.00	395.66	1,456.00	728.00	1,478.84	740.52	51.23	-5.64	0.541
95.00	-8.69	-16.79	0.00	-341.71	0.00	341.71	1,417.09	708.55	1,396.21	699.14	54.97	-5.83	0.495
98.00	-8.36	-16.12	0.00	-291.33	0.00	291.33	1,375.51	687.75	1,315.06	658.51	58.69	-6.02	0.449
100.00	-8.13	-15.91	0.00	-259.08	0.00	259.08	1,347.79	673.89	1,262.31	632.09	61.24	-6.14	0.416
105.00	-7.64	-15.68	0.00	-179.56	0.00	179.56	1,278.48	639.24	1,135.17	568.43	67.80	-6.40	0.322
106.00	-4.87	-10.66	0.00	-163.87	0.00	163.87	1,264.62	632.31	1,110.55	556.10	69.15	-6.45	0.299
110.00	-4.56	-10.37	0.00	-121.22	0.00	121.22	1,209.18	604.59	1,014.77	508.14	74.62	-6.61	0.243
115.00	-4.19	-10.16	0.00	-69.35	0.00	69.35	1,139.88	569.94	901.12	451.23	81.62	-6.77	0.158
116.00	-2.54	-6.02	0.00	-59.19	0.00	59.19	1,126.02	563.01	879.21	440.26	83.04	-6.80	0.137
120.00	-2.32	-5.80	0.00	-35.12	0.00	35.12	1,070.57	535.29	794.22	397.70	88.75	-6.87	0.091
123.00	-1.59	-4.29	0.00	-17.72	0.00	17.72	1,028.99	514.50	733.32	367.21	93.08	-6.91	0.050
125.00	-1.50	-4.20	0.00	-9.14	0.00	9.14	1,001.27	500.64	694.07	347.55	95.97	-6.93	0.028
126.00	0.00	-3.99	0.00	-4.94	0.00	4.94	987.41	493.71	674.85	337.93	97.41	-6.93	0.015

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:53 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

24 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			Dead Load (lb)	Linear Forces		Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		56.1	0.0					0.0	0.0	56.1	0.0	0.0	0.0
5.00		111.1	1,412.4					0.0	540.0	111.1	1,952.5	0.0	0.0
10.00		108.8	1,413.8					0.0	567.8	108.8	1,981.5	0.0	0.0
15.00		106.2	1,394.6					0.0	582.1	106.2	1,976.7	0.0	0.0
20.00		103.6	1,368.7					0.0	592.0	103.6	1,960.8	0.0	0.0
25.00		101.0	1,339.3					0.0	599.8	101.0	1,939.1	0.0	0.0
30.00		99.5	1,307.7					0.0	606.1	99.5	1,913.8	0.0	0.0
35.00		100.0	1,274.5					0.0	611.6	100.0	1,886.1	0.0	0.0
40.00		85.7	1,240.2					0.0	616.3	85.7	1,856.5	0.0	0.0
43.50	Bot - Section 2	50.9	848.4					0.0	434.0	50.9	1,282.4	0.0	0.0
45.00		51.6	575.9					0.0	186.6	51.6	762.4	0.0	0.0
48.50	Top - Section 1	51.6	1,321.2					0.0	436.7	51.6	1,757.9	0.0	0.0
50.00		66.9	313.4					0.0	187.7	66.9	501.0	0.0	0.0
55.00		102.6	1,019.8					0.0	627.9	102.6	1,647.7	0.0	0.0
60.00		101.9	987.6					0.0	631.1	101.9	1,618.7	0.0	0.0
65.00		100.9	954.9					0.0	634.0	100.9	1,589.0	0.0	0.0
70.00		99.5	921.9					0.0	636.8	99.5	1,558.7	0.0	0.0
75.00		97.9	888.5					37.5	639.4	135.4	1,527.9	0.0	0.0
80.00		96.1	854.8					38.3	641.9	134.5	1,496.7	0.0	0.0
85.00		52.3	820.9					39.1	644.2	91.4	1,465.1	0.0	0.0
85.50	Appertunance(s)	29.2	80.8	95.8	0.0	0.0	369.0	4.0	64.5	129.0	514.3	0.0	0.0
88.13	Bot - Section 3	42.1	417.0					20.9	338.2	63.0	755.2	0.0	0.0
90.00		35.1	448.9					15.1	241.9	50.1	690.8	0.0	0.0
91.88	Top - Section 2	46.2	441.4					15.2	242.2	61.4	683.6	0.0	0.0
95.00		55.9	416.1					25.5	404.3	81.4	820.4	0.0	0.0
98.00	Appertunance(s)	45.0	388.6	55.1	0.0	0.0	326.7	24.8	388.9	124.8	1,104.2	0.0	0.0
100.00		61.5	253.6					0.0	197.9	61.5	451.5	0.0	0.0
105.00		52.2	609.2					0.0	495.5	52.2	1,104.8	0.0	0.0
106.00	Appertunance(s)	42.3	119.2	855.5	0.0	0.0	8,149.7	0.0	99.2	897.8	8,368.2	0.0	0.0
110.00		74.5	461.8					0.0	149.0	74.5	610.8	0.0	0.0
115.00		48.8	548.6					0.0	186.2	48.8	734.9	0.0	0.0
116.00	Appertunance(s)	39.3	107.1	674.6	0.0	0.0	4,852.7	0.0	37.2	713.8	4,997.0	0.0	0.0
120.00		54.1	413.0					0.0	74.8	54.1	487.8	0.0	0.0
123.00	Appertunance(s)	37.7	297.7	242.0	0.0	0.0	1,967.4	0.0	56.1	279.6	2,321.1	0.0	0.0
125.00		22.2	192.8					0.0	18.1	22.2	210.9	0.0	0.0
126.00	Appertunance(s)	7.3	94.8	709.4	0.0	792.9	4,799.3	0.0	9.1	716.7	4,903.2	0.0	0.0
Totals:										5,290.25	59,433.00	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:55 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

24 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	-59.43	-5.26	0.00	-512.14	0.00	512.14	3,765.29	1,882.65	6,978.46	3,494.42	0.00	0.00	0.162
5.00	-57.47	-5.20	0.00	-485.83	0.00	485.83	3,697.80	1,848.90	6,673.37	3,341.64	0.03	-0.05	0.161
10.00	-55.49	-5.14	0.00	-459.83	0.00	459.83	3,628.68	1,814.34	6,371.97	3,190.72	0.11	-0.10	0.159
15.00	-53.51	-5.08	0.00	-434.12	0.00	434.12	3,557.92	1,778.96	6,074.51	3,041.77	0.25	-0.16	0.158
20.00	-51.54	-5.02	0.00	-408.71	0.00	408.71	3,485.52	1,742.76	5,781.22	2,894.91	0.44	-0.21	0.156
25.00	-49.60	-4.96	0.00	-383.60	0.00	383.60	3,411.48	1,705.74	5,492.34	2,750.25	0.70	-0.27	0.154
30.00	-47.68	-4.90	0.00	-358.79	0.00	358.79	3,335.81	1,667.90	5,208.12	2,607.93	1.01	-0.33	0.152
35.00	-45.79	-4.84	0.00	-334.28	0.00	334.28	3,258.50	1,629.25	4,928.79	2,468.06	1.39	-0.39	0.150
40.00	-43.93	-4.78	0.00	-310.09	0.00	310.09	3,158.60	1,579.30	4,623.93	2,315.40	1.83	-0.45	0.148
43.50	-42.64	-4.74	0.00	-293.37	0.00	293.37	3,085.84	1,542.92	4,412.25	2,209.40	2.17	-0.49	0.147
45.00	-41.88	-4.71	0.00	-286.25	0.00	286.25	3,054.65	1,527.33	4,323.05	2,164.74	2.33	-0.51	0.146
48.50	-40.12	-4.66	0.00	-269.78	0.00	269.78	2,457.75	1,228.87	3,470.74	1,737.95	2.72	-0.56	0.172
50.00	-39.62	-4.62	0.00	-262.79	0.00	262.79	2,439.67	1,219.84	3,409.59	1,707.33	2.90	-0.58	0.170
55.00	-37.96	-4.55	0.00	-239.69	0.00	239.69	2,378.35	1,189.18	3,208.11	1,606.44	3.54	-0.65	0.165
60.00	-36.34	-4.47	0.00	-216.94	0.00	216.94	2,315.40	1,157.70	3,010.48	1,507.48	4.26	-0.72	0.160
65.00	-34.75	-4.40	0.00	-194.57	0.00	194.57	2,249.69	1,124.84	2,815.52	1,409.85	5.05	-0.79	0.153
70.00	-33.18	-4.32	0.00	-172.59	0.00	172.59	2,163.06	1,081.53	2,601.80	1,302.84	5.92	-0.87	0.148
75.00	-31.65	-4.20	0.00	-151.01	0.00	151.01	2,076.43	1,038.21	2,396.52	1,200.04	6.87	-0.94	0.141
80.00	-30.15	-4.07	0.00	-130.02	0.00	130.02	1,989.80	994.90	2,199.68	1,101.47	7.90	-1.01	0.133
85.00	-28.69	-3.97	0.00	-109.65	0.00	109.65	1,903.17	951.59	2,011.27	1,007.13	8.99	-1.08	0.124
85.50	-28.18	-3.85	0.00	-107.67	0.00	107.67	1,894.51	947.25	1,992.89	997.93	9.11	-1.09	0.123
88.13	-27.42	-3.78	0.00	-97.57	0.00	97.57	1,849.03	924.51	1,897.79	950.31	9.71	-1.12	0.118
90.00	-26.73	-3.73	0.00	-90.48	0.00	90.48	1,816.54	908.27	1,831.29	917.01	10.16	-1.15	0.113
91.88	-26.04	-3.67	0.00	-83.48	0.00	83.48	1,456.00	728.00	1,478.84	740.52	10.62	-1.17	0.131
95.00	-25.22	-3.59	0.00	-72.01	0.00	72.01	1,417.09	708.55	1,396.21	699.14	11.40	-1.21	0.121
98.00	-24.12	-3.46	0.00	-61.24	0.00	61.24	1,375.51	687.75	1,315.06	658.51	12.17	-1.25	0.111
100.00	-23.67	-3.40	0.00	-54.33	0.00	54.33	1,347.79	673.89	1,262.31	632.09	12.71	-1.28	0.104
105.00	-22.56	-3.34	0.00	-37.32	0.00	37.32	1,278.48	639.24	1,135.17	568.43	14.08	-1.33	0.083
106.00	-14.22	-2.25	0.00	-33.99	0.00	33.99	1,264.62	632.31	1,110.55	556.10	14.36	-1.34	0.072
110.00	-13.61	-2.17	0.00	-25.00	0.00	25.00	1,209.18	604.59	1,014.77	508.14	15.50	-1.38	0.060
115.00	-12.87	-2.10	0.00	-14.16	0.00	14.16	1,139.88	569.94	901.12	451.23	16.96	-1.41	0.043
116.00	-7.89	-1.27	0.00	-12.06	0.00	12.06	1,126.02	563.01	879.21	440.26	17.25	-1.41	0.034
120.00	-7.41	-1.20	0.00	-6.98	0.00	6.98	1,070.57	535.29	794.22	397.70	18.45	-1.43	0.024
123.00	-5.09	-0.87	0.00	-3.37	0.00	3.37	1,028.99	514.50	733.32	367.21	19.35	-1.44	0.014
125.00	-4.88	-0.84	0.00	-1.63	0.00	1.63	1,001.27	500.64	694.07	347.55	19.95	-1.44	0.010
126.00	0.00	-0.72	0.00	-0.79	0.00	0.79	987.41	493.71	674.85	337.93	20.25	-1.44	0.002

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

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Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 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	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX	Dead Load	Wind FX	Torsion MY	Moment MZ	Dead Load	Wind FX	Dead Load	Wind FX	Dead Load	Torsion MY	Moment MZ
(ft)	Description	(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)	
0.00		41.6	0.0					0.0	0.0	41.6	0.0	0.0	0.0
5.00		82.2	901.9					0.0	256.6	82.2	1,158.4	0.0	0.0
10.00		80.0	878.1					0.0	256.6	80.0	1,134.6	0.0	0.0
15.00		77.8	854.3					0.0	256.6	77.8	1,110.8	0.0	0.0
20.00		75.6	830.5					0.0	256.6	75.6	1,087.0	0.0	0.0
25.00		73.5	806.7					0.0	256.6	73.5	1,063.2	0.0	0.0
30.00		72.1	782.9					0.0	256.6	72.1	1,039.4	0.0	0.0
35.00		72.2	759.0					0.0	256.6	72.2	1,015.6	0.0	0.0
40.00		61.7	735.2					0.0	256.6	61.7	991.8	0.0	0.0
43.50	Bot - Section 2	36.6	500.5					0.0	179.6	36.6	680.1	0.0	0.0
45.00		37.0	390.2					0.0	77.0	37.0	467.2	0.0	0.0
48.50	Top - Section 1	37.0	895.2					0.0	179.6	37.0	1,074.7	0.0	0.0
50.00		47.9	173.3					0.0	77.0	47.9	250.3	0.0	0.0
55.00		73.2	564.8					0.0	256.6	73.2	821.3	0.0	0.0
60.00		72.4	544.9					0.0	256.6	72.4	801.5	0.0	0.0
65.00		71.4	525.1					0.0	256.6	71.4	781.7	0.0	0.0
70.00		99.5	505.3					0.0	256.6	99.5	761.8	0.0	0.0
75.00		126.8	485.4					25.8	256.6	152.6	742.0	0.0	0.0
80.00		123.8	465.6					26.3	256.6	150.1	722.1	0.0	0.0
85.00		67.1	445.8					26.8	256.6	93.9	702.3	0.0	0.0
85.50	Appertunance(s)	37.3	43.5	83.7	0.0	0.0	176.5	2.7	25.7	123.8	245.6	0.0	0.0
88.13	Bot - Section 3	53.8	225.0					14.3	133.8	68.1	358.9	0.0	0.0
90.00		44.8	286.2					10.3	95.6	55.0	381.7	0.0	0.0
91.88	Top - Section 2	58.8	281.1					10.3	95.6	69.1	376.7	0.0	0.0
95.00		70.9	205.9					17.3	159.3	88.2	365.2	0.0	0.0
98.00	Appertunance(s)	46.5	191.9	61.0	0.0	0.0	55.8	16.8	152.9	124.3	400.6	0.0	0.0
100.00		41.9	124.7					0.0	92.0	41.9	216.7	0.0	0.0
105.00		35.5	300.7					0.0	229.9	35.5	530.6	0.0	0.0
106.00	Appertunance(s)	28.5	58.2	843.7	0.0	0.0	3,551.6	0.0	46.0	872.2	3,655.8	0.0	0.0
110.00		50.0	226.6					0.0	124.2	50.0	350.8	0.0	0.0
115.00		32.6	269.0					0.0	155.2	32.6	424.2	0.0	0.0
116.00	Appertunance(s)	26.0	51.9	703.2	0.0	0.0	2,274.9	0.0	31.0	729.2	2,357.9	0.0	0.0
120.00		35.7	201.2					0.0	62.3	35.7	263.5	0.0	0.0
123.00	Appertunance(s)	24.7	144.2	238.1	0.0	0.0	814.1	0.0	46.7	262.9	1,005.1	0.0	0.0
125.00		14.5	93.0					0.0	15.1	14.5	108.1	0.0	0.0
126.00	Appertunance(s)	4.8	45.5	737.0	0.0	917.9	2,168.0	0.0	7.6	741.8	2,221.1	0.0	0.0
Totals:										4,852.96	29,668.40	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:57 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 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	-29.67	-4.82	0.00	-466.26	0.00	466.26	3,765.29	1,882.65	6,978.46	3,494.42	0.00	0.00	0.141
5.00	-28.50	-4.76	0.00	-442.15	0.00	442.15	3,697.80	1,848.90	6,673.37	3,341.64	0.03	-0.05	0.140
10.00	-27.37	-4.71	0.00	-418.33	0.00	418.33	3,628.68	1,814.34	6,371.97	3,190.72	0.10	-0.09	0.139
15.00	-26.25	-4.65	0.00	-394.80	0.00	394.80	3,557.92	1,778.96	6,074.51	3,041.77	0.23	-0.14	0.137
20.00	-25.16	-4.59	0.00	-371.56	0.00	371.56	3,485.52	1,742.76	5,781.22	2,894.91	0.40	-0.19	0.136
25.00	-24.09	-4.54	0.00	-348.61	0.00	348.61	3,411.48	1,705.74	5,492.34	2,750.25	0.63	-0.25	0.134
30.00	-23.05	-4.48	0.00	-325.93	0.00	325.93	3,335.81	1,667.90	5,208.12	2,607.93	0.92	-0.30	0.132
35.00	-22.03	-4.42	0.00	-303.52	0.00	303.52	3,258.50	1,629.25	4,928.79	2,468.06	1.26	-0.35	0.130
40.00	-21.04	-4.37	0.00	-281.41	0.00	281.41	3,158.60	1,579.30	4,623.93	2,315.40	1.66	-0.41	0.128
43.50	-20.35	-4.34	0.00	-266.10	0.00	266.10	3,085.84	1,542.92	4,412.25	2,209.40	1.97	-0.45	0.127
45.00	-19.88	-4.31	0.00	-259.59	0.00	259.59	3,054.65	1,527.33	4,323.05	2,164.74	2.12	-0.46	0.126
48.50	-18.81	-4.27	0.00	-244.50	0.00	244.50	2,457.75	1,228.87	3,470.74	1,737.95	2.47	-0.51	0.148
50.00	-18.55	-4.24	0.00	-238.09	0.00	238.09	2,439.67	1,219.84	3,409.59	1,707.33	2.64	-0.52	0.147
55.00	-17.73	-4.18	0.00	-216.91	0.00	216.91	2,378.35	1,189.18	3,208.11	1,606.44	3.22	-0.59	0.142
60.00	-16.92	-4.12	0.00	-196.02	0.00	196.02	2,315.40	1,157.70	3,010.48	1,507.48	3.87	-0.65	0.137
65.00	-16.14	-4.05	0.00	-175.45	0.00	175.45	2,249.69	1,124.84	2,815.52	1,409.85	4.59	-0.72	0.132
70.00	-15.37	-3.96	0.00	-155.18	0.00	155.18	2,163.06	1,081.53	2,601.80	1,302.84	5.38	-0.79	0.126
75.00	-14.63	-3.81	0.00	-135.38	0.00	135.38	2,076.43	1,038.21	2,396.52	1,200.04	6.24	-0.85	0.120
80.00	-13.91	-3.67	0.00	-116.31	0.00	116.31	1,989.80	994.90	2,199.68	1,101.47	7.17	-0.92	0.113
85.00	-13.20	-3.57	0.00	-97.97	0.00	97.97	1,903.17	951.59	2,011.27	1,007.13	8.16	-0.98	0.104
85.50	-12.96	-3.45	0.00	-96.18	0.00	96.18	1,894.51	947.25	1,992.89	997.93	8.26	-0.98	0.103
88.13	-12.60	-3.38	0.00	-87.13	0.00	87.13	1,849.03	924.51	1,897.79	950.31	8.81	-1.02	0.099
90.00	-12.22	-3.32	0.00	-80.80	0.00	80.80	1,816.54	908.27	1,831.29	917.01	9.22	-1.04	0.095
91.88	-11.84	-3.25	0.00	-74.57	0.00	74.57	1,456.00	728.00	1,478.84	740.52	9.63	-1.06	0.109
95.00	-11.47	-3.16	0.00	-64.41	0.00	64.41	1,417.09	708.55	1,396.21	699.14	10.34	-1.10	0.100
98.00	-11.08	-3.04	0.00	-54.91	0.00	54.91	1,375.51	687.75	1,315.06	658.51	11.04	-1.13	0.091
100.00	-10.86	-3.00	0.00	-48.84	0.00	48.84	1,347.79	673.89	1,262.31	632.09	11.52	-1.16	0.085
105.00	-10.33	-2.96	0.00	-33.85	0.00	33.85	1,278.48	639.24	1,135.17	568.43	12.75	-1.20	0.068
106.00	-6.69	-2.01	0.00	-30.89	0.00	30.89	1,264.62	632.31	1,110.55	556.10	13.01	-1.21	0.061
110.00	-6.34	-1.96	0.00	-22.85	0.00	22.85	1,209.18	604.59	1,014.77	508.14	14.04	-1.24	0.050
115.00	-5.91	-1.92	0.00	-13.07	0.00	13.07	1,139.88	569.94	901.12	451.23	15.36	-1.27	0.034
116.00	-3.57	-1.14	0.00	-11.15	0.00	11.15	1,126.02	563.01	879.21	440.26	15.62	-1.28	0.029
120.00	-3.31	-1.09	0.00	-6.61	0.00	6.61	1,070.57	535.29	794.22	397.70	16.70	-1.29	0.020
123.00	-2.31	-0.81	0.00	-3.33	0.00	3.33	1,028.99	514.50	733.32	367.21	17.52	-1.30	0.011
125.00	-2.20	-0.79	0.00	-1.71	0.00	1.71	1,001.27	500.64	694.07	347.55	18.06	-1.30	0.007
126.00	0.00	-0.74	0.00	-0.92	0.00	0.92	987.41	493.71	674.85	337.93	18.34	-1.30	0.003

Site Number: 302469**Code: ANSI/TIA-222-G**

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Site Name: Bridgeport CT 2, CT**Engineering Number: OAA663340_C3_09****7/21/2016 5:15:57 PM****Customer: T-MOBILE**

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22
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):	2.31
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.90
Total Unfactored Dead Load:	29.67 k
Seismic Base Shear (E):	1.16 k

Site Number: 302469

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

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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):	0.20
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}):	0.22
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.31
Redundancy Factor (ρ):	1.30

Load Case (1.2 + 0.2S_{ds}) * DL + E ELFM**Seismic Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	S _{az}	Horizontal Force (lb)	Vertical Force (lb)
35	125.50	53	1.875	1.902	1.112	0.401	18	45
34	124.00	108	1.830	1.681	1.031	0.369	35	93
33	121.50	191	1.757	1.352	0.906	0.319	53	164
32	118.00	264	1.658	0.968	0.751	0.253	58	226
31	115.50	83	1.588	0.742	0.654	0.211	15	71
30	112.50	424	1.507	0.518	0.551	0.164	60	363
29	108.00	351	1.389	0.263	0.420	0.103	31	300
28	105.50	104	1.325	0.157	0.359	0.073	7	89
27	102.50	531	1.251	0.058	0.294	0.041	19	454
26	99.00	217	1.167	-0.024	0.231	0.010	2	186
25	96.50	345	1.109	-0.065	0.192	-0.009	-3	295
24	93.44	365	1.039	-0.098	0.152	-0.027	-9	313
23	90.94	377	0.984	-0.113	0.124	-0.039	-13	323
22	89.06	382	0.944	-0.120	0.105	-0.046	-15	327
21	86.81	359	0.897	-0.122	0.086	-0.051	-16	307
20	85.25	69	0.865	-0.120	0.075	-0.054	-3	59
19	82.50	702	0.810	-0.114	0.057	-0.056	-34	602
18	77.50	722	0.715	-0.091	0.033	-0.049	-31	619
17	72.50	742	0.626	-0.062	0.018	-0.032	-21	635
16	67.50	762	0.542	-0.032	0.009	-0.009	-6	652
15	62.50	782	0.465	-0.004	0.006	0.016	11	669
14	57.50	801	0.394	0.020	0.007	0.036	25	686
13	52.50	821	0.328	0.039	0.010	0.050	36	703
12	49.25	250	0.289	0.048	0.013	0.056	12	214
11	46.75	1,075	0.260	0.053	0.016	0.058	54	920
10	44.25	467	0.233	0.058	0.019	0.060	24	400
9	41.75	680	0.208	0.062	0.022	0.061	36	582
8	37.50	992	0.167	0.066	0.028	0.061	52	849
7	32.50	1,016	0.126	0.070	0.034	0.059	52	870
6	27.50	1,039	0.090	0.071	0.038	0.058	52	890
5	22.50	1,063	0.060	0.072	0.041	0.056	52	911
4	17.50	1,087	0.036	0.070	0.041	0.054	51	931
3	12.50	1,111	0.019	0.063	0.037	0.050	48	951
2	7.50	1,135	0.007	0.049	0.028	0.041	40	972

Site Number: 302469

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Site Name: Bridgeport CT 2, CT

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Customer: T-MOBILE

1	2.50	1,158	0.001	0.021	0.011	0.020	20	992
Decibel DB844H90E-XY	126.00	168	1.890	1.980	1.140	0.412	60	144
Flat Platform w/ Han	126.00	2,000	1.890	1.980	1.140	0.412	714	1,713
DragonWave Horizon C	123.00	21	1.801	1.543	0.979	0.349	6	18
Dragonwave A-ANT-23G	123.00	15	1.801	1.543	0.979	0.349	5	13
NextNet BTS-2500	123.00	105	1.801	1.543	0.979	0.349	32	90
Argus LLPX310R	123.00	86	1.801	1.543	0.979	0.349	26	73
Dragonwave A-ANT-18G	123.00	27	1.801	1.543	0.979	0.349	8	23
Side Arms	123.00	560	1.801	1.543	0.979	0.349	169	480
Kathrein Smart Bias	116.00	10	1.602	0.784	0.673	0.219	2	9
Ericsson KRY 112 489	116.00	92	1.602	0.784	0.673	0.219	18	79
Ericsson AIR-32 B2A/	116.00	397	1.602	0.784	0.673	0.219	75	340
RFS APX16DWV-	116.00	122	1.602	0.784	0.673	0.219	23	105
Andrew LNX-6515DS-VT	116.00	154	1.602	0.784	0.673	0.219	29	132
Round Low Profile PI	116.00	1,500	1.602	0.784	0.673	0.219	285	1,285
Powerwave LGP21901	106.00	33	1.338	0.176	0.370	0.079	2	28
Powerwave LGP2140X	106.00	228	1.338	0.176	0.370	0.079	16	195
Raycap DC6-48-60-18-	106.00	64	1.338	0.176	0.370	0.079	4	54
Ericsson RRUS A2 B2	106.00	66	1.338	0.176	0.370	0.079	4	57
Ericsson RRUS-11	106.00	153	1.338	0.176	0.370	0.079	10	131
Ericsson RRUS 12	106.00	150	1.338	0.176	0.370	0.079	10	128
Ericsson RRUS E2 B29	106.00	180	1.338	0.176	0.370	0.079	12	154
Ericsson RRUS-32	106.00	231	1.338	0.176	0.370	0.079	16	198
Powerwave 7770.00	106.00	105	1.338	0.176	0.370	0.079	7	90
CCI OPA-65R-LCUU-H4	106.00	342	1.338	0.176	0.370	0.079	23	293
Round Platform w/ Ha	106.00	2,000	1.338	0.176	0.370	0.079	136	1,713
RCU	98.00	3	1.143	-0.042	0.215	0.002	0	3
Kathrein 800 10504	98.00	53	1.143	-0.042	0.215	0.002	0	45
Antel BCD-87010	85.50	26	0.870	-0.121	0.076	-0.054	-1	23
Flat Side Arm	85.50	150	0.870	-0.121	0.076	-0.054	-7	128
		29,668	69.500	26.973	24.357	7.298	2,398	25,410

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)
35	125.50	53	1.875	1.902	1.112	0.401	18	45
34	124.00	108	1.830	1.681	1.031	0.369	35	93
33	121.50	191	1.757	1.352	0.906	0.319	53	164
32	118.00	264	1.658	0.968	0.751	0.253	58	226
31	115.50	83	1.588	0.742	0.654	0.211	15	71
30	112.50	424	1.507	0.518	0.551	0.164	60	363
29	108.00	351	1.389	0.263	0.420	0.103	31	300
28	105.50	104	1.325	0.157	0.359	0.073	7	89
27	102.50	531	1.251	0.058	0.294	0.041	19	454
26	99.00	217	1.167	-0.024	0.231	0.010	2	186
25	96.50	345	1.109	-0.065	0.192	-0.009	-3	295
24	93.44	365	1.039	-0.098	0.152	-0.027	-9	313
23	90.94	377	0.984	-0.113	0.124	-0.039	-13	323
22	89.06	382	0.944	-0.120	0.105	-0.046	-15	327
21	86.81	359	0.897	-0.122	0.086	-0.051	-16	307
20	85.25	69	0.865	-0.120	0.075	-0.054	-3	59
19	82.50	702	0.810	-0.114	0.057	-0.056	-34	602
18	77.50	722	0.715	-0.091	0.033	-0.049	-31	619
17	72.50	742	0.626	-0.062	0.018	-0.032	-21	635
16	67.50	762	0.542	-0.032	0.009	-0.009	-6	652
15	62.50	782	0.465	-0.004	0.006	0.016	11	669
14	57.50	801	0.394	0.020	0.007	0.036	25	686
13	52.50	821	0.328	0.039	0.010	0.050	36	703

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12	49.25	250	0.289	0.048	0.013	0.056	12	214
11	46.75	1,075	0.260	0.053	0.016	0.058	54	920
10	44.25	467	0.233	0.058	0.019	0.060	24	400
9	41.75	680	0.208	0.062	0.022	0.061	36	582
8	37.50	992	0.167	0.066	0.028	0.061	52	849
7	32.50	1,016	0.126	0.070	0.034	0.059	52	870
6	27.50	1,039	0.090	0.071	0.038	0.058	52	890
5	22.50	1,063	0.060	0.072	0.041	0.056	52	911
4	17.50	1,087	0.036	0.070	0.041	0.054	51	931
3	12.50	1,111	0.019	0.063	0.037	0.050	48	951
2	7.50	1,135	0.007	0.049	0.028	0.041	40	972
1	2.50	1,158	0.001	0.021	0.011	0.020	20	992
Decibel DB844H90E-XY	126.00	168	1.890	1.980	1.140	0.412	60	144
Flat Platform w/ Han	126.00	2,000	1.890	1.980	1.140	0.412	714	1,713
DragonWave Horizon C	123.00	21	1.801	1.543	0.979	0.349	6	18
Dragonwave A-ANT-23G	123.00	15	1.801	1.543	0.979	0.349	5	13
NextNet BTS-2500	123.00	105	1.801	1.543	0.979	0.349	32	90
Argus LLPX310R	123.00	86	1.801	1.543	0.979	0.349	26	73
Dragonwave A-ANT-18G	123.00	27	1.801	1.543	0.979	0.349	8	23
Side Arms	123.00	560	1.801	1.543	0.979	0.349	169	480
Kathrein Smart Bias	116.00	10	1.602	0.784	0.673	0.219	2	9
Ericsson KRY 112 489	116.00	92	1.602	0.784	0.673	0.219	18	79
Ericsson AIR-32 B2A/	116.00	397	1.602	0.784	0.673	0.219	75	340
RFS APX16DWV-	116.00	122	1.602	0.784	0.673	0.219	23	105
Andrew LNX-6515DS-VT	116.00	154	1.602	0.784	0.673	0.219	29	132
Round Low Profile PI	116.00	1,500	1.602	0.784	0.673	0.219	285	1,285
Powerwave LGP21901	106.00	33	1.338	0.176	0.370	0.079	2	28
Powerwave LGP2140X	106.00	228	1.338	0.176	0.370	0.079	16	195
Raycap DC6-48-60-18-	106.00	64	1.338	0.176	0.370	0.079	4	54
Ericsson RRUS A2 B2	106.00	66	1.338	0.176	0.370	0.079	4	57
Ericsson RRUS-11	106.00	153	1.338	0.176	0.370	0.079	10	131
Ericsson RRUS 12	106.00	150	1.338	0.176	0.370	0.079	10	128
Ericsson RRUS E2 B29	106.00	180	1.338	0.176	0.370	0.079	12	154
Ericsson RRUS-32	106.00	231	1.338	0.176	0.370	0.079	16	198
Powerwave 7770.00	106.00	105	1.338	0.176	0.370	0.079	7	90
CCI OPA-65R-LCUU-H4	106.00	342	1.338	0.176	0.370	0.079	23	293
Round Platform w/ Ha	106.00	2,000	1.338	0.176	0.370	0.079	136	1,713
RCU	98.00	3	1.143	-0.042	0.215	0.002	0	3
Kathrein 800 10504	98.00	53	1.143	-0.042	0.215	0.002	0	45
Antel BCD-87010 ____	85.50	26	0.870	-0.121	0.076	-0.054	-1	23
Flat Side Arm	85.50	150	0.870	-0.121	0.076	-0.054	-7	128
		29,668	69.500	26.973	24.357	7.298	2,398	25,410

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
35	125.50	53	1.875	1.902	1.112	0.401	18	45
34	124.00	108	1.830	1.681	1.031	0.369	35	93
33	121.50	191	1.757	1.352	0.906	0.319	53	164
32	118.00	264	1.658	0.968	0.751	0.253	58	226
31	115.50	83	1.588	0.742	0.654	0.211	15	71
30	112.50	424	1.507	0.518	0.551	0.164	60	363
29	108.00	351	1.389	0.263	0.420	0.103	31	300
28	105.50	104	1.325	0.157	0.359	0.073	7	89
27	102.50	531	1.251	0.058	0.294	0.041	19	454
26	99.00	217	1.167	-0.024	0.231	0.010	2	186
25	96.50	345	1.109	-0.065	0.192	-0.009	-3	295
24	93.44	365	1.039	-0.098	0.152	-0.027	-9	313

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

7/21/2016 5:15:57 PM

Customer: T-MOBILE

23	90.94	377	0.984	-0.113	0.124	-0.039	-13	323
22	89.06	382	0.944	-0.120	0.105	-0.046	-15	327
21	86.81	359	0.897	-0.122	0.086	-0.051	-16	307
20	85.25	69	0.865	-0.120	0.075	-0.054	-3	59
19	82.50	702	0.810	-0.114	0.057	-0.056	-34	602
18	77.50	722	0.715	-0.091	0.033	-0.049	-31	619
17	72.50	742	0.626	-0.062	0.018	-0.032	-21	635
16	67.50	762	0.542	-0.032	0.009	-0.009	-6	652
15	62.50	782	0.465	-0.004	0.006	0.016	11	669
14	57.50	801	0.394	0.020	0.007	0.036	25	686
13	52.50	821	0.328	0.039	0.010	0.050	36	703
12	49.25	250	0.289	0.048	0.013	0.056	12	214
11	46.75	1,075	0.260	0.053	0.016	0.058	54	920
10	44.25	467	0.233	0.058	0.019	0.060	24	400
9	41.75	680	0.208	0.062	0.022	0.061	36	582
8	37.50	992	0.167	0.066	0.028	0.061	52	849
7	32.50	1,016	0.126	0.070	0.034	0.059	52	870
6	27.50	1,039	0.090	0.071	0.038	0.058	52	890
5	22.50	1,063	0.060	0.072	0.041	0.056	52	911
4	17.50	1,087	0.036	0.070	0.041	0.054	51	931
3	12.50	1,111	0.019	0.063	0.037	0.050	48	951
2	7.50	1,135	0.007	0.049	0.028	0.041	40	972
1	2.50	1,158	0.001	0.021	0.011	0.020	20	992
Decibel DB844H90E-XY	126.00	168	1.890	1.980	1.140	0.412	60	144
Flat Platform w/ Han	126.00	2,000	1.890	1.980	1.140	0.412	714	1,713
DragonWave Horizon C	123.00	21	1.801	1.543	0.979	0.349	6	18
Dragonwave A-ANT-23G	123.00	15	1.801	1.543	0.979	0.349	5	13
NextNet BTS-2500	123.00	105	1.801	1.543	0.979	0.349	32	90
Argus LLPX310R	123.00	86	1.801	1.543	0.979	0.349	26	73
Dragonwave A-ANT-18G	123.00	27	1.801	1.543	0.979	0.349	8	23
Side Arms	123.00	560	1.801	1.543	0.979	0.349	169	480
Kathrein Smart Bias	116.00	10	1.602	0.784	0.673	0.219	2	9
Ericsson KRY 112 489	116.00	92	1.602	0.784	0.673	0.219	18	79
Ericsson AIR-32 B2A/	116.00	397	1.602	0.784	0.673	0.219	75	340
RFS APX16DWV-	116.00	122	1.602	0.784	0.673	0.219	23	105
Andrew LNX-6515DS-VT	116.00	154	1.602	0.784	0.673	0.219	29	132
Round Low Profile PI	116.00	1,500	1.602	0.784	0.673	0.219	285	1,285
Powerwave LGP21901	106.00	33	1.338	0.176	0.370	0.079	2	28
Powerwave LGP2140X	106.00	228	1.338	0.176	0.370	0.079	16	195
Raycap DC6-48-60-18-	106.00	64	1.338	0.176	0.370	0.079	4	54
Ericsson RRUS A2 B2	106.00	66	1.338	0.176	0.370	0.079	4	57
Ericsson RRUS-11	106.00	153	1.338	0.176	0.370	0.079	10	131
Ericsson RRUS 12	106.00	150	1.338	0.176	0.370	0.079	10	128
Ericsson RRUS E2 B29	106.00	180	1.338	0.176	0.370	0.079	12	154
Ericsson RRUS-32	106.00	231	1.338	0.176	0.370	0.079	16	198
Powerwave 7770.00	106.00	105	1.338	0.176	0.370	0.079	7	90
CCI OPA-65R-LCUU-H4	106.00	342	1.338	0.176	0.370	0.079	23	293
Round Platform w/ Ha	106.00	2,000	1.338	0.176	0.370	0.079	136	1,713
RCU	98.00	3	1.143	-0.042	0.215	0.002	0	3
Kathrein 800 10504	98.00	53	1.143	-0.042	0.215	0.002	0	45
Antel BCD-87010 ____	85.50	26	0.870	-0.121	0.076	-0.054	-1	23
Flat Side Arm	85.50	150	0.870	-0.121	0.076	-0.054	-7	128
		29,668	69.500	26.973	24.357	7.298	2,398	25,410

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)
35	125.50	53	1.875	1.902	1.112	0.401	18	45

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

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Customer: T-MOBILE

34	124.00	108	1.830	1.681	1.031	0.369	35	93
33	121.50	191	1.757	1.352	0.906	0.319	53	164
32	118.00	264	1.658	0.968	0.751	0.253	58	226
31	115.50	83	1.588	0.742	0.654	0.211	15	71
30	112.50	424	1.507	0.518	0.551	0.164	60	363
29	108.00	351	1.389	0.263	0.420	0.103	31	300
28	105.50	104	1.325	0.157	0.359	0.073	7	89
27	102.50	531	1.251	0.058	0.294	0.041	19	454
26	99.00	217	1.167	-0.024	0.231	0.010	2	186
25	96.50	345	1.109	-0.065	0.192	-0.009	-3	295
24	93.44	365	1.039	-0.098	0.152	-0.027	-9	313
23	90.94	377	0.984	-0.113	0.124	-0.039	-13	323
22	89.06	382	0.944	-0.120	0.105	-0.046	-15	327
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11	46.75	1,075	0.260	0.053	0.016	0.058	54	920
10	44.25	467	0.233	0.058	0.019	0.060	24	400
9	41.75	680	0.208	0.062	0.022	0.061	36	582
8	37.50	992	0.167	0.066	0.028	0.061	52	849
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Kathrein 800 10504	98.00	53	1.143	-0.042	0.215	0.002	0	45
Antel BCD-87010	85.50	26	0.870	-0.121	0.076	-0.054	-1	23
Flat Side Arm	85.50	150	0.870	-0.121	0.076	-0.054	-7	128

Site Number: 302469

Code: ANSI/TIA-222-G

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Site Name: Bridgeport CT 2, CT

Engineering Number: OAA663340_C3_09

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Customer: T-MOBILE

29,668

69.500

26.973

24.357

7.298

2,398

25,410

Site Number: 302469**Code: ANSI/TIA-222-G**

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Site Name: Bridgeport CT 2, CT**Engineering Number: OAA663340_C3_09****7/21/2016 5:15:57 PM****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	26.97	0.00	35.54	0.00	0.00	2572.73	48.50	0.78
0.9D + 1.6W	25.88	0.00	26.64	0.00	0.00	2487.49	48.50	0.75
1.2D + 1.0Di + 1.0Wi	5.26	0.00	59.43	0.00	0.00	512.14	48.50	0.17
(1.2 + 0.2Sds) * DL + E ELFM	1.16	0.00	35.45	0.00	0.00	124.65	48.50	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.39	0.00	35.45	0.00	0.00	255.03	48.50	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.16	0.00	24.42	0.00	0.00	122.61	48.50	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.38	0.00	24.42	0.00	0.00	250.57	48.50	0.09
1.0D + 1.0W	4.82	0.00	29.67	0.00	0.00	466.26	48.50	0.15

Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	45.5 in
	Pole Thickness	0.375 in
	Plate Diameter	60 in
	Plate Thickness	1.75 in
	Plate Fy	60 ksi
	Weld Length	0.3125 in
	ϕ_s Resistance	1212.48 k-in
	Applied	495.59 k-in
Stiffeners	#	12 Show
	Thickness	0.5 in
	Length	6 in
	Height	12 in
	Chamfer	2 in
	Offset Angle	0°
	Fy	50 ksi
Bolts	#	12
	Bolt Circle (R)adial / (S)quare	54 in R
	Diameter	2.25 in
	Hole Diameter	2.75 in
	Type	A615-75
	Fy	75 ksi
	Fu	100 ksi
	ϕ_s Resistance	259.82 k
	Applied	193.40 k
Reinforcement	#	0
Extra Bolts	#	0

Code Rev.

G

Date

7/21/2016

Engineer

CMM

Site #

302469

Carrier

T-Mobile

Moment

2572.7 k-ft

Axial

35.5 k

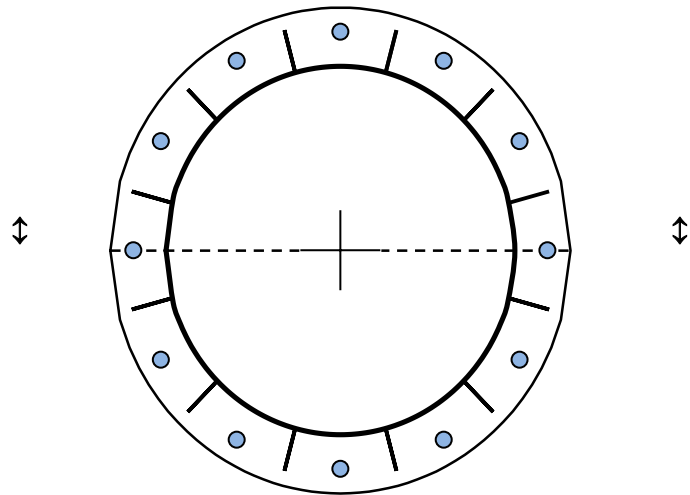


Plate Stress Ratio:

0.41 (Pass)

Bolt Stress Ratio:

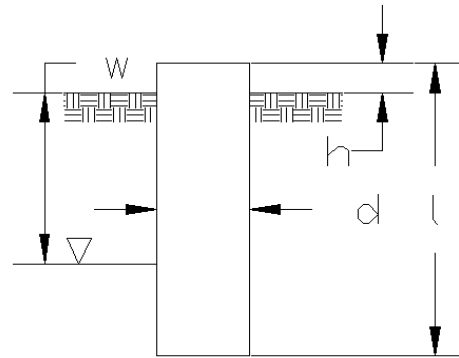
0.74 (Pass)

Site Name: Bridgeport CT 2
 Site Number: 302469
 Engineer: CMM
 Engineering Number: OAA663340_C3_09
 Date: 07/21/16

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): 2572.7 k-ft
 Shear/Leg (V): 27.0 k
 Axial Load (P): 35.5 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP
 Diameter of Caisson (d): 6.0 ft
 Caisson Embedment (L-h): 18.0 ft
 Caisson Height Above Ground (h): 1.0 ft
 Depth Below Ground Surface to Water Table (w): 99.0 ft
 Unit Weight of Concrete: 150.0 pcf
 Unit Weight of Water: 62.4 pcf
 Tension Skin Friction/Compression Skin Friction: 1.00
 Pullout Angle: 30.0 degrees



Engineer Notes

Soil Mechanical Properties

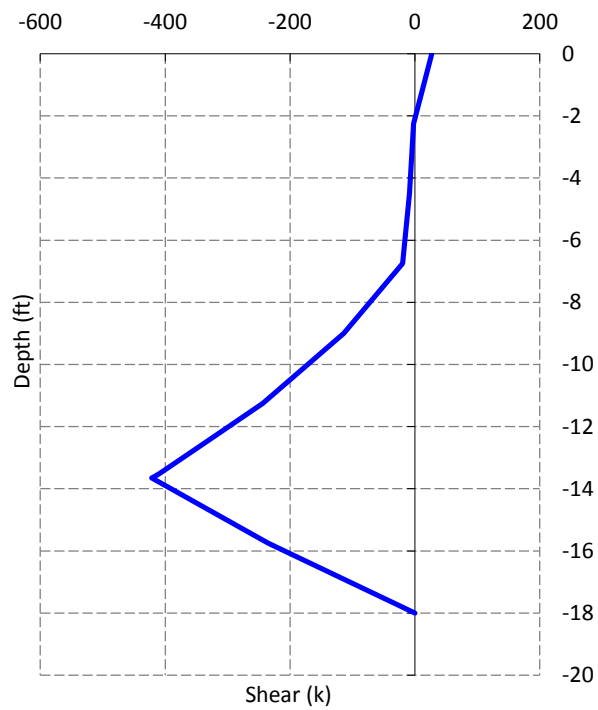
Depth (ft)		γ_{Soil}	Cohesion	ϕ	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	5.0	120	0	0	0	0
5.0	19.0	165	0	45	942	22000

Required Embedment: 17.2 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 537.2 ft³ = 19.9 yd³
 Weight of Concrete (Buoyancy Effect Considered): 80.6 k
 Average Soil Unit Weight: 152.5 pcf
 Skin Friction Resistance: 230.8 k
 Compressive Bearing Resistance: 622.0 k
 Pullout Weight (Minus Concrete Weight): 579.3 k
 Nominal Uplift Capacity per Leg ($\phi_s T_n$): 233.6 k
 Nominal Compressive Capacity per Leg ($\phi_s P_n$): 639.7 k
 P_u : 34.0 k
 $T_u / \phi_s T_n$: 0.00 Result: OK
 $P_u / \phi_s P_n$: 0.05 Result: OK
 Total Lateral Resistance: 1792.5 k
 Inflection Point (Below Ground Surface): 13.6 ft
 Design Overturning Moment At Inflection Point (M_D): 2967.8 k-ft
 Nominal Moment Capacity ($\phi_s M_n$): 3745.9 k-ft
 $M_D / \phi_s M_n$: 0.79 Result: OK
 ϕ_s : 0.75

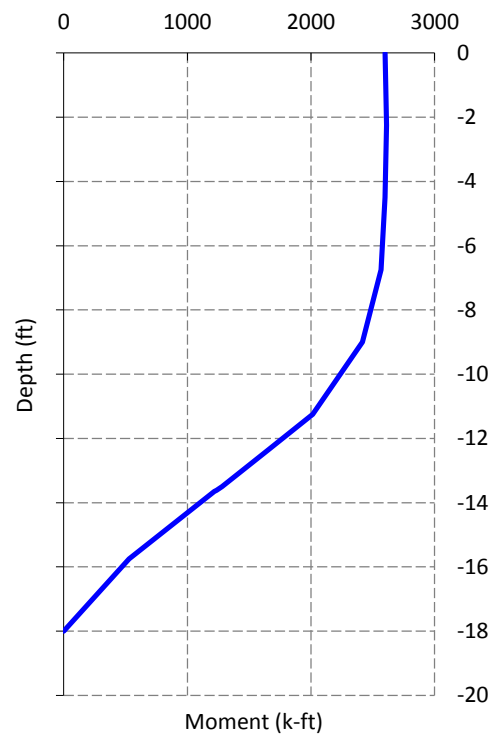
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
# of Vertical Steel Rebars:	16
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in ²
Design Horizontal Tie / Stirrup Spacing:	12.0 in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60 ksi
Rebar Cage Diameter:	64.0 in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_P):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	2611.5 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	3528.7 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$:	0.74 Result: OK
Design Shear (V_u):	421.6 k
Nominal Shear Capacity ($\phi_V V_n$):	521.9 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$:	0.81 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	1347.8 k - ACI318-05 - 10.2
$T_u / \phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	34.0 k
Nominal Compression Capacity ($\phi_P P_n$):	7154.3 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$:	0.00 Result: OK
Bending Reinforcement Ratio:	0.006 ACI318-05 - 10.8.4 & 10.9.1
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.74 Result: OK

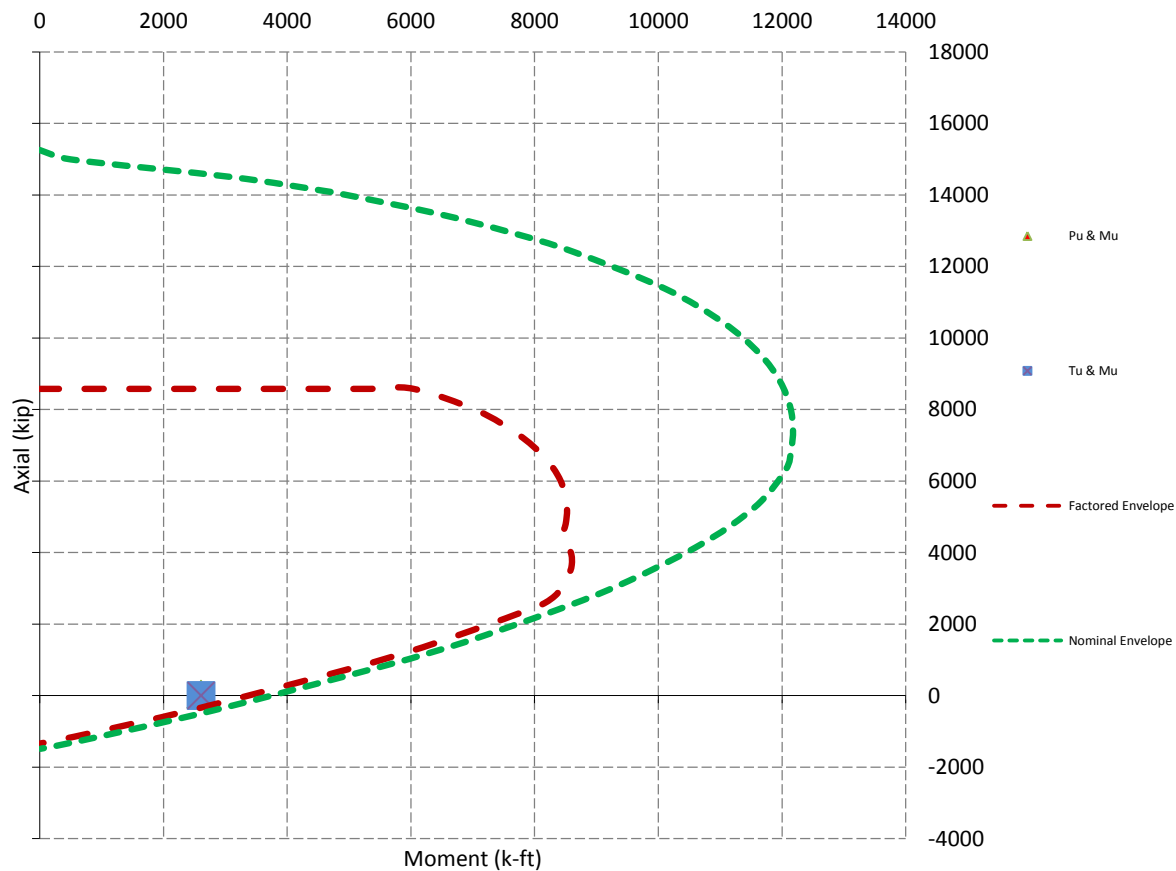
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads



WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
 - B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
 - C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
 - D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
 - E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
 - F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL

SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.

B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.

6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY

A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT WHERE U.S. OR OTHER AGENCY HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LATEST AND BEST OF ACCORDING THE

SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.

- B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
- D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
- E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

1. AS-BUILT DRAWINGS:
 - A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
 - A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
 - B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE—TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY, TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES. CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.

SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
 - A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
 - B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
 - C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
 - D. INSTALL PULL ROPS IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
 - E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
 - F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
 - G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
 - I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
 - J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
 - K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

- L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
- M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
- N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
- O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
- P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/ THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

<u>LENGTH (FT.)</u>	<u>HOME RUN WIRE SIZE</u>
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8
8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
 - A. GENERAL ELECTRIC COMPANY
 - B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
 - A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
 - B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
 - A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
 - B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE
3. INTERIOR
 - A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
 - B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

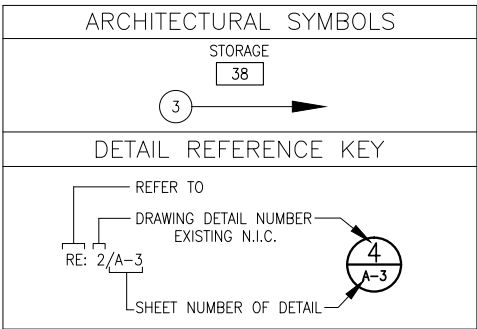
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON A
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.



T-MOBILE NORTHEAST, LLC

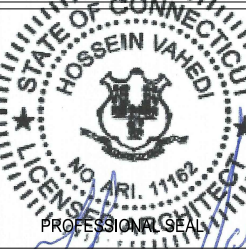
Transcend Wireless
10 INDUSTRIAL AVE
MAHAH NJ 07430
TRANSCEND@TRANSCENDWIRELESS.COM
TELEPHONE: (201) 684-0066

Innovative design solutions
Foresitellc.com
462 WALNUT STREET
NEWTON, MA 02460
PHONE: 617-527-3031
EMAIL: SMOSSAVAT@FORESITELLC.COM

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DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CT11452A
DRAWN BY:	MS
CHECKED BY:	SM



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SITE NUMBER
CT11452A
SITE NAME
BRIDGEPORT/CONNECTICUT AVE

SITE ADDRESS
1069 CONNECTICUT AVE
BRIDGEPORT, CT

SHEET TITLE

CONTRACTOR'S
NOTES

SHEET NUMBER

N-1

CONFIGURATION

Diagram illustrating the antenna configuration for the ESR-1000 radar system, showing the central hub and the distribution of antennas across different sectors and azimuths.

Sector Alpha (Azimuth 20°)

- 1B-TWIN TMA
- 1A-TWIN TMA
- ERICSSON APX16DWV-16DWV
- ERICSSON APX16DWV-16DWV
- COMMSCOPE LNX-6515DS-VTM

Sector Gamma (Azimuth 240°)

- ERICSSON APX16DWV-16DWV
- COMMSCOPE LNX-6515DS-VTM

Sector Beta (Azimuth 280°)

- 1A-TWIN TMA
- 1B-TWIN TMA
- ERICSSON APX16DWV-16DWV
- COMMSCOPE LNX-6515DS-VTM

Diagram illustrating the Antenna Plan, showing the layout of various antennas and their orientations relative to the central structure.

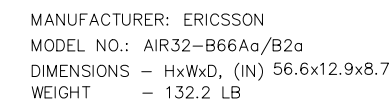
Antennas and Labels:

- COMMScope LNX-6515DS-VTM
- ERICSSON AIR32 B66Aa/B2a
- ERICSSON APX16DWV-16DWV
- 1A-TWIN TMA
- 1B-TWIN TMA
- COMMScope LNX-6515DS-VTM
- ERICSSON AIR32 B66Aa/B2a
- ERICSSON APX16DWV-16DWV
- 1A-TWIN TMA
- 1B-TWIN TMA
- COMMScope LNX-6515DS-VTM
- ERICSSON AIR32 B66Aa/B2a
- ERICSSON APX16DWV-16DWV
- 1A-TWIN TMA
- 1B-TWIN TMA

Sectors and Azimuths:

- SECTOR ALPHA AZIMUTH 20°
- SECTOR GAMMA AZIMUTH 240°
- SECTOR BETA AZIMUTH 120°

Scale: 1:100



SCALE: N.T.S

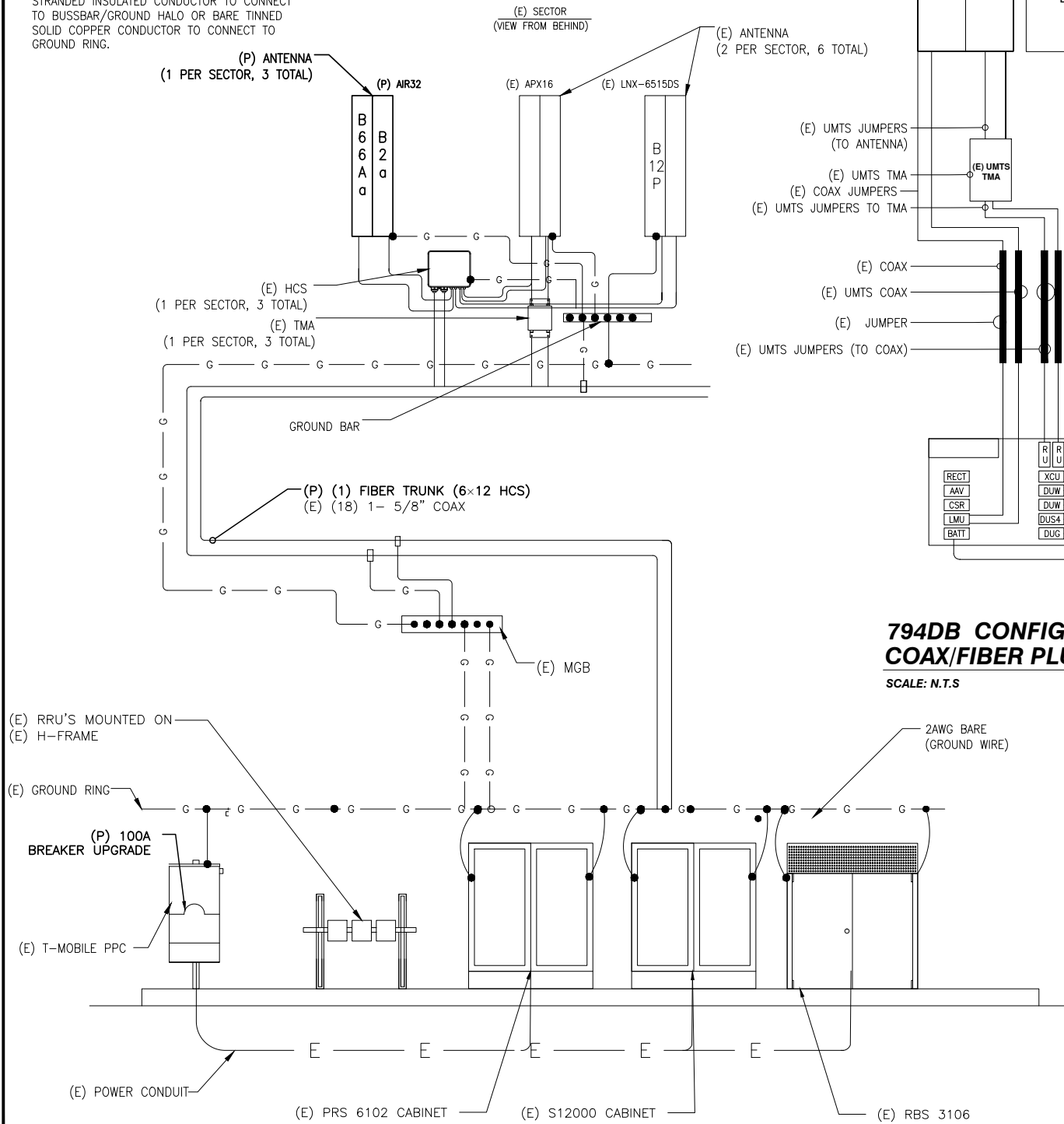


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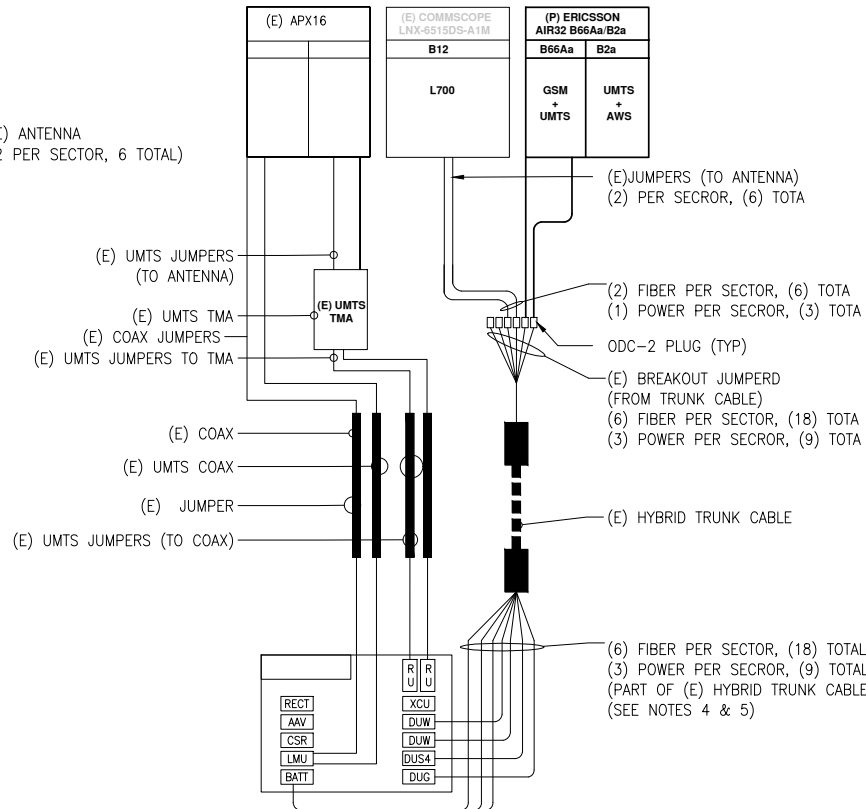
- A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM EQUIPMENT TO ANTENNA) IS GREATER THAN 20'-0".
E. GROUND HCS BOX W/ #2AWG GROUNDING CONDUCTOR ATTACHED TO GOOD GROUND AS DIRECT AND SHORT AS POSSIBLE. USE GREEN STRANDED INSULATED CONDUCTOR TO CONNECT TO BUSSBAR/GROUND HALO OR BARE TINNED SOLID COPPER CONDUCTOR TO CONNECT TO GROUND RING.



GROUNDING DIGRAM

SCALE: N.T.S

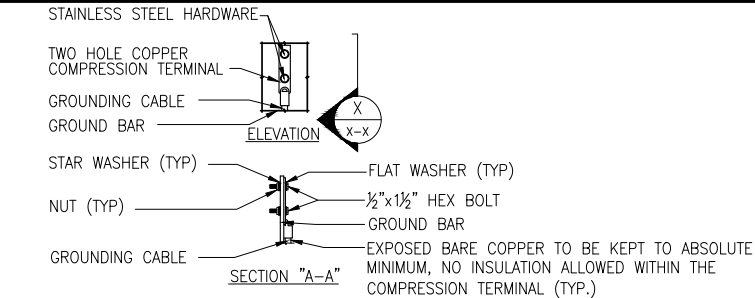
1
E-1



794DB CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM

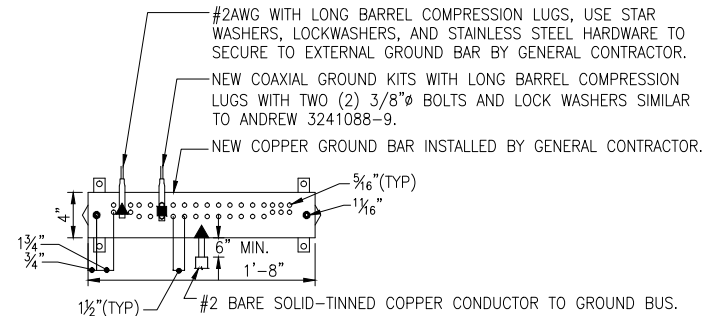
SCALE: N.T.S

2
E-1



NOTES:

1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



NOTES:

1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: N.T.S

3
E-1

TRUNK FIBER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO 7/8" COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN 3/4" (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMMScope NON LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

HYBRID FIBER/POWER JUMPER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A 3/8" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN 3/4" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

COAX/FIBER NOTES

SCALE: N.T.S

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E-1

T-Mobile

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

Transcend Wireless

10 INDUSTRIAL AVE
MAHWAH NJ 07430
TRANSCEND@TRANSCENDWIRELESS.COM
TELEPHONE: (201) 684-0066

ForeSite LLC

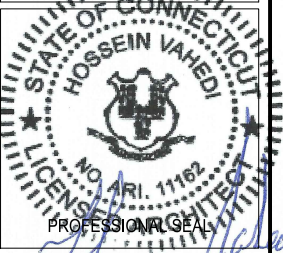
Innovative design solutions
ForeSiteLLC.com
462 WALNUT STREET
NEWTON, MA 02460
PHONE: 617-527-3031
EMAIL: SMOSSAVAT@FORESITELLC.COM

SUBMITTALS

DATE	DESCRIPTION	REVISION
05/05/16	ISSUED FOR REVIEW	A
08/01/16	FINAL CD	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: CT11452A
DRAWN BY: MS
CHECKED BY: SM



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SITE NUMBER
CT11452A
SITE NAME
BRIDGEPORT/CONNECTICUT AVE
SITE ADDRESS
1069 CONNECTICUT AVE
BRIDGEPORT, CT

SHEET TITLE
GROUNDING AND ONE
LINE DIAGRAM
COAX/FIBER DIAGRAM

SHEET NUMBER
E-1