Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

June 27, 2016

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

Notice of Exempt Modification
1320 Chopsey Hill Road, Bridgeport, CT
Latitude- 41.21961800
Longitude- -73.20121300

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 202' level of the existing 240' self-support tower located at 1320 Chopsey Hill Road in Bridgeport, CT (also known as 1000 Trumbull Avenue). The tower and property are owned by American Tower Corporation, which is also known by the entity Cell Tower Lease Acquisition LLC. T-Mobile now intends to replace (3) existing antennas with (3) new 1900 MHz antennas. These antennas would be installed at the same 202' level of the tower. T-Mobile also intends to add (1) new fiber cable.

This facility was approved by the Council in Petition No. 512 on June 25, 2002. This approval included the condition that the applicants (Voicestream, now T-Mobile) verify the structural adequacy of the tower. Included with this submission is a passing structural analysis for this modification. This modification complies with the aforementioned condition.

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 Joseph P. Ganim, the Mayor of the City of Bridgeport, as well as the tower and property owner.

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

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

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

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

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

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

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

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

Sincerely,

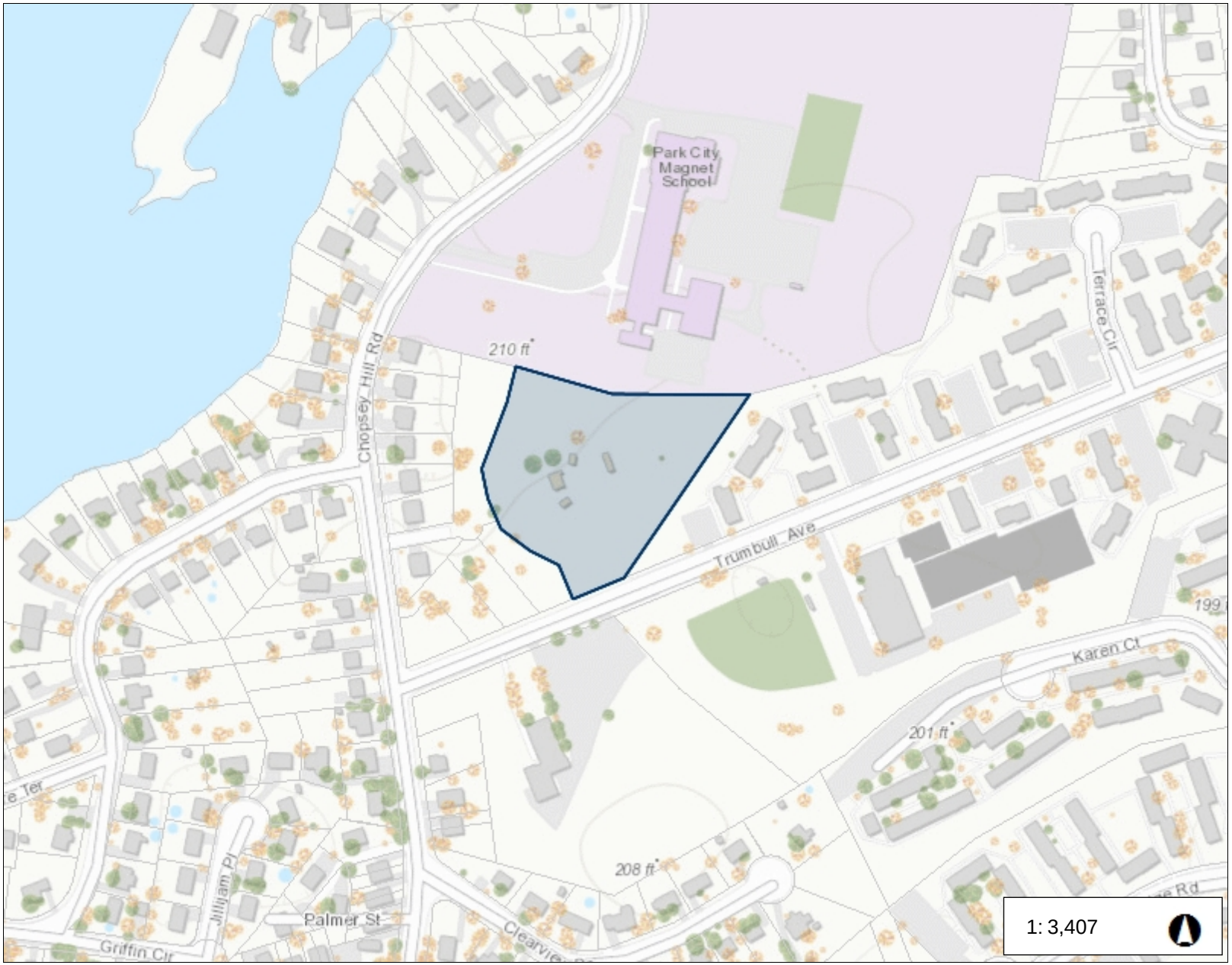
Kyle Richers

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

cc: Joseph P. Ganim- as elected official
American Tower Corporation- as tower and property owner

City of Bridgeport

CT11680A parcel map



Legend

- Parcel Label
- Parcels

567.8 0 283.90 567.8 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

GBRC Greater Bridgeport Regional Council

1000 TRUMBULL AV

Location	1000 TRUMBULL AV	**Mblu**	82/ 2778/ 61/B /
Acct#	RT-0049550	**Owner**	CELL TOWER LEASE ACQUISION LLC
Assessment	$310,420	**Appraisal**	$443,440
PID	32253	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$75,820	$367,620	$443,440
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$53,090	$257,330	$310,420

Owner of Record

Owner	CELL TOWER LEASE ACQUISION LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	PO BOX 723597 ATLANTA, GA 31139	**Book & Page**	7342/ 302
		Sale Date	01/23/2007
		Instrument	03

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
CELL TOWER LEASE ACQUISION LLC	$0		7342/ 302	03	01/23/2007
UNISON SITE MANAGEMENT LLC	$1,925,000		7342/ 299	03	01/23/2007
TARTAGLIA REMO	$700,000		3018/ 317		07/06/1992
CHOPSEY HILL ASSOCIATES	$0		2564/ 93		09/29/1988

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:

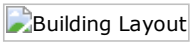
Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Telephone Bldg
Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
.	

Building Photo

(http://images.vgsi.com/photos/BridgeportCTPhotos//\00\09\9(

Building Layout



Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	200V	**Size (Acres)**	3.05
Description	Commercial Lnd	**Frontage**	0
Zone	RA	**Depth**	0
Neighborhood	2140	**Assessed Value**	$257,330
Alt Land Appr	No	**Appraised Value**	$367,620
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN5	Fence 10'			616 LF	$6,160	1
PAV2	Paving Conc			40 SF	$110	1
TWR	Tower			240 LF	$48,000	1
SHD1	Shed	MS	Masonry	1200 SF	$12,240	1
SHD1	Shed	MS	Masonry	432 SF	$4,410	1
SHD1	Shed	MS	Masonry	240 SF	$2,450	1
SHD1	Shed	MS	Masonry	240 SF	$2,450	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$152,140	$348,270	$500,410
2013	$152,140	$348,270	$500,410
2012	$106,960	$348,270	$455,230

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$106,499	$243,790	$350,289
2013	$106,499	$243,790	$350,289
2012	$74,870	$243,790	$318,660

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11680A

Bridgeport North
1320 Chopsey Hill Road
Bridgeport, CT 06606

June 17, 2016

EBI Project Number: 6216002850

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	10.70 %

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

EBI Consulting
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June 17, 2016

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

Emissions Analysis for Site: **CT11680A – Bridgeport North**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1320 Chopsey Hill Road, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1320 Chopsey Hill Road, 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 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

5) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

7) Since the 2100 MHz UMTS radios are ground mounted there are additional cabling losses accounted for. For each ground mounted 2100 MHz UMTS RF path the following losses were calculated. There was 2.76 dB of additional cable loss for all ground mounted 2100 MHz UMTS channels. This is based on manufacturers Specifications for 260 feet of 1-5/8" coax cable on each of the 2100 MHz UMTS path.

8) 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.

9) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB 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.

10) The antennas used in this modeling are the **Ericsson AIR32 B66Aa/B2A** & **Ericsson AIR21 B2A/B4P** 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 B66Aa/B2A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **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.

11) The antenna mounting height centerline of the proposed antennas is **202 feet** above ground level (AGL).

12) 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.

13) 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 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	202	Height (AGL):	202	Height (AGL):	202
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%	0.87	Antenna B1 MPE%	0.87	Antenna C1 MPE%	0.87
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):	202	Height (AGL):	202	Height (AGL):	202
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	5,904.92	ERP (W):	5,904.92	ERP (W):	5,904.92
Antenna A2 MPE%	0.55	Antenna B2 MPE%	0.55	Antenna C2 MPE%	0.55
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):	202	Height (AGL):	202	Height (AGL):	202
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):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.17	Antenna B3 MPE%	0.17	Antenna C3 MPE%	0.17

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**1.61 %**
Marcus	0.27 %
AT&T	2.87 %
Redstar	0.06 %
MetroCall	0.42 %
Clinton Tower	0.43 %
AAT	0.39 %
Nextel	0.15 %
Verizon Wireless	1.60 %
Clearwire	0.06
Sprint	2.32
MetroPCS	0.52
Site Total MPE %:	**10.70 %**

T-Mobile Sector A Total:	1.61 %
T-Mobile Sector B Total:	1.61 %
T-Mobile Sector C Total:	1.61 %
Site Total:	10.70 %

T-Mobile Per Sector Maximum Power Values

T-Mobile _Max per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	2	2,334.27	202	4.37	PCS - 1900 MHz	1000	0.44%
T-Mobile 2100 MHz (AWS) LTE	2	2,334.27	202	4.37	AWS - 2100 MHz	1000	0.44%
T-Mobile 2100 MHz (AWS) UMTS	2	618.19	202	1.16	AWS - 2100 MHz	1000	0.12%
T-Mobile 1900 MHz (PCS) UMTS	2	1,167.14	202	2.18	PCS - 1900 MHz	1000	0.22%
T-Mobile 1900 MHz (PCS) GSM	2	1,167.14	202	2.18	PCS - 1900 MHz	1000	0.22%
T-Mobile 700 MHz LTE	1	865.21	202	0.81	700 MHz	467	0.17%
						Total*:	1.61 %

NOTE: Totals may vary by 0.01% due to summing of remainders

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 A:	1.60 %
Sector B:	1.60 %
Sector C:	1.60 %
T-Mobile Per Sector Maximum:	1.60 %
Site Total:	10.70 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **10.70%** 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.

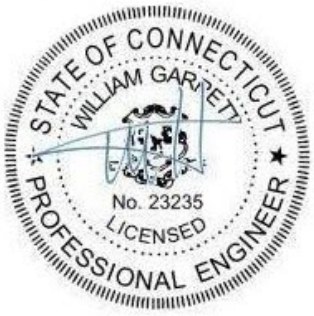
FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100%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

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**240 ft Self Supported Tower**
GTP Site Name	:	**Tartaglia, CT**
GTP Site Number	:	**CT-5035**
Engineering Number	:	**OAA664315_C3_02**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**Tartaglia (Connecticut)**
Carrier Site Number	:	**CT11680A**
Site Location	:	**1000 Trumbull Avenue** **Bridgeport, CT 06606-0000** **41.21884900,-73.20170100**
County	:	**Fairfield**
Date	:	**June 17, 2016**
Max Usage	:	**97%**
Result	:	**Pass**

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Robert D. Barrett, E.I.
Structural Engineer I

Robert D. Barrett

Jun 20 2016 8:40 AM

cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 240 ft self supported tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Rohn Drawing #C880400RI, dated March 3, 1988
Foundation Drawing	Mapping by FDH Project #10-12269E N1, dated January 17, 2011
Geotechnical Report	Soiltesting Job #G96-1987-87, dated January 6, 1988
Modifications	Centek Job #10001.CO78, dated December 6, 2010 GlenMartin Drawing #GM-07602, dated February 21, 2013

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:	C
Topographic Category:	1
Spectral Response:	Ss = 0.21, 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					
240.0	240.0	1	10' Omni	Empty Side Arm	(1) 1" Conduit (1) 1 1/4" Coax	--
		1	Beacon			
		1	Lightning Rod			
230.0	230.0	2	8' Omni	Side Arms	(2) 7/8" Coax	
223.0	223.0	1	12' Omni	Side Arm	(1) 1 1/4" Coax	
202.0	202.0	3	Ericsson RRUS11	Sector Frames	(7) 1 5/8" Coax	T-Mobile
		3	Commscope LNX-6515DS-VTM			
		3	Ericsson KRY112 144-1			
		3	Ericsson AIR21 B2A/B4P			
196.0	196.0	1	3' Yagi	Leg	(1) 7/8" Coax	--
187.0	187.0	2	2' HP Dish	Leg	(4) 1/2" Coax	Clearwire
		1	Andrew VHLP800-11-DW1			
180.6	180.6	3	DragonWave A-ANT-11G-2C	Sector Frames	(6) 5/16" Coax (3) 1 1/4" Hybriflex (3) 1/2" Ethernet (2) 2" Conduit (1) 1.625" Hybrid	Sprint Nextel
		3	RFS APXVTM14-C-I20			
		3	Alcatel-Lucent TD-RRH8x20-25			
		1	PCTEL GPS-TMG-HR-26NCM			
		3	Samsung DAP Heads			
		3	Argus LLPX310R			
		3	Alcatel-Lucent 800MHz 2/50W			
		6	Alcatel-Lucent 1900MHz 2x40W			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
174.0	174.0	2	Andrew 950F65T4E-M	Leg	(6) 1 5/8" Coax	--
		4	5' x 5" x 2" Panel			
165.0	165.0	1	20' Omni	Sector Frames	(1) 1 1/4" Coax	
		3	Ericsson RRUS-32 B2		(2) 0.39" Fiber Trunk (4) 0.78" 8 AWG 6 (12) 1 5/8" Coax	AT&T Mobility
		3	Quintel QS66512-3			
		3	Ericsson RRUS-11			
		9	Powerwave LGP21401			
		3	CCI DTMABP7819VG12A			
		12	Powerwave LGP21901			
		3	Commscope SBNHH-1D65A			
		2	Raycap DC6-48-60-18-8F			
		3	Powerwave 7770			
		3	Ericsson RRUS-32			
		6	Powerwave 7020			
152.0	155.0	6	Andrew CBC78-DF	Sector Frames	(12) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
		2	RFS DB-T1-6Z-8AB-0Z			
		3	ALU RH_2x60-PCS			
		3	ALU RH_2x60-700			
		3	ALU RH_2x60-AWS			
		3	Kathrein 800 10734V01			
		6	Commscope HBXX-6516DS-A2M			
		3	Antel BXA-80063/6BF			

Existing and Reserved Equipment (Continued)

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Small Side Lights	Leg	-	--
118.0	118.0	1	10' Omni	Side Arm	(1) 7/8" Coax	
108.0	108.0	1	10' Omni	Side Arm	(1) 1 1/4" Coax	
80.0	80.0	-	-	Empty Side Arm	-	
22.0	22.0	1	3' Dish	Leg	(1) 0.24" Cat 5	
20.0	20.0	1	GPS	Leg	(1) 1/2" Coax	Verizon
8.0	8.0	1	GPS	Side Arm	(1) 1/2" Coax	T-Mobile

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
202.0	202.0	3	Ericsson AIR21 B4A/B2P	-	-	T-Mobile

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
202.0	202.0	3	Ericsson AIR32 B66Aa/B2a	Sector Frames	(1) 1" Hybrid	T-Mobile

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

Install proposed coax stacked on top of existing T-Mobile coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	49%	Pass
Diagonals	97%	Pass
Horizontals	92%	Pass
Anchor Bolts*	45%	Pass
Leg Bolts	42%	Pass

***Includes a factor of safety of 2 or greater**

Foundations*

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	321.3	71%
Axial (Kips)	382.9	66%

***Includes a factor of safety of 2 or greater**

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, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
202.0	Ericsson AIR32 B66Aa/B2a	T-Mobile	0.117	0.011	0.043
187.0	2' HP Dish	Clearwire	0.109		0.044
	Andrew VHLP800-11-DW1				
180.6	DragonWave A-ANT-11G-2C	Sprint Nextel	0.102		
22.0	3' Dish	--	0.008	0.002	0.023

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

AMERICAN TOWER®
CORPORATION

Standard Conditions

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

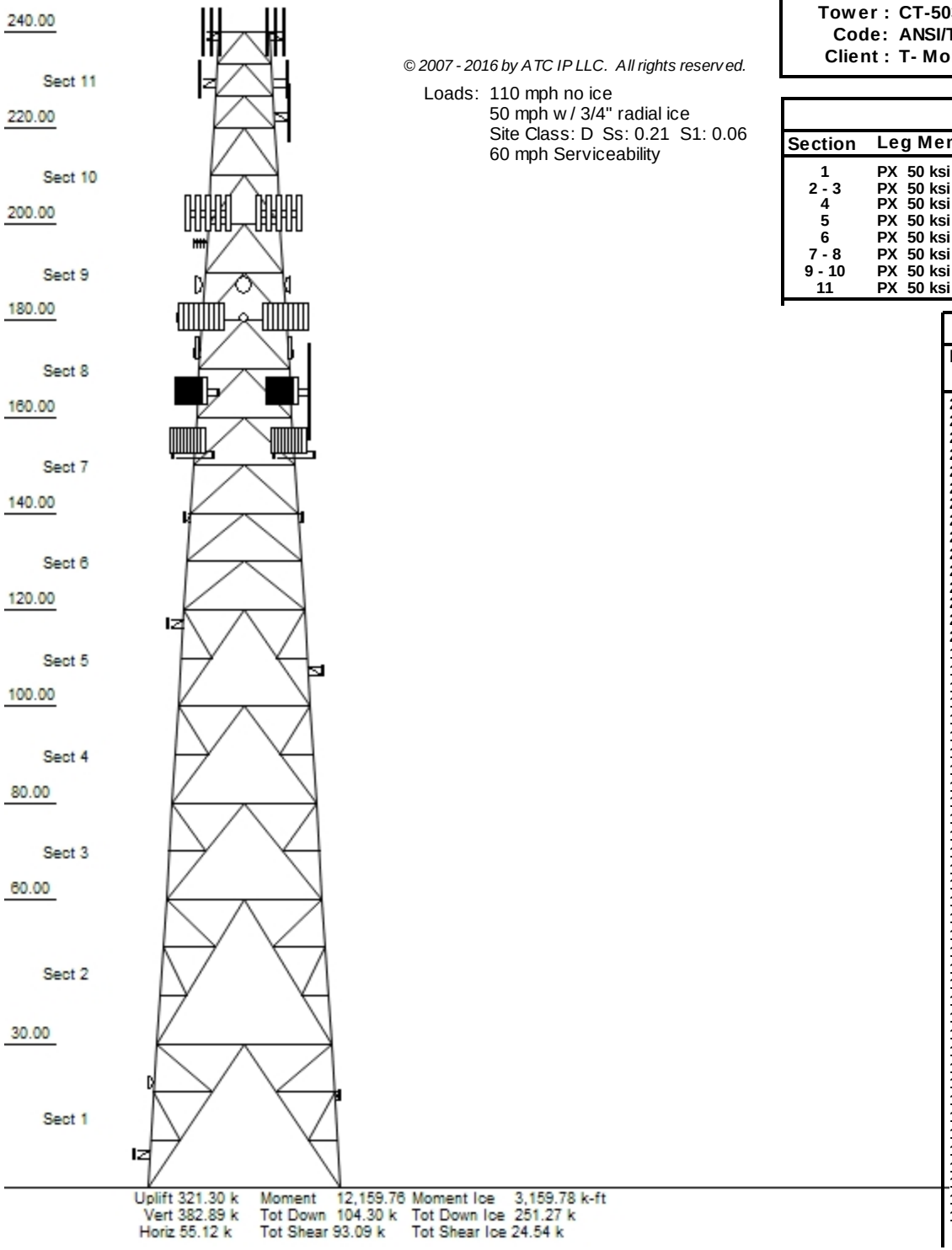
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- 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.



Loads: 110 mph no ice
50 mph w / 3/4" radial ice
Site Class: D Ss: 0.21 S1: 0.06
60 mph Serviceability

Job Information

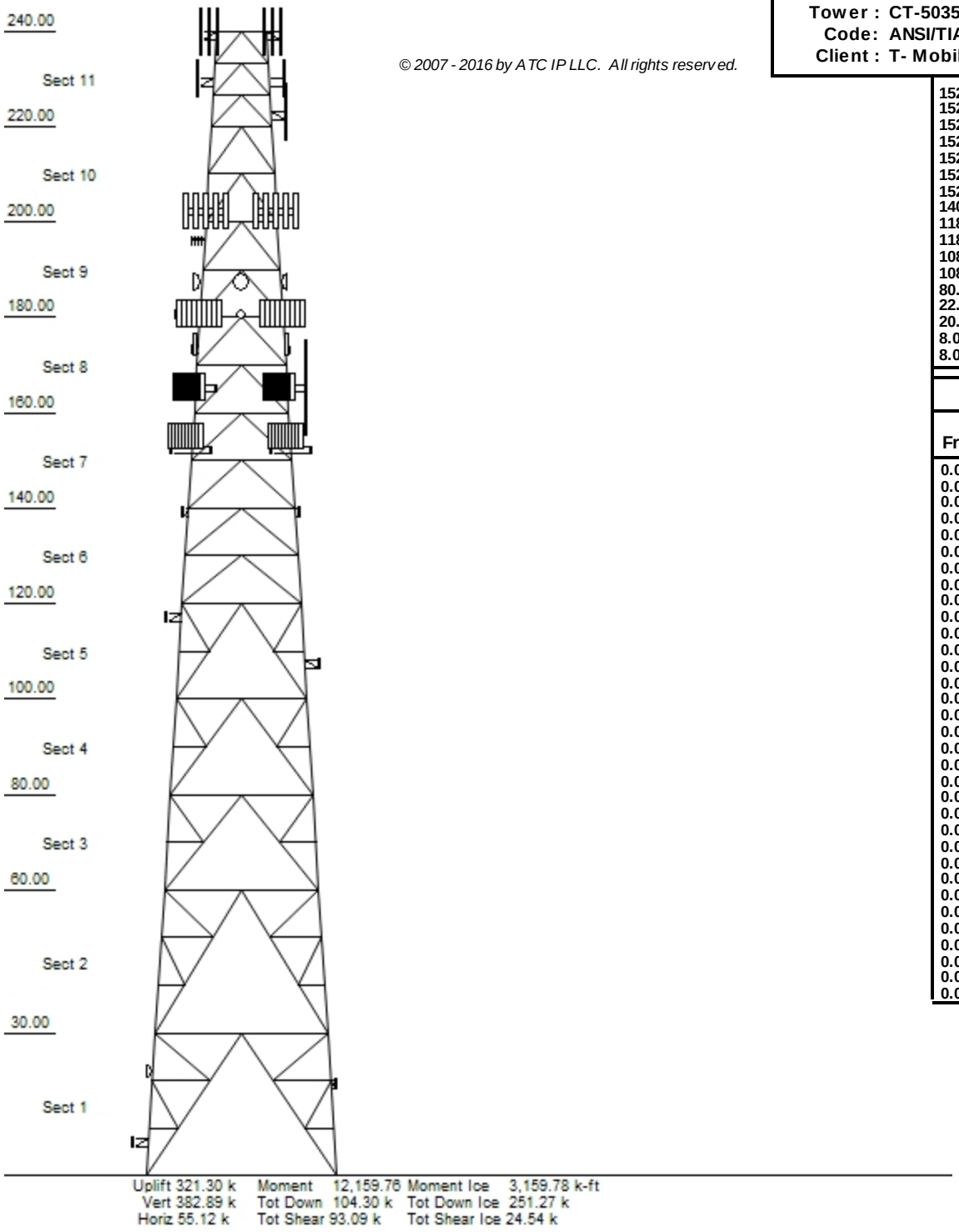
Tower : CT-5035	Location : Tartaglia, CT		
Code: ANSI/TIA-222-G	Shape : Triangle	Base Width : 40.33 ft	
Client : T- Mobile		Top Width : 10.93 ft	

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1	PX 50 ksi	10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3-1/2" DIA PIPE
2 - 3	PX 50 ksi	10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
4	PX 50 ksi	8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
5	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
6	PX 50 ksi	8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
7 - 8	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
9 - 10	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2" DIA PIPE
11	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2" DIA PIPE	PST 50 ksi 2" DIA PIPE

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
240.00	Straight Arm	1	Empty Round Side Arm
240.00	Whip	1	10' Omni
240.00	Whip	1	Beacon
240.00	Whip	1	Lightning Rod
230.00	Whip	1	8' Omni
230.00	Whip	1	8' Omni
230.00	Straight Arm	3	Round Side Arm
223.00	Straight Arm	1	Round Side Arm
223.00	Whip	1	12' Omni
202.00	Panel	3	Ericsson AIR32 B66Aa/B2a
202.00	Panel	3	Ericsson RRUS11
202.00	Panel	3	Commscope LNX-6515DS-VTM
202.00	Panel	3	Ericsson KRY112 144-1
202.00	Panel	3	Ericsson AIR21 B2A/B4P
202.00	Mounting Frame	3	Round Sector Frame
196.00	Yagi	1	3' Yagi
187.00	Dish	1	2' HP Dish
187.00	Dish	1	2' HP Dish
187.00	Dish	1	Andrew VHLP800-11-DW1
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Panel	3	RFS APXVTM14-C-I20
180.60	Panel	3	Alcatel-Lucent TD-RRH8x20-25
180.60	Panel	1	PCTEL GPS-TMG-HR-26NCM
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Panel	3	Samsung DAP Heads
180.60	Panel	3	Argus LLPX310R
180.60	Panel	3	Alcatel-Lucent 800 MHz 2/50W
180.60	Panel	6	Alcatel-Lucent 1900 MHz 2x40W
180.60	Panel	1	RFS APXV9ERR18-C-A20
180.60	Panel	2	RFS APXVSPP18-C-A20
180.60	Mounting Frame	3	Flat Light Sector Frame
174.00	Panel	2	Andrew 950F65T4E-M
174.00	Panel	4	5' x 5" x 2" Panel
165.00	Panel	3	Ericsson RRUS-32 B2
165.00	Panel	3	Quintel QS66512-3
165.00	Panel	3	Ericsson RRUS-11
165.00	Panel	9	Powerwave LGP21401
165.00	Panel	3	CCI DTMABP7819VG12A
165.00	Panel	12	Powerwave LGP21901
165.00	Panel	3	Commscope SBNHH-1D65A
165.00	Panel	1	Raycap DC6-48-60-18-8F
165.00	Mounting Frame	3	Round Sector Frame
165.00	Whip	1	20' Omni
165.00	Panel	3	Powerwave 7770
165.00	Panel	3	Ericsson RRUS-32
165.00	Panel	1	Raycap DC6-48-60-18-8F
165.00	Panel	6	Powerwave 7020
152.00	Panel	6	Andrew CBC78-DF
152.00	Panel	2	RFS DB-T1-6Z-8AB-0Z



Job Information

Tower : CT-5035	Location : Tartaglia, CT	
Code: ANSI/TIA-222-G	Shape : Triangle	Base Width : 40.33 ft
Client : T- Mobile		Top Width : 10.93 ft

152.00	Panel	3	ALU RH 2x60-PCS
152.00	Panel	3	ALU RH_2x60-700
152.00	Panel	3	ALU RH_2x60-AWS
152.00	Panel	3	Kathrein 800 10734V01
152.00	Panel	6	Commscope HBXX-6516DS-A2M
152.00	Mounting Frame	3	Flat Light Sector Frame
152.00	Panel	3	Antel BXA-80063/6BF
140.00	Whip	3	Small Side Lights
118.00	Straight Arm	1	Round Side Arm
118.00	Whip	1	10' Omni
108.00	Straight Arm	1	Round Side Arm
108.00	Whip	1	10' Omni
80.00	Straight Arm	1	Empty Round Side Arm
22.00	Dish	1	3' Dish
20.00	Whip	1	GPS
8.00	Straight Arm	1	Round Side Arm
8.00	Whip	1	GPS

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.000	240.00	1	1" Conduit
0.000	240.00	1	1 1/4" Coax
0.000	230.00	2	7/8" Coax
0.000	223.00	1	1 1/4" Coax
0.000	202.00	1	Waveguide
0.000	202.00	1	1" Hybrid
0.000	202.00	7	1 5/8" Coax
0.000	196.00	1	7/8" Coax
0.000	187.00	4	1/2" Coax
0.000	180.60	1	Waveguide
0.000	180.60	6	5/16" Coax
0.000	180.60	2	2" Conduit
0.000	180.60	3	1/2" Ethernet
0.000	180.60	1	1.625" Hybrid
0.000	180.60	3	1 1/4" Hybriflex
0.000	174.00	1	Waveguide
0.000	174.00	6	1 5/8" Coax
0.000	165.00	1	Waveguide
0.000	165.00	12	1 5/8" Coax
0.000	165.00	1	1 1/4" Coax
0.000	165.00	2	0.78" 8 AWG 6
0.000	165.00	2	0.78" 8 AWG 6
0.000	165.00	1	0.39" Fiber Trunk
0.000	165.00	1	0.39" Fiber Trunk
0.000	152.00	1	Waveguide
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	12	1 5/8" Coax
0.000	118.00	1	7/8" Coax
0.000	108.00	1	1 1/4" Coax
0.000	22.000	1	0.24" Cat 5
0.000	20.000	1	1/2" Coax
0.000	8.000	1	1/2" Coax

Site Number:	**CT-5035**	**Code:**	**ANSI/TIA-222-G**	
Site Name:	**Tartaglia, CT**	**Engineering Number:**	**OAA664315_C3_02**	6/17/2016 6:05:04 PM
Customer:	**T- Mobile**			

Analysis Parameters

Location:	**Fairfield County, CT**		
Code:	**ANSI/TIA-222-G**	**Height (ft):**	**240**
Shape:	**Triangle**	**Base Elevation (ft):**	**0.00**
Tower Manufacturer:	**Rohn**	**Bottom Face Width (ft):**	**40.33**
Tower Type:	**Self Support**	**Top Face Width (ft):**	**10.93**

Ice & Wind Parameters

Structure Class:	**II**	**Design Windspeed Without Ice:**	**110 mph**
Exposure Category:	**C**	**Design Windspeed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Windspeed:**	**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):	**0.68**				
T_L(sec):	**6**	**p:**	**1.3**	**C_S:**	**0.051**
S_S:	**0.207**	**S_1:**	**0.065**	**C_S, Max:**	**0.051**
F_a:	**1.600**	**F_V:**	**2.400**	**C_S, Min:**	**0.030**
S_{ds}:	**0.221**	**S_{d1}:**	**0.104**		

Load Cases

1.2D + 1.6W Normal	**110 mph Normal to Face with No Ice**
1.2D + 1.6W 60 deg	**110 mph 60 degree with No Ice**
1.2D + 1.6W 90 deg	**110 mph 90 degree with No Ice**
0.9D + 1.6W Normal	**110 mph Normal to Face with No Ice (Reduced DL)**
0.9D + 1.6W 60 deg	**110 mph 60 deg with No Ice (Reduced DL)**
0.9D + 1.6W 90 deg	**110 mph 90 deg with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi Normal	**50 mph Normal with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 60 deg	**50 mph 60 degree with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 90 deg	**50 mph 90 degree with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E Normal	**Seismic Normal**
(1.2 + 0.2Sds) * DL + E 60 deg	**Seismic 60 degree**
(1.2 + 0.2Sds) * DL + E 90 deg	**Seismic 90 degree**
(0.9 - 0.2Sds) * DL + E Normal	**Seismic (Reduced DL) Normal**
(0.9 - 0.2Sds) * DL + E 60 deg	**Seismic (Reduced DL) 60 degree**
(0.9 - 0.2Sds) * DL + E 90 deg	**Seismic (Reduced DL) 90 degree**
1.0D + 1.0W Service Normal	**Serviceability - 60 mph Wind Normal**
1.0D + 1.0W Service 60 deg	**Serviceability - 60 mph Wind 60 degree**
1.0D + 1.0W Service 90 deg	**Serviceability - 60 mph Wind 90 degree**

Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	54	14
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	163	36
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	40.07	245	101
240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.07	283	216
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	39.71	130	58
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	39.71	130	58
230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	39.71	564	648
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	39.45	193	58
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.45	279	216
202.0	Ericsson KRY112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	38.64	23	48
202.0	Ericsson RRUS11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	38.64	176	219
202.0	Ericsson AIR21	3	90	5.8	4.7	12.0	8.0	0.80	0.71	0.0	0.0	38.64	519	389
202.0	Ericsson AIR32	3	132	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	38.64	583	571
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	38.64	1011	217
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	38.64	1141	1296
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	38.40	156	14
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	38.02	162	130
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	38.02	199	130
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	38.02	864	174
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	37.74	4	1
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	37.74	112	143
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	37.74	148	276
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	37.74	472	380
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	37.74	333	124
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	37.74	106	39
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	37.74	117	39
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	37.74	193	39
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	37.74	390	302
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	37.74	515	242
180.6	RFS APXVSPP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	37.74	468	164
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	37.74	234	89
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.74	1385	1728
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	37.44	491	173
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	37.44	435	45
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	37.03	48	95
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	37.03	48	19
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	37.03	59	83
165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	37.03	199	183
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	29
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	29
165.0	Ericsson RRUS-32 B2	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	219
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	219
165.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	37.03	169	219
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	37.03	432	151
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	37.03	490	177
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	37.03	242	79
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	37.03	727	484
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.03	1093	1296
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	161.0	36.54	54	57
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	329.2	36.54	110	199
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	336.4	36.54	112	190
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	386.5	36.54	129	247
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	572.5	36.54	191	19
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	2598.9	36.54	866	264

Site Number: CT-5035 | Code: ANSI/TIA-222-G |

Site Name: Tartaglia, CT | Engineering Number: OAA664315_C3_02 | 6/17/2016 6:05:04 PM

Customer: T- Mobile

Tower Loading

152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	1257.9	36.54	419	105
152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	1717.0	36.54	572	83
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	36.39	1336	1728
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	35.77	292	194
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	34.50	6	12
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	34.50	244	216
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	33.87	6	12
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	33.87	240	216
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	31.79	225	216
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	24.23	129	144
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	23.75	32	14
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	22.38	30	14
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	22.38	158	216
	Totals	168	10975	732.8										

Discrete Appurtenance Properties

0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	54	8
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	163	20
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	40.07	245	57
240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.07	283	122
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	39.71	130	32
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	39.71	130	32
230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	39.71	564	365
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	39.45	193	32
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.45	279	122
202.0	Ericsson KRY112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	38.64	23	27
202.0	Ericsson RRUS11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	38.64	176	123
202.0	Ericsson AIR21	3	90	5.8	4.7	12.0	8.0	0.80	0.71	0.0	0.0	38.64	519	219
202.0	Ericsson AIR32	3	132	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	38.64	583	321
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	38.64	1011	122
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	38.64	1141	729
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	38.40	156	8
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	38.02	162	73
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	38.02	199	73
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	38.02	864	98
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	37.74	4	0
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	37.74	112	80
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	37.74	148	156
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	37.74	472	214
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	37.74	333	69
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	37.74	106	22
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	37.74	117	22
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	37.74	193	22
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	37.74	390	170
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	37.74	515	136
180.6	RFS APXVSPP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	37.74	468	92
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	37.74	234	50
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.74	1385	972
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	37.44	491	97
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	37.44	435	25
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	37.03	48	53
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	37.03	48	11
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	37.03	59	47

Tower Loading

165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	37.03	199	103
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	16
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	16
165.0	Ericsson RRUS-32 B2	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	123
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	123
165.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	37.03	169	123
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	37.03	432	85
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	37.03	490	99
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	37.03	242	45
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	37.03	727	272
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.03	1093	729
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	161.0	36.54	54	32
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	329.2	36.54	110	112
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	336.4	36.54	112	107
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	386.5	36.54	129	139
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	572.5	36.54	191	11
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	2598.9	36.54	866	149
152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	1257.9	36.54	419	59
152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	1717.0	36.54	572	47
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	36.39	1336	972
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	35.77	292	109
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	34.50	6	6
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	34.50	244	122
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	33.87	6	6
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	33.87	240	122
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	31.79	225	122
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	24.23	129	81
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	23.75	32	8
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	22.38	30	8
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	22.38	158	122
	Totals	168	10975	732.8										

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
240.0	Lightning Rod	1	70	1.9	4.0	3.0	3.0	1.00	1.00	0.0	0.0	8.28	14	86
240.0	10' Omni	1	167	6.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	8.28	42	206
240.0	Beacon	1	294	4.2	3.0	18.0	18.0	1.00	1.00	0.0	0.0	8.28	29	369
240.0	Empty Round Side	1	227	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.28	57	308
230.0	8' Omni	1	179	4.9	8.0	4.0	4.0	1.00	1.00	0.0	0.0	8.20	34	224
230.0	8' Omni	1	154	4.5	8.0	3.0	3.0	1.00	1.00	0.0	0.0	8.20	31	195
230.0	Round Side Arm	3	227	8.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	8.20	113	923
223.0	12' Omni	1	242	8.4	12.0	4.0	4.0	1.00	1.00	0.0	0.0	8.15	58	300
223.0	Round Side Arm	1	226	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.15	56	307
202.0	Ericsson KRY112	3	28	0.6	0.6	6.1	2.7	0.80	0.50	0.0	0.0	7.98	5	109
202.0	Ericsson RRUS11	3	140	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	7.98	28	539
202.0	Ericsson AIR21	3	264	7.2	4.7	12.0	8.0	0.80	0.71	0.0	0.0	7.98	83	1015
202.0	Ericsson AIR32	3	321	7.7	4.7	12.9	8.7	0.80	0.71	0.0	0.0	7.98	89	1250
202.0	Commscope LNX-	3	321	13.1	8.0	11.9	7.1	0.80	0.70	0.0	0.0	7.98	150	1193
202.0	Round Sector Frame	3	677	31.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.98	321	2655
196.0	3' Yagi	1	102	9.4	3.0	36.0	3.0	1.00	1.00	0.0	0.0	7.93	63	125
187.0	2' HP Dish	1	225	5.1	2.0	0.0	0.0	1.00	0.79	0.0	0.0	7.85	27	292
187.0	2' HP Dish	1	225	5.1	2.0	0.0	0.0	1.00	0.97	0.0	0.0	7.85	33	292
187.0	Andrew VHLP800-11-	1	466	19.2	4.1	0.0	0.0	1.00	1.00	0.0	0.0	7.85	128	589
180.6	PCTEL GPS-TMG-HR-	1	11	0.3	0.4	3.2	3.2	0.80	1.00	0.0	0.0	7.80	2	14

Tower Loading

180.6	Samsung DAP Heads	3	86	2.1	1.4	11.6	5.3	0.80	0.50	0.0	0.0	7.80	17	334
180.6	Alcatel-Lucent 800	3	156	2.7	1.6	13.0	12.2	0.80	0.50	0.0	0.0	7.80	21	608
180.6	Alcatel-Lucent 1900	6	172	4.0	1.9	17.3	13.0	0.80	0.50	0.0	0.0	7.80	64	1300
180.6	Argus LLPX310R	3	138	5.2	3.5	11.8	4.5	0.80	0.63	0.0	0.0	7.80	52	518
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	0.55	0.0	0.0	7.80	17	158
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	0.61	0.0	0.0	7.80	19	158
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	1.00	0.0	0.0	7.80	32	158
180.6	Alcatel-Lucent TD-	3	164	6.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	7.80	72	640
180.6	RFS APXVTM14-C-I20	3	204	8.5	4.7	12.6	6.3	0.80	0.66	0.0	0.0	7.80	90	774
180.6	RFS APXVSPP18-C-	2	260	9.3	6.0	11.8	7.0	0.80	0.71	0.0	0.0	7.80	70	651
180.6	RFS APXV9ERR18-C-	1	274	9.3	6.0	11.8	7.9	0.80	0.71	0.0	0.0	7.80	35	343
180.6	Flat Light Sector	3	705	33.2	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.80	332	2827
174.0	5' x 5" x 2" Panel	4	108	4.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	7.74	84	546
174.0	Andrew 950F65T4E-	2	181	7.2	5.0	11.0	7.0	1.00	0.90	0.0	0.0	7.74	86	442
165.0	Powerwave	12	18	0.4	0.5	4.0	3.0	0.80	0.50	0.0	0.0	7.65	13	277
165.0	Powerwave 7020	6	18	0.6	0.4	8.3	2.4	0.80	0.50	0.0	0.0	7.65	10	132
165.0	CCI	3	53	1.4	0.9	10.6	3.8	0.80	0.50	0.0	0.0	7.65	11	205
165.0	Powerwave	9	48	1.6	1.2	9.2	2.6	0.80	0.50	0.0	0.0	7.65	37	546
165.0	Raycap DC6-48-60-	1	101	2.5	2.0	9.7	9.7	0.80	1.00	0.0	0.0	7.65	13	125
165.0	Raycap DC6-48-60-	1	101	2.5	2.0	9.7	9.7	0.80	1.00	0.0	0.0	7.65	13	125
165.0	Ericsson RRUS-32 B2	3	137	3.4	2.2	12.1	6.8	0.80	0.50	0.0	0.0	7.65	27	529
165.0	Ericsson RRUS-32	3	115	3.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	7.65	29	451
165.0	Ericsson RRUS-11	3	137	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	7.65	27	530
165.0	Powerwave 7770	3	170	6.6	4.6	11.0	5.0	0.80	0.65	0.0	0.0	7.65	67	638
165.0	Commscope SBNHH-	3	199	7.0	4.6	11.9	7.1	0.80	0.69	0.0	0.0	7.65	75	746
165.0	20' Omni	1	373	15.2	20.0	4.0	4.0	0.80	1.00	0.0	0.0	7.65	79	461
165.0	Quintel QS66512-3	3	339	9.4	6.0	12.0	9.6	0.80	0.74	0.0	0.0	7.65	109	1302
165.0	Round Sector Frame	3	669	31.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.65	304	2623
152.0	Andrew CBC78-DF	6	24	0.7	0.7	5.9	2.6	0.80	0.50	3.0	31.5	7.55	11	181
152.0	ALU RH_2x60-PCS	3	100	2.7	1.6	11.2	8.2	0.80	0.50	3.0	63.2	7.55	21	393
152.0	ALU RH_2x60-AWS	3	112	2.5	1.7	11.2	7.3	0.80	0.50	3.0	56.8	7.55	19	434
152.0	ALU RH_2x60-700	3	139	2.8	1.8	12.0	9.0	0.80	0.50	3.0	64.4	7.55	21	541
152.0	RFS DB-T1-6Z-8AB-	2	150	5.7	2.0	24.0	10.0	0.80	0.50	3.0	87.4	7.55	29	364
152.0	Commscope HBXX-	6	244	7.9	4.2	12.0	6.5	0.80	0.67	3.0	491.9	7.55	164	1803
152.0	Kathrein 800	3	153	6.7	4.4	11.9	3.9	0.80	0.62	3.0	192.7	7.55	64	570
152.0	Antel BXA-80063/6BF	3	189	8.5	5.7	11.2	5.3	0.80	0.66	3.0	259.2	7.55	86	694
152.0	Flat Light Sector	3	702	33.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.52	318	2814
140.0	Small Side Lights	3	86	0.9	1.0	8.0	8.0	1.00	1.00	0.0	0.0	7.39	16	341
118.0	10' Omni	1	21	0.4	1.0	2.0	2.0	1.00	1.00	0.0	0.0	7.13	2	27
118.0	Round Side Arm	1	221	7.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.13	48	301
108.0	10' Omni	1	20	0.4	1.0	2.0	2.0	1.00	1.00	0.0	0.0	7.00	2	26
108.0	Round Side Arm	1	220	7.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.00	46	300
80.00	Empty Round Side	1	218	7.7	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.57	43	298
22.00	3' Dish	1	245	7.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	5.01	19	318
20.00	GPS	1	38	0.8	1.0	9.0	6.0	1.00	1.00	0.0	0.0	4.91	4	49
8.00	GPS	1	38	0.8	1.0	9.0	6.0	1.00	1.00	0.0	0.0	4.62	3	49
8.00	Round Side Arm	1	208	7.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.62	29	286
	Totals	168	30244	1092.8										

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	11.92	10	10
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	11.92	30	25
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	11.92	46	70

Tower Loading

240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.92	53	150
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	11.81	24	40
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	11.81	24	40
230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	11.81	105	450
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	11.74	36	40
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.74	52	150
202.0	Ericsson KRY112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	11.50	4	33
202.0	Ericsson RRUS11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	11.50	33	152
202.0	Ericsson AIR21	3	90	5.8	4.7	12.0	8.0	0.80	0.71	0.0	0.0	11.50	97	270
202.0	Ericsson AIR32	3	132	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	11.50	108	397
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	11.50	188	151
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.50	212	900
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	11.42	29	10
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	11.31	30	90
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	11.31	37	90
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	11.31	161	121
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	11.23	1	1
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	11.23	21	99
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	11.23	27	192
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	11.23	88	264
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	11.23	62	86
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	11.23	20	27
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	11.23	22	27
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	11.23	36	27
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	11.23	72	210
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	11.23	96	168
180.6	RFS APXVSPP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	11.23	87	114
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	11.23	43	62
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.23	258	1200
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	11.14	91	120
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	11.14	81	31
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	11.02	9	66
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	11.02	9	13
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	11.02	11	58
165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	11.02	37	127
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	11.02	8	20
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	11.02	8	20
165.0	Ericsson RRUS-32 B2	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	11.02	30	152
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	11.02	30	152
165.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	11.02	31	152
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	11.02	80	105
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	11.02	91	123
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	11.02	45	55
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	11.02	135	336
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.02	203	900
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	29.9	10.87	10	40
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	61.2	10.87	20	138
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	62.5	10.87	21	132
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	71.9	10.87	24	172
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	106.5	10.87	35	13
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	483.3	10.87	161	184
152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	233.9	10.87	78	73
152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	319.3	10.87	106	58
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.83	248	1200
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	10.64	54	135
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	10.27	1	8
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.27	45	150
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	10.08	1	8
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.08	45	150

Tower Loading

80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	9.46	42	150
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	7.21	24	100
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	7.07	6	10
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	6.66	6	10
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.66	29	150
	Totals	168	10975	732.8										

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	240.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	240.0	1" Conduit	1	1.30	1.68	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	230.0	7/8" Coax	2	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	223.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	202.0	1 5/8" Coax	7	1.98	0.82	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	1" Hybrid	1	1.00	0.65	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	202.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	196.0	7/8" Coax	1	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	187.0	1/2" Coax	4	0.63	0.15	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	1 1/4" Hybriflex	3	1.54	1.00	67	2	Block	0.00	N	0.25	1.00	0.55
0.00	180.6	1.625" Hybrid	1	1.63	1.61	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	1/2" Ethernet	3	0.50	0.14	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	2" Conduit	2	2.38	3.65	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	180.6	5/16" Coax	6	0.32	0.04	0	2	Individual	0.00	N	1.00	1.00	0.28
0.00	180.6	Waveguide	1	1.50	6.00	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	174.0	1 5/8" Coax	6	1.98	0.82	0	1	Individual	0.00	N	1.00	1.00	0.28
0.00	174.0	Waveguide	1	1.50	6.00	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	165.0	0.39" Fiber Trunk	1	0.39	0.06	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.39" Fiber Trunk	1	0.39	0.06	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.78" 8 AWG 6	2	0.78	0.59	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.78" 8 AWG 6	2	0.78	0.59	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	0.25	1.00	0.54
0.00	165.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	152.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	0.25	1.00	0.54
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	152.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	118.0	7/8" Coax	1	1.09	0.33	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	108.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	22.00	0.24" Cat 5	1	0.24	0.04	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	20.00	1/2" Coax	1	0.63	0.15	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	8.00	1/2" Coax	1	0.63	0.15	0	3	Individual	0.00	N	1.00	1.00	0.00

Force/Stress Summary

Section: 1 1 Bot Elev (ft): 0.00 Height (ft): 30.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-330.95	1.2D + 1.6W	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	49	Member X
HORIZ PST - 3-1/2" DIA PIP	-18.06	0.9D + 1.6W 90	18.29	100	100	100	163.8	50.0	22.56	2	0	0.00	42.31	80	Member X
DIAG PST - 3" DIA PIPE	-35.38	1.2D + 1.6W 90	36.16	32	32	32	0.0	0.0	41.40	3	0	0.00	60.65	85	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	275.29	0.9D + 1.6W 60	50	65	724.50	0	0	0.00	0.00	37	Member
HORIZ PST - 3-1/2" DIA PIP	18.53	1.2D + 1.6W 90	50	65	120.60	2	0	0.00	33.93	54	Bolt Bear
DIAG PST - 3" DIA PIPE	33.35	1.2D + 1.6W 90	50	65	100.35	3	0	0.00	52.65	63	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	273.38	0.9D + 1.6W 60	0.00	0	0	
Top Compression	328.97	1.2D + 1.6W	0.00	0		
Bot Tension	325.33	0.9D + 1.6W 60	726.84	45	12	1" A193-B7
Bot Compression	384.03	1.2D + 1.6W	0.00	0		

Section: 2 2 Bot Elev (ft): 30.00 Height (ft): 30.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-271.77	1.2D + 1.6W	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	40	Member X
HORIZ PST - 3" DIA PIPE	-17.44	0.9D + 1.6W 90	16.41	96	96	96	163.0	50.0	18.95	2	0	0.00	40.44	92	Member X
DIAG PST - 3" DIA PIPE	-38.57	1.2D + 1.6W 90	35.15	31	31	31	112.7	50.0	39.62	3	0	0.00	60.65	97	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	223.05	0.9D + 1.6W 60	50	65	724.50	0	0	0.00	0.00	30	Member
HORIZ PST - 3" DIA PIPE	18.19	1.2D + 1.6W 90	50	65	100.35	2	0	0.00	32.43	56	Bolt Bear
DIAG PST - 3" DIA PIPE	36.01	1.2D + 1.6W 90	50	65	100.35	3	0	0.00	52.65	68	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	221.23	0.9D + 1.6W 60	0.00	0	0	
Top Compression	269.86	1.2D + 1.6W	0.00	0		
Bot Tension	273.38	0.9D + 1.6W 60	654.24	42	12	1 A325
Bot Compression	328.97	1.2D + 1.6W	0.00	0		

Force/Stress Summary

Section: 3 3 Bot Elev (ft): 60.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-231.18	1.2D + 1.6W	20.05	50	50	50	33.1	50.0	668.58	0	0	0.00	0.00	34	Member X
HORIZ PST - 3" DIA PIPE	-15.84	1.2D + 1.6W 90	15.16	100	100	100	156.9	50.0	20.47	2	0	0.00	40.44	77	Member X
DIAG PST - 3" DIA PIPE	-28.48	1.2D + 1.6W 90	25.88	48	48	48	128.5	50.0	30.49	3	0	0.00	50.54	93	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	188.99	0.9D + 1.6W 60	50	65	724.50	0	0	0.00	0.00	26	Member
HORIZ PST - 3" DIA PIPE	16.64	1.2D + 1.6W 90	50	65	100.35	2	0	0.00	32.43	51	Bolt Bear
DIAG PST - 3" DIA PIPE	26.76	0.9D + 1.6W 90	50	65	100.35	3	0	0.00	43.80	61	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	187.30	0.9D + 1.6W 60	0.00	0	0	
Top Compression	229.40	1.2D + 1.6W	0.00	0		
Bot Tension	221.23	0.9D + 1.6W 60	654.24	34	12	1 A325
Bot Compression	269.86	1.2D + 1.6W	0.00	0		

Section: 4 4 Bot Elev (ft): 80.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-191.77	1.2D + 1.6W	20.06	50	50	50	41.8	50.0	506.95	0	0	0.00	0.00	37	Member X
HORIZ PST - 3" DIA PIPE	-14.59	1.2D + 1.6W 90	13.83	100	100	100	143.2	50.0	24.58	2	0	0.00	40.44	59	Member X
DIAG PST - 3" DIA PIPE	-27.29	1.2D + 1.6W 90	25.11	48	48	48	124.7	50.0	32.40	3	0	0.00	50.54	84	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	154.71	0.9D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	26	Member
HORIZ PST - 3" DIA PIPE	14.97	1.2D + 1.6W 90	50	65	100.35	2	0	0.00	32.43	46	Bolt Bear
DIAG PST - 3" DIA PIPE	25.60	1.2D + 1.6W 90	50	65	100.35	3	0	0.00	43.80	58	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	153.11	0.9D + 1.6W 60	0.00	0	0	
Top Compression	190.12	1.2D + 1.6W	0.00	0		
Bot Tension	187.30	0.9D + 1.6W 60	654.24	29	12	1 A325
Bot Compression	229.40	1.2D + 1.6W	0.00	0		

Force/Stress Summary

Section: 5 5 Bot Elev (ft): 100.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-151.15	1.2D + 1.6W	20.05	50	50	50	41.8	50.0	507.00	0	0	0.00	0.00	29	Member X
HORIZ PST - 2-1/2" DIA PIP	-13.56	0.9D + 1.6W 90	12.58	98	98	98	156.3	50.0	15.75	2	0	0.00	38.00	86	Member X
DIAG PST - 2-1/2" DIA PIP	-27.33	1.2D + 1.6W 90	24.33	48	48	48	0.0	0.0	28.20	3	0	0.00	47.50	96	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	118.89	0.9D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	20	Member
HORIZ PST - 2-1/2" DIA PIP	14.23	1.2D + 1.6W 90	50	65	76.68	2	0	0.00	30.48	46	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	25.94	0.9D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	63	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	117.48	0.9D + 1.6W 60	0.00	0	0	
Top Compression	149.65	1.2D + 1.6W	0.00	0		
Bot Tension	153.11	0.9D + 1.6W 60	654.24	23	12	1 A325
Bot Compression	190.12	1.2D + 1.6W	0.00	0		

Section: 6 6 Bot Elev (ft): 120.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-130.58	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	25	Member X
HORIZ PST - 2-1/2" DIA PIP	-12.41	1.2D + 1.6W 90	11.96	100	100	100	151.6	50.0	16.75	2	0	0.00	31.67	74	Member X
DIAG PST - 3" DIA PIPE	-17.70	1.2D + 1.6W 90	16.08	96	96	96	159.7	50.0	19.75	3	0	0.00	50.54	89	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	98.05	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	17	Member
HORIZ PST - 2-1/2" DIA PIP	13.12	1.2D + 1.6W 90	50	65	76.68	2	0	0.00	25.33	51	Bolt Bear
DIAG PST - 3" DIA PIPE	16.71	0.9D + 1.6W 90	50	65	100.35	3	0	0.00	43.80	38	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	83.33	0.9D + 1.6W 60	0.00	0	0	
Top Compression	109.55	1.2D + 1.6W	0.00	0		
Bot Tension	117.48	0.9D + 1.6W 60	436.16	27	8	1 A325
Bot Compression	149.65	1.2D + 1.6W	0.00	0		

Force/Stress Summary

Section: 7 7 Bot Elev (ft): 140.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-91.12	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	17	Member X
HORIZ PST - 2-1/2" DIA PIP	-10.77	1.2D + 1.6W 90	10.71	100	100	100	135.8	50.0	20.89	2	0	0.00	31.67	51	Member X
DIAG PST - 2-1/2" DIA PIP	-16.07	1.2D + 1.6W 90	15.12	100	100	100	0.0	0.0	23.40	3	0	0.00	47.50	68	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	64.47	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	11	Member
HORIZ PST - 2-1/2" DIA PIP	11.32	1.2D + 1.6W 90	50	65	76.68	2	0	0.00	25.33	44	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	15.06	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	36	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	52.35	0.9D + 1.6W 60	0.00	0	0	
Top Compression	71.57	1.2D + 1.6W	0.00	0		
Bot Tension	83.33	0.9D + 1.6W 60	436.16	19	8	1 A325
Bot Compression	109.55	1.2D + 1.6W	0.00	0		

Section: 8 8 Bot Elev (ft): 160.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-56.82	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	11	Member X
HORIZ PST - 2-1/2" DIA PIP	-7.27	1.2D + 1.6W 90	9.464	100	100	100	119.9	50.0	26.77	2	0	0.00	31.67	27	Member X
DIAG PST - 2-1/2" DIA PIP	-11.62	1.2D + 1.6W 90	14.20	96	96	96	172.9	50.0	12.88	3	0	0.00	47.50	90	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	41.18	0.9D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	7	Member
HORIZ PST - 2-1/2" DIA PIP	7.70	1.2D + 1.6W 90	50	65	76.68	2	0	0.00	25.33	30	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	10.84	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	26	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	28.54	0.9D + 1.6W 60	0.00	0	0	
Top Compression	42.07	1.2D + 1.6W	0.00	0		
Bot Tension	52.35	0.9D + 1.6W 60	436.16	12	8	1 A325
Bot Compression	71.57	1.2D + 1.6W	0.00	0		

Force/Stress Summary

Section: 9 9 Bot Elev (ft): 180.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-30.95	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	6	Member X
HORIZ PST - 2" DIA PIPE	-4.49	1.2D + 1.6W 90	8.214	100	100	100	125.2	50.0	15.41	2	0	0.00	24.02	29	Member X
DIAG PST - 2-1/2" DIA PIP	-7.83	1.2D + 1.6W 90	13.35	100	100	100	169.2	50.0	13.45	3	0	0.00	47.50	58	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	19.45	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	3	Member
HORIZ PST - 2" DIA PIPE	4.77	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	24	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	7.25	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	17	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	12.66	0.9D + 1.6W 60	0.00	0	0	
Top Compression	20.97	1.2D + 1.6W	0.00	0		
Bot Tension	28.54	0.9D + 1.6W 60	436.16	7	8	1 A325
Bot Compression	42.07	1.2D + 1.6W	0.00	0		

Section: 10 10 Bot Elev (ft): 200.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-14.01	1.2D + 1.6W	10.02	100	100	100	41.8	50.0	507.06	0	0	0.00	0.00	2	Member X
HORIZ PST - 2" DIA PIPE	-2.13	1.2D + 1.6W 90	7.026	100	100	100	107.1	50.0	20.80	2	0	0.00	24.02	10	Member X
DIAG PST - 2-1/2" DIA PIP	-4.38	1.2D + 1.6W 90	12.55	100	100	100	159.1	50.0	15.20	3	0	0.00	47.50	28	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	7.73	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	1	Member
HORIZ PST - 2" DIA PIPE	2.35	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	12	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	3.88	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	9	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	3.82	0.9D + 1.6W 60	0.00	0	0	
Top Compression	7.89	1.2D + 1.6W	0.00	0		
Bot Tension	12.66	0.9D + 1.6W 60	436.16	3	8	1 A325
Bot Compression	20.97	1.2D + 1.6W	0.00	0		

Force/Stress Summary

Section: 11 11 **Bot Elev (ft): 220.0** **Height (ft): 20.000**

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-4.66	1.2D + 1.6W	6.68	100	100	100	27.8	50.0	544.30	0	0	0.00	0.00	0	Member X
HORIZ PST - 2" DIA PIPE	-1.15	1.2D + 1.6W	6.130	100	100	100	93.5	50.0	25.42	2	0	0.00	24.02	4	Member X
DIAG PST - 2" DIA PIPE	-2.31	1.2D + 1.6W 90	9.288	100	100	100	141.6	50.0	12.05	3	0	0.00	36.04	19	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	1.48	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	0	Member
HORIZ PST - 2" DIA PIPE	1.40	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	7	Bolt Bear
DIAG PST - 2" DIA PIPE	1.96	1.2D + 1.6W 90	50	65	48.15	3	0	0.00	31.23	6	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	0.80	1.2D + 1.0Di +	0.00	0		
Bot Tension	3.82	0.9D + 1.6W 60	436.16	1	8	1 A325
Bot Compression	7.89	1.2D + 1.6W	0.00	0		

Site Name:	Tartaglia, CT	*Program Last Updated: 5/13/2014*
Site Number:	CT-5035	*American Tower Corporation*
Engineering Number:	OAA664315_C3_02	
Engineer:	R. Barrett	
Date:	6/17/2016	

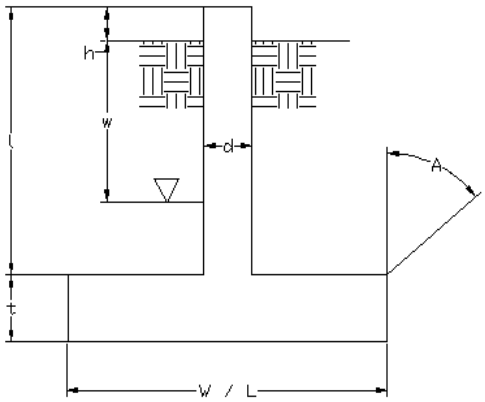
Design Base Loads (Factored) per TIA-222-G

Foundation Mapped:	Y	
Moment (M_u):	0.0	k-ft
Shear/Leg (V_u):	55.1	k
Compression/Leg (P_u):	382.9	k
Uplift/Leg (T_u):	321.3	k
Tower Type (GT / SST):	SST	
Diameter of Prismatic Portion of Pier (d):	0.0	ft
Depth to Base of Foundation (l + t - h):	6.1	ft
Pier Height Above Ground (h):	0.00	ft
Length / Width of Pad (w):	22.0	ft
Thickness of Pad (t):	6.10	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
Unit Weight of Soil Above Water Table:	110.0	pcf
Unit Weight of Soil Below Water Table:	55.0	pcf
Friction Angle of Uplift from Top of Pad:	30	Degrees
Friction Angle of Uplift from Base of Pad:	30	Degrees
Uplift Angle Started at Top or Base of Pad (T/B):	T	
Ultimate Skin Friction:	0	psf
Ultimate Compressive Bearing Pressure:	3000	psf
Capacity Increase (Due to Transient Loads):	1.00	
Bearing Strength Reduction Factor (ϕ_s):	0.75	
Uplift Strength Reduction Factor (ϕ_s):	0.75	

Axial Capacities and Design Moment

Considering Uplift Starting at Top of Pad

Volume of Concrete:	4044.4	ft^3
Depth to Uplift Starting Point:	0.0	ft
Soil Volume Above Mat:	0.0	ft^3
Soil Volume Around Mat Edges:	0.0	ft^3
Soil Volume Around Mat Corners:	0.0	ft^3
Volume of Soil:	0.0	ft^3
Weight of Concrete (Bouyancy Considered):	606.7	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	455.0	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	1089.0	k
P_u:	721.2	k
$T_u/\phi_s T_n$:	0.71	Result: OK
$P_u/\phi_s P_n$:	0.66	Result: OK



T-MOBILE NORTHEAST LLC

SITE #: CT11680A

SITE NAME: BRIDGEPORT NORTH

ATC SITE ID: CT-5035 / TARTAGLIA, CT

SITE ADDRESS:

1320 CHOPSEY HILL ROAD

BRIDGEPORT, CT 06610

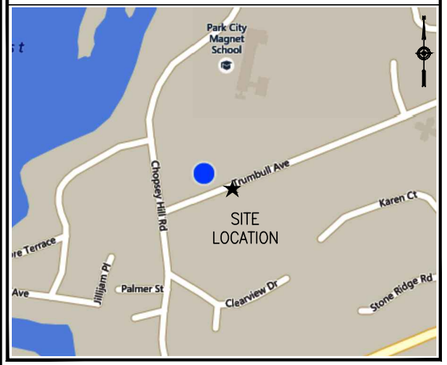
WIRELESS BROADBAND FACILITY

CONSTRUCTION DRAWINGS

(EXISTING CONFIGURATION 702CU)

(PROPOSED CONFIGURATION 792DB

VICINITY MAP



DO NOT SCALE DRAWINGS

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

CALL BEFORE YOU DIG:

WWW.CBYD.COM

CALL 800 922 4455, OR 811

CALL THREE WORKING DAYS PRIOR TO DIGGING

SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC	– RED	SEWER	– GREEN
GAS/OIL	– YELLOW	SURVEY	– PINK
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES. RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T–MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T–MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T–MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.
17. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY AMERICAN TOWER CORPORATION DATED JUNE 17, 2016.

PROJECT INFORMATION

SITE NUMBER:	CT11680A
SITE NAME:	BRIDGEPORT NORTH
SITE ADDRESS:	1320 CHOPSEY HILL ROAD BRIDGEPORT, CT 06610
LAT./LONG.:	N 41.21692 / W –73.20121
PROPERTY OWNER:	AMERICAN TOWER CORPORATION 116 HUNTINGTON AVE. BOSTON, MA 02116
APPLICANT:	T–MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 692–7100
PROJECT MANAGER	TRANSCEND WIRELESS LLC 10 INDUSTRIAL AVE, SUITE #3 MAHWAH, NJ 07430
PROJECT ENGINEER	FORESITE LLC. 462 WALNUT STREET NEWTON, MA 02460

PROJECT DESCRIPTION

T–MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN EXISTING WIRELESS BROABAND FACILITY CONSISTING OF REPLACEMENT OF 3 EXISTING AIR21 ANTENNAS WITH (3) AIR32 ANTENNAS, ADD (1) (6×12) FIBER TRUNK AND UPGRADE CIRCUIT BREAKER TO 100 AMPS

SHEET INDEX

SHEET	DESCRIPTION
T–1	TITLE SHEET
N–1	CONTRACTOR'S NOTES
A–1	SITE PLAN
A–2	ELEVATION ANTENNA PLAN AND DETAILS
E–1	GROUNDING AND POWER ONE LINE DIAGRAM

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SUBMITTALS

DATE	DESCRIPTION	REVISION
06/06/16	ISSUED FOR REVIEW	A
06/24/16	ISSUED FOR CONSTRUCTION	0

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

PROJECT NO:	CT11680A
DRAWN BY:	MS
CHECKED BY:	SM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NAME
CT11680A
SITE NAME
BRIDGEPORT NORTH
SITE ADDRESS
1320 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06610

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

ELECTRICAL NOTES:

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.

GENERAL REQUIREMENTS

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
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND 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 UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND 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.

GUARANTEE

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.

CLEANING

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.

COORDINATION AND SUPERVISION

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.

SUBMITTALS

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.

CUTTING AND PATCHING

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.

TESTS, INSPECTION AND APPROVAL

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.

SPECIAL REQUIREMENTS

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 TO 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.

GROUNDING

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.

RACEWAYS

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 ROPES 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.

RACEWAYS CONT'D

   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.

WIRES AND CABLES

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:

LENGTH (FT.)	HOME RUN WIRE SIZE
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.

WIRING DEVICES

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

DISCONNECT SWITCHES AND FUSES

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.

INSTALLATION

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.

GENERAL NOTES:

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.

CONFLICTS

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.

CONTRACTS AND WARRANTIES

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

STORAGE

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.

CLEANUP

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.

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

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.

SHOP DRAWINGS

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.

PRODUCTS AND SUBSTITUTIONS

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.

QUALITY ASSURANCE

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.

ADMINISTRATION

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.

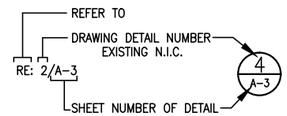
INSURANCE AND BONDS

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 COVERAGE'S TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ARCHITECTURAL SYMBOLS

STORAGE
38
3

DETAIL REFERENCE KEY



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SHEET NUMBER
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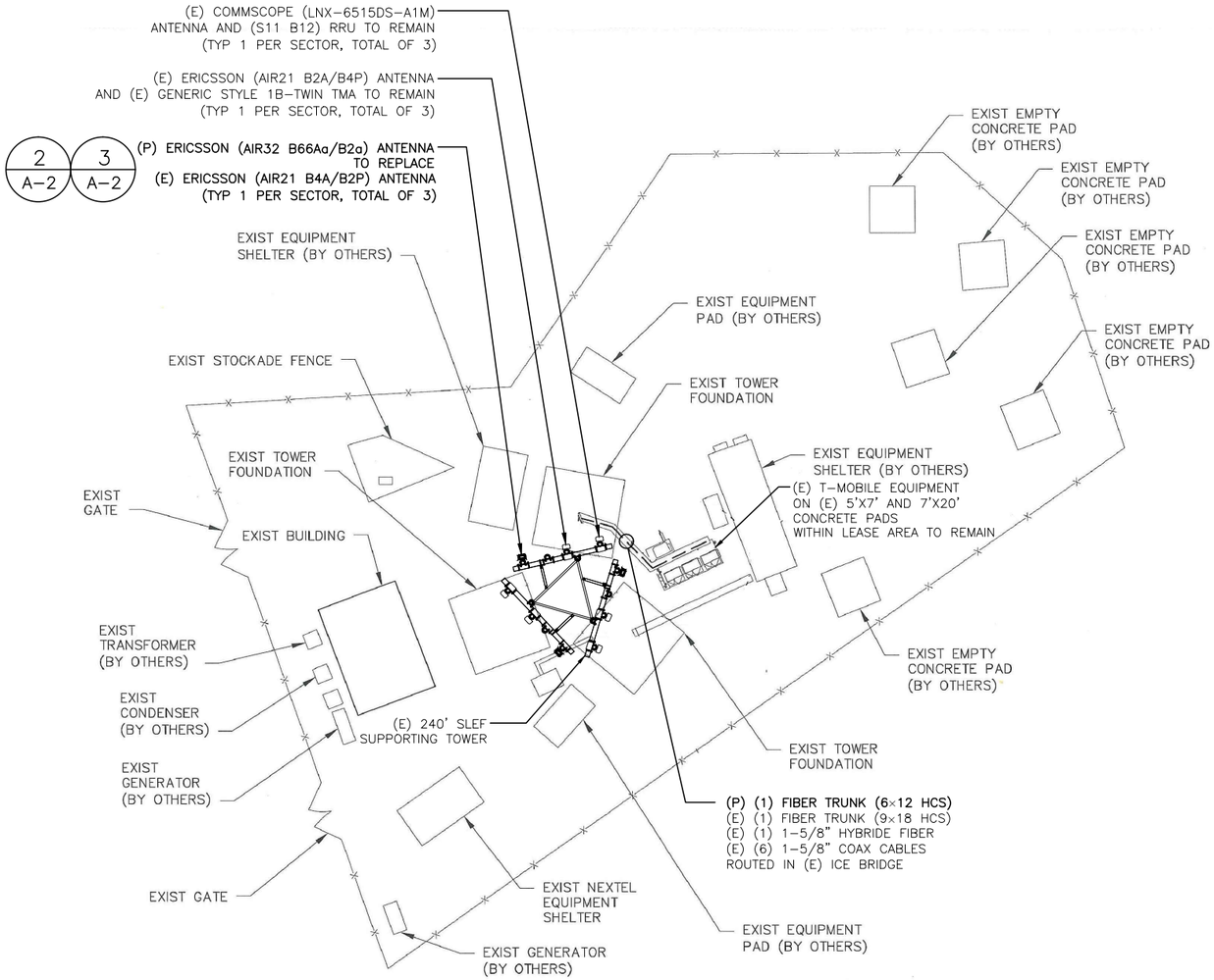

SITE PLAN

SCALE: 1" = 20'-0" (11x17)
1" = 10'-0" (24X36)

1 A-1

GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.

2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.

3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.

4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.

5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.

6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.

7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- BOARD ON BOARD FENCE
- DECIDUOUS TREES/SHRUBS
- EVERGREEN TREES/SHRUBS
- TREE LINE
- UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE
- PROP. LTE ANTENNA
- PROP. UMTS/GSM ANTENNA
- EX. GSM ANTENNA
- EX. UMTS ANTENNA

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TELEPHONE: (201) 684-0066

SUBMITTALS

DATE	DESCRIPTION	REVISION
06/06/16	ISSUED FOR REVIEW	A
06/24/16	ISSUED FOR CONSTRUCTION	0

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

PROJECT NO:	CT11680A
DRAWN BY:	MS
CHECKED BY:	SM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

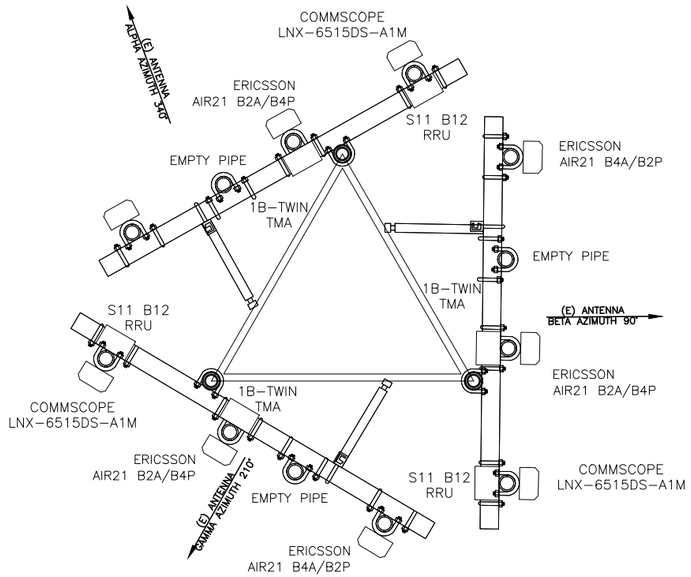
PROFESSIONAL SEAL

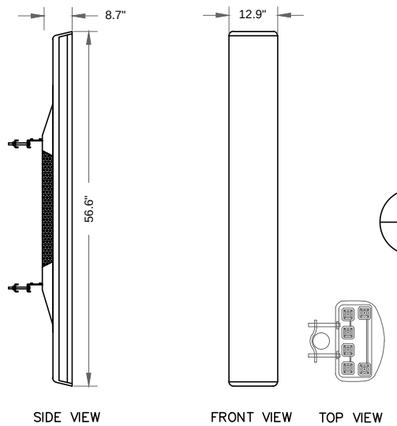
SITE NAME
CT11680A
SITE NAME
BRIDGEPORT NORTH
SITE ADDRESS
1320 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06610

SHEET TITLE
ELEVATION

SHEET NUMBER
A-1

EXISTING CONFIGURATION



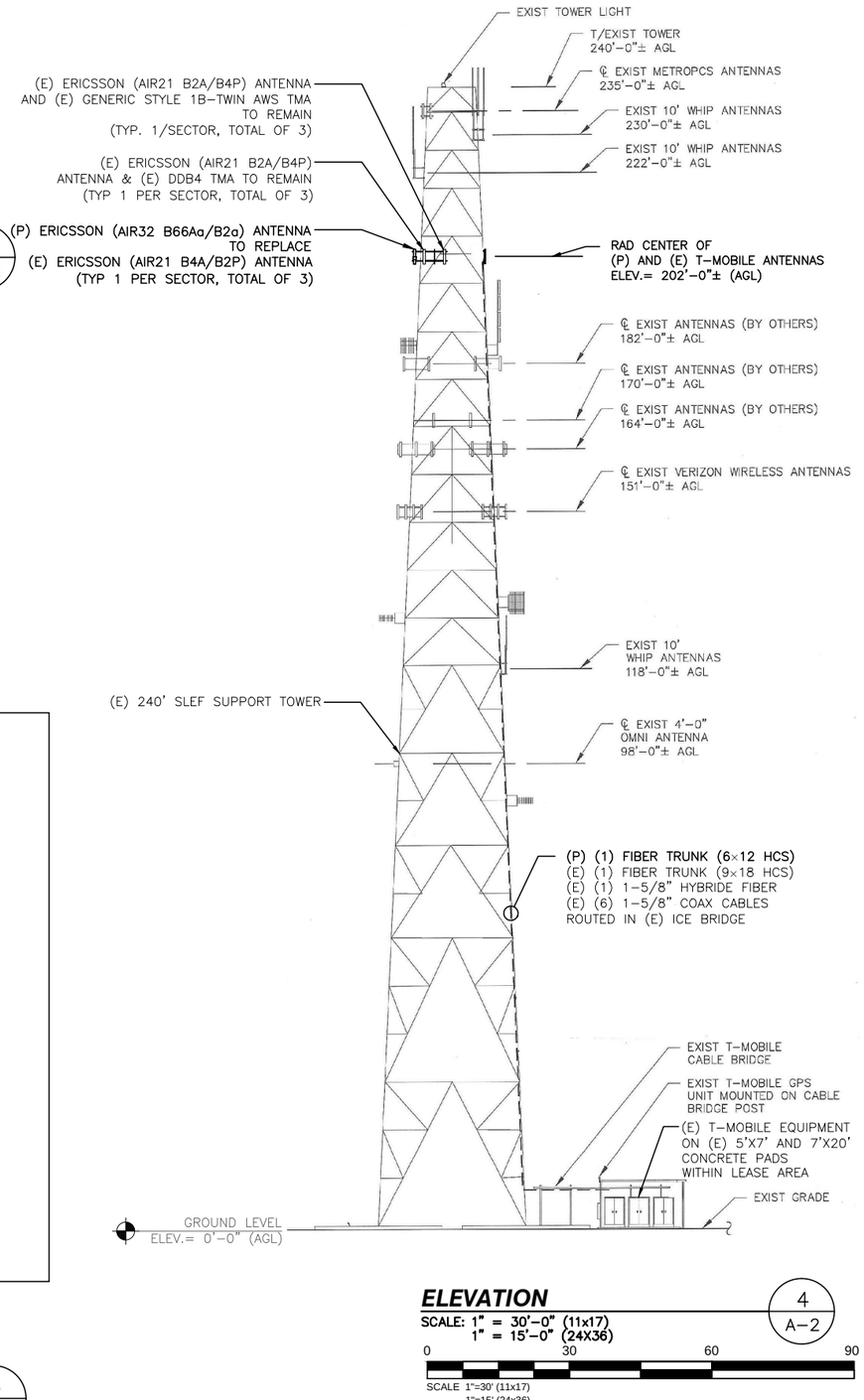


MANUFACTURER: ERICSSON
MODEL NO.: AIR32-B66Aa/B2a
DIMENSIONS - HxWxD, (IN) 56.6x12.9x8.7
WEIGHT - 132.2 LB

ERICSSON AIR32- B66Aa/B2a ANTENNA DETAIL

SCALE: N.T.S

2 / A-2



ELEVATION

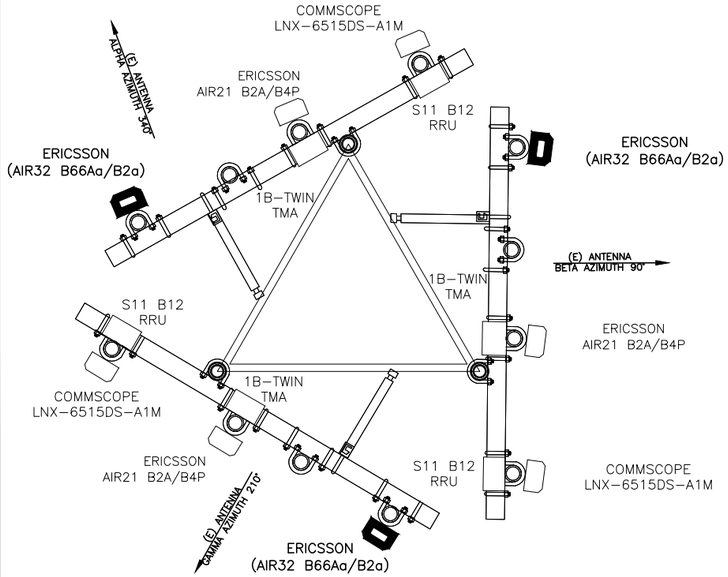
SCALE: 1" = 30'-0" (11x17)
1" = 15'-0" (24X36)

4 / A-2

0 30 60 90

SCALE 1"=30' (11x17)
1"=15' (24x36)

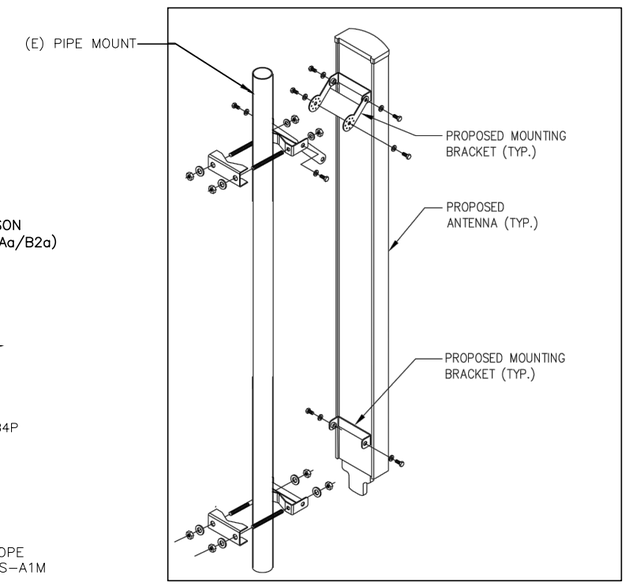
FINAIL CONFIGURATION



ANTENNA PLAN

SCALE: N.T.S

1 / A-2



MOUNTING DETAIL

SCALE: N.T.S

3 / A-2

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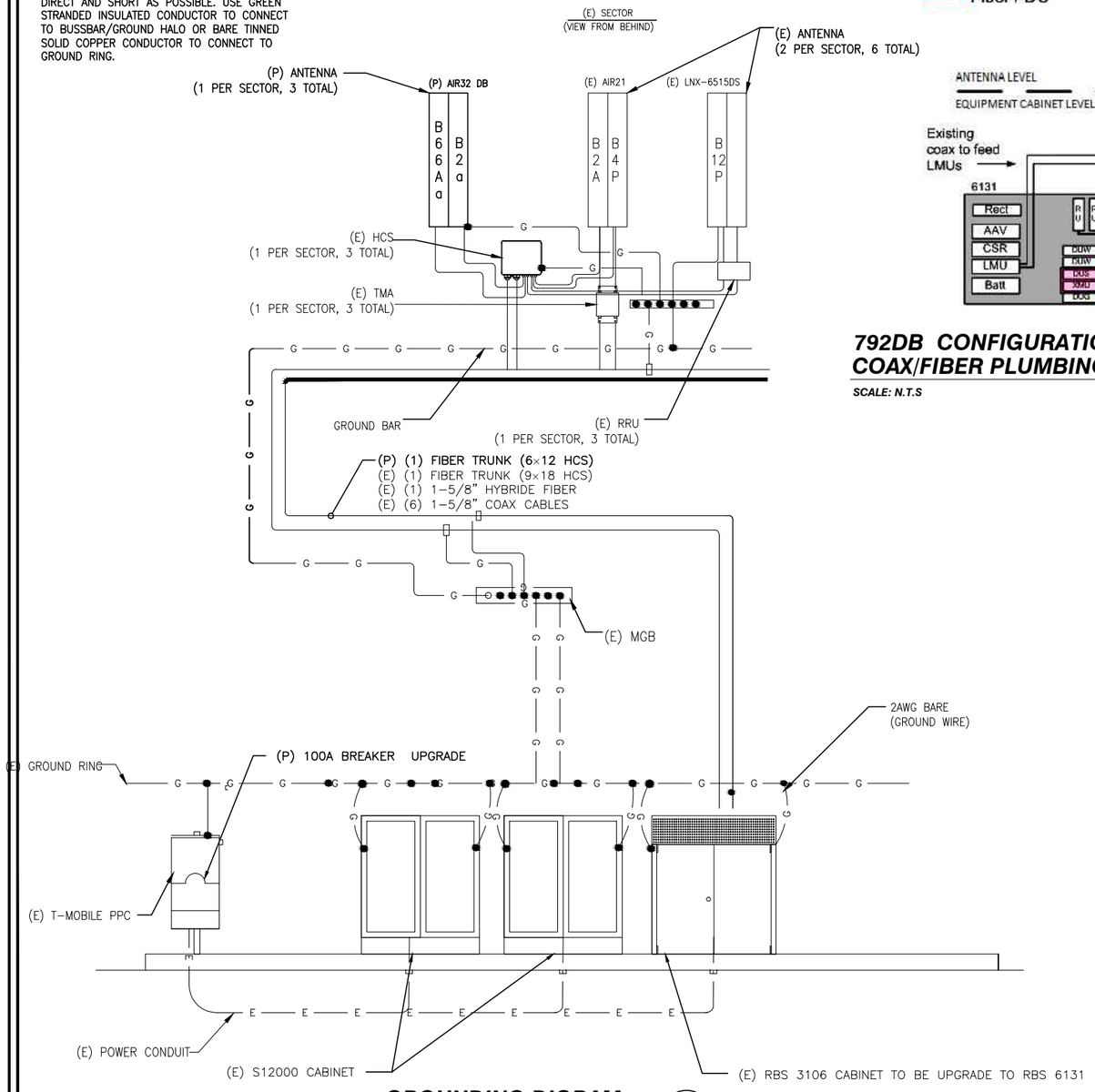
BRIDGEPORT, CT 06610

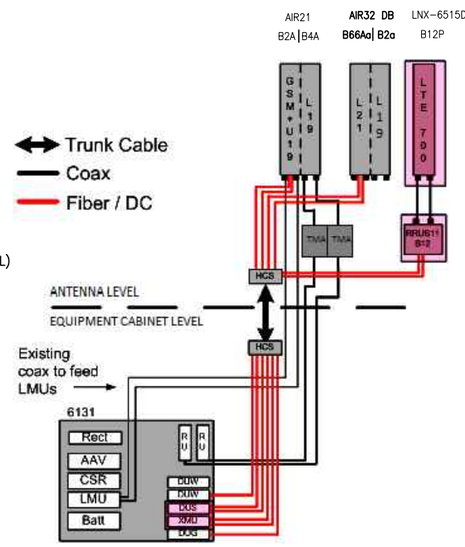
SHEET TITLE
ANTENNA PLAN
AND
DETAILS

SHEET NUMBER
A-2

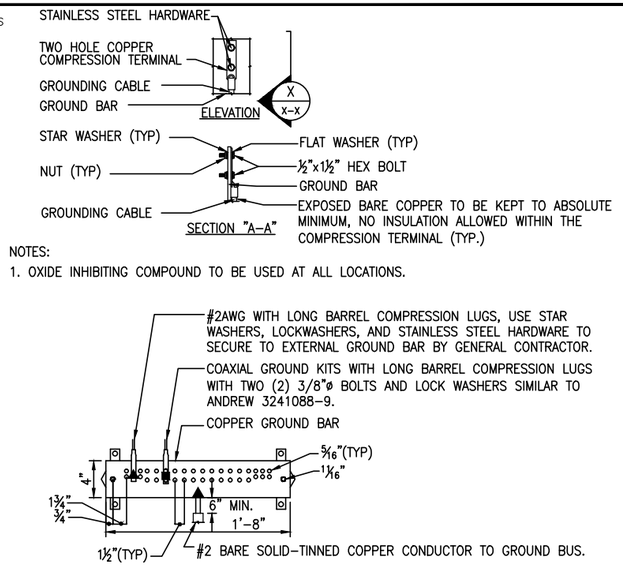
NOTES:
A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM 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



792DB 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 ¾" (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 ¾" (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
4 / E-1

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SHEET TITLE
GROUNDING DIAGRAM AND POWER ONE LINE DIAGRAM

SHEET NUMBER
E-1