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August 15th, 2018

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

RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at 1069 CONNECTICUT AVE, BRIDGEPORT, CONNECTICUT – CT52XC006 (lat. 41° 11' 00.87" N, long. - 73° 09' 30.15" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (123-foot level) on an existing (136-foot Monopole Tower) at the above-referenced address. The property is owned by WR CT AVENUE LLC and the tower is owned by AMERICAN TOWER CORPORATION.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace three (3) antennas, add an additional three (3) antennas, and add nine (9) new RRHs onto the tower. All the proposed work is contained within the existing fenced area. Please refer to the attached drawings for site plans prepared by Infinigy Engineering.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to JOSEPH GANIM, MAYOR and DENNIS BUCKLEY, ZONING ADMINISTRATOR of the City of Bridgeport. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the tower and WR CT AVENUE LLC who owns the land.

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

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The antennas work is a one-for-one replacement of facility components.

32 Clinton Street, Saratoga Springs, NY 12866
Office 518-306-1733 – Fax 518-306-1711
www.airosmithdevelopment.com

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3. The proposed modifications will include the addition of ground base equipment as depicted on the attached drawings; however, the proposed equipment will not require an extension of the site boundaries.

4. The proposed modifications will not increase noise levels at the facility by six decibels or more.

5. The additional ground based equipment will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard.

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

If you have any questions or require any additional information regarding this request, please do not hesitate to give me a call at (518) 350-4222 or email me to aperkowski@airosmithdevelopment.com

Kind Regards,

Arthur Perkowski
Airosmith Development Inc.
32 Clinton Street
Saratoga Springs, NY 12866
518-306-1711 desk & fax
518-871-3707 cell
aperkowski@airosmithdevelopment.com

Attachment

CC: Joseph Ganim (MAYOR, Bridgeport, CT)
Justine Paul (American Tower Corporation)
Dennis Buckley (Zoning Administrator, Bridgeport, CT)
WR CT AVENUE LLC (Land Owner)

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BRIDGEPORT, CT 06604

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SARATOGA FINANCE
AUG 15 2018
SARATOGA SPRINGS NY 12866

0867 77

08/15/2018

Sent To: Joseph Ganim CTSaxcod

Street and Apt. No., or PO Box No.: 199 Broad St

City, State, ZIP+4®: Bridgeport CT

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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AUG 15 2018
SARATOGA SPRINGS NY 12866

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08/15/2018

Sent To: WR CT Avenue LLC CTSaxcod

Street and Apt. No., or PO Box No.: 440 Mamaroneck Ave

City, State, ZIP+4®: Harrison NY 10528

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Sent To: Justice Paul CTSaxcod

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City, State, ZIP+4®: Woburn MA 01801

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SARATOGA FINANCE
AUG 15 2018
SARATOGA SPRINGS NY 12866

0867

08/15/2018

Sent To: Dennis Bebbe CTSaxcod

Street and Apt. No., or PO Box No.: 45 Lyon Terrace

City, State, ZIP+4®: Bridgeport CT

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0680 0002 1201 3735

1069 CONNECTICUT AV

Location	1069 CONNECTICUT AV	**Mblu**	44/ 723/ 3/A /
Acct#	R--0004050	**Owner**	WR CT AVENUE LLC
Assessment	$1,902,240	**Appraisal**	$2,717,490
PID	4911	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$1,808,490	$909,000	$2,717,490
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$1,265,940	$636,300	$1,902,240

Owner of Record

Owner	WR CT AVENUE LLC	**Sale Price**	$0
Co-Owner	C/O WESTROCK DEVELOPMENT LLC	**Certificate**	
Address	440 MAMARONECK AVENUE SUITE N-503 HARRISON, NY 10528	**Book & Page**	7844/ 40
		Sale Date	06/27/2008
		Instrument	14

Ownership History

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

Building Information

Building 1 : Section 1

Year Built:	1939
Living Area:	106,726
Replacement Cost:	$5,015,157
Building Percent Good:	20

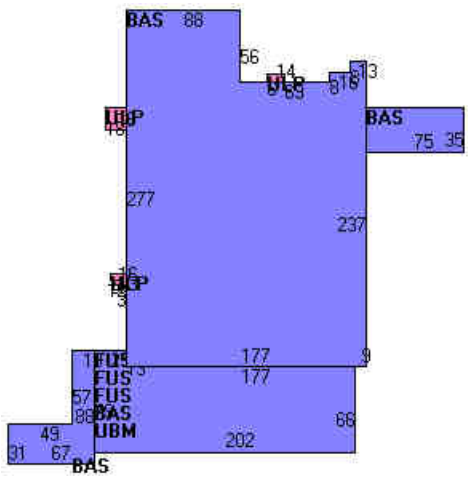
Replacement Cost Less Depreciation: $1,003,030

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

Building Photo

(http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\00\5C

Building Layout



(http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/

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

Building 2 : Section 1

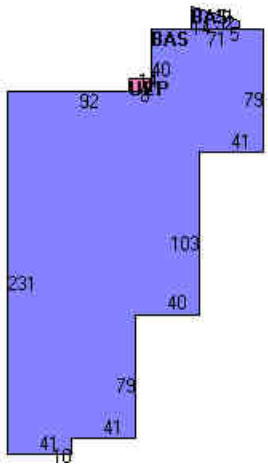
Year Built: 1967
Living Area: 28,945
Replacement Cost: $1,058,496
Building Percent Good: 23
Replacement Cost Less Depreciation: $243,450

Building Attributes : Bldg 2 of 3	
Field	**Description**
STYLE	Industrial
MODEL	Ind/Comm
Grade:	Average
Stories:	1
Occupancy:	1
Exterior Wall 1:	Concr/CinderBl
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	Oil
Heating Type:	Hot Air-No Duc
AC Type:	None
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	10
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	None
Rooms/Prtns:	Average
Wall Height:	14
% Comn Wall:	

Building Photo

(http://images.vgsi.com/photos2/BridgeportCTPhotos//default.jp

Building Layout



(http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/

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

Building 3 : Section 1

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

Building Attributes : Bldg 3 of 3	
Field	**Description**

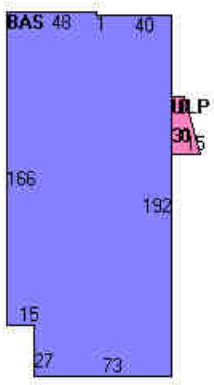
STYLE	Mill Building
MODEL	Ind/Comm
Grade:	D+
Stories:	4
Occupancy:	1
Exterior Wall 1:	Brick
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	Tar + Gravel
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	None
Heating Type:	None
AC Type: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

Building Photo

(http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\09\91

Building Layout

UBM[7600]



(http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/

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

Extra Features

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

ELV1	Freight	5 STOPS	$16,500	1

Land

Land Use

Use Code	342
Description	Mill Building
Zone	LI
Neighborhood	CTA
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	6.06
Frontage	0
Depth	0
Assessed Value	$636,300
Appraised Value	$909,000

Outbuildings

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

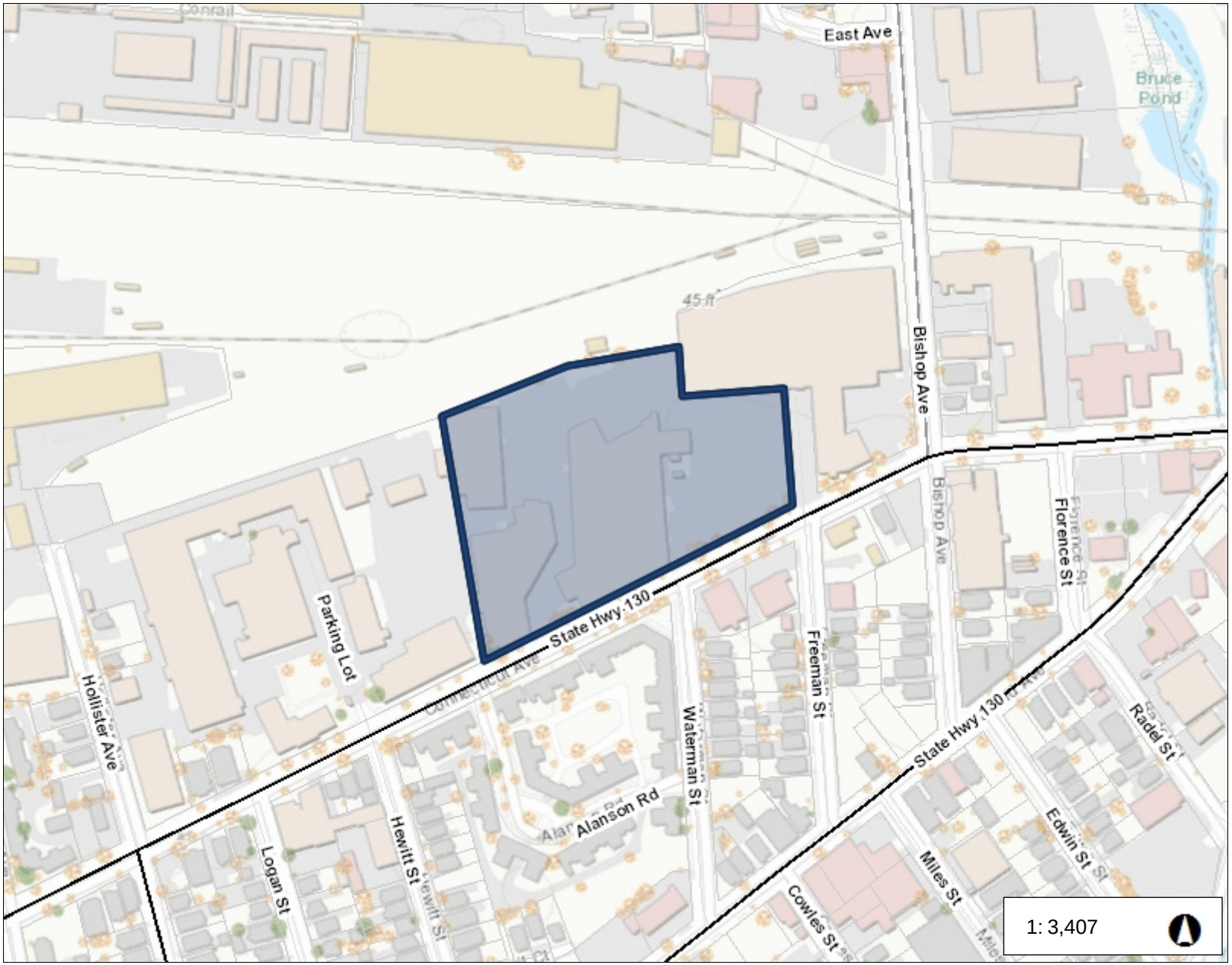
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$1,808,490	$909,000	$2,717,490
2016	$1,808,490	$909,000	$2,717,490
2015	$1,808,490	$909,000	$2,717,490

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$1,265,940	$636,300	$1,902,240
2016	$1,265,940	$636,300	$1,902,240
2015	$1,265,940	$636,300	$1,902,240

City of Bridgeport

CT52XC006



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

567.8 0 283.90 567.8 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Connecticut Metropolitan Council of Governments

METROCOG
Connecticut Metropolitan Council of Governments

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT52XC006

Bridgeport CT 2
1069 Connecticut Avenue
Bridgeport, CT 06607

August 5, 2018

EBI Project Number: 6218005336

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	15.30 %

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

EBI Consulting
environmental | engineering | due diligence

August 5, 2018

SPRINT
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT52XC006 – Bridgeport CT 2**

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

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS), 2500 MHz (BRS) and 18 GHz / 23 GHz microwave 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 SPRINT Wireless antenna facility located at **1069 Connecticut Avenue, Bridgeport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) 1 microwave channel (23 GHz) was considered for sector B of the proposed installation. This channel has a transmit power of 1 Watt.

7) 1 microwave channel (18 GHz) was considered for sector C of the proposed installation. This channel has a transmit power of 1 Watt.

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 for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 **Commscope NNVV-65B-R4 and the Nokia 2.5G MAA-AAHC (64T64R)** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands as well as the **Dragonwave A-ANT-23G-1-C** for microwave transmission in the 23 GHz frequency band and the **Dragonwave A-ANT-18G-2-C** for microwave transmission in the 18 GHz frequency band. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 centerlines of the proposed panel antennas and microwave dishes are **123 feet** above ground level (AGL) for **Sector A**, **123 feet** above ground level (AGL) for **Sector B** and **123 feet** above ground level (AGL) for Sector C.

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.

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	**123 feet**	Height (AGL):	**123 feet**	Height (AGL):	**123 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	**2.39 %**	Antenna B1 MPE%	**2.39 %**	Antenna C1 MPE%	**2.39 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Nokia 2.5G MAA-AAHC (64T64R)	Make / Model:	Nokia 2.5G MAA-AAHC (64T64R)	Make / Model:	Nokia 2.5G MAA-AAHC (64T64R)
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**123 feet**	Height (AGL):	**123 feet**	Height (AGL):	**123 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**1.34 %**	Antenna B2 MPE%	**1.34 %**	Antenna C2 MPE%	**1.34 %**

Microwave Backhaul Data

Antenna Type:	Gain (dBd)	Height (feet AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
Dragonwave A-ANT-23G-1-C	33.15 dBd	123	23 GHz	1	1	2,065.38	**0.05**	B
Dragonwave A-ANT-18G-2-C	36.45 dBd	123	18 GHz	1	1	4,415.70	**0.12**	C

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Sector C	**3.85 %**
T-Mobile	4.19 %
Clearwire	0.18 %
AT&T	4.90 %
MetroPCS	2.18 %
Site Total MPE %:	**15.30 %**

SPRINT Sector A Total:	3.74 %
SPRINT Sector B Total:	3.79 %
SPRINT Sector C Total:	3.85 %
Site Total:	15.30 %

Sprint Maximum MPE Power Values (Sector C)

SPRINT _ Frequency Band / Technology (Sector C)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	123	0.99	850 MHz	567	0.18%
Sprint 850 MHz LTE	2	941.82	123	4.95	850 MHz	567	0.87%
Sprint 1900 MHz (PCS) CDMA	5	511.82	123	6.72	1900 MHz (PCS)	1000	0.67%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	123	6.72	1900 MHz (PCS)	1000	0.67%
Sprint 2500 MHz (BRS) LTE	8	639.78	123	13.44	2500 MHz (BRS)	1000	1.34%
Sprint 18 GHz Microwave	1	4,415.70	123	1.16	18 GHz	1000	0.12%
						Total:	**3.85%**

Summary

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

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	3.74 %
Sector B:	3.79 %
Sector C:	3.85 %
SPRINT Maximum MPE % (Sector C):	3.85 %
Site Total:	15.30 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.30 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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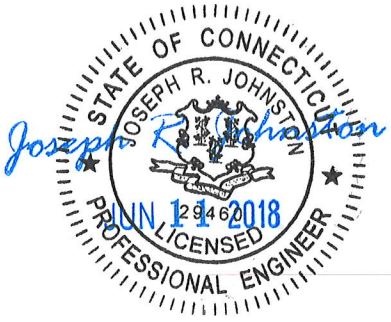
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Mount Analysis Report

June 8, 2018

Cascade Name	CT52XC006
Site Name	Bridgeport CT 2
Infinigy Job Number	526-104
Client	Airosmith
Carrier	Sprint
Site Location	1069 Connecticut Avenue Bridgeport, CT 06607 41° 11' 0.87" N NAD83 73° 9' 30.15" W NAD83
Mount Centerline EL.	131.0 ft
Mount Classification	T-Arm
Mount Usage	**60.7%**
Overall Result	**Contingent Pass-See Required Modification Below**
Note	**Replace existing mount with (3) SitePro1 RMV5-296 prior to installation of proposed appurtenances.**

Upon reviewing the results of this analysis, it is our opinion that the proposed mount meets the specified TIA code requirements. The proposed mounts are therefore deemed adequate to support the final loading configuration as listed in this report and must be replaced as noted above.



Jessica Kipp
Structural Engineer Intern

Contents

Introduction

Infinigy Engineering has been requested to perform a mount analysis on the existing Sprint mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 16.0.3 analysis software.

Supporting Documentation

Tower Analysis	ATC #OAA718327_C3_02, dated January 8, 2018
Construction Drawings	Infinigy Job #526-104, dated December 4, 2017
Colo Application	ATC Asset #302469, dated March 19, 2018

Analysis Code Requirements

Wind Speed	97 mph (3-Second Gust, V_{ASD}) / 125 mph (3-Second Gust, V_{ULT})
Wind Speed w/ ice	50 mph (3-Second Gust, V_{ASD}) w/ 3/4" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2012 IBC / 2016 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the proposed mount meets the specified TIA code requirements. The proposed mounts are therefore deemed adequate to support the final loading configuration as listed in this report and must be replaced as noted above.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Jessica Kipp
Structural Engineer Intern | Infinigy
1033 Watervliet Shaker Road, Albany, NY 12205
(O) (518) 690-0790
jkipp@infinigy.com | www.infinigy.com

DO Macro Final Configuration

Mount CL (ft)	Rad. HT (ft)	Horiz. O/S (ft)(1)	Qty	Appurtenance(1)(2)	Carrier
131.0	131.0	5.0	3	Commscope NNVV-65B-R4	Sprint
		0.0	3	Nokia 2.5G MMA-AAHC	
		5.0	3	Alcatel-Lucent 1900 MHz 4x45 RRH	
		0.0, 5.0	6	Alcatel Lucent RRH2x50-08	
		0.0	1	Dragonwave A-ANT-18G-2-C	
		5.0	1	Dragonwave-A-ANT-23G-1-C	
		0.0	2	DragonWave Horizon Compact	

(1) Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.
(2) Radios are mounted behind antennas at respective locations. See appended documents for vertical locations

Structure Usages

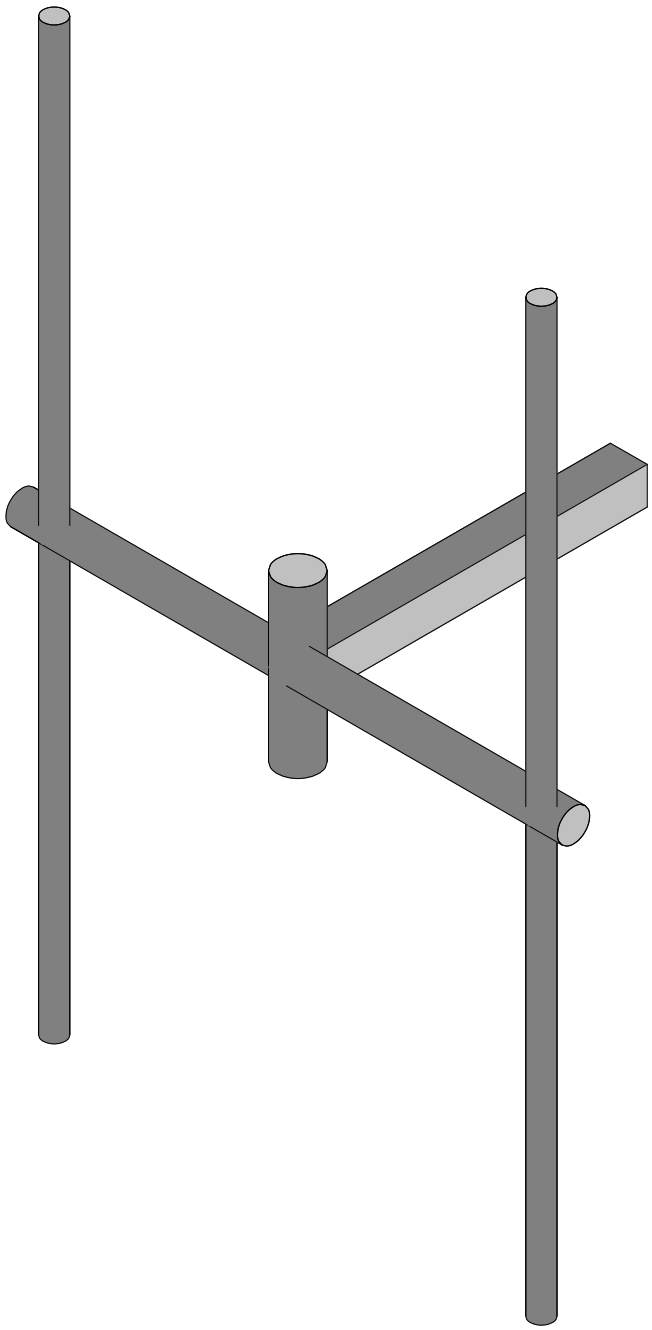
Mount Pipe	60.7%	Pass
Standoff	49.3%	Pass
Horizontal	34.8%	Pass
Results	**60.7%**	**Pass**

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.



Envelope Only Solution

Infinigy Engineering, PLLC	CT52XC006	Final Configuration
JNK		June 8, 2018 at 9:45 AM
526-104		Proposed_CT52XC006.r3d

Site Name:	CT52XC006
Client:	Airosmith
Carrier:	Sprint
Engineer:	JNK
Date:	6/8/2018

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INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code:	2012 IBC
Structure Load Standard:	TIA-222-G
Antenna Load Standard:	TIA-222-G
Structure Risk Category:	II
Structure Type:	Mount - T-Arm
Number of Sectors:	3
Structure Shape 1:	Round

Rooftop Inputs:

Rooftop Wind Speed-Up?:	No

Wind Loading Inputs:

Design Wind Velocity:	97	mph (nominal 3-second gust)
Wind Centerline 1 (z_1):	131.0	ft
Side Face Angle (θ):	60	degrees
Exposure Category:	B	
Topographic Category:	1	

Wind with No Ice		
q_z (psf)	Gh	F_{ST} (psf)
24.43	1.00	**29.31**

Wind with Ice		
q_z (psf)	Gh	F_{ST} (psf)
6.49	1.00	**15.79**

Ice Loading Inputs:

Is Ice Loading Needed?:	Yes	
Ice Wind Velocity:	50	mph (nominal 3-second gust)
Base Ice Thickness:	0.75	in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	Ka	Front Shape	Side Shape	q_z (psf)	EPA (ft^2)	Fz (lbs)	Fx (lbs)	Fz(60) (lbs)	Fx(30) (lbs)
Commscope NNVV-65B-R4	131.0	3	1.00	Flat	Flat	24.43	12.27	299.75	140.46	180.28	259.92
Nokia 2.5G MMA-AAHC	131.0	3	1.00	Flat	Flat	24.43	4.20	102.66	50.34	63.42	89.58
Alcatel-Lucent 1900 MHz 4x45 RRH	131.0	3	1.00	Flat	Flat	24.43	2.31	56.49	58.01	57.63	56.87
Alcatel-Lucent RRH2x50-08	131.0	3	1.00	Flat	Flat	24.43	1.70	41.55	31.32	33.88	38.99
Alcatel-Lucent RRH2x50-08	131.0	3	1.00	Flat	Flat	24.43	1.70	41.55	31.32	33.88	38.99
Dragonwave A-ANT-18G-2-C	131.0	1	1.00	Round	Round	24.43	2.37	57.78	29.22	36.36	50.64
Dragonwave-A-ANT-23G-1-C	131.0	1	1.00	Round	Round	24.43	0.82	20.12	11.36	13.55	17.93
DragonWave Horizon Compact	131.0	2	1.00	Flat	Flat	24.43	0.72	17.61	8.99	11.15	15.45

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N2	N1			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
2	M2	N4	N3			3" STD Pipe	Beam	None	A53 Gr.B	Typical
3	M3	N6	N5			4" STD Pipe	Beam	None	A53 Gr.B	Typical
4	MP1	N20	N21			2" STD Pipe	Beam	None	A53 Gr.B	Typical
5	MP2	N22	N23			2" STD Pipe	Beam	None	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	Hot Rolled Steel				
2	A53 Gr.B	HSS4x4x4	1	36	0
3	A53 Gr.B	PIPE_2.0	2	192	0
4	A53 Gr.B	PIPE_3.0	1	60	0
5	A53 Gr.B	PIPE_4.0	1	18	0
6	Total HR Steel		5	306	.1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			10			
2	Wind Load AZI 000	WLZ					10		1	
3	Wind Load AZI 090	WLX					10		1	
4	Ice Weight	OL1					10	5		
5	Wind + Ice Load AZI 000	OL2					10		1	
6	Wind + Ice Load AZI 090	OL3					10		1	
7	Service Live 1	LL				2				
8	BLC 2 Transient Area Loads	None						4		
9	BLC 3 Transient Area Loads	None						4		
10	BLC 5 Transient Area Loads	None						4		
11	BLC 6 Transient Area Loads	None						4		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	BLC	Fac...	BLC	Fa...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...
1	1.4D	Y...	Y		DL	1.4																				
2	1.2D + 1.6W AZI 000	Y...	Y		DL	1.2	WLZ	1.6																		
3	1.2D + 1.6W AZI 030	Y...	Y		DL	1.2	WLZ	1.3...	W...	.8																
4	1.2D + 1.6W AZI 060	Y...	Y		DL	1.2	WLZ	.8	W...	1.3...																
5	1.2D + 1.6W AZI 090	Y...	Y		DL	1.2			W...	1.6																
6	1.2D + 1.6W AZI 120	Y...	Y		DL	1.2	WLZ	-.8	W...	1.3...																
7	1.2D + 1.6W AZI 150	Y...	Y		DL	1.2	WLZ	-1.3...	W...	.8																
8	1.2D + 1.6W AZI 180	Y...	Y		DL	1.2	WLZ	-1.6																		
9	1.2D + 1.6W AZI 210	Y...	Y		DL	1.2	WLZ	-1.3...	W...	-.8																
10	1.2D + 1.6W AZI 240	Y...	Y		DL	1.2	WLZ	-.8	W...	-1....																
11	1.2D + 1.6W AZI 270	Y...	Y		DL	1.2			W...	-1.6																
12	1.2D + 1.6W AZI 300	Y...	Y		DL	1.2	WLZ	.8	W...	-1....																
13	1.2D + 1.6W AZI 330	Y...	Y		DL	1.2	WLZ	1.3...	W...	-.8																
14	0.9D + 1.6W AZI 000	Y...	Y		DL	.9	WLZ	1.6																		
15	0.9D + 1.6W AZI 030	Y...	Y		DL	.9	WLZ	1.3...	W...	.8																
16	0.9D + 1.6W AZI 060	Y...	Y		DL	.9	WLZ	.8	W...	1.3...																
17	0.9D + 1.6W AZI 090	Y...	Y		DL	.9			W...	1.6																
18	0.9D + 1.6W AZI 120	Y...	Y		DL	.9	WLZ	-.8	W...	1.3...																
19	0.9D + 1.6W AZI 150	Y...	Y		DL	.9	WLZ	-1.3...	W...	.8																
20	0.9D + 1.6W AZI 180	Y...	Y		DL	.9	WLZ	-1.6																		

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	BLC	Fac...	BLC	Fa...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...
21	0.9D + 1.6W AZI 210	Y...	Y		DL	.9	WLZ	-1.3...	W...	-.8																
22	0.9D + 1.6W AZI 240	Y...	Y		DL	.9	WLZ	-.8	W...	-1....																
23	0.9D + 1.6W AZI 270	Y...	Y		DL	.9			W...	-1.6																
24	0.9D + 1.6W AZI 300	Y...	Y		DL	.9	WLZ	.8	W...	-1....																
25	0.9D + 1.6W AZI 330	Y...	Y		DL	.9	WLZ	1.3...	W...	-.8																
26	1.2D + 1.0Di	Y...	Y		DL	1.2	OL1	1																		
27	1.2D + 1.0Di + 1.0Wi AZI 000	Y...	Y		DL	1.2	OL1	1	OL2	1																
28	1.2D + 1.0Di + 1.0Wi AZI 030	Y...	Y		DL	1.2	OL1	1	OL2	.866	...	.5														
29	1.2D + 1.0Di + 1.0Wi AZI 060	Y...	Y		DL	1.2	OL1	1	OL2	.5	...	.8...														
30	1.2D + 1.0Di + 1.0Wi AZI 090	Y...	Y		DL	1.2	OL1	1			...	1														
31	1.2D + 1.0Di + 1.0Wi AZI 120	Y...	Y		DL	1.2	OL1	1	OL2	-.5	...	.8...														
32	1.2D + 1.0Di + 1.0Wi AZI 150	Y...	Y		DL	1.2	OL1	1	OL2	-.866	...	.5														
33	1.2D + 1.0Di + 1.0Wi AZI 180	Y...	Y		DL	1.2	OL1	1	OL2	-1																
34	1.2D + 1.0Di + 1.0Wi AZI 210	Y...	Y		DL	1.2	OL1	1	OL2	-.866	...	-.5														
35	1.2D + 1.0Di + 1.0Wi AZI 240	Y...	Y		DL	1.2	OL1	1	OL2	-.5	...	-....														
36	1.2D + 1.0Di + 1.0Wi AZI 270	Y...	Y		DL	1.2	OL1	1			...	-1														
37	1.2D + 1.0Di + 1.0Wi AZI 300	Y...	Y		DL	1.2	OL1	1	OL2	.5	...	-....														
38	1.2D + 1.0Di + 1.0Wi AZI 330	Y...	Y		DL	1.2	OL1	1	OL2	.866	...	-.5														
39	1.2D + 1.5L + 1.0WL (30 mph) AZI 000	Y...	Y		DL	1.2	LL	1.5	WLZ	.111																
40	1.2D + 1.5L + 1.0WL (30 mph) AZI 030	Y...	Y		DL	1.2	LL	1.5	WLZ	.096	...	.0...														
41	1.2D + 1.5L + 1.0WL (30 mph) AZI 060	Y...	Y		DL	1.2	LL	1.5	WLZ	.056	...	.0...														
42	1.2D + 1.5L + 1.0WL (30 mph) AZI 090	Y...	Y		DL	1.2	LL	1.5			...	.1...														
43	1.2D + 1.5L + 1.0WL (30 mph) AZI 120	Y...	Y		DL	1.2	LL	1.5	WLZ	-.056	...	.0...														
44	1.2D + 1.5L + 1.0WL (30 mph) AZI 150	Y...	Y		DL	1.2	LL	1.5	WLZ	-.096	...	.0...														
45	1.2D + 1.5L + 1.0WL (30 mph) AZI 180	Y...	Y		DL	1.2	LL	1.5	WLZ	-.111																
46	1.2D + 1.5L + 1.0WL (30 mph) AZI 210	Y...	Y		DL	1.2	LL	1.5	WLZ	-.096	...	-....														
47	1.2D + 1.5L + 1.0WL (30 mph) AZI 240	Y...	Y		DL	1.2	LL	1.5	WLZ	-.056	...	-....														
48	1.2D + 1.5L + 1.0WL (30 mph) AZI 270	Y...	Y		DL	1.2	LL	1.5			...	-....														
49	1.2D + 1.5L + 1.0WL (30 mph) AZI 300	Y...	Y		DL	1.2	LL	1.5	WLZ	.056	...	-....														
50	1.2D + 1.5L + 1.0WL (30 mph) AZI 330	Y...	Y		DL	1.2	LL	1.5	WLZ	.096	...	-....														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	799.724	5	1849.696	34	1262.446	14	-881.531	14	2366.614	6	237.255	36
2		min	-799.724	11	479.396	15	-1262.446	8	-5431.96	33	-2368.754	12	-198.981	17
3	Totals:	max	799.724	5	1849.696	34	1262.446	14						
4		min	-799.724	11	479.396	15	-1262.446	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Che...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*P...	phi*M...	phi*M...	...	Eqn
1	MP1	PIPE_2.0	.607	48	8	.041	48		20	14916.096	32130	1871....	1871....	...	H1-1b
2	M1	HSS4x4x4	.493	36	30	.086	36	y	36	103155.903	106155	12311...	12311...	...	H1-1b
3	M2	PIPE_3.0	.348	30	33	.101	30		2	57037.472	65205	5748....	5748....	...	H1-1b
4	MP2	PIPE_2.0	.295	48	8	.028	48		8	14916.096	32130	1871....	1871....	...	H1-1b
5	M3	PIPE_4.0	.001	9	8	.000	9		9	92571.332	93240	10631...	10631...	...	H1-1b

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**126 ft Monopole**
ATC Site Name	:	**Bridgeport CT 2, CT**
ATC Site Number	:	**302469**
Engineering Number	:	**OAA718327_C3_04**
Proposed Carrier	:	**Clearwire Corporation**
Carrier Site Name	:	**Bridgeport CT 2**
Carrier Site Number	:	**CT52XC006**
Site Location	:	**1069 Connecticut Avenue** **Bridgeport, CT 06607-1226** **41.183600,-73.158400**
County	:	**Fairfield**
Date	:	**June 26, 2018**
Max Usage	:	**80%**
Result	:	**Pass**

Prepared By:
Ryan Daudelin
Engineer Intern

Ryan Daudelin

Reviewed By:

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 126 ft monopole to reflect the change in loading by Clearwire Corporation.

Supporting Documents

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

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
126.0	131.0	2	DragonWave Horizon Compact	-	(3) 1/2" Coax (2) 2" Conduit	Clearwire
		1	Dragonwave A-ANT-23G-1-C			
		1	Dragonwave A-ANT-18G-2-C			
120.0	120.0	3	Kathrein Smart Bias Tee	Low Profile Platform	(18) 1 5/8" Coax (3) 7/8" Fiber	T-Mobile
		6	Ericsson KRY 112 489/1			
		3	Ericsson AIR 32			
		3	Ericsson AIR-32 B2A/B66Aa			
		3	RFS APXVAARR24_43-U-NA20			
	116.0	3	Ericsson Radio 4449 B12,B71			
106.0	110.0	6	Powerwave 7020.00 Dual Band RET	Platform w/ Handrails	(4) 1.24" 4 AWG 6 (12) 1 5/8" Coax (2) 0.51" Hybrid (2) 0.78" 8 AWG 6	AT&T Mobility
		6	Kaelus DBC0061F1V51-2			
		6	Powerwave LGP21401			
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 32 B66			
		3	Ericsson RRUS-11			
		3	Ericsson RRUS-32 (55.1 lbs)			
		6	Ericsson RRUS 12			
		1	Raycap DC6-48-60-0-8F (31.4" Height)			
		3	Quintel QS46512-2 (75 lbs)			
		3	Powerwave 7750.00			
		3	CCI OPA-65R-LCUU-H4			
101.0	101.0	3	RCU (Remote Control Unit)	Flush	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
		3	Kathrein 800 10504			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
126.0	123.0	3	Argus LLPX310R	Platform w/ Handrails	(6) 5/16" Coax	Clearwire
		3	NextNet BTS-2500			
	131.0	4	Decibel DB844H90E-XY		(12) 1 1/4" Coax	Sprint Nextel
		8	EMS RR90-11-00DBL			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
126.0	131.0	6	Alcatel-Lucent RRH2x50-08	RMV5-2XXs (T-Arms)	(3) 1 1/4" Hybriflex (1) 1.7" Hybrid	Clearwire
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Nokia 2.5G MAA - AAHC(64T64R)			
		3	Commscope NNVV-65B-R4			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	54%	Pass
Shaft	58%	Pass
Base Plate	57%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	1,906.4	59%
Axial (Kips)	36.5	5%
Shear (Kips)	19.9	80%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
131.0	Dragonwave A-ANT-23G-1-C	Clearwire Corporation	1.517	1.315
	Alcatel-Lucent RRH2x50-08			
	Alcatel-Lucent 1900 MHz 4x45 RRH			
	Nokia 2.5G MAA - AAHC(64T64R)			
	Dragonwave A-ANT-18G-2-C			
	Commscope NNVV-65B-R4			

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

AMERICAN TOWER®
CORPORATION

Standard Conditions

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

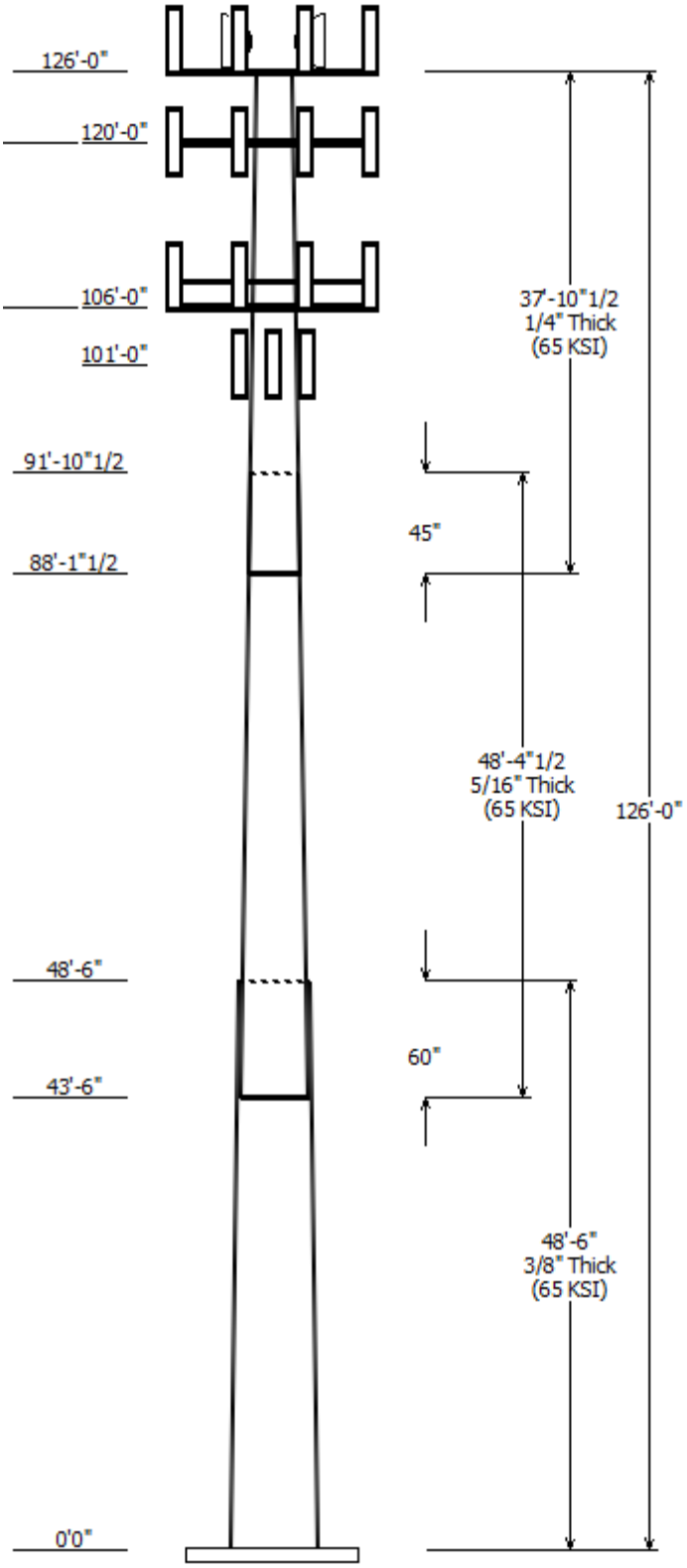
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

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

Sections Properties

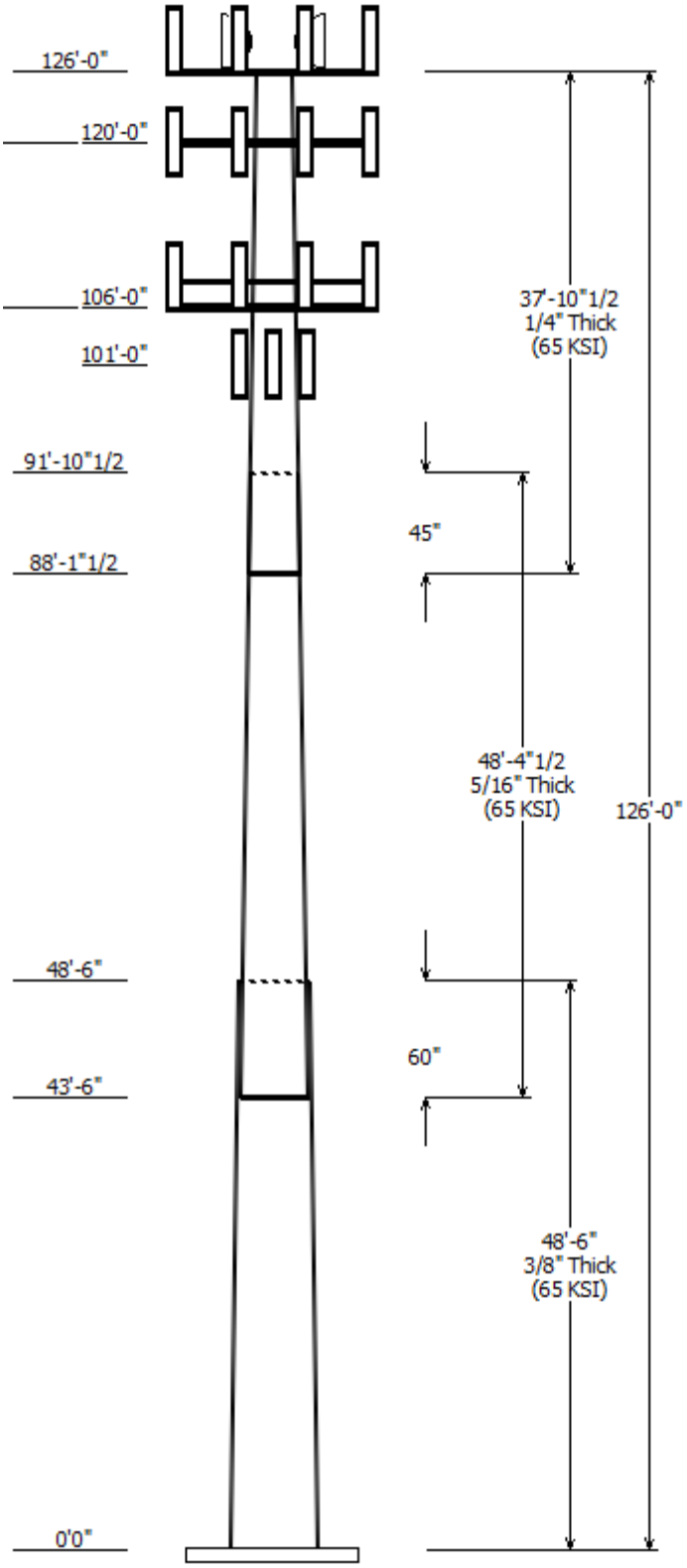
Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Steel Grade Shape	(ksi)
1	48.500	34.09	45.50	0.375		0.000	18 Sides	65
2	48.375	24.52	35.89	0.313	Slip Joint	60.000	18 Sides	65
3	37.875	17.00	25.90	0.250	Slip Joint	45.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
126.000	126.000	3	RMV5-2XX
126.000	131.000	3	Nokia 2.5G MAA -
126.000	131.000	1	Dragonwave A-ANT-18G-2-C
126.000	131.000	3	Commscope NNVV-65B-R4
126.000	131.000	3	Alcatel-Lucent 1900 MHz 4x45
126.000	131.000	6	Alcatel-Lucent RRH2x50-08
126.000	131.000	1	Dragonwave A-ANT-23G-1-C
126.000	131.000	2	DragonWave Horizon Compact
120.000	120.000	1	Round Low Profile Platform
120.000	120.000	3	RFS APXVAARR24_43-U-NA20
120.000	120.000	3	Ericsson AIR-32 B2A/B66Aa
120.000	120.000	3	Ericsson AIR 32
120.000	116.000	3	Ericsson Radio 4449 B12,B71
120.000	120.000	6	Ericsson KRY 112 489/1
120.000	120.000	3	Kathrein Scala Smart Bias Tee
106.000	106.000	1	Round Platform w/ Handrails
106.000	110.000	3	CCI OPA-65R-LCUU-H4
106.000	110.000	3	Powerwave Allgon 7750.00
106.000	110.000	3	Quintel QS46512-2 (75 lbs)
106.000	110.000	1	Raycap DC6-48-60-0-8F (31.4" H
106.000	110.000	6	Ericsson RRUS 12
106.000	110.000	3	Ericsson RRUS-32 (55.1 lbs)
106.000	110.000	3	Ericsson RRUS-11
106.000	110.000	3	Ericsson RRUS 32 B66
106.000	110.000	2	Raycap DC6-48-60-18-8F
106.000	110.000	6	Powerwave LGP21401
106.000	110.000	6	Kaelus DBC0061F1V51-2
106.000	110.000	6	Powerwave 7020.00 Dual Band
101.000	101.000	3	Kathrein Scala 800 10504
101.000	101.000	3	RCU (Remote Control Unit)

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	101.0	1 5/8" Coax	Yes
0.000	101.0	3/8" Coax	Yes
0.000	106.0	0.51" Hybrid	Yes
0.000	106.0	0.78" 8 AWG 6	Yes
0.000	106.0	1 5/8" Coax	Yes
0.000	106.0	1.24" (31.6mm) 4	Yes
0.000	120.0	1 5/8" Coax	No
0.000	120.0	7/8" Fiber	No



0.000	126.0	1 1/4" Hybriflex	No
0.000	126.0	1.7" Hybrid	No
0.000	126.0	1/2" Coax	No
0.000	126.0	2" Conduit	No

Load Cases

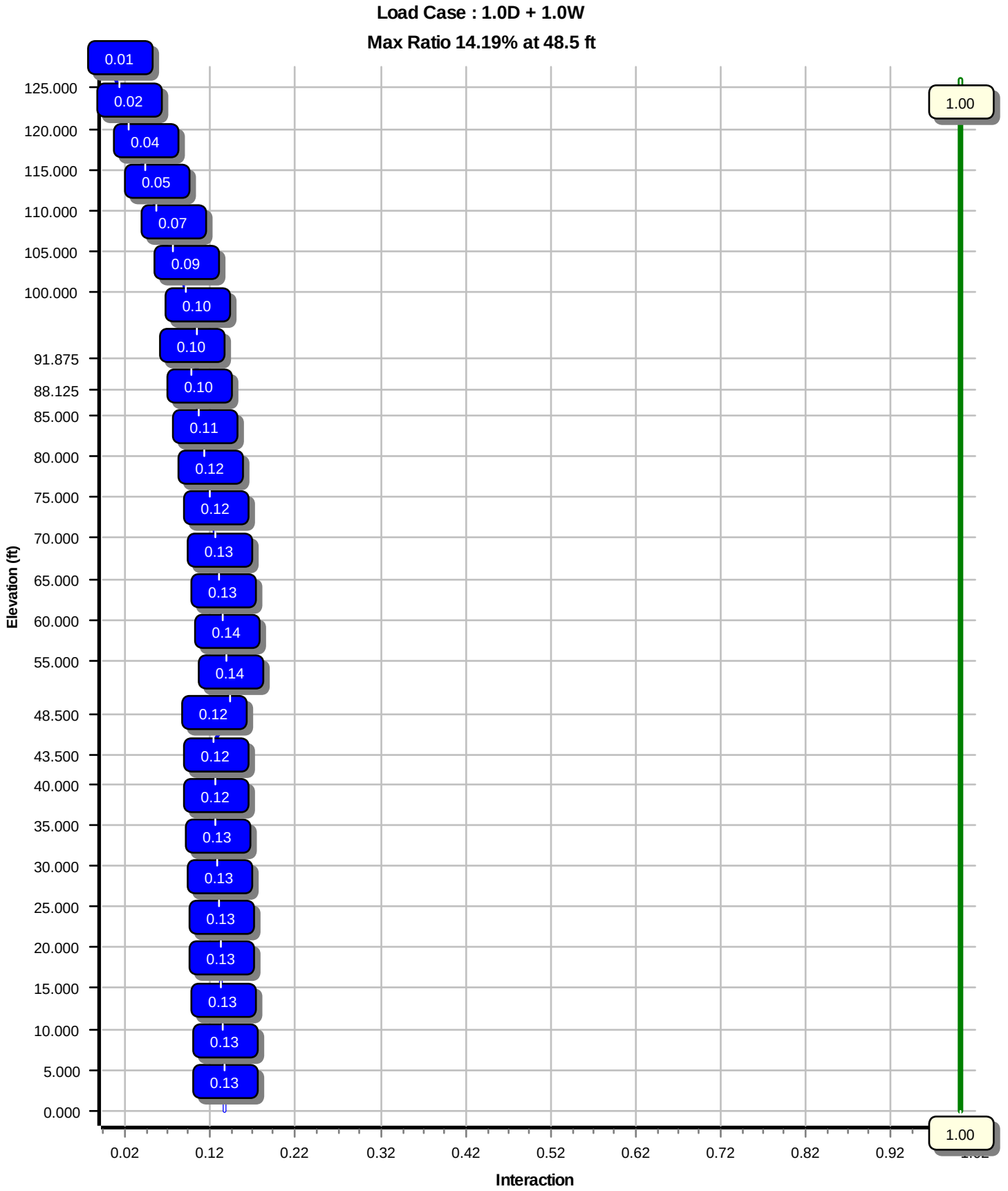
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1906.38	19.89	36.45
0.9D + 1.6W	1841.83	19.07	27.33
1.2D + 1.0Di + 1.0Wi	496.51	5.01	64.47
(1.2 + 0.2Sds) * DL + E ELFM	132.02	1.19	36.37
(1.2 + 0.2Sds) * DL + E EMAM	315.97	2.83	36.37
(0.9 - 0.2Sds) * DL + E ELFM	129.62	1.19	25.05
(0.9 - 0.2Sds) * DL + E EMAM	309.83	2.83	25.05
1.0D + 1.0W	442.99	4.56	30.40

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	126.00	17.660	1.276
1.0D + 1.0W	126.00	17.660	1.276


Load Case : 1.0D + 1.0W
Max Ratio 14.19% at 48.5 ft
0.01
0.02
0.04
0.05
0.07
0.09
0.10
0.10
0.10
0.11
0.12
0.12
0.13
0.13
0.14
0.14
0.12
0.12
0.12
0.13
0.13
0.13
0.13
0.13
0.13
1.00
1.00
125.000
120.000
115.000
110.000
105.000
100.000
91.875
88.125
85.000
80.000
75.000
70.000
65.000
60.000
55.000
48.500
43.500
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	302469	Code: ANSI/TIA-222-G	
Site Name:	Bridgeport CT 2, CT	Engineering Number:OAA718327_C3_04	6/26/2018 4:37:42 PM
Customer:	CLEARWIRE		

Analysis Parameters

Location :	FAIRFIELD County, CT	Height (ft) :	126
Code :	ANSI/TIA-222-G	Base Diameter (in) :	45.50
Shape :	18 Sides	Top Diameter (in) :	17.00
Pole Type :	Taper	Taper (in/ft) :	0.235
Pole Manfacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.45				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.204	S_1:	0.064	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.218	S_{d1}:	0.102		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

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

Site Name: Bridgeport CT 2, CT Engineering Number:OAA718327_C3_04 6/26/2018 4:37:42 PM

Customer: CLEARWIRE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	48.500	0.3750	65		0.00	7,744	45.50	0.00	53.71	13817.4	19.63	121.33	34.09	48.50	40.14	5766.3	14.27	90.92	0.235121
2-18	48.375	0.3125	65	Slip	60.00	4,881	35.89	43.50	35.29	5646.6	18.49	114.87	24.52	91.88	24.01	1778.4	12.07	78.47	0.235121
3-18	37.875	0.2500	65	Slip	45.00	2,168	25.90	88.13	20.36	1692.8	16.51	103.62	17.00	126.00	13.29	471.1	10.23	68.00	0.235121
				Shaft Weight		14,793													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
126.00	Alcatel-Lucent 1900 MHz 4x45 R	3	0.000	5.000	60.00	2.320	0.67
126.00	Alcatel-Lucent RRH2x50-08	6	0.000	5.000	52.90	1.700	0.50
126.00	Commscope NNVV-65B-R4	3	0.000	5.000	77.40	12.270	0.64
126.00	Dragonwave A-ANT-18G-2-C	1	0.000	5.000	27.10	4.690	1.00
126.00	Dragonwave A-ANT-23G-1-C	1	0.000	5.000	15.00	1.610	1.00
126.00	DragonWave Horizon Compact	2	0.000	5.000	10.60	0.430	0.50
126.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.000	5.000	103.60	4.200	0.64
126.00	RMV5-2XX	3	0.000	0.000	710.60	9.700	1.00
120.00	Ericsson AIR 32	3	0.000	0.000	108.50	5.800	0.72
120.00	Ericsson AIR-32 B2A/B66Aa	3	0.000	0.000	132.20	6.510	0.71
120.00	Ericsson KRY 112 489/1	6	0.000	0.000	15.40	0.650	0.50
120.00	Ericsson Radio 4449 B12,B71	3	0.000	-4.000	74.00	1.640	0.50
120.00	Kathrein Scala Smart Bias Tee	3	0.000	0.000	3.31	0.090	0.50
120.00	RFS APXVAARR24_43-U-NA20	3	0.000	0.000	127.90	20.240	0.63
120.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
106.00	CCI OPA-65R-LCUU-H4	3	0.000	4.000	57.00	6.080	0.66
106.00	Ericsson RRUS 12	6	0.000	4.000	50.00	3.150	0.67
106.00	Ericsson RRUS 32 B66	3	0.000	4.000	53.00	2.740	0.67
106.00	Ericsson RRUS-11	3	0.000	4.000	51.00	2.790	0.67
106.00	Ericsson RRUS-32 (55.1 lbs)	3	0.000	4.000	55.10	2.850	0.67
106.00	Kaelus DBC0061F1V51-2	6	0.000	4.000	25.50	0.510	0.50
106.00	Powerwave 7020.00 Dual Band	6	0.000	4.000	2.20	0.400	0.50
106.00	Powerwave Allgon 7750.00	3	0.000	4.000	27.00	5.560	0.65
106.00	Powerwave LGP21401	6	0.000	4.000	14.10	1.100	0.50
106.00	Quintel QS46512-2 (75 lbs)	3	0.000	4.000	75.00	5.550	0.76
106.00	Raycap DC6-48-60-0-8F (31.4" H	1	0.000	4.000	16.00	4.790	0.67
106.00	Raycap DC6-48-60-18-8F	2	0.000	4.000	31.80	1.280	1.00
106.00	Round Platform w/ Handrails	1	0.000	0.000	2000.00	27.200	1.00
101.00	Kathrein Scala 800 10504	3	0.000	0.000	17.60	3.340	0.67
101.00	RCU (Remote Control Unit)	3	0.000	0.000	1.00	0.160	0.50
Totals	Num Loadings:30	96			9806.13		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	126.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Clearwire Corporation
0.00	126.00	1	1.7" Hybrid	1.70	1.78	N	0.00	N	Clearwire Corporation
0.00	126.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire Corporation
0.00	126.00	2	2" Conduit	2.38	3.65	N	0.00	N	Clearwire Corporation
0.00	120.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	120.00	3	7/8" Fiber	0.88	0.70	N	0.00	N	T-Mobile
0.00	106.00	2	0.51" Hybrid	0.51	0.14	N	0.00	Y	AT&T Mobility

0.00	106.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	Y	AT&T Mobility
0.00	106.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	AT&T Mobility
0.00	106.00	4	1.24" (31.6mm) 4 AWG	1.24	1.17	N	0.00	Y	AT&T Mobility
0.00	101.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	Metro PCS
0.00	101.00	1	3/8" Coax	0.44	0.08	N	0.00	Y	Metro PCS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	45.500	53.708	13,817.4	19.63	121.33	78.3	598.1	0.0	0.0
5.00		0.3750	44.324	52.309	12,765.4	19.08	118.20	79.0	567.2	0.0	901.9
10.00		0.3750	43.149	50.910	11,768.2	18.53	115.06	79.6	537.2	0.0	878.1
15.00		0.3750	41.973	49.510	10,824.3	17.97	111.93	80.3	507.9	0.0	854.3
20.00		0.3750	40.798	48.111	9,932.2	17.42	108.79	80.9	479.5	0.0	830.5
25.00		0.3750	39.622	46.712	9,090.6	16.87	105.66	81.6	451.9	0.0	806.7
30.00		0.3750	38.446	45.313	8,297.9	16.31	102.52	82.2	425.1	0.0	782.9
35.00		0.3750	37.271	43.914	7,552.7	15.76	99.39	82.6	399.1	0.0	759.0
40.00		0.3750	36.095	42.514	6,853.5	15.21	96.25	82.6	374.0	0.0	735.2
43.50	Bot - Section 2	0.3750	35.272	41.535	6,390.7	14.82	94.06	82.6	356.9	0.0	500.5
45.00		0.3750	34.920	41.115	6,198.9	14.66	93.12	82.6	349.6	0.0	390.2
48.50	Top - Section 1	0.3125	34.722	34.128	5,105.2	17.83	111.11	80.4	289.6	0.0	895.2
50.00		0.3125	34.369	33.779	4,949.8	17.63	109.98	80.7	283.7	0.0	173.3
55.00		0.3125	33.193	32.612	4,454.7	16.97	106.22	81.4	264.3	0.0	564.8
60.00		0.3125	32.018	31.446	3,993.8	16.30	102.46	82.2	245.7	0.0	544.9
65.00		0.3125	30.842	30.280	3,565.8	15.64	98.69	82.6	227.7	0.0	525.1
70.00		0.3125	29.667	29.114	3,169.5	14.98	94.93	82.6	210.4	0.0	505.3
75.00		0.3125	28.491	27.948	2,803.8	14.31	91.17	82.6	193.8	0.0	485.4
80.00		0.3125	27.315	26.782	2,467.3	13.65	87.41	82.6	177.9	0.0	465.6
85.00		0.3125	26.140	25.616	2,158.9	12.99	83.65	82.6	162.7	0.0	445.8
88.13	Bot - Section 3	0.3125	25.405	24.888	1,979.8	12.57	81.30	82.6	153.5	0.0	268.5
90.00		0.3125	24.964	24.450	1,877.3	12.32	79.89	82.6	148.1	0.0	286.2
91.88	Top - Section 2	0.2500	25.023	19.657	1,524.2	15.89	100.09	82.6	120.0	0.0	281.1
95.00		0.2500	24.288	19.074	1,392.5	15.37	97.15	82.6	112.9	0.0	205.9
100.0		0.2500	23.113	18.141	1,198.1	14.54	92.45	82.6	102.1	0.0	316.6
101.0		0.2500	22.878	17.954	1,161.5	14.37	91.51	82.6	100.0	0.0	61.4
105.0		0.2500	21.937	17.208	1,022.6	13.71	87.75	82.6	91.8	0.0	239.3
106.0		0.2500	21.702	17.022	989.7	13.54	86.81	82.6	89.8	0.0	58.2
110.0		0.2500	20.762	16.275	865.1	12.88	83.05	82.6	82.1	0.0	226.6
115.0		0.2500	19.586	15.343	724.7	12.05	78.34	82.6	72.9	0.0	269.0
120.0		0.2500	18.410	14.410	600.4	11.22	73.64	82.6	64.2	0.0	253.1
125.0		0.2500	17.235	13.477	491.2	10.39	68.94	82.6	56.1	0.0	237.2
126.0		0.2500	17.000	13.290	471.1	10.23	68.00	82.6	54.6	0.0	45.5
											14,793.2

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

Site Name: Bridgeport CT 2, CT Engineering Number:OAA718327_C3_04 6/26/2018 4:37:42 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.6W 97 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		189.9	0.0					0.0	0.0	189.9	0.0	0.0	0.0
5.00		376.6	1,082.3					0.0	302.2	376.6	1,384.5	0.0	0.0
10.00		370.2	1,053.7					0.0	302.2	370.2	1,355.9	0.0	0.0
15.00		363.9	1,025.1					0.0	302.2	363.9	1,327.3	0.0	0.0
20.00		357.5	996.6					0.0	302.2	357.5	1,298.8	0.0	0.0
25.00		351.1	968.0					0.0	302.2	351.1	1,270.2	0.0	0.0
30.00		348.8	939.4					0.0	302.2	348.8	1,241.6	0.0	0.0
35.00		353.6	910.9					0.0	302.2	353.6	1,213.1	0.0	0.0
40.00		305.7	882.3					0.0	302.2	305.7	1,184.5	0.0	0.0
43.50	Bot - Section 2	182.7	600.6					0.0	211.6	182.7	812.2	0.0	0.0
45.00		186.7	468.2					0.0	90.7	186.7	558.9	0.0	0.0
48.50	Top - Section 1	186.9	1,074.2					0.0	211.6	186.9	1,285.7	0.0	0.0
50.00		243.5	208.0					0.0	90.7	243.5	298.6	0.0	0.0
55.00		376.2	677.7					0.0	302.2	376.2	980.0	0.0	0.0
60.00		377.9	653.9					0.0	302.2	377.9	956.2	0.0	0.0
65.00		378.7	630.1					0.0	302.2	378.7	932.3	0.0	0.0
70.00		457.4	606.3					0.0	302.2	457.4	908.5	0.0	0.0
75.00		530.1	582.5					107.8	302.2	637.9	884.7	0.0	0.0
80.00		517.7	558.7					109.9	302.2	627.6	860.9	0.0	0.0
85.00		411.8	534.9					111.9	302.2	523.6	837.1	0.0	0.0
88.13	Bot - Section 3	250.3	322.2					70.9	188.9	321.2	511.1	0.0	0.0
90.00		187.2	343.4					42.9	113.3	230.1	456.7	0.0	0.0
91.88	Top - Section 2	245.8	337.4					43.1	113.3	288.9	450.7	0.0	0.0
95.00		390.4	247.1					72.5	188.9	462.9	436.0	0.0	0.0
100.00		284.3	379.9					117.4	302.2	401.6	682.1	0.0	0.0
101.00	Appurtenance(s)	167.4	73.7	277.5	0.0	0.0	67.0	23.7	60.4	468.6	201.1	0.0	0.0
105.00		150.9	287.2					0.0	217.8	150.9	504.9	0.0	0.0
106.00	Appurtenance(s)	125.0	69.9	3,457.7	0.0	9,427.9	4,301.6	0.0	54.4	3,582.7	4,426.0	0.0	0.0
110.00		209.2	271.9					0.0	141.1	209.2	413.0	0.0	0.0
115.00		223.1	322.8					0.0	176.3	223.1	499.1	0.0	0.0
120.00	Appurtenance(s)	212.2	303.7	3,229.9	0.0	-326.9	3,516.2	0.0	176.3	3,442.1	3,996.2	0.0	0.0
125.00		123.4	284.7					0.0	75.2	123.4	359.9	0.0	0.0
126.00	Appurtenance(s)	20.0	54.7	2,892.1	0.0	8,274.3	3,882.6	0.0	15.0	2,912.1	3,952.3	0.0	0.0
									Totals:	20,013.1	36,480.2	0.00	0.00

Load Case: 1.2D + 1.6W 97 mph with No Ice 24 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.45	-19.89	0.00	-1,906.38	0.00	1,906.38	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.552
5.00	-35.00	-19.62	0.00	-1,806.96	0.00	1,806.96	3,717.33	1,858.67	6,708.61	3,359.29	0.10	-0.19	0.547
10.00	-33.58	-19.36	0.00	-1,708.84	0.00	1,708.84	3,647.68	1,823.84	6,405.34	3,207.43	0.41	-0.39	0.542
15.00	-32.18	-19.10	0.00	-1,612.02	0.00	1,612.02	3,576.40	1,788.20	6,106.06	3,057.57	0.92	-0.59	0.536
20.00	-30.82	-18.84	0.00	-1,516.51	0.00	1,516.51	3,503.48	1,751.74	5,811.01	2,909.82	1.65	-0.79	0.530
25.00	-29.49	-18.58	0.00	-1,422.30	0.00	1,422.30	3,428.92	1,714.46	5,520.42	2,764.31	2.59	-1.00	0.523
30.00	-28.18	-18.31	0.00	-1,329.40	0.00	1,329.40	3,352.72	1,676.36	5,234.53	2,621.15	3.76	-1.22	0.516
35.00	-26.91	-18.04	0.00	-1,237.83	0.00	1,237.83	3,262.56	1,631.28	4,934.93	2,471.13	5.15	-1.44	0.509
40.00	-25.67	-17.79	0.00	-1,147.64	0.00	1,147.64	3,158.60	1,579.30	4,623.93	2,315.40	6.78	-1.66	0.504
43.50	-24.83	-17.63	0.00	-1,085.39	0.00	1,085.39	3,085.84	1,542.92	4,412.25	2,209.40	8.06	-1.83	0.499
45.00	-24.24	-17.48	0.00	-1,058.94	0.00	1,058.94	3,054.65	1,527.33	4,323.05	2,164.74	8.65	-1.90	0.497
48.50	-22.93	-17.29	0.00	-997.78	0.00	997.78	2,470.49	1,235.24	3,488.73	1,746.96	10.10	-2.06	0.581
50.00	-22.59	-17.11	0.00	-971.85	0.00	971.85	2,452.28	1,226.14	3,427.21	1,716.15	10.76	-2.14	0.576
55.00	-21.55	-16.79	0.00	-886.32	0.00	886.32	2,390.53	1,195.26	3,224.53	1,614.66	13.14	-2.40	0.558
60.00	-20.53	-16.47	0.00	-802.36	0.00	802.36	2,327.14	1,163.57	3,025.74	1,515.12	15.80	-2.67	0.539
65.00	-19.54	-16.14	0.00	-720.02	0.00	720.02	2,249.69	1,124.84	2,815.52	1,409.85	18.74	-2.94	0.520
70.00	-18.58	-15.72	0.00	-639.33	0.00	639.33	2,163.06	1,081.53	2,601.80	1,302.84	21.97	-3.21	0.500
75.00	-17.67	-15.11	0.00	-560.74	0.00	560.74	2,076.43	1,038.21	2,396.52	1,200.04	25.48	-3.48	0.476
80.00	-16.78	-14.51	0.00	-485.17	0.00	485.17	1,989.80	994.90	2,199.68	1,101.47	29.27	-3.75	0.449
85.00	-15.93	-13.99	0.00	-412.62	0.00	412.62	1,903.17	951.59	2,011.27	1,007.13	33.34	-4.01	0.418
88.13	-15.41	-13.67	0.00	-368.90	0.00	368.90	1,849.03	924.51	1,897.79	950.31	36.01	-4.17	0.397
90.00	-14.95	-13.43	0.00	-343.28	0.00	343.28	1,816.54	908.27	1,831.29	917.01	37.67	-4.26	0.383
91.88	-14.50	-13.14	0.00	-318.10	0.00	318.10	1,460.41	730.20	1,483.31	742.76	39.36	-4.36	0.439
95.00	-14.05	-12.69	0.00	-277.05	0.00	277.05	1,417.09	708.55	1,396.21	699.14	42.26	-4.51	0.407
100.00	-13.38	-12.27	0.00	-213.59	0.00	213.59	1,347.79	673.89	1,262.31	632.09	47.12	-4.76	0.348
101.00	-13.19	-11.81	0.00	-201.32	0.00	201.32	1,333.93	666.96	1,236.34	619.09	48.12	-4.81	0.335
105.00	-12.68	-11.64	0.00	-154.06	0.00	154.06	1,278.48	639.24	1,135.17	568.43	52.22	-4.98	0.281
106.00	-8.57	-7.70	0.00	-132.99	0.00	132.99	1,264.62	632.31	1,110.55	556.10	53.26	-5.02	0.246
110.00	-8.16	-7.48	0.00	-102.19	0.00	102.19	1,209.18	604.59	1,014.77	508.14	57.53	-5.16	0.208
115.00	-7.67	-7.22	0.00	-64.81	0.00	64.81	1,139.88	569.94	901.12	451.23	63.00	-5.30	0.151
120.00	-4.01	-3.43	0.00	-28.69	0.00	28.69	1,070.57	535.29	794.22	397.70	68.59	-5.39	0.076
125.00	-3.66	-3.27	0.00	-11.55	0.00	11.55	1,001.27	500.64	694.07	347.55	74.26	-5.43	0.037
126.00	0.00	-2.91	0.00	-8.27	0.00	8.27	987.41	493.71	674.85	337.93	75.39	-5.44	0.025

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

Site Name: Bridgeport CT 2, CT Engineering Number:OAA718327_C3_04 6/26/2018 4:37:45 PM

Customer: CLEARWIRE

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		174.1	0.0					0.0	0.0	174.1	0.0	0.0	0.0
5.00		343.6	811.7					0.0	226.7	343.6	1,038.4	0.0	0.0
10.00		334.5	790.3					0.0	226.7	334.5	1,016.9	0.0	0.0
15.00		325.4	768.8					0.0	226.7	325.4	995.5	0.0	0.0
20.00		316.3	747.4					0.0	226.7	316.3	974.1	0.0	0.0
25.00		307.2	726.0					0.0	226.7	307.2	952.7	0.0	0.0
30.00		301.6	704.6					0.0	226.7	301.6	931.2	0.0	0.0
35.00		302.0	683.1					0.0	226.7	302.0	909.8	0.0	0.0
40.00		258.2	661.7					0.0	226.7	258.2	888.4	0.0	0.0
43.50	Bot - Section 2	153.0	450.5					0.0	158.7	153.0	609.1	0.0	0.0
45.00		154.8	351.2					0.0	68.0	154.8	419.2	0.0	0.0
48.50	Top - Section 1	154.6	805.6					0.0	158.7	154.6	964.3	0.0	0.0
50.00		200.1	156.0					0.0	68.0	200.1	224.0	0.0	0.0
55.00		306.1	508.3					0.0	226.7	306.1	735.0	0.0	0.0
60.00		302.7	490.5					0.0	226.7	302.7	717.1	0.0	0.0
65.00		298.4	472.6					0.0	226.7	298.4	699.3	0.0	0.0
70.00		416.0	454.7					0.0	226.7	416.0	681.4	0.0	0.0
75.00		530.1	436.9					107.8	226.7	637.9	663.6	0.0	0.0
80.00		517.7	419.0					109.9	226.7	627.6	645.7	0.0	0.0
85.00		411.8	401.2					111.9	226.7	523.6	627.8	0.0	0.0
88.13	Bot - Section 3	250.3	241.7					70.9	141.7	321.2	383.3	0.0	0.0
90.00		187.2	257.5					42.9	85.0	230.1	342.5	0.0	0.0
91.88	Top - Section 2	245.8	253.0					43.1	85.0	288.9	338.0	0.0	0.0
95.00		390.4	185.3					72.5	141.7	462.9	327.0	0.0	0.0
100.00		284.3	284.9					117.4	226.7	401.6	511.6	0.0	0.0
101.00	Appurtenance(s)	145.5	55.3	277.5	0.0	0.0	50.2	23.7	45.3	446.7	150.8	0.0	0.0
105.00		123.2	215.4					0.0	163.3	123.2	378.7	0.0	0.0
106.00	Appurtenance(s)	119.3	52.4	3,457.7	0.0	9,427.9	3,226.2	0.0	40.8	3,577.0	3,319.5	0.0	0.0
110.00		209.2	203.9					0.0	105.8	209.2	309.7	0.0	0.0
115.00		223.1	242.1					0.0	132.3	223.1	374.3	0.0	0.0
120.00	Appurtenance(s)	212.2	227.8	3,229.9	0.0	-326.9	2,637.1	0.0	132.3	3,442.1	2,997.2	0.0	0.0
125.00		123.4	213.5					0.0	56.4	123.4	269.9	0.0	0.0
126.00	Appurtenance(s)	20.0	41.0	2,892.1	0.0	8,274.3	2,911.9	0.0	11.3	2,912.1	2,964.2	0.0	0.0
									Totals:	19,199.2	27,360.2	0.00	0.00

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.33	-19.07	0.00	-1,841.83	0.00	1,841.83	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.532
5.00	-26.23	-18.81	0.00	-1,746.49	0.00	1,746.49	3,717.33	1,858.67	6,708.61	3,359.29	0.10	-0.18	0.527
10.00	-25.15	-18.55	0.00	-1,652.44	0.00	1,652.44	3,647.68	1,823.84	6,405.34	3,207.43	0.39	-0.37	0.522
15.00	-24.10	-18.30	0.00	-1,559.67	0.00	1,559.67	3,576.40	1,788.20	6,106.06	3,057.57	0.89	-0.57	0.517
20.00	-23.06	-18.06	0.00	-1,468.16	0.00	1,468.16	3,503.48	1,751.74	5,811.01	2,909.82	1.59	-0.77	0.511
25.00	-22.05	-17.82	0.00	-1,377.87	0.00	1,377.87	3,428.92	1,714.46	5,520.42	2,764.31	2.50	-0.97	0.505
30.00	-21.06	-17.57	0.00	-1,288.80	0.00	1,288.80	3,352.72	1,676.36	5,234.53	2,621.15	3.63	-1.18	0.498
35.00	-20.09	-17.33	0.00	-1,200.93	0.00	1,200.93	3,262.56	1,631.28	4,934.93	2,471.13	4.98	-1.39	0.492
40.00	-19.16	-17.11	0.00	-1,114.30	0.00	1,114.30	3,158.60	1,579.30	4,623.93	2,315.40	6.56	-1.61	0.487
43.50	-18.52	-16.97	0.00	-1,054.42	0.00	1,054.42	3,085.84	1,542.92	4,412.25	2,209.40	7.80	-1.77	0.483
45.00	-18.07	-16.84	0.00	-1,028.96	0.00	1,028.96	3,054.65	1,527.33	4,323.05	2,164.74	8.37	-1.84	0.481
48.50	-17.08	-16.69	0.00	-970.01	0.00	970.01	2,470.49	1,235.24	3,488.73	1,746.96	9.77	-2.00	0.562
50.00	-16.81	-16.53	0.00	-944.97	0.00	944.97	2,452.28	1,226.14	3,427.21	1,716.15	10.41	-2.07	0.558
55.00	-16.02	-16.27	0.00	-862.32	0.00	862.32	2,390.53	1,195.26	3,224.53	1,614.66	12.72	-2.33	0.541
60.00	-15.24	-16.01	0.00	-780.96	0.00	780.96	2,327.14	1,163.57	3,025.74	1,515.12	15.30	-2.59	0.522
65.00	-14.48	-15.74	0.00	-700.93	0.00	700.93	2,249.69	1,124.84	2,815.52	1,409.85	18.16	-2.86	0.504
70.00	-13.75	-15.36	0.00	-622.21	0.00	622.21	2,163.06	1,081.53	2,601.80	1,302.84	21.29	-3.12	0.484
75.00	-13.06	-14.74	0.00	-545.44	0.00	545.44	2,076.43	1,038.21	2,396.52	1,200.04	24.69	-3.38	0.461
80.00	-12.39	-14.13	0.00	-471.74	0.00	471.74	1,989.80	994.90	2,199.68	1,101.47	28.37	-3.64	0.435
85.00	-11.75	-13.61	0.00	-401.09	0.00	401.09	1,903.17	951.59	2,011.27	1,007.13	32.32	-3.89	0.405
88.13	-11.36	-13.29	0.00	-358.57	0.00	358.57	1,849.03	924.51	1,897.79	950.31	34.92	-4.05	0.384
90.00	-11.02	-13.05	0.00	-333.66	0.00	333.66	1,816.54	908.27	1,831.29	917.01	36.53	-4.14	0.370
91.88	-10.67	-12.76	0.00	-309.19	0.00	309.19	1,460.41	730.20	1,483.31	742.76	38.17	-4.23	0.424
95.00	-10.34	-12.31	0.00	-269.32	0.00	269.32	1,417.09	708.55	1,396.21	699.14	40.99	-4.38	0.393
100.00	-9.83	-11.89	0.00	-207.78	0.00	207.78	1,347.79	673.89	1,262.31	632.09	45.70	-4.62	0.336
101.00	-9.70	-11.45	0.00	-195.89	0.00	195.89	1,333.93	666.96	1,236.34	619.09	46.67	-4.67	0.324
105.00	-9.31	-11.32	0.00	-150.08	0.00	150.08	1,278.48	639.24	1,135.17	568.43	50.66	-4.84	0.272
106.00	-6.29	-7.48	0.00	-129.33	0.00	129.33	1,264.62	632.31	1,110.55	556.10	51.67	-4.88	0.238
110.00	-5.99	-7.26	0.00	-99.41	0.00	99.41	1,209.18	604.59	1,014.77	508.14	55.81	-5.01	0.201
115.00	-5.62	-7.01	0.00	-63.12	0.00	63.12	1,139.88	569.94	901.12	451.23	61.13	-5.14	0.145
120.00	-2.94	-3.32	0.00	-28.04	0.00	28.04	1,070.57	535.29	794.22	397.70	66.56	-5.23	0.073
125.00	-2.68	-3.17	0.00	-11.45	0.00	11.45	1,001.27	500.64	694.07	347.55	72.06	-5.28	0.036
126.00	0.00	-2.91	0.00	-8.27	0.00	8.27	987.41	493.71	674.85	337.93	73.17	-5.29	0.025

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 23 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		56.1	0.0					0.0	0.0	56.1	0.0	0.0	0.0
5.00		111.1	1,412.4					0.0	580.8	111.1	1,993.3	0.0	0.0
10.00		108.8	1,413.8					0.0	615.8	108.8	2,029.5	0.0	0.0
15.00		106.2	1,394.6					0.0	633.9	106.2	2,028.5	0.0	0.0
20.00		103.6	1,368.7					0.0	646.5	103.6	2,015.2	0.0	0.0
25.00		101.0	1,339.3					0.0	656.3	101.0	1,995.6	0.0	0.0
30.00		99.5	1,307.7					0.0	664.4	99.5	1,972.1	0.0	0.0
35.00		100.0	1,274.5					0.0	671.3	100.0	1,945.8	0.0	0.0
40.00		85.7	1,240.2					0.0	677.4	85.7	1,917.6	0.0	0.0
43.50	Bot - Section 2	50.9	848.4					0.0	477.4	50.9	1,325.8	0.0	0.0
45.00		51.6	575.9					0.0	205.4	51.6	781.2	0.0	0.0
48.50	Top - Section 1	51.6	1,321.2					0.0	480.8	51.6	1,802.0	0.0	0.0
50.00		66.9	313.4					0.0	206.8	66.9	520.1	0.0	0.0
55.00		102.6	1,019.8					0.0	692.1	102.6	1,711.9	0.0	0.0
60.00		101.9	987.6					0.0	696.2	101.9	1,683.8	0.0	0.0
65.00		100.9	954.9					0.0	700.0	100.9	1,654.9	0.0	0.0
70.00		99.5	921.9					0.0	703.5	99.5	1,625.4	0.0	0.0
75.00		97.9	888.5					37.5	706.9	135.4	1,595.4	0.0	0.0
80.00		96.1	854.8					38.3	710.0	134.5	1,564.8	0.0	0.0
85.00		76.8	820.9					39.1	713.0	115.9	1,533.8	0.0	0.0
88.13	Bot - Section 3	46.8	497.1					24.9	447.0	71.7	944.2	0.0	0.0
90.00		35.1	448.9					15.1	268.7	50.1	717.6	0.0	0.0
91.88	Top - Section 2	46.2	441.4					15.2	269.1	61.4	710.5	0.0	0.0
95.00		73.7	416.1					25.5	449.3	99.2	865.5	0.0	0.0
100.00		53.8	639.3					41.4	721.0	95.2	1,360.3	0.0	0.0
101.00	Appurtenance(s)	43.6	125.2	60.2	0.0	0.0	328.1	8.4	144.5	112.3	597.8	0.0	0.0
105.00		43.4	486.0					0.0	455.0	43.4	941.0	0.0	0.0
106.00	Appurtenance(s)	42.3	119.2	825.5	0.0	1,935.3	8,528.6	0.0	113.9	867.8	8,761.7	0.0	0.0
110.00		74.5	461.8					0.0	141.1	74.5	602.9	0.0	0.0
115.00		80.1	548.6					0.0	176.3	80.1	725.0	0.0	0.0
120.00	Appurtenance(s)	76.9	518.1	733.9	0.0	-71.4	6,228.3	0.0	176.3	810.8	6,922.7	0.0	0.0
125.00		45.0	487.4					0.0	75.2	45.0	562.6	0.0	0.0
126.00	Appurtenance(s)	7.3	94.8	731.1	0.0	1,768.6	8,958.1	0.0	15.0	738.4	9,068.0	0.0	0.0
								Totals:		5,033.59	64,476.4	0.00	0.00

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

Site Name: Bridgeport CT 2, CT Engineering Number:OAA718327_C3_04 6/26/2018 4:37:50 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 Iterations

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

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-64.47	-5.01	0.00	-496.51	0.00	496.51	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.158
5.00	-62.48	-4.95	0.00	-471.48	0.00	471.48	3,717.33	1,858.67	6,708.61	3,359.29	0.03	-0.05	0.157
10.00	-60.44	-4.89	0.00	-446.73	0.00	446.73	3,647.68	1,823.84	6,405.34	3,207.43	0.11	-0.10	0.156
15.00	-58.41	-4.84	0.00	-422.27	0.00	422.27	3,576.40	1,788.20	6,106.06	3,057.57	0.24	-0.15	0.154
20.00	-56.39	-4.78	0.00	-398.10	0.00	398.10	3,503.48	1,751.74	5,811.01	2,909.82	0.43	-0.21	0.153
25.00	-54.39	-4.72	0.00	-374.20	0.00	374.20	3,428.92	1,714.46	5,520.42	2,764.31	0.68	-0.26	0.151
30.00	-52.41	-4.67	0.00	-350.59	0.00	350.59	3,352.72	1,676.36	5,234.53	2,621.15	0.98	-0.32	0.149
35.00	-50.46	-4.61	0.00	-327.26	0.00	327.26	3,262.56	1,631.28	4,934.93	2,471.13	1.35	-0.38	0.148
40.00	-48.54	-4.55	0.00	-304.23	0.00	304.23	3,158.60	1,579.30	4,623.93	2,315.40	1.78	-0.44	0.147
43.50	-47.22	-4.51	0.00	-288.30	0.00	288.30	3,085.84	1,542.92	4,412.25	2,209.40	2.11	-0.48	0.146
45.00	-46.43	-4.48	0.00	-281.53	0.00	281.53	3,054.65	1,527.33	4,323.05	2,164.74	2.27	-0.50	0.145
48.50	-44.63	-4.44	0.00	-265.84	0.00	265.84	2,470.49	1,235.24	3,488.73	1,746.96	2.65	-0.54	0.170
50.00	-44.11	-4.40	0.00	-259.19	0.00	259.19	2,452.28	1,226.14	3,427.21	1,716.15	2.82	-0.56	0.169
55.00	-42.39	-4.33	0.00	-237.18	0.00	237.18	2,390.53	1,195.26	3,224.53	1,614.66	3.45	-0.63	0.165
60.00	-40.70	-4.26	0.00	-215.51	0.00	215.51	2,327.14	1,163.57	3,025.74	1,515.12	4.15	-0.71	0.160
65.00	-39.04	-4.19	0.00	-194.19	0.00	194.19	2,249.69	1,124.84	2,815.52	1,409.85	4.93	-0.78	0.155
70.00	-37.41	-4.12	0.00	-173.23	0.00	173.23	2,163.06	1,081.53	2,601.80	1,302.84	5.79	-0.85	0.150
75.00	-35.82	-4.00	0.00	-152.64	0.00	152.64	2,076.43	1,038.21	2,396.52	1,200.04	6.72	-0.93	0.144
80.00	-34.25	-3.88	0.00	-132.63	0.00	132.63	1,989.80	994.90	2,199.68	1,101.47	7.73	-1.00	0.138
85.00	-32.71	-3.77	0.00	-113.21	0.00	113.21	1,903.17	951.59	2,011.27	1,007.13	8.81	-1.07	0.130
88.13	-31.77	-3.70	0.00	-101.42	0.00	101.42	1,849.03	924.51	1,897.79	950.31	9.52	-1.11	0.124
90.00	-31.05	-3.65	0.00	-94.48	0.00	94.48	1,816.54	908.27	1,831.29	917.01	9.97	-1.14	0.120
91.88	-30.34	-3.60	0.00	-87.63	0.00	87.63	1,460.41	730.20	1,483.31	742.76	10.42	-1.17	0.139
95.00	-29.47	-3.51	0.00	-76.39	0.00	76.39	1,417.09	708.55	1,396.21	699.14	11.20	-1.21	0.130
100.00	-28.11	-3.40	0.00	-58.86	0.00	58.86	1,347.79	673.89	1,262.31	632.09	12.50	-1.28	0.114
101.00	-27.52	-3.29	0.00	-55.45	0.00	55.45	1,333.93	666.96	1,236.34	619.09	12.77	-1.29	0.110
105.00	-26.57	-3.24	0.00	-42.29	0.00	42.29	1,278.48	639.24	1,135.17	568.43	13.87	-1.34	0.095
106.00	-17.83	-2.18	0.00	-37.11	0.00	37.11	1,264.62	632.31	1,110.55	556.10	14.15	-1.35	0.081
110.00	-17.23	-2.10	0.00	-28.41	0.00	28.41	1,209.18	604.59	1,014.77	508.14	15.29	-1.39	0.070
115.00	-16.51	-2.01	0.00	-17.92	0.00	17.92	1,139.88	569.94	901.12	451.23	16.77	-1.42	0.054
120.00	-9.61	-1.03	0.00	-7.88	0.00	7.88	1,070.57	535.29	794.22	397.70	18.27	-1.45	0.029
125.00	-9.05	-0.97	0.00	-2.74	0.00	2.74	1,001.27	500.64	694.07	347.55	19.80	-1.46	0.017
126.00	0.00	-0.74	0.00	-1.77	0.00	1.77	987.41	493.71	674.85	337.93	20.11	-1.46	0.005

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

Site Name: Bridgeport CT 2, CT Engineering Number:OAA718327_C3_04 6/26/2018 4:37:50 PM

Customer: CLEARWIRE

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		41.6	0.0					0.0	0.0	41.6	0.0	0.0	0.0
5.00		82.2	901.9					0.0	251.9	82.2	1,153.7	0.0	0.0
10.00		80.0	878.1					0.0	251.9	80.0	1,129.9	0.0	0.0
15.00		77.8	854.3					0.0	251.9	77.8	1,106.1	0.0	0.0
20.00		75.6	830.5					0.0	251.9	75.6	1,082.3	0.0	0.0
25.00		73.5	806.7					0.0	251.9	73.5	1,058.5	0.0	0.0
30.00		72.1	782.9					0.0	251.9	72.1	1,034.7	0.0	0.0
35.00		72.2	759.0					0.0	251.9	72.2	1,010.9	0.0	0.0
40.00		61.7	735.2					0.0	251.9	61.7	987.1	0.0	0.0
43.50	Bot - Section 2	36.6	500.5					0.0	176.3	36.6	676.8	0.0	0.0
45.00		37.0	390.2					0.0	75.6	37.0	465.7	0.0	0.0
48.50	Top - Section 1	37.0	895.2					0.0	176.3	37.0	1,071.5	0.0	0.0
50.00		47.9	173.3					0.0	75.6	47.9	248.9	0.0	0.0
55.00		73.2	564.8					0.0	251.9	73.2	816.6	0.0	0.0
60.00		72.4	544.9					0.0	251.9	72.4	796.8	0.0	0.0
65.00		71.4	525.1					0.0	251.9	71.4	777.0	0.0	0.0
70.00		99.5	505.3					0.0	251.9	99.5	757.1	0.0	0.0
75.00		126.8	485.4					25.8	251.9	152.6	737.3	0.0	0.0
80.00		123.8	465.6					26.3	251.9	150.1	717.4	0.0	0.0
85.00		98.5	445.8					26.8	251.9	125.2	697.6	0.0	0.0
88.13	Bot - Section 3	59.9	268.5					17.0	157.4	76.8	425.9	0.0	0.0
90.00		44.8	286.2					10.3	94.4	55.0	380.6	0.0	0.0
91.88	Top - Section 2	58.8	281.1					10.3	94.4	69.1	375.6	0.0	0.0
95.00		93.4	205.9					17.3	157.4	110.7	363.3	0.0	0.0
100.00		68.0	316.6					28.1	251.9	96.0	568.4	0.0	0.0
101.00	Appurtenance(s)	34.8	61.4	66.4	0.0	0.0	55.8	5.7	50.4	106.8	167.6	0.0	0.0
105.00		29.5	239.3					0.0	181.5	29.5	420.8	0.0	0.0
106.00	Appurtenance(s)	28.5	58.2	826.8	0.0	2,254.5	3,584.7	0.0	45.4	855.4	3,688.3	0.0	0.0
110.00		50.0	226.6					0.0	117.6	50.0	344.2	0.0	0.0
115.00		53.3	269.0					0.0	147.0	53.3	415.9	0.0	0.0
120.00	Appurtenance(s)	50.8	253.1	772.4	0.0	-78.2	2,930.1	0.0	147.0	823.1	3,330.2	0.0	0.0
125.00		29.5	237.2					0.0	62.6	29.5	299.9	0.0	0.0
126.00	Appurtenance(s)	4.8	45.5	691.6	0.0	1,978.7	3,235.5	0.0	12.5	696.4	3,293.6	0.0	0.0
									Totals:	4,591.17	30,400.2	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.40	-4.56	0.00	-442.99	0.00	442.99	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.134
5.00	-29.24	-4.50	0.00	-420.18	0.00	420.18	3,717.33	1,858.67	6,708.61	3,359.29	0.02	-0.04	0.133
10.00	-28.11	-4.44	0.00	-397.68	0.00	397.68	3,647.68	1,823.84	6,405.34	3,207.43	0.09	-0.09	0.132
15.00	-27.00	-4.38	0.00	-375.47	0.00	375.47	3,576.40	1,788.20	6,106.06	3,057.57	0.21	-0.14	0.130
20.00	-25.91	-4.33	0.00	-353.54	0.00	353.54	3,503.48	1,751.74	5,811.01	2,909.82	0.38	-0.18	0.129
25.00	-24.85	-4.27	0.00	-331.90	0.00	331.90	3,428.92	1,714.46	5,520.42	2,764.31	0.60	-0.23	0.127
30.00	-23.81	-4.22	0.00	-310.54	0.00	310.54	3,352.72	1,676.36	5,234.53	2,621.15	0.87	-0.28	0.126
35.00	-22.80	-4.16	0.00	-289.46	0.00	289.46	3,262.56	1,631.28	4,934.93	2,471.13	1.20	-0.34	0.124
40.00	-21.81	-4.11	0.00	-268.66	0.00	268.66	3,158.60	1,579.30	4,623.93	2,315.40	1.58	-0.39	0.123
43.50	-21.13	-4.08	0.00	-254.28	0.00	254.28	3,085.84	1,542.92	4,412.25	2,209.40	1.88	-0.43	0.122
45.00	-20.66	-4.05	0.00	-248.17	0.00	248.17	3,054.65	1,527.33	4,323.05	2,164.74	2.01	-0.44	0.121
48.50	-19.59	-4.01	0.00	-234.00	0.00	234.00	2,470.49	1,235.24	3,488.73	1,746.96	2.35	-0.48	0.142
50.00	-19.34	-3.97	0.00	-227.99	0.00	227.99	2,452.28	1,226.14	3,427.21	1,716.15	2.51	-0.50	0.141
55.00	-18.52	-3.91	0.00	-208.12	0.00	208.12	2,390.53	1,195.26	3,224.53	1,614.66	3.06	-0.56	0.137
60.00	-17.72	-3.85	0.00	-188.55	0.00	188.55	2,327.14	1,163.57	3,025.74	1,515.12	3.69	-0.62	0.132
65.00	-16.94	-3.79	0.00	-169.28	0.00	169.28	2,249.69	1,124.84	2,815.52	1,409.85	4.37	-0.69	0.128
70.00	-16.18	-3.70	0.00	-150.32	0.00	150.32	2,163.06	1,081.53	2,601.80	1,302.84	5.13	-0.75	0.123
75.00	-15.44	-3.56	0.00	-131.82	0.00	131.82	2,076.43	1,038.21	2,396.52	1,200.04	5.95	-0.82	0.117
80.00	-14.72	-3.41	0.00	-114.04	0.00	114.04	1,989.80	994.90	2,199.68	1,101.47	6.84	-0.88	0.111
85.00	-14.02	-3.29	0.00	-96.99	0.00	96.99	1,903.17	951.59	2,011.27	1,007.13	7.79	-0.94	0.104
88.13	-13.59	-3.21	0.00	-86.72	0.00	86.72	1,849.03	924.51	1,897.79	950.31	8.42	-0.98	0.099
90.00	-13.21	-3.15	0.00	-80.71	0.00	80.71	1,816.54	908.27	1,831.29	917.01	8.81	-1.00	0.095
91.88	-12.84	-3.08	0.00	-74.80	0.00	74.80	1,460.41	730.20	1,483.31	742.76	9.20	-1.02	0.110
95.00	-12.47	-2.98	0.00	-65.16	0.00	65.16	1,417.09	708.55	1,396.21	699.14	9.88	-1.06	0.102
100.00	-11.91	-2.88	0.00	-50.28	0.00	50.28	1,347.79	673.89	1,262.31	632.09	11.02	-1.11	0.088
101.00	-11.74	-2.77	0.00	-47.40	0.00	47.40	1,333.93	666.96	1,236.34	619.09	11.26	-1.13	0.085
105.00	-11.32	-2.74	0.00	-36.31	0.00	36.31	1,278.48	639.24	1,135.17	568.43	12.22	-1.17	0.073
106.00	-7.65	-1.81	0.00	-31.32	0.00	31.32	1,264.62	632.31	1,110.55	556.10	12.46	-1.18	0.062
110.00	-7.30	-1.76	0.00	-24.07	0.00	24.07	1,209.18	604.59	1,014.77	508.14	13.47	-1.21	0.053
115.00	-6.89	-1.70	0.00	-15.27	0.00	15.27	1,139.88	569.94	901.12	451.23	14.75	-1.24	0.040
120.00	-3.58	-0.81	0.00	-6.77	0.00	6.77	1,070.57	535.29	794.22	397.70	16.06	-1.26	0.020
125.00	-3.28	-0.77	0.00	-2.75	0.00	2.75	1,001.27	500.64	694.07	347.55	17.39	-1.27	0.011
126.00	0.00	-0.70	0.00	-1.98	0.00	1.98	987.41	493.71	674.85	337.93	17.66	-1.28	0.006

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.20	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.45	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.98	
Total Unfactored Dead Load:	30.40	k
Seismic Base Shear (E):	1.19	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
32	125.50	58	816	0.004	5	72
31	122.50	300	4,015	0.021	25	373
30	117.50	400	4,933	0.026	31	497
29	112.50	416	4,706	0.025	29	517
28	108.00	344	3,593	0.019	22	428
27	105.50	104	1,033	0.005	6	129
26	103.00	421	4,000	0.021	25	523
25	100.50	112	1,012	0.005	6	139
24	97.50	568	4,848	0.025	30	707
23	93.44	363	2,849	0.015	18	452
22	90.94	376	2,791	0.015	17	467
21	89.06	381	2,714	0.014	17	473
20	86.56	426	2,871	0.015	18	530
19	82.50	698	4,276	0.022	27	867
18	77.50	717	3,887	0.020	24	892
17	72.50	737	3,501	0.018	22	917
16	67.50	757	3,122	0.016	19	941
15	62.50	777	2,752	0.014	17	966
14	57.50	797	2,393	0.013	15	991
13	52.50	817	2,049	0.011	13	1,016
12	49.25	249	550	0.003	3	309
11	46.75	1,071	2,138	0.011	13	1,332
10	44.25	466	834	0.004	5	579

9	41.75	677	1,080	0.006	7	842
8	37.50	987	1,274	0.007	8	1,227
7	32.50	1,011	983	0.005	6	1,257
6	27.50	1,035	723	0.004	4	1,287
5	22.50	1,059	498	0.003	3	1,316
4	17.50	1,082	310	0.002	2	1,346
3	12.50	1,106	163	0.001	1	1,375
2	7.50	1,130	61	0.000	0	1,405
1	2.50	1,154	7	0.000	0	1,435
DragonWave Horizon C	126.00	21	300	0.002	2	26
Dragonwave A-ANT-23G	126.00	15	212	0.001	1	19
Alcatel-Lucent RRH2x	126.00	317	4,493	0.024	28	395
Alcatel-Lucent 1900	126.00	180	2,548	0.013	16	224
Nokia 2.5G MAA - AAH	126.00	311	4,400	0.023	27	386
Dragonwave A-ANT-18G	126.00	27	384	0.002	2	34
RMV5-2XX	126.00	2,132	30,178	0.158	188	2,651
Commscope NNVV-65B-R	126.00	232	3,287	0.017	20	289
Kathrein Scala Smart	120.00	10	128	0.001	1	12
Ericsson KRY 112 489	120.00	92	1,188	0.006	7	115
Ericsson Radio 4449	120.00	222	2,854	0.015	18	276
Ericsson AIR 32	120.00	326	4,184	0.022	26	405
Ericsson AIR-32 B2A/	120.00	397	5,098	0.027	32	493
RFS APXVAARR24_43-U-	120.00	384	4,932	0.026	31	477
Round Low Profile Pl	120.00	1,500	19,282	0.101	120	1,865
Powerwave 7020.00 Du	106.00	13	133	0.001	1	16
Kaelus DBC0061F1V51-	106.00	153	1,539	0.008	10	190
Powerwave LGP21401	106.00	85	851	0.004	5	105
Raycap DC6-48-60-18-	106.00	64	640	0.003	4	79
Ericsson RRUS 32 B66	106.00	159	1,600	0.008	10	198
Ericsson RRUS-11	106.00	153	1,539	0.008	10	190
Ericsson RRUS-32 (55	106.00	165	1,663	0.009	10	206
Ericsson RRUS 12	106.00	300	3,018	0.016	19	373
Raycap DC6-48-60-0-8	106.00	16	161	0.001	1	20
Quintel QS46512-2 (7	106.00	225	2,263	0.012	14	280
Powerwave Allgon 775	106.00	81	815	0.004	5	101
CCI OPA-65R-LCUU-H4	106.00	171	1,720	0.009	11	213
Round Platform w/ Ha	106.00	2,000	20,120	0.105	125	2,487
RCU (Remote Control	101.00	3	27	0.000	0	4
Kathrein Scala 800 1	101.00	53	483	0.003	3	66
		30,400	190,820	1.000	1,186	37,803

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
32	125.50	58	816	0.004	5	50
31	122.50	300	4,015	0.021	25	257
30	117.50	400	4,933	0.026	31	343
29	112.50	416	4,706	0.025	29	356
28	108.00	344	3,593	0.019	22	295
27	105.50	104	1,033	0.005	6	89
26	103.00	421	4,000	0.021	25	360
25	100.50	112	1,012	0.005	6	96
24	97.50	568	4,848	0.025	30	487
23	93.44	363	2,849	0.015	18	311
22	90.94	376	2,791	0.015	17	322
21	89.06	381	2,714	0.014	17	326
20	86.56	426	2,871	0.015	18	365
19	82.50	698	4,276	0.022	27	597
18	77.50	717	3,887	0.020	24	614

17	72.50	737	3,501	0.018	22	631
16	67.50	757	3,122	0.016	19	648
15	62.50	777	2,752	0.014	17	665
14	57.50	797	2,393	0.013	15	682
13	52.50	817	2,049	0.011	13	699
12	49.25	249	550	0.003	3	213
11	46.75	1,071	2,138	0.011	13	918
10	44.25	466	834	0.004	5	399
9	41.75	677	1,080	0.006	7	580
8	37.50	987	1,274	0.007	8	845
7	32.50	1,011	983	0.005	6	866
6	27.50	1,035	723	0.004	4	886
5	22.50	1,059	498	0.003	3	907
4	17.50	1,082	310	0.002	2	927
3	12.50	1,106	163	0.001	1	947
2	7.50	1,130	61	0.000	0	968
1	2.50	1,154	7	0.000	0	988
DragonWave Horizon C	126.00	21	300	0.002	2	18
Dragonwave A-ANT-23G	126.00	15	212	0.001	1	13
Alcatel-Lucent RRH2x	126.00	317	4,493	0.024	28	272
Alcatel-Lucent 1900	126.00	180	2,548	0.013	16	154
Nokia 2.5G MAA - AAH	126.00	311	4,400	0.023	27	266
Dragonwave A-ANT-18G	126.00	27	384	0.002	2	23
RMV5-2XX	126.00	2,132	30,178	0.158	188	1,826
Commscope NNVV-65B-R	126.00	232	3,287	0.017	20	199
Kathrein Scala Smart	120.00	10	128	0.001	1	9
Ericsson KRY 112 489	120.00	92	1,188	0.006	7	79
Ericsson Radio 4449	120.00	222	2,854	0.015	18	190
Ericsson AIR 32	120.00	326	4,184	0.022	26	279
Ericsson AIR-32 B2A/	120.00	397	5,098	0.027	32	340
RFS APXVAARR24_43-U-	120.00	384	4,932	0.026	31	329
Round Low Profile Pl	120.00	1,500	19,282	0.101	120	1,285
Powerwave 7020.00 Du	106.00	13	133	0.001	1	11
Kaelus DBC0061F1V51-	106.00	153	1,539	0.008	10	131
Powerwave LGP21401	106.00	85	851	0.004	5	72
Raycap DC6-48-60-18-	106.00	64	640	0.003	4	54
Ericsson RRUS 32 B66	106.00	159	1,600	0.008	10	136
Ericsson RRUS-11	106.00	153	1,539	0.008	10	131
Ericsson RRUS-32 (55	106.00	165	1,663	0.009	10	142
Ericsson RRUS 12	106.00	300	3,018	0.016	19	257
Raycap DC6-48-60-0-8	106.00	16	161	0.001	1	14
Quintel QS46512-2 (7	106.00	225	2,263	0.012	14	193
Powerwave Allgon 775	106.00	81	815	0.004	5	69
CCI OPA-65R-LCUU-H4	106.00	171	1,720	0.009	11	146
Round Platform w/ Ha	106.00	2,000	20,120	0.105	125	1,713
RCU (Remote Control	101.00	3	27	0.000	0	3
Kathrein Scala 800 1	101.00	53	483	0.003	3	45
		30,400	190,820	1.000	1,186	26,037

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.37	-1.19	0.00	-132.02	0.00	132.02	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.047
5.00	-34.96	-1.20	0.00	-126.08	0.00	126.08	3,717.33	1,858.67	6,708.61	3,359.29	0.01	-0.01	0.047
10.00	-33.59	-1.20	0.00	-120.10	0.00	120.10	3,647.68	1,823.84	6,405.34	3,207.43	0.03	-0.03	0.047
15.00	-32.24	-1.21	0.00	-114.08	0.00	114.08	3,576.40	1,788.20	6,106.06	3,057.57	0.06	-0.04	0.046
20.00	-30.92	-1.21	0.00	-108.04	0.00	108.04	3,503.48	1,751.74	5,811.01	2,909.82	0.12	-0.06	0.046
25.00	-29.64	-1.21	0.00	-101.97	0.00	101.97	3,428.92	1,714.46	5,520.42	2,764.31	0.18	-0.07	0.046
30.00	-28.38	-1.21	0.00	-95.90	0.00	95.90	3,352.72	1,676.36	5,234.53	2,621.15	0.26	-0.09	0.045
35.00	-27.15	-1.21	0.00	-89.83	0.00	89.83	3,262.56	1,631.28	4,934.93	2,471.13	0.36	-0.10	0.045
40.00	-26.31	-1.21	0.00	-83.77	0.00	83.77	3,158.60	1,579.30	4,623.93	2,315.40	0.48	-0.12	0.045
43.50	-25.73	-1.21	0.00	-79.53	0.00	79.53	3,085.84	1,542.92	4,412.25	2,209.40	0.57	-0.13	0.044
45.00	-24.40	-1.20	0.00	-77.72	0.00	77.72	3,054.65	1,527.33	4,323.05	2,164.74	0.61	-0.14	0.044
48.50	-24.09	-1.19	0.00	-73.54	0.00	73.54	2,470.49	1,235.24	3,488.73	1,746.96	0.72	-0.15	0.052
50.00	-23.07	-1.18	0.00	-71.75	0.00	71.75	2,452.28	1,226.14	3,427.21	1,716.15	0.76	-0.15	0.051
55.00	-22.08	-1.17	0.00	-65.83	0.00	65.83	2,390.53	1,195.26	3,224.53	1,614.66	0.93	-0.17	0.050
60.00	-21.12	-1.16	0.00	-59.96	0.00	59.96	2,327.14	1,163.57	3,025.74	1,515.12	1.13	-0.19	0.049
65.00	-20.17	-1.15	0.00	-54.15	0.00	54.15	2,249.69	1,124.84	2,815.52	1,409.85	1.34	-0.21	0.047
70.00	-19.26	-1.13	0.00	-48.42	0.00	48.42	2,163.06	1,081.53	2,601.80	1,302.84	1.57	-0.23	0.046
75.00	-18.36	-1.11	0.00	-42.78	0.00	42.78	2,076.43	1,038.21	2,396.52	1,200.04	1.83	-0.25	0.044
80.00	-17.50	-1.08	0.00	-37.25	0.00	37.25	1,989.80	994.90	2,199.68	1,101.47	2.11	-0.27	0.043
85.00	-16.97	-1.07	0.00	-31.84	0.00	31.84	1,903.17	951.59	2,011.27	1,007.13	2.41	-0.29	0.041
88.13	-16.49	-1.05	0.00	-28.51	0.00	28.51	1,849.03	924.51	1,897.79	950.31	2.60	-0.31	0.039
90.00	-16.03	-1.03	0.00	-26.54	0.00	26.54	1,816.54	908.27	1,831.29	917.01	2.72	-0.31	0.038
91.88	-15.57	-1.01	0.00	-24.61	0.00	24.61	1,460.41	730.20	1,483.31	742.76	2.85	-0.32	0.044
95.00	-14.87	-0.98	0.00	-21.44	0.00	21.44	1,417.09	708.55	1,396.21	699.14	3.06	-0.33	0.041
100.00	-14.73	-0.98	0.00	-16.52	0.00	16.52	1,347.79	673.89	1,262.31	632.09	3.42	-0.35	0.037
101.00	-14.14	-0.95	0.00	-15.54	0.00	15.54	1,333.93	666.96	1,236.34	619.09	3.50	-0.36	0.036
105.00	-14.01	-0.95	0.00	-11.73	0.00	11.73	1,278.48	639.24	1,135.17	568.43	3.80	-0.37	0.032
106.00	-9.12	-0.67	0.00	-10.79	0.00	10.79	1,264.62	632.31	1,110.55	556.10	3.88	-0.37	0.027
110.00	-8.61	-0.64	0.00	-8.12	0.00	8.12	1,209.18	604.59	1,014.77	508.14	4.20	-0.38	0.023
115.00	-8.11	-0.60	0.00	-4.93	0.00	4.93	1,139.88	569.94	901.12	451.23	4.61	-0.39	0.018
120.00	-4.09	-0.32	0.00	-1.90	0.00	1.90	1,070.57	535.29	794.22	397.70	5.02	-0.40	0.009
125.00	-4.02	-0.31	0.00	-0.31	0.00	0.31	1,001.27	500.64	694.07	347.55	5.44	-0.40	0.005
126.00	0.00	-0.28	0.00	0.00	0.00	0.00	987.41	493.71	674.85	337.93	5.53	-0.40	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.05	-1.19	0.00	-129.62	0.00	129.62	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.044
5.00	-24.08	-1.19	0.00	-123.68	0.00	123.68	3,717.33	1,858.67	6,708.61	3,359.29	0.01	-0.01	0.043
10.00	-23.13	-1.20	0.00	-117.72	0.00	117.72	3,647.68	1,823.84	6,405.34	3,207.43	0.03	-0.03	0.043
15.00	-22.21	-1.20	0.00	-111.73	0.00	111.73	3,576.40	1,788.20	6,106.06	3,057.57	0.06	-0.04	0.043
20.00	-21.30	-1.20	0.00	-105.73	0.00	105.73	3,503.48	1,751.74	5,811.01	2,909.82	0.11	-0.05	0.042
25.00	-20.41	-1.20	0.00	-99.73	0.00	99.73	3,428.92	1,714.46	5,520.42	2,764.31	0.18	-0.07	0.042
30.00	-19.55	-1.20	0.00	-93.72	0.00	93.72	3,352.72	1,676.36	5,234.53	2,621.15	0.26	-0.08	0.042
35.00	-18.70	-1.20	0.00	-87.72	0.00	87.72	3,262.56	1,631.28	4,934.93	2,471.13	0.36	-0.10	0.041
40.00	-18.12	-1.19	0.00	-81.75	0.00	81.75	3,158.60	1,579.30	4,623.93	2,315.40	0.47	-0.12	0.041
43.50	-17.72	-1.19	0.00	-77.58	0.00	77.58	3,085.84	1,542.92	4,412.25	2,209.40	0.56	-0.13	0.041
45.00	-16.80	-1.18	0.00	-75.79	0.00	75.79	3,054.65	1,527.33	4,323.05	2,164.74	0.60	-0.13	0.041
48.50	-16.59	-1.17	0.00	-71.68	0.00	71.68	2,470.49	1,235.24	3,488.73	1,746.96	0.70	-0.14	0.048
50.00	-15.89	-1.16	0.00	-69.92	0.00	69.92	2,452.28	1,226.14	3,427.21	1,716.15	0.75	-0.15	0.047
55.00	-15.21	-1.15	0.00	-64.11	0.00	64.11	2,390.53	1,195.26	3,224.53	1,614.66	0.91	-0.17	0.046
60.00	-14.54	-1.14	0.00	-58.35	0.00	58.35	2,327.14	1,163.57	3,025.74	1,515.12	1.10	-0.19	0.045
65.00	-13.89	-1.12	0.00	-52.66	0.00	52.66	2,249.69	1,124.84	2,815.52	1,409.85	1.31	-0.21	0.044
70.00	-13.26	-1.10	0.00	-47.06	0.00	47.06	2,163.06	1,081.53	2,601.80	1,302.84	1.54	-0.23	0.042
75.00	-12.65	-1.08	0.00	-41.56	0.00	41.56	2,076.43	1,038.21	2,396.52	1,200.04	1.79	-0.25	0.041
80.00	-12.05	-1.05	0.00	-36.17	0.00	36.17	1,989.80	994.90	2,199.68	1,101.47	2.06	-0.27	0.039
85.00	-11.68	-1.04	0.00	-30.90	0.00	30.90	1,903.17	951.59	2,011.27	1,007.13	2.35	-0.29	0.037
88.13	-11.36	-1.02	0.00	-27.66	0.00	27.66	1,849.03	924.51	1,897.79	950.31	2.54	-0.30	0.035
90.00	-11.04	-1.00	0.00	-25.75	0.00	25.75	1,816.54	908.27	1,831.29	917.01	2.66	-0.31	0.034
91.88	-10.73	-0.99	0.00	-23.87	0.00	23.87	1,460.41	730.20	1,483.31	742.76	2.78	-0.31	0.039
95.00	-10.24	-0.95	0.00	-20.79	0.00	20.79	1,417.09	708.55	1,396.21	699.14	2.99	-0.32	0.037
100.00	-10.14	-0.95	0.00	-16.01	0.00	16.01	1,347.79	673.89	1,262.31	632.09	3.34	-0.34	0.033
101.00	-9.73	-0.92	0.00	-15.06	0.00	15.06	1,333.93	666.96	1,236.34	619.09	3.42	-0.35	0.032
105.00	-9.65	-0.92	0.00	-11.38	0.00	11.38	1,278.48	639.24	1,135.17	568.43	3.71	-0.36	0.028
106.00	-6.28	-0.65	0.00	-10.46	0.00	10.46	1,264.62	632.31	1,110.55	556.10	3.79	-0.36	0.024
110.00	-5.93	-0.62	0.00	-7.87	0.00	7.87	1,209.18	604.59	1,014.77	508.14	4.10	-0.37	0.020
115.00	-5.58	-0.59	0.00	-4.78	0.00	4.78	1,139.88	569.94	901.12	451.23	4.49	-0.38	0.015
120.00	-2.82	-0.31	0.00	-1.85	0.00	1.85	1,070.57	535.29	794.22	397.70	4.90	-0.39	0.007
125.00	-2.77	-0.30	0.00	-0.30	0.00	0.30	1,001.27	500.64	694.07	347.55	5.31	-0.39	0.004
126.00	0.00	-0.28	0.00	0.00	0.00	0.00	987.41	493.71	674.85	337.93	5.39	-0.39	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.45
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
32	125.50	58	1.875	1.902	1.112	0.400	20	72
31	122.50	300	1.786	1.478	0.954	0.337	88	373
30	117.50	400	1.644	0.920	0.731	0.243	84	497
29	112.50	416	1.507	0.518	0.551	0.163	59	517
28	108.00	344	1.389	0.263	0.420	0.101	30	428
27	105.50	104	1.325	0.157	0.359	0.071	6	129
26	103.00	421	1.263	0.072	0.304	0.044	16	523
25	100.50	112	1.202	0.007	0.257	0.021	2	139
24	97.50	568	1.132	-0.050	0.207	-0.004	-2	707
23	93.44	363	1.039	-0.098	0.152	-0.030	-9	452
22	90.94	376	0.984	-0.113	0.124	-0.042	-14	467
21	89.06	381	0.944	-0.120	0.105	-0.049	-16	473
20	86.56	426	0.892	-0.122	0.084	-0.056	-21	530
19	82.50	698	0.810	-0.114	0.057	-0.060	-36	867
18	77.50	717	0.715	-0.091	0.033	-0.054	-33	892
17	72.50	737	0.626	-0.062	0.018	-0.036	-23	917
16	67.50	757	0.542	-0.032	0.009	-0.012	-8	941
15	62.50	777	0.465	-0.004	0.006	0.014	10	966
14	57.50	797	0.394	0.020	0.007	0.036	25	991
13	52.50	817	0.328	0.039	0.010	0.051	36	1,016
12	49.25	249	0.289	0.048	0.013	0.057	12	309
11	46.75	1,071	0.260	0.053	0.016	0.060	55	1,332
10	44.25	466	0.233	0.058	0.019	0.061	25	579
9	41.75	677	0.208	0.062	0.022	0.062	36	842
8	37.50	987	0.167	0.066	0.028	0.062	53	1,227
7	32.50	1,011	0.126	0.070	0.034	0.061	53	1,257
6	27.50	1,035	0.090	0.071	0.038	0.059	53	1,287
5	22.50	1,059	0.060	0.072	0.041	0.057	53	1,316
4	17.50	1,082	0.036	0.070	0.041	0.055	52	1,346
3	12.50	1,106	0.019	0.063	0.037	0.051	49	1,375
2	7.50	1,130	0.007	0.049	0.028	0.042	41	1,405
1	2.50	1,154	0.001	0.021	0.011	0.021	21	1,435
DragonWave Horizon C	126.00	21	1.890	1.980	1.140	0.411	8	26
Dragonwave A-ANT-23G	126.00	15	1.890	1.980	1.140	0.411	5	19

Alcatel-Lucent RRH2x	126.00	317	1.890	1.980	1.140	0.411	113	395
Alcatel-Lucent 1900	126.00	180	1.890	1.980	1.140	0.411	64	224
Nokia 2.5G MAA - AAH	126.00	311	1.890	1.980	1.140	0.411	111	386
Dragonwave A-ANT-18G	126.00	27	1.890	1.980	1.140	0.411	10	34
RMV5-2XX	126.00	2,132	1.890	1.980	1.140	0.411	760	2,651
Commscope NNVV-	126.00	232	1.890	1.980	1.140	0.411	83	289
Kathrein Scala Smart	120.00	10	1.714	1.177	0.837	0.289	2	12
Ericsson KRY 112 489	120.00	92	1.714	1.177	0.837	0.289	23	115
Ericsson Radio 4449	120.00	222	1.714	1.177	0.837	0.289	56	276
Ericsson AIR 32	120.00	326	1.714	1.177	0.837	0.289	81	405
Ericsson AIR-32 B2A/	120.00	397	1.714	1.177	0.837	0.289	99	493
RFS APXVAARR24_43-U-	120.00	384	1.714	1.177	0.837	0.289	96	477
Round Low Profile Pl	120.00	1,500	1.714	1.177	0.837	0.289	375	1,865
Powerwave 7020.00 Du	106.00	13	1.338	0.176	0.370	0.077	1	16
Kaelus DBC0061F1V51-	106.00	153	1.338	0.176	0.370	0.077	10	190
Powerwave LGP21401	106.00	85	1.338	0.176	0.370	0.077	6	105
Raycap DC6-48-60-18-	106.00	64	1.338	0.176	0.370	0.077	4	79
Ericsson RRUS 32 B66	106.00	159	1.338	0.176	0.370	0.077	11	198
Ericsson RRUS-11	106.00	153	1.338	0.176	0.370	0.077	10	190
Ericsson RRUS-32 (55	106.00	165	1.338	0.176	0.370	0.077	11	206
Ericsson RRUS 12	106.00	300	1.338	0.176	0.370	0.077	20	373
Raycap DC6-48-60-0-8	106.00	16	1.338	0.176	0.370	0.077	1	20
Quintel QS46512-2 (7	106.00	225	1.338	0.176	0.370	0.077	15	280
Powerwave Allgon 775	106.00	81	1.338	0.176	0.370	0.077	5	101
CCI OPA-65R-LCUU-H4	106.00	171	1.338	0.176	0.370	0.077	11	213
Round Platform w/ Ha	106.00	2,000	1.338	0.176	0.370	0.077	133	2,487
RCU (Remote Control	101.00	3	1.214	0.019	0.266	0.025	0	4
Kathrein Scala 800 1	101.00	53	1.214	0.019	0.266	0.025	1	66
		30,400	69.296	31.678	26.151	8.148	2,844	37,803

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
32	125.50	58	1.875	1.902	1.112	0.400	20	50
31	122.50	300	1.786	1.478	0.954	0.337	88	257
30	117.50	400	1.644	0.920	0.731	0.243	84	343
29	112.50	416	1.507	0.518	0.551	0.163	59	356
28	108.00	344	1.389	0.263	0.420	0.101	30	295
27	105.50	104	1.325	0.157	0.359	0.071	6	89
26	103.00	421	1.263	0.072	0.304	0.044	16	360
25	100.50	112	1.202	0.007	0.257	0.021	2	96
24	97.50	568	1.132	-0.050	0.207	-0.004	-2	487
23	93.44	363	1.039	-0.098	0.152	-0.030	-9	311
22	90.94	376	0.984	-0.113	0.124	-0.042	-14	322
21	89.06	381	0.944	-0.120	0.105	-0.049	-16	326
20	86.56	426	0.892	-0.122	0.084	-0.056	-21	365
19	82.50	698	0.810	-0.114	0.057	-0.060	-36	597
18	77.50	717	0.715	-0.091	0.033	-0.054	-33	614
17	72.50	737	0.626	-0.062	0.018	-0.036	-23	631
16	67.50	757	0.542	-0.032	0.009	-0.012	-8	648
15	62.50	777	0.465	-0.004	0.006	0.014	10	665
14	57.50	797	0.394	0.020	0.007	0.036	25	682
13	52.50	817	0.328	0.039	0.010	0.051	36	699
12	49.25	249	0.289	0.048	0.013	0.057	12	213
11	46.75	1,071	0.260	0.053	0.016	0.060	55	918
10	44.25	466	0.233	0.058	0.019	0.061	25	399
9	41.75	677	0.208	0.062	0.022	0.062	36	580
8	37.50	987	0.167	0.066	0.028	0.062	53	845

7	32.50	1,011	0.126	0.070	0.034	0.061	53	866
6	27.50	1,035	0.090	0.071	0.038	0.059	53	886
5	22.50	1,059	0.060	0.072	0.041	0.057	53	907
4	17.50	1,082	0.036	0.070	0.041	0.055	52	927
3	12.50	1,106	0.019	0.063	0.037	0.051	49	947
2	7.50	1,130	0.007	0.049	0.028	0.042	41	968
1	2.50	1,154	0.001	0.021	0.011	0.021	21	988
DragonWave Horizon C	126.00	21	1.890	1.980	1.140	0.411	8	18
Dragonwave A-ANT-23G	126.00	15	1.890	1.980	1.140	0.411	5	13
Alcatel-Lucent RRH2x	126.00	317	1.890	1.980	1.140	0.411	113	272
Alcatel-Lucent 1900	126.00	180	1.890	1.980	1.140	0.411	64	154
Nokia 2.5G MAA - AAH	126.00	311	1.890	1.980	1.140	0.411	111	266
Dragonwave A-ANT-18G	126.00	27	1.890	1.980	1.140	0.411	10	23
RMV5-2XX	126.00	2,132	1.890	1.980	1.140	0.411	760	1,826
Commscope NNVV-	126.00	232	1.890	1.980	1.140	0.411	83	199
Kathrein Scala Smart	120.00	10	1.714	1.177	0.837	0.289	2	9
Ericsson KRY 112 489	120.00	92	1.714	1.177	0.837	0.289	23	79
Ericsson Radio 4449	120.00	222	1.714	1.177	0.837	0.289	56	190
Ericsson AIR 32	120.00	326	1.714	1.177	0.837	0.289	81	279
Ericsson AIR-32 B2A/	120.00	397	1.714	1.177	0.837	0.289	99	340
RFS APXVAARR24_43-U-	120.00	384	1.714	1.177	0.837	0.289	96	329
Round Low Profile Pl	120.00	1,500	1.714	1.177	0.837	0.289	375	1,285
Powerwave 7020.00 Du	106.00	13	1.338	0.176	0.370	0.077	1	11
Kaelus DBC0061F1V51-	106.00	153	1.338	0.176	0.370	0.077	10	131
Powerwave LGP21401	106.00	85	1.338	0.176	0.370	0.077	6	72
Raycap DC6-48-60-18-	106.00	64	1.338	0.176	0.370	0.077	4	54
Ericsson RRUS 32 B66	106.00	159	1.338	0.176	0.370	0.077	11	136
Ericsson RRUS-11	106.00	153	1.338	0.176	0.370	0.077	10	131
Ericsson RRUS-32 (55	106.00	165	1.338	0.176	0.370	0.077	11	142
Ericsson RRUS 12	106.00	300	1.338	0.176	0.370	0.077	20	257
Raycap DC6-48-60-0-8	106.00	16	1.338	0.176	0.370	0.077	1	14
Quintel QS46512-2 (7	106.00	225	1.338	0.176	0.370	0.077	15	193
Powerwave Allgon 775	106.00	81	1.338	0.176	0.370	0.077	5	69
CCI OPA-65R-LCUU-H4	106.00	171	1.338	0.176	0.370	0.077	11	146
Round Platform w/ Ha	106.00	2,000	1.338	0.176	0.370	0.077	133	1,713
RCU (Remote Control	101.00	3	1.214	0.019	0.266	0.025	0	3
Kathrein Scala 800 1	101.00	53	1.214	0.019	0.266	0.025	1	45
		30,400	69.296	31.678	26.151	8.148	2,844	26,037

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.37	-2.83	0.00	-315.97	0.00	315.97	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.100
5.00	-34.96	-2.81	0.00	-301.81	0.00	301.81	3,717.33	1,858.67	6,708.61	3,359.29	0.02	-0.03	0.099
10.00	-33.58	-2.78	0.00	-287.75	0.00	287.75	3,647.68	1,823.84	6,405.34	3,207.43	0.07	-0.06	0.099
15.00	-32.24	-2.75	0.00	-273.85	0.00	273.85	3,576.40	1,788.20	6,106.06	3,057.57	0.15	-0.10	0.099
20.00	-30.92	-2.71	0.00	-260.12	0.00	260.12	3,503.48	1,751.74	5,811.01	2,909.82	0.28	-0.13	0.098
25.00	-29.63	-2.67	0.00	-246.57	0.00	246.57	3,428.92	1,714.46	5,520.42	2,764.31	0.44	-0.17	0.098
30.00	-28.37	-2.63	0.00	-233.21	0.00	233.21	3,352.72	1,676.36	5,234.53	2,621.15	0.63	-0.21	0.097
35.00	-27.14	-2.59	0.00	-220.04	0.00	220.04	3,262.56	1,631.28	4,934.93	2,471.13	0.87	-0.25	0.097
40.00	-26.30	-2.57	0.00	-207.07	0.00	207.07	3,158.60	1,579.30	4,623.93	2,315.40	1.15	-0.29	0.098
43.50	-25.72	-2.55	0.00	-198.07	0.00	198.07	3,085.84	1,542.92	4,412.25	2,209.40	1.37	-0.32	0.098
45.00	-24.39	-2.50	0.00	-194.25	0.00	194.25	3,054.65	1,527.33	4,323.05	2,164.74	1.47	-0.33	0.098
48.50	-24.08	-2.49	0.00	-185.50	0.00	185.50	2,470.49	1,235.24	3,488.73	1,746.96	1.73	-0.36	0.116
50.00	-23.06	-2.46	0.00	-181.76	0.00	181.76	2,452.28	1,226.14	3,427.21	1,716.15	1.84	-0.37	0.115
55.00	-22.07	-2.45	0.00	-169.44	0.00	169.44	2,390.53	1,195.26	3,224.53	1,614.66	2.26	-0.42	0.114
60.00	-21.10	-2.45	0.00	-157.19	0.00	157.19	2,327.14	1,163.57	3,025.74	1,515.12	2.73	-0.48	0.113
65.00	-20.15	-2.47	0.00	-144.92	0.00	144.92	2,249.69	1,124.84	2,815.52	1,409.85	3.26	-0.53	0.112
70.00	-19.24	-2.51	0.00	-132.55	0.00	132.55	2,163.06	1,081.53	2,601.80	1,302.84	3.84	-0.58	0.111
75.00	-18.34	-2.55	0.00	-120.02	0.00	120.02	2,076.43	1,038.21	2,396.52	1,200.04	4.49	-0.64	0.109
80.00	-17.47	-2.59	0.00	-107.28	0.00	107.28	1,989.80	994.90	2,199.68	1,101.47	5.19	-0.70	0.106
85.00	-16.94	-2.62	0.00	-94.32	0.00	94.32	1,903.17	951.59	2,011.27	1,007.13	5.95	-0.76	0.103
88.13	-16.46	-2.64	0.00	-86.13	0.00	86.13	1,849.03	924.51	1,897.79	950.31	6.46	-0.79	0.100
90.00	-15.99	-2.65	0.00	-81.19	0.00	81.19	1,816.54	908.27	1,831.29	917.01	6.78	-0.82	0.097
91.88	-15.54	-2.66	0.00	-76.21	0.00	76.21	1,460.41	730.20	1,483.31	742.76	7.10	-0.84	0.113
95.00	-14.83	-2.67	0.00	-67.89	0.00	67.89	1,417.09	708.55	1,396.21	699.14	7.66	-0.88	0.108
100.00	-14.69	-2.67	0.00	-54.56	0.00	54.56	1,347.79	673.89	1,262.31	632.09	8.62	-0.94	0.097
101.00	-14.10	-2.65	0.00	-51.89	0.00	51.89	1,333.93	666.96	1,236.34	619.09	8.81	-0.95	0.094
105.00	-13.97	-2.65	0.00	-41.28	0.00	41.28	1,278.48	639.24	1,135.17	568.43	9.63	-1.00	0.084
106.00	-9.09	-2.30	0.00	-38.63	0.00	38.63	1,264.62	632.31	1,110.55	556.10	9.84	-1.01	0.077
110.00	-8.57	-2.24	0.00	-29.43	0.00	29.43	1,209.18	604.59	1,014.77	508.14	10.70	-1.05	0.065
115.00	-8.07	-2.15	0.00	-18.24	0.00	18.24	1,139.88	569.94	901.12	451.23	11.82	-1.09	0.048
120.00	-4.07	-1.25	0.00	-7.49	0.00	7.49	1,070.57	535.29	794.22	397.70	12.97	-1.11	0.023
125.00	-4.00	-1.23	0.00	-1.23	0.00	1.23	1,001.27	500.64	694.07	347.55	14.14	-1.12	0.008
126.00	0.00	-1.15	0.00	0.00	0.00	0.00	987.41	493.71	674.85	337.93	14.38	-1.12	0.000

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

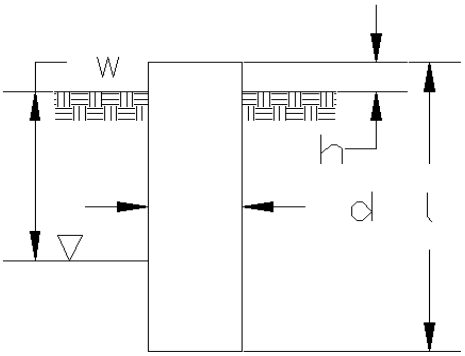
Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.05	-2.83	0.00	-309.83	0.00	309.83	3,785.34	1,892.67	7,015.62	3,513.02	0.00	0.00	0.095
5.00	-24.08	-2.80	0.00	-295.68	0.00	295.68	3,717.33	1,858.67	6,708.61	3,359.29	0.02	-0.03	0.094
10.00	-23.13	-2.76	0.00	-281.67	0.00	281.67	3,647.68	1,823.84	6,405.34	3,207.43	0.07	-0.06	0.094
15.00	-22.20	-2.72	0.00	-267.85	0.00	267.85	3,576.40	1,788.20	6,106.06	3,057.57	0.15	-0.10	0.094
20.00	-21.29	-2.68	0.00	-254.23	0.00	254.23	3,503.48	1,751.74	5,811.01	2,909.82	0.27	-0.13	0.093
25.00	-20.41	-2.64	0.00	-240.81	0.00	240.81	3,428.92	1,714.46	5,520.42	2,764.31	0.43	-0.17	0.093
30.00	-19.54	-2.60	0.00	-227.61	0.00	227.61	3,352.72	1,676.36	5,234.53	2,621.15	0.62	-0.20	0.093
35.00	-18.69	-2.55	0.00	-214.62	0.00	214.62	3,262.56	1,631.28	4,934.93	2,471.13	0.85	-0.24	0.093
40.00	-18.11	-2.52	0.00	-201.85	0.00	201.85	3,158.60	1,579.30	4,623.93	2,315.40	1.13	-0.28	0.093
43.50	-17.71	-2.50	0.00	-193.02	0.00	193.02	3,085.84	1,542.92	4,412.25	2,209.40	1.34	-0.31	0.093
45.00	-16.79	-2.45	0.00	-189.26	0.00	189.26	3,054.65	1,527.33	4,323.05	2,164.74	1.44	-0.32	0.093
48.50	-16.58	-2.44	0.00	-180.69	0.00	180.69	2,470.49	1,235.24	3,488.73	1,746.96	1.69	-0.35	0.110
50.00	-15.88	-2.41	0.00	-177.02	0.00	177.02	2,452.28	1,226.14	3,427.21	1,716.15	1.80	-0.36	0.110
55.00	-15.19	-2.40	0.00	-164.96	0.00	164.96	2,390.53	1,195.26	3,224.53	1,614.66	2.21	-0.41	0.109
60.00	-14.53	-2.39	0.00	-152.99	0.00	152.99	2,327.14	1,163.57	3,025.74	1,515.12	2.67	-0.46	0.107
65.00	-13.88	-2.41	0.00	-141.02	0.00	141.02	2,249.69	1,124.84	2,815.52	1,409.85	3.18	-0.52	0.106
70.00	-13.24	-2.44	0.00	-128.98	0.00	128.98	2,163.06	1,081.53	2,601.80	1,302.84	3.75	-0.57	0.105
75.00	-12.62	-2.48	0.00	-116.79	0.00	116.79	2,076.43	1,038.21	2,396.52	1,200.04	4.38	-0.63	0.103
80.00	-12.02	-2.52	0.00	-104.40	0.00	104.40	1,989.80	994.90	2,199.68	1,101.47	5.07	-0.68	0.101
85.00	-11.66	-2.54	0.00	-91.80	0.00	91.80	1,903.17	951.59	2,011.27	1,007.13	5.81	-0.74	0.097
88.13	-11.33	-2.56	0.00	-83.85	0.00	83.85	1,849.03	924.51	1,897.79	950.31	6.31	-0.77	0.094
90.00	-11.01	-2.58	0.00	-79.05	0.00	79.05	1,816.54	908.27	1,831.29	917.01	6.61	-0.80	0.092
91.88	-10.69	-2.59	0.00	-74.22	0.00	74.22	1,460.41	730.20	1,483.31	742.76	6.93	-0.82	0.107
95.00	-10.21	-2.59	0.00	-66.14	0.00	66.14	1,417.09	708.55	1,396.21	699.14	7.48	-0.85	0.102
100.00	-10.11	-2.59	0.00	-53.19	0.00	53.19	1,347.79	673.89	1,262.31	632.09	8.41	-0.91	0.092
101.00	-9.70	-2.57	0.00	-50.60	0.00	50.60	1,333.93	666.96	1,236.34	619.09	8.60	-0.93	0.089
105.00	-9.61	-2.57	0.00	-40.31	0.00	40.31	1,278.48	639.24	1,135.17	568.43	9.40	-0.97	0.078
106.00	-6.25	-2.25	0.00	-37.74	0.00	37.74	1,264.62	632.31	1,110.55	556.10	9.60	-0.98	0.073
110.00	-5.89	-2.19	0.00	-28.76	0.00	28.76	1,209.18	604.59	1,014.77	508.14	10.44	-1.02	0.061
115.00	-5.55	-2.10	0.00	-17.83	0.00	17.83	1,139.88	569.94	901.12	451.23	11.53	-1.06	0.044
120.00	-2.80	-1.23	0.00	-7.34	0.00	7.34	1,070.57	535.29	794.22	397.70	12.65	-1.08	0.021
125.00	-2.75	-1.21	0.00	-1.21	0.00	1.21	1,001.27	500.64	694.07	347.55	13.80	-1.09	0.006
126.00	0.00	-1.15	0.00	0.00	0.00	0.00	987.41	493.71	674.85	337.93	14.03	-1.09	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	19.89	0.00	36.45	0.00	0.00	1906.38	48.50	0.58
0.9D + 1.6W	19.07	0.00	27.33	0.00	0.00	1841.83	48.50	0.56
1.2D + 1.0Di + 1.0Wi	5.01	0.00	64.47	0.00	0.00	496.51	48.50	0.17
(1.2 + 0.2Sds) * DL + E ELFM	1.19	0.00	36.37	0.00	0.00	132.02	48.50	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.83	0.00	36.37	0.00	0.00	315.97	48.50	0.12
(0.9 - 0.2Sds) * DL + E ELFM	1.19	0.00	25.05	0.00	0.00	129.62	48.50	0.05
(0.9 - 0.2Sds) * DL + E EMAM	2.83	0.00	25.05	0.00	0.00	309.83	48.50	0.11
1.0D + 1.0W	4.56	0.00	30.40	0.00	0.00	442.99	48.50	0.14

Site Name:	Bridgeport CT 2, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302469	*American Tower Corporation*	
Engineer:	Ryan.Daudelin		
Engineering Number:	OAA718327		
Date:	06/26/18		



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

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	1906.4	k-ft
Shear/Leg (V):	19.9	k
Axial Load (P):	35.5	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	6.0	ft
Caisson Embedment (L-h):	18.0	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	99.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

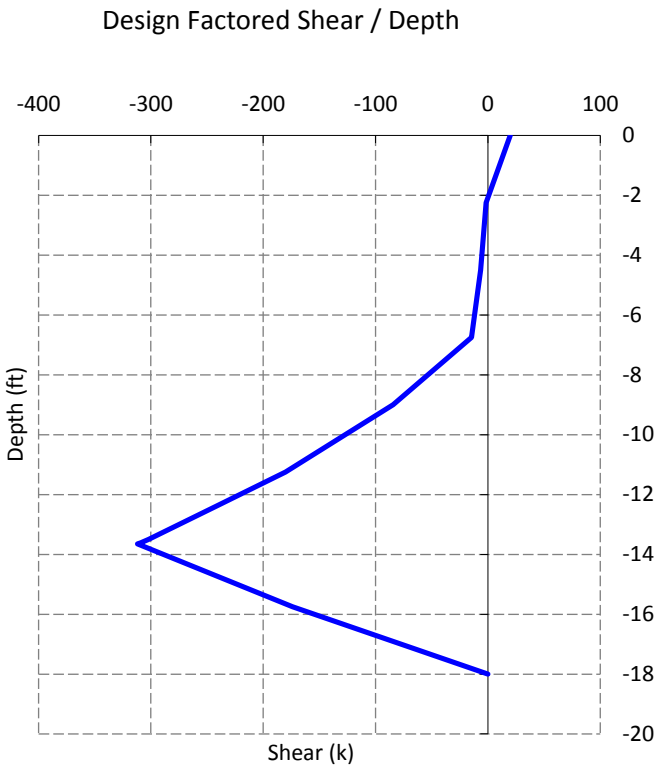
Soil Mechanical Properties

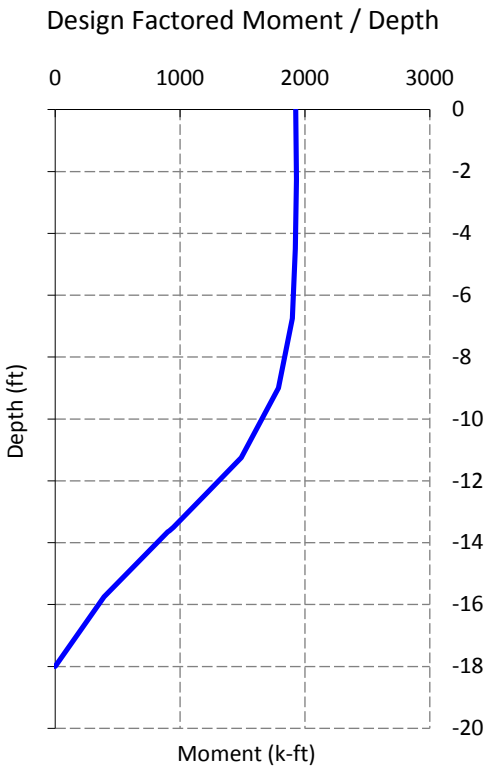
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	5.0	120	0	0	0	0
5.0	19.0	165	0	45	942	22000

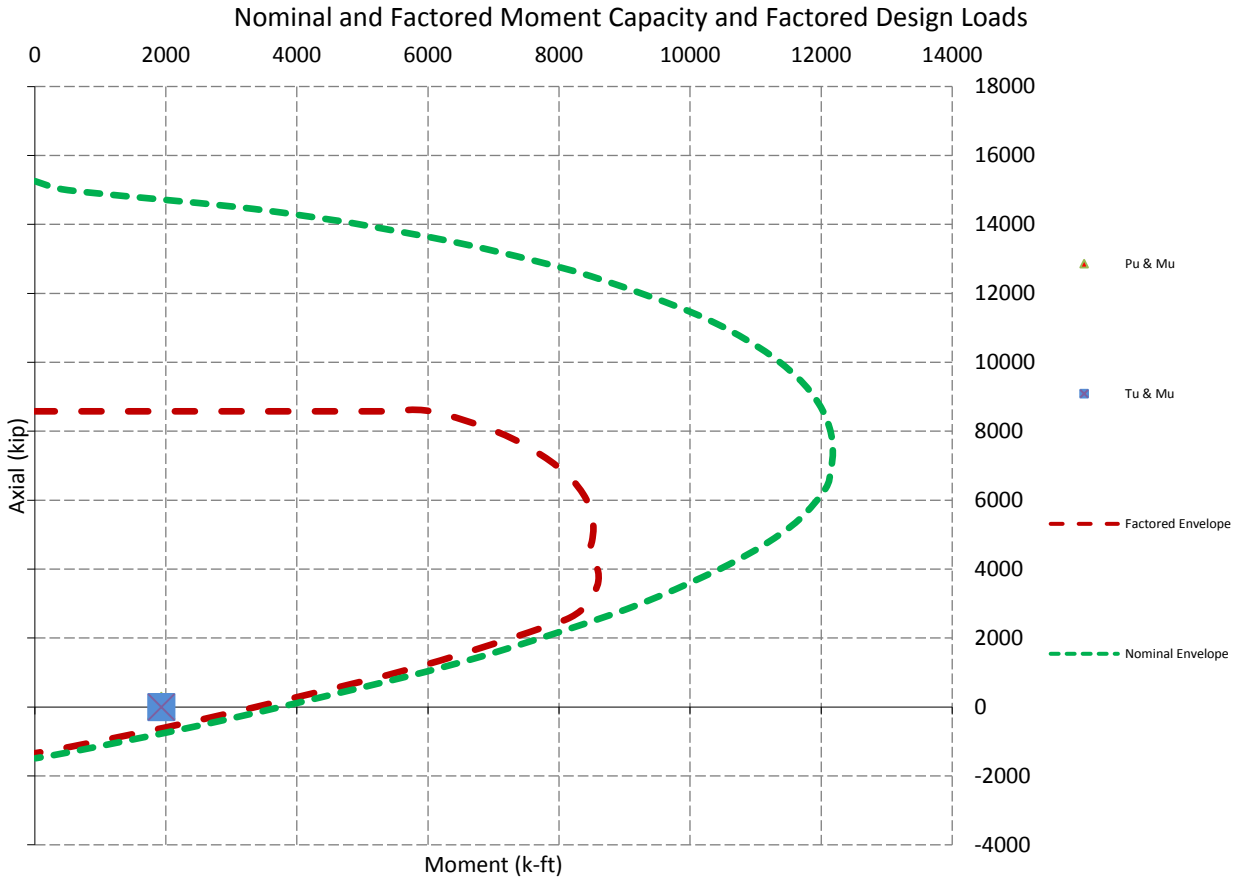
Required Embedment:	15.4	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	537.2	ft^3 = 19.9 yd^3
Weight of Concrete (Buoyancy Effect Considered):	80.6	k
Average Soil Unit Weight:	152.5	pcf
Skin Friction Resistance:	230.8	k
Compressive Bearing Resistance:	622.0	k
Pullout Weight (Minus Concrete Weight):	579.3	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	233.6	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	639.7	k
P_u:	33.9	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.05	Result: OK
Total Lateral Resistance:	1792.5	k
Inflection Point (Below Ground Surface):	13.6	ft
Design Overturning Moment At Inflection Point (M_D):	2197.6	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	3745.9	k-ft
$M_D/\phi_s M_n$:	0.59	Result: OK
ϕ_s:	0.75	

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	16	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	64.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	1932.2	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	3528.7	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.55	Result: OK
Design Shear (V_u):	312.0	k
Nominal Shear Capacity ($\phi_V V_n$):	387.9	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.80	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	1347.8	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	33.9	k
Nominal Compression Capacity ($\phi_P P_n$):	7154.3	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.00	Result: OK
Bending Reinforcement Ratio:	0.006	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.55	Result: OK


Design Factored Shear / Depth
-400
-300
-200
-100
0
100
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
Depth (ft)
Shear (k)


Design Factored Moment / Depth
0
1000
2000
3000
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
Depth (ft)
Moment (k-ft)


Nominal and Factored Moment Capacity and Factored Design Loads
0
2000
4000
6000
8000
10000
12000
14000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
-4000
Axial (kip)
Moment (k-ft)
Pu & Mu
Tu & Mu
Factored Envelope
Nominal Envelope

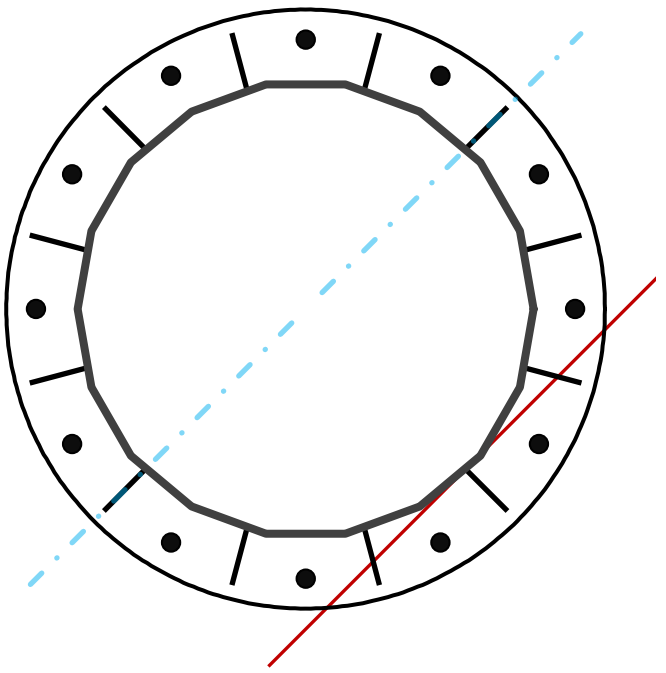
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	45.00	in
Thickness	0.375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	1906.4	k-ft
Axial, Pu	36.5	k
Shear, Vu	19.9	k
Neutral Axis	225	°

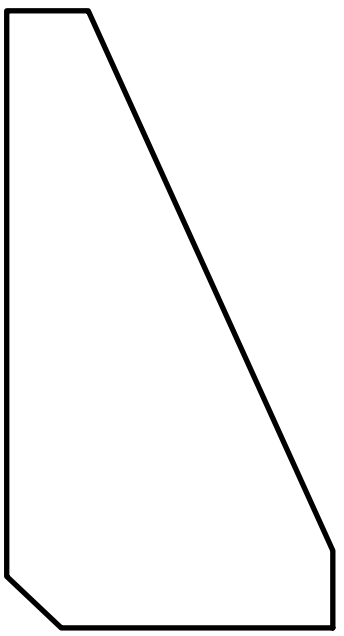
Report Capacities		
Component	Capacity	Result
Base Plate	57%	Pass
Anchor Rods	54%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	60	in
Thickness	1 3/4	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	997.7	k
Bending Stress, ϕMn	1747.3	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	12	-
Diameter, ø	2 1/4	in
Bolt Circle	54	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	14.1	in
Orientation Offset	0	°
Applied Force, Pu	139.3	k
Anchor Rods, ϕPn	259.8	k

Stiffeners		
Arrangement	Radial	-
Quantity	12	-
Height	12	in
Width	6	in
Effective Width	6.000	in
Thickness	1/2	in
Effective Thickness	0.500	in
Notch	1	in
Flat Edge	1.5	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	1/2	in
Bevel Depth		in
Vertical Weld	Fillet	
Vertical Fillet Size	3/8	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, ϕRn	198.2	k
Horz. Weld, ϕRn	111.2	k
Ten. Capacity, ϕTn	109.7	k
Comp. Capacity, ϕPn	227.0	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	19.9	1906.4	1.00
Anchor Rod Forces	19.9	1906.4	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	8.0	770.5	0.40

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	52.3061	2.9059	0.1368		13022.69
Bolt	3.9761	3.2477	0.8393	4.5	14215.47
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	2.5000	2.2500	36.0000		8832.75

Base Plate		
Shape	Round	-
Diameter, D	60	in
Thickness, t	1.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	39.686	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate		
Chord Length AA	34.165	in
Additional AA	8.098	in
Section Modulus, Z	32.358	in^3
Applied Moment, Mu	997.7	k-ft
Bending Capacity, ϕMn	1747.3	k-ft
Capacity, Mu/ϕMn	0.571	OK
Chord Length AB	33.231	in
Additional AB	7.624	in
Section Modulus, Z	31.279	in^3
Applied Moment, Mu	901.0	k-ft
Bending Capacity, ϕMn	1689.1	k-ft
Capacity, Mu/ϕMn	0.533	OK
Bend Line Length	32.855	in
Additional Bend Line	26.088	in
Section Modulus, Z	45.128	in^3
Applied Moment, Mu	997.7	k-ft
Bending Capacity, ϕMn	2436.9	k-ft
Capacity, Mu/ϕMn	0.409	OK

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

Anchor Rods		
Anchor Rod Quantity, N	12	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	54	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	139.3	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.536	OK
Interaction Capacity	0.536	OK

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

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

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	51.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners		
Applied Axial Force, Pu	61.3	k
Applied Horizontal Force, Vu	0.33	k

Vertical Weld		
Vert.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.042	-
Weld Coefficient, C	3.670	-
Compressive Capacity, ϕPn	198.2	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.042	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	158.8	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.311	OK

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	2.940	-
Effective Fillet	0.500	in
Compressive Capacity, ϕPn	105.8	k
Horz.-to-Pole a=e_x/l	0.333	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	3.090	-
Shear Capacity, ϕVn	111.2	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.582	OK

Plate Tension		
Gross Cross Section	2.500	in^2
Net Cross Section	2.250	in^2
Tensile Capacity, ϕTn	109.7	k
Capacity, Tu/ϕTn	0.279	OK

Plate Compression		
Radius of Gyration	0.144	in^3
kl/r	49.88	-
4.71 √(E/Fy)	113.43	-
Buckling Stress(Fe)	115.0	-
Crit. Buckling Stress(Fcr)	100.9	ksi
Compressive Capacity, ϕPn	227.0	k
Capacity, Pu/ϕPn	0.135	OK

Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	BRIDGEPORT CT 2
SITE CASCADE:	CT52XC006
SITE ADDRESS:	1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607
SITE TYPE:	MONOPOLE TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801

LATITUDE (NAD83):
41° 11' 0.87" N
41.18357500°

LONGITUDE (NAD83):
-73° 9' 30.15" W
-73.15837500°

COUNTY:
FAIRFIELD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

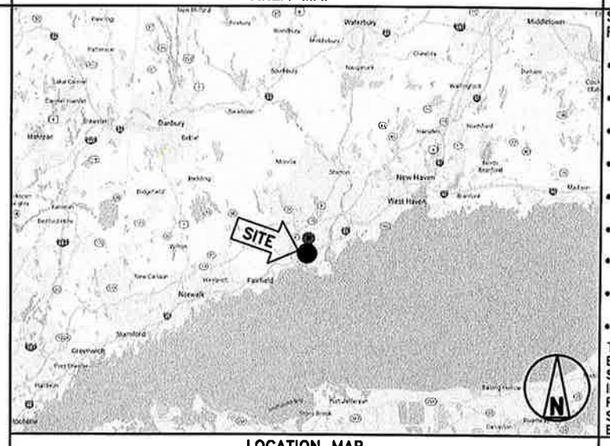
ZONING DISTRICT:
TBD

POWER COMPANY:
TBD

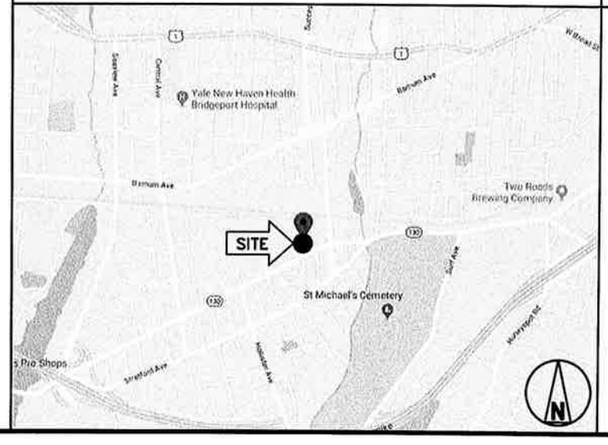
AAV PROVIDER:
FRONTIER
PHONE: (800) 921-8101

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
TERRI BURKHOLDER
(315)719-2928
TBURKHOLDER@AIROSMITHDEVELOPMENT.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE (3) EXISTING PANEL ANTENNAS AND RRH's
- INSTALL (6) PANEL ANTENNAS
- INSTALL (3) 1900 MHz
- INSTALL (6) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (24) JUMPER CABLES
- INSTALL (4) HYBRID CABLE
- REMOVE EXISTING CLEARWIRE GROUND EQUIPMENT
- INSTALL (2) EQUIPMENT CABINETS WITHIN EXISTING LEASE AREA
- INSTALL 7' x 7' CONCRETE EQUIPMENT PAD

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

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SP-2	SPRINT SPECIFICATIONS	0
SP-3	SPRINT SPECIFICATIONS	0
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A-2	TOWER ELEVATION	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	EQUIPMENT & MOUNTING DETAILS	0
A-5	EQUIPMENT DETAILS	0
A-6	CIVIL DETAILS	0
A-7	PLUMBING DIAGRAM	0
E-1	ONE LINE & NOTES	0
E-2	ELECTRICAL & GROUNDING DETAILS	0
E-3	ELECTRICAL & GROUNDING DETAILS	0

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 308-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
JUL 25 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:
BRIDGEPORT CT 2

SITE NUMBER:
CT52XC006

SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT CORPORATION

C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.

D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.

E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#: (518) 306-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24093
JUL 25 2018
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:

BRIDGEPORT CT 2

SITE NUMBER:

CT52XC006

SITE ADDRESS:

1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.

1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)

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JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
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OFFICE#. (518) 306-3740

ENGINEERING LICENSE:

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:

BRIDGEPORT CT 2

SITE NUMBER:

CT52XC006

SITE ADDRESS:

1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
2. STRUCTURAL BACKFILL COMPACTION REPORTS.
3. SITE RESISTANCE TO EARTH TEST.
4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.
2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
5. PHOTOS OF TOWER SECTION STACKING.
6. CONCRETE TESTING / SAMPLES.
7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.
10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
11. COAX CABLE ENTRY INTO SHELTER.
12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
25. ALL BTS GROUND CONNECTIONS.
26. ALL GROUND TEST WELLS.
27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
30. GPS ANTENNAS.
31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
32. DOGHOUSE/CABLE EXIT FROM ROOF.
33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
34. MASTER BUS BAR.
35. TELCO BOARD AND NIU.
36. ELECTRICAL DISTRIBUTION WALL.
37. CABLE ENTRY WITH SURGE SUPPRESSION.
38. ENTRANCE TO EQUIPMENT ROOM.
39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.
40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.
41. ANTENNA AND MAST GROUNDING.
42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

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JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 308-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
JUL 2 6 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:

BRIDGEPORT CT 2

SITE NUMBER:

CT52XC006

SITE ADDRESS:

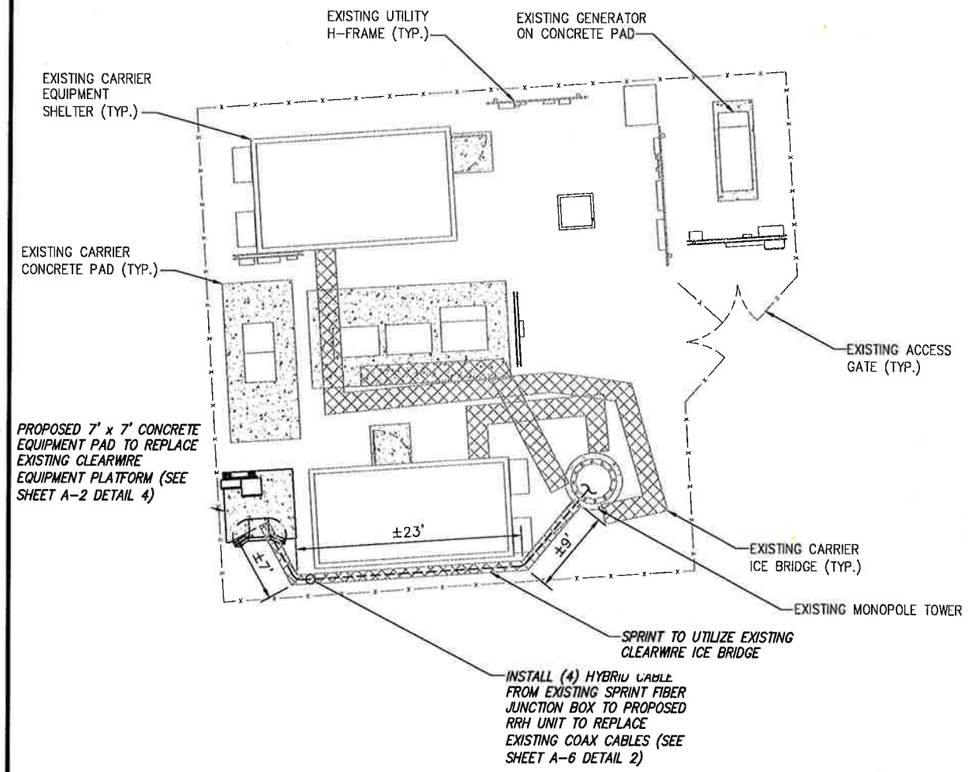
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3



INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

N

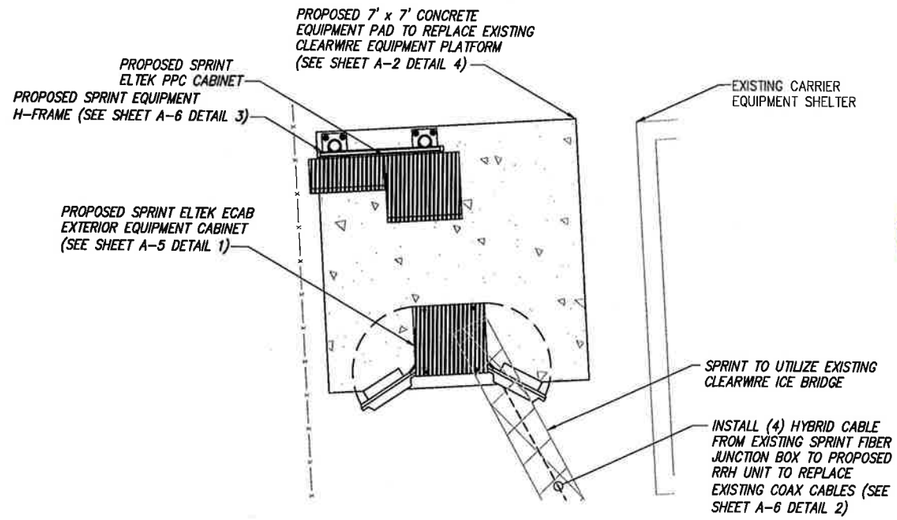
GRAPHIC SCALE:

15' 7.5' 0 7.5' 15'

SCALE (11x17): 1" = 15'-0"
SCALE (22x34): 1" = 7'-6"

OVERALL SITE PLAN | SCALE: AS NOTED | 1

NOTE:
CABLE LENGTH IS THE ESTIMATED DISTANCE FROM EXISTING EQUIPMENT AREA TO PROPOSED TOWER MOUNTED APPURTENANCES WITH AN ADDITIONAL 15%.



N

GRAPHIC SCALE:

4' 2' 0 2' 4'

SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

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SHEET DESCRIPTION:

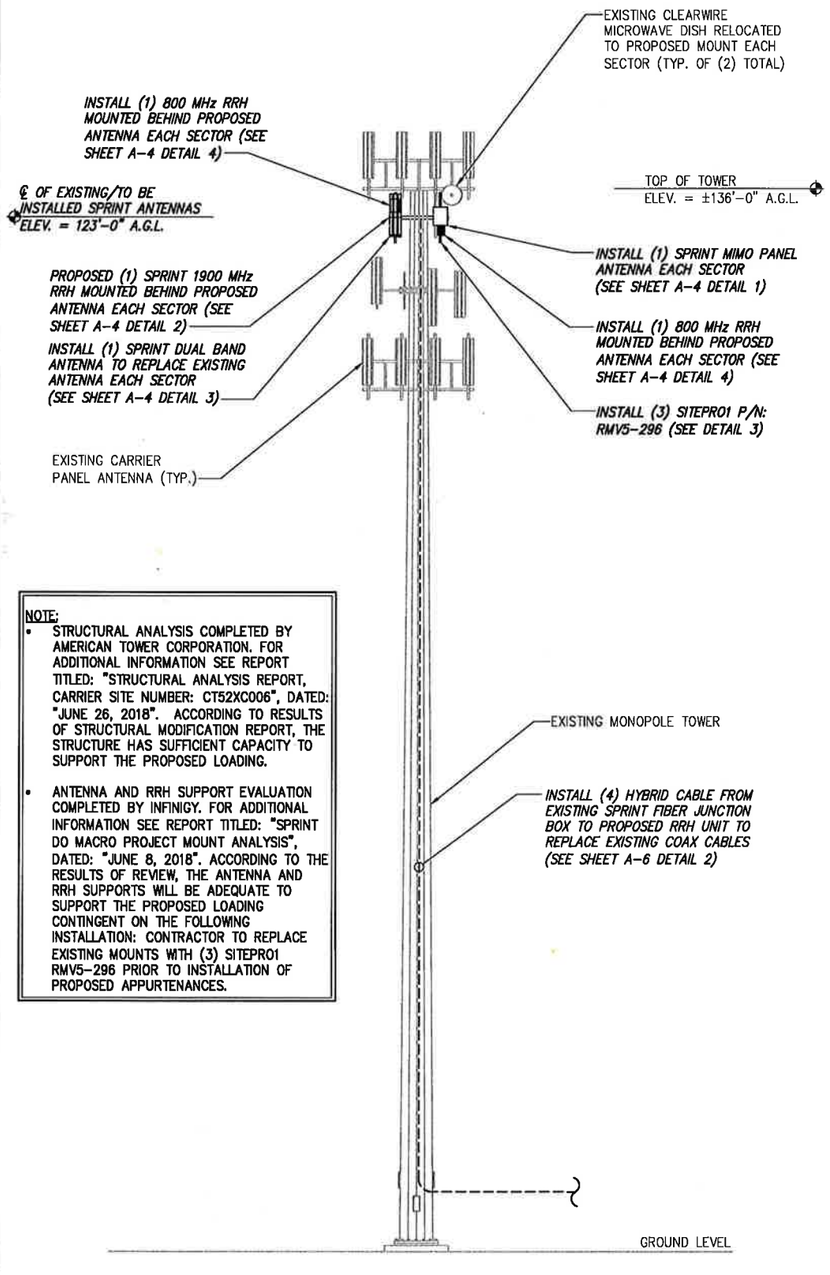
SITE PLAN

SHEET NUMBER:

A-1

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

NOTE:
SEE DETAIL 2 ON A-3 FOR ANTENNA LAYOUT



NOTE:
- STRUCTURAL ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, CARRIER SITE NUMBER: CT52XC006", DATED: "JUNE 26, 2018". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT DO MACRO PROJECT MOUNT ANALYSIS", DATED: "JUNE 8, 2018". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS WILL BE ADEQUATE TO SUPPORT THE PROPOSED LOADING CONTINGENT ON THE FOLLOWING INSTALLATION: CONTRACTOR TO REPLACE EXISTING MOUNTS WITH (3) SITEPRO1 RMV5-296 PRIOR TO INSTALLATION OF PROPOSED APPURTENANCES.

TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

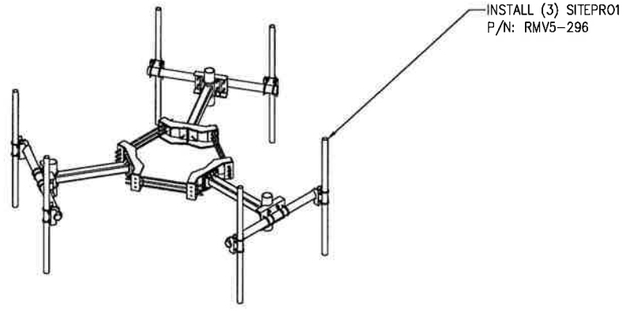
SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	NNVV-65B-R4	COMMSCOPE	25°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1	±183'*	±123' AGL
	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	25°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	25°	1	REMOVE		EXISTING COAX		
BETA	PROPOSED	NNVV-65B-R4	COMMSCOPE	155°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1		±123' AGL
	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	155°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	155°	1	REMOVE		EXISTING COAX		
GAMMA	PROPOSED	NNVV-65B-R4	COMMSCOPE	275°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1		±123' AGL
	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	275°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	275°	1	REMOVE		EXISTING COAX		

PROJECT SCOPE:

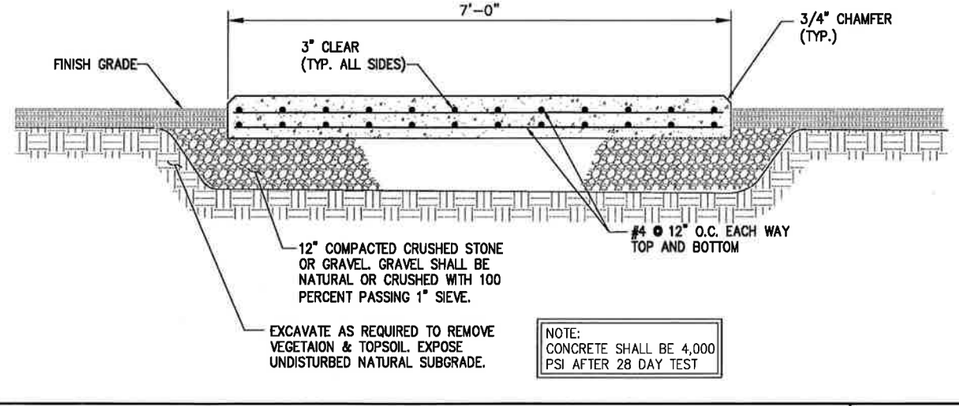
REMOVE: (3) PANEL ANTENNAS INSTALL: (6) PANEL ANTENNAS AND (9) RRH'S

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

SITE LOADING CHART | NO SCALE | 2



MOUNT DETAIL | NO SCALE | 3



NOTE:
CONCRETE SHALL BE 4,000 PSI AFTER 28 DAY TEST

EQUIPMENT CABINET FOUNDATION | NO SCALE | 4

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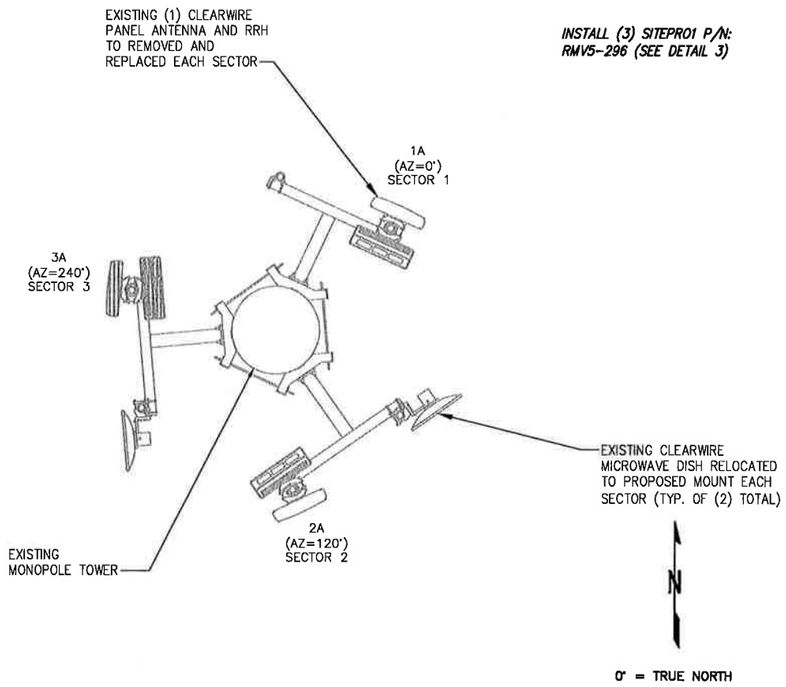
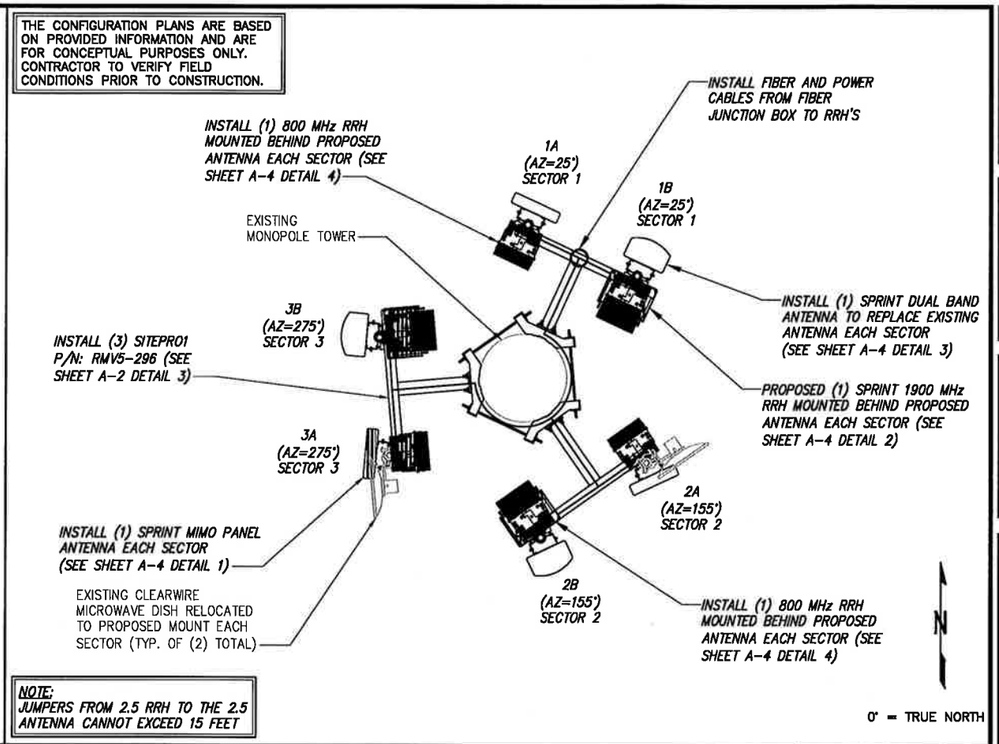
TOWER ELEVATION

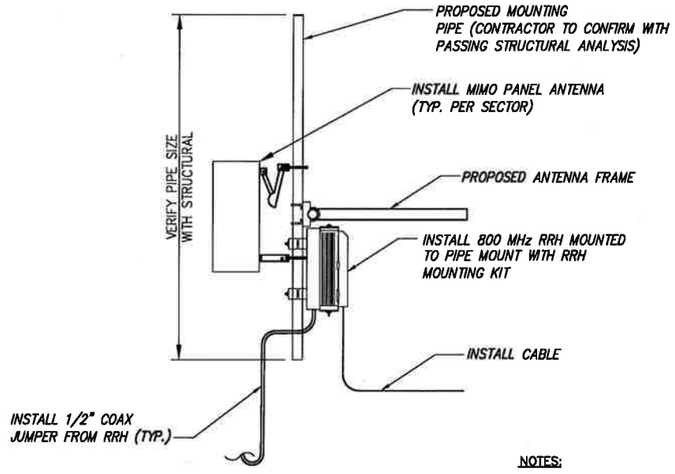
SHEET NUMBER:
A-2



EXISTING ANTENNA & RRH LAYOUT | NO SCALE | 1



FINAL ANTENNA & RRH LAYOUT | NO SCALE | 2

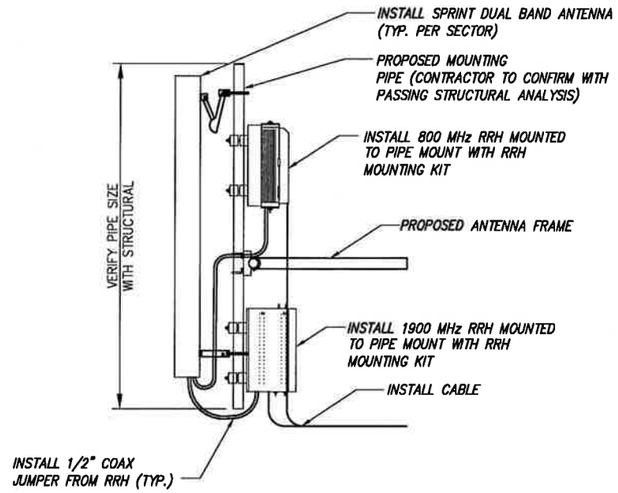


NOTE: CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE: THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRH MOUNTING DETAILS

NOTES:
1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

TYPICAL MIMO ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 3



NOTE: CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE: THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRH MOUNTING DETAILS

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.

TYPICAL DUAL BAND ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 4

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JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
JULY 25, 2013

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:
BRIDGEPORT CT 2

SITE NUMBER:
CT52XC006

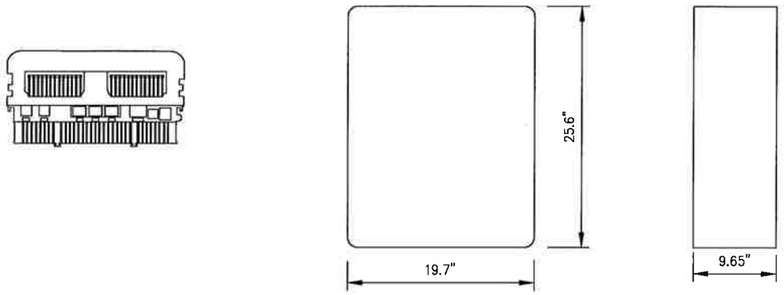
SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:
A-3

ANTENNA NOKIA AAHC

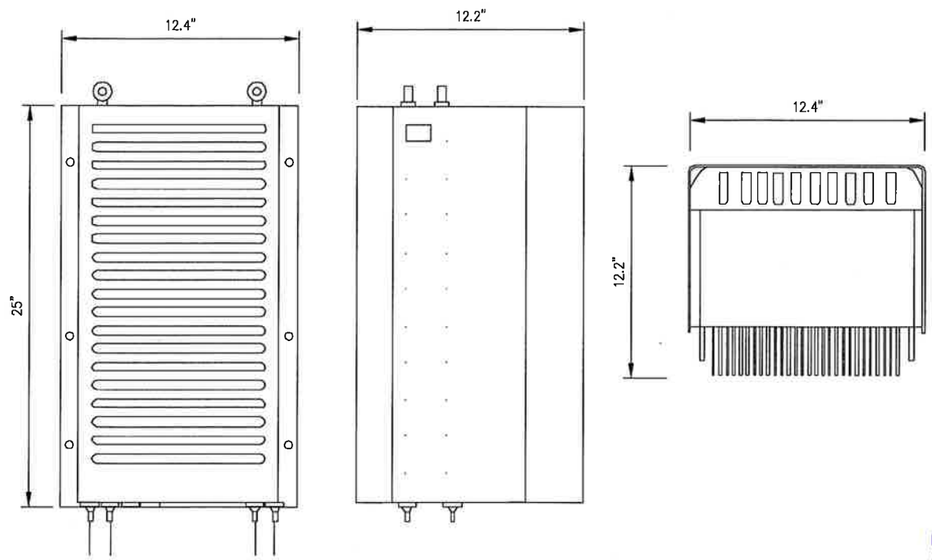
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.In(mim):	25.6"x19.7"x9.9" (651x501x245mm)
WEIGHT:	99.2 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



MIMO ANTENNA DETAIL | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)

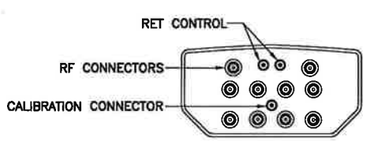


FRONT VIEW | SIDE VIEW | TOP VIEW

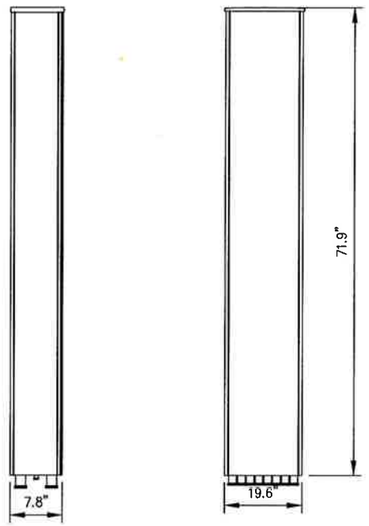
1900 MHz RRH | NO SCALE | 2

ANTENNA COMMSCOPE NNVV-65B-R4

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.In(mim):	71.9"x19.6"x7.8" (1826x498x198mm)
WEIGHT:	77.4 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



PLAN VIEW



SIDE VIEW | FRONT VIEW

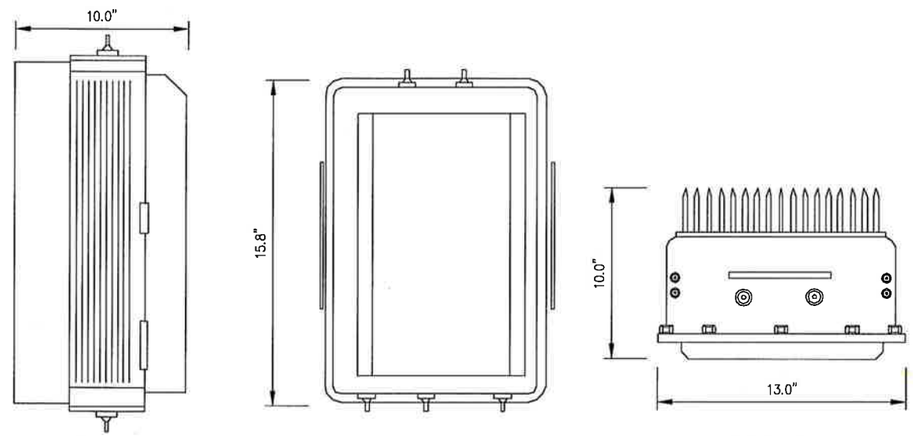
DUAL BAND ANTENNA | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

COLOR: LIGHT GREY
WEIGHT: 53 LBS.

NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.



SIDE VIEW | FRONT VIEW | PLAN VIEW

800 MHz RRH | NO SCALE | 4

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PROJECT MANAGER:
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32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
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JOHN S. STEVENS
No. 25402
LICENSED PROFESSIONAL ENGINEER
JUL 25 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:
BRIDGEPORT CT 2

SITE NUMBER:
CT52XC006

SITE ADDRESS:
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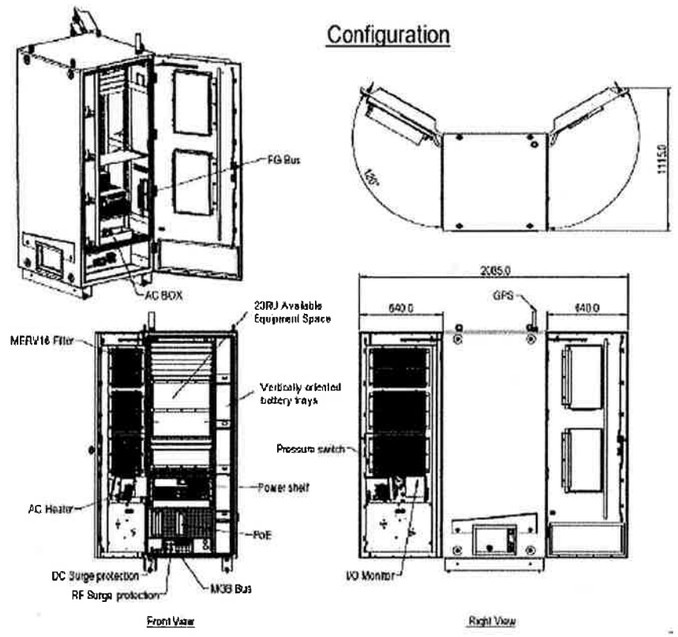
BRIDGEPORT , CT 06607

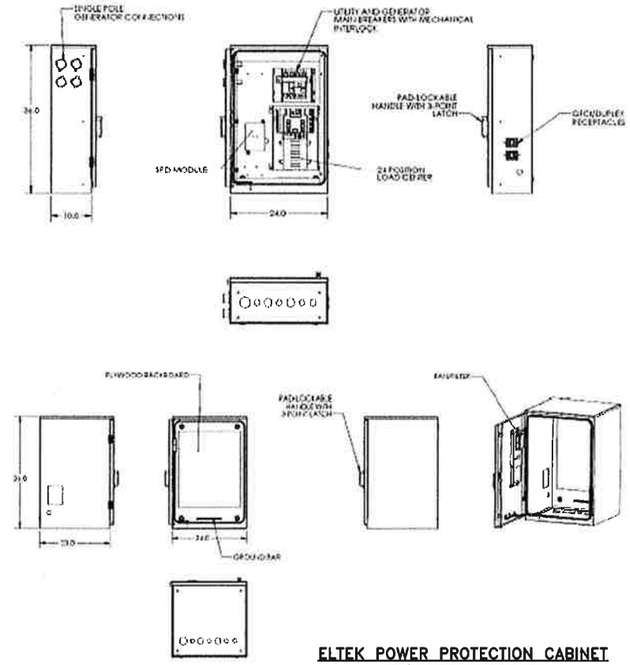
SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4



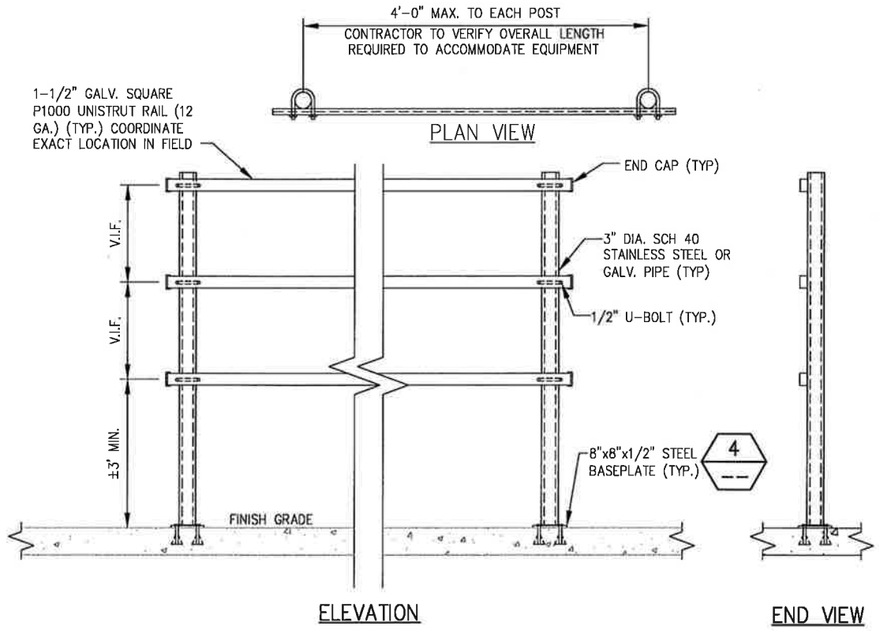
ELTEK ECAB EXTERIOR CABINET
P/N: ESOA220-SCA02

EQUIPMENT CABINET DETAIL	NO SCALE	1

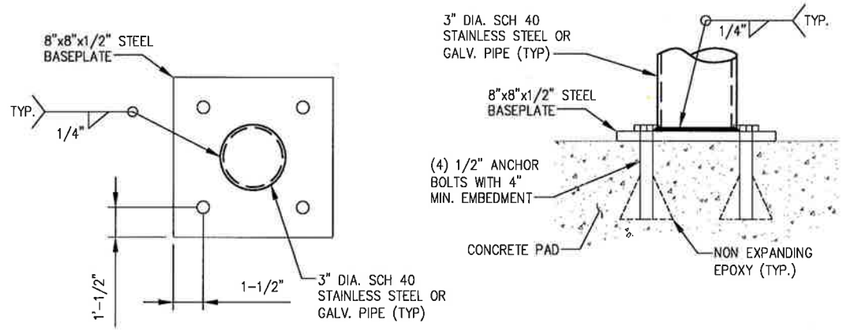


ELTEK POWER PROTECTION CABINET
P/N: 5811122212

EQUIPMENT CABINET DETAIL	NO SCALE	2



H-FRAME DETAIL	NO SCALE	3



SUPPORT POST MOUNTING DETAIL	NO SCALE	4

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32 CLINTON ST.
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OFFICE#. (516) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
JUL 25 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

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SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:
EQUIPMENT DETAILS

SHEET NUMBER:
A-5

RFS HYBRIFLEX RISER CABLE SCHEDULE

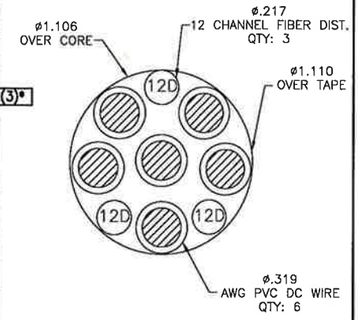
Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft (3)*
8 AWG Power	**Hybrid cable** MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	**Hybrid cable** MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	**Hybrid cable** MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

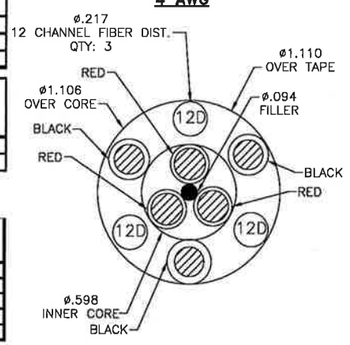
Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	**Hybrid Jumper cable** MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	**Hybrid Jumper cable** MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.

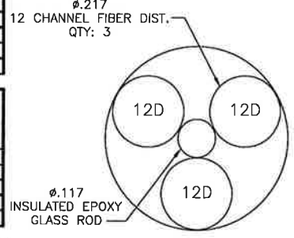
* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.



4 AWG

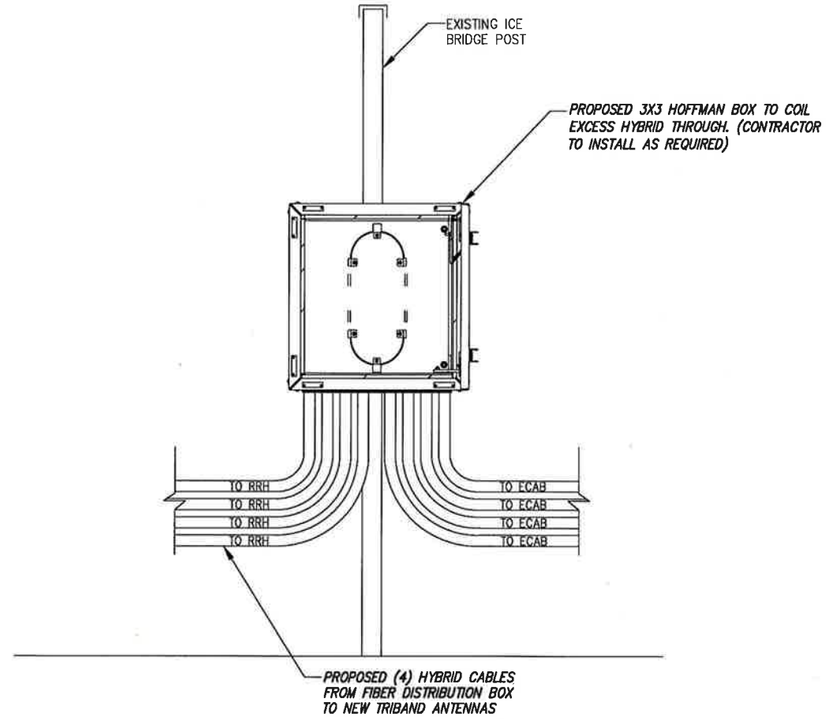


8 & 6 AWG



FIBER ONLY

800/900/2500 CABLE CROSS SECTION DATA | NO SCALE | 1



OPTIONAL HYBRID SLACK BOX | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

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PLANS PREPARED BY:

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PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 308-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
JUL 25 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

SITE NAME:
BRIDGEPORT CT 2

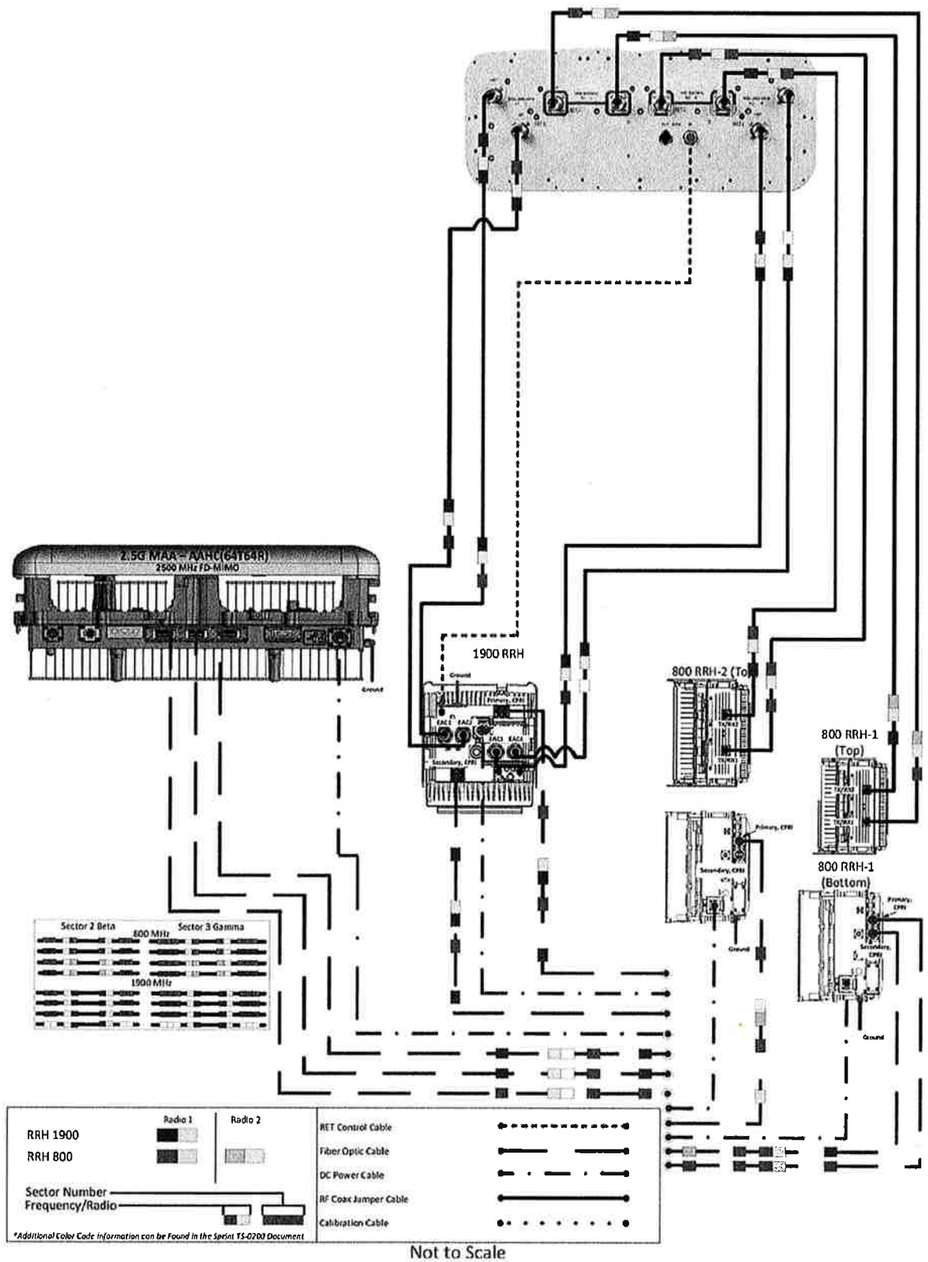
SITE NUMBER:
CT52XC006

SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-6

ALU 21-MIMO NNVV-65B-R4 wo Filters



Not to Scale

PLUMBING DIAGRAM | NO SCALE | 1

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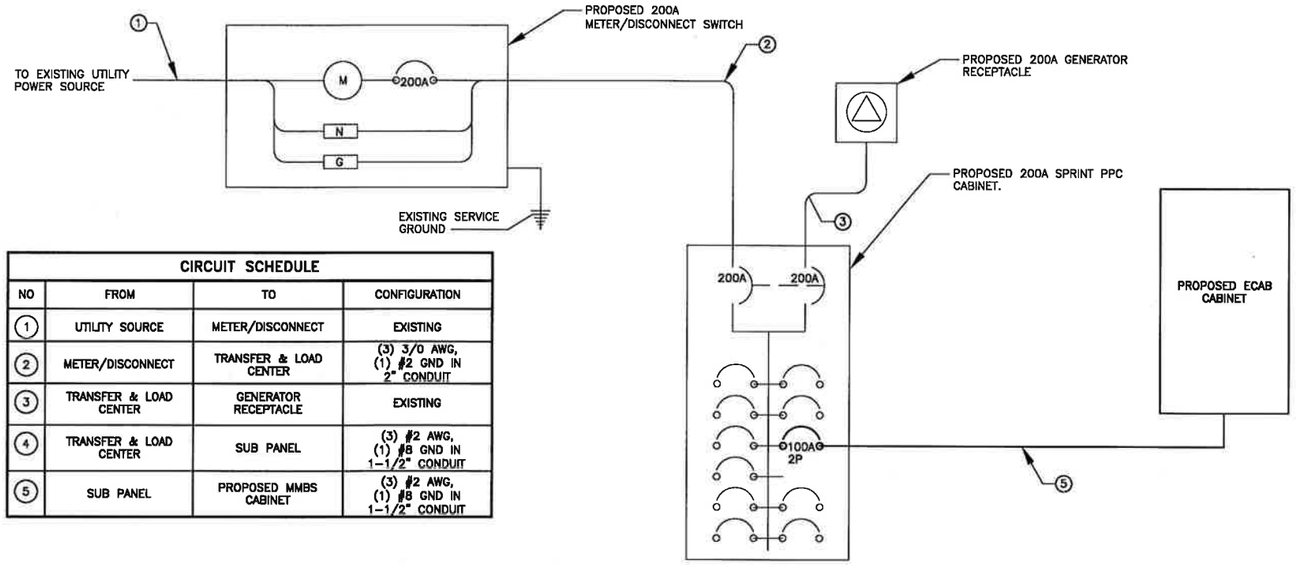
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

A-7



CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	(3) 3/0 AWG, (1) #2 GND IN 2" CONDUIT
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	SUB PANEL	(3) #2 AWG, (1) #8 GND IN 1-1/2" CONDUIT
5	SUB PANEL	PROPOSED MMBS CABINET	(3) #2 AWG, (1) #8 GND IN 1-1/2" CONDUIT

ONE LINE DIAGRAM | NO SCALE | 1

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
2. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE INDICATED. CONDUITS EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL. ALL UNDERGROUND CONDUIT SHALL TRANSITION FROM PVC TO RIGID ABOVE GRADE. PROVIDE 36" SEPARATION BETWEEN UNDERGROUND POWER AND TELEPHONE CONDUITS. SUPPLY UTILITY MARKING TAPE BURIED 12" BELOW GRADE ALONG ENTIRE LENGTH OF UNDERGROUND CONDUITS.
3. ALL CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. CONTROL CONDUCTORS SHALL BE STRANDED, POWER & LIGHTING CONDUCTORS SHALL BE SOLID FOR #10 & #12 CONDUCTORS AND STRANDED FOR ALL OTHER SIZES.
4. ELECTRICAL DRAWINGS ARE IN PART DIAGRAMMATIC. COORDINATE ELECTRICAL WORK WITH SITE CONDITIONS.
5. LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. IF CONFLICTS ARISE, CONTACT UTILITY COMPANY AND ENGINEER IMMEDIATELY.
6. ALL EXPOSED CONDUITS SHALL HAVE WEATHERPROOF CAPS NOT DUCT TAPE.
7. PROVIDE 200 LB TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
8. PULL BOXES SHALL BE INSTALLED AS NEEDED PER NEC UTILITY REQUIREMENTS.

ELECTRICAL NOTES | NO SCALE | 2

GENERAL GROUNDING NOTES:

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
   – #2/0 BARE TINNED SOLID COPPER CONDUCTOR: CADWELD TO RODS OR GROUND RING
   – LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT CADWELDS AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. DO NOT INSTALL GROUND RING OUTSIDE OF LEASED AREA.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'–0" (MAX. 15'–0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND. BONDING IS SHOWN ON THE ICE BRIDGE DUE TO DIFFICULTY WITH WELDING OR ATTACHING TO TOWER LEGS. CONTRACTOR SHALL ADVISE CONSTRUCTION MANAGER PRIOR TO PLACING CIGBE ON ICE BRIDGE IF MOUNTING TO TOWER LEG IS POSSIBLE.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250–30.

GROUNDING NOTES | NO SCALE | 3

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ISSUED FOR PERMIT	07/20/18	ETC	0

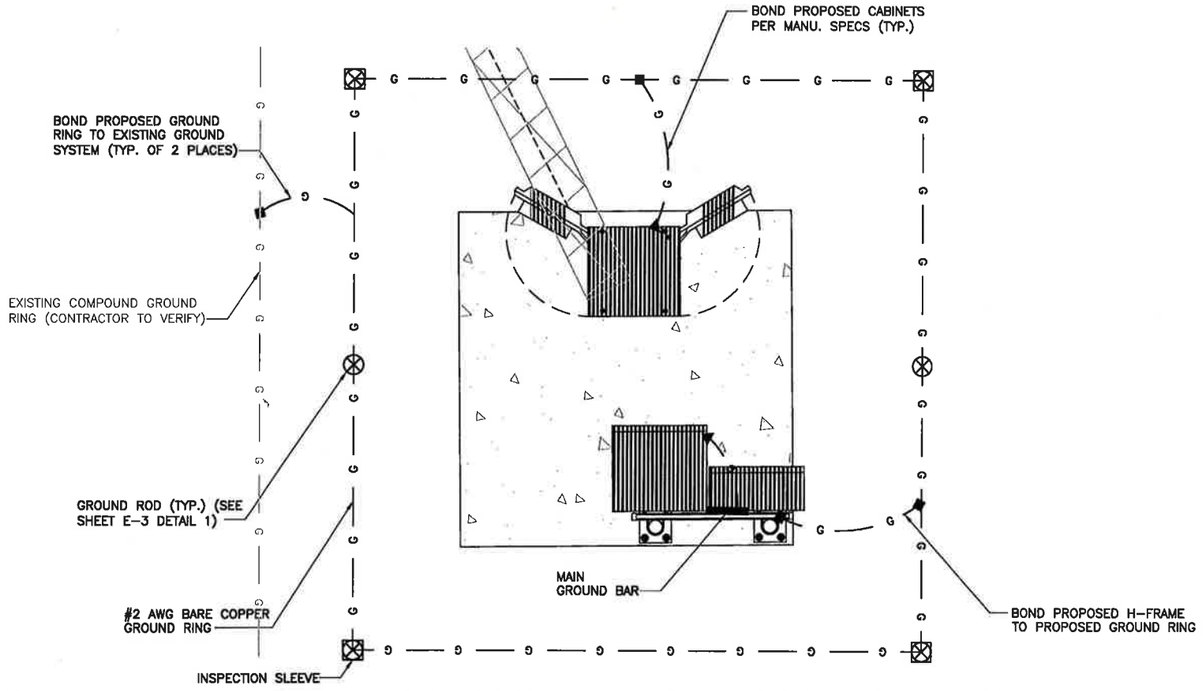
SITE NAME:
BRIDGEPORT CT 2

SITE NUMBER:
CT52XC006

SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

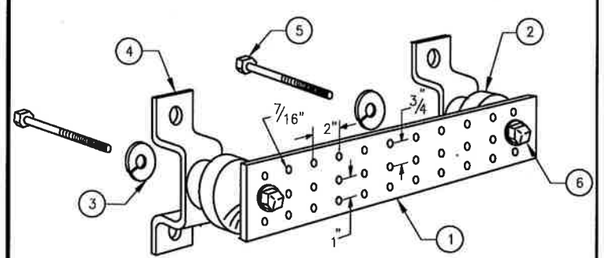
SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1



GROUNDING PLAN

NO SCALE | 1



LEGEND

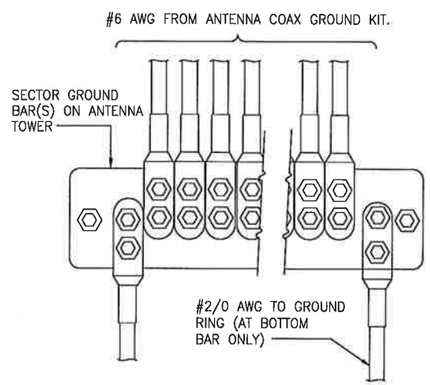
1 – TINNED COPPER GROUND BAR, 1/4"x 4"x 24"
2 – INSULATORS (NO INSULATORS ON TOWER)
3 – 5/8" LOCK WASHERS
4 – MOUNTING BRACKET (MOUNT HORIZONTAL ON VERTICAL CABLE LADDER)
5 – 5/8-11 X 1" H.H.C.S.BOLTS
6 – "LOCTITE" THREAD LOCK (RED) ON ALL REMOVABLE BOLTS

TINNED GROUND BAR DETAIL

NO SCALE | 2

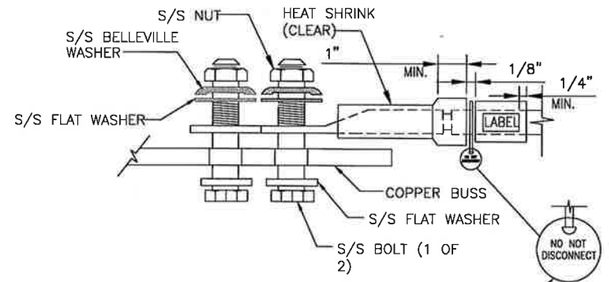
NOTE:

1. COPPER GROUND BAR 1/4"x4"x24" 2-HOLE CONTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. SIMILAR INSTALLATION FOR TOP AND BOTTOM TOWER GROUND BARS AND FOR COAX ENTRY PORT GROUND BARS.



ANTENNA GROUND WIRE INSTALLATION

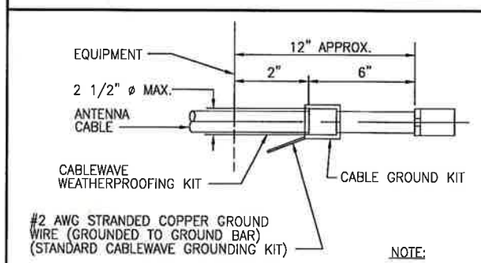
NO SCALE | 3



NOTE:
ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR-SHIELD CP8 ANTI-OXIDATION COMPOUND.

EQUIPMENT GROUND CONNECTION

NO SCALE | 4



NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUND KIT CONNECTION

NO SCALE | 5

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:
INFINIGY
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1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.Infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT · JOHN S. STEVENS · No. 24109 · LICENSED PROFESSIONAL ENGINEER
JUL 25 2018

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/20/18	ETC	0

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BRIDGEPORT CT 2

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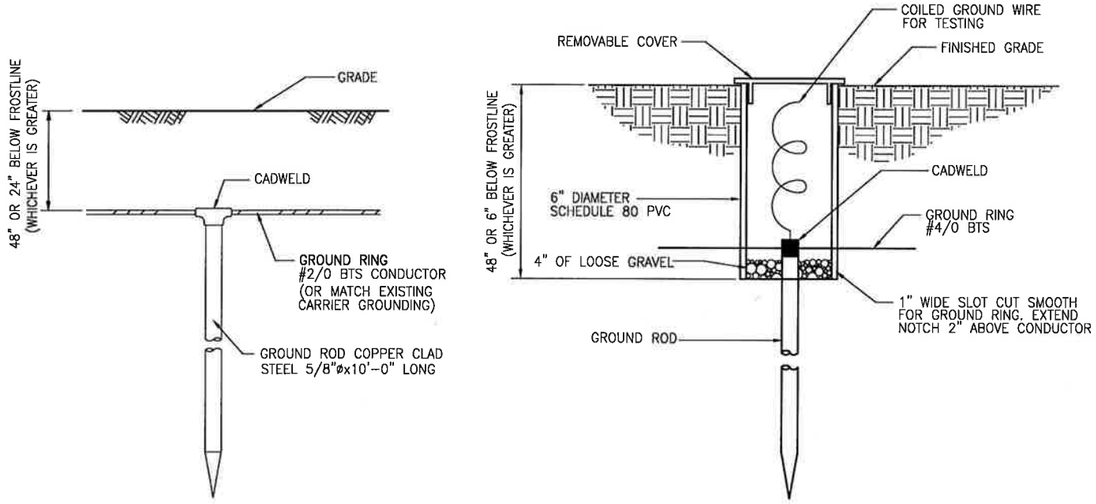
CT52XC006

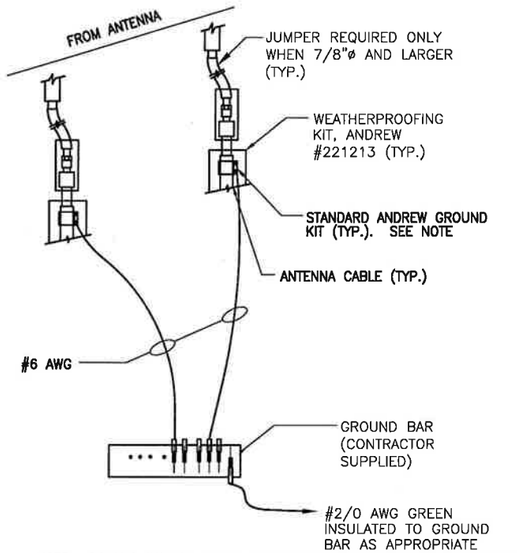
SITE ADDRESS:
1069 CONNECTICUT AVE.
BRIDGEPORT , CT 06607

SHEET DESCRIPTION:
ONE LINE & NOTES

SHEET NUMBER:
E-2



GROUND ROD & INSPECTION SLEEVE DETAIL | NO SCALE | 1

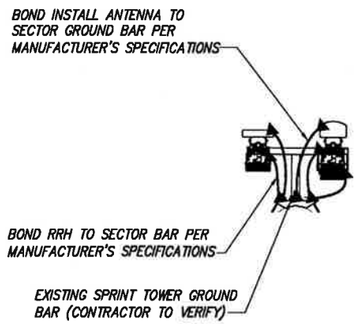


NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

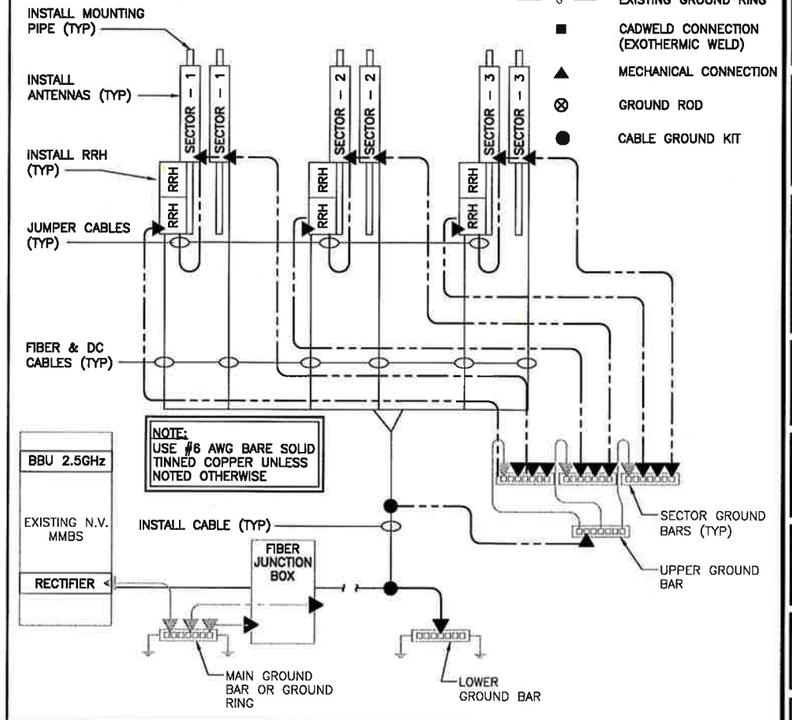
CONNECTION OF GROUND WIRES TO GROUND BARS @ ANTENNAS | NO SCALE | 2

LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 3



GROUNDING RISER DIAGRAM | NO SCALE | 4

PLANS PREPARED FOR:

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PLANS PREPARED BY:
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ENGINEERING LICENSE:

STATE OF CONNECTICUT JOHN S. STEVENS 24705 PROFESSIONAL ENGINEER
JUL 25 2018
No. 24705
LICENSED

REVISIONS:

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E-3